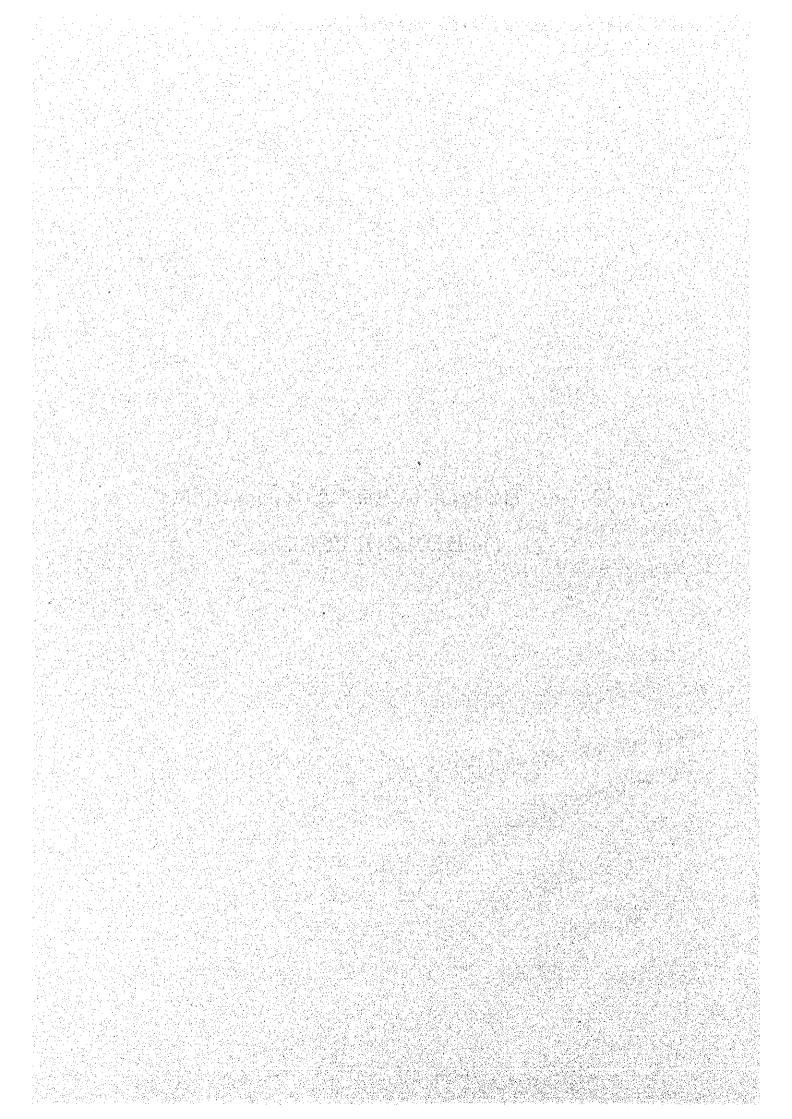
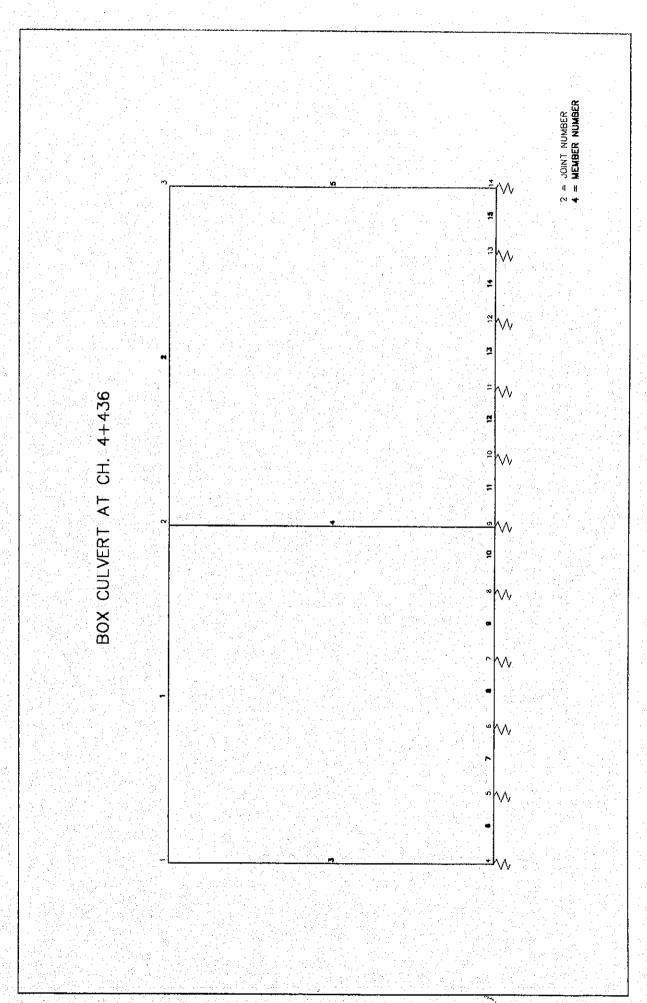
2-1-4 BOX CULVERT AT CH.5+643 (1) BOX CULVERT





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STAAD-III
                   Revision 22.3a
                    Proprietary Program of
                   Research Engineers, Inc.
                            JAN 30, 2000
                   Date=
                            11:39: 7
                   Time=
             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
    2 3.91 3.80
5
                  0.00
             3.80 0.00
    3 7.82
    4 11.72 3.80
                  0.00
7.
8.
    5 15.63
             3.80
                  0.00
    6 0.00 0.00
9.
                  0.00
                          11
                                3.91 0.00
                                            0.00
                               7.82 0.00 0.00
10. 12 4.69 0.00
                  0.00
                          16
                              11.72 0.00 0.00
11. 17 8.60 0.00 0.00
                          21
12. 22 12.50
            0.00 0.00
                          26
                               15.63 0.00 0.00
14. MEMBER INCI
15. 1
          1 2
16.
                 6
    6
                11
17.
           2
     7 🗈
18.
           3
                16
    . . 8
19.
                21
           4
20.
     9
                     . 29
    10
                . 7
21.
           6
22. MEMBER PROPERTY
                    YD ...
23. 1 TO 4 PRIS
                           0.325 ZD 1.0
24. 5 9
                          0.325 ZD 1.0
             PRIS
                    YD -
25. 6 7 8 PRIS
26. 10 TO 29 PRIS
                        0.275 2D 1.0
                    YD
                     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
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
                     3.84 21.80
-3.84 -21.80
46. 5 TRAP
                 GΧ
47. 9
         TRAP
                 GX
48. LOAD 4 : BACK FILL (MAXIMUM)
49. MEMBER LOAD
50. 5
                      11.51 34.67 0.00 2.45
                 GΧ
         TRAP
51. 5
                     34.67 51.68
          TRAP
                                    2.45 3.80
                 GX
          TRAP GX
                     -11.51 -34.67
                                     0.00 2.45
53. 9
         TRAP GX -34.67 -51.68
54. LOAD 5 : LL IN ADJACENT SPANS
55. MEMBER LOAD
56. 1 UNI GY
                   -67.03 1.37 2.53
           GY -67.03 1.73 2.89
: LL IN ALTERNATE SPAN
57. 2 UNI
58. LOAD 6
59. MEMBER LOAD
60. 1 UNI
              GY
                   -67.03 1.37 2.53
```

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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
              GY
 67. 2 UNI
                   -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
              : MILITARY LOADING IN SPAN 1
 71. LOAD 10
 72. MEMBER LOAD
            GY
GY
 73. 1 UNI
                     -39.03
                             0.76 1.95
                   -39.03 1.95 3.14
 74, 1 UNI
 75. LOAD 11 : MILITARY LOADING IN SPAN 2
 76. MEMBER LOAD
 77. 2 UNI
78. 2 UNI
              GY
                     -39.03
                             0.76 1.95
                   -39.03
                            1.95 3.14
               GY
 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
86. *
               - GY
                     -39.03
                             1.19
 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
                       1.3 6
                               2.171
 96. LOAD COMB 18
 97. 1 1.3 2 1.3 4
                       1.3
                               2.171
 98. LOAD COMB 19
 99. 1 1.3 2 1.3
                        1.3
                               2.171
100. LOAD COMB 20
101. 1 1.3 2 1.3
                       1.3 9
                              2.171
103 LOAD COMB 21
104. 1 1.3 2 1.3
                       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
112. LOAD COMB 25
                1.3
                     3 1.3
                            6. 2,171
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. *
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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

++ 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

мемв		FY/ FZ	DIST	LD LD	MZ/ MY	DIST DIST	LD	FX	DIST	LD
1	MAX	179.90	.00	15	115.93	.00	16			
12.54		.00	.00	14	.00	.00	14	82.67 C	.00	16
	MIN	-157.90	3.91	28		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			
fa ta		.00	.00	14	.00	.00	14	118.50 C	.00	22
	MIN	-146.15	3.91	22		1.96	19			100
		.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			
	the second	.00	.00	14	.00	.00	14	80.95 C	.00	20
A. De	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	14	.00	.00	14	249 04 C	3.80	27
	MIN .	-10.76	3.80	14	-52.28	3.80	29		-01/10/10 A	Karani.
		.00	3.80	30	.00	3.80	30	30.36 C	3.48	30
. 9	MAX	80.95	.00	20	89.75	.00	20			
	4.74	.00	.00	14	.00	.00	14	115.25 C	3.80	20
	MIN	-97.65	3.80	14	-34.02	2.53	20		er light	
		.00	3.80	30	.00	3.80	30	28.07 C	3.48	30
10	MAX	-37.37	.00	30	68.95	.78	23			
414.		.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
	12.5	and the second second second	the state of the state of		and the second of the second		The second second	and the control of th	Grand Street	[1] J. J. G. G. P. P. G. P. P. G. P. P. G. P. P. G.

		. 11		11.						
MEMB		FY/		D	MZ/	DIST L	D.			
		FZ	DIST	LD	MY	DIST	LD	FX	OIST I	D
11	MAX	1.26	.00	29	86.76	.78	23		Salar Salar	
		.00	.00	14	.00	.00	14	.00	.00	14
	MIN	-70.52	.78	14	-6.36	.00	30	, 00		
		.00	.78	30	.00	.78	. 30	.00	.78	30
	and the second			100						
12	MAX	53.26	.00	23	86.77	.00	23			
91.5		.00	.00	14	.00	.00	14	.00	.00	14
				F Sec.						
	MIN	-4.45	.78	. 14	8.32	.46	30			
		.00	.78	30	.00	.78	30	.00	.78	30
13	MAX	101.06	.00	23	EC 01	00	1			
13	MAA	.00	.00	23 14	56.81	.00	14	0.0	00	4.4
1 Sec.	MIN	9.43	.78	30	-40.34	.00 .78	14 29	.00	.00	14
	11-11	.00	.78	30	.00	.78	30	.00	. 78	30
da et.	100		• • •				30	.00	.,,	30
14	MAX	149.52	.00	23	25.30	.00	14			yte X 1 dan set se
		.00	00	14	.00	.00	14	.00	.00	14
1.20	MIN	22.12	.78	30	-141.71	.78	23		1 24 3	The service of the se
		.00	.78	30	.00	.78	30	.00	.78	30
									Tally of the	
15	MAX	-19.58	.00	30	14.31	.78	20			
	MTN	.00 -105.46	.00	14	.00	.00	14	.00	.00	14
	MIN	.00	.78 .78	. 23 . 30	-106.43	.00 .78	23 30	.00	.78	30
		.00		. 30	.00	. / 0	30	.00	. / 0	30
16	MAX	-6.66	.00	30	31.21	.78	14			
	84. J. E.	.00	00	14	.00	.00	1.4	.00	.00	14
	MIN	-59.01	.78	28	-28.05	.00	28			
		.00	.78	30	.00	.78	30	.00	.78	30
		Salary Salary	Margarit.	Edeler.	rigija ve kileli		detet j			
17	MAX	15.61	.00	20	32.46	.78	15			
		.00	.00	1.4	.00	.00	14	.00	.00	14
	MIN	-22.25	. 78	28	8.44	. 65	30			
		.00	.78	30	.00	.78	30	.00	.78	30

^{128.} START CONC DESIGN

HEIGHT

BEAM NO. 1 DESIGN RESULTS - FLEXURE

25. MPA, SIZE - 1000. X 325. MMS

FROM

BAR INFO

LEVEL HEIGHT BAR INFO FROM TO ANCI (MM) (MM) (MM) STA	
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	МО

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

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то

ANCHOR

^{129.} FC 25000.0

^{130.} TRACK 2 131. MAXMAIN 20.

^{132.} CLEAR 0.05

^{133.} DESIGN BEAM 1 2 3

3							
REQD STELL= 1127.MMZ, ROW= 0044, ROWMX= 0194 ROWMN= 0033 MAX/MIN/ACTUAL BAR SPACTING= 886./ 37./ 98.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS REQUIRED REINF. STEEL SUMMARY : SECTION REINF STEEL (+VE/-VE) MCMENTS (+VE/-VE) LOAD (+VE/-VE) (MM) (SQ. MM) (KNS-MET) (NM) (RNS-MET)	3	256. 10 -	12MM	2411.	3910.	NO	YES
	REQD S	STEEL= 1127.MM	42, ROW≕ (BPACING≃	0044, ROWMX= 886./ 37./	.0194 ROWMN 98 MMS	OAD 15 = .0033	
SECTION REINF STEEL(+VE/-VE) MOMENTS(+VE/-VE) LOAD(+VE/-VE) (NM) (SQ, MM) (KNS-MET) 0. 0./ 1324. 0./ 116. 0/ 16 326. 224./ 784. 21./ 70. 14/ 16 6522. 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 1629. 1174./ 93. 103./ 9. 25/ 22 1955. 1263./ 6. 111./ 1. 25/ 22 2911. 1133./ 0. 100./ 0. 25/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2932. 498./ 139. 45./ 13. 21/ 14 3258. 47./ 933. 4./ 36. 21/ 14 3258. 47./ 933. 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 1466. 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 LJ 3909X 999X 324 2J 22.221. 11312 113*12c/c125 22.13 1			المراج				
(MM) (SQ. MM) (KNS-MET) 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/ 22 281. 1133./ 0. 100./ 0. 25/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2932. 498./ 139. 45./ 13. 21/ 14 3258. 47./ 393. 45./ 13. 21/ 14 3258. 47./ 393. 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 BEAMNO. 1 DESIGNRESULTS - 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	REQUIRED !	REINF. STEEL SU	JMMARY :				
(MM) (SQ. MM) (KNS-MET) 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 1629. 1174./ 93. 103./ 9. 25/ 22 1955. 1263./ 6. 111./ 1. 25/ 22 281. 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 3258. 47./ 393. 4./ 36. 21/ 14 3258. 47./ 393. 4./ 36. 21/ 14 3258. 47./ 393. 4./ 36. 21/ 14 3258. 9./ 702. 1./ 63. 30/ 15 3910. 0./ 1159. 0./ 102. 0/ 15 B E A M N O. 1 D E S I G N R E S U L T S - 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 1	ECTION	REINE STEEL	 (+VE/-VE)	MOMENTS (+	VE/~VE)	LOAD (+VE	/-VE)
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 1303. 952./ 211. 85./ 19. 28/ 22 1955. 1263./ 6. 111./ 1. 25/ 22 2281. 1133./ 0. 100./ 0. 25/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2932. 498./ 139. 45./ 13. 21/ 14 3584. 9./ 702. 1./ 63. 30/ 15 3910. 0./ 1159. 0./ 102. 0/ 15 BEAMNO.1 DESIGNRESULTS - 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 2012 H 256. 0.70 2314 10No12 H 256.2411.TO 39101 8*12c/c125							
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 1303. 952./ 211. 85./ 19. 28/ 22 1955. 1263./ 6. 111./ 1. 25/ 22 2281. 1133./ 0. 100./ 0. 25/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2932. 498./ 139. 45./ 13. 21/ 14 3584. 9./ 702. 1./ 63. 30/ 15 3910. 0./ 1159. 0./ 102. 0/ 15 BEAMNO. 1 DESIGNRESULTS - 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 2012 H 256.1 0.TO 2314 10No12 H 256.2411.TO 39101 8*12c/c125							
652. 572./ 544. 52./ 49. 14/ 22 1977. 738./ 361. 66./ 33. 15./ 22 1303. 952./ 211. 85./ 19. 28/ 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 3258. 47./ 393. 4./ 36. 21/ 14 3258. 47./ 393. 4./ 36. 21/ 14 3584. 9./ 702. 1./ 63. 30/ 15 3910. 0./ 1159. 0./ 102. 0/ 15 BEAMNO. 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 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 1		the state of the s	and the second s	4.4		0/	16
9//. 735. 351. 352. 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 BEAMNO. 1 DESIGNRESULTS-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 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 2No12 H 256.1 0.TO 2314 10No12 H 256.2411.TO 39101 8*12c/c125		224./ 572./	784 544		/U.		
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	and the second s	739 /	344.		33	15/	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 BEAMNO. 1 DESIGNRESULTS-SHEAR AT START SUPPORT - Vu= 152.21 KNS VC= 207.25 KNS Vs= .00 KNS	*	952 /			19.	28/	22
2931. 1133./ 0. 110./ 1. 25/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2932. 498./ 139. 45./ 13. 21/ 14 3258. 47./ 393. 4./ 36. 21/ 14 3258. 47./ 393. 4./ 36. 21/ 14 3584. 9./ 702. 1./ 63. 30/ 15 3910. 0./ 1159. 0./ 102. 0/ 15 BEAMNO, 1 DESIGNRESULTS-SHEAR AT START SUPPORT - Vu= 152.21 KNS Vc= 207.25 KNS Vs= .00 KNS		1174./		103./		4.2	
2281. 1133./ 0. 100./ 0. 25/ 0 2607. 857./ 0. 76./ 0. 28/ 0 2932. 498./ 139. 45./ 13. 21/ 14 3256. 47./ 393. 4./ 36. 21/ 14 3584. 9./ 702. 1./ 63. 30/ 15 3910. 0./ 1159. 0./ 102. 0./ 15 BEAMNO. 1 DESIGNRESULTS-SHEAR AT START SUPPORT - Vu= 152.21 KNS Vc= 207.25 KNS Vs= .00 KNS		1403./	6.	and the second s	1.	25/	22
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 BEAMNO. 1 DESIGNRESULTS - 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 2D 2No12 H 256. 0.TO 2314 10No12 H 256.2411.TO 39101 8*12c/c125		1133./	0.		0.	25/	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 BEAMNO. 1 DESIGNRESULTS - 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 815. MM 1J 3909X 999X 324 2J 2No12 H 256.; 0.TO 2314 10No12 H 256.2411.TO 39101 8*12c/c125 1 1	2607.	857./	0.		0	28/	0
3584. 9./ 702. 1./ 63. 30/ 15 3910. 0./ 1159. 0./ 102. 0/ 15 BEAMNO. 1 DESIGNRESULTS - 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		498./	139.	45./	13	21/	14
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					36.		
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		9./	702	1./	63.	30/	15 15
AT START SUPPORT - Vu= 152.21 KNS Vc= 207.25 KNS Vs= .00 KNS	3910.	0./	1129.	0./	102.	U/	r.2
00000000000	1J	PRO 56. 0.TO 231 25 69. 0.TO 391	3909 3909 4	BARS AT 125. X 999X 324	MM C/C FC	0R 1466. 2411.TO 13*12c	MM 2J_ 3910 /c125
2#12							
1#12 11#12 11#12 000000000000000000000000000000000	and the second second	0000000					00
11#12			and the second second		1 1 1 1		
LEN - 3910. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR (MM) (MM) (MM) STA END 1 69. 12 - 12MM 146. 3601. NO NO CRITICAL POS MOMENT= 117.73 KN-MET AT 1994 MM, LOAD 19 REOD STEEL= 1298 MM2, ROW= .0051, ROWMX= .0194 ROWMN= .0033	L1#12	 	111#12	and the second of the second o			000
LEVEL HEIGHT BAR INFO FROM TO ANCHOR (MM) (MM) (MM) STA END 1 69. 12 - 12MM 146. 3601. NO NO							
(MM) (MM) (MM) STA END 1 69. 12 - 12MM 146. 3601. NO NO CRITICAL POS MOMENT= 117.73 KN-MET AT 1994 MM, LOAD 19 REOD STEEL= 1298 MM2, ROW= .0051, ROWMX= .0194 ROWMN= .0033	LEN - 39	010. MM FY -	414. FC	- 25. MPA, S	SIZE - 1000	. X 325.	MMS
CRITICAL POS MOMENT= 117.73 KN-MET AT 1994 MM, LOAD 19 REOD STEEL= 1298 MM2, ROW= .0051, ROWMX= .0194 ROWMN= .0033	LEVEL	early and the second of the second			The second secon		
REOD STEEL= 1298.MM2, ROW= .0051, ROWMX= .0194 ROWMN= .0033	1	69. 12	- 12MM	146.	3601.	NO	NO
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 343. MMS	REQD MAX/	STEEL= 1298.	MM2, ROW= SPACING=	.0051, ROWMX= 886./ 37.	.0194 ROWM / 81. MMS	N = .0033	

11-163

2		256.	11 - 12	MM?	0.		391). ·	YES	YES
 			MOMENT= 1241.MM2,							
1	MAX	/MIN/ACTU	JAL BAR SPA DEVELOPMEN	CING=	886./	37./	89	MMS		i !

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL (SQ. MM		MOMENTS (+V (KNS-M	-	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

<u> </u>	3909X 999X 324	<u>∞ 11 1 13 13 13 13 13 13 13 13 13 13 13 1</u>
11No12		• • •
0000000000	 	000000000
11#12 	11#12	11#12
医抗药 经货票 海南西港等位	1 00000000000	
다 교육 [경상 조금 사람 중심 등학 기다		 ** ** ** ** ** ** ** ** ** ** ** ** **

DESIGN RESULTS-FLEXURE LEN -3900. MM 414. FC -25. MPA, SIZE - 1000. X 325. MMS LEVEL BAR INFO HEIGHT FROM TO ANCHOR (MM) (MM) STA END (MM) 69. 11 - 12MM 3900. 131. NO YES

CRITICA REQD ST	L POS MOMENT= EEL= 1237.MM	112.5 2, ROW=	3 KN-MET AT	2808.MM, LO	AD 17	1
MAX/MIN	/ACTUAL BAR S	PACING=	886./ 37./ H = 177./	89, MMS		
2	256. 8 -	12MM	0.	1334.	YES	NO I
REQD ST	EEL= 854.MM /ACTUAL BAR S	2, ROW= . PACING=	8 KN-MET AT 0033, ROWMX= 886./ 37./ H = 177./	.0194 ROWMN= 127. MMS		
3	252. 3 -	20MM	1840.	3900.	NO	YES
REQD ST MAX/MIN	EEL= 909.MM /ACTUAL BAR S	12, ROW≕ . PACING=	2 KN-MET AT 0036, ROWMX= 878./ 45./ H = 493./	.0194 ROWMN= 439. MMS		
EOUIRED RE	INF. STEEL SU	IMMARY :				
	REINF STEEL		MOMENTS (+	VE/-VE) I	LOAD (+VE	:/-VE)
	(SQ. MM		(KNS-			
0.	0./	856.	0./	76.	0/	17
325.	0./	409.	ŏ./	37.	0/	
650.	70./	184.	6./	17.	24/	
975.	474./	43.	43./	4.	24/	and the second second
1300.	863./	0.	77./	0.	17/	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1625.	1177./	0. 0.	104./	0.	17/ 17/	
1950. 2275.	1283./ 1173./	0.	113./ 103./	0. 0.		0
2600.	855./	54.	76./	5.	17/	29
2925		180	71./	17.	20/	29
3250.	613./	338	55./	31.	20/	
3575.	244./	530.	22./	48.	20/	29
3900.		926.	0./	82.	0/	24
Вε	AM NO.	3 DESI	CGN RESU	JLTS-SH	EAR	
	PRO SUPPORT - Vu=	VIDE 12 MM 143.49	KNS Vc= 207. 4 BARS AT 125. KNS Vc= 207. 4 BARS AT 125.	MM C/C FO	R 1462.	MM O KNS
3J			9X 999X 324_			4J
	6. 0.ТО 133 5 69. 131.ТО 39		3No20 H 252.			
		=======	 			
er e la la						
00000 8#12	0000	 3#20	000		000	
		 11#12 0	000000000		000000	0000
	a An Agili			\$41. i 120 44		

134. CLEAR 0.065 135. DESIGN BEAM 5 6 7 9 TO 22

BEAM	NO.	5	D	Ε	S	Ι	G	N	R	Ξ	S	Ü	L	T	S	-	FLEXURE

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

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

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	REINF STEEL	(+VE/-VE)	MOMENTS (+V	E/-VE)	LOAD (+V	E/-VE)
(MM)	(SQ. MN	1 }	(KNS-M	ET)		
0.	1421./	0.	116./		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	147	22
3167.	544./	358	46./	31	14/	22
3483.	856./	256.	72./	22.	14/	29
3800.	1257./	214.	103./	18.	14/	29

BEAM NO. 5 DESIGN RESULTS + SHEAR

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

7#16	000000	 	0000 000000	 	00000	0
В	EAM NO.	6 DES	IGN RES	ULTS-F	LEXURE	
LEN - 3	800. MM FY -	414. FC	- 25. MPA,	SIZE - 1000.	x 275.	MMS
LEVEL	HEIGHT BAR (MM)	INFO	FROM (MM)	TO (MM)	ANC STA	HOR END
1	86. 6 -	16MM	0.	2357.	YES	МО
REQD MAX/	ICAL POS MOMENT STEEL= 1152.M MIN/ACTUAL BAR C/REQD. DEVELOP	M2, ROW= SPACING=	.0061, ROWMX= 882./ 41	= .0194 ROWMN ./ 176. MMS		
2	88. 2 -	20MM	1781.	3800.	МО	YES
REQD MAX/	ICAL POS MOMENT STEEL= 624.M MIN/ACTUAL BAR C/REQD. DEVELOR	M2, ROW= SPACING=	.0033, ROWMX 878./ 45	= .0194 ROWMN ./ 878. MMS		
3	187. 3 -	20 MM	0.	3800.	YES	YES
REQU	ICAL NEG MOMENT STEEL= 915.M MIN/ACTUAL BAR C/REQD. DEVELOR	M2, ROW= SPACING=	.0048, ROWMX 878./ 45	= .0194 ROWMN ./ 439. MMS		
REQUIRED	REINF. STEEL S	SUMMARY :				·1
SECTION	REINF STEEL	and the second		(+VE/-VE)	LOAD (+VE	/-VE
(MM)	(SQ. MI	1)		S-MET)		
0. 317.	1197./	528. 470	76./	35. 31.	22/	28 28
633.	1007./ 821./	470. 412.	65./ 54./		22/ 22/	1.40
950	640./	354	42.7	24	22/	28
1267.	462./	297	31./	20	22/	
1583.	287./	240	19./	16	22/	
1900.	116./	188.	8./	13.	22/	24

239.

411.

587.

767.

950.

5./ 49./

110./ 172./ 234:/

2217.

2533.

2850.

3167.

3483.

3800.

C:\Box Culvert\B4_643.doc Page 9 of 26

0./

3./

7./

12./

16./

16.

39.

50.

61.

24 29

29

14/

15/

15/

15/

15/

BEAM NO. 6 DESIGN RESULTS - SHEAR

ΑT	START	SUPPORT -	Vu= 36.06 KNS	Vc= 153.28	KNS V	/s≔	.00 KNS
4.74	4		STIRRUPS ARE NOT	REQUIRED.		1	
AΤ	END	SUPPORT -	Vu= 36.06 KNS	Vc= 153.28	KNS V	/s≃	.00 KNS
	1.1		STIRRUPS ARE NOT	REQUIRED,			

2J	3799X 999X 274	<u>11</u> J
6No16 H 186. 0.TO 2357	2No20 H 88.17	81.TO 3800
3#20 000000	000 3#20 000000	000

BEAM NO. 7 DESIGN RESULTS - FLEXURE

Ц.	F1/4 ~~	3800.	MM F.A	- 4	L4. FC	<i>-</i>	25.	MPA.	SIZE -	1000.	Х	275.	MMS
- 4	tage 2009	30 to 15	autoti et	14 S 1 C 2	3.5			1800	or the state of	J. 8 J.		6.7.1	200
-	ER CONTE	rim # c	1170	ם מס				100			100		
سا	EVEL	HETC	HT	BAR I	LNEO		FROM	100	TO			ANC	1OR
		(MM	[]		100	100	(MM)	277	(MM)	1	200	STA	END

1	1	3800. AS	YES	YES
	1 1 7 	CRITICAL POS MOMENT= 43.89 KN-MET AT 0.MM, LC	DAD 17	1
	L.	REQD STEEL= 638.MM2, ROW= .0033, ROWMX= .0194 ROWMN=	0033	1
		MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 177. MMS	in a second	1 .
-	L	BASIC/REQD. DEVELOPMENT LENGTH = 177./ 337. MMS		1
				100

). 	2 10 10 10 10 10 10 10 10 10 10 10 10 10	YES
	CRITICAL NEG MOMENT= 51.30 KN-MET AT 0.MM, LOAD 29	Latin. Hara
ł	REQD STEEL= 749 MM2, ROW= .0039, ROWMX= .0194 ROWMN= .0033	1
-	MAX/MIN/ACTUAL BAR SPACING= 886./ 37./ 148. MMS	1 1 1
1-	BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS	

REQUIRED REINF. STEEL SUMMARY :

SECTION	REINF STEET		MOMENTS (+V		LOAD (+VE/-V	E)
(MM)	(SQ. MN	1)	(KNS-M	ET)		
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	. 44
2217.	51./	54.	3./	4.	17/ 27	
2533.	89./	146.	6./	10.	16/ 27	
2850.	195./	239.	13./	16.	22/ 27	., ¹
3167.	303./	334.	20./	22.	22/ 27	7

(MM)			IM)		-MET)	LOAD (+VE	
3483 3800		413./ 523./	429. 525.	27./ 35./		22 22	
	BEAM	и О.	7 DES	IGN RES	ULTS	- SHEAR	
100	100	ST	TIRRUPS ARE	KNS Vc= 153 NOT REQUIRED KNS Vc= 153	r. Barrey		33.1 Sec. 3
				NOT REQUIRED			
_	3J			99X 999X 274_			16
6No12	н 184.			3 3 4 4 5 5 6 6 7 4 6 7 4 6 7			
		********					*******
7#12	0000000		7#12	0000000		#12	0000
44.5	2 P. C. C. B. C. B.	1 1 1	1 1 1 1 2		and the second second second		
	00000			000000		000	000
LEVEL	000000 B E A M 3800. M	NO. M FY -	9 D È S	I G N R E S - 25. MPA, FROM	SIZE - 1	- FLEXUF	E 25. MMS ANCHOR
	000000 B E A M 3800. M HEIGH	INO. MFY-	9 D E S 414. FC	I G N R E S - 25. MPA,	SIZE - 1	- FLEXUF	E 25. MMS ANCHOR
	000000 B E A M 3800. M HEIGH (MM)	INO. MFY-	9 D E S 414. FC	IGNRES - 25. MPA, FROM (MM)	SIZE - 1	- FLEXUF	E 25. MMS ANCHOR
LEVEL	BEAM 3800. M HEIGH (MM) 86 RITICAL H REQD STEEN	NO. M FY - T B O. M FY - T B O. M BO	9 DES 414. FC AR INFO - 16MM - 16MM MT= 34 MM2, ROW= R SPACING=	IGNRES - 25. MPA, FROM (MM)	TO (MM) 3800 T 2533.1 0194 1	- FLEXUS .000. X 3	E 25. MMS ANCHOR TA END 10 YES
LEVEL	BEAM 3800. M HEIGH (MM) 86 RITICAL H REQD STEEN	NO. M FY - T B O. M FY - T B O. M FY - T B O. DO M FY - M	9 DES 414. FC AR INFO - 16MM - 16MM MT= 34 MM2, ROW= R SPACING=	I G N R E S - 25. MPA, FROM (MM) 31302 KN-MET A .0033, ROWMX. 882./ 41 IGTH = 316./	TO (MM) 3800 T 2533.1 0194 1	- FLEXUS .000. X 3 .000. X	E 25. MMS ANCHOR TA END 10 YES
LEVEL 1 R M E C F	BEAM 3800. M 3800. M HEIGH (MM) 86 CRITICAL IN REQD STEEL SAX/MIN/AC CRITICAL IN REQD STEEL MAX/MIN/AC	N O. M FY - T B C A C A C B NEG MOME L 1043 C TUAL BA	9 DES 414. FC AR INFO - 16MM NT= 34 MM2, ROW= R SPACING= OPMENT LEN 1 - 12MM NT= 89 NM2, ROW= R SPACING= R SPACING=	I G N R E S - 25. MPA, FROM (MM) 31302 KN-MET A .0033, ROWMX. 882./ 41 IGTH = 316./	TO (MM) 3800 T 2533.1 = .0194 478.1 2259 T 0.1 = .0194 ./ 98.	- FLEXUR .000. X .0	E 25 MMS ANCHOR STA END O YES 20 333 (ES NO 20
LEVEL 1 R M E C F	BEAM 3800. M 3800. M HEIGH (MM) 86 CRITICAL IN REQD STEEL SAX/MIN/AC CRITICAL IN REQD STEEL MAX/MIN/AC	IN O. M FY - TT B COS MOME BOA CTUAL BA CTUAL BA CTUAL BA CTUAL BA CTUAL BA CTUAL BA	9 DES 414. FC AR INFO - 16MM NT= 34 MM2, ROW= R SPACING= OPMENT LEN 1 - 12MM NT= 89 NM2, ROW= R SPACING= R SPACING=	I G N R E S - 25. MPA, FROM (MM) 313 .02 KN-MET A .0033, ROWMX. 882./ 41 GTH = 316./ 0. .75 KN-MET A = .0043, ROWMX.	TO (MM) 3800 T 2533.1 = .0194 478.1 2259 T 0.1 = .0194 ./ 98.	- FLEXUR .000. X 3 .000. X 3 .000. X 3 .000 .000 .000 .000 .000 .000 .000 .0	E 25 MMS ANCHOR STA END O YES 20 333 (ES NO 20

		CL(+VE/-VE) 1M)	MOMENTS (+V (KNS-M		LOAD (+VE	/-VE)
0.	0./		0./	90.	0/	20
317.	0./	773.	0./	65.	0/	20 -
633.	0./	528.	0./	45.	0/	27
950.	121./		10./	32.	30/	27
1267.	245./	230.	21./	20.		27
1583.	335./	105	29./	9.	30/	27
1900.	384 /	0.	33./	0.	30/	27 .
2217.		o.	33./	0.	30/	0 -
	399./	0.	34./.		20/	0
2850.	384./	49.	33./	4.		28
3167.	307./		26./	11.		28
3483.	200./		17./	28.		14
3800.	153./	665.	13./	56.	27/	14
AT START		ı= 77.01 KN	s Vc= 194.8	io kns v	s= .00	KNS
5J	SUPPORT - Vi S1 31 31 86.T313	1= 82.24 KN PIRRUPS ARE N 3799X	OT REQUIRED. 999X 324 4No1	.6 н 239.	2213.TO 38	26J
5J	SUPPORT - Vi S1 31 31 86.T313	1= 82.24 KN PIRRUPS ARE N 3799X TO 3800	S Vc= 194.8 OT REQUIRED. 999X 324 4No1	.6 н 239.	2213.TO 38	26J

	to decide the					The second
s, i	2	239.	4 - 16MM		782. YES	YES
١.		distribute to the				- 1. T. J. J.
4	1.00		after the first of			10 11 11 11 11

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

(SQ. MM 257./ .145./ .034./ 923./ 813./ 703./ 594./ 486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	(+VE/-VE)) 214. 251. 288. 326. 364. 403. 443. 484. 525. 585. 663. 743. 823. 0 DESI = 136.00 KB OVIDE 12 MM = 139.11 KB OVIDE 12 MM	BARS AT 117	18. 22. 25. 28. 31. 34. 38. 41. 45. 50. 56. 62. 69. ULTS-SI 1.80 KNS Vs=7. MM C/C FC	14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 23 30/ 23 30/ 23 30/ 23 HEAR = 00 KNS OR 782. MM = .00 KNS
(SQ. MM 257./ .145./ .034./ 923./ 813./ 703./ 594./ 486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	214. 251. 288. 326. 364. 403. 443. 484. 525. 585. 663. 743. 823. 0 D E S I = 136.00 KB DVIDE 12 MM = 139.11 KB	(KNS 103./ 95./ 86./ 77./ 68./ 59./ 50./ 41./ 32./ 23./ 24./ 9./ 6./ GN RES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	18. 22. 25. 28. 31. 34. 38. 41. 45. 50. 56. 62. 69. ULTS-SI 1.80 KNS Vs=7. MM C/C FC	14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 23 30/ 23 30/ 23 HEAR = 00 KNS OR 782. MM = .00 KNS
.145./ .034./ .923./ .813./ .703./ .594./ .486./ .378./ .271./ .164./ .107./ .74./ .N. O. 1 .DRT - Vu= .PRO .DRT - Vu= .PRO	251. 288. 326. 364. 403. 443. 484. 525. 585. 663. 743. 823. 0 DESI 136.00 KB OVIDE 12 MM 139.11 KB OVIDE 12 MM	95./ 86./ 77./ 68./ 59./ 50./ 41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	22. 25. 28. 31. 34. 38. 41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
.145./ .034./ .923./ .813./ .703./ .594./ .486./ .378./ .271./ .164./ .107./ .74./ .N. O. 1 .DRT - Vu= .PRO .DRT - Vu= .PRO	251. 288. 326. 364. 403. 443. 484. 525. 585. 663. 743. 823. 0 DESI 136.00 KB OVIDE 12 MM 139.11 KB OVIDE 12 MM	95./ 86./ 77./ 68./ 59./ 50./ 41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	22. 25. 28. 31. 34. 38. 41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
923./ 813./ 703./ 594./ 486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	326. 364. 403. 443. 484. 525. 585. 663. 743. 823. 0 DEST = 136.00 KB DVIDE 12 MM = 139.11 KB DVIDE 12 MM	86./ 77./ 68./ 59./ 50./ 41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	25. 28. 31. 34. 38. 41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
923./ 813./ 703./ 594./ 486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu=	326. 364. 403. 443. 484. 525. 585. 663. 743. 823. 0 DESI = 136.00 KB DVIDE 12 MM = 139.11 KB DVIDE 12 MM	77./ 68./ 59./ 50./ 41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	28. 31. 34. 38. 41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
813./ 703./ 594./ 486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	364. 403. 443. 484. 525. 585. 663. 743. 823. 0 DESI = 136.00 Ki DVIDE 12 MM = 139.11 Ki DVIDE 12 MM	68./ 59./ 50./ 41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	31. 34. 38. 41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 29 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
703./ 594./ 486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	403. 443. 484. 525. 585. 663. 743. 823. 0 DEST = 136.00 KD DVIDE 12 MM = 139.11 KD DVIDE 12 MM	59./ 50./ 41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	34. 38. 41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 23 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
594./ 486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	443. 484. 525. 585. 663. 743. 823. 0 DESI = 136.00 KI DVIDE 12 MM = 139.11 KI DVIDE 12 MM	50./ 41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	38. 41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 23 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
486./ 378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	484. 525. 585. 663. 743. 823. 0 DESI = 136.00 KD DVIDE 12 MM = 139.11 KD DVIDE 12 MM	41./ 32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	41. 45. 50. 56. 62. 69. U L T S - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 29 14/ 23 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
378./ 271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	525. 585. 663. 743. 823. 0 DESI = 136.00 KD DVIDE 12 MM = 139.11 KD DVIDE 12 MM	32./ 23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	45. 50. 56. 62. 69. ULTS - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 29 14/ 23 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
271./ 164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	585. 663. 743. 823. 0 DESI = 136.00 KI DVIDE 12 MM = 139.11 KI	23./ 14./ 9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	50. 56. 62. 69. ULTS - SH 1.80 KNS Vs= 7. MM C/C FC	14/ 23 14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS
164./ 107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	663. 743. 823. 0 DESI = 136.00 KI DVIDE 12 MM = 139.11 KI DVIDE 12 MM	14./ 9./ 6./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	56. 62. 69. ULTS - SI 1.80 KNS Vs= 7. MM C/C FO 1.80 KNS Vs= 7. MM C/C FO	14/ 23 30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS OR 782. MM
107./ 74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	743. 823. 0 DEST = 136.00 KD DVIDE 12 MM = 139.11 KD DVIDE 12 MM	9./ 6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	62. 69. ULTS - SH 1.80 KNS Vs= 7. MM C/C FC 1.80 KNS Vs= 7. MM C/C FC	30/ 23 30/ 23 HEAR = .00 KNS OR 782. MM = .00 KNS OR 782. MM
74./ N O. 1 DRT - Vu= PRO DRT - Vu= PRO	823. 0 DESI = 136.00 KN DVIDE 12 MM = 139.11 KN DVIDE 12 MM	6./ GNRES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	69. ULTS - SH 1.80 KNS Vs= 7. MM C/CFC 1.80 KNS Vs= 7. MM C/CFC	30/ 23 HEAR = .00 KNS DR 782. MM = .00 KNS DR 782. MM
N O. 1 ORT - Vu= PRO ORT - Vu= PRO	.0 DESI = 136.00 KI DVIDE 12 MM = 139.11 KI DVIDE 12 MM	GN RES NS VC= 194 BARS AT 117 NS VC= 194 BARS AT 117	U L T S - SH 1.80 KNS Vs= 7. MM C/C FC 1.80 KNS Vs= 7. MM C/C FC	HEAR = .00 KNS DR 782. MM = .00 KNS DR 782. MM
PRO	OVIDE 12 MM	BARS AT 117	7. MM C/C FO	OR 782. MM
PRO	OVIDE 12 MM	BARS AT 117	7. MM C/C FO	OR 782. MM
0.TO 78	32 			8*12c/c117
	4#16	h y u jaky i ja u telulu		
		00000000		000000000
NO. 1	ll DESI	GN RES	ULTS-	FLEXURE
M FY -	414. FC -	25. MPA,	SIZE - 1000	. x 325. MMS
	R INFO	FROM (MM)	TO (MM)	ANCHOR STA END
. 4 -	- 16MM	0.	782.	YES YES
	M FY - T BA T 4 POS MOMEN = 804	4#16 00 00 	4#16 0000000000000000000000000000000000	0000 4#16

Page 13 of 26 //-/7/

REQD S'	reel= 1007. N/ACTUAL BAR	MM2, ROW= R SPACING=	.76 KN-MET AT .0042, ROWMX= 886./ 37./ GTH = 177./	.0194 ROW	MN= .0033 S	I	
EQUIRED R	EINF. STEEL	SUMMARY :					
SECTION (MM)	REINF STEE (SQ. M	CL(+VE/-VE) MM)		•	LOAD(+VE	/-VE)	
0.	74./	823.	6./	69.	30/ :	23	
65		839.	5./	70.	A 17.	23	
130	48./		4./		· ·	23	
195.		871.	3./	The second second	30/	and the second second	
261. 326.		888. 906.	2./ 1./	74. 76.	30/		
326.	and the second s	906.	0./		30/ 1 0/ 1		
456.	0./	943.	0./	79	0/ :		
521.	0./	963	0./	80	0/		
586	0./	983	0./		0/ :	23	e seine.
652	0./	1003.	0./	83.	0/ :		
717.	0./	1024.	0./	85.	0/		
782.		1046.	0./	87,	0/ :	43	
	ST SUPPORT - Vu ST	TIRRUPS ARE 1= 68.19 TIRRUPS ARE	KNS Vc= 194. E NOT REQUIRED. KNS Vc= 194. E NOT REQUIRED.	80 KNS V			
7J	ST SUPPORT - Vu ST ST	TIRRUPS ARE 1= 68.19 TIRRUPS ARE 78	E NOT REQUIRED. KNS Vc= 194.	80 KNS V	s= .00	KNS 8J	- I
AT END 7J 4No16 H 28	ST SUPPORT - Vu ST 6. 0.TO 7	TIRRUPS ARE 1= 68.19 TIRRUPS ARE 78	E NOT REQUIRED. KNS Vc= 194. E NOT REQUIRED. B1X 999X 324	80 KNS V	.00 .00 .0000000	KNS 8J_	
AT END 7J 4No16 H 28 9#12 ooo	ST SUPPORT - Vu ST 6. 0.TO 7	TIRRUPS ARE	E NOT REQUIRED. KNS Vc= 194. E NOT REQUIRED. B1X 999X 324 OOOOOOOOO OOOO	80 KNS V	9= .00 000000002 0000	KNS 8J_	
AT END 7J 4No16 H 28 9#12 ooo	ST SUPPORT - Vu ST 6. 0.TO 7	TIRRUPS ARE	E NOT REQUIRED. KNS Vc= 194. E NOT REQUIRED. B1X 999X 324 OOOOOOOOO	80 KNS V	9= .00 000000002 0000	KNS 8J_	
7J 4No16 H 28 9#12 000 B E LEN - 78	ST SUPPORT - Vu ST ST SUPPORT - Vu ST	TIRRUPS ARE	E NOT REQUIRED. KNS Vc= 194. E NOT REQUIRED. B1X 999X 324 OOOOOOOOO OOOO I G N R E S U - 25. MPA, S	80 KNS V	9= .00 000000002 0000	KNS 8J DO MMS MMS	
7J 4No16 H 28 9#12 000 B E LEN - 78	ST SUPPORT - VU ST 6. 0.TO 7 6. 0.TO 7 2. MM FY - EIGHT BA (MM)	TIRRUPS ARE	E NOT REQUIRED. KNS Vc= 194. E NOT REQUIRED. B1X 999X 324 OOOOOOOO OOOO I G N R E S U 25. MPA, S FROM	80 KNS V	0000000002 00000 FLEXURE 0. X 325. ANCI	KNS 8J MMS HOR END	

	EINF. STEEL S					
ECTION MM)	REINF STEEI (SQ. MR	L(+VE/-VE) M)	MOMENTS (+7 (-2NX)	/E/~VE) /ET)	LOAD(+VE/	-VE)
0.	0./	1046.	0./	87.	0/ 2	3
65.		1002.	0./	83.	0/ 2	3
130.	0./	960.	0./	80.	0/ 2	
195.	0./	917.	0./	77.	0/ 2	
261.	0./		0./	73.	0/ 2	
326.	0./	835.	0./	70.		
391.		795.	0.7	67.	0/ 2	
456.		763.		64. 62.	0/ 2	
521. 586.	0./	741. 719.	0./	62. 61	0/ 2	
652.	0.7	698	0.7	59.	0/ 2	4
717.			0./	57.	0/ 2	4
782.	0./	677. 674.	A5.4	57.	0/ 1	4
AT END	ST SUPPORT - Vu ST	IRRUPS ARE 1 47.81 KI IRRUPS ARE 1 781	NS VC= 194 NOT REQUIRED. NS VC= 194 NOT REQUIRED. X 999X 324	80 KNS V	s= .00	0.1
9#12	00000		0000000		00000000) o
В	EAM NO.	13 DESI	GN RESU	JLTS-	FLEXURE	
LEN - 7	82. MM FY -	414. FC -	25. MPA, S	SIZE - 100		
LEVEL	HEIGHT BA	AR INFO	FROM (MM)	TO (MM)	ANC! STA	ior End
					YES	VDC
1	86. 4	- 16MM	0.	782.	163	YES
REQD MAX/M	CAL POS MOMEN STEEL= 804 IN/ACTUAL BA	NT= 40.3 .MM2, ROW= R SPACING=	0. 34 KN-MET AT 0033, ROWMX= 882./ 41., PH = 316./	782.MM, .0194 ROW / 294.MM	LOAD 29 MMN= .0033	l I
REQD MAX/M BASIC	CAL POS MOMEN STEEL= 804 IN/ACTUAL BA	NT= 40.3 .MM2, ROW= R SPACING=	34 KN-MET AT 0033, ROWMX= 882./ 41.,	782.MM, .0194 ROW / 294.MM	LOAD 29 MMN= .0033	

SECTION REINF STEEL(+VE/-VE) MOMENTS(+VE/-VE) LOAD(+VE/-V (MM) (SQ. MM) (KNS-MET)	7E)
0. 0./ 674. 0./ 57. 0/ 14	
65. 0./ 639. 0./ 54. 0/ 14	٠.,
130. 0./ 605. 0./ 51, 0/ 14	
195. 0./ 571. 0./ 48. 0/ 14	
261. 10./ 538. 1./ 46. 22/ 14	
326. 68./ 506. 6./ 43. 22/ 14	-
391. 126./ 474. 11./ 40. 22/ 14	
456. 184./ 443. 16./ 38. 22/ 14	
521. 241./ 412. 21./ 35. 22/ 14	
586. 299./ 382. 26./ 33. 22/ 14	
652. 356./ 352. 30./ 30. 22/ 14	
717. 413./ 324. 413./ 28. 29/ 14	
782. 474./ 295. 40./ 25. 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

9.5	781X 999X 324	103	<u> </u>
4No16cHc286. 0.TO 782		8*12c/c117	
			=== :
[] []	0000 I	0000	į
4#16	4#16	4#16 	
<u> </u>			

BEAM NO. 14 DESIGN RESULTS - FLEXURE

LEN - 782. MM	FY -	414.	FC	 25. MP	A, SI	3E -	1000.	Х	325.	MMS
	and the second of the second	4.4		 				4.0		

T	-FAFF :	HEIGHT	BAR	INFO	FROM	TO	100	ANC	HOR
	护法操制不断	(MM)	s sandila		(MM)	(MM)		STA	END
	Per III De Hill	at the second				de la			32.5
Ü				as the other	1 11 14 14	 1			74 T. J.
	1	84.	15 -	12MM	0.	782		YES	YES
1						 			1 :

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

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

REQUIRED REINF. STEEL SUMMARY :

SECTION REINF ST	EEL(+VE/-VE)	MOMENTS (+VE	:/-VE)	LOAD(+VE/-VE)
(MM) (SQ.	MM)	(KNS-ME	et)	
		ewithi <u>l</u> edition	4_4	
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. 3	142./	0.	23/ 0

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

10J	781X 999X 324	11J
15No12cHc284. 0.TO 782		8*12c/c117
 	 0000 4#16 000000000000000000	

15 DESIGN RESULTS - FLEXURE

FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS LEVEL HEIGHT BAR INFO FROM OT ANCHOR STA END (MM)

(MM)

	1.	88. 4 - 20MM 0. 780. YES	ŒS
 		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	

(MM)

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)		L(+VE/-VE) M)	MOMENTS(+V (KNS-M		LOAD(+VE/-VE)
0.	1297./	0.	106./	0.	23/ 0
65.	1215./	0.	100./	0.	23/ 0 .
130.	1133./	0.	94./	0.	23/ 0 0
195.	1051./	0.	87 /	0.	23/ 0
260.	969./	0.	81./	0.	23/ 0
325.	888./	0.	74./	0.	23/ 0
390.	806./	0.	68 /	0.	23/ 0
455.	724./	0.	61./	0.	23/ 0
520.	643./	23.	54./	2.	23/ 20
585.	562./	58.	48./	5.	23/ 20
650.	480./	93.	41./	8.	23/ 20
715.	403./	129.	34./	11.	28/ 20
780.	328./	166.	28./	14.	28/ 20

BEAM NO. 15 DESTEN 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

115	779X 999X 324	12J
4No20cHc288.1 0.TO 7801		8*12c/c117
4#20	0000 4#16 0000	0000 4#16 0000

BEAM NO. 16 DESIGN RESULTS - FLEXURE

LEN ~	782. MM FY	- 414. FC -	25. MPA,	SIZE - 1000.	X 325. MMS
LEVEL	HEIGHT	BAR INFO	FROM	то	ANCHOR
tu watin ka 1996. Natahari 1996	(MM)		(MM)	(MM)	STA END
1	86.	4 - 16MM	0.	782.	YES YES

```
CRITICAL POS MOMENT= 28.05 KN-MET AT 782.MM, LOAD 28 I
   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
   239. 4 - 16MM
                                            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
REQUIRED REINF. STEEL SUMMARY :
          REINF STEEL (+VE/-VE) MOMENTS (+VE/-VE) LOAD (+VE/-VE)
SECTION
        (SQ. MM)
                                 (KNS-MET )
( MM )
                     166.
                                  28./
           328./
                                              14. 28/ 20
                                 25./
                      176.
                                              15.
             288.7
                                                       28/
  65.
                                                       28/ 20
                      187.
             248./
                                   21./
                                              16.
 130.
            207./
                                                       28/
                       199.
                                   18./
                                              17.
 196
            167./
 261.
                       210.
                                    14 /
                                              18.
                                                       28/ 20
                    223.
                                                       28/
             125./
                                              19.
 326.
                                   11./
             84./
                                              20.
 391.
                       236.
                                    7.1
                                                       28/
                                    4./
 456.
              42./
                       249.
                                              21.
                                                           20
 522.
               0./
                       263.
                                    0./
                                              23.
                                              24.
                                                       0/ 14
  587.
               0./
                       281.
                                    0./
                                                        0/ 14
 652
              0./
                       309.
                                    0./
                                              26.
                                                       0/ 14
                                    0./
                       337.
  717.
               0./
                                              29.
                                                       0/ 14
  782
               0./
                       365.
                                    0 /
                                              31.
     BEAM NO. 16 DESIGN RESULTS - SHEAR
 AT START SUPPORT - Vu= 53.55 KNS Vc= 194.80 KNS Vs= .00 KNS
                 STIRRUPS ARE NOT REQUIRED.
         SUPPORT - Vu= 56.67 KNS Vc= 194.80 KNS Vs= .00 KNS
 AT END
                  STIRRUPS ARE NOT REQUIRED.
                           782X 999X 324
4No16 H 286. 0.TO 782
                               0000
                                                       0000
       0000
4#16
                        4#16
                                              | 4#16
                               0000
                                                        0000
        0000
       BEAM NO. 17 DESIGN RESULTS - FLEXURE
       782. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS
                   BAR INFO
                                 FROM
                                             TO
                                                         ANCHOR
 LEVEL
        HETGHT
          (MM)
                                 (MM)
                                             (MM)
                                                         STA END
```

1	239. 4 -	16MM	0.	782.	YES YE	s
REQD ST	L NEG MOMENT= EEL= 804.MM /ACTUAL BAR S	2, ROW= 0	033, ROWMX=	.0194 ROWMN=	AD 15 .0033	
BASIC/R	EQD. DEVELOPM					• •
REQUIRED RE	INF. STEEL SU	MMARY :				
	REINF STEEL (VE/-VE) L	OAD(+VE/-V	E) .
(MM)	(SQ. MM)	(Kns-	MET)		
0.	0./	365.	0./		0/ 14	
65. 130.	0./	363. 361.	0./ 0./	31. 31.	0/ 14 0/ 14	
196.	0.7	359.	0./	31.		
261.	0 /	358.	0./	31.	0/ 14	
326.	0./	357.	0./	31.	0/ 14	
391.	0./	357.	0./	31.	0/ 14	4.1.5
456. 522.	0 /	357. 358.	0./	31.	0/ 14	
587.	A CONTRACTOR OF THE CONTRACTOR	360.	0./	31. 31.	0/ 14	1
652.		362.	0./		0/ 15	
717.	0./	371.	0./	32.	0/ 15	
782.	0./	380.	0./	32.	0/ 15	
ВЕ	AM NO. 17	DESI	GN RESU	LTS - SHE	AR	
AT START S	UPPORT - Vu=				.00 KN	s
Δ ጥ ΓΝΙΌ -	STIR UPPORT - Vu=		OT REQUIRED.		00 691	
AT LIND 3			OT REQUIRED.		.00 ки	3
13J		782X	999X 324		1	4 J

4No16 H 239	0.TO 782					·. · ·
	<u>North Community paid</u>	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				* *.
		is Mari		zii.		
000	o 1		0000	L I I	0000	
4#16		4#16		4#16		
		1		<u>i i</u> i		
ВЕ	AM NO. 18	DESI	GN RESU	ILTS - FL	EXURE	
	有效,但是是不可能的					
LEN - 782	. MM FY - 4	14. FC -	25. MPA, S	IZE - 1000.	х 325. мм	S
	IGHT BAR MM)	INFO	FROM (MM)	TO (MM)	ANCHOR STA EN	1
1	86. 4	- 16MM	0.	782.	YES	- YES
 CRITICA	I POS MOMENTE	20.00	ENI MEM AM			1.35.
	H LOS MOMENT-	22.09	VM-MP1 AT	782.MM, LO	AD 22	1. 1.
MAX/MIN	EEL= 804.MM /ACTUAL BAR S	2, ROW= .0 PACING=	033, ROWMX= 882./ 41./	.0194 ROWMN= 294. MMS	.0033	
MAX/MIN	EEL= 804.MM	2, ROW= .0 PACING=	033, ROWMX= 882./ 41./	.0194 ROWMN= 294. MMS	.0033 	

2 2	39. 4 -	16MM	0.	782.	YES YES	\$
REQD STER MAX/MIN/A	EL= 804.M ACTUAL BAR	M2, ROW= .0 SPACING=	5 KN-MET AT 0033, ROWMX= . 882./ 41./ 4 = 316./	.0194 ROWMN 294 MMS	= .0033	
				·		
QUIRED REI	NF. STEEL S	UMMARY :				
CTION 1	REINF STEEL	.(+VE/-VE)	Moments (+	/E/-VE)	LOAD(+VE/-VE	Ξ)
MM)	(SQ, MM	()	(KNS-0	MET)		
0.	0./	380.	0./	32	0/ 15	
65.		358.	0./	31.	0/ 15	ŊŻ.
130	0./	336	0./	29.	0/ 15	
196. 261.	0./ 9./	315. 294.	0./	27. 25.	0/ 15 22/ 15	
326.		274.	4.7	23.	22/ 15	4.5
391.	74./	260.	6./	22.	22/ 28	
456.	105./		9./	21.	22/ 28	
522.	136./		12./	20.	22/ 28	
587. 652.	167./ 198./	225. 214		19. 18.	22/ 28 22/ 28	
717		204.	20./	18.	22/ 28	
782.	257./	194.	22./	17.	22/ 28	
AT END SU	PPORT - Vu	IRRUPS ARE 1 = 46.93 Ki	NOT REQUIRED. NS VC= 194. NOT REQUIRED.	80 KNS Vs=	.00 KN	
	PPORT - Vu- ST	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1	NOT REQUIRED. NS VC= 194. NOT REQUIRED.	80 KNS Vs=		
	PPORT - Vu- ST	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1	NOT REQUIRED. NS Vc= 194.	80 KNS Vs=		S
14J	PPORT - Vu	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324	80 KNS Vs=	.00 KN	S
14J No16 H 286.	OPPORT - Vursing ST	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782:	NOT REQUIRED. NS VC= 194. NOT REQUIRED. X 999X 324	80 KNS Vs=	.00 KN	S
14J No16 H 286.	OPPORT - Vursing ST	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782:	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324	80 KNS Vs=	.00 KN	S
14J No16 H 286.	OPPORT - Vursing ST	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782:	NOT REQUIRED. NS VC= 194. NOT REQUIRED. X 999X 324	80 KNS Vs=	.00 KN	S
14J No16 H 286.	OPPORT - Vursing ST	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782:	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324	80 KNS Vs=	.00 KN	S
14J No16 H 286.	OPPORT - Vursing ST	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 7823	NOT REQUIRED. NS VC= 194. NOT REQUIRED. X 999X 324	80 KNS Vs	.00 KN	S
14J No16 H 286.	OPPORT - Vurstrand	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782:	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324	80 KNS Vs=	.00 KN	S
14J No16 H 286.	OPPORT - Vurstrand	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 7823	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324	80 KNS Vs	.00 KN	S
14J No16 H 286.	OPPORT - Vurstrand	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 7823	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324	80 KNS Vs	.00 KN	S
14J No16 H 286.	OPPORT - Vurstrand	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 7823	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324	80 KNS Vs	.00 KN	S
14J No16 H 286. #16 oood	OPPORT Vurst	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 7822 82	NOT REQUIRED. NOT REQUIRED. X 999X 324 OOOO	80 KNS VS=	.00 KN	S
14J No16 H 286. 0000 #16 0000	OPPORT - Vur ST O.TO 7	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782: 82 1	NOT REQUIRED. NS VC= 194. NOT REQUIRED. X 999X 324 OOOO OOOO	80 KNS VS=	OOOO COOO	
14J No16 H 286. 0000 #16 0000	OPPORT - Vur ST O.TO 7	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782: 82 1	NOT REQUIRED. NOT REQUIRED. X 999X 324 OOOO	80 KNS VS=	OOOO COOO	
14J No16 H 286. #16 0000 #16	O.TO 7	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782: 82 1	NOT REQUIRED. NS VC= 194. NOT REQUIRED. X 999X 324 OOOO OOOO	80 KNS VS=	OOOO COOO	
14J No16 H 286. 10000 116 0000 B E F EN - 782. EVEL HE:	O.TO 7	IRRUPS ARE 1 = 46.93 Ki IRRUPS ARE 1 782: 82 1	NOT REQUIRED. NS Vc= 194. NOT REQUIRED. X 999X 324 COOO COOO COOO COOO FROM	80 KNS VS=	OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO	

```
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 |
         239.
                    4 - 16MM
                                                     739
    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
            REINF STEEL (+VE/-VE)
                                        MOMENTS (+VE/-VE) LOAD (+VE/-VE)
 ( MM )
               (SQ. MM )
                                       (KNS-MET )
                                         22./
     0. .
                 257./ 194.
                                                     17
                                                                22/ 28
                        154.
    65.
                 322./
                                         28./
                                                    13.
                                                              22/ 28
                                        33./
                                                    10.
   130.
                 386./
                           114.
                                                                22/ 28
                450./
   196
                            75
                                          38./
                                                     6.
   261.
                                       44./
                                                     · 3.
                 514./
                           37.
                                                                22/
                           0.
   326.
                                        49./
                 578./
   391.
                           0.
                 642./
                                                     0.
                                          54./
                                                                221
                                                    ő.
   456.
                 711./
                            . 0.
                                          60./
                                                               17/
                           0.
   522.
                782./
                                          66./
                                                                17/
                           €0.
                                                                17/ : 0
   587.
                 853./
                                          71./
   652.
                924./
                          0.
                                          77./
                                                     0.
                                                                17/ 0
17/ 0
17/ 0
   717.
                995./
                             0.
                                          83./
                                                       0.
                                          88./
   782.
               1066./
                             0.
                                                       Ο.
        BEAM NO. 19 DESIGN RESULTS - SHEAR
  AT START SUPPORT - Vu=
                           91.31 KNS VC= 194.80 KNS Vs=
                    PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM
            SUPPORT - Vu= 88.20 KNS Vc= 194.80 KNS Vs=
                                                                .00 KNS
                      PROVIDE 12 MM BARS AT 117. MM C/C FOR 782. MM
                               782X 999X 324
|10No12cHc284.| 0.TO 782|
 4#16
                          1 4#16
                                                    1 110#12
      000000000
                                000000000
                                                           000000000
        BEAM NO. 20 DESIGN RESULTS - FLEXURE
        780. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 325. MMS
          HEIGHT
                      BAR INFO
 LEVEL
                                      FROM
                                                    TO
                                                                  ANCHOR
            (MM)
                                      (MM)
                                                    (MM)
                                                                 STA END
```

REQD S1	AL POS MOMENT TEEL= 1410.M N/ACTUAL BAR S REQD. DEVELOP	= 119.45 42, ROW= .00 SPACING= 8	58, ROWMX= 86./ 37./	0.MM, LC .0194 ROWMN= 74. MMS	= .0033	
2	239. 4 -	16MM	9.	780.	NO Y	ŒS
REQD S'	AL NEG MOMENT TEEL= 804.MI N/ACTUAL BAR REQD. DEVELOPI	M2, ROW= .00 SPACING= 8)33, ROWMX= 382./ 41./	.0194 ROWMN= 294. MMS	= .0033	
EQUIRED RI	einf. Steel s	JMMARY :				
ECTION	REINF STEEL	 (+VE/-VE)	MOMENTS (+	VE/-VE)	LOAD(+VE/-	-VE)
MM)	(SQ. MM	`)	(KNS-			
			119./	0.	22/ (ገ . ገ
0. 65.	1467./ 1386./	0.	119./	0.	* * * * * * * * * * * * * * * * * * *)
130.	1305./	Ŏ.	107./	o.		j
195.	1225./	0.	101./	0.	22/)
260.	1144./	0.	94./	0.	22/ ()
325.	1063./	0.	88./	0.	22/	0
390.	983./	0.	82./	0.	22/ (
455	902./	0.	75./	0.	22/ (
520.	822./	22.		2.	22/ 1	
585.	822./ 742./ 661./	58.	62./	5. 8.	22/ 1	5
650	661./	95.	56./	8.	22/ 1 22/ 1	5
715.	581./	132.	49./		- ZZ/ / L	J
780.	501./	170.	43./	15.	22/ 1	3
ВЕ	AM NO. 2	ODESI	GN RESU	JLTS - SH	EAR	
ለመ ደጥስውጥ	SUPPORT - Vu=	97 03 KN	S Vc= 194	80 KNS Ve=	00	KNS
AL STAKE	PRO	VIDE 12 MM	BARS AT 117.	MM C/C FC	R 780. M	M
AT END	SUPPORT - Vu=	100.12 KN	S Vc= 194.	.80 KNS Vs=	.00	KNS
	PRC	VIDE 12 MM	BARS AT 117.	. MM C/C FC	R 780. M	M
16J		779x	999X 324			17J
 3No12cHc28	34. [0. TO 78	30			8*12c/	c117 (

			0000		0000	
3#12		4#16		4#16		
000000	0000000	0000	00000000		000000000	000
		l lavaria. Eliment				

BEAM NO. 21 DESIGN RESULTS - FLEXURE

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

HEIGHT LEVET. BAR INFO FROM TO (MM) (MM) (MM) STA END

4 - 16MM780. 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 |

239. 4 - 16MM 0. 780. YES YES 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:

						e iste
SECTION	REINF STEE	L(+VE/-VE)	MOMENTS (+V	E/-VE)	LOAD (+V	E/-VE)
(MM)	(SQ. M	1)	(KNS-M	ET)	建设路 安良	
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 .00 KNS STIRRUPS ARE NOT REQUIRED. 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	

0000	1	 4#16 	0000	4#16 4#16	0000 0000	
BEAM	NO. 22	DESI	GN RESU	LTS - F	LEXURE	
LEN - 780. MM	FY - 4	14. FC -	25. MPA, SI	ZE - 1000.	X 325. MMS	
LEVEL HEIGHT (MM)	BAR	INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1 239.	4 -	16MM		780.	YES YES	
REQD STEEL= MAX/MIN/ACT	804.MM UAL BAR S	12, ROW= . SPACING=	7 KN-MET AT 0033, ROWMX=. 882./ 41./ H = 316./	780 MM, L 0194 ROWMN 294 MMS	= .0033	
REQUIRED REINF.	STEEL SU	JMMARY :				
			MOMENITO / LI	/F./-VE)	LOAD(+VE/-VE	١
	NE STEEL (SQ. MM		(KNS-N		JOAD (13)	,
		333.	(KNS-N		0/ 21	
(MM) 0. 65.	(SQ. MM 0./ 0./	333. 326.	0./ 0./	ÆT) 28. 28.	0/ 21 0/ 21	
(MM) 0. 65. 130.	0./ 0./ 0./	333. 326. 319.	0./ 0./ 0./ 0./	28. 28. 28. 27.	0/ 21 0/ 21 0/ 21	
(MM) 0. 65. 130. 195.	(SQ. MM 0./ 0./ 0./	333. 326. 319. 313.	0./ 0./ 0./ 0./ 0./	28. 28. 28. 27.	0/ 21 0/ 21 0/ 21 0/ 21	
0. 65. 130.	(SQ. MM 0./ 0./ 0./ 0./	333. 326. 319.	0./ 0./ 0./ 0./ 0./ 0./	28. 28. 28. 27.	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21	
0. 65. 130. 195. 260.	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./	333. 326. 319. 313. 307. 302.	0./ 0./ 0./ 0./ 0./	28. 28. 27. 27. 26. 26.	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21	
(MM) 0. 65. 130. 195. 260. 325. 390. 455.	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	333. 326. 319. 313. 307. 302. 297. 293.	0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	28. 28. 27. 27. 26. 26. 25.	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520.	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301.	0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	28. 28. 27. 27. 26. 26. 25. 25.	0/ 21 0/ 16	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520. 585.	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301. 318.	0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	28. 28. 27. 27. 26. 26. 25. 25. 26. 27.	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 16	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520. 585. 650.	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301.	0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	28. 28. 27. 27. 26. 26. 25. 25. 26. 27. 29.	0/ 21 0/ 16	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520. 585.	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301. 318. 334.	0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	28. 28. 27. 27. 26. 26. 25. 25. 26. 27. 29.	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 16 0/ 16	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520. 585. 650. 715. 780.	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301. 318. 334. 352. 370.	0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	28. 28. 27. 27. 26. 25. 25. 26. 27. 29. 30. 32.	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 16 0/ 16 0/ 16 0/ 16	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520. 585. 650. 715. 780. B E A M AT START SUPPO	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301. 318. 334. 352. 370. 2 D E S 1	(KNS-N 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	4ET) 28. 28. 27. 27. 26. 25. 25. 26. 27. 29. 30. 32. L T S - Si	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 16 0/ 16 0/ 16 0/ 16	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520. 585. 650. 715. 780. B E A M AT START SUPPO	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301. 318. 352. 370. 2 D E S 1 26.11 [RRUPS ARE 29.21 [0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	4ET) 28. 28. 27. 27. 26. 25. 25. 26. 27. 29. 30. 32. L T S - Si	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 16 0/ 16 0/ 16 0/ 16	
(MM) 0. 65. 130. 195. 260. 325. 390. 455. 520. 585. 650. 715. 780. B E A M AT START SUPPO	(SQ. MM 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0.	333. 326. 319. 313. 307. 302. 297. 293. 301. 318. 334. 352. 370. 2 D E S 1 26.11 [RRUPS ARE 29.21 [RRUPS ARE	(KNS-N 0./ 0./ 0./ 0./ 0./ 0./ 0./ 0./	28. 28. 28. 27. 27. 26. 25. 25. 25. 27. 29. 30. 32. L T S - SI 80 KNS Vs=	0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 21 0/ 16 0/ 16 0/ 16 0/ 16 0/ 16	

0000 4#16	1 0000 4#16	0000
4#10	1 4410	4#16
	1	1

136. END CONC DESIGN

137. FINISH

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

**** 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 *
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2-1-4 BOX CULVERT AT CH.5+643 (2) WING WALL

Ç WING WALL WITH JOINT NUMBER à WING WALL AT CH. 4+436 ŝ Š Ŷ ¥

11-186

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STAAD-III
                     Revision 22.3a
                     Proprietary Program of
                     Research Engineers, Inc.
                             JAN 30, 2000
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                USER ID: Development Design Consultants L *
 1. STAAD SPACE
2. UNIT KNS METER
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 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
                                     3.395 0.000 3.420
                               176
13. 190
           0.000 0.000 3.848
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                                    1.940 0.000 3.848
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14. 211
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16. MEM INC
17. *HORIZONTAL MEMBER
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25. 161
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26. 181
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27. 191
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                212
                      192
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30. R
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31. 221
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32 R
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33. 241
          6
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                      248
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34 R
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35. 271
          9
                30
                      277
                             1
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36. R
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37. 291
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38 R
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39. 321
          14
                35
                       325
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40. R
          1
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41. 341
          16
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42 R
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43. 371
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44 R
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45. 391
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47 MEM PRO
48. 1
          TO
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                                                0.325 IX
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49. 21
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51. 61
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60. 2 61. 2 62. 2 63. 2 64. 2 65. 2 66. 2 67. 2 68. 2 70. 3 71. 3 72. 3 73. 3 74. 3 75. 3 76. 3 77. 3 78. 3	11 TO 21 TO 31 TO 41 TO 51 TO 61 TO 61 TO 71 TO 81 TO 91 TO 11 TO 21 TO 31 TO 41 TO 31 TO 61 TO 60 TO	210 220 229 239 248 258 268 277 287 296 306 316 325 335 344 354 364 373 383 392	PRI	YD Y		2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2	0.485 IX 0.485 IX	1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06 1E-06		
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89. <u>I</u>	LOAD 1 : EA JOINT LOAD		ESSURE				FIXED	B01	.113	
91. 2	2 FY	-20.0								
92. 3 93. 4		-19.50 -18.9								
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99. 1	· ·	-15.4								
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102.	13 FY	-13.6	8				5일 - 10일 시간 설립되었다. 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915 - 1915			
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111. 3	and the second second	-13.5 -13.0								
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122. 123.		-8.4 -7.9	. /*							
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100	300		
130	10	F34	11 00
132.	45	FY	-11.02
133.	46	FΥ	-10,56
134.	47	FΥ	-10.10
135.	48	FΥ	-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
			-6.87
141.	54	ΕY	
142.	55	FΥ	-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
			the second secon
150.	63	FY	0.00
151.	65	FY	-9.47
152.	66	FY	-9.01
153.	67	FY	-8.55
	68		
154.		FY	-8.08
155.	69	FY	-7.62
156	70	FΥ	-7.16
157.	71	FY	-6.70
158	72	FY	-6.24
159.	73		-5.78
		FY	
160.	74 🚎	FY	-5.32
161.	75	FY	-4.85
162	76	FY	-4.39
163.	77	FY	-3.93
164.	78		-3.47
		FY	
165.	7.9	FΥ	-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	FΥ	-6.07
174	90	ĒΥ	-5.61
175.	91	ĒΥ	-5.14
176.	92	FY	-4.68
177.	93	FY	-4.22
178:	94	FY	-3.76
179.	95	FY	-3.30
180			-2.84
	96	FY	
181	97	FY	-2.37
182	98	FY	-1.91
183.	99	FY	-1.45
184.	100	FY	-0.99
185.	101		-0.53
		FY	
186.	102	FY	-0.07
187	107	FY	-5.43
188.	108	FY	-4.97
189.	109	FY	-4.51
190.	110	2.11	-4.05
		FY	
191.	111	FY	-3.59
192.	112	FY	-3.13
193.	113	FY	-2.66
194.	114	FY	-2.20
			1 7/
195.	115	FY	-1.74 -1.28
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199	119	FY	0.00
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and the second second	 1 (2) (2) (3) 		化电压 医多种性性 医结肠性 电电流电池

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	202.	129		FY	-3.69
	203.	130		ξY	~3.23
	204.	131		ξY	-2.77
	205.	132		ΕY	-2.31
	206.	133	4.	ΕY	-1.85
	207.	134		FΥ	-1.38
	208.	135		FΥ	-0.92
	209.	136	٠.	FΥ	-0.46
	210.	137	:	FΥ	0.00
	211.	138		FΥ	0.00
	212.	139		FΥ	0.00
	213.	149	Ċ	ξX	-3.00
-	214.	150	Ġ.	FΥ	-2.54
	215.	151	1	ΕY	-2.08
	216.	152	+ 1	FΥ	-1.62
	217.	153	14	FY	-1.15
	218.	154	÷	FΥ	-0.69
	219.	155	1	FY	-0.23
	220.	156		FY	0.00
	221.	157	:.	ΕY	0.00
	222.	170		FΥ	-1.85
	223.	171		ΓY	-1.38
	224.	172	1	FΥ	-0.92
	225.	173		FΥ	-0.46
	226.	174		FΥ	0.00
	227.	175	7	εx	0.00
	228.	176	1	FΥ	0.00
	229.	191		FΥ	-0.69
	230.	192		ΓY	-0.23
	231.	193		FY	0.00
	232.	194	. '	FY	0.00
	233.			FΥ	0.00
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