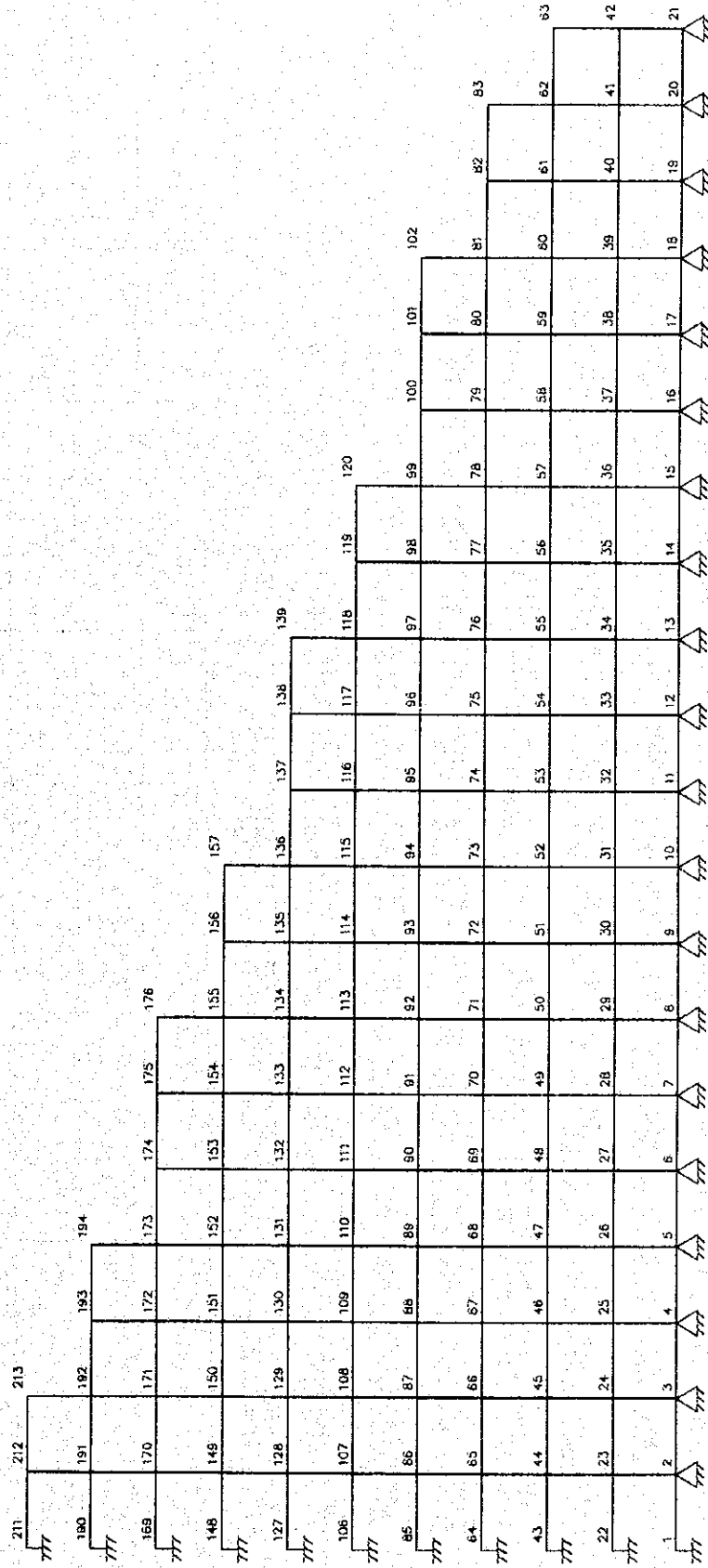# 2-1-3 BOX CULVERT AT CH.4+660
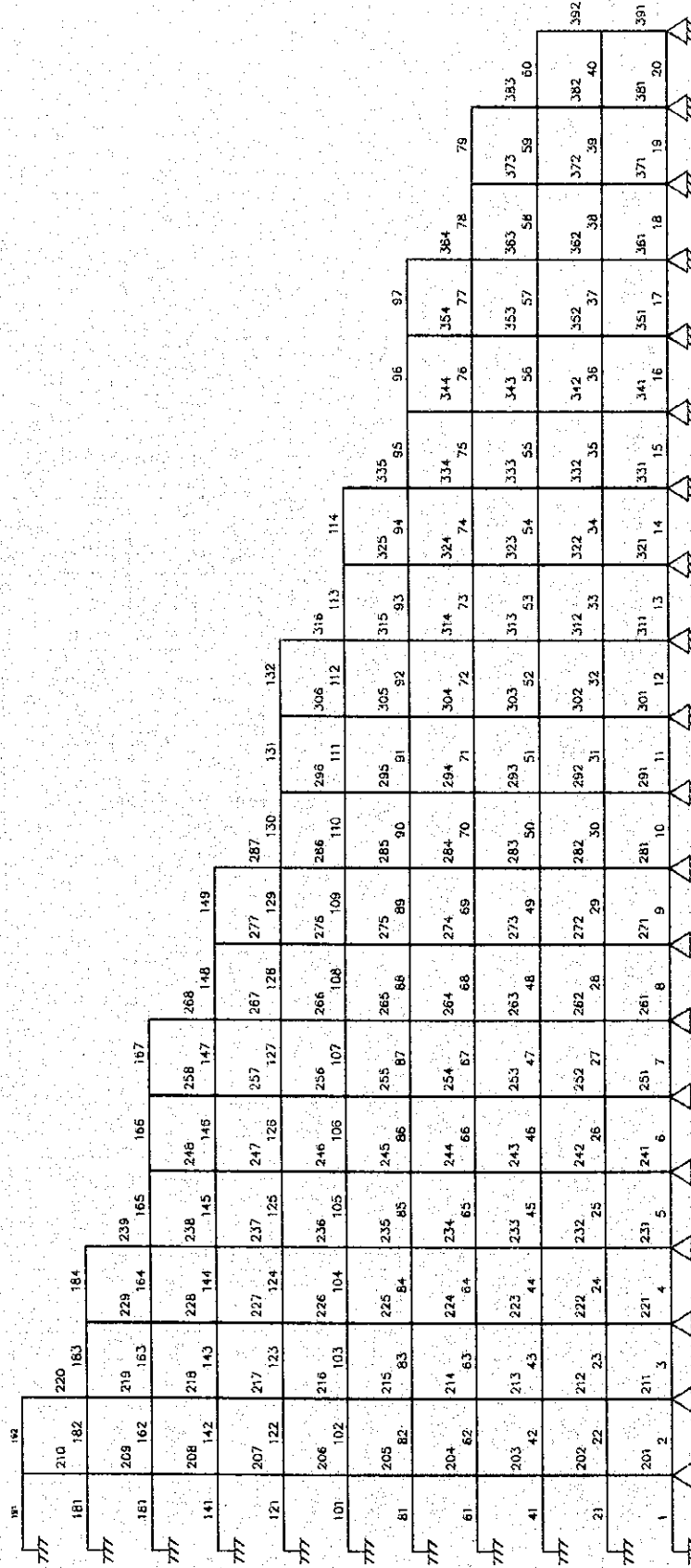
(2) WING WALL

WING WALL AT CH. 3+660

WING WALL WITH JOINT NUMBER

11-128

WING WALL AT CH. 3+660

WING WALL WITH MEMBER NUMBER

11-129

```
      *****************************************************
      *                                                   *
      *          S T A A D - III                          *
      *          Revision 22.3a                           *
      *          Proprietary Program of                   *
      *          Research Engineers, Inc.                 *
      *          Date=    JAN 30, 2000                    *
      *          Time=     9:15:42                         *
      *                                                   *
      *      USER ID: Development Design Consultants L *
      *****************************************************
```

```
 1. STAAD SPACE
 2. UNIT KNS METER
 3. PAGE EJE
 4. JOI COO
 5.       1 0.000 0.000 0.000     21  12.80 0.000 0.000
 6. R         2 0.000 0.000 0.565
 7. 64      0.000 0.000 1.695      83 12.160 0.000 1.695
 8. 85      0.000 0.000 2.260     102 10.880 0.000 2.260
 9. 106     0.000 0.000 2.825     120  8.960 0.000 2.825
10. 127     0.000 0.000 3.390     139  7.680 0.000 3.390
11. 148     0.000 0.000 3.955     157  5.760 0.000 3.955
12. 169     0.000 0.000 4.520     176  4.480 0.000 4.520
13. 190     0.000 0.000 5.085     194  2.560 0.000 5.085
14. 211     0.000 0.000 5.650     213  1.280 0.000 5.650
16. MEM INC
17. *HORIZONTAL MEMBER
18. 1       1     2     20    1     1
19. R       2     20    21
20. 61      64    65    79    1     1
21. 81      85    86    97    1     1
22. 101     106   107   114   1     1
23. 121     127   128   132   1     1
24. 141     148   149   149   1     1
25. 161     169   170   167   1     1
26. 181     190   191   184   1     1
27. 191     211   212   192   1     1
28. *VERTICAL MEMBER (START WITH 301)
29. 201     2     23    210   1     21
30. R       1     10    1
31. 221     4     25    229   1     21
32. R       1     10    1
33. 241     6     27    248   1     21
34. R       2     10    1
35. 271     9     30    277   1     21
36. R       1     10    1
37. 291     11    32    296   1     21
38. R       2     10    1
39. 321     14    35    325   1     21
40. R       1     10    1
41. 341     16    37    344   1     21
42. R       2     10    1
43. 371     19    40    373   1     21
44. R       1     10    1
45. 391     21    42    392   1     21
47. MEM PRO
48. 1     TO    20    PRI   YD    3.350   ZD    0.4    IX    1E-06
49. 21    TO    40    PRI   YD    0.350   ZD    0.565  IX    1E-06
50. 41    TO    60    PRI   YD    0.350   ZD    0.565  IX    1E-06
51. 61    TO    79    PRI   YD    0.350   ZD    0.565  IX    1E-06
52. 81    TO    97    PRI   YD    0.350   ZD    0.565  IX    1E-06
53. 101   TO    114   PRI   YD    0.350   ZD    0.565  IX    1E-06
54. 121   TO    132   PRI   YD    0.350   ZD    0.565  IX    1E-06
55. 141   TO    149   PRI   YD    0.350   ZD    0.565  IX    1E-06
56. 161   TO    167   PRI   YD    0.350   ZD    0.565  IX    1E-06
57. 181   TO    184   PRI   YD    0.350   ZD    0.565  IX    1E-06
58. 191   TO    192   PRI   YD    0.350   ZD    0.565  IX    1E-06
59. *VERTICAL
```

60.	201	TO	210	PRI	YD	0.350	ZD	0.640	IX	1E-06
61.	211	TO	220	PRI	YD	0.350	ZD	0.640	IX	1E-06
62.	221	TO	229	PRI	YD	0.350	ZD	0.640	IX	1E-06
63.	231	TO	239	PRI	YD	0.350	ZD	0.640	IX	1E-06
64.	241	TO	248	PRI	YD	0.350	ZD	0.640	IX	1E-06
65.	251	TO	258	PRI	YD	0.350	ZD	0.640	IX	1E-06
66.	261	TO	268	PRI	YD	0.350	ZD	0.640	IX	1E-06
67.	271	TO	277	PRI	YD	0.350	ZD	0.640	IX	1E-06
68.	281	TO	287	PRI	YD	0.350	ZD	0.640	IX	1E-06
69.	291	TO	296	PRI	YD	0.350	ZD	0.640	IX	1E-06
70.	301	TO	306	PRI	YD	0.350	ZD	0.640	IX	1E-06
71.	311	TO	316	PRI	YD	0.350	ZD	0.640	IX	1E-06
72.	321	TO	325	PRI	YD	0.350	ZD	0.640	IX	1E-06
73.	331	TO	335	PRI	YD	0.350	ZD	0.640	IX	1E-06
74.	341	TO	344	PRI	YD	0.350	ZD	0.640	IX	1E-06
75.	351	TO	354	PRI	YD	0.350	ZD	0.640	IX	1E-06
76.	361	TO	364	PRI	YD	0.350	ZD	0.640	IX	1E-06
77.	371	TO	373	PRI	YD	0.350	ZD	0.640	IX	1E-06
78.	381	TO	383	PRI	YD	0.350	ZD	0.640	IX	1E-06
79.	391	TO	392	PRI	YD	0.350	ZD	0.640	IX	1E-06

```
81. CONSTANTS
82. E      CONC
83. DEN    CONC
85. SUPPORT
86. 1    22    43    64    85    106   127   148   169   190   211   FIXED
87. 2    TO    21                            FIXED       BUT   MZ    FY
89. LOAD 1 : EARTH PRESSURE
90. JOINT LOAD
 91.  2   FY    -44.31
 92.  3   FY    -43.03
 93.  4   FY    -41.74
 94.  5   FY    -40.46
 95.  6   FY    -39.17
 96.  7   FY    -37.89
 97.  8   FY    -36.60
 98.  9   FY    -35.32
 99. 10   FY    -34.03
100. 11   FY    -32.75
101. 12   FY    -31.46
102. 13   FY    -30.18
103. 14   FY    -28.89
104. 15   FY    -27.61
105. 16   FY    -26.32
106. 17   FY      0.00
107. 18   FY      0.00
108. 19   FY      0.00
109. 20   FY      0.00
110. 21   FY      0.00
111. 23   FY    -31.27
112. 24   FY    -30.21
113. 25   FY    -29.15
114. 26   FY    -28.08
115. 27   FY    -27.02
116. 28   FY    -25.96
117. 29   FY    -24.89
118. 30   FY    -23.83
119. 31   FY    -22.76
120. 32   FY    -21.70
121. 33   FY    -20.64
122. 34   FY    -19.57
123. 35   FY    -18.51
124. 36   FY    -17.45
125. 37   FY    -16.38
126. 38   FY      0.00
127. 39   FY      0.00
128. 40   FY      0.00
129. 41   FY      0.00
130. 42   FY      0.00
131. 44   FY    -26.62
132. 45   FY    -25.56
```

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133.  46     FY     -24.50
134.  47     FY     -23.43
135.  48     FY     -22.37
136.  49     FY     -21.31
137.  50     FY     -20.24
138.  51     FY     -19.18
139.  52     FY     -18.11
140.  53     FY     -17.05
141.  54     FY     -15.99
142.  55     FY     -14.92
143.  56     FY     -13.86
144.  57     FY     -12.80
145.  58     FY     -11.73
146.  59     FY       0.00
147.  60     FY       0.00
148.  61     FY       0.00
149.  62     FY       0.00
150.  63     FY       0.00
151.  65     FY     -21.97
152.  66     FY     -20.91
153.  67     FY     -19.85
154.  68     FY     -18.78
155.  69     FY     -17.72
156.  70     FY     -16.66
157.  71     FY     -15.59
158.  72     FY     -14.53
159.  73     FY     -13.46
160.  74     FY     -12.40
161.  75     FY     -11.34
162.  76     FY     -10.27
163.  77     FY      -9.21
164.  78     FY      -8.15
165.  79     FY      -7.08
166.  80     FY       0.00
167.  81     FY       0.00
168.  82     FY       0.00
169.  83     FY       0.00
170.  86     FY     -17.32
171.  87     FY     -16.26
172.  88     FY     -15.20
173.  89     FY     -14.13
174.  90     FY     -13.07
175.  91     FY     -12.01
176.  92     FY     -10.94
177.  93     FY      -9.88
178.  94     FY      -8.81
179.  95     FY      -7.75
180.  96     FY      -6.69
181.  97     FY      -5.62
182.  98     FY      -4.56
183.  99     FY      -3.50
184. 100     FY      -2.43
185. 101     FY       0.00
186. 102     FY       0.00
187. 107     FY     -12.67
188. 108     FY     -11.61
189. 109     FY     -10.55
190. 110     FY      -9.48
191. 111     FY      -8.42
192. 112     FY      -7.35
193. 113     FY      -6.29
194. 114     FY      -5.23
195. 115     FY      -4.16
196. 116     FY      -3.10
197. 117     FY      -2.04
198. 118     FY      -0.97
199. 119     FY       0.00
200. 120     FY       0.00
201. 128     FY      -9.57
202. 129     FY      -8.51
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203.  130    FY      -7.45
204.  131    FY      -6.38
205.  132    FY      -5.32
206.  133    FY      -4.26
207.  134    FY      -3.19
208.  135    FY      -2.13
209.  136    FY      -1.06
210.  137    FY       0.00
211.  138    FY       0.00
212.  139    FY       0.00
213.  149    FY      -6.91
214.  150    FY      -5.85
215.  151    FY      -4.79
216.  152    FY      -3.72
217.  153    FY      -2.66
218.  154    FY      -1.60
219.  155    FY      -0.53
220.  156    FY       0.00
221.  157    FY       0.00
222.  170    FY      -4.26
223.  171    FY      -3.19
224.  172    FY      -2.13
225.  173    FY      -1.06
226.  174    FY       0.00
227.  175    FY       0.00
228.  176    FY       0.00
229.  191    FY      -1.60
230.  192    FY      -0.53
231.  193    FY       0.00
232.  194    FY       0.00
233.  212    FY       0.00
234.  213    FY       0.00
```

236. PER ANA

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

   NUMBER OF JOINTS/MEMBER+ELEMENTS/SUPPORTS =   155/   268/   31
   ORIGINAL/FINAL BAND-WIDTH =   21/   9
   TOTAL PRIMARY LOAD CASES =   1, TOTAL DEGREES OF FREEDOM =   784
   SIZE OF STIFFNESS MATRIX =   43904 DOUBLE PREC. WORDS
   REQRD/AVAIL. DISK SPACE = 12.59/ 246.6 MB, EXMEM = 1964.5 MB

++ Processing Element Stiffness Matrix.   9:15:42
++ Processing Global Stiffness Matrix.   9:15:42
++ Processing Triangular Factorization.   9:15:42
++ Calculating Joint Displacements.   9:15:42
++ Calculating Member Forces.   9:15:42

237. PRINT MEM FORCES

MEMBER END FORCES   STRUCTURE TYPE = SPACE

ALL UNITS ARE -- KNS METE

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
1	1	1	.00	1385.10	.00	.00	.00	6824.55
		2	.00	-1385.10	.00	.00	.00	-5938.09
2	1	2	.00	1329.26	.00	.00	.00	5938.09
		3	.00	-1329.26	.00	.00	.00	-5087.36
3	1	3	.00	1240.78	.00	.00	.00	5087.35
		4	.00	-1240.78	.00	.00	.00	-4293.25
4	1	4	.00	1134.69	.00	.00	.00	4293.25
		5	.00	-1134.69	.00	.00	.00	-3567.05
5	1	5	.00	1020.79	.00	.00	.00	3567.05
		6	.00	-1020.79	.00	.00	.00	-2913.75
6	1	6	.00	904.85	.00	.00	.00	2913.74
		7	.00	-904.85	.00	.00	.00	-2334.64
7	1	7	.00	790.70	.00	.00	.00	2334.64
		8	.00	-790.70	.00	.00	.00	-1828.59
8	1	8	.00	680.74	.00	.00	.00	1828.59
		9	.00	-680.74	.00	.00	.00	-1392.91
9	1	9	.00	576.18	.00	.00	.00	1392.91
		10	.00	-576.18	.00	.00	.00	-1024.16
10	1	10	.00	477.52	.00	.00	.00	1024.16
		11	.00	-477.52	.00	.00	.00	-718.54
11	1	11	.00	384.84	.00	.00	.00	718.54
		12	.00	-384.84	.00	.00	.00	-472.24
12	1	12	.00	297.86	.00	.00	.00	472.23
		13	.00	-297.86	.00	.00	.00	-281.61
13	1	13	.00	216.54	.00	.00	.00	281.60
		14	.00	-216.54	.00	.00	.00	-143.01
14	1	14	.00	141.46	.00	.00	.00	143.02
		15	.00	-141.46	.00	.00	.00	-52.48
15	1	15	.00	74.14	.00	.00	.00	52.48
		16	.00	-74.14	.00	.00	.00	-5.03

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MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
16	1	16	.00	18.30	.00	.00	.00	5.03
		17	.00	-18.30	.00	.00	.00	6.68
17	1	17	.00	3.36	.00	.00	.00	-6.67
		18	.00	-3.36	.00	.00	.00	8.83
18	1	18	.00	-2.92	.00	.00	.00	-8.83
		19	.00	2.92	.00	.00	.00	6.97
19	1	19	.00	-5.12	.00	.00	.00	-6.97
		20	.00	5.12	.00	.00	.00	3.68
20	1	20	.00	-5.76	.00	.00	.00	-3.68
		21	.00	5.76	.00	.00	.00	.00
21	1	22	.00	35.83	.00	.00	.00	34.64
		23	.00	-35.83	.00	.00	.00	-11.71
22	1	23	.00	8.53	.00	.00	.00	11.71
		24	.00	-8.53	.00	.00	.00	-6.25
23	1	24	.00	2.59	.00	.00	.00	6.25
		25	.00	-2.59	.00	.00	.00	-4.59
24	1	25	.00	1.58	.00	.00	.00	4.59
		26	.00	-1.58	.00	.00	.00	-3.58
25	1	26	.00	1.22	.00	.00	.00	3.58
		27	.00	-1.22	.00	.00	.00	-2.80
26	1	27	.00	.94	.00	.00	.00	2.80
		28	.00	-.94	.00	.00	.00	-2.20
27	1	28	.00	.73	.00	.00	.00	2.20
		29	.00	-.73	.00	.00	.00	-1.73
28	1	29	.00	.68	.00	.00	.00	1.73
		30	.00	-.68	.00	.00	.00	-1.29
29	1	30	.00	.73	.00	.00	.00	1.29
		31	.00	-.73	.00	.00	.00	-.83
30	1	31	.00	.69	.00	.00	.00	.83
		32	.00	-.69	.00	.00	.00	-.39
31	1	32	.00	.66	.00	.00	.00	.39
		33	.00	-.66	.00	.00	.00	.03
32	1	33	.00	.64	.00	.00	.00	-.03
		34	.00	-.64	.00	.00	.00	.44
33	1	34	.00	.41	.00	.00	.00	-.44
		35	.00	-.41	.00	.00	.00	.70
34	1	35	.00	.41	.00	.00	.00	-.70
		36	.00	-.41	.00	.00	.00	.96
35	1	36	.00	.05	.00	.00	.00	-.96
		37	.00	-.05	.00	.00	.00	.99
36	1	37	.00	-3.19	.00	.00	.00	-.99
		38	.00	3.19	.00	.00	.00	-1.05
37	1	38	.00	.40	.00	.00	.00	1.05
		39	.00	-.40	.00	.00	.00	-.79

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
38	1	39	.00	-.28	.00	.00	.00	.80
		40	.00	.28	.00	.00	.00	-.97
39	1	40	.00	1.08	.00	.00	.00	.97
		41	.00	-1.08	.00	.00	.00	-.28
40	1	41	.00	.44	.00	.00	.00	.28
		42	.00	-.44	.00	.00	.00	.00
41	1	43	.00	41.78	.00	.00	.00	45.90
		44	.00	-41.78	.00	.00	.00	-19.16
42	1	44	.00	19.91	.00	.00	.00	19.16
		45	.00	-19.91	.00	.00	.00	-6.42
43	1	45	.00	7.13	.00	.00	.00	6.42
		46	.00	-7.13	.00	.00	.00	-1.85
44	1	46	.00	2.31	.00	.00	.00	1.85
		47	.00	-2.31	.00	.00	.00	-.38
45	1	47	.00	.72	.00	.00	.00	.37
		48	.00	-.72	.00	.00	.00	.08
46	1	48	.00	.12	.00	.00	.00	-.08
		49	.00	-.12	.00	.00	.00	.16
47	1	49	.00	-.20	.00	.00	.00	-.16
		50	.00	.20	.00	.00	.00	.03
48	1	50	.00	-.13	.00	.00	.00	-.03
		51	.00	.13	.00	.00	.00	-.05
49	1	51	.00	.45	.00	.00	.00	.05
		52	.00	-.45	.00	.00	.00	.24
50	1	52	.00	.79	.00	.00	.00	-.24
		53	.00	-.79	.00	.00	.00	.75
51	1	53	.00	.78	.00	.00	.00	-.75
		54	.00	-.78	.00	.00	.00	1.25
52	1	54	.00	.78	.00	.00	.00	-1.25
		55	.00	-.78	.00	.00	.00	1.74
53	1	55	.00	.56	.00	.00	.00	-1.74
		56	.00	-.56	.00	.00	.00	2.10
54	1	56	.00	-.01	.00	.00	.00	-2.10
		57	.00	.01	.00	.00	.00	2.09
55	1	57	.00	-.96	.00	.00	.00	-2.09
		58	.00	.96	.00	.00	.00	1.48
56	1	58	.00	-5.65	.00	.00	.00	-1.48
		59	.00	5.65	.00	.00	.00	-2.14
57	1	59	.00	-.30	.00	.00	.00	2.14
		60	.00	.30	.00	.00	.00	-2.33
58	1	60	.00	-.38	.00	.00	.00	2.33
		61	.00	.38	.00	.00	.00	-2.58
59	1	61	.00	-1.27	.00	.00	.00	2.58
		62	.00	1.27	.00	.00	.00	-3.39
60	1	62	.00	5.31	.00	.00	.00	3.40
		63	.00	-5.31	.00	.00	.00	.00

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MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
61	1	64	.00	46.33	.00	.00	.00	55.79
		65	.00	-46.33	.00	.00	.00	-26.14
62	1	65	.00	27.03	.00	.00	.00	26.14
		66	.00	-27.03	.00	.00	.00	-8.84
63	1	66	.00	12.87	.00	.00	.00	8.84
		67	.00	-12.87	.00	.00	.00	-.60
64	1	67	.00	4.72	.00	.00	.00	.60
		68	.00	-4.72	.00	.00	.00	2.41
65	1	68	.00	1.01	.00	.00	.00	-2.41
		69	.00	-1.01	.00	.00	.00	3.06
66	1	69	.00	-.32	.00	.00	.00	-3.06
		70	.00	.32	.00	.00	.00	2.86
67	1	70	.00	-.66	.00	.00	.00	-2.86
		71	.00	.66	.00	.00	.00	2.44
68	1	71	.00	-.84	.00	.00	.00	-2.44
		72	.00	.84	.00	.00	.00	1.90
69	1	72	.00	.05	.00	.00	.00	-1.90
		73	.00	-.05	.00	.00	.00	1.93
70	1	73	.00	1.31	.00	.00	.00	-1.94
		74	.00	-1.31	.00	.00	.00	2.78
71	1	74	.00	1.11	.00	.00	.00	-2.78
		75	.00	-1.11	.00	.00	.00	3.49
72	1	75	.00	-.25	.00	.00	.00	-3.49
		76	.00	.25	.00	.00	.00	3.33
73	1	76	.00	1.09	.00	.00	.00	-3.33
		77	.00	-1.09	.00	.00	.00	4.03
74	1	77	.00	-1.50	.00	.00	.00	-4.03
		78	.00	1.50	.00	.00	.00	3.06
75	1	78	.00	-1.95	.00	.00	.00	-3.06
		79	.00	1.95	.00	.00	.00	1.81
76	1	79	.00	-6.32	.00	.00	.00	-1.81
		80	.00	6.32	.00	.00	.00	-2.23
77	1	80	.00	-5.41	.00	.00	.00	2.23
		81	.00	5.41	.00	.00	.00	-5.70
78	1	81	.00	3.56	.00	.00	.00	5.70
		82	.00	-3.56	.00	.00	.00	-3.42
79	1	82	.00	5.34	.00	.00	.00	3.42
		83	.00	-5.34	.00	.00	.00	.00
81	1	85	.00	46.49	.00	.00	.00	61.49
		86	.00	-46.49	.00	.00	.00	-31.74
82	1	86	.00	30.27	.00	.00	.00	31.74
		87	.00	-30.27	.00	.00	.00	-12.36
83	1	87	.00	17.15	.00	.00	.00	12.36
		88	.00	-17.15	.00	.00	.00	-1.38
84	1	88	.00	7.66	.00	.00	.00	1.38
		89	.00	-7.66	.00	.00	.00	3.52

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
85	1	89	.00	2.26	.00	.00	.00	-3.52
		90	.00	-2.26	.00	.00	.00	4.97
86	1	90	.00	-.11	.00	.00	.00	-4.97
		91	.00	.11	.00	.00	.00	4.90
87	1	91	.00	.02	.00	.00	.00	-4.90
		92	.00	-.02	.00	.00	.00	4.91
88	1	92	.00	-.07	.00	.00	.00	-4.91
		93	.00	.07	.00	.00	.00	4.87
89	1	93	.00	-.96	.00	.00	.00	-4.87
		94	.00	.96	.00	.00	.00	4.26
90	1	94	.00	2.22	.00	.00	.00	-4.26
		95	.00	-2.22	.00	.00	.00	5.68
91	1	95	.00	1.76	.00	.00	.00	-5.68
		96	.00	-1.76	.00	.00	.00	6.81
92	1	96	.00	-2.54	.00	.00	.00	-6.81
		97	.00	2.54	.00	.00	.00	5.18
93	1	97	.00	.52	.00	.00	.00	-5.18
		98	.00	-.52	.00	.00	.00	5.51
94	1	98	.00	-.11	.00	.00	.00	-5.51
		99	.00	.11	.00	.00	.00	5.44
95	1	99	.00	-7.34	.00	.00	.00	-5.44
		100	.00	7.34	.00	.00	.00	.75
96	1	100	.00	-3.13	.00	.00	.00	-.75
		101	.00	3.13	.00	.00	.00	-1.25
97	1	101	.00	1.94	.00	.00	.00	1.25
		102	.00	-1.94	.00	.00	.00	.00
101	1	106	.00	42.96	.00	.00	.00	62.88
		107	.00	-42.96	.00	.00	.00	-35.38
102	1	107	.00	29.93	.00	.00	.00	35.39
		108	.00	-29.93	.00	.00	.00	-16.23
103	1	108	.00	19.18	.00	.00	.00	16.23
		109	.00	-19.18	.00	.00	.00	-3.96
104	1	109	.00	10.06	.00	.00	.00	3.96
		110	.00	-10.06	.00	.00	.00	2.48
105	1	110	.00	4.00	.00	.00	.00	-2.48
		111	.00	-4.00	.00	.00	.00	5.04
106	1	111	.00	1.07	.00	.00	.00	-5.04
		112	.00	-1.07	.00	.00	.00	5.73
107	1	112	.00	1.18	.00	.00	.00	-5.73
		113	.00	-1.18	.00	.00	.00	6.48
108	1	113	.00	4.09	.00	.00	.00	-6.48
		114	.00	-4.09	.00	.00	.00	9.10
109	1	114	.00	-1.17	.00	.00	.00	-9.10
		115	.00	1.17	.00	.00	.00	8.35
110	1	115	.00	1.84	.00	.00	.00	-8.35
		116	.00	-1.84	.00	.00	.00	9.53

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
111	1	116	.00	-1.60	.00	.00	.00	-9.53
		117	.00	1.60	.00	.00	.00	8.50
112	1	117	.00	4.14	.00	.00	.00	-8.50
		118	.00	-4.14	.00	.00	.00	11.15
113	1	118	.00	-10.62	.00	.00	.00	-11.15
		119	.00	10.62	.00	.00	.00	4.35
114	1	119	.00	-6.81	.00	.00	.00	-4.36
		120	.00	6.81	.00	.00	.00	.00
121	1	127	.00	37.48	.00	.00	.00	60.85
		128	.00	-37.48	.00	.00	.00	-36.86
122	1	128	.00	26.63	.00	.00	.00	36.86
		129	.00	-26.63	.00	.00	.00	-19.82
123	1	129	.00	17.95	.00	.00	.00	19.82
		130	.00	-17.95	.00	.00	.00	-8.33
124	1	130	.00	12.13	.00	.00	.00	8.33
		131	.00	-12.13	.00	.00	.00	-.57
125	1	131	.00	4.96	.00	.00	.00	.57
		132	.00	-4.96	.00	.00	.00	2.60
126	1	132	.00	4.94	.00	.00	.00	-2.60
		133	.00	-4.94	.00	.00	.00	5.77
127	1	133	.00	2.47	.00	.00	.00	-5.77
		134	.00	-2.47	.00	.00	.00	7.35
128	1	134	.00	5.94	.00	.00	.00	-7.35
		135	.00	-5.94	.00	.00	.00	11.15
129	1	135	.00	14.03	.00	.00	.00	-11.15
		136	.00	-14.03	.00	.00	.00	20.13
130	1	136	.00	-11.46	.00	.00	.00	-20.14
		137	.00	11.46	.00	.00	.00	12.80
131	1	137	.00	-9.40	.00	.00	.00	-12.81
		138	.00	9.40	.00	.00	.00	6.79
132	1	138	.00	-10.61	.00	.00	.00	-6.79
		139	.00	10.61	.00	.00	.00	.00
141	1	148	.00	29.35	.00	.00	.00	55.68
		149	.00	-29.35	.00	.00	.00	-36.90
142	1	149	.00	23.11	.00	.00	.00	36.90
		150	.00	-23.11	.00	.00	.00	-22.11
143	1	150	.00	11.30	.00	.00	.00	22.11
		151	.00	-11.30	.00	.00	.00	-14.88
144	1	151	.00	13.86	.00	.00	.00	14.88
		152	.00	-13.86	.00	.00	.00	-6.01
145	1	152	.00	5.86	.00	.00	.00	6.01
		153	.00	-5.86	.00	.00	.00	-2.25
146	1	153	.00	10.46	.00	.00	.00	2.25
		154	.00	-10.46	.00	.00	.00	4.44
147	1	154	.00	12.08	.00	-.01	.00	-4.44
		155	.00	-12.08	.00	.01	.00	12.18

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MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
148	1	155	.00	-5.01	.00	.00	.00	-12.18
		156	.00	5.01	.00	.00	.00	8.97
149	1	156	.00	-14.00	.00	-.01	.00	-8.97
		157	.00	14.00	.00	.01	.00	.01
161	1	169	.00	15.21	.00	.00	.00	46.51
		170	.00	-15.21	.00	.00	.00	-36.78
162	1	170	.00	20.06	.00	.00	.00	36.78
		171	.00	-20.06	.00	.00	.00	-23.94
163	1	171	.00	6.44	.00	.00	.00	23.94
		172	.00	-6.44	.00	.00	.00	-19.82
164	1	172	.00	-.77	.00	.00	.00	19.82
		173	.00	.77	.00	.00	.00	-20.31
165	1	173	.00	25.65	.00	-.01	.00	20.32
		174	.00	-25.65	.00	.01	.00	-3.90
166	1	174	.00	8.76	.00	-.01	.00	3.90
		175	.00	-8.76	.00	.01	.00	1.70
167	1	175	.00	-2.64	.00	-.01	.00	-1.70
		176	.00	2.64	.00	.01	.00	.01
181	1	190	.00	7.02	.00	.00	.00	35.81
		191	.00	-7.02	.00	.00	.00	-31.32
182	1	191	.00	-8.75	.00	.00	.00	31.32
		192	.00	8.75	.00	.00	.00	-36.92
183	1	192	.00	31.95	.00	.00	.00	36.93
		193	.00	-31.95	.00	.00	.00	-16.48
184	1	193	.00	25.75	.00	.00	.00	16.48
		194	.00	-25.75	.00	.00	.00	.00
191	1	211	.00	21.96	.00	.00	.00	31.36
		212	.00	-21.96	.00	.00	.00	-17.31
192	1	212	.00	27.03	.00	.01	.00	17.31
		213	.00	-27.03	.00	-.01	.00	-.01
201	1	2	.00	11.52	.00	.00	.00	9.66
		23	.00	-11.52	.00	.00	.00	-3.15
202	1	23	.00	7.56	.00	.00	.00	3.15
		44	.00	-7.56	.00	.00	.00	1.12
203	1	44	.00	2.81	.00	.00	.00	-1.13
		65	.00	-2.81	.00	.00	.00	2.71
204	1	65	.00	.14	.00	.00	.00	-2.72
		86	.00	-.14	.00	.00	.00	2.80
205	1	86	.00	-.96	.00	.00	.00	-2.80
		107	.00	.96	.00	.00	.00	2.26
206	1	107	.00	-.60	.00	.00	.00	-2.26
		128	.00	.60	.00	.00	.00	1.92
207	1	128	.00	.67	.00	.00	.00	-1.92
		149	.00	-.67	.00	.00	.00	2.29
208	1	149	.00	.00	.00	.00	.00	-2.29
		170	.00	.00	.00	.00	.00	2.29

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
209	1	170	.00	-9.11	.00	.00	.00	-2.29
		191	.00	9.11	.00	.00	.00	-2.85
210	1	191	.00	5.07	.00	.00	.00	2.86
		212	.00	-5.07	.00	.00	.00	.00
211	1	3	.00	45.45	.00	.00	.00	34.82
		24	.00	-45.45	.00	.00	.00	-9.14
212	1	24	.00	21.18	.00	.00	.00	9.14
		45	.00	-21.18	.00	.00	.00	2.83
213	1	45	.00	8.39	.00	.00	.00	-2.83
		66	.00	-8.39	.00	.00	.00	7.57
214	1	66	.00	1.64	.00	.00	.00	-7.57
		87	.00	-1.64	.00	.00	.00	8.50
215	1	87	.00	-1.50	.00	.00	.00	-8.50
		108	.00	1.50	.00	.00	.00	7.65
216	1	108	.00	-2.35	.00	.00	.00	-7.65
		129	.00	2.35	.00	.00	.00	6.32
217	1	129	.00	-2.17	.00	.00	.00	-6.32
		150	.00	2.17	.00	.00	.00	5.10
218	1	150	.00	3.78	.00	.00	.00	-5.10
		171	.00	-3.78	.00	.00	.00	7.23
219	1	171	.00	14.21	.00	.00	.00	-7.23
		192	.00	-14.21	.00	.00	.00	15.26
220	1	192	.00	-27.03	.00	-.01	.00	-15.26
		213	.00	27.03	.00	.01	.00	-.01
221	1	4	.00	64.35	.00	.00	.00	55.03
		25	.00	-64.35	.00	.00	.00	-18.68
222	1	25	.00	36.22	.00	.00	.00	18.68
		46	.00	-36.22	.00	.00	.00	1.79
223	1	46	.00	16.54	.00	.00	.00	-1.79
		67	.00	-16.54	.00	.00	.00	11.13
224	1	67	.00	4.84	.00	.00	.00	-11.13
		88	.00	-4.84	.00	.00	.00	13.87
225	1	88	.00	-.86	.00	.00	.00	-13.87
		109	.00	.86	.00	.00	.00	13.38
226	1	109	.00	-2.29	.00	.00	.00	-13.38
		130	.00	2.29	.00	.00	.00	12.09
227	1	130	.00	-3.93	.00	.00	.00	-12.09
		151	.00	3.93	.00	.00	.00	9.87
228	1	151	.00	-11.28	.00	.00	.00	-9.87
		172	.00	11.28	.00	.00	.00	3.50
229	1	172	.00	-6.19	.00	.00	.00	-3.50
		193	.00	6.19	.00	.00	.00	.00
231	1	5	.00	73.45	.00	.00	.00	68.97
		26	.00	-73.45	.00	.00	.00	-27.47
232	1	26	.00	45.73	.00	.00	.00	27.47
		47	.00	-45.73	.00	.00	.00	-1.63

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
233	1	47	.00	23.90	.00	.00	.00	1.63
		68	.00	-23.90	.00	.00	.00	11.87
234	1	68	.00	8.82	.00	.00	.00	-11.87
		89	.00	-8.82	.00	.00	.00	16.85
235	1	89	.00	.08	.00	.00	.00	-16.85
		110	.00	-.08	.00	.00	.00	16.89
236	1	110	.00	-3.34	.00	.00	.00	-16.89
		131	.00	3.34	.00	.00	.00	15.01
237	1	131	.00	-2.55	.00	.00	.00	-15.01
		152	.00	2.55	.00	.00	.00	13.56
238	1	152	.00	1.73	.00	.00	.00	-13.57
		173	.00	-1.73	.00	.00	.00	14.54
239	1	173	.00	-25.75	.00	.00	.00	-14.55
		194	.00	25.75	.00	.00	.00	.00
241	1	6	.00	76.77	.00	.00	.00	77.51
		27	.00	-76.77	.00	.00	.00	-34.14
242	1	27	.00	50.02	.00	.00	.00	34.14
		48	.00	-50.02	.00	.00	.00	-5.88
243	1	48	.00	28.24	.00	.00	.00	5.88
		69	.00	-28.24	.00	.00	.00	10.08
244	1	69	.00	11.85	.00	.00	.00	-10.08
		90	.00	-11.85	.00	.00	.00	16.77
245	1	90	.00	1.16	.00	.00	.00	-16.77
		111	.00	-1.16	.00	.00	.00	17.43
246	1	111	.00	-4.33	.00	.00	.00	-17.43
		132	.00	4.33	.00	.00	.00	14.98
247	1	132	.00	-9.63	.00	.00	.00	-14.98
		153	.00	9.63	.00	.00	.00	9.54
248	1	153	.00	-16.89	.00	.00	.00	-9.54
		174	.00	16.89	.00	.00	.00	.00
251	1	7	.00	76.25	.00	.00	.00	81.69
		28	.00	-76.25	.00	.00	.00	-38.61
252	1	28	.00	50.51	.00	.00	.00	38.61
		49	.00	-50.51	.00	.00	.00	-10.07
253	1	49	.00	29.52	.00	.00	.00	10.07
		70	.00	-29.52	.00	.00	.00	6.61
254	1	70	.00	13.21	.00	.00	.00	-6.61
		91	.00	-13.21	.00	.00	.00	14.07
255	1	91	.00	1.07	.00	.00	.00	-14.07
		112	.00	-1.07	.00	.00	.00	14.68
256	1	112	.00	-6.39	.00	.00	.00	-14.68
		133	.00	6.39	.00	.00	.00	11.07
257	1	133	.00	-8.19	.00	.00	.00	-11.07
		154	.00	8.19	.00	.00	.00	6.44
258	1	154	.00	-11.40	.00	.01	.00	-6.44
		175	.00	11.40	.00	-.01	.00	.00

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
261	1	8	.00	73.35	.00	.00	.00	82.60
		29	.00	-73.35	.00	.00	.00	-41.16
262	1	29	.00	48.51	.00	.00	.00	41.16
		50	.00	-48.51	.00	.00	.00	-13.75
263	1	50	.00	28.20	.00	.00	.00	13.75
		71	.00	-28.20	.00	.00	.00	2.18
264	1	71	.00	12.78	.00	.00	.00	-2.18
		92	.00	-12.78	.00	.00	.00	9.40
265	1	92	.00	1.93	.00	.00	.00	-9.40
		113	.00	-1.93	.00	.00	.00	10.49
266	1	113	.00	-7.27	.00	.00	.00	-10.49
		134	.00	7.27	.00	.00	.00	6.38
267	1	134	.00	-13.92	.00	.00	.00	-6.38
		155	.00	13.92	.00	.00	.00	-1.49
268	1	155	.00	2.64	.00	.01	.00	1.49
		176	.00	-2.64	.00	-.01	.00	.01
271	1	9	.00	69.25	.00	.00	.00	81.30
		30	.00	-69.25	.00	.00	.00	-42.17
272	1	30	.00	45.38	.00	.00	.00	42.17
		51	.00	-45.38	.00	.00	.00	-16.53
273	1	51	.00	25.61	.00	.00	.00	16.53
		72	.00	-25.61	.00	.00	.00	-2.06
274	1	72	.00	10.20	.00	.00	.00	2.06
		93	.00	-10.20	.00	.00	.00	3.70
275	1	93	.00	1.21	.00	.00	.00	-3.70
		114	.00	-1.21	.00	.00	.00	4.38
276	1	114	.00	1.23	.00	.00	.00	-4.38
		135	.00	-1.23	.00	.00	.00	5.08
277	1	135	.00	-8.99	.00	.00	.00	-5.08
		156	.00	8.99	.00	.00	.00	.00
281	1	10	.00	64.62	.00	.00	.00	78.54
		31	.00	-64.62	.00	.00	.00	-42.03
282	1	31	.00	41.90	.00	.00	.00	42.03
		52	.00	-41.90	.00	.00	.00	-18.35
283	1	52	.00	23.46	.00	.00	.00	18.35
		73	.00	-23.46	.00	.00	.00	-5.10
284	1	73	.00	8.73	.00	.00	.00	5.10
		94	.00	-8.73	.00	.00	.00	-.17
285	1	94	.00	-3.26	.00	.00	.00	.17
		115	.00	3.26	.00	.00	.00	-2.01
286	1	115	.00	-10.42	.00	.00	.00	2.01
		136	.00	10.42	.00	.00	.00	-7.90
287	1	136	.00	14.00	.00	.01	.00	7.91
		157	.00	-14.00	.00	-.01	.00	.01
291	1	11	.00	59.93	.00	.00	.00	74.68
		32	.00	-59.93	.00	.00	.00	-40.82

11-143

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
292	1	32	.00	38.26	.00	.00	.00	40.82
		53	.00	-38.26	.00	.00	.00	-19.21
293	1	53	.00	21.21	.00	.00	.00	19.21
		74	.00	-21.21	.00	.00	.00	-7.22
294	1	74	.00	9.02	.00	.00	.00	7.22
		95	.00	-9.02	.00	.00	.00	-2.13
295	1	95	.00	1.72	.00	.00	.00	2.13
		116	.00	-1.72	.00	.00	.00	-1.16
296	1	116	.00	2.06	.00	.00	.00	1.16
		137	.00	-2.06	.00	.00	.00	.00
301	1	12	.00	55.52	.00	.00	.00	69.85
		33	.00	-55.52	.00	.00	.00	-38.48
302	1	33	.00	34.90	.00	.00	.00	38.48
		54	.00	-34.90	.00	.00	.00	-18.76
303	1	54	.00	18.92	.00	.00	.00	18.76
		75	.00	-18.92	.00	.00	.00	-8.07
304	1	75	.00	8.94	.00	.00	.00	8.07
		96	.00	-8.94	.00	.00	.00	-3.02
305	1	96	.00	6.56	.00	.00	.00	3.02
		117	.00	-6.56	.00	.00	.00	.68
306	1	117	.00	-1.21	.00	.00	.00	-.68
		138	.00	1.21	.00	.00	.00	.00
311	1	13	.00	51.17	.00	.00	.00	63.87
		34	.00	-51.17	.00	.00	.00	-34.96
312	1	34	.00	31.82	.00	.00	.00	34.96
		55	.00	-31.82	.00	.00	.00	-16.98
313	1	55	.00	17.12	.00	.00	.00	16.98
		76	.00	-17.12	.00	.00	.00	-7.31
314	1	76	.00	5.51	.00	.00	.00	7.31
		97	.00	-5.51	.00	.00	.00	-4.20
315	1	97	.00	-3.18	.00	.00	.00	4.20
		118	.00	3.18	.00	.00	.00	-5.99
316	1	118	.00	10.61	.00	.00	.00	5.99
		139	.00	-10.61	.00	.00	.00	.00
321	1	14	.00	46.16	.00	.00	.00	56.33
		35	.00	-46.16	.00	.00	.00	-30.26
322	1	35	.00	27.65	.00	.00	.00	30.26
		56	.00	-27.65	.00	.00	.00	-14.64
323	1	56	.00	14.35	.00	.00	.00	14.64
		77	.00	-14.35	.00	.00	.00	-6.53
324	1	77	.00	7.74	.00	.00	.00	6.53
		98	.00	-7.74	.00	.00	.00	-2.15
325	1	98	.00	3.81	.00	.00	.00	2.15
		119	.00	-3.81	.00	.00	.00	.00
331	1	15	.00	39.73	.00	.00	.00	46.92
		36	.00	-39.73	.00	.00	.00	-24.47

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MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
332	1	36	.00	22.64	.00	.00	.00	24.47
		57	.00	-22.64	.00	.00	.00	-11.68
333	1	57	.00	10.78	.00	.00	.00	11.68
		78	.00	-10.78	.00	.00	.00	-5.59
334	1	78	.00	3.08	.00	.00	.00	5.59
		99	.00	-3.08	.00	.00	.00	-3.85
335	1	99	.00	6.81	.00	.00	.00	3.85
		120	.00	-6.81	.00	.00	.00	.00
341	1	16	.00	29.53	.00	.00	.00	34.99
		37	.00	-29.53	.00	.00	.00	-18.30
342	1	37	.00	16.39	.00	.00	.00	18.30
		58	.00	-16.39	.00	.00	.00	-9.04
343	1	58	.00	9.36	.00	.00	.00	9.04
		79	.00	-9.36	.00	.00	.00	-3.75
344	1	79	.00	6.64	.00	.00	.00	3.75
		100	.00	-6.64	.00	.00	.00	.00
351	1	17	.00	14.92	.00	.00	.00	21.07
		38	.00	-14.92	.00	.00	.00	-12.64
352	1	38	.00	11.33	.00	.00	.00	12.64
		59	.00	-11.33	.00	.00	.00	-6.24
353	1	59	.00	5.97	.00	.00	.00	6.24
		80	.00	-5.97	.00	.00	.00	-2.87
354	1	80	.00	5.07	.00	.00	.00	2.87
		101	.00	-5.07	.00	.00	.00	.00
361	1	18	.00	6.27	.00	.00	.00	10.36
		39	.00	-6.27	.00	.00	.00	-6.81
362	1	39	.00	6.95	.00	.00	.00	6.81
		60	.00	-6.95	.00	.00	.00	-2.88
363	1	60	.00	7.04	.00	.00	.00	2.88
		81	.00	-7.04	.00	.00	.00	1.09
371	1	19	.00	2.23	.00	.00	.00	2.76
		40	.00	-2.23	.00	.00	.00	-1.50
372	1	40	.00	.88	.00	.00	.00	1.50
		61	.00	-.88	.00	.00	.00	-1.00
373	1	61	.00	1.77	.00	.00	.00	1.00
		82	.00	-1.77	.00	.00	.00	.00
381	1	20	.00	.61	.00	.00	.00	-1.96
		41	.00	-.61	.00	.00	.00	2.31
382	1	41	.00	1.24	.00	.00	.00	-2.31
		62	.00	-1.24	.00	.00	.00	3.01
391	1	21	.00	-5.75	.00	.00	.00	-6.25
		42	.00	5.75	.00	.00	.00	3.00
392	1	42	.00	-5.30	.00	.00	.00	-3.00
		63	.00	5.30	.00	.00	.00	.00

************* END OF LATEST ANALYSIS RESULT **************

```
238. PLOT BEN FILE
239. PLOT DISP FILE
240. START CON DESIGN
241. FC    25000
242. CLEAR  0.065
243. TRACK 1
244. MAXMAIN 25
245. DESIGN BEAM 141 TO 144 161 TO 164 251 TO 254 261 TO 264
```

B E A M   N O. 141   D E S I G N   R E S U L T S - FLEXURE

LEN -   640. MM FY - 414. FC - 25. MPA, SIZE - 565. X 350. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	264.	3 - 16MM	0.	640.	YES YES

```
|----------------------------------------------------------------|
|   CRITICAL NEG MOMENT=     55.68 KN-MET  AT      0.MM, LOAD   1 |
|   REQD STEEL=    593.MM2, ROW=  .0040, ROWMX=  .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=    447./   41./  224. MMS         |
|   BASIC/REQD. DEVELOPMENT LENGTH =   316./   478. MMS           |
|----------------------------------------------------------------|
```

B E A M   N O. 141   D E S I G N   R E S U L T S - SHEAR

```
AT START SUPPORT - Vu=   29.35 KNS  Vc=  121.79 KNS  Vs=      .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
  AT END    SUPPORT - Vu=   29.35 KNS  Vc=  121.79 KNS  Vs=      .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
```

```
__ 148J_____    639X 564X  349 _____ 149J____
|                                                                         |
||===========================================================================||
| 3No16 H 264.  0.TO  640                                                  |
|                                                                         |
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|                                                                         |
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|         ooo            |  | |        ooo       |  | |        ooo       |
| 3#16                   |  | | 3#16             |  | | 3#16             |
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|                        |  | |                  |  |  |                 |
|_____|  |_|_____|  |_|_____|
```

B E A M   N O. 142   D E S I G N   R E S U L T S - FLEXURE

LEN -   640. MM FY - 414. FC - 25. MPA, SIZE - 565. X 350. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	266.	5 - 12MM	0.	640.	YES YES

```
|----------------------------------------------------------------|
|   CRITICAL NEG MOMENT=     36.90 KN-MET  AT      0.MM, LOAD   1 |
|   REQD STEEL=    502.MM2, ROW=  .0033, ROWMX=  .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=    451./   37./  113. MMS         |
|   BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS           |
|----------------------------------------------------------------|
```

B E A M   N O.   142   D E S I G N   R E S U L T S - SHEAR

AT START SUPPORT - Vu=   23.11 KNS   Vc= 121.79 KNS   Vs=   .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu=   23.11 KNS   Vc= 121.79 KNS   Vs=   .00 KNS
                   STIRRUPS ARE NOT REQUIRED.

```
___149J_____        639X 564X  349_____150J____
|                                                                                |
| |==========================================================================| |
| 5No12 H 266.   0.TO  640                                                       |
|                                                                                |
|                                                                                |
|                                                                                |
|                                                                                |
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 | 5#12              |      | | 5#12            |      | | 5#12             |
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 |_____|      |_|_____|      |_|_____|
```

B E A M   N O.   143   D E S I G N   R E S U L T S - FLEXURE

LEN -   640. MM FY - 414. FC - 25. MPA, SIZE - 565. X 350. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	266.	5 - 12MM	0.	640.	YES YES

```
|----------------------------------------------------------------------------|
|   CRITICAL NEG MOMENT=     22.11 KN-MET  AT    0.MM, LOAD   1 |
|   REQD STEEL=   502.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=   451./   37./  113. MMS |
|   BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS |
|----------------------------------------------------------------------------|
```

B E A M   N O.   143   D E S I G N   R E S U L T S - SHEAR

AT START SUPPORT - Vu=   11.30 KNS   Vc= 121.79 KNS   Vs=   .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu=   11.30 KNS   Vc= 121.79 KNS   Vs=   .00 KNS
                   STIRRUPS ARE NOT REQUIRED.

```
___150J_____        639X 564X  349_____151J____
|                                                                                |
| |==========================================================================| |
| 5No12 H 266.   0.TO  640                                                       |
|                                                                                |
|                                                                                |
|                                                                                |
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 | 5#12              |      | | 5#12            |      | | 5#12             |
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 |_____|      |_|_____|      |_|_____|
```

B E A M N O. 144 D E S I G N R E S U L T S - FLEXURE

LEN - 640. MM FY - 414. FC - 25. MPA, SIZE - 565. X 350. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END

| 1 | 266. | 5 - 12MM | 0. | 640. | YES YES |

```
|-------------------------------------------------------------|
|   CRITICAL NEG MOMENT=     14.88 KN-MET  AT      0.MM, LOAD  1 |
|   REQD STEEL=    502.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=    451./   37./  113. MMS        |
|   BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS          |
|-------------------------------------------------------------|
```

B E A M N O. 144 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 13.86 KNS Vc= 121.79 KNS Vs=   .00 KNS
                 STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu= 13.86 KNS Vc= 121.79 KNS Vs=   .00 KNS
                 STIRRUPS ARE NOT REQUIRED.

```
___151J_____  639X 564X 349_____152J____
|                                                                    |
||====================================================================||
| 5No12 H 266.  0.TO  640                                             |
|                                                                    |
|                                                                    |
|                                                                    |
|                                                                    |
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|          ooooo     | |          ooooo     | |          ooooo     |
| 5#12               | | 5#12               | | 5#12               |
```

B E A M N O. 161 D E S I G N R E S U L T S - FLEXURE

LEN - 640. MM FY - 414. FC - 25. MPA, SIZE - 565. X 350. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END

| 1 | 266. | 5 - 12MM | 0. | 640. | YES YES |

```
|-------------------------------------------------------------|
|   CRITICAL NEG MOMENT=     46.51 KN-MET  AT      0.MM, LOAD  1 |
|   REQD STEEL=    502.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=    451./   37./  113. MMS        |
|   BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS          |
|-------------------------------------------------------------|
```

B E A M N O. 161 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 15.21 KNS Vc= 121.79 KNS Vs=   .00 KNS
                 STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu= 15.21 KNS Vc= 121.79 KNS Vs=   .00 KNS
                 STIRRUPS ARE NOT REQUIRED.

11- 148

```
___169J_____         639X 564X  349_____170J_____
|                                                                                        |
| |=====================================================================================| |
| 5No12 H 266.   0.TO   640                                                              |
|                                                                                        |
|                                                                                        |
|                                                                                        |
|                                                                                        |
|                                                                                        |
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| 5#12                |  | 5#12                |  | 5#12                |
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```
         B E A M   N O.  162   D E S I G N   R E S U L T S  -  FLEXURE

LEN -    640. MM  FY -   414.  FC -  25.  MPA, SIZE -  565. X  350. MMS

LEVEL      HEIGHT      BAR INFO        FROM           TO            ANCHOR
            (MM)                       (MM)          (MM)          STA  END
_____

   1        266.      5 - 12MM           0.           640.          YES  YES
|--------------------------------------------------------------------------|
|    CRITICAL NEG MOMENT=      36.78 KN-MET  AT      0.MM, LOAD    1 |
|    REQD STEEL=   502.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033  |
|    MAX/MIN/ACTUAL BAR SPACING=    451./   37./  113. MMS          |
|    BASIC/REQD. DEVELOPMENT LENGTH =    177./   359. MMS           |
|--------------------------------------------------------------------------|
```

```
         B E A M   N O.  162   D E S I G N   R E S U L T S  - SHEAR


 AT START SUPPORT - Vu=   20.06 KNS  Vc=  121.79 KNS  Vs=      .00 KNS
                    STIRRUPS ARE NOT REQUIRED.
 AT END   SUPPORT - Vu=   20.06 KNS  Vc=  121.79 KNS  Vs=      .00 KNS
                    STIRRUPS ARE NOT REQUIRED.
```

```
___170J_____         639X 564X  349_____171J_____
|                                                                                        |
| |=====================================================================================| |
| 5No12 H 266.   0.TO   640                                                              |
|                                                                                        |
|                                                                                        |
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| 5#12                |  | 5#12                |  | 5#12                |
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11- 14

```
        B E A M   N O.  163   D E S I G N   R E S U L T S  -  FLEXURE

LEN -   640. MM  FY -  414.  FC -  25.  MPA, SIZE -  565. X  350. MMS

LEVEL    HEIGHT     BAR INFO      FROM          TO         ANCHOR
          (MM)                    (MM)         (MM)       STA  END
_____


    1      266.     5 - 12MM       0.          640.       YES  YES
|----------------------------------------------------------------------|
|   CRITICAL NEG MOMENT=     23.94 KN-MET  AT      0.MM, LOAD    1 |
|   REQD STEEL=   502.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033  |
|   MAX/MIN/ACTUAL BAR SPACING=   451./   37./  113. MMS           |
|   BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS            |
|----------------------------------------------------------------------|


        B E A M   N O.  163   D E S I G N   R E S U L T S  - SHEAR

AT START SUPPORT - Vu=    6.44 KNS  Vc= 121.79 KNS  Vs=    .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu=    6.44 KNS  Vc= 121.79 KNS  Vs=    .00 KNS
                   STIRRUPS ARE NOT REQUIRED.

___171J_____ 639X 564X  349 _____172J____
|  |                                                               |  |
| |==========================================================| |
| 5No12 H 266.   0.TO   640                                         |
|  |                                                               |  |
|  |                                                               |  |
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|_____|  |_|_____|  |_|_____|


        B E A M   N O.  164   D E S I G N   R E S U L T S  -  FLEXURE

LEN -   640. MM  FY -  414.  FC -  25.  MPA, SIZE -  565. X  350. MMS

LEVEL    HEIGHT     BAR INFO      FROM          TO         ANCHOR
          (MM)                    (MM)         (MM)       STA  END
_____


    1      266.     5 - 12MM       0.          640.       YES  YES
|----------------------------------------------------------------------|
|   CRITICAL NEG MOMENT=     20.31 KN-MET  AT    640.MM, LOAD   1 |
|   REQD STEEL=   502.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033  |
|   MAX/MIN/ACTUAL BAR SPACING=   451./   37./  113. MMS           |
|   BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS            |
|----------------------------------------------------------------------|


        B E A M   N O.  164   D E S I G N   R E S U L T S  - SHEAR

AT START SUPPORT - Vu=     .77 KNS  Vc= 121.79 KNS  Vs=    .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu=     .77 KNS  Vc= 121.79 KNS  Vs=    .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
```

```
    172J                        639X 564X  349                   173J
|
| |=====================================================================| |
| 5No12 H 266.   0.TO   640                                             |
|
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|                 ooooo       | |                ooooo     | |              ooooo     |
| 5#12                        | | 5#12                     | | 5#12                   |
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|                             | |                          | |                        |
```

B E A M   N O. 251   D E S I G N   R E S U L T S - FLEXURE

LEN -   565. MM   FY - 414.   FC -   25. MPA, SIZE - 640. X 350. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END

```
    1         266.      8 - 12MM         0.           565.        YES  YES
|-------------------------------------------------------------------------|
|    CRITICAL NEG MOMENT=       81.69 KN-MET  AT     0.MM, LOAD   1 |
|    REQD STEEL=    867.MM2, ROW= .0051, ROWMX= .0194 ROWMN= .0033 |
|    MAX/MIN/ACTUAL BAR SPACING=    526./   37./   75. MMS          |
|    BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS            |
|-------------------------------------------------------------------------|
```

B E A M   N O. 251   D E S I G N   R E S U L T S - SHEAR

```
AT START SUPPORT - Vu=    76.25 KNS  Vc=  137.96 KNS  Vs=     .00 KNS
                   PROVIDE 12 MM BARS AT 130. MM  C/C FOR   565. MM
AT END   SUPPORT - Vu=    76.25 KNS  Vc=  137.96 KNS  Vs=     .00 KNS
                   PROVIDE 12 MM BARS AT 130. MM  C/C FOR   565. MM
```

```
    7J                          564X 639X  349                    28J
|
| |=====================================================================| |
| 8No12 H 266.   0.TO   565                                             |
|   6*12c/c130                                          6*12c/c130      |
|
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|            ooooooo         | |          ooooooo       | |           ooooooo      |
| 8#12                       | | 8#12                   | | 8#12                   |
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11-151

```
        B E A M   N O. 252   D E S I G N   R E S U L T S -  FLEXURE

LEN -    565. MM  FY -   414.  FC -  25.  MPA, SIZE -  640. X  350. MMS

LEVEL     HEIGHT      BAR INFO      FROM          TO          ANCHOR
          (MM)                      (MM)          (MM)        STA  END
_____


   1        264.     3 - 16MM         0.          565.        YES  YES
|--------------------------------------------------------------------|
|   CRITICAL NEG MOMENT=      38.61 KN-MET  AT     0.MM, LOAD    1 |
|   REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=   522./   41./  261. MMS          |
|   BASIC/REQD. DEVELOPMENT LENGTH =   316./   478. MMS           |
|--------------------------------------------------------------------|


        B E A M   N O. 252   D E S I G N   R E S U L T S - SHEAR


AT START SUPPORT - Vu=   50.51 KNS  Vc= 137.96 KNS  Vs=     .00 KNS
                 STIRRUPS ARE NOT REQUIRED.
AT END    SUPPORT - Vu=   50.51 KNS  Vc= 137.96 KNS  Vs=     .00 KNS
                 STIRRUPS ARE NOT REQUIRED.

___ 28J _____ 564X 639X  349 _____ 49J ___
|                                                                         |
| |=================================================================| |
| 3No16 H 264.   0.TO   565                                            |
|                                                                         |
|                                                                         |
|                                                                         |
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|                                                                         |
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|          ooo        | |         ooo         | |          ooo         |
| 3#16                | | 3#16                | | 3#16                 |
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|_____| |_____| |_____|


        B E A M   N O. 253   D E S I G N   R E S U L T S -  FLEXURE

LEN -    565. MM  FY -   414.  FC -  25.  MPA, SIZE -  640. X  350. MMS

LEVEL     HEIGHT      BAR INFO      FROM          TO          ANCHOR
          (MM)                      (MM)          (MM)        STA  END
_____


   1         86.     3 - 16MM         0.          565.        YES  YES
|--------------------------------------------------------------------|
|   CRITICAL POS MOMENT=       6.61 KN-MET  AT   565.MM, LOAD    1 |
|   REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=   522./   41./  261. MMS          |
|   BASIC/REQD. DEVELOPMENT LENGTH =   316./   450. MMS           |
|--------------------------------------------------------------------|


   2        264.     3 - 16MM         0.          565.        YES  YES
|--------------------------------------------------------------------|
|   CRITICAL NEG MOMENT=      10.07 KN-MET  AT     0.MM, LOAD    1 |
|   REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=   522./   41./  261. MMS          |
|   BASIC/REQD. DEVELOPMENT LENGTH =   316./   478. MMS           |
|--------------------------------------------------------------------|
```
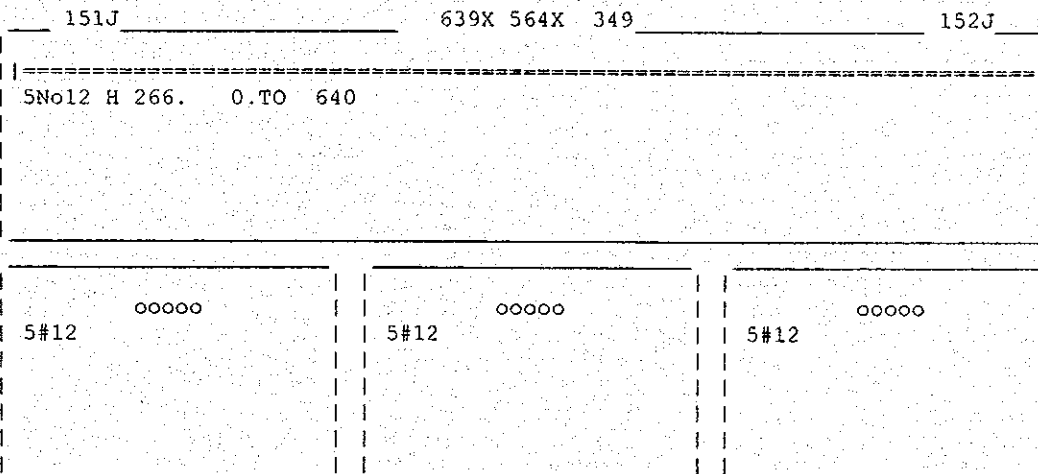
```
        B E A M   N O. 253   D E S I G N   R E S U L T S - SHEAR

   AT START SUPPORT - Vu=  29.52 KNS  Vc=  137.96 KNS  Vs=    .00 KNS
                      STIRRUPS ARE NOT REQUIRED.
   AT END   SUPPORT - Vu=  29.52 KNS  Vc=  137.96 KNS  Vs=    .00 KNS
                      STIRRUPS ARE NOT REQUIRED.
```

```
____ 49J _____ 564X 639X  349 _____ 70J ____
|                                                                    |
| |==================================================================| |
| 3No16 H 264.   0.TO  565                                           |
|                                                                    |
| 3No16 H  86.   0.TO  565                                           |
| |==================================================================| |
|                                                                    |
|                                                                    |
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|           ooo       |  |         ooo      |  |         ooo       |
| 3#16                |  | 3#16             |  | 3#16              |
|                     |  |                  |  |                   |
| 3#16                |  | 3#16             |  | 3#16              |
|           ooo       |  |         ooo      |  |         ooo       |
```

```
        B E A M   N O. 254   D E S I G N   R E S U L T S - FLEXURE

   LEN -  565. MM  FY - 414.  FC - 25.  MPA, SIZE - 640. X  350. MMS

   LEVEL    HEIGHT    BAR INFO      FROM        TO        ANCHOR
            (MM)                    (MM)        (MM)      STA  END
   _____

     1       86.    3 - 16MM        0.         565.       YES  YES
   |-----------------------------------------------------------------|
   | CRITICAL POS MOMENT=    14.07 KN-MET  AT  565.MM, LOAD   1 |
   | REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
   | MAX/MIN/ACTUAL BAR SPACING=   522./   41./  261. MMS |
   | BASIC/REQD. DEVELOPMENT LENGTH =   316./   450. MMS |
   |-----------------------------------------------------------------|

        B E A M   N O. 254   D E S I G N   R E S U L T S - SHEAR

   AT START SUPPORT - Vu=  13.21 KNS  Vc=  137.96 KNS  Vs=    .00 KNS
                      STIRRUPS ARE NOT REQUIRED.
   AT END   SUPPORT - Vu=  13.21 KNS  Vc=  137.96 KNS  Vs=    .00 KNS
                      STIRRUPS ARE NOT REQUIRED.
```

```
____ 70J _____ 564X 639X  349 _____ 91J ____
|                                                                    |
|                                                                    |
|                                                                    |
| 3No16 H  86.   0.TO  565                                           |
| |==================================================================| |
|                                                                    |
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| 3#16                |  | 3#16             |  | 3#16              |
|           ooo       |  |         ooo      |  |         ooo       |
|                     |  |                  |  |                   |
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11-153

```
          B E A M   N O.  261   D E S I G N   R E S U L T S -  FLEXURE

LEN -   565. MM  FY -   414.  FC -   25.  MPA, SIZE -   640. X   350. MMS

LEVEL      HEIGHT      BAR INFO        FROM            TO            ANCHOR
           (MM)                        (MM)           (MM)          STA  END


    1       266.     8 - 12MM          0.            565.          YES  YES
|----------------------------------------------------------------------|
|   CRITICAL NEG MOMENT=    82.60 KN-MET  AT     0.MM, LOAD    1 |
|   REQD STEEL=   892.MM2, ROW= .0053, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=   526./   37./   75. MMS         |
|   BASIC/REQD. DEVELOPMENT LENGTH =   177./   359. MMS          |
|----------------------------------------------------------------------|


          B E A M   N O.  261   D E S I G N   R E S U L T S - SHEAR


AT START SUPPORT - Vu=   73.35 KNS  Vc=  137.96 KNS  Vs=      .00 KNS
                   PROVIDE 12 MM BARS AT 130. MM  C/C FOR   565. MM
AT END   SUPPORT - Vu=   73.35 KNS  Vc=  137.96 KNS  Vs=      .00 KNS
                   PROVIDE 12 MM BARS AT 130. MM  C/C FOR   565. MM

    8J_____ 564X 639X  349_____ 29J____
  |                                                                        |
  ||=====================================================================||
  | 8No12 H 266.   0.TO  565                                                |
  |  6*12c/c130                                            6*12c/c130       |
  |                                                                         |
  |                                                                         |
  |                                                                         |
  |                                                                         |

  |        oooooooo    | |        oooooooo    | |        oooooooo    |
  | 8#12               | | 8#12               | | 8#12               |
  |                    | |                    | |                    |
  |                    | |                    | |                    |
  |                    | |                    | |                    |
  |                    | |                    | |                    |


          B E A M   N O.  262   D E S I G N   R E S U L T S -  FLEXURE

LEN -   565. MM  FY -   414.  FC -   25.  MPA, SIZE -   640. X   350. MMS

LEVEL      HEIGHT      BAR INFO        FROM            TO            ANCHOR
           (MM)                        (MM)           (MM)          STA  END


    1       264.     3 - 16MM          0.            565.          YES  YES
|----------------------------------------------------------------------|
|   CRITICAL NEG MOMENT=    41.16 KN-MET  AT     0.MM, LOAD    1 |
|   REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
|   MAX/MIN/ACTUAL BAR SPACING=   522./   41./  261. MMS         |
|   BASIC/REQD. DEVELOPMENT LENGTH =   316./   478. MMS          |
|----------------------------------------------------------------------|


          B E A M   N O.  262   D E S I G N   R E S U L T S - SHEAR


AT START SUPPORT - Vu=   48.51 KNS  Vc=  137.96 KNS  Vs=      .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu=   48.51 KNS  Vc=  137.96 KNS  Vs=      .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
```

11-154

```
___ 29J _____  564X 639X  349 _____  50J ____
|
| |=================================================================| |
| 3No16 H 264.   0.TO  565                                             |
|                                                                     |
|                                                                     |
|                                                                     |
|                                                                     |
|                                                                     |
|                                                                     |

|          ooo        | |          ooo        | |          ooo        |
| 3#16                | | 3#16                | | 3#16                |
|                     | |                     | |                     |
|                     | |                     | |                     |
|                     | |                     | |                     |
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|_____| |_____| |_____|
```

          B E A M   N O. 263   D E S I G N   R E S U L T S -   FLEXURE

    LEN -   565. MM FY - 414. FC - 25. MPA, SIZE - 640. X 350. MMS

    LEVEL   HEIGHT   BAR INFO   FROM   TO   ANCHOR
              (MM)   (MM)   (MM)   STA END
    _____

      1   86.   3 - 16MM   44.   565.   NO   YES
    |---|
    | CRITICAL POS MOMENT=   2.18 KN-MET AT   565.MM, LOAD   1 |
    | REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
    | MAX/MIN/ACTUAL BAR SPACING=   522./   41./ 261. MMS |
BASIC/REQD. DEVELOPMENT LENGTH =   316./   450. MMS

      2   264.   3 - 16MM   0.   565.   YES YES
    |---|
    | CRITICAL NEG MOMENT=   13.75 KN-MET AT   0.MM, LOAD   1 |
    | REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
    | MAX/MIN/ACTUAL BAR SPACING=   522./   41./ 261. MMS |
BASIC/REQD. DEVELOPMENT LENGTH =   316./   478. MMS

          B E A M   N O. 263   D E S I G N   R E S U L T S - SHEAR

    AT START SUPPORT - Vu=   28.20 KNS Vc= 137.96 KNS Vs=   .00 KNS
                       STIRRUPS ARE NOT REQUIRED.
    AT END   SUPPORT - Vu=   28.20 KNS Vc= 137.96 KNS Vs=   .00 KNS
                       STIRRUPS ARE NOT REQUIRED.

```
___ 50J _____  564X 639X  349 _____  71J ____
|
| |===============================================================| |
| 3No16 H 264.   0.TO  565                                           |
|                                                                   |
|    3No16 H  86.  44.TO  565                                        |
|  =================================================================| |
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|                                                                   |

|          ooo        | |          ooo        | |          ooo        |
| 3#16                | | 3#16                | | 3#16                |
|                     | |                     | |                     |
|                     | | 3#16                | | 3#16                |
|                     | |          ooo        | |          ooo        |
|                     | |                     | |                     |
|_____| |_____| |_____|
```

```
        B E A M   N O. 264   D E S I G N   R E S U L T S -  FLEXURE

LEN -   565. MM  FY -  414.  FC -  25.  MPA, SIZE -  640. X  350. MMS

LEVEL      HEIGHT      BAR INFO        FROM          TO          ANCHOR
            (MM)                       (MM)         (MM)        STA  END
```

```
    1        86.     3 - 16MM          0.           565.         YES  YES
|-----------------------------------------------------------------------|
|    CRITICAL POS MOMENT=        9.40 KN-MET  AT   565.MM, LOAD    1     |
|    REQD STEEL=   568.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033       |
|    MAX/MIN/ACTUAL BAR SPACING=   522./   41./  261. MMS               |
|    BASIC/REQD. DEVELOPMENT LENGTH =   316./   450. MMS                |
|-----------------------------------------------------------------------|


        B E A M   N O. 264   D E S I G N   R E S U L T S - SHEAR


AT START SUPPORT - Vu=   12.78 KNS  Vc= 137.96 KNS  Vs=    .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
AT END   SUPPORT - Vu=   12.78 KNS  Vc= 137.96 KNS  Vs=    .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
```
```
  __71J_____564X 639X  349_____92J____
 |                                                                   |
 |                                                                   |
 |                                                                   |
 | 3No16 H  86.   0.TO  565                                          |
 ||==================================================================||
 |                                                                   |
 |                                                                   |

 |----------------------|  |  |------------|  |  |------------------|
 |                      |  |  |            |  |  |                  |
 |                      |  |  |            |  |  |                  |
 |                      |  |  |            |  |  |                  |
 | 3#16                 |  |  | 3#16       |  |  | 3#16             |
 |      ooo             |  |  |     ooo    |  |  |       ooo        |
 |                      |  |  |            |  |  |                  |
 |----------------------|  |  |------------|  |  |------------------|


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

246. END CON DESIGN
247. FINISH

```
************** END OF STAAD-III **************

**** DATE= JAN 30,2000   TIME=  9:15:43 ****

***********************************************************
*         For questions on  STAAD-III,   contact:        *
*              Research Engineers, Inc at                 *
*  West Coast: Ph- (714) 974-2500  Fax- (714) 921-2543    *
*  East Coast: Ph- (508) 688-3626  Fax- (508) 685-7230    *
***********************************************************
```