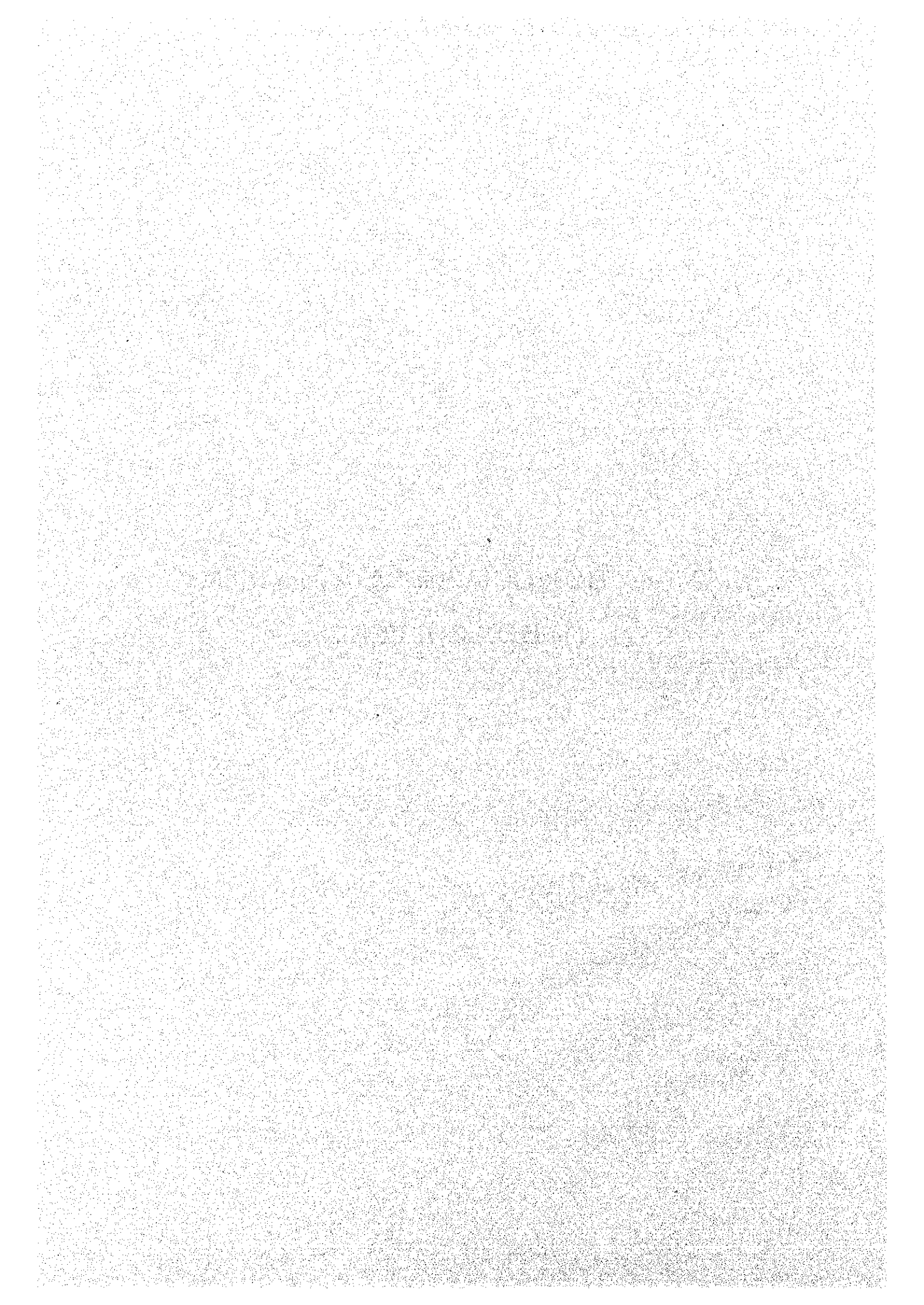
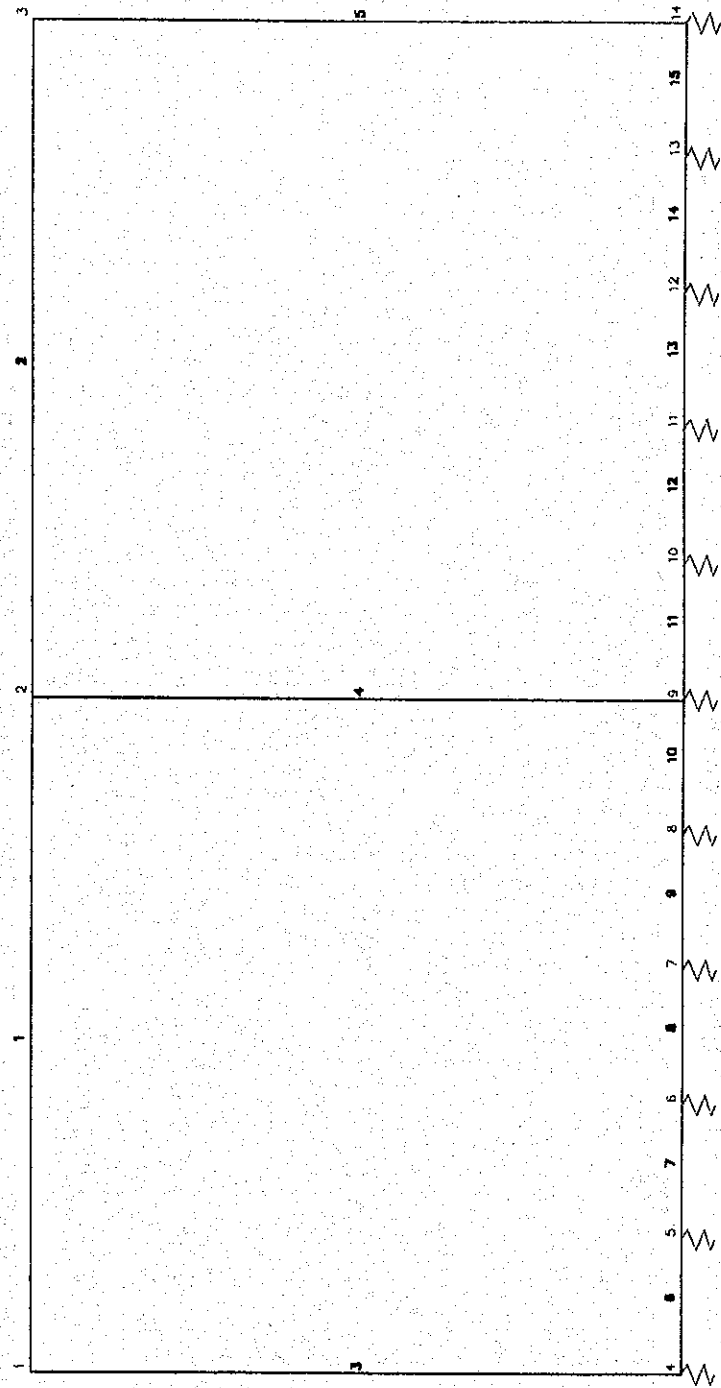


2-1-4 BOX CULVERT AT CH.5+643

(1) BOX CULVERT



BOX CULVERT AT CH. 4+436



2 = JOINT NUMBER
4 = MEMBER NUMBER

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*****
*
*           S T A A D - I I I
*           Revision 22.3a
*           Proprietary Program of
*           Research Engineers, Inc.
*           Date=   JAN 30, 2000
*           Time=   11:39: 7
*
*
*           USER ID: Development Design Consultants L *
*****

```

1. STAAD PLANE DESIGN OF BOX CULVERT AT CH. 4+643 (3 X 3.5 X 3.5)
2. UNIT METER KNS
3. JOINT COORD
4. 1 0.00 3.80 0.00
5. 2 3.91 3.80 0.00
6. 3 7.82 3.80 0.00
7. 4 11.72 3.80 0.00
8. 5 15.63 3.80 0.00
9. 6 0.00 0.00 0.00 11 3.91 0.00 0.00
10. 12 4.69 0.00 0.00 16 7.82 0.00 0.00
11. 17 8.60 0.00 0.00 21 11.72 0.00 0.00
12. 22 12.50 0.00 0.00 26 15.63 0.00 0.00
14. MEMBER INCI
15. 1 1 2 4
16. 5 1 6
17. 6 2 11
18. 7 3 16
19. 8 4 21
20. 9 5 26
21. 10 6 7 29
22. MEMBER PROPERTY
23. 1 TO 4 PRIS YD 0.325 ZD 1.0
24. 5 9 PRIS YD 0.325 ZD 1.0
25. 6 7 8 PRIS YD 0.275 ZD 1.0
26. 10 TO 29 PRIS YD 0.325 ZD 1.0
28. CONSTANT
29. E 23.667E6 ALL
30. DENSITY 23.56 ALL
32. SUPPORT
33. *7 TO 25 FIXED BUT MZ KFY 1563
34. *6 26 FIXED BUT MZ KFY 782
35. *
36. 9 TO 23 FIXED BUT MZ KFY 1563
37. 6 7 8 24 25 26 FIXED BUT MZ KFY 2250
38. *
39. LOAD 1 : SELFWEIGHT
40. SELFWEIGHT Y -1
41. LOAD 2 : FILL WEIGHT
42. MEMBER LOAD
43. 1 TO 4 UNI GY -12.50
44. LOAD 3 : BACK FILL (MINIMUM)
45. MEMBER LOAD
46. 5 TRAP GX 3.84 21.80
47. 9 TRAP GX -3.84 -21.80
48. LOAD 4 : BACK FILL (MAXIMUM)
49. MEMBER LOAD
50. 5 TRAP GX 11.51 34.67 0.00 2.45
51. 5 TRAP GX 34.67 51.68 2.45 3.80
52. 9 TRAP GX -11.51 -34.67 0.00 2.45
53. 9 TRAP GX -34.67 -51.68 2.45 3.80
54. LOAD 5 : LL IN ADJACENT SPANS
55. MEMBER LOAD
56. 1 UNI GY -67.03 1.37 2.53
57. 2 UNI GY -67.03 1.73 2.89
58. LOAD 6 : LL IN ALTERNATE SPAN
59. MEMBER LOAD
60. 1 UNI GY -67.03 1.37 2.53

61. 3 UNI GY -67.03 1.37 2.53
62. LOAD 7 : LL IN SPAN 1
63. MEMBER LOAD
64. 1 UNI GY -67.03 1.37 2.53
65. LOAD 8 : LL IN SPAN 2
66. MEMBER LOAD
67. 2 UNI GY -67.03 1.37 2.53
68. LOAD 9 : LL IN MIDDLE OF BOX CULVERT
69. MEMBER LOAD
70. 3 UNI GY -67.03 2.75 3.91
71. LOAD 10 : MILITARY LOADING IN SPAN 1
72. MEMBER LOAD
73. 1 UNI GY -39.03 0.76 1.95
74. 1 UNI GY -39.03 1.95 3.14
75. LOAD 11 : MILITARY LOADING IN SPAN 2
76. MEMBER LOAD
77. 2 UNI GY -39.03 0.76 1.95
78. 2 UNI GY -39.03 1.95 3.14
79. LOAD 12 : LL IN SPAN 1 FOR MAX. SHEAR
80. MEMBER LOAD
81. 1 UNI GY -67.03 0.00 1.16
82. LOAD 13 : MILITARY LOADING IN SPAN 1 FOR MAX. SHEAR
83. MEMBER LOAD
84. 1 UNI GY -39.03 0.00 1.19
85. 1 UNI GY -39.03 1.19 2.38
86. *
87. LOAD COMB 14
88. 1 1.3 2 1.3 4 1.3 12 2.171
89. LOAD COMB 15
90. 1 1.3 2 1.3 4 1.3 13 2.171
91. *
92. LOAD COMB 16
93. 1 1.3 2 1.3 4 1.3 5 2.171
94. LOAD COMB 17
95. 1 1.3 2 1.3 4 1.3 6 2.171
96. LOAD COMB 18
97. 1 1.3 2 1.3 4 1.3 7 2.171
98. LOAD COMB 19
99. 1 1.3 2 1.3 4 1.3 8 2.171
100. LOAD COMB 20
101. 1 1.3 2 1.3 4 1.3 9 2.171
103. LOAD COMB 21
104. 1 1.3 2 1.3 4 1.3 10 2.171
105. LOAD COMB 22
106. 1 1.3 2 1.3 4 1.3 11 2.171
107. *
108. LOAD COMB 23
109. 1 1.3 2 1.3 3 1.3 5 2.171
110. LOAD COMB 24
111. 1 1.3 2 1.3 3 1.3 6 2.171
112. LOAD COMB 25
113. 1 1.3 2 1.3 3 1.3 7 2.171
114. LOAD COMB 26
115. 1 1.3 2 1.3 3 1.3 8 2.171
116. LOAD COMB 27
117. 1 1.3 2 1.3 3 1.3 9 2.171
118. LOAD COMB 28
119. 1 1.3 2 1.3 3 1.3 10 2.171
120. LOAD COMB 29
121. 1 1.3 2 1.3 3 1.3 11 2.171
122. LOAD COMB 30
123. 1 1.3 4 1.3
124. *

125. PERFORM ANALYSIS

PROBLEM STATISTICS

NUMBER OF JOINTS/MEMBER+ELEMENTS/SUPPORTS = 26/ 29/ 21
 ORIGINAL/FINAL BAND-WIDTH = 21/ 5
 TOTAL PRIMARY LOAD CASES = 13, TOTAL DEGREES OF FREEDOM = 57
 SIZE OF STIFFNESS MATRIX = 741 DOUBLE PREC. WORDS
 REQRD/AVAIL. DISK SPACE = 12.07/ 219.4 MB, EXMEM = 1960.5 MB

WARNING LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3

++ Processing Element Stiffness Matrix. 11:39: 7
 ++ Processing Global Stiffness Matrix. 11:39: 7
 ++ Processing Triangular Factorization. 11:39: 7
 ++ Calculating Joint Displacements. 11:39: 7
 ++ Calculating Member Forces. 11:39: 7

126. LOAD LIST 14 TO 30
 127. PRINT MAXFORCE ENVELOP LIST 1 2 4 5 8 TO 17

MEMBER FORCE ENVELOPE

ALL UNITS ARE KNS METE

MAX AND MIN FORCE VALUES AMONGST ALL SECTION LOCATIONS

MEMB		FY/ FZ	DIST DIST	LD LD	MZ/ MY	DIST DIST	LD LD	FX	DIST	LD
1	MAX	179.90	.00	15	115.93	.00	16			
		.00	.00	14	.00	.00	14	82.67 C	.00	16
	MIN	-157.90	3.91	28	-110.81	1.96	25			
		.00	3.91	30	.00	3.91	30	30.85 C	3.91	27
2	MAX	159.41	.00	29	112.85	.00	23			
		.00	.00	14	.00	.00	14	118.50 C	.00	22
	MIN	-146.15	3.91	22	-116.46	1.96	19			
		.00	3.91	30	.00	3.91	30	20.16 C	3.91	28
4	MAX	55.32	.00	28	89.75	3.91	20			
		.00	.00	14	.00	.00	14	80.95 C	.00	20
	MIN	-77.42	3.91	20	-24.71	1.30	27			
		.00	3.91	30	.00	3.91	30	21.28 C	3.91	28
5	MAX	110.48	3.80	14	37.41	2.53	22			
		.00	.00	14	.00	.00	14	217.73 C	3.80	15
	MIN	-82.67	.00	16	-115.93	.00	16			
		.00	3.80	30	.00	3.80	30	28.08 C	3.48	30
8	MAX	26.36	.00	22	52.71	.00	17			
		.00	.00	14	.00	.00	14	249.04 C	3.80	27
	MIN	-10.76	3.80	14	-52.28	3.80	29			
		.00	3.80	30	.00	3.80	30	30.36 C	3.48	30
9	MAX	80.95	.00	20	89.75	.00	20			
		.00	.00	14	.00	.00	14	115.25 C	3.80	20
	MIN	-97.65	3.80	14	-34.02	2.53	20			
		.00	3.80	30	.00	3.80	30	28.07 C	3.48	30
10	MAX	-37.37	.00	30	68.95	.78	23			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	-141.45	.78	14	-103.31	.00	14			
		.00	.78	30	.00	.78	30	.00	.78	30

MEMB		FY/ FZ	DIST	LD	MZ/ MY	DIST	LD	FX	DIST	LD
11	MAX	1.26	.00	29	86.76	.78	23			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	-70.52	.78	14	-6.36	.00	30	.00	.78	30
12	MAX	53.26	.00	23	86.77	.00	23			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	-4.45	.78	14	8.32	.46	30	.00	.78	30
13	MAX	101.06	.00	23	56.81	.00	14			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	9.43	.78	30	-40.34	.78	29	.00	.78	30
14	MAX	149.52	.00	23	25.30	.00	14			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	22.12	.78	30	-141.71	.78	23	.00	.78	30
15	MAX	-19.58	.00	30	14.31	.78	20			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	-105.46	.78	23	-106.43	.00	23	.00	.78	30
16	MAX	-6.66	.00	30	31.21	.78	14			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	-59.01	.78	28	-28.05	.00	28	.00	.78	30
17	MAX	15.61	.00	20	32.46	.78	15			
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	-22.25	.78	28	8.44	.65	30	.00	.78	30

- 128. START CONC DESIGN
- 129. FC 25000.0
- 130. TRACK 2
- 131. MAXMAIN 20.
- 132. CLEAR 0.05
- 133. DESIGN BEAM 1 2 3

BEAM NO. 1 DESIGN RESULTS - FLEXURE

LEN - 3910. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
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1	69.	11 - 12MM	0.	3910.	YES YES
---	-----	-----------	----	-------	---------

CRITICAL POS MOMENT= 110.81 KN-MET AT 1955.MM, LOAD 25					
REQD STEEL= 1218.MM2, ROW= .0048, ROWMX= .0194 ROWMN= .0033					
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 89. MMS					
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 351. MMS					

2	256.	12 - 12MM	0.	2314.	YES NO
---	------	-----------	----	-------	--------

CRITICAL NEG MOMENT= 115.93 KN-MET AT 0.MM, LOAD 16					
REQD STEEL= 1277.MM2, ROW= .0050, ROWMX= .0194 ROWMN= .0033					
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 81. MMS					
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS					

3	256.	10 - 12MM	2411.	3910.	NO	YES

CRITICAL NEG MOMENT= 102.13 KN-MET AT 3910.MM, LOAD 15						
REQD STEEL= 1127.MM2, ROW= .0044, ROWMX= .0194 ROWMN= .0033						
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 98. MMS						
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	0./ 1324.	0./ 116.	0/ 16
326.	224./ 784.	21./ 70.	14/ 16
652.	572./ 544.	52./ 49.	14/ 22
977.	738./ 361.	66./ 33.	15/ 22
1303.	952./ 211.	85./ 19.	28/ 22
1629.	1174./ 93.	103./ 9.	25/ 22
1955.	1263./ 6.	111./ 1.	25/ 22
2281.	1133./ 0.	100./ 0.	25/ 0
2607.	857./ 0.	76./ 0.	28/ 0
2932.	498./ 139.	45./ 13.	21/ 14
3258.	47./ 393.	4./ 36.	21/ 14
3584.	9./ 702.	1./ 63.	30/ 15
3910.	0./ 1159.	0./ 102.	0/ 15

BEAM NO. 1 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 152.21 KNS Vc= 207.25 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 125. MM C/C FOR 815. MM
 AT END SUPPORT - Vu= 151.36 KNS Vc= 207.25 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 125. MM C/C FOR 1466. MM

1J	3909X 999X 324	2J
=====		
12No12 H 256. 0.TO 2314	10No12 H 256.2411.TO 3910	
8*12c/c125	13*12c/c125	
11No12 H 69. 0.TO 3910		
=====		
000000000000	000000000000	0000000000
12#12	12#12	10#12
11#12	11#12	11#12
000000000000	000000000000	000000000000

BEAM NO. 2 DESIGN RESULTS - FLEXURE

LEN - 3910. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	69.	12 - 12MM	146.	3601.	NO NO

CRITICAL POS MOMENT= 117.73 KN-MET AT 1994.MM, LOAD 19					
REQD STEEL= 1298.MM2, ROW= .0051, ROWMX= .0194 ROWMN= .0033					
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 81. MMS					
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 343. MMS					

2	256.	11 - 12MM	0.	3910.	YES	YES

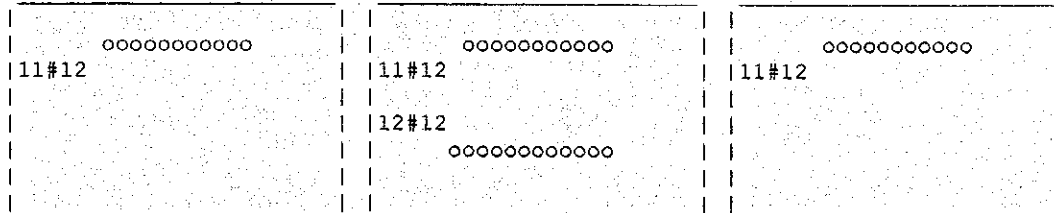
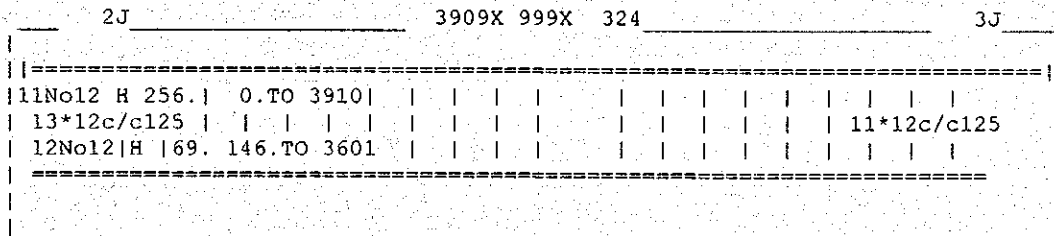
CRITICAL NEG MOMENT= 112.85 KN-MET AT 0.MM, LOAD 23						
REQD STEEL= 1241.MM2, ROW= .0048, ROWMX= .0194 ROWMN= .0033						
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 89. MMS						
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	0./ 1287.	0./ 113.	0/ 23
326.	0./ 798.	0./ 71.	0/ 23
652.	108./ 523.	10./ 47.	22/ 24
977.	581./ 364.	52./ 33.	22/ 24
1303.	941./ 238.	84./ 22.	22/ 24
1629.	1203./ 143.	106./ 13.	19/ 24
1955.	1346./ 80.	118./ 7.	19/ 24
2281.	1239./ 47.	109./ 4.	19/ 24
2607.	1025./ 44.	91./ 4.	22/ 24
2932.	706./ 79.	63./ 7.	29/ 21
3258.	274./ 172.	25./ 16.	29/ 21
3584.	0./ 297.	0./ 27.	0/ 21
3910.	0./ 789.	0./ 71.	0/ 16

BEAM NO. 2 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 152.87 KNS Vc= 207.25 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 125. MM C/C FOR 1466. MM
 AT END SUPPORT - Vu= 139.61 KNS Vc= 207.25 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 125. MM C/C FOR 1140. MM



BEAM NO. 3 DESIGN RESULTS - FLEXURE

LEN - 3900. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	69.	11 - 12MM	131.	3900.	NO YES

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-----
CRITICAL POS MOMENT=   112.53 KN-MET AT  2808.MM, LOAD  17 |
REQD STEEL= 1237.MM2, ROW= .0048, ROWMX= .0194 ROWMN= .0033 |
MAX/MIN/ACTUAL BAR SPACING=  886./  37./  89. MMS |
BASIC/REQD. DEVELOPMENT LENGTH =  177./  357. MMS |
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2 256. 8 - 12MM 0. 1334. YES NO

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-----
CRITICAL NEG MOMENT=   76.38 KN-MET AT   0.MM, LOAD  17 |
REQD STEEL=  854.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
MAX/MIN/ACTUAL BAR SPACING=  886./  37./ 127. MMS |
BASIC/REQD. DEVELOPMENT LENGTH =  177./  359. MMS |
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3 252. 3 - 20MM 1840. 3900. NO YES

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-----
CRITICAL NEG MOMENT=   82.42 KN-MET AT  3900.MM, LOAD  24 |
REQD STEEL=  909.MM2, ROW= .0036, ROWMX= .0194 ROWMN= .0033 |
MAX/MIN/ACTUAL BAR SPACING=  878./  45./ 439. MMS |
BASIC/REQD. DEVELOPMENT LENGTH =  493./  598. MMS |
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REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	0./ 856.	0./ 76.	0/ 17
325.	0./ 409.	0./ 37.	0/ 20
650.	70./ 184.	6./ 17.	24/ 14
975.	474./ 43.	43./ 4.	24/ 14
1300.	863./ 0.	77./ 0.	17/ 0
1625.	1177./ 0.	104./ 0.	17/ 0
1950.	1283./ 0.	113./ 0.	17/ 0
2275.	1173./ 0.	103./ 0.	17/ 0
2600.	855./ 54.	76./ 5.	17/ 29
2925.	795./ 180.	71./ 17.	20/ 29
3250.	613./ 338.	55./ 31.	20/ 29
3575.	244./ 530.	22./ 48.	20/ 29
3900.	0./ 926.	0./ 82.	0/ 24

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

AT START SUPPORT - Vu= 128.44 KNS Vc= 207.25 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 125. MM C/C FOR 1462. MM
 AT END SUPPORT - Vu= 143.49 KNS Vc= 207.25 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 125. MM C/C FOR 1462. MM

3J 3899X 999X 324 4J

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=====
| 8No12 H 256. | 0.TO 1334 | 3No20|H 252.1840.TO 3900 | | | | | | | | | | |
| 13*12c/c125 | | | | | | | | | 13*12c/c125 | |
| 11No12|H |69. 131.TO 3900 | | | | | | | | | | | |
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| 8#12     oooooooooo | |                     ooo | |                     ooo | | | | | | | | | | | | | | | | | | | | | | | |
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134. CLEAR 0.065
 135. DESIGN BEAM 5 6 7 9 TO 22

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

LEN - 3800. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	END
1	86.	7 - 16MM	0.	3800.	YES	YES
----- CRITICAL POS MOMENT= 115.93 KN-MET AT 0.MM, LOAD 16 REQD STEEL= 1366.MM2, ROW= .0057, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 147. MMS BASIC/REQD. DEVELOPMENT LENGTH = 316./ 464. MMS -----						
2	239.	4 - 16MM	313.	3800.	NO	YES
----- CRITICAL NEG MOMENT= 37.41 KN-MET AT 2533.MM, LOAD 22 REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS -----						

REQUIRED REINF. STEEL SUMMARY :

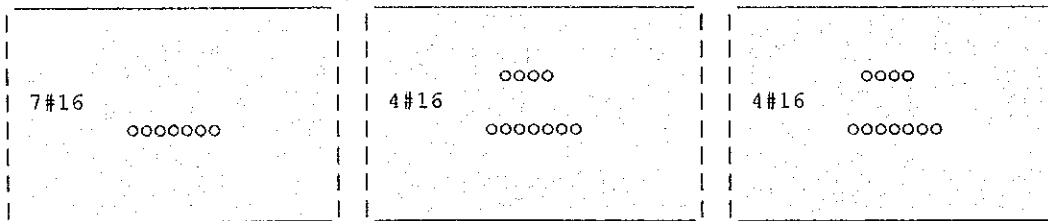
SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	1421./ 0.	116./ 0.	16/ 0
317.	1094./ 0.	91./ 0.	16/ 0
633.	834./ 0.	70./ 0.	23/ 0
950.	668./ 121.	56./ 10.	23/ 30
1267.	515./ 245.	44./ 21.	23/ 30
1583.	381./ 335.	33./ 29.	23/ 30
1900.	307./ 384.	26./ 33.	28/ 30
2217.	272./ 394.	23./ 34.	28/ 22
2533.	262./ 439.	22./ 37.	28/ 22
2850.	307./ 430.	26./ 37.	14/ 22
3167.	544./ 358.	46./ 31.	14/ 22
3483.	856./ 256.	72./ 22.	14/ 29
3800.	1257./ 214.	103./ 18.	14/ 29

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= 78.73 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.

AT END SUPPORT - Vu= 95.07 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 475. MM

1J	3799X 999X 324	6J
===== 7No164Ho186. 230.TO13800 3800 6*12c/c117 =====		



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

LEN - 3800. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 275. MMS

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

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	END
1	86.	6 - 16MM	0.	2357.	YES	NO
CRITICAL POS MOMENT= 76.36 KN-MET AT 0. MM, LOAD 22 REQD STEEL= 1152. MM2, ROW= .0061, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 176. MMS BASIC/REQD. DEVELOPMENT LENGTH = 316./ 457. MMS						
2	88.	2 - 20MM	1781.	3800.	NO	YES
CRITICAL POS MOMENT= 15.74 KN-MET AT 3800. MM, LOAD 15 REQD STEEL= 624. MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 878./ 45./ 878. MMS BASIC/REQD. DEVELOPMENT LENGTH = 493./ 594. MMS						
3	187.	3 - 20MM	0.	3800.	YES	YES
CRITICAL NEG MOMENT= 61.45 KN-MET AT 3800. MM, LOAD 29 REQD STEEL= 915. MM2, ROW= .0048, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 878./ 45./ 439. MMS BASIC/REQD. DEVELOPMENT LENGTH = 493./ 598. MMS						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)		MOMENTS (+VE/-VE) (KNS-MET)		LOAD (+VE/-VE)	
0.	1197./	528.	76./	35.	22/	28
317.	1007./	470.	65./	31.	22/	28
633.	821./	412.	54./	27.	22/	28
950.	640./	354.	42./	24.	22/	28
1267.	462./	297.	31./	20.	22/	28
1583.	287./	240.	19./	16.	22/	28
1900.	116./	188.	8./	13.	22/	24
2217.	0./	213.	0./	14.	0/	24
2533.	5./	239.	0./	16.	14/	24
2850.	49./	411.	3./	27.	15/	29
3167.	110./	587.	7./	39.	15/	29
3483.	172./	767.	12./	50.	15/	29
3800.	234./	950.	16./	61.	15/	29

BEAM NO. 6 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 36.06 KNS Vc= 153.28 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 36.06 KNS Vc= 153.28 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.

2J	3799X 999X 274	11J
===== 6No16 H 186. 0.TO 2357 2No20 H 88.1781.TO 3800 =====		
3#20	3#20	3#20
ooo	ooo	ooo
oooooo	oooooo	oo

BEAM NO. 7 DESIGN RESULTS - FLEXURE

LEN - 3800. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 275. MMS

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

1	84.	6 - 12MM	0.	3800.	YES	YES
----- CRITICAL POS MOMENT= 43.89 KN-MET AT 0.MM, LOAD 17 REQD STEEL= 638.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 177. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 337. MMS -----						
2	191.	7 - 12MM	0.	3800.	YES	YES
----- CRITICAL NEG MOMENT= 51.30 KN-MET AT 0.MM, LOAD 29 REQD STEEL= 749.MM2, ROW= .0039, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 148. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS -----						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	668./ 786.	44./ 51.	17/ 29
317.	577./ 672.	38./ 44.	17/ 29
633.	487./ 559.	32./ 37.	17/ 29
950.	398./ 448.	27./ 30.	17/ 29
1267.	310./ 338.	21./ 23.	17/ 29
1583.	223./ 230.	15./ 15.	17/ 29
1900.	137./ 123.	9./ 8.	17/ 29
2217.	51./ 54.	3./ 4.	17/ 27
2533.	89./ 146.	6./ 10.	16/ 27
2850.	195./ 239.	13./ 16.	22/ 27
3167.	303./ 334.	20./ 22.	22/ 27

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
3483.	413./ 429.	27./ 29.	22/ 27
3800.	523./ 525.	35./ 35.	22/ 27

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

AT START SUPPORT - Vu= 22.62 KNS Vc= 153.28 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 22.62 KNS Vc= 153.28 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.

3J	3799X 999X 274	16J
6No12 H 184. 0.TO 3800		
7#12	7#12	7#12
ooooooo	ooooooo	ooooooo
ooooooo	ooooooo	ooooooo

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

LEN - 3800. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

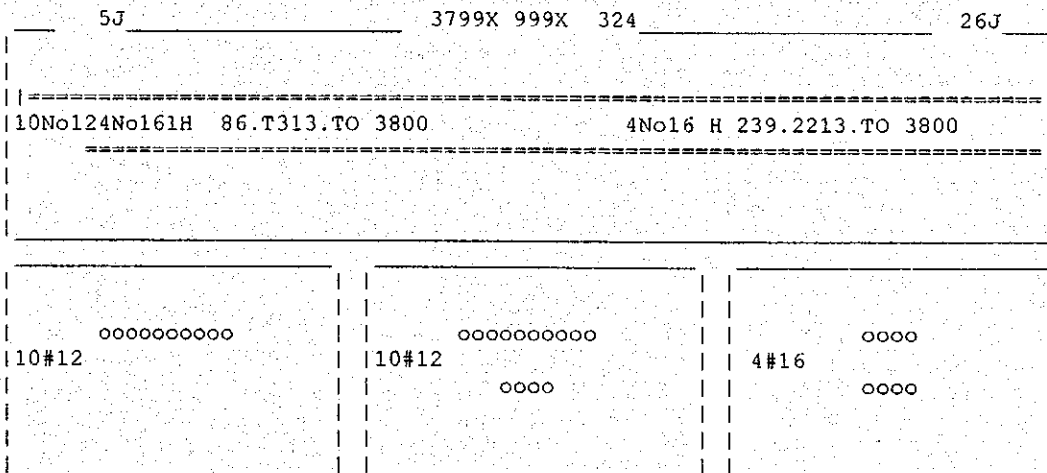
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	86.	4 - 16MM	313.	3800.	NO YES
CRITICAL POS MOMENT= 34.02 KN-MET AT 2533.MM, LOAD 20 REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS					
2	241.	10 - 12MM	0.	2259.	YES NO
CRITICAL NEG MOMENT= 89.75 KN-MET AT 0.MM, LOAD 20 REQD STEEL= 1043.MM2, ROW= .0043, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 98. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS					
3	239.	4 - 16MM	2213.	3800.	NO YES
CRITICAL NEG MOMENT= 56.11 KN-MET AT 3800.MM, LOAD 14 REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS					

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	0./ 1084.	0./ 90.	0/ 20
317.	0./ 773.	0./ 65.	0/ 20
633.	0./ 528.	0./ 45.	0/ 27
950.	121./ 372.	10./ 32.	30/ 27
1267.	245./ 230.	21./ 20.	30/ 27
1583.	335./ 105.	29./ 9.	30/ 27
1900.	384./ 0.	33./ 0.	30/ 27
2217.	387./ 0.	33./ 0.	30/ 0
2533.	399./ 0.	34./ 0.	20/ 0
2850.	384./ 49.	33./ 4.	20/ 28
3167.	307./ 125.	26./ 11.	20/ 28
3483.	200./ 333.	17./ 28.	27/ 14
3800.	153./ 665.	13./ 56.	27/ 14

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= 77.01 KNS Vc= 194.80 KNS Vs= .00 KNS
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 82.24 KNS Vc= 194.80 KNS Vs= .00 KNS
STIRRUPS ARE NOT REQUIRED.



B E A M N O . 10 D E S I G N R E S U L T S - F L E X U R E

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
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1	84.	11 - 12MM	0.	782.	YES YES
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CRITICAL POS MOMENT= 103.31 KN-MET AT 0. MM, LOAD 14
REQD STEEL= 1209. MM2, ROW= .0050, ROWMX= .0194 ROWMN= .0033
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 89. MMS
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 349. MMS

2	239.	4 - 16MM	0.	782.	YES YES
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| CRITICAL NEG MOMENT=      68.95 KN-MET AT  782.MM, LOAD  23 |
| REQD STEEL=      804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING=  882./  41./  294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH =  316./  478. MMS |
-----

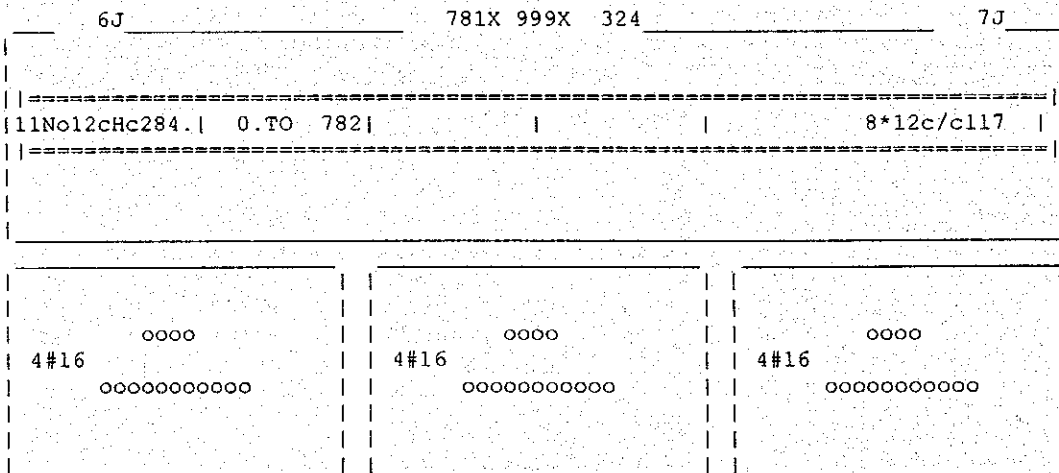
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REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	1257./	214.	14/ 29
65.	1145./	251.	14/ 29
130.	1034./	288.	14/ 29
195.	923./	326.	14/ 29
261.	813./	364.	14/ 29
326.	703./	403.	14/ 29
391.	594./	443.	14/ 29
456.	486./	484.	14/ 29
521.	378./	525.	14/ 29
586.	271./	585.	14/ 23
652.	164./	663.	14/ 23
717.	107./	743.	30/ 23
782.	74./	823.	30/ 23

BEAM NO. 10 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 136.00 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM
 AT END SUPPORT - Vu= 139.11 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM



BEAM NO. 11 DESIGN RESULTS - FLEXURE

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	86.	4 - 16MM	0.	782.	YES YES

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-----
| CRITICAL POS MOMENT=      6.36 KN-MET AT  782.MM, LOAD  30 |
| REQD STEEL=      804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING=  882./  41./  294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH =  316./  478. MMS |
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2	241.	9 - 12MM	0.	782.	YES	YES

CRITICAL NEG MOMENT= 86.76 KN-MET AT 782.MM, LOAD 23						
REQD STEEL= 1007.MM2, ROW= .0042, ROWMX= .0194 ROWMN= .0033						
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 111. MMS						
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS						

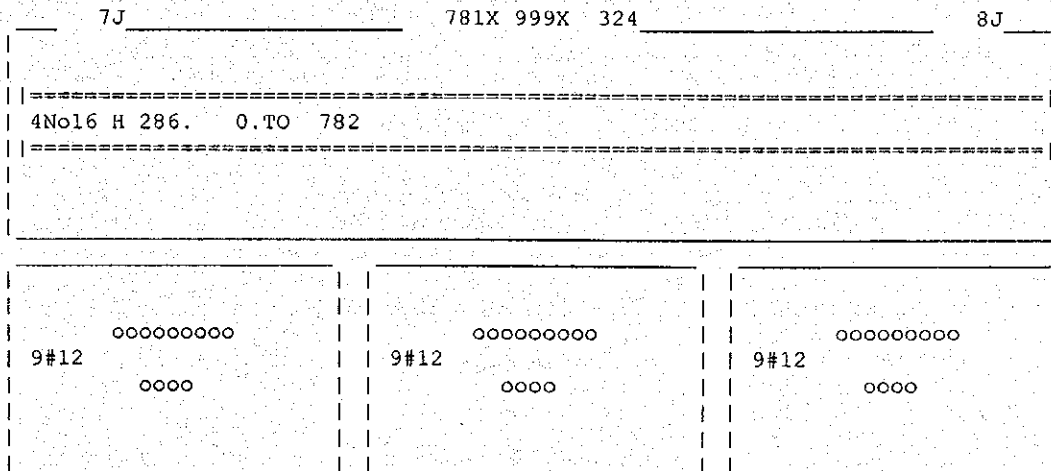
REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	74./ 823.	6./ 69.	30/ 23
65.	61./ 839.	5./ 70.	30/ 23
130.	48./ 855.	4./ 71.	30/ 23
195.	34./ 871.	3./ 73.	30/ 23
261.	20./ 888.	2./ 74.	30/ 23
326.	6./ 906.	1./ 76.	30/ 23
391.	0./ 924.	0./ 77.	0/ 23
456.	0./ 943.	0./ 79.	0/ 23
521.	0./ 963.	0./ 80.	0/ 23
586.	0./ 983.	0./ 82.	0/ 23
652.	0./ 1003.	0./ 83.	0/ 23
717.	0./ 1024.	0./ 85.	0/ 23
782.	0./ 1046.	0./ 87.	0/ 23

BEAM NO. 11 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 65.07 KNS Vc= 194.80 KNS Vs= .00 KNS
STIRRUPS ARE NOT REQUIRED.

AT END SUPPORT - Vu= 68.19 KNS Vc= 194.80 KNS Vs= .00 KNS
STIRRUPS ARE NOT REQUIRED.



BEAM NO. 12 DESIGN RESULTS - FLEXURE

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

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

1	241.	9 - 12MM	0.	782.	YES	YES

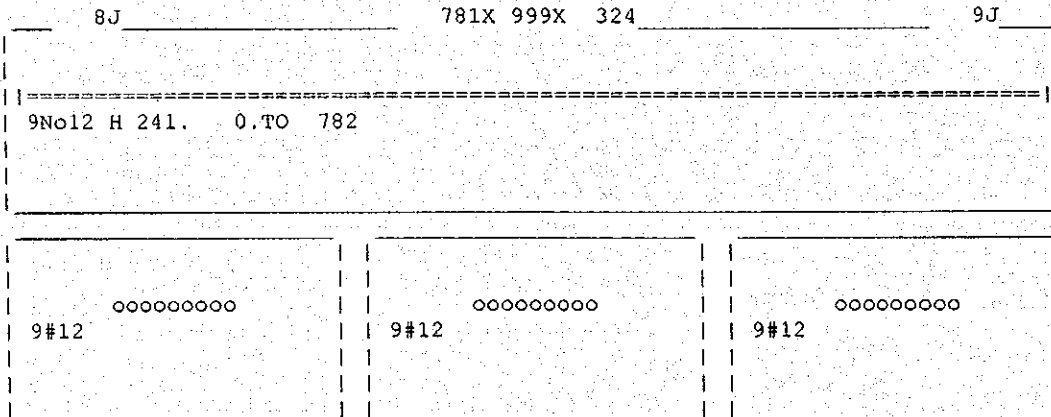
CRITICAL NEG MOMENT= 86.77 KN-MET AT 0.MM, LOAD 23						
REQD STEEL= 1007.MM2, ROW= .0042, ROWMX= .0194 ROWMN= .0033						
MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 111. MMS						
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	0./ 1046.	0./ 87.	0/ 23
65.	0./ 1002.	0./ 83.	0/ 23
130.	0./ 960.	0./ 80.	0/ 23
195.	0./ 917.	0./ 77.	0/ 23
261.	0./ 876.	0./ 73.	0/ 23
326.	0./ 835.	0./ 70.	0/ 23
391.	0./ 795.	0./ 67.	0/ 23
456.	0./ 763.	0./ 64.	0/ 24
521.	0./ 741.	0./ 62.	0/ 24
586.	0./ 719.	0./ 61.	0/ 24
652.	0./ 698.	0./ 59.	0/ 24
717.	0./ 677.	0./ 57.	0/ 24
782.	0./ 674.	0./ 57.	0/ 14

BEAM NO. 12 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 50.92 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 47.81 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.



BEAM NO. 13 DESIGN RESULTS - FLEXURE

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
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1	86.	4 - 16MM	0.	782.	YES YES
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CRITICAL POS MOMENT= 40.34 KN-MET AT 782. MM, LOAD 29
 REQD STEEL= 804. MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033
 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS
 BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS

2	239.	4 - 16MM	0.	782.	YES YES
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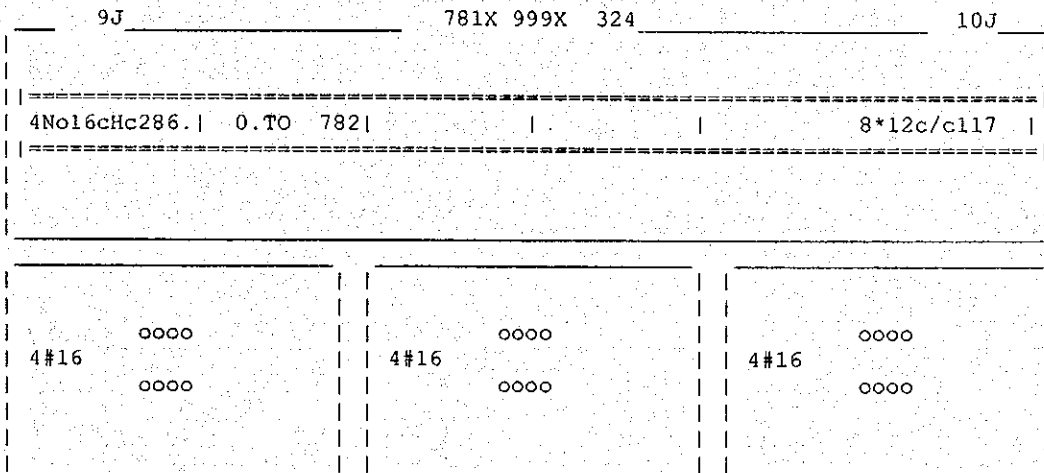
CRITICAL NEG MOMENT= 56.80 KN-MET AT 0. MM, LOAD 14
 REQD STEEL= 804. MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033
 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS
 BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	0./	674.	0/ 14
65.	0./	639.	0/ 14
130.	0./	605.	0/ 14
195.	0./	571.	0/ 14
261.	10./	538.	22/ 14
326.	68./	506.	22/ 14
391.	126./	474.	22/ 14
456.	184./	443.	22/ 14
521.	241./	412.	22/ 14
586.	299./	382.	22/ 14
652.	356./	352.	22/ 14
717.	413./	324.	29/ 14
782.	474./	295.	29/ 14

BEAM NO. 13 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 98.73 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM
 AT END SUPPORT - Vu= 95.61 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM



BEAM NO. 14 DESIGN RESULTS - FLEXURE

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	84.	15 - 12MM	0.	782.	YES	YES
CRITICAL POS MOMENT= 141.71 KN-MET AT 782.MM, LOAD 23 REQD STEEL= 1693.MM2, ROW= .0070, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 63. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 358. MMS						
2	239.	4 - 16MM	0.	739.	YES	NO

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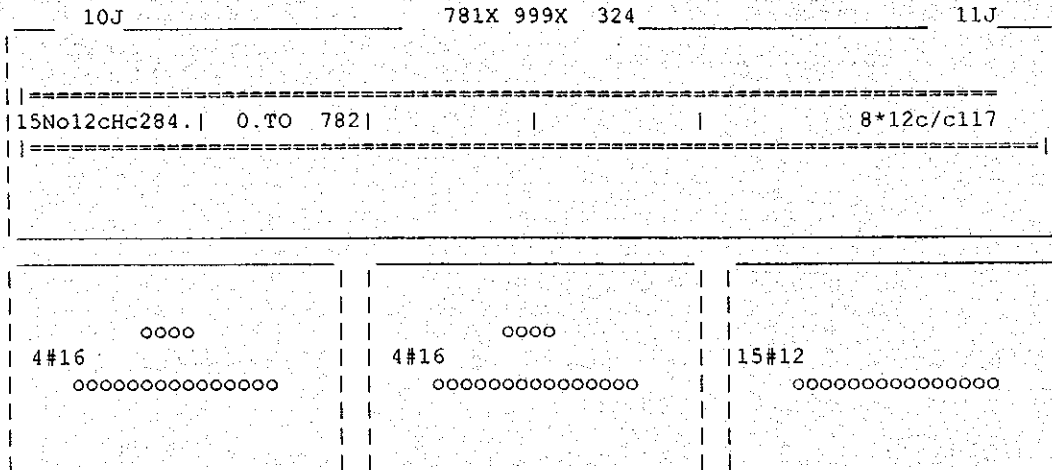
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| CRITICAL NEG MOMENT= 25.30 KN-MET AT 0.MM, LOAD 14 |
| REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS |
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REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	474./ 295.	40./ 25.	29/ 14
65.	570./ 232.	48./ 20.	29/ 14
130.	665./ 169.	56./ 15.	29/ 14
195.	761./ 107.	64./ 9.	29/ 14
261.	858./ 46.	72./ 4.	29/ 14
326.	954./ 0.	79./ 0.	29/ 0
391.	1051./ 0.	87./ 0.	29/ 0
456.	1150./ 0.	95./ 0.	23/ 0
521.	1271./ 0.	104./ 0.	23/ 0
586.	1393./ 0.	114./ 0.	23/ 0
652.	1515./ 0.	123./ 0.	23/ 0
717.	1639./ 0.	132./ 0.	23/ 0
782.	1763./ 0.	142./ 0.	23/ 0

BEAM NO. 14 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 147.19 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM
 AT END SUPPORT - Vu= 144.08 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM



BEAM NO. 15 DESIGN RESULTS - FLEXURE

LEN - 780. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	88.	4 - 20MM	0.	780.	YES YES

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-----
| CRITICAL POS MOMENT= 106.43 KN-MET AT 0.MM, LOAD 23 |
| REQD STEEL= 1247.MM2, ROW= .0052, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING= 878./ 45./ 293. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH = 493./ 594. MMS |
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```

2	239.	4 - 16MM	9.	780.	NO	YES

CRITICAL NEG MOMENT= 14.31 KN-MET AT 780.MM, LOAD 20						
REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033						
MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS						
BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	1297./	0.	106./ 0.
65.	1215./	0.	100./ 0.
130.	1133./	0.	94./ 0.
195.	1051./	0.	87./ 0.
260.	969./	0.	81./ 0.
325.	888./	0.	74./ 0.
390.	806./	0.	68./ 0.
455.	724./	0.	61./ 0.
520.	643./	23.	54./ 2.
585.	562./	58.	48./ 5.
650.	480./	93.	41./ 8.
715.	403./	129.	34./ 11.
780.	328./	166.	28./ 14.

BEAM NO. 15 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 100.03 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 780. MM
 AT END SUPPORT - Vu= 103.12 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 780. MM

11J	779X 999X 324	12J

4No20cHc288.	0 TO 780	8*12c/c117

4#20	4#16	4#16
oooo	oooo	oooo
	oooo	oooo

BEAM NO. 16 DESIGN RESULTS - FLEXURE

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	86.	4 - 16MM	0.	782.	YES YES

```

-----
CRITICAL POS MOMENT= 28.05 KN-MET AT 782.MM, LOAD 28
REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033
MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS
BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS
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2      239.      4 - 16MM      0.      782.      YES YES
-----
CRITICAL NEG MOMENT= 31.21 KN-MET AT 782.MM, LOAD 14
REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033
MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS
BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS
-----

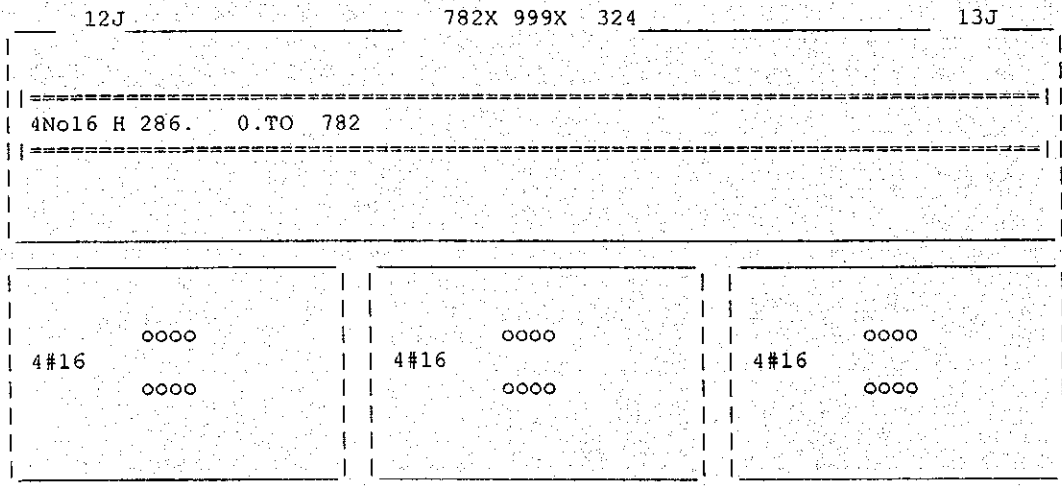
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REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	328./ 166.	28./ 14.	28/ 20
65.	288./ 176.	25./ 15.	28/ 20
130.	248./ 187.	21./ 16.	28/ 20
196.	207./ 199.	18./ 17.	28/ 20
261.	167./ 210.	14./ 18.	28/ 20
326.	125./ 223.	11./ 19.	28/ 20
391.	84./ 236.	7./ 20.	28/ 20
456.	42./ 249.	4./ 21.	28/ 20
522.	0./ 263.	0./ 23.	0/ 20
587.	0./ 281.	0./ 24.	0/ 14
652.	0./ 309.	0./ 26.	0/ 14
717.	0./ 337.	0./ 29.	0/ 14
782.	0./ 365.	0./ 31.	0/ 14

BEAM NO. 16 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 53.55 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 56.67 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.



BEAM NO. 17 DESIGN RESULTS - FLEXURE

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

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

```

1      239.      4 - 16MM      0.      782.      YES  YES
-----
| CRITICAL NEG MOMENT=      32.46 KN-MET AT 782.MM, LOAD 15 |
| REQD STEEL=      804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS |
-----

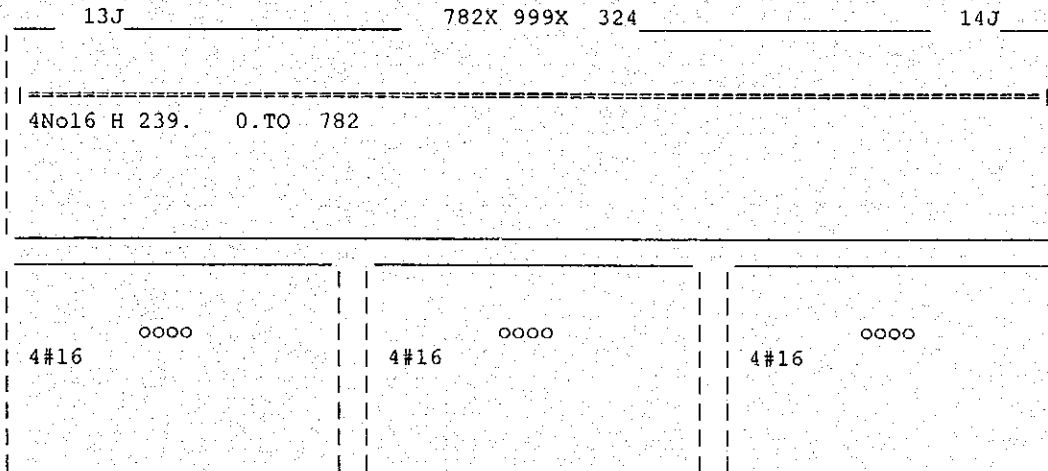
```

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	0./ 365.	0./ 31.	0/ 14
65.	0./ 363.	0./ 31.	0/ 14
130.	0./ 361.	0./ 31.	0/ 14
196.	0./ 359.	0./ 31.	0/ 14
261.	0./ 358.	0./ 31.	0/ 14
326.	0./ 357.	0./ 31.	0/ 14
391.	0./ 357.	0./ 31.	0/ 14
456.	0./ 357.	0./ 31.	0/ 14
522.	0./ 358.	0./ 31.	0/ 14
587.	0./ 360.	0./ 31.	0/ 14
652.	0./ 362.	0./ 31.	0/ 15
717.	0./ 371.	0./ 32.	0/ 15
782.	0./ 380.	0./ 32.	0/ 15

BEAM NO. 17 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 13.27 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 19.91 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.



BEAM NO. 18 DESIGN RESULTS - FLEXURE

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

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

```

1      86.      4 - 16MM      0.      782.      YES  YES
-----
| CRITICAL POS MOMENT=      22.09 KN-MET AT 782.MM, LOAD 22 |
| REQD STEEL=      804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS |
-----

```

2	239.	4 - 16MM	0.	782.	YES	YES

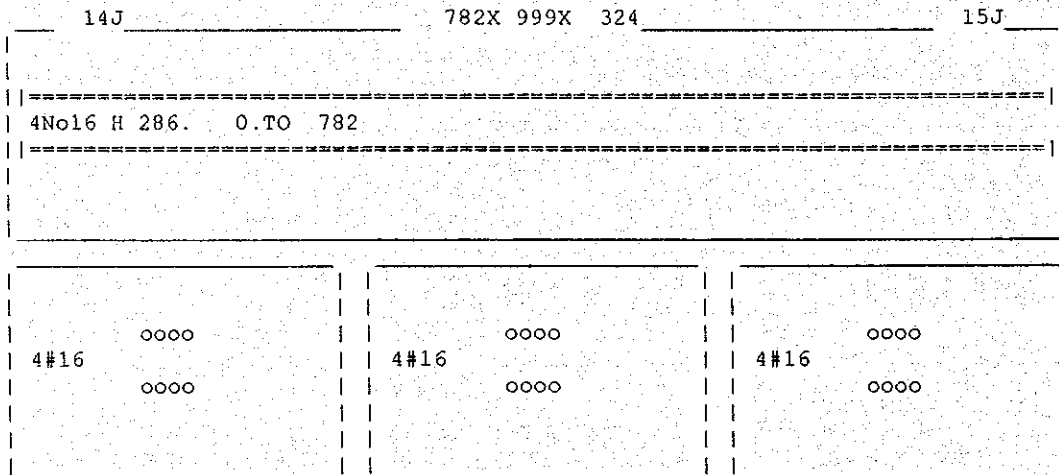
CRITICAL NEG MOMENT= 32.46 KN-MET AT 0.MM, LOAD 15						
REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033						
MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS						
BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	0./ 380.	0./ 32.	0/ 15
65.	0./ 358.	0./ 31.	0/ 15
130.	0./ 336.	0./ 29.	0/ 15
196.	0./ 315.	0./ 27.	0/ 15
261.	9./ 294.	1./ 25.	22/ 15
326.	41./ 274.	4./ 23.	22/ 15
391.	74./ 260.	6./ 22.	22/ 28
456.	105./ 248.	9./ 21.	22/ 28
522.	136./ 236.	12./ 20.	22/ 28
587.	167./ 225.	14./ 19.	22/ 28
652.	198./ 214.	17./ 18.	22/ 28
717.	228./ 204.	20./ 18.	22/ 28
782.	257./ 194.	22./ 17.	22/ 28

B E A M N O . 1 8 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 50.05 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 46.93 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.



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

LEN - 782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	84.	10 - 12MM	0.	782.	YES YES


```

|-----|
| CRITICAL POS MOMENT=   88.38 KN-MET AT   782.MM, LOAD 17 |
| REQD STEEL=  1026.MM2, ROW= .0043, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING=  886./   37./   98. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH =  177./   326. MMS |
|-----|

```

```

2          239.         4 - 16MM            0.          739.         YES NO
|-----|
| CRITICAL NEG MOMENT=   16.68 KN-MET AT     0.MM, LOAD 28 |
| REQD STEEL=   804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING=  882./   41./  294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH =  316./   478. MMS |
|-----|

```

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)		MOMENTS (+VE/-VE) (KNS-MET)		LOAD (+VE/-VE)	
0..	257./	194.	22./	17.	22/	28
65.	322./	154.	28./	13.	22/	28
130.	386./	114.	33./	10.	22/	28
196.	450./	75.	38./	6.	22/	28
261.	514./	37.	44./	3.	22/	28
326.	578./	0.	49./	0.	22/	0
391.	642./	0.	54./	0.	22/	0
456.	711./	0.	60./	0.	17/	0
522.	782./	0.	66./	0.	17/	0
587.	853./	0.	71./	0.	17/	0
652.	924./	0.	77./	0.	17/	0
717.	995./	0.	83./	0.	17/	0
782.	1066./	0.	88./	0.	17/	0

BEAM NO. 19 DESIGN RESULTS - SHEAR

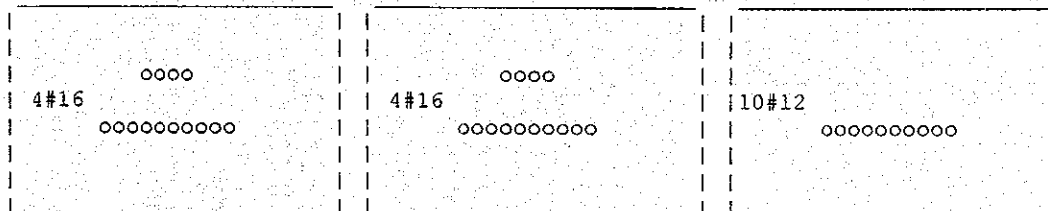
AT START SUPPORT - Vu= 91.31 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM
 AT END SUPPORT - Vu= 88.20 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM

15J _____ 782X 999X 324 _____ 16J

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|-----|
|=====|
|10No12cHc284.| 0.T0 782|         |         |         8*12c/c117 |
|=====|
|-----|

```



BEAM NO. 20 DESIGN RESULTS - FLEXURE

LEN - 780. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

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

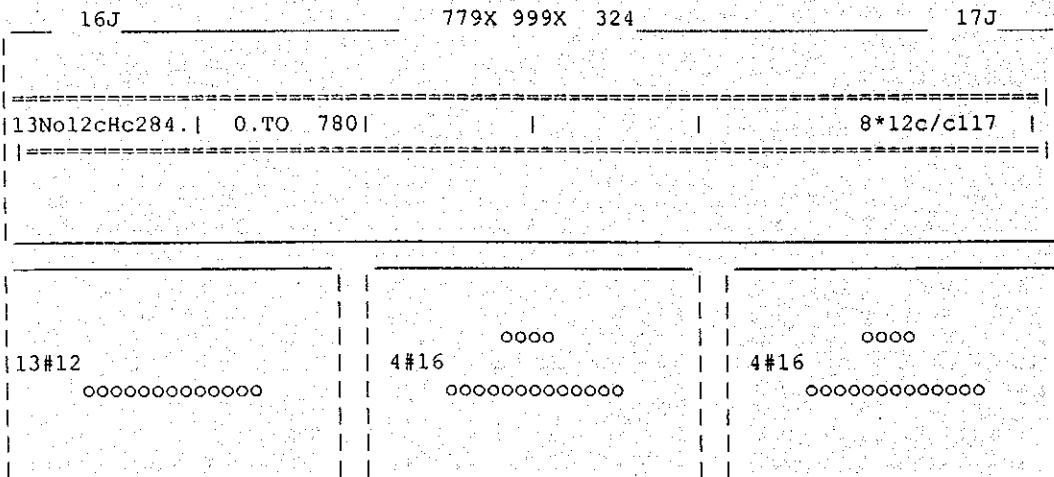
1	84.	13 - 12MM	0.	780.	YES	YES
CRITICAL POS MOMENT= 119.45 KN-MET AT 0.MM, LOAD 22 REQD STEEL= 1410.MM2, ROW= .0058, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 74. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 344. MMS						
2	239.	4 - 16MM	9.	780.	NO	YES
CRITICAL NEG MOMENT= 14.62 KN-MET AT 780.MM, LOAD 15 REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS						

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS(+VE/-VE) (KNS-MET)	LOAD(+VE/-VE)
0.	1467./	0.	22/ 0
65.	1386./	0.	22/ 0
130.	1305./	0.	22/ 0
195.	1225./	0.	22/ 0
260.	1144./	0.	22/ 0
325.	1063./	0.	22/ 0
390.	983./	0.	22/ 0
455.	902./	0.	22/ 0
520.	822./	22.	22/ 15
585.	742./	58.	22/ 15
650.	661./	95.	22/ 15
715.	581./	132.	22/ 15
780.	501./	170.	22/ 15

B E A M N O . 2 0 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 97.03 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 780. MM
 AT END SUPPORT - Vu= 100.12 KNS Vc= 194.80 KNS Vs= .00 KNS
 PROVIDE 12 MM BARS AT 117. MM C/C FOR 780. MM



BEAM NO. 21 DESIGN RESULTS - FLEXURE

LEN - 780. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	END
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1	86.	4 - 16MM	0.	780.	YES	YES
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| CRITICAL POS MOMENT= 42.57 KN-MET AT 0.MM, LOAD 22 |
| REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS |
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2	239.	4 - 16MM	0.	780.	YES	YES
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| CRITICAL NEG MOMENT= 28.47 KN-MET AT 780.MM, LOAD 21 |
| REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS |
| BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS |
-----
    
```

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (+VE/-VE) (SQ. MM)		MOMENTS (+VE/-VE) (KNS-MET)		LOAD (+VE/-VE)	
0.	501./	170.	43./	15.	22/	15
65.	455./	180.	39./	16.	22/	15
130.	409./	191.	35./	16.	22/	15
195.	363./	203.	31./	17.	22/	15
260.	316./	215.	27./	18.	22/	15
325.	269./	228.	23./	20.	22/	15
390.	222./	241.	19./	21.	22/	15
455.	175./	254.	15./	22.	22/	15
520.	127./	268.	11./	23.	22/	15
585.	79./	283.	7./	24.	22/	15
650.	30./	298.	3./	26.	22/	15
715.	0./	314.	0./	27.	0/	15
780.	0./	333.	0./	28.	0/	21

BEAM NO. 21 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 60.56 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 63.65 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.

17J 779X 999X 324 18J

4No16 H 286.	0.TO 780
--------------	----------

4#16	0000	4#16	0000	4#16	0000
	0000		0000		0000

BEAM NO. 22 DESIGN RESULTS - FLEXURE

LEN - 780. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	239.	4 - 16MM	0.	780.	YES	YES

CRITICAL NEG MOMENT= 31.57 KN-MET AT 780.MM, LOAD 16
 REQD STEEL= 804.MM2, ROW= .0033, ROWMX= .0194 ROWMN=.0033
 MAX/MIN/ACTUAL BAR SPACING= 882./ 41./ 294. MMS
 BASIC/REQD. DEVELOPMENT LENGTH = 316./ 478. MMS

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)	MOMENTS (+VE/-VE) (KNS-MET)	LOAD (+VE/-VE)
0.	0./ 333.	0./ 28.	0/ 21
65.	0./ 326.	0./ 28.	0/ 21
130.	0./ 319.	0./ 27.	0/ 21
195.	0./ 313.	0./ 27.	0/ 21
260.	0./ 307.	0./ 26.	0/ 21
325.	0./ 302.	0./ 26.	0/ 21
390.	0./ 297.	0./ 25.	0/ 21
455.	0./ 293.	0./ 25.	0/ 21
520.	0./ 301.	0./ 26.	0/ 16
585.	0./ 318.	0./ 27.	0/ 16
650.	0./ 334.	0./ 29.	0/ 16
715.	0./ 352.	0./ 30.	0/ 16
780.	0./ 370.	0./ 32.	0/ 16

BEAM NO. 22 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 26.11 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.
 AT END SUPPORT - Vu= 29.21 KNS Vc= 194.80 KNS Vs= .00 KNS
 STIRRUPS ARE NOT REQUIRED.

18J	779X 999X 324	19J
=====		
4No16 H 239.	0 TO 780	

4#16	0000	4#16	0000	4#16	0000
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136. END CONC DESIGN
137. FINISH

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

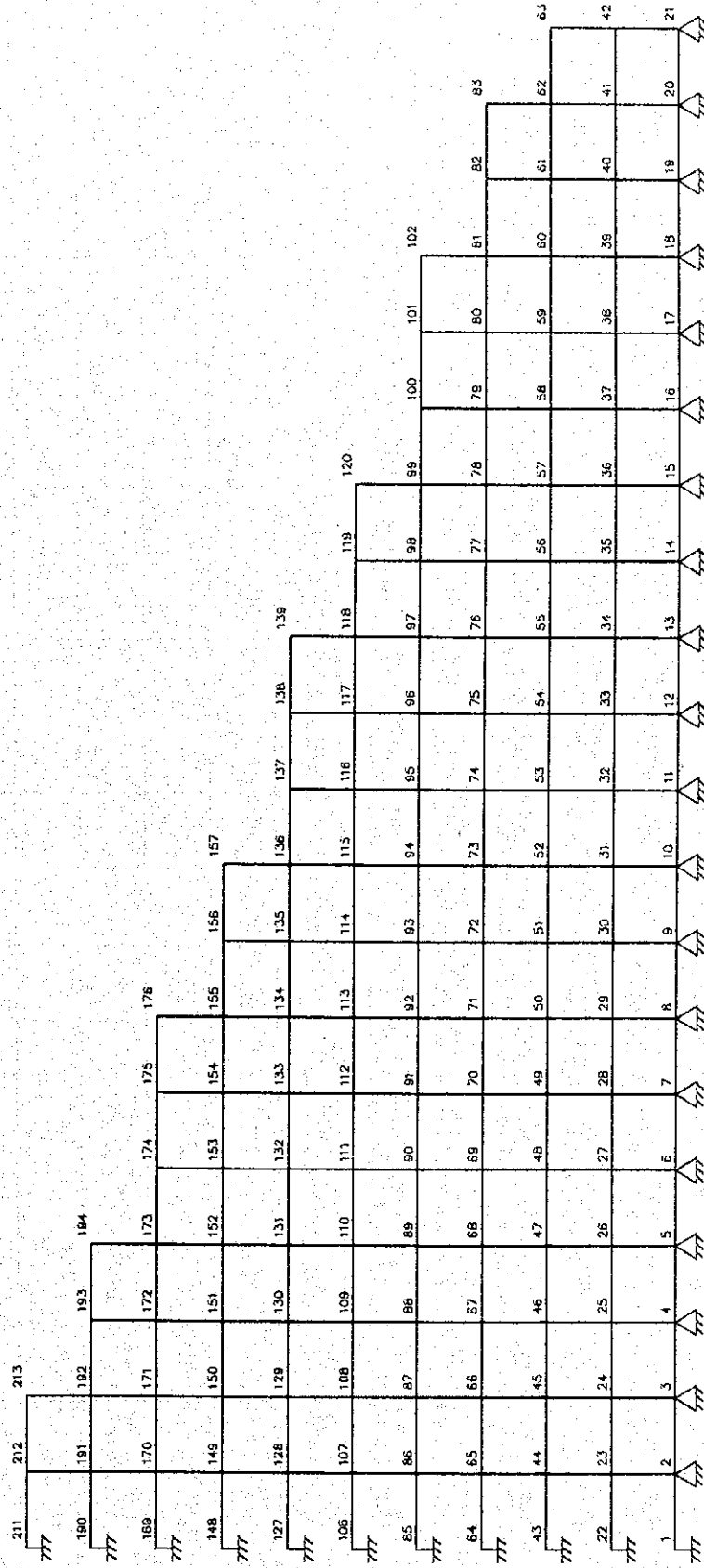
**** DATE= JAN 30,2000 TIME= 11:39: 8 ****

* 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 *

2-1-4 BOX CULVERT AT CH.5+643

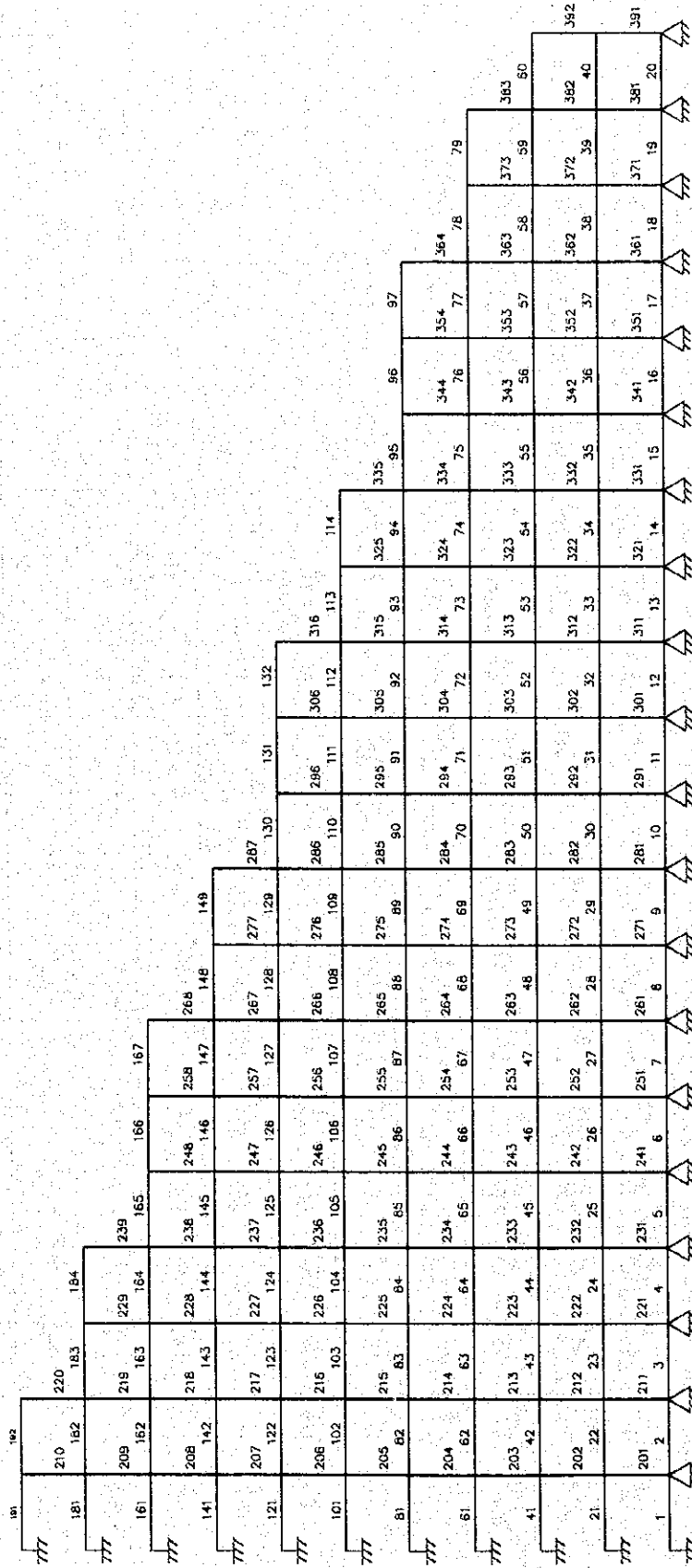
(2) WING WALL

WING WALL AT CH. 4+436



WING WALL WITH JOINT NUMBER

WING WALL AT CH. 4+436



WING WALL WITH MEMBER NUMBER


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*****
*
*          S T A A D - III
*          Revision 22.3a
*          Proprietary Program of
*          Research Engineers, Inc.
*          Date=   JAN 30, 2000
*          Time=   9:16:56
*
*          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      9.70 0.000 0.000
6. R      2 0.000 0.000 0.000 0.428
7. 64      0.000 0.000 1.283      83      9.215 0.000 1.283
8. 85      0.000 0.000 1.710      102     8.245 0.000 1.710
9. 106     0.000 0.000 2.138      120     6.790 0.000 2.138
10. 127     0.000 0.000 2.565      139     5.820 0.000 2.565
11. 148     0.000 0.000 2.993      157     4.365 0.000 2.993
12. 169     0.000 0.000 3.420      176     3.395 0.000 3.420
13. 190     0.000 0.000 3.848      194     1.940 0.000 3.848
14. 211     0.000 0.000 4.275      213     0.970 0.000 4.275
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     2.500  ZD     0.325  IX     1E-06
49. 21     TO     40     PRI    YD     0.275  ZD     0.428  IX     1E-06
50. 41     TO     60     PRI    YD     0.275  ZD     0.428  IX     1E-06
51. 61     TO     79     PRI    YD     0.275  ZD     0.428  IX     1E-06
52. 81     TO     97     PRI    YD     0.275  ZD     0.428  IX     1E-06
53. 101    TO     114    PRI    YD     0.275  ZD     0.428  IX     1E-06
54. 121    TO     132    PRI    YD     0.275  ZD     0.428  IX     1E-06
55. 141    TO     149    PRI    YD     0.275  ZD     0.428  IX     1E-06
56. 161    TO     167    PRI    YD     0.275  ZD     0.428  IX     1E-06
57. 181    TO     184    PRI    YD     0.275  ZD     0.428  IX     1E-06
58. 191    TO     192    PRI    YD     0.275  ZD     0.428  IX     1E-06
    
```

59.	*VERTICAL											
60.	201	TO	210	PRI	YD	0.275	ZD	0.485	IX	1E-06		
61.	211	TO	220	PRI	YD	0.275	ZD	0.485	IX	1E-06		
62.	221	TO	229	PRI	YD	0.275	ZD	0.485	IX	1E-06		
63.	231	TO	239	PRI	YD	0.275	ZD	0.485	IX	1E-06		
64.	241	TO	248	PRI	YD	0.275	ZD	0.485	IX	1E-06		
65.	251	TO	258	PRI	YD	0.275	ZD	0.485	IX	1E-06		
66.	261	TO	268	PRI	YD	0.275	ZD	0.485	IX	1E-06		
67.	271	TO	277	PRI	YD	0.275	ZD	0.485	IX	1E-06		
68.	281	TO	287	PRI	YD	0.275	ZD	0.485	IX	1E-06		
69.	291	TO	296	PRI	YD	0.275	ZD	0.485	IX	1E-06		
70.	301	TO	306	PRI	YD	0.275	ZD	0.485	IX	1E-06		
71.	311	TO	316	PRI	YD	0.275	ZD	0.485	IX	1E-06		
72.	321	TO	325	PRI	YD	0.275	ZD	0.485	IX	1E-06		
73.	331	TO	335	PRI	YD	0.275	ZD	0.485	IX	1E-06		
74.	341	TO	344	PRI	YD	0.275	ZD	0.485	IX	1E-06		
75.	351	TO	354	PRI	YD	0.275	ZD	0.485	IX	1E-06		
76.	361	TO	364	PRI	YD	0.275	ZD	0.485	IX	1E-06		
77.	371	TO	373	PRI	YD	0.275	ZD	0.485	IX	1E-06		
78.	381	TO	383	PRI	YD	0.275	ZD	0.485	IX	1E-06		
79.	391	TO	392	PRI	YD	0.275	ZD	0.485	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	-20.08									
92.	3	FY	-19.50									
93.	4	FY	-18.92									
94.	5	FY	-18.34									
95.	6	FY	-17.75									
96.	7	FY	-17.17									
97.	8	FY	-16.59									
98.	9	FY	-16.01									
99.	10	FY	-15.43									
100.	11	FY	-14.85									
101.	12	FY	-14.26									
102.	13	FY	-13.68									
103.	14	FY	-13.10									
104.	15	FY	-12.52									
105.	16	FY	-11.94									
106.	17	FY	-11.36									
107.	18	FY	-10.77									
108.	19	FY	0.00									
109.	20	FY	0.00									
110.	21	FY	0.00									
111.	23	FY	-13.50									
112.	24	FY	-13.04									
113.	25	FY	-12.58									
114.	26	FY	-12.12									
115.	27	FY	-11.66									
116.	28	FY	-11.20									
117.	29	FY	-10.73									
118.	30	FY	-10.27									
119.	31	FY	-9.81									
120.	32	FY	-9.35									
121.	33	FY	-8.89									
122.	34	FY	-8.43									
123.	35	FY	-7.97									
124.	36	FY	-7.50									
125.	37	FY	-7.04									
126.	38	FY	-6.58									
127.	39	FY	-6.12									
128.	40	FY	0.00									
129.	41	FY	0.00									
130.	42	FY	0.00									
131.	44	FY	-11.49									

BOX CULVERT AT CH. 4+643 (WING WALL)

132.	45	FY	-11.02
133.	46	FY	-10.56
134.	47	FY	-10.10
135.	48	FY	-9.64
136.	49	FY	-9.18
137.	50	FY	-8.72
138.	51	FY	-8.26
139.	52	FY	-7.79
140.	53	FY	-7.33
141.	54	FY	-6.87
142.	55	FY	-6.41
143.	56	FY	-5.95
144.	57	FY	-5.49
145.	58	FY	-5.03
146.	59	FY	-4.56
147.	60	FY	-4.10
148.	61	FY	0.00
149.	62	FY	0.00
150.	63	FY	0.00
151.	65	FY	-9.47
152.	66	FY	-9.01
153.	67	FY	-8.55
154.	68	FY	-8.08
155.	69	FY	-7.62
156.	70	FY	-7.16
157.	71	FY	-6.70
158.	72	FY	-6.24
159.	73	FY	-5.78
160.	74	FY	-5.32
161.	75	FY	-4.85
162.	76	FY	-4.39
163.	77	FY	-3.93
164.	78	FY	-3.47
165.	79	FY	-3.01
166.	80	FY	-2.55
167.	81	FY	-2.08
168.	82	FY	0.00
169.	83	FY	0.00
170.	86	FY	-7.45
171.	87	FY	-6.99
172.	88	FY	-6.53
173.	89	FY	-6.07
174.	90	FY	-5.61
175.	91	FY	-5.14
176.	92	FY	-4.68
177.	93	FY	-4.22
178.	94	FY	-3.76
179.	95	FY	-3.30
180.	96	FY	-2.84
181.	97	FY	-2.37
182.	98	FY	-1.91
183.	99	FY	-1.45
184.	100	FY	-0.99
185.	101	FY	-0.53
186.	102	FY	-0.07
187.	107	FY	-5.43
188.	108	FY	-4.97
189.	109	FY	-4.51
190.	110	FY	-4.05
191.	111	FY	-3.59
192.	112	FY	-3.13
193.	113	FY	-2.66
194.	114	FY	-2.20
195.	115	FY	-1.74
196.	116	FY	-1.28
197.	117	FY	-0.82
198.	118	FY	-0.36
199.	119	FY	0.00
200.	120	FY	0.00
201.	128	FY	-4.15

202.	129	FY	-3.69
203.	130	FY	-3.23
204.	131	FY	-2.77
205.	132	FY	-2.31
206.	133	FY	-1.85
207.	134	FY	-1.38
208.	135	FY	-0.92
209.	136	FY	-0.46
210.	137	FY	0.00
211.	138	FY	0.00
212.	139	FY	0.00
213.	149	FY	-3.00
214.	150	FY	-2.54
215.	151	FY	-2.08
216.	152	FY	-1.62
217.	153	FY	-1.15
218.	154	FY	-0.69
219.	155	FY	-0.23
220.	156	FY	0.00
221.	157	FY	0.00
222.	170	FY	-1.85
223.	171	FY	-1.38
224.	172	FY	-0.92
225.	173	FY	-0.46
226.	174	FY	0.00
227.	175	FY	0.00
228.	176	FY	0.00
229.	191	FY	-0.69
230.	192	FY	-0.23
231.	193	FY	0.00
232.	194	FY	0.00
233.	212	FY	0.00
234.	213	FY	0.00