JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF COMMUNICATIONS
THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

THE STUDY ON CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA IN KHULNA (Phase 2)

TECHNICAL REPORT VOLUME 2: BOX CULVERTS AND STAIR CASE



PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS

S S F CR 3 00-080(7/s) JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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TECHNICAL REPORT
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MARCH 2000

PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS



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| | | 화장 설명 관점 생겨를 | |
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| | | 화고 있는 항상 모양을 하는 말라고 | |
| | | | 그리 하네 그 전쟁으로 가게 되었다. |
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| | 2 4 DESIGN | OF BOX CULV | EDTC |
| | Z-I. DESIGI | A OL BOY COFA | |
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| | | | 고속 가는 이 발생을 보고 함께 들어 있는데 하는데 있다. 이 많이 있는 사람들은 이 전 보는데 하는데 있다. |
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| | | | 전하면 들어 흥미를 지어받는 것이 |
| | | 그림 없는 얼마 하면 하다. | |
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| | | | 그러움 회사들은 중 발전 보고 있다. 그 |
| | | | |
| | | | |
| - 프로젝트 등 기업 | | | |
| | | 보고 있어요? 생생님 나무 생각 | |
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Summary

A total of nine box culverts are designed at various location of the approach roads. Some of them are similar in consideration of box dimensions and number of vents. So analysis and design are made for culverts that are unique in consideration of span, height, number of vents, etc. The stations, number of vents, box dimensions, member (deck slab, side wall, interior wall, etc) dimensions, height of fill above deck slab, etc are presented in the following table.

| Location | Alutala Khal | Aralia Khal | Narikalb- aria Khal | Karate Khal | Laurir Khal | Moyur Khal | Khetra Khal | Moriyut- sure Khal | Besar Khal |
|------------------|-----------------|-------------------|------------------------|----------------|----------------|---------------|----------------|-----------------------|---------------|
| Station | 2+219 | 2+760 | 3+660 | 4+436 | 4+643 | 4+882 | 5+266 | 5+496 | 8+860 |
| Canal Bed Level | ne de la compa | Programme Company | | | | | | | |
| SHWL | 1.900 | 1.900 | 1.900 | 1.900 | 1.900 | 1.900 | 1.900 | 1.900 | 1.600 |
| Free Board | 0.300 | 0.300 | 1.800 | 0.300 | 1.800 | 1.800 | 1.800 | 0.300 | 1.800 |
| Soffit Level | 2.200 | 2.200 | 3.700 | 2.200 | 3.700 | 3.700 | 3.700 | 2.200 | 3.400 |
| Invert Level | 0.700 | 0.200 | -1.050 | 0.200 | 0.200 | -0.300 | -0.300 | 0.200 | -0.600 |
| Deck Level | 2.450 | 2.450 | 4.100 | 2.450 | 4.000 | 4.050 | 4.050 | 2.450 | 3.750 |
| Fill Height | 0.785 | 0.895 | 0.740 | 1.766 | 0.663 | 1.129 | 0.766 | 1.593 | 0.680 |
| Formation Level | 3.235 | 3.345 | 4.840 | 4.216 | 4.663 | 5.179 | 4.816 | 4.043 | 4.430 |
| | 11494 | | | | | | | | |
| Height (m) | 1.50 | 2.00 | 4.75 | 2.00 | 3.50 | 4.00 | 4.00 | 2.00 | 4.00 |
| Span (m) | 2.00 | 2.50 | 4.75 | 2.00 | 3.50 | 4.50 | 4.00 | 2.50 | 4.00 |
| No. Vents | 2 | 3 | 4 | 2 | 4 | 3 | 3 | 5 | 3 |
| Skew Angle (deg) | | 20 | • | - | 20 | | 10 | | - |
| Thickness (mm) | | | | | | | | 1 2 2 | |
| Deck | 250 | 250 | 400 | 250 | 325 | 350 | 350 | 250 | 350 |
| Invert | 250 | 250 | 400 | 250 | 325 | 350 | 350 | 250 | 350 |
| Ext. Wall | 250 | 250 | 400 | 250 | 325 | 350 | 350 | 250 | 350 |
| Wing Wall | 250 | 250 | 350 | 250 | 275 | 300 | 300 | 250 | 300 |
| Int. Wali | 250 | 250 | 300 | 250 | 275 | 300 | 300 | 250 | 300 |

Box culverts are designed using state of the art structural analysis and design software STAAD-III ver. 22.3a. Although wing wall will be built integrally with the box, mathematical models of box and wing wall are prepared separately taking due consideration of the continuity effect of wing wall with the box. The STAAD input files along with the typical requested output are presented herewith.

Analysis and design of Box

A one-meter wide strip is considered for preparation of the mathematical model of boxes. Deck slabs are considered as single members for the entire span. Walls (both exterior and interior) are also considered as single member for the full height of the culvert. At the bottom slabs, four intermediate nodes are generated within each span to simulate soil-structure interaction by providing support with spring constants.

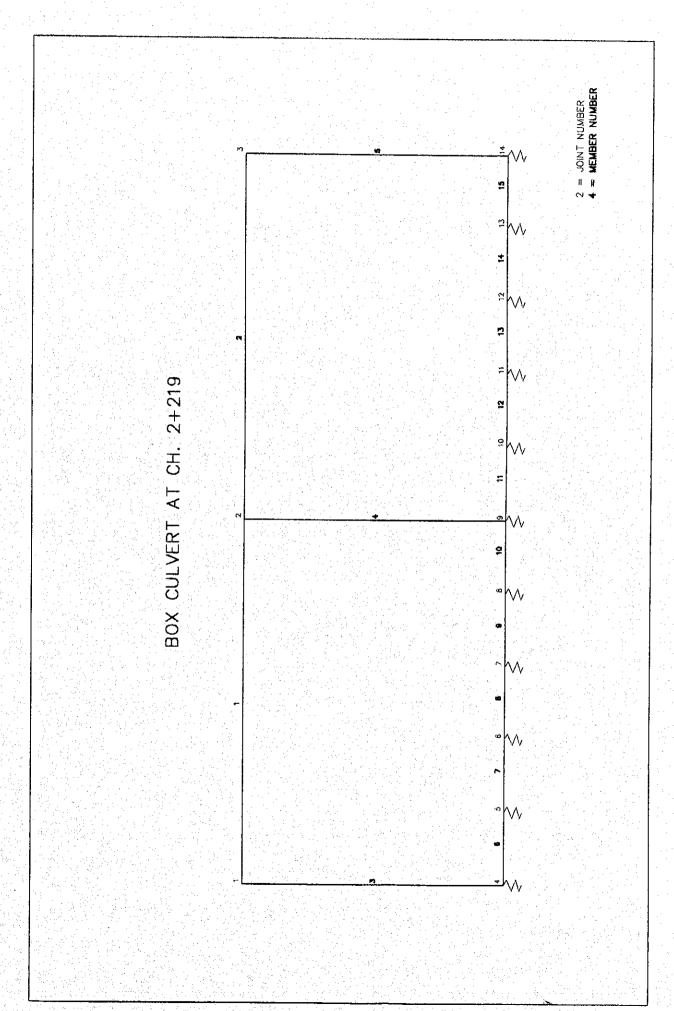
AASHTO-1996 designated loads like dead load (Section, 6-2-1), live loads (both truck and military loading) and surcharge loads are considered for analysis and design. These loads are

applied to the structure in such a way that their effects produce maximum stress on the structure. Primary loads are applied through Load Cases 1 to 13 and their combinations are applied through Load Cases 14 to 30. These combinations are made according to AASHTO load combinations (Table 3.22.1A).

Analysis and design of Wing wall

As stated earlier, wing walls are modeled separately from the box. Wing walls are modeled as combinations of horizontal and vertical discrete members. To take the continuity effect of the wing wall with the box, the nodes at the box end of the wing wall are considered as fixed support. The wing wall base is considered as a cantilever member fixed to the box culvert base.

2-1-1 BOX CULVERT AT CH.3+219 (1) BOX CULVERT



```
STAAD-III
                     Revision 22.3a
                     Proprietary Program of
                     Research Engineers, Inc.
                               FEB 7, 2000
                     Date≕
                               15:12: 0
                     Time=
                USER ID: Development Design Consultants L *
1. STAAD PLANE DESIGN OF 2 X 2 X 1.5 BOX CULVERT
2. UNIT METER KNS
3. JOINT COORD
                    0.00
4. 1 0.00 1.75
       2.25 1.75
5.
                    0.00
    3 4.50 1.75
                    0.00
6.
                                  4.50 0.00 0.00
 7. 4 0.00 0.00
                    0.00
                         - 14
8. MEMBER INCI
   , , 1
9.
                  3
            2
10.
      2
      3
11.
            Q
                  2
12.
      4
13.
      - 5
           14
      6
           ... 4 ...
                        1.5
15. MEMBER PROPERTY
                     YD
                            0.250 ZD 1.0
16. 1 2
             PRIS
17. 3 5
                            0.250 ZD 1.1
             PRIS
                      YD
                            0.250 ZD 1.2
18.4
             PRIS
                      YD
                            0.250 ZD 1.3
19. 6 TO 15 PRIS
                      YD
20. MEMB OFFSET
21. 1 6 :
             START
                           0.13
                                  0.00 0.00
                          -0.13 0.00 0.00
22. 1 10
             END
23. 3 4
                           0.00 0.13
             START
                                         0.00
24. 3 4
                           0.00 -0.13 0.00
             END
                           0.13 0.00 0.00
             START
25. 2
26. CONSTANT
27. E 23.667E6 ALL
28. DENSITY 23.56 ALL
29. SUPPORT
30. *5 TO 13 FIXED BUT MZ
31. *4 14 FIXED BUT MZ
                                      900
                              KFY
                                      450
                              KFY
32. *
                             KFY
                                     900
33. 4 TO 14 FIXED BUT MZ
34. *
35. LOAD 1 : SELFWEIGHT
36. SELFWEIGHT Y -1
37. LOAD 2 : FILL WEIGHT
38. MEMBER LOAD
39. 1 2 UNI GY -14.80
40. LOAD 3 : BACK FILL (MINIMUM)
41. MEMBER LOAD
42. 3 TRAP GX 12.54 4.29
43. 5 TRAP GX -12.54 -4.29
44. LOAD 4 : BACK FILL (MAXIMUM)
45. MEMBER LOAD
                     16.42 12.41
46. 3 TRAP GX
                                    1.33
                                          1.75
                    33.08 16.42
                                    0.00
                                          -1.33
47.
      3 TRAP
                GΧ
                                          1.75
      5 TRAP
                GX -16.42 -12.41 1.33
 48.
               GX -33.08 -16.42 0.00
 49.
      5 TRAP
 50. LOAD 5 : LL IN ALL SPANS
 51. MEMBER LOAD
 52. 1 UNI
53. 2 CON
              GY -51.95
                              0.44
                                    1.81
                GY -0.01 0.00
 54. LOAD 6
              : LL IN SPAN 1
 55. MEMBER LOAD
 56. 1 UNI GY -51.95
                              0.44 1.81
```

Page 1 of 16 //-

57. LOAD 7

: LL IN SPAN 2

```
58. MEMBER LOAD
            GY -51.95 0.44 1.81
 59. 2 UNI
 60. LOAD 8
            : MILITARY LOADING IN SPAN 1
 61. MEMBER LOAD
 62. 1 UNI GY -33.42
                          0.00 1.13
 63. 1 UNI
             GY -33.42 1.13 2.25
           : MILITARY LOADING IN SPAN 2
 64. LOAD 9
 65. MEMBER LOAD
 66. 2 UNI GY -33.42
                          0.00 1.13
 67. 2 UNI GY -33.42
                          1.13 2.25
 68. LOAD 10 : LL IN SPAN 1 FOR MAX. SHEAR
 69. MEMBER LOAD
70. 1 UNI
            GY -51.95 0.00 1.37
 71. LOAD 11 : MILITARY LOADING IN SPAN 1 FOR MAX. SHEAR
72. MEMBER LOAD
73. 1 UNI GY -33.42 0.00 1.30
             GY -33.42
 74. 1 UNI
                          1.30 2.25
75.
 76. LOAD COMB 12
77. 1 1.3 2 1.3 4 1.3
                          10
 78. LOAD COMB 13
79. 1 1.3 2 1.3 4 1.3
                              2.171
80. *
81. LOAD COMB 14
82. 1 1.3 2 1.3 4 1.3
                             2.171
83. LOAD COMB 15
84. 1 1.3 2 1.3 4 1.3
                             2.171
85. LOAD COMB 16
86. 1 1.3 2 1.3
                  4 1.3
 87. LOAD COMB 17
88. 1 1.3 2 1.3 4
                     1.3
89. LOAD COMB 18
90. 1 1.3 2 1.3 4 1.3
 91.
 92. LOAD COMB 19
 93. 1 1.3 2 1.3 3 1.3 5
                             2:171
 94. LOAD COMB 20
95. 1 1.3 2 1.3 3 1.3 6
                             2.171
96. LOAD COMB 21
97. 1 1.3 2 1.3 3 1.3
                             2.171
98. LOAD COMB 22
99. 1 1.3 2 1.3 3 1.3 8
                             2.171
100. LOAD COMB 23
101. 1 1.3 2 1.3 3 1.3 9
102. LOAD COMB 24
103. 1 1.3 4 1.3
104.
105. PERFORM ANALYSIS
```

PROBLEM STATISTICS

```
NUMBER OF JOINTS/MEMBER+ELEMENTS/SUPPORTS = 14/ 15/ 11
ORIGINAL/FINAL BAND-WIDTH = 11/ 2
TOTAL PRIMARY LOAD CASES = 11, TOTAL DEGREES OF FREEDOM = 3
SIZE OF STIFFNESS MATRIX = 248 DOUBLE PREC. WORDS
REQRD/AVAIL. DISK SPACE = 12.04/ 224.4 MB, EXMEM = 1965.6 MB

**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 3
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 1
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 1
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 1
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 1
**WARNING** LOAD BEYOND ITS LENGTH. FULL LENGTH ASSUMED. MEMB 1
```

C:\Box Culvert\B2_219.doc

| ++ | Processing Element Stiffness Matrix. | 15:12: | 0 |
|----|--------------------------------------|--------|---|
| | Processing Global Stiffness Matrix. | 15:12: | 0 |
| | | 15:12: | 0 |
| | Calculating Joint Displacements. | 15:12: | 0 |
| | | 15:12: | 0 |

106. LOAD LIST 12 TO 24 107. PRINT MAXFORCE ENVELOP LIST 1 TO 4 6 TO 12

MEMBER FORCE ENVELOPE

ALL UNITS ARE KNS METE

MAX AND MIN FORCE VALUES AMONGST ALL SECTION LOCATIONS

| MEMB | | FY/ | DIST | LD | MZ/ | DIST | LD | | | |
|--|-------------|---|----------|-----------|--|--------------|-----------|----------|--|-----|
| | | FZ | DIST | LD | MY | DIST | LD | FX | DIST 1 | ĹD |
| 1 | MAX | 116.61 | .00 | 12 | 38.26 | 1.99 | 12 | | | |
| • | .11.00 | .00 | .00 | 12 | .00 | .00 | 12 | 36.21 C | .00 | 14 |
| | MIN | -119.46 | 1.99 | 20 | -34.19 | 1.00 | 20 | | | |
| | against the | .00 | 1.99 | 24 | .00 | 1.99 | 24 | 4.95 C | 1.99 | 21 |
| | | | | 100 | artistic Victoria | | | | | |
| 2 | MAX | 109.16 | .00 | 23 | 39.27 | .00 | 21 | | 00 | 1.0 |
| | | .00 | 00 | | .00 | .00 | 12 | 29.89 C | .00 | 16 |
| | MIN | -107.23 | 2.12 | 16 24 | -36.75 .00 | 1.06 2.12 | 21 24 | 7.87 C | 2.12 | 22 |
| | | .00 | 2.12 | 24 | .00 | 2.12 | 23 | 7.07 | | |
| 3 | MAX | 28.01 | .00 | 16 | 33.34 | 1.49 | 14 | | | |
| | | .00 | .00 | 12 | .00 | .00 | 12 | 129.18 C | .00 | 12 |
| | MIN | | 1.49 | 1.4 | -4.72 | .75 | 16 | | | |
| | | .00 | 1.49 | 24 | .00 | 1.49 | 24 | 8.97 C | 1.49 | 24 |
| | | 10.00 | | 16 | 10.00 | 1 40 | 21 | 강하님 홍리 및 | | |
| 4 | MAX | 12.96 | .00 | 15 12 | 19.80 .00 | 1.49 | 21 12 | 169.29 C | .00 | 19 |
| en de la companya de | MIN | -11.75 | 1.49 | 21 | -21.39 | 1.49 | 15 | | | |
| | 11211 | .00 | 1.49 | 24 | .00 | 1.49 | 24 | 13.25 C | 1.49 | 24 |
| | | | | | | | | | | |
| 6 | MAX | -12.02 | .00 | 24 | 18.05 | .32 | 19 | | | |
| | | .00 | .00 | 12 | .00 | .00 | 12 | .00 | .00 | 12 |
| | MIN | -79.57 | .32 | 12 | -14.08 | .00 | 12 | 00 | 20 | 24 |
| | | .00 | .32 | 24 | .00 | .32 | 24 | .00 | .32 | 24 |
| 7 | MAX | -3.54 | .00 | 21 | 26.05 | 45 | 19 | | | |
| | CICHO | .00 | .00 | 12 | .00 | 00 | 12 | .00 | .00 | 12 |
| | MIN | -35.64 | .45 | 12 | -2.74 | .00 | 24 | | | |
| | | .00 | .45 | 24 | .00 | . 45 | 24 | .00 | .45 | 24 |
| 75 gb | | | | 00 | 26.05 | 00 | 10 | | , kirkin ili tenga. Tanggarapat salah | |
| 8 | MAX | 20.00 | .00 | 20 | 26.05 | .00 | 19 | .00 | .00 | 12 |
| | MIN | .00 -4.62 | .00 | 12 24 | .00 .32 | .45 | 12 16 | .00 | .00 | ** |
| | GITIA | .00 | .45 | 24 | .00 | .45 | 24 | .00 | .45 | 24 |
| | | | | | | | | | | |
| 9 | MAX | 52.76 | .00 | 19 | 23.12 | .00 | 12 | | | |
| | | .00 | .00 | 12 | .00 | .00 | 12 | .00 | .00 | 12 |
| | MIN | .95 | .45 | 24 | -11.59 | . 45 | 21 | | | |
| | | .00 | .45 | 24 | .00 | .45 | 24 | .00 | .45 | 24 |
| 1.0 | MAN | 02.02 | .00 | 19 | 4.39 | 00 | 12 | | | |
| . 10 | MAX | 82.82 .00 | .00 | 12 | .00 | .00 | 12 | . 60 | .00 | 12 |
| | | • | | | | | | | | |
| | MIN | 8.00 | .32 | 24 | -30.67 | .32 | 19 | | | |
| | | .00 | . 32 | 24 | .00 | .32 | 24 | .00 | . 32 | 24 |
| 3 14 | | | a Harry | a Liberti | | | | | | |
| 11 | XAM | -8.52 | .00 | 24 | 1.70 | . 45 | 16 | | | |
| | | .00 | .00 | | 00 | .00 | | .00 | .00 | 12 |
| | MIN | -83.29 | .45 | 21 | -40.17 | .00 | 13 | | | |
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12

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|--------------------|--|--|--------------------|-------------|-------------------|-----------------------|--------------------|--|-------------------------------|
| 1EMB | | FY/ | DIST | LD | MZ/ | DIST | LD | | |
| | | F2 | DIST | LD . | MY | DIST | LD | FX | DIS |
| 1.0 | MANZ | 0.30 | 00 | | 00.50 | | | | |
| 12 | MAX | -2.39 .00 | .00 | 12 | 23.56 .00 | .45 | 21 | | |
| | MIN | -52.02 | .45 | 23 | -13.12 | .00 | 19 | .00 | • • |
| | | .00 | 45 | 24 | .00 | 45 | 24 | .00 | |
| | | | | | | 11.00 | | | |
| | | T CONC DES 5000.0 | IGN | 1 4 5 | | | - N N L | | |
| | | K 2 | 100 | | | | | | |
| | | AIN 20. | | | | | | | |
| | | | | Article S | | | | an e e e e e e e e e e e e e e e e e e e | |
| 113. | . DESI | GN BEAM 1 | TO 4 (| 5 TO 12 | | | | | |
| | В | E A M N O | . 1 | DES | I G N R E | SUL | TS- | FLEXURE | en de la Salanda La gradia |
| LEN | | | | | | | | 00. X 250. | MM 0 |
| Te () | | | 1909-02 | 14.0 | - 23. ME | Ά, 512 | E - 10 | 00. X 250. | MMS |
| LEVE | EL | HEIGHT | BAR IN | IFO | FROM | | TO | ANC | |
| | | (MM) | | | (MM) | | (MM) | STA | END |
| | 1 / 14 h | | 1,71,5,11 | | | | | | |
| 1 | | 63. | 2 - 20 | MM(| 0. | | 1990. | YES | YES |
| i i | CRITI | CAL POS MO | MENT= | 34. | 19 KN-MET | AT 1 | 990 MM | , LOAD 20 | • |
| \mathbf{I}_{i} . | REQD | STEEL= 6 | 24.MM2. | ROW= | .0033, ROW | MX = 0 | 194 RO | EE00. = MMW | |
| 1 | MAX/M | IN/ACTUAL | BAR SPA | CING= | 878 / | 45./ | 878. MI | MS | |
| 1 | BASIC | /REQD. DEV | ELOPMEN | IT LENC | TH = 493 | . / 5 | 94. MM | 3 | 1 |
| 1 | | | | | | | | | ٠١ |
| 2 | | 187. | 2 - 20 | MM | 0. | | 1261. | YES | NO |
| . | | | | | | | | | - |
| | CRITI | CAL NEG MO | MENT= | 26. | 23 KN-MET | AT | 0.MM | , LOAD 14 | 1 |
| 1 5 | MAX/M | IN/ACTUAL | Z4.MMZ, BAR SPA | CING= | .0033, ROW | MX≃ .U 45 / | 194 KOI 878 MI | 0033 = MMN | |
| in | BASIC | /REQD. DEV | ELOPMEN | T LENC | TH = 493 | ./ 5 | 98. MM | s | |
| 1 | | | | | | | | | ·1 = . |
| 3 | | 187. | 2 - 20 | MM | 314 | | 1990. | NO | YES |
| | | | | | | | | <u>,</u> | -] |
| 1 | CRITI | CAL NEG MO | MENT= | 38. | 26 KN-MET | AT 1 | 990.MM | LOAD 12 | 1 |
|] - | | | | | | | | 0033 = NMV | |
| 4.5 | | | | | 878./ TH = 493 | | 878. MI 98. MM: | | 1 1 |
| j | | | | | | | | | 1 |
| | | | | | | | | | |
| 2201 | 17000 | | at ama | | | | | | |
| KEQU | JIKED I | REINF. STE | | AKI: | | | | | |
| SECT | CION | REINF S | TEEL (+V | E/-VE) | MOMEN | TS (+VE | /-VE) | LOAD (+VE | (-VE) |
| 1M) | 1) | (SQ. | MM) | | i | KNS-ME | Т) | | |
| | 0. | 3. | / 3 | 93. | 0. | | 26. | 21/ | 14 |
| | 66. | 30. | | 71. | 2. | | 12. | 21/ | |
| 33 | 32. | 231. | / | 28. | 16. | and the second second | 2. | 12/ | 24 |
| 4.9 | | 379. | | 14. | 25. | | 1. | 12/ | |
| - 1 1 1 L | 53. | 470. | | 3. | 31. | | 0. | 12/ | |
| 4.5 | 29. 95. | 501. 516. | | 0. 8. | 33. 34. | | 0. 1. | 12/ 20/ | |
| | 51. | 484. | | 41. | 34. 32. | | 3. | 20/ 19/ | |
| 132 | | 395 | | 85. | 26. | | 6. | 14/ | |
| 149 | | 253. | / 🚛 1 | 46. | 17. | 1 | 10. | 14/ | |
| 165 | A Company of the Comp | 56. | | 18. 51. | 4. | | 15. | 14/ | 21 |
| 182 | | 0. | , , | 10.7 | 0. | | 23. | 0/ | |

351.

579.

56./

0.7

0/

12 0/ 12

23.

38.

4./

0./

BEAM NO. 1 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 90.83 KNS Vc= 153.28 KNS Vs= .00 KNS PROVIDE 12 MM BARS AT 92, MM C/C FOR 415. MM AT END SUPPORT - Vu= 104.98 KNS Vc= 153.28 KNS Vs= .00 KNS PROVIDE 12 MM BARS AT 92. MM C/C FOR 746. MM

| 1.J | 1989X 999X 249 | 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 |
|----------------------------|------------------|---|
| 2No20cHc163.No20.T01199031 | 4.TO 1990 | 10*12c/c 92 |
| | | |
| | | |
| 2#20 | 00 2#20 00 | 1 2 # 20 |
| | | |

BEAM NO. 2 DESIGN RESULTS - FLEXURE

LEN - 2120. MM FY - 414. FC - 25. MPA, SIZE - 1000. X 250. MMS

| LEVEL | HEIGHT | BAR INFO | FROM | TO | ANCHOR |
|--------|--------|-------------------|--------------------|-------|---------|
| 机流动 第, | (MM) | 가는 나를 되는 말을 다 했다. | (MM) | (MM) | STA END |
| | | | tu habiski, s | | |
| ALC: Y | | | to a gold the fig. | | |
| 1 | 63 | 2 - 20MM | 0. | 2120. | YES YES |

| | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
|---|--|
| | CRITICAL POS MOMENT# 36.75 KN-MET AT 1060 MM, LOAD 21 |
| i | REQD STEEL= 624.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
| | MAX/MIN/ACTUAL BAR SPACING= 878./ 45./ 878. MMS |
| ĺ | BASIC/REQD. DEVELOPMENT LENGTH = 493./ 594. MMS |
| Ì | |

| ٠ | 2 187 2 - 2000 10 1981 183 | . |
|------|--|--------------|
| | CRITICAL NEG MOMENT= 39.27 KN-MET AT 0.MM, LOAD 21 | L |
| 1 | REQD STEEL= 624.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | 1 |
| 1 | MAX/MIN/ACTUAL BAR SPACING= 878./ 45./ 878. MMS | ₂ |
| | BASIC/REQD. DEVELOPMENT LENGTH = 493./ 598. MMS | 1. |

| | . 3 | 187. 2 - 20MM 904. 2120. NO YES | 3 |
|---|-----|--|----|
| ! | | CRITICAL NEG MOMENT= 30.60 KN-MET AT 2120.MM, LOAD 16 | |
| i | | REQD STEEL= 624.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | |
| . | | MAX/MIN/ACTUAL BAR SPACING= 878./ 45./ 878. MMS | |
| 1 | | BASIC/REQD. DEVELOPMENT LENGTH = 493./ 598. MMS | |
| . | | | 10 |

REQUIRED REINF. STEEL SUMMARY :

| ٠ | | 하다 그는 이 얼마 없다면 하는 것이 |
|-----|---|-----------------------|
| s | SECTION REINF STEEL (+VE/-VE) MOMENTS (+VE/-VE) | LOAD (+VE/-VE) |
| (| (MM) (SQ. MM) (KNS-MET) | |
| | | 그리고 된 하기 바라를 보는 사람이다. |
| | 0 0./ 595 0./ 39 | 0/ 21 |
| | 177. 0./ 312. 21. | 0/ 21 |
| . 4 | 353. 28./ 214. 2./ 14. | 18/ 12 |
| | 530. 4 200./ 139. 139. 14./ 67. 49. | 16/ 12 |
| | 707. 381./ 77. 25./ 25./ | 16/ 12 |
| | ,一点点,这一点,我就是有一样的一点,一点,我们就会一点,这一点,这个点点是有一块的。 \$P\$\$P\$ 她说话,一 | |

| ection (MM) | (SQ. MN | (+VE/-VE) 1) | MOMENTS (+VE (KNS-M | | OAD(+VE/-VE) | |
|--|--|---|---|--|---|---------|
| 883. | 500./ | 28. | 33./ | 2. | 21/ 12 | |
| 1060. | 556./ | 0. | 37./ | ō. | 21/ 0 | |
| 1237. | 544./ | 0. | 36./ | 0 | 21/ 0 | |
| 1413. | 464./ | 0 | 31./ | 0. | 21/ 0 | |
| 1590. | 319./ | 10 | 21./ | 1. | 21/ 24 | |
| 1767. | 111./ | 29 | 8./ | 2. | 21/ 14 | |
| 1943. | 7./ | 179. | 0./ | 12. | 12/ 16 | |
| 2120. | 0./ | 460. | 0./ | 31. | 0/ 16 | 100 |
| na kasinti (| E A M N O. SUPPORT - Vu= | = 90.80 KN | S Vc= 153.2 | 8 KNS Vs= | .00 KNS | |
| AT END | SUPPORT - Vu= | 99.71 KN | BARS AT 92. S Vc= 153.2 BARS AT 92. | 8 KNS Vs= | .00 KNS | |
| 2J | | | 999X 249 | | | |
| | | | | | 3J_ | |
| | 63. 0.TO 212 | | ===================================== | | 8*12c/c 92 | === |
| 2#20 | oo | 1 2#20 | 00 | 1 1 2#20 | 00 | |
| В | EAM NO. | 3 DESI | oo GNRESÜ | | 00 LEXURE | |
| В | 00 | 3 DESI | oo GNRESÜ | | 00 LEXURE | |
| 8 LEN - 14 | E A M N O. 90. MM FY - | 3 DESI(414. FC- | OO | | 00 LEXURE | |
| 8 LEN - 14 | E A M N O. 90. MM FY - HEIGHT BAF | 3 DESI(414. FC- | OO S N R E S Ü 25. MPA, SI FROM | LTS-F ZE-1100. | LEXURE X 250. MMS ANCHOR | |
| B LEN - 14 LEVEL 1 | E A M N O. 90. MM FY - HEIGHT BAF | 3 DESI(414. FC - INFO 12MM 4.72 M2, ROW= .00 SPACING= | OO G N R E S U 25. MPA, SI FROM (MM) 0. KN-MET AT 033, ROWMX= 986./ 37./ | LTS-F ZE-1100. TO (MM) 1490.MM, L 0194 ROWIN 164. MMS | LEXURE X 250. MMS ANCHOR STA END YES YES OAD 16 | |
| B LEN - 14 LEVEL 1 CRITI REQD MAX/M BASIC | E A M N O. 90. MM FY - HEIGHT BAF (MM) 59. 7 - CAL POS MOMENT STEEL= 701.M IN/ACTUAL BAR | 3 DESI (414. FC - INFO 12MM 2 4.72 IM2, ROW 0 SPACING MENT LENGTH | OO | LTS-FZE-1100. TO (MM) 1490.MM, L 0194 ROWMN 164. MMS 318. MMS | LEXURE X 250. MMS ANCHOR STA END YES YES DAD 16 = 0033 | |
| B LEN - 14 LEVEL 1 | E A M N O. 90. MM FY - HEIGHT BAF (MM) 59. 7 - CAL POS MOMENT STEEL= 701.M IN/ACTUAL BAR /REQD. DEVELOR | 3 DESI (414. FC - 414. FC - 110 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | OO S N R E S U 25. MPA, SI FROM (MM) 0. KN-MET AT 033, ROWMX= 986./ 37./ 0. KN-MET AT 033, ROWMX= 986./ 37./ | LTS-F ZE-1100. TO (MM) 1490.MM, L 0194 ROWMN 164. MMS 1490. 1490.MM, L 0194 ROWMN 164. MMS | LEXURE X 250. MMS ANCHOR STA END YES YES OAD 16 OOO33 YES YES OAD 14 | |
| B LEN - 14 LEVEL 1 CRITIC REQD MAX/M BASIC CRITIC REQD MAX/M BASIC REQD REQD REQD REQD REQD REQUIRED | E A M N O. E A M N O. 90. MM FY - HEIGHT BAF (MM) 59. 7 - CAL POS MOMENT FOR TO THE STEEL T | J DESIGNAMENT LENGTH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | OO SN RESU 25. MPA, SI FROM (MM) 0. KN-MET AT 033, ROWMX= 986./ 37./ 0. KN-MET AT 033, ROWMX= 986./ 37./ | LTS - F ZE - 1100. TO (MM) 1490. 1490.MM, L 0194 ROWMN 164. MMS 318. MMS 1490. 1490.MM, L 0194 ROWMN 164. MMS | VES YES VES YES OAD 16 VES YES OAD 16 VES YES OAD 14 OAD 14 | |
| B LEN - 14 LEVEL 1 CRITIC REQD MAX/M BASIC CRITIC REQD MAX/M BASIC REQD REQD REQD REQD REQD REQUIRED | E A M N O. 90. MM FY - HEIGHT BAF (MM) 59. 7 - CAL POS MOMENT IN/ACTUAL BAR /REQD. DEVELOF 191. 7 - CAL NEG MOMENT STEEL= 701.M IN/ACTUAL BAR /REQD. DEVELOF REINF. STEEL S REINF. STEEL S | 3 DESI 414. FC - 414. FC - INFO 12MM 12MM 2 4.72 MENT LENGTH 12MM 12MM 2 33.34 M2, ROW 00 SPACING 00 SPACING 00 MENT LENGTH | OO S N R E S U 25. MPA, SI FROM (MM) 0. KN-MET AT 033, ROWMX= 986./ 37./ 177./ 0. KN-MET AT 033, ROWMX= 986./ 37./ 177./ | LTS F ZE - 1100. TO (MM) 1490. 1490.MM, L 0194 ROWMN 164. MMS 318. MMS 1490. 1490.MM, L 0194 ROWMN 164. MMS 359. MMS | OO LEXURE X 250. MMS ANCHOR STA END YES YES OAD 16 = .0033 YES YES OAD 14 = .0033 LOAD(+VE/-VE) | |

| (MM) | | +VE/-VE) | MOMENTS (+VE (KNS-M | | LOAD (+VE/-VE) |
|---|--|--------------------------------------|--|--|--|
| 104 | 0./ | 279. | 0./ | 19. | 0/ 12 |
| 124. 248. | 7./ | 252 | 0.7 | 17. | |
| 372. | 33./ | 236 | 2./ | 16 | 24/ 12 |
| 497. | 53./ | 227 | 4./ | 15 | 16/ 12 |
| 621. | 65./ | 226 | 4./ | 15 | 16/ 12 |
| 745. | 70./ | 252 | 5./ | 17 | 16/ 19 |
| 869. | 67./ | 284. | 5./ | 19 | 16/ 19 |
| 993. | 57./ | 319 | 4./ | 21. | 16/ 19 |
| 1117. | 42./ | | 3./ | 24. | 16/ 19 |
| 1242. | 21./ | 395 | 1./ | 26. | 16/ 19 |
| 1366. | 0./ | 435. | . Frag. 0.7 g 6 | 29. | 0/ 14 |
| 1490. | 0./ | 501. | 0./ | 33. | 0/ 14 |
| AT START | SUPPORT - Vu= STI SUPPORT - Vu= | = 19.39 F [RRUPS ARE = 32.07 F | GNRESU TNS Vc= 168.6 NOT REQUIRED. TNS Vc= 168.6 NOT REQUIRED. | 51 KNS V | s= .00 KNS |
| 4 J | | and the state of the state of the | 0X1099X 249 | | 1 |
| ~ | 00000 | 1: 1 | 000000 | | |
| | | 1 1 7#12 | | 7# | 000000 |
| 7#12 7#12 | 00000 | 7#12 | 000000 | 1 7# 7# 7# | 12 |
| 7#12 7#12 oc | EAM NO. | | 0000000 IGN RESU | | 12 0000000 FLEXURE |
| 7#12 7#12 oc | EAM NO. 490. MM FY - | | 0000000 I G N R E S U - 25. MPA, S | | 12 0000000 FLEXURE 00. X 250. MMS |
| 7#12 7#12 oc B LEN - 1- | EAM NO. 490. MM FY - | | 0000000 IGN RESU | | 12 0000000 FLEXURE |
| 7#12 7#12 oc B LEN - 1- | EAM NO. 490. MM FY - HEIGHT BA (MM) | | O000000 I G N R E S U - 25. MPA, S FROM | | 12 0000000 FLEXURE 00. X 250. MMS ANCHOR |
| 7#12 7#12 00 B LEN - 1 LEVEL 1 CRIT REQD MAX/ | E A M N O. 490. MM FY - HEIGHT BA (MM) 59. 7 ICAL POS MOMEN STEEL= 765. MIN/ACTUAL BAR | 7#12 7#12 | OOOOOOO I G N R E S U - 25. MPA, S FROM (MM) | 1 7# 1 7# 1 T S - IZE - 12 TO (MM) 1490.MM 0194 RC | 12 00000000 FLEXURE 00. X 250. MMS ANCHOR STA END YES YES , LOAD 15 WMN= .0033 MS |

CRITICAL NEG MOMENT= 19.80 KN-MET AT 1490 MM, LOAD 21 | REQD STEEL= 765.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | MAX/MIN/ACTUAL BAR SPACING= 1086./ 37./ 181. MMS | BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS

| SECTION (MM) | REINF STEEL (SQ. MM | | MOMENTS (+ (KNS- | | LOAD(+VE/ | -VE) |
|--|--|--|--|--|---|--|
| 0. | 66./ | 52. | 5./ | 4. | 12/ 1 | ٠. |
| 124. | 82./ | 67. | 6./ | 5. | 12/ 1 | |
| 248. | 97./ | 82. | 7./ | 6. | 12/ 1 | |
| 372 | 112./ | 103. | 8./ | | | |
| 497. | 130./ | 124. | • • | 7. | 12/ 1 | |
| 621. | 153./ | | 9./ | 8. | 20/ 1 | |
| 745. | 176./ | 145. 166. | 10./ | 10. | 20/ 1 | |
| 869. | 200./ | | 12./ | 11. | 20/ 1 | |
| 993. | | | | 13. | 20/ 1 | |
| | 223./ | 208. | 15./ | 14. | 20/ 1 | |
| 1117. | 247./ | 230 | 17./ | 15. | 20/ 1 | |
| 1242. | 270./ | 251. | 18./ | 17. | 20/ 1 | |
| 1366 | 294./ | 272 | 20./ | 18. | 15/ 2 | |
| 1490. | 318./ | 294. | 21./ | 20. | 15/ 2 | 1 |
| 8 E | AM NO. | 4 DESI | GN RESU | LTS- | SHEAR | |
| AT START | SUPPORT - Vu= | 12.96 KN | S Vc= 183. | 94 KNS V | = .00 | KNS |
| Ar valli | | | OT REQUIRED. | | | 7 1 |
| AT END | SUPPORT - Vu= | 12.96 KN | | | | KNS |
| 9J | | 1489X | 1199X 249 | | | 2J_ |
| | | ======================================= | | Hildian I | | |
| | 1. 0.TO 149 | | | | | |
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| | and the second of the second o | | ====================================== | | | # CA 18 17 17 1 |
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| 000 | and the second of the second o | | 000000 | | 000000 | H CH 18 17 19 |
| 000 | | | | | 000000 | H CH 200 A T 200 A |
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| 000 7#12 7#12 | 0000 | 7#12 7#12 | 00000 | | 0000000 | |
| 000 #12 #12 000 | 0000 | Or 7#12 Or Or Or | 000000 | | 0000000 | |
| 000 #12 #12 000 | 0000 | Or 7#12 Or Or Or | 000000 | | 0000000 | |
| 000 #12 #12 000 | 0000 0000 A M N O. | | 000000 000000 G N R E S U | | ooooooo 2 ooooooo FLEXURE | |
| 000 7#12 7#12 000 | 0000 | | 000000 000000 G N R E S U | | ooooooo 2 ooooooo FLEXURE | 1MS |
| 000 #12 #12 000 B E LEN - 32 | 0000 0000 A M N O. 0 MM FY - | 7#12 7#12 7#12 00 1 6 DESI 414. FC - | 000000 000000 G N R E S U | | ooooooo 2 ooooooo FLEXURE | 1MS |
| #12 #12 000 B E JEN - 32 | 0000 0000 A M N O. 0. MM FY - | 7#12 7#12 7#12 00 1 6 DESI(| 000000 000000 G N R E S U | | ooooooo 2 ooooooo FLEXURE | en e |
| 000 #12 #12 000 B E EN - 32 | 0000 0000 A M N O. 0 MM FY - | 7#12 | 000000 000000 G N R E S U 25. MPA, S | | 0000000 2 0000000 FLEXURE 0. X 250. N | en e |
| #12 000 #12 000 B E EN - 32 | OOOO A M N O. O MM FY - | 7#12 | 000000 000000 G N R E S U 25. MPA, S FROM | | 0000000 2 0000000 FLEXURE 0. X 250. N | OR . |
| 000 #12 #12 000 B E EN - 32 | OOOO A M N O. O MM FY - | 7#12 1 7#12 1 7#12 2 00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 000000 G N R E S U 25. MPA, S FROM (MM) | | 0000000 2 0000000 FLEXURE 0. X 250. M ANCHO | OR END |
| 7#12 7#12 000 B E LEN - 32 | OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOOO | 7#12 1 7#12 1 7#12 2 00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 000000 G N R E S U 25. MPA, S FROM (MM) | | 0000000 2 0000000 FLEXURE 0. X 250. N | OR END |
| 7#12 7#12 000 7#12 LEN - 32 LEVEL H | OOOO OOOOO OOOO OOOO OOOO OOOO OOOO OOOO OOOO OOOO OOOOO OOOO OOOOO OOOOO OOOO OOOO | 1 7#12 | 000000 000000 G N R E S U 25. MPA, S FROM (MM) | | 0000000 2 0000000 FLEXURE 0. X 250. N ANCHO STA 1 | OR END |
| 000 #12 #12 000 #12 000 B E LEN - 32 LEVEL H | OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOOO | 12MM | 000000 000000 G N R E S U 25. MPA, S FROM (MM) 0. | 7#12 7#12 7#12 7#12 | 0000000 2 0000000 FLEXURE 0. X 250. M ANCHO STA 1 YES | OR END |
| #12 #12 ooo #12 #12 coo #12 #12 critic REQD S | OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOOO | 12MM 14. ROW= .00 | 000000 000000 G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= | TO (MM) 320.MM, .0194 ROWN | 0000000 2 2 0000000 FLEXURE 0. X 250. I ANCHO STA I YES YES LOAD 12 I | OR END |
| #12 #12 000 #12 #12 CRITIC REQD S MAX/MI | OOOOO A M N O. O MM FY - EIGHT BAR (MM) 59. 8 - AL POS MOMENT: TEEL= 820.MI N/ACTUAL BAR | 12MM 141. FC - 12MM 14. ROW = 00 12MM = 14.08 M2, ROW = 00 SPACING = 1 | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ | TO (MM) 320.MM, .0194 ROWN 169. MMS | 0000000 2 2 0000000 FLEXURE 0. X 250. I ANCHO STA I YES YES LOAD 12 I | OR END |
| OOO #12 #12 OOO #12 B E JEN - 32 JEVEL H CRITIC REQD S MAX/MI | OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOOO | 12MM 141. FC - 12MM 14. ROW = 00 12MM = 14.08 M2, ROW = 00 SPACING = 1 | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ | TO (MM) 320.MM, .0194 ROWN 169. MMS | 0000000 2 2 0000000 FLEXURE 0. X 250. I ANCHO STA I YES YES LOAD 12 I | OR END |
| OOO #12 #12 OOO #12 B E JEN - 32 JEVEL H CRITIC REQD S MAX/MI | OOOOO A M N O. O MM FY - EIGHT BAR (MM) 59. 8 - AL POS MOMENT: TEEL= 820.MI N/ACTUAL BAR | 12MM 141. FC - 12MM 14. ROW = 00 12MM = 14.08 M2, ROW = 00 SPACING = 1 | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ | TO (MM) 320.MM, .0194 ROWN 169. MMS | 0000000 2 2 0000000 FLEXURE 0. X 250. I ANCHO STA I YES YES LOAD 12 I | OR END |
| #12 000 /#12 /#12 O00 /#12 BE JEN - 32 JEVEL H CRITIC REQD S MAX/MI BASIC/ | OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO | 12MM 141. FC - INFO 12MM 14. FC - INFO 12MM 14. OS 12MM 14. OS 12MM | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ = 177./ | 7#12 7#12 1 7#12 1 7#12 1 7#12 1 7#12 1 7#12 7 7 7 7 7 7 7 7 7 | 0000000 2 2 0000000 FLEXURE 0. X 250. N ANCHO STA 1 YES LOAD 12 | OR END (ES |
| 7#12 7#12 000 7#12 7#12 CRITIC REQD S MAX/MI | OOOOO A M N O. O MM FY - EIGHT BAR (MM) 59. 8 - AL POS MOMENT: TEEL= 820.MI N/ACTUAL BAR | 12MM 141. FC - INFO 12MM 14. FC - INFO 12MM 14. OS 12MM 14. OS 12MM | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ | 7#12 7#12 1 7#12 1 7#12 1 7#12 1 7#12 1 7#12 7 7 7 7 7 7 7 7 7 | 0000000 2 2 0000000 FLEXURE 0. X 250. N ANCHO STA 1 YES LOAD 12 | OR END |
| B E LEN - 32 LEVEL H CRITIC REQD S MAX/MI BASIC/ | OOOOO | | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ = 177./ | 7#12 7#12 1 7#12 1 7#12 1 7#12 1 7#12 1 7#12 7 7 7 7 7 7 7 7 7 | 0000000 2 2 0000000 FLEXURE 0. X 250. N ANCHO STA YES LOAD 12 N= .0033 N= .0033 YES | OR END (ES |
| B E JEN - 32 JEVEL H CRITIC REQD S MAX/MI BASIC/ 2 CRITIC | OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOOO | | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ = 177./ 0. KN-MET AT | 7#12 7#12 1 7#12 7#12 1 7#12 7# | 0000000 2 2 0000000 FLEXURE 0. X 250. N ANCHO STA YES LOAD 12 N= .0033 YES YES LOAD 19 | OR END (ES |
| #12 000 #12 #12 CRITIC REQD S MAX/MI BASIC/ | OOOOO | | OOOOOOO G N R E S U 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ = 177./ 0. KN-MET AT | 7#12 7#12 1 7#12 7#12 1 7#12 7# | 0000000 2 2 0000000 FLEXURE 0. X 250. N ANCHO STA YES LOAD 12 N= .0033 YES YES LOAD 19 | OR END (ES |
| #12 #12 ooo #12 #12 COOO EVEL H CRITIC REQD MAX/MI BASIC/ CRITIC REQD S MAX/MI | OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOO OOOOOO | 7#12 7#12 7#12 7#12 7#12 17#12 104 6 DESI 414. FC INFO 12MM 14.08 M2, ROW= .00 SPACING= 1 MENT LENGTH 12MM 18.05 M2, ROW= .00 SPACING= 1 | OOOOOOO GNRESU 25. MPA, S FROM (MM) 0. KN-MET AT 033, ROWMX= 186./ 37./ 0. KN-MET AT 033, ROWMX= 186./ 37./ | 7#12 7#12 1 7#12 1 7#12 1 7#12 1 1 1 1 1 1 1 1 1 | 0000000 2 2 0000000 FLEXURE 0. X 250. N ANCHO STA YES LOAD 12 N= .0033 YES LOAD 19 N= .0033 | OR END (ES |

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的复数物质 化二氯基酚 化多基酚 医多二苯基酚 医二乙基酚

| REQUIRED REINF | . STEEL | SUMMARY | : |
|----------------|---------|---------|---|
|----------------|---------|---------|---|

| SECTION (MM) | REINF STEEL (SQ. MM | • | MOMENTS (+VE (KNS-ME | | LOAD (+VE/-VE) |
|----------------|------------------------|------|-------------------------|-----|----------------|
| 0. | 208./ | 0. | 14./ | 0. | 12/ 0 |
| 27. | 178./ | 20. | 12./ | 1. | 12/ 19 |
| 53. | 148./ | 42. | 10./ | 3. | 12/ 19 |
| 80. | 117./ | 63. | 8./ | 4. | 12/ 19 |
| 107. | 87./ | 86. | 6./ | 6. | 12/ 19 |
| 133. | 80 / | 108. | 5./ | 7. | 24/ 19 |
| 160. | 74./ | 130. | 5./ | 9. | 24/ 19 |
| 187. | 69./ | 153. | 5./ | 10. | 24/ 19 |
| 213. | 63./ | 176. | 4./ | 12. | 24/ 19 |
| 240. | 58./ | 198. | 4./ | 13. | 24/ 19 |
| 267. | 52./ | 221. | 4./ | 15. | 24/ 19 |
| 293. | 46./ | 245. | 3./ | 16. | 24/ 19 |
| 320. | 40./ | 268. | · [1.7] 3.7 | 18. | 24/ 19 |
| | | | | | |

REAM NO 6 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 78.22 KNS Vc= 199.27 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED.

AT END SUPPORT - Vu= 77.74 KNS Vc= 199.27 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED.

| 1 <u>1 </u> | 319X1299X 249 | <u> </u> |
|---|---------------|-------------------|
| 8No12 H 191. 0.TO 320 8No12 H 59. 0.TO 320 | | |
| | | |
| 0000000 | 00000000 | 00000000 8#12 |
| 00000000 | 00000000 | 1 |

BEAM NO. 7 DESIGN RESULTS - FLEXURE

LEN - 450. MM FY - 414. FC - 25. MPA, SIZE - 1300. X 250. MMS

| LEVE | in the interest of the state of | CHOR END |
|---------------------|--|-------------|
| 1 | 59. 8 - 12MM 0. 450. YES | YES |
| | CRITICAL POS MOMENT= 2.74 KN-MET AT 450.MM, LOAD 24 REQD STEEL= 820.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 1186./ 37./ 169. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 325. MMS | |

| REQD STEEL= 82 MAX/MIN/ACTUAL B | ENT= 26.05 KN-MET 0.MM2, ROW= .0033, ROWM AR SPACING= 1186./ 3 | X= .0194 ROWM 7./ 169. MMS | LOAD 19 N= .0033 |
|---|---|--|--|
| | LOPMENT LENGTH = 177. | / 359. MMS | |
| REQUIRED REINF. STEE | L SUMMARY : | | |
| SECTION REINF ST (MM) (SQ. | | S(+VE/-VE) NS-MET) | LOAD(+VE/-VE) |
| 0. 40./ | 268. 3./ | 18. | 24/ 19 |
| 37. | | | 24/ 19 |
| | 286. 2./ | the state of the s | 24/ 19 |
| 112. 30./ 150. 26./ | | | 24/ 19 24/ 19 |
| 187. 22./ | | | 24/ 19 |
| 225. 18./ | 324. 1./ | 22. | 24/ 19 |
| 262. 14./ | 334. 1./ | 22, | 24/ 19 |
| 300. 9./ | | 23. | 24/ 19 |
| 337. 4./ | 355. 0./ | 24. | 24/ 19 |
| 375. 0./ 412. 0./ | | 25. | 0/ 19 |
| 450. 0./ | | 25. 26. | 0/ 19 0/ 19 |
| | Vu= 33.80 KNS Vc= 1 STIRRUPS ARE NOT REQUIRE 449X1299X 24 | ÉD. | |
| 5J No12 H 191. 0.TO | STIRRUPS ARE NOT REQUIRE 449X1299X 24 | ED. | |
| 5J No12 H 191. 0.TO | STIRRUPS ARE NOT REQUIRE 449X1299X 24 | ED. | 6 <u>J</u> |
| 5J No12 H 191. 0.TO No12 H 59. 0.TO | ### STIRRUPS ARE NOT REQUIRED | ED. | 6л |
| 5J No12 H 191. 0.TO No12 H 59. 0.TO oooooooo | STIRRUPS ARE NOT REQUIRE 449X1299X 24 | ED. 9 | 6J 00000000 |
| 5J 3No12 H 191. 0.TO 3No12 H 59. 0.TO 00000000 | 449X1299X 24 450 450 | ED. | 6J 00000000 |
| 5J 3No12 H 191. 0.TO 3No12 H 59. 0.TO 00000000 3#12 00000000 B E A M N O. EN - 450. MM FY EVEL HEIGHT | ### ATTICLE ATTICLE 1 | ED. 9 | OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO |
| 5J SNo12 H 191. 0.TO SNo12 H 59. 0.TO 000000000 8#12 000000000 B # 12 B E A M N O. | ### ATT ATT ATT ATT ATT ATT ATT ATT ATT | ED. 9 | OCOCCOCC OCOCCOCCC FLEXURE X 250. MMS ANCHOR STA END |

| ECTION MM) | REINF STEEL (SQ. MM | and the second s | MOMENTS (+VE (KNS-ME | | LOAD(+VE/-VE) |
|---------------------------------|------------------------|--|--|------------|---|
| 0. | 0./ | 389. | 0./ | 26. | 0/ 19 |
| 37. | 0./ | 382. | 0./ | 26. | 0/ 12 |
| 75. | 0./ | 377 | 0./ | 25. | 0/ 12 |
| 112. | 0./ | 373. | 0./ | 25. | 0/ 12 |
| 150. | 0./ | 369. | 0./ | 25. | 0/ 12 |
| 187. | 0./ | 365. | 0./ | 24. | 0/ 12 |
| 225. | 0./ | 361. | 0./ | 24. | 0/ 12 |
| 262 | 0./ | 358. | 0./ | 24. | 0/ 12 |
| 300 | 0./ | 355. | 0./ | 24. | 0/ 12 0/ 12 |
| 337 | 0./ | 352. | 0./ | 24. 23. | 0/ 12 |
| 375 | 0./ 0./ | 349. 346. | 0./ | 23. | 0/ 12 |
| 412 450 | 0.7 | 344. | 0./ | 23. | 0/ 12 |
| KONSTRUCTION | SUPPORT - Vu= | RRUPS ARE N 17.36 KN RRUPS ARE N | OT REQUIRED. S Vc= 199.2' OT REQUIRED. | | /s= .00 KNS /s= .00 KNS |
| 6J | | 4497 | 1299X 249 | | 7J |
| ======= | 91. 0.TO 45 | | | | |
| ======= | 91. 0.TO 45 | | | | |
| 8No12 H 1 | 91. 0.TO 45 | 0 | | | 0000000 |
| 3No12 H 1 | | 0 | | | |
| 3No12 H 1 | 00000 | 0 | GN RESU | | 12 FLEXURE |
| 9No12 H 1 | 00000 | 0 8#12 | GN RESU | | 12 |
| 3No12 H 1 000 8#12 | 00000 | 0 8#12 | GN RESU | | 12 FLEXURE |
| 3No12 H I 000 8#12 B LEN - 4 | 00000 (| 0 8#12 | GNRESU 25. MPA, SI FROM (MM) | | FLEXURE 00. X 250. MMS ANCHOR STA END |

Page 11 of 16

| 2 | 191. 8 - | 1.2MM | 0. | 450. | YES | VPC |
|------------------------------|--|----------------------------------|---|------------------------------------|-------------------|---------------------------------------|
| REQD ST | AL NEG MOMENT PEEL= 820.M N/ACTUAL BAR | = 23.1 M2, ROW= . SPACING= | 2 KN-MET AT 0033, ROWMX= 1186./ 37./ H = 177./ | 0.MM, L .0194 ROWMN 169. MMS | OAD 12 = .0033 | |
| | | | | | | |
| REQUIRED RE | EINF. STEEL S | UMMARY : | | | | |
| | REINF STEEL | | MOMENTS (+ | VE/-VE) | LOAD (+VE | /-VE) |
| (MM) | (SQ. MM | | (KNS- | MET) | | |
| 0. 37. | 0./ | 344. | 0./ | 23. | | 12 |
| 37. 75. | | 319. 295. | 1./ 2./ | | | 12 12 |
| 112. | 10.7 | 271 | 3./ | 18. | | 12 |
| 150. | 54./ | 247. | 4./ | 17. | 16/ | 12 |
| 187. | 68./ | 223. | 5./ | | 16/ | 12 |
| 225. 262. | 83./ | 200. 177. | 6./ | 14. | | 12 |
| 300. | 113./ | 154. | 7./ | 12. 10. | 21/ 21/ | 12 |
| 337. | | 131. | 9./ | 9. | | 12 |
| 375. | 143./ | 109. | 10./ | 7. | 21/ | |
| 412. | 157./ | 87. | 11./ | 6. | 21/ | 12 |
| 450. | 171./ | 65. | 12./ | 4. | 21/ | 12 |
| The second second second | 0.TO 45 | 449 | NOT REQUIRED. | | | 8J |
| 8No12 H 59 |). 0.TO 45 | 0 | | | | |
| | | | | | | |
| 00000 8#12 |))) | 0 8#12 | 000000 | | 000000 | • • • • • • • • • • • • • • • • • • • |
| | | i | | 1 1 01112 | | |
| 8#12 |) 0000 | 8#12 0 | 000000 | 8#12 | 000000 | 0 |
| | AM NO. 1 | | | LTS-F | | |
| LEN - 320 | | -14. PU - | 25. MPA, S | 10E - 13UU. | X 25U. | CIMIN |
| | | | FROM | | | |
| and the second second second | CIGHT BAR (MM) | INFO | (MM) | TO (MM) | ANC STA | |
| and the second second second | (MM) | INFO 12MM | | 1.475 | and the second | |

| REQD S | AL NEG MOMENT= TEEL= 820.MM N/ACTUAL BAR S REQD. DEVELOPM | 12, ROW= .0 SPACING= 1 | 0033, ROWMX= . .186./ 37./ | 0194 ROWMN 169. MMS | .0033 | |
|---------------|--|--|--|------------------------|--|------------------------------------|
| EQUIRED R | EINF. STEEL SU | JMMARY : | | | | |
| CTION MM) | REINF STEEL (SQ. MM | (+VE/-VE) | MOMENTS (+V (KNS-V | | LOAD (+VE | :/-VE) |
| | 171 | C E | 12./ | 4 | 21/ | 10 |
| 0. 27. | 171./ 192./ | 35. | 13./ | 2. | 21/ | |
| 53. | 213./ | 6. | 14./ | 0. | 21/ | |
| 80. | 234./ | 0. | 16./ | 0. | 21/ | 0 |
| 107. | 255./ | 0. | 17./ | 0. | 21/ | 0 |
| 133. | 276./ | 0. | 19./ | 0. | 21/ | 0 |
| 160. | 296./ | 0. | 20./ | 0. | 21/ | 0 |
| 187. | 317./ | 0. | 21./ | 0. | 21/ | 0 |
| 213. | 337./ | | | 0. | 21/ | . V |
| 240. | 361./ | | 24./ | 0. | 19/ | |
| 267. | | 0. 0. | 26./ 29./ | 0. | 19/ 19/ | |
| 293. 320. | | 0. | 31./ | 0. | 19/ | |
| | STI SUPPORT - Vu= | RRUPS ARE 1 81.47 K | NS VC= 199. NOT REQUIRED. NS VC= 199. NOT REQUIRED. | 27 KNS Vs | | |
| AT END | STI SUPPORT - Vu= STI | RRUPS ARE 81.47 KI RRUPS ARE 319 | NOT REQUIRED. NS Vc= 199. NOT REQUIRED. X1299X 249 | 27 KNS Vs | = .0 | 0 KNS _ 9J_ |
| 8J | STI SUPPORT - Vu= STI 91. 0.TO 32 | RRUPS ARE 81.47 KI RRUPS ARE 319 | NOT REQUIRED. NS Vc= 199. NOT REQUIRED. X1299X 249 | 27 KNS Vs | = .0 | 0 KNS _ 9J_ |
| 8J | STI SUPPORT - Vu= STI 91. 0.TO 32 69. 0.TO 32 | RRUPS ARE 81.47 KI RRUPS ARE 319 | NOT REQUIRED. NS VC= 199. NOT REQUIRED. X1299X 249 | 27 KNS Vs | .0 | 0 KNS 9J |
| 8J | STI SUPPORT - Vu= STI 91. 0.TO 32 99. 0.TO 32 | RRUPS ARE 81.47 KI RRUPS ARE 319 | NOT REQUIRED. NS Vc= 199. NOT REQUIRED. X1299X 249 | 27 KNS Vs | .0 | 0 KNS 9J |
| 8J | STI SUPPORT - Vu= STI 91. 0.TO 32 69. 0.TO 32 | RRUPS ARE 81.47 KI RRUPS ARE 319 | NOT REQUIRED. NS VC= 199. NOT REQUIRED. X1299X 249 | 27 KNS Vs | .0 | 0 KNS 9J |
| 8J | STI SUPPORT - Vu= STI 91. 0.TO 32 69. 0.TO 32 | RRUPS ARE 81.47 KI RRUPS ARE 319 0 0 8#12 | NOT REQUIRED. NS VC= 199. NOT REQUIRED. X1299X 249 | 27 KNS Vs | .0 | 0 KNS 9J |
| 8J | STI SUPPORT - Vu= STI 31. 0.TO 32 39. 0.TO 32 000000 | RRUPS ARE 81.47 KI RRUPS ARE 31.9 0 0 0 0 0 0 0 0 0 | NOT REQUIRED. NS VC= 199. NOT REQUIRED. X1299X 249 DOCCOOCOOCO COCCOOCOOCO CG N R E S C | 27 KNS Vs | oooooo oooooo | 0 KNS |
| 8J | STI SUPPORT - Vu= STI 31. 0.TO 32 39. 0.TO 32 300000 | RRUPS ARE 81.47 KI RRUPS ARE 31.9 31.9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | NOT REQUIRED. NS VC= 199. NOT REQUIRED. X1299X 249 DOCCOCCC CCC N R E S C - 25. MPA, S | 27 KNS Vs | 000000 000000 FLEXURE | 0 KNS 9J |
| 8J | STI SUPPORT - Vu= STI 31. 0.TO 32 39. 0.TO 32 000000 | RRUPS ARE 81.47 KI RRUPS ARE 31.9 31.9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | NOT REQUIRED. NS VC= 199. NOT REQUIRED. X1299X 249 DOCCOOCOOCO COCCOOCOOCO CG N R E S C | 27 KNS Vs | 000000 000000 FLEXURE | 0 KNS 9J |
| 8J | STI SUPPORT - Vu= STI 31. 0.TO 32 39. 0.TO 32 300000 | RRUPS ARE 81.47 KI RRUPS ARE 319 0 0 8 # 12 | NOT REQUIRED. NS VC= 199. NOT REQUIRED. X1299X 249 DOCCOCCC CCCC NCCC NCCC NCCC NCCC NCCC N | 27 KNS Vs | oooooooooooooooooooooooooooooooooooooo | O KNS 9J OO OO ICHOR END YES |

| | 191. 8 - | 12MM | 0. | 450. | YES | YES |
|--|------------------------------|------------------------------|--|------------------------|--|--|
| REQD ST | EEL= 820.MM /ACTUAL BAR S | 12, ROW≃ .(SPACING= | 0 KN-MET AT 0033, ROWMX= . 1186./ 37./ H = 177./ | 0194 ROWMN 169. MMS | = .0033 | |
| | | | | | | |
| REQUIRED RE | INF. STEEL SU | MMARY : | | | | |
| SECTION (MM) | REINF STEEL (| and the second second second | (KNS-M | /E/-VE) 1ET) | LOAD (+VE) | '-VE) |
| 0. | 604./ | 0. | 40./ | 0. | 19/ | 0 |
| 37. | 571./ | 0. | 38./ | | 19/ | 0 |
| 75. | 537./ | 0. | 36./ | 0 | 19/ | |
| 112 | 503./ | 0. | 34./ | 0. | 19/ | 0 |
| 150. | 469./ | 0. | 31./ | 0. | 19/ | 0 |
| 187. | 435./ | 0. | 29./ | 0. | | 0 |
| 225. | 401./ | 0. | 27./ | 0 | 19/ | 0 |
| 262. 300. | 367./ | 0. | 25./ | 0. | 19/ | |
| 337. | 333./ 298./ | 0. | 22./ 20./ | 0. | 19/ | |
| 375. | 264./ | 1. | 18./ | 0. | | 0 24 |
| 412. | 229./ | 8 | 15./ | 1. | | 24 24 |
| 450 | 194./ | 25. | 13./ | 2. | 19/ | |
| | | | | | | |
| | STIF UPPORT - Vu= | RUPS ARE 81.45 K | NS VC= 199.2 NOT REQUIRED. NS VC= 199.2 NOT REQUIRED. | | 网络拉克克斯 | |
| 9Ј | | 449 | X1299X 249 | | | 10Ј |
| 1 | | | | | | taka Taka |
| | . 0.то 450 | | | | .======= | |
| 8No12 H 59 | . 0.то 450 | | | | | |
| | | ====== | | | ******* | |
| | | | | | | |
| | <u> </u> | | | | | |
| 00000 | I 2000 I | 0 | 000000 | | 0000000 | raga i Yang di Maga |
| 8#12 | Mara i | 8#12 | | 8#12 | | |
| | | 1 | | : i i saasa | a ila jak | |
| 8#12 | | 8#12 | | 8#12 | | |
| 00000 | 000 | 1 0 | 000000 | 1 1 1 2 1 1. | 0000000 | > |
| | | | | | | |
| | | | | | | en e |
| | | | | | | |
| B E ! | am NO. 12 | резі | GN RESU | ьт з - F | LEXURE | |
| LEN - 450 | . MM FY - 4 | 14. FC - | 25. MPA, SI | ZE - 1300. | X 250. | MMS |
| LEVEL HE | IGHT BAR | INFO | FROM | то | ANCI | IOR |
| and the property of the Control of t | MM) | | (MM) | (MM) | 7. · · · · · · · · · · · · · · · · · · · | END |

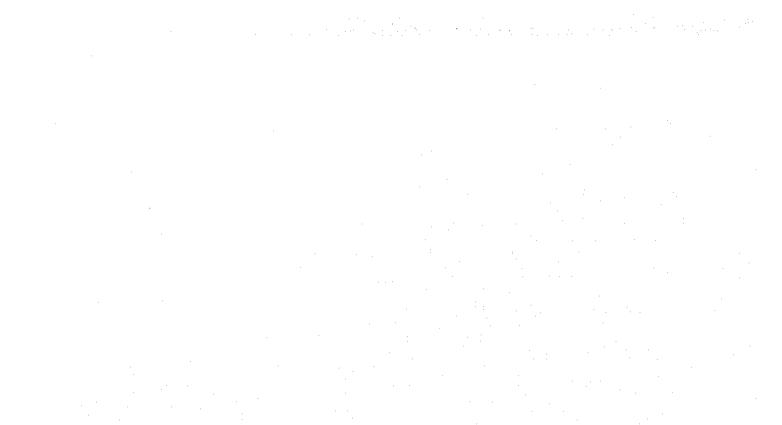
C:\Box Culvert\B2_219.doc

| 1 | 59. 8 - | 12MM | 0. | 450. | YES | YES |
|------------------------------------|--|---------------------------|------------------------------|--|------------|--|
| REQD S | AL POS MOMENT= TEEL= 820,MM N/ACTUAL BAR S REQD, DEVELOPM | 12, ROW≃ .0 PACING≕ 1 | 033, ROWMX= . .186./ 37./ | 0194 ROWMN= 169. MMS | | |
| 2 | 191. 8 - | 12MM | 0. | 450. | YES | YES |
| REQD S MAX/MI | AL NEG MOMENT= TEEL= 820.M N/ACTUAL BAR (REQD. DEVELOP) | 12, ROW= .0 SPACING= 1 | 0033, ROWMX= : 186./ 37./ | 0194 ROWMN 169. MMS | = .0033 | |
| REQUIRED R | REINF. STEEL SU | JMMARY : | | | | |
| SECTION (MM) | REINF STEEL (SQ. MM | (+VE/-VE)) | MOMENTS (+1 | | LOAD (+VE | /-VE) |
| 0. | 194./ | 25. | 13./ | 2. | 19/ | 16 |
| 37. | 175./ | 50. | 12./ | 3. | 19/ | |
| | 156./ | 76. | 11./ | 5. | 19/ | 16 |
| 112. | 137./ | 102. | 9 / | 7. | 19/ | The state of the s |
| 150. | 118./ | 128. | 8./ | Control of the control of the | | 16 |
| 187. | 99./ | 154. | 7./ | 10. | 19/ | |
| 225. | | | 5./ | 12. | 19/ | |
| 262. | 59./ | 207. | 4./ | 14. | 19/ | 16 |
| 300. | 40./ | 15 to 1 | 3./ | 16. 18. | 14/ 15/ | 21 |
| 337. | 21./ | 264. | 1./ | 18. | 15/ | Z1 |
| 375. | 1./ | | 0.7 | 20. 22. | 13/ | 21 21 |
| 412. 450. | 0./ | 322. 351. | 0.7 | 24. | 0/ | 21 |
| 150. | , , , , , , , , , , , , , , , , , , , | | | | | |
| В | EAM NO. 1 | 2 DESI | GN RESU | LTS-SH | EAR | |
| AT START | SUPPORT - Vu= | | NS Vc= 199. NOT REQUIRED. | | .00 |) KNS |
| AT END | SUPPORT - Vu= | 50.19 K | | 27 KNS Vs= | .00 |) KNS |
| 10J | | 449 | X1299X 249 | | | 11J |
| 1. 出版数 4.20 | مرية وأبيك سالة بالجارية | | | | | |
| ================================== | 91. 0.TO 45 | .0 | | | | |
| 1 | 59. 0.TO 45 | | | | | |
| ======== | | | | | | |
| J | | | | | | |
| 000 8#12 | 00000 | 8#12 | 0000000 | | 000000 | 00 |
| 8#12 000 | 00000 | | 0000000 | | 00000 | 00 |
| ***** | ********* | OF BEAM I | DESIGN***** | \$ * # * * * * * * * * * * * * * * * * * | ***** | |

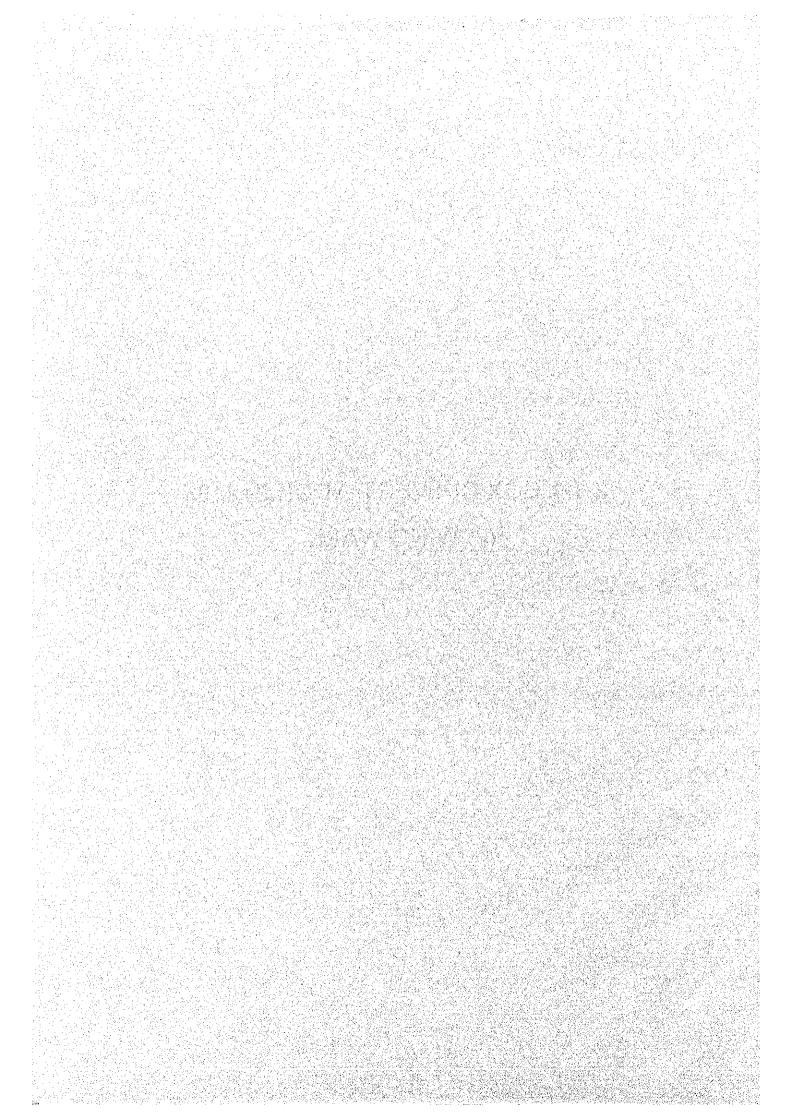
Page 15 of 16

114. END CONC DESIGN 115. FINISH

```
********** END OF STAAD-III *******
                                 TIME= 15:12: 1 ****
      **** DATE= FEB 7,2000
************
         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
```



2-1-1 BOX CULVERT AT CH.3+219 (2) WING WALL



11-21

```
STAAD-III
                     Revision 22.3a
                      Proprietary Program of
                      Research Engineers, Inc.
                     Date=
                               JAN 29, 2000
                     Time=
                               15: 9:31
                USER ID: Development Design Consultants L
 1. STAAD SPACE
 2. UNIT KNS METER
 3. PAGE EJE
 4. JOI COO
                               21
       1 0 000 0 000 0 000
 5
                                     6.70 0.000 0.000
 6 R
               2 0.000 0.000 0.295
           0.000 0.000 0.885
 7. 64
                                83
                                     6.365 0.000 0.885
 8.85
           0.000 0.000 1.180
                                102
                                     5,695 0,000 1,180
9. 106
           0.000 0.000 1.475
                                120 4.690 0.000 1.475
10. 127
           0.000 0.000 1.770
                                139
                                     4.020 0.000 1.770
11. 148
           0.000 0.000 2.065
                                157
                                     3.015 0.000 2.065
12. 169
           0.000 0.000 2.360
                                176
                                     2.345 0.000 2.360
13. 190
        0.000 0.000 2.655
                                194
                                     1.340 0.000 2.655
           0.000 0.000 2.950
14. 211
                                213
                                     0.670 0.000 2.950
16. MEM INC
17 *HORIZONTAL MEMBER
18.1
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19. R
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21. 81
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                      97
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                107
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23. 121
          127
                128
                      132
                             1 >
24. 141
          148
                149
                      149
25. 161
          169
                170
                      167
                                   1
26 181
          190
                191
                      184
27 191
          211
                212
                      192
                             1
                                   1
28. *VERTICAL MEMBER (START WITH 301)
29. 201
          2
                23
                      210
                             1
                                   21
30 R
                10
                      1
31. 221
          4
                25
                      229
                             1
                                   21
32. R
          1
                10
                      1
33. 241
          6
                27
                      248
                             1
                                   21
34. R
                10
35. 271
                      277
          9
                30
                             1
                                   21
36 R
          1
                10
37. 291
          11
                32
                      296
                             1
                                   21
38. R
          2
                10
                      1
39. 321
          14
                35
                      325
                                   21
40 R
          1
                10
                      1
41. 341
          16
                37
                      344
                             1
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42. R
          2 -
                10
                      1
43. 371
          19
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                40
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44. R
         1
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45. 391
          21
                42
                      392
                             1
                                   21
47. MEM PRO
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          TO
                      PRI
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                             YD
                                   1.500
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                                                 0.25 IX
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49. 21
          TO
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                40
                      PRI
                             YD
                                   0,250
                                          ZD
                                                             18-06
50. 41
          TO
                60
                      PRI
                             YD
                                   0.250
                                          ZD
                                                 0.295 IX
                                                             1E-06
51. 61
          TO
                79.
                      PRI
                                   0.250
                             YD
                                          ZD
                                               0.295 IX
                                                             1E-06
52. 81
          TO
                97
                      PRI
                             YD.
                                   0.250
                                           ZD
                                                 0.295 IX
                                                             1E-06
53. 101
          TO
                114
                      PRI
                                   0.250 ZD
                             YD
                                                 0.295 IX
                                                             1E-06
54. 121
          TO
                132
                      PRI
                             YD
                                   0.250
                                          ZD
                                                 0.295 IX
                                                             1E-06
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                             YD.
                                   0.250
                                          ZD
                                                 0.295 IX
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56. 161
          TO
                167
                      PRI
                             YD
                                   0.250
                                          ZD
                                                 0.295 IX
                                                             1E-06
57. 181
          TO
                184
                      PRI
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                             YD
                                          ZD
                                                 0.295 IX
                                                             1E-06
58. 191
          TO
                192
                      PRI
                             YD
                                   0.250
                                          20
                                                 0.295 IX
                                                             1E-06
```

59. *VERTICAL

| | · | | | | | | | 5 - F | es in the est | | 400 200 | | | |
|-------|--------------|------------|---------------------|-----------------------|----------------|------------------------|-------------------|------------|--|--|-------------|--|-------------|------------|
| | 60. | 201 | TO | 210 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| | 61. | | ТО | 220 | PRI | ΥD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | 1.0 |
| | 62. | | TO | 229 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | + 5 | | tig of the |
| | 63. | | TO | 239 | PRI | ΥD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| | 64. | 241 | TO | 248 | PRI | QΥ | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| | 65. | | TO | 258 | PRI | ΥĎ | 0.250 | ZD | 0.335 | IX | 1E-06 | 100 | | |
| | 66. | | TO | 268 | PRI | YD | 0.250 | · ŹD . | 0.335 | IX | 1E-06 | | | |
| 1.1 | 67. | | TO | 277 | PRI | ΥD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| | 68. | | TO | 287 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | | a girah ara | · . |
| 1 | 69. | | TO | 296 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | 4 T. S. | | |
| | 70. | | TO | 306 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | | 4.4 |
| | 71. | | TO | 316 | PRI | ΥD | 0.250 | ZD | 0.335 | | 1E-06 | | | |
| | 72. | | TO | 325 | PRI | ΥD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | alia da |
| | 73. | | TO | 335 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| | 74. | | TO | 344 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | 12.5 |
| | 75. | | TO | 354 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| i vij | 76. | 361 | TO | 364 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| 1 | 77. | 371 | TO | 373 | PRI | YD | 0.250 | ZD | 0.335 | IX | LE-06 | t rsi | | |
| - 1: | 78. | 381 | TO | 383 | PRI | YD | 0.250 | ZD | 0.335 | IX | 1E-06 | | | |
| 31.4 | 79. | 391 | TO | 392 | PRI | Ϋ́D | 0.250 | ZD | 0.335 | IX | 1E-06 | | | 1.5 |
| | 81. | CONST | ANTS | | | | | er egy (| | | | | | |
| ٠. | 82. | E | CONC | | | | | ti gili ki | | ra Nai | | | | |
| | 83. | DEN | CONC | | or Might | $\xi \leftarrow \phi,$ | | | | | | | | |
| | 85. | SUPPO | RT | | | | | 1.4.4 | | | | | | |
| | | 1 | | 43 | 64 | 85. | 106 | 127 | | 169 | 190 | 211 | FIXED | |
| gar." | 87. | 2 4 17 1 | TO | 21 | | | | | FIXED | | BUT | MZ | FY | 1866 |
| 100 | 89 | LOAD | 1 : $\mathbb{E}I$ | RTH P | RESSURE | | | | | | | | | |
| | | | LOAD | | | | | 4,47 | | | | | (최근학원 전) | |
| | | 2 | . FY | -7. | | | | Hitti | | | | a di di | | |
| | 92. | 3 | FY | -7. | and the second | | | | | | | | | |
| 25.7 | | 4 | FY | -6. | | | | | | | 1.00 | | | |
| | 94. | | FY | -6. | | | | 50 J. 10 | 12 14 15 15 15 15 15 15 15 15 15 15 15 15 15 | Transfer (State) | | y ay | | |
| | 95. | | FY | -6. | | | | | | ng ka Bara | | | | 12.44 |
| | 96. | | FY | -6. | | | | y Å | | | | | | |
| | 97. | 4 4 4 | FY | -6. | | | | | | | | 되었다 | | |
| 13 | 98 | | εY | -5. | | | | | | | | | | |
| | 99 | | FY | -5, | | | | | | | | | | |
| | 100. | | FY | 0. | | | | | | | | | | |
| | 101. | | FY | | 00 | | | | | | | | | |
| | 102. | | FY | | 00 | | | | | | | | | |
| | 103. | | FY | | 00 | 31 75 | | Service . | ar Prince Aria. | | | | | |
| | 104 | | FY | 6 T | 00 | | | 200 | | | | | 일보는 원인. | |
| | 105. | | FY | 1 1 | 00 | | | | | | | | | di wa |
| | 106. | | FY | | 00 00 | e i terr | | raile. | | | | | 化铁铁铁矿 | |
| | 107. 108. | | FY FY | | 00 | | | | | | | | | |
| | 109. | | FY | | 00 | Kir it | | | | | | | | Y-175 |
| | 110. | | FY | | 00 | | | | | | | 2011 | | |
| | 111. | | FY | -4. | | | | | | | | 138,300 | | |
| | 112. | | FY | -4 | | | | 4.5 | | | J. 1900 | | | |
| | 113. | | FY | -4. | | | | | | | | | | A 1 |
| | 114. | | FY | -4 | 4.1 | 1.54 | | | | | i grada | | is a Chair | |
| | 115. | | FY | -4 | | | | 1000 | | | | | | i i sa |
| | 116. | | FY | -3. | | | | | in Maria (1995) i Maria Galaksi (1995) | | | | | |
| | 117. | | FY | -3 | | | | | 그리는 원칙 | | | | | |
| 201 | 118. | | FY | | 55 | | | | | | | | | |
| 1 11 | 119. | | FY | | 40 | $i,j\in \mathbb{N}$ | | 13 70 13 | | | 4 1 1 1 1 1 | | | Mr. W |
| 4.5 | 120. | | FY | and the second second | 00 | | | N. Addi | | | | | | |
| 100 | 121. | | FY | | .00 | | | \$1940 | | | | | | |
| | 122. | | FY | | .00 | 15.79 | | | | | | 100 | | |
| 1 | 123. | | FY | | 00 | | | | | | | | | |
| | 124. | | FY | | .00 | | | | | 医肾髓 | | | | |
| 5,50 | 125. | | ΕY | | .00 | | | | | | | | | |
| | 126. | | ΕY | | .00 | | | | | | | | | 101.4 |
| | 127. | | FY | | .00 | vieli. | | . 34 / W | | | | | | |
| | 128. | | FY | | .00 | | The second of the | | | | | | | 33,34 |
| | 129. | | ΕY | | .00 | | | | | roja N | | | | |
| | 130. | | FY | | .00 | | | | | | | | | |
| | 131. | | FY | and the second second | . 95 | 4 | | | | | | | | |
| i ki | 132. | | FY | | .80 | | | | | | | | | |
| | . <u> </u> | .e <u></u> | <u> </u> | | | | | | | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | <u> </u> | | | |
| | | | | | | | | | | | | | | |

Page 2 of 28

| | | | 6 | | | | |
|------|----------------|----------|-----|-------------|------|------|-----|
| 122 | | | 31. | | | · . | |
| 133. | 46 | | Y | | | 65 | |
| 134. | 47 | . 5 | Y | 1.5 | -3. | 50 | |
| 135. | 48 | E | Y | | -3 | . 35 | |
| 136. | 49 | | Y | | | . 19 | |
| | 50 | | | | 3 | 0.4 | |
| 137. | | | Y | | | 04 | |
| 138. | 51 | E | Y | | | . 89 | |
| 139. | 52 | E | Y | | -2 | .74 | |
| 140. | 53 | | Ϋ́ | | | 00 | |
| | | | | | | | |
| 141. | 54 | | Y | | 4.0 | .00 | |
| 142. | 55 | Ę | Y | 1. | 0. | .00 | |
| 143. | 56 | F | Y | | | .00 | |
| 144. | 57 | | | 1 | | | |
| | | | Y | 11 | | .00 | |
| 145. | 58 | E | Y | | | .00 | |
| 146. | 59 | E | Υ | 4.0 | . 0 | .00 | |
| 147. | 60 | | Y | | | 00 | |
| | | | | ai i . i | | | |
| 148. | 61 | | Y | 4. | | .00 | |
| 149. | 62 | E | Y | · . | . 0. | 0,0 | |
| 150. | 63 | . 1 | Y | 200 miles | 0 | .00 | |
| 151. | 65 | | Ϋ́ | 10.75 | | 29 | |
| | | | | | | 49 | |
| 152. | 66 | | Y | 45 115 | -3 | . ⊥4 | |
| 153. | 67 | E | Ϋ́ | | -2. | 99 | |
| 154. | 68 | | Y | 1 2 | | 83 | |
| 155. | | | | 4.4 | -2 | 60 | |
| | 69 | | Y | | | | |
| 156. | 70 | E | Υ | 3 B | | . 53 | |
| 157. | 71 | F | Y | | -2 | .38 | |
| 158. | 72 | | Υ | 1100 | - 2 | 23 | |
| | | | | 1 | | 20 | |
| 159. | 73 | | Y | | | . 08 | |
| 160. | 74 | | Υ | | 0. | .00 | |
| 161. | 75 | .: E | Υ | . 7.7 | 0. | 00 | |
| 162. | 76 | | Y | Maria. | | .00 | |
| | | | | | | | |
| 163. | 77 | | Y | ar in | | .00 | |
| 164. | .78 | · . E | Y | | | .00 | |
| 165. | 79 | E | Y | | 0. | 00 | |
| 166. | 80 | | Y | 100 | | 00 | |
| | | | | 1200 | | | |
| 167. | 81 | | Y | 1 4 | | .00 | |
| 168. | 82 | E | Y | 1.44 (5 | . 0 | 00 | |
| 169. | 83 | E | Y | | 0. | .00 | |
| 170. | 86 | | Υ | 1.3 | | 63 | |
| | | | | 1.7 | | | |
| 171. | 87 | | Y | | _2 | 47 | |
| 172. | 88 | - E | Y | 144 | -2 | 32 | |
| 173. | 89 | Ē | Y | - : | -2. | 17 | ٠. |
| 174. | 90 | | Y | | | 02 | |
| 175. | | | | 16.4 | | | |
| | 91 | | Y | | -1. | | |
| 176. | 92 | .: E | Y | | -1. | .72 | |
| 177. | 93 | . 5 | Y | | -1 | 56 | |
| 178. | 94 | | Y | | | 41 | |
| | 95 | | | | | | |
| 179. | | | Y | | | 00 | |
| 180. | 96 | | Y | | | .00 | |
| 181. | 97 | E | Y | 100 | 0. | .00 | |
| 182. | 98 | | Y | | ് റ | 00 | |
| 183. | 99 | | Ŷ | | | .00 | ä |
| | | | | 100 | | | ٠ |
| 184. | 100 | | Y | 4.45 | | .00 | |
| 185. | 101 | Đ | Y | | . 0. | .00 | |
| 186. | 102 | | Y | . 1 | | 00 | |
| | 107 | | | 100 | | 96 | |
| 187. | | | Y | 80.50 | | | |
| 188. | 108 | | Y | 100 | | 81 | |
| 189. | 109 | ` E | Y | 43.00 | -1 | 66 | |
| 190. | 110 | | Y | 100 | | 51 | |
| | | | | 100 | | | |
| 191. | 111 | | Y | | | .36 | |
| 192. | 112 | | Y | | | .20 | |
| 193. | 113 | | Y | 49 | -1. | 05 | - |
| 194. | 114 | | Y | 100 | | 90 | |
| 195. | 115 | | | 40 | | | |
| | | | Y | | -0. | 75 | |
| 196. | 116 | | Y | 45 | 0. | 00 | |
| 197. | 117 | <u> </u> | Υ | | 0. | 00 | |
| 198. | 118 | | Y | | | 00 | |
| 199. | 119 | | Y | 18 1 2 C | | 00 | |
| | for the second | | | 17 W 17 S 1 | | | : : |
| 200. | 120 | | Y | t 1.1 | | 00 | |
| 201. | 128 | Ē | Y | 114 (11) | -1 | . 37 | |
| 202. | 129 | | Y | | | 21 | |
| | 7 | 4.00 T | | 建设备 | - 7 | | |

| 203. | 130 | FY | -1.06 |
|------|-----|----|-------|
| 204. | 131 | FY | -0.91 |
| 205. | 132 | FY | -0.76 |
| 206. | 133 | ΕY | -0.61 |
| 207. | 134 | FY | -0.46 |
| 208. | 135 | FY | -0.30 |
| 209. | 136 | FY | -0.15 |
| 210. | 137 | FY | 0.00 |
| 211. | 138 | FY | 0.00 |
| 212. | 139 | ξY | 0.00 |
| 213. | 149 | ΕY | -0.99 |
| 214. | 150 | FΥ | -0.83 |
| 215. | 151 | FY | -0.68 |
| 216. | 152 | FY | -0.53 |
| 217. | 153 | FY | -0.38 |
| 218. | 154 | FY | -0.23 |
| 219. | 155 | FY | -0.08 |
| 220. | 156 | ΕY | 0.00 |
| 221. | 157 | FΥ | 0.00 |
| 222. | 170 | FY | -0.61 |
| 223. | 171 | ΕY | -0.46 |
| 224. | 172 | FY | -0.30 |
| 225. | 173 | FY | -0.15 |
| 226. | 174 | ΕY | 0.00 |
| 227. | 175 | FY | 0.00 |
| 228. | 176 | FY | 0.00 |
| 229. | 191 | FY | -0.23 |
| 230. | 192 | FY | -0.08 |
| 231. | 193 | FY | 0.00 |
| 232. | 194 | FY | 0.00 |
| 233. | 212 | FY | 0.00 |
| 234. | 213 | FY | 0.00 |

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236. PER ANA

PROBLEM STATISTICS

NUMBER OF JOINTS/MEMBER+ELEMENTS/SUPPORTS = 155/ 268/ 31
ORIGINAL/FINAL BAND-WIDTH = 21/ 9
TOTAL PRIMARY LOAD CASES = 1, TOTAL DEGREES OF FREEDOM = 784
SIZE OF STIFFNESS MATRIX = 43904 DOUBLE PREC. WORDS
REQRD/AVAIL. DISK SPACE = 12.59/ 243.8 MB, EXMEM = 1965.6 MB

++ Processing Element Stiffness Matrix. 15: 9:31
++ Processing Global Stiffness Matrix. 15: 9:31
++ Processing Triangular Factorization. 15: 9:31
++ Calculating Joint Displacements. 15: 9:31
++ Calculating Member Forces. 15: 9:31

237. PRINT MEM FORCES

MEMBER END FORCES STRUCTURE TYPE = SPACE

ALL UNITS ARE -- KNS METE

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z |
|------------|-----------------------|------|-------|---------|---------|---------|-------|---------|
| | 不准度的 177 1770年第4月7 | | | | | | | |
| . 1 | 1 | 1 | .00 | 139.58 | .00 | .00 | .00 | 253.27 |
| | | 2 | .00 | -139.58 | ,00 | .00 | .00 | -206.51 |
| 2 | 1 | 2 | .00 | 131.29 | .00 | .00 | .00 | 206.51 |
| | | 3 | .00 | -131.29 | .00 | .00 | .00 | -162.52 |
| 3 | 1 | 3 | .00 | 118.08 | 00 | .00 | .00 | 162.52 |
| wa di Paga | | 4 | .00 | -118.08 | .00 | .00 | .00 | -122.97 |
| 4 | 1 | 4 | 00 | 102.01 | .00 | .00 | .00 | 122.96 |
| | | 5 | .00 | -102.01 | .00 | .00 | .00 | -88.79 |
| 5 | 1 | 5 | .00 | 84.69 | .00 | .00 | .00 | 88.79 |
| | | 6 | .00 | -84.69 | .00 | .00 | .00 | -60.42 |
| 6 | 1 | 6 | .00 | 67.09 | .00 | .00 | .00 | 60.42 |
| | | 7 | .00 | -67.09 | .00 | .00 | .00 | -37.94 |
| 7 | 1 | ·. 7 | .00 | 49.88 | .00 | .00 | .00 | 37.94 |
| | | 8 | .00 | -49.88 | .00 | .00 | .00 | -21.23 |
| 8 | 1 | 8 | .00 | 33.63 | .00 | .00 | .00 | 21.23 |
| | | 9 | .00 | -33.63 | .00 | .00 | .00 | -9.97 |
| 9 | 1 | 9 | .00 | 18.89 | .00 | .00 | .00 | 9.97 |
| | | 10 | .00 | -18.89 | .00 | .00 | .00 | -3.64 |
| 10 | 1 | 10 | .00 | 6.58 | .00 | .00 | .00 | 3.64 |
| | | 11 | .00 | -6.58 | 00 | .00 | .00 | -1.43 |
| 11 | 1 | 11 | .00 | 3.19 | 00 | .00 | .00 | 1.44 |
| | | 12 | .00 | -3.19 | .00 | .00 | .00 | 37 |
| 12 | 1 | 12 | .00 | 1.66 | .00 | .00 | .00 | .37 |
| | | 13 | .00 | -1.66 | .00 | .00 | .00 | .19 |
| 13 | 1 | 13 | .00 | .90 | .00 | .00 | .00 | 19 |
| | | 14 | .00 | 90 | .00 | .00 | .00 | .49 |
| 14 | 1 | 14 | .00 | . 38 | .00 | .00 | .00 | 49 |
| | | 15 | .00 | 38 | .00 | .00 | .00 | .62 |

| | • | · · · | | | | | | |
|--------|------|----------|---------|---------------|------------|------------|------------|------------------|
| MEMBER | LOAD | JT | AXIAL S | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z |
| 15 | 1 | 15 16 | .00 | 01 .01 | .00 | .00 | .00 | 62 .62 |
| 5 | | 100 | | 29 | | | tanan (i | 62 |
| 16 | 1 | 16 17 | .00 | 29 | .00 | .00 | .00 | .52 |
| 17 | 1 | 17 | .00 | - 44 | .00 | .00 | .00 | 52 |
| | | 18 | .00 | .44 | .00 | .00 | ,00 | .37 |
| 18 | 1 | 18 19 | .00 | 48 .48 | .00 | .00 | .00 | 37 .21 |
| 19 | 1 | 19 | .00 | 38 | .00 | .00 | .00 | 21 |
| | | 20 | .00 | .38 | .00 | .00 | .00 | .08 |
| 20 | 1 | 20 21 | .00 | 25 .25 | .00 | .00 | .00 | 08 .00 |
| | | | | | | | | 3.68 |
| 21 | 1 | 22 23 | .00 | 6.83 -6.83 | .00 .00 | .00 | .00 .00 | -1.39 |
| 22 | 1 | 23 | .00 | 2.12 | .00 | .00 | .00 | 1.39 |
| | | 24 | .00 | -2.12 | .00 | .00 | .00 | 68 |
| 23 | 1 | 24 25 | .00 | .82 82 | .00 | .00 .00 | .00 | .68 41 |
| 24 | 1 | 25 | .00 | .53 | .00 | .00 | .00 | .41 |
| | | 26 | .00 | 53 | .00 | .00 | .00 | - .23 |
| 25 | 1 | 26 27 | .00 | .41 41 | .00 | .00 | .00 .00 | .23 10 |
| 26 | 1 | 27 | .00 | .31 | .00 | .00 | .00 | .10 |
| 20 | | 28 | .00 | 31 | .00 | .00 | .00 | .01 |
| 27 | 1 | 28 | .00 | .24 | .00 | .00 | .00 | 01 |
| | | 29 | .00 | 24 | .00 | .00 | .00 | .09 |
| 28 | 1 | 29 30 | .00 | .18 18 | .00 | .00 | .00 | 09 .15 |
| 29 | 1 | 30 | .00 | .04 | .00 | .00 | .00 | 15 |
| | | 31 | .00 | 04 | .00 | .00 | .00 | .16 |
| 30 | 1 | 31 32 | .00 | 75 .75 | .00 | .00 | .00 | 16 09 |
| 31 | 1 | 32 | .00 | .02 | .00 | .00 | .00 | .09 |
| | | 33 | .00 | 02 | .00 | .00 | .00 | 08 |
| 32 | 1 | 33 34 | .00 | .11 11 | .00 | .00 | .00 .00 | .08 05 |
| 22 | • | 34 | .00 | .08 | .00 | .00 | .00 | .05 |
| 33 | 1 | 35 | .00 | 08 | .00 | .00 | .00 | 02 |
| 34 | 1 | 35 | .00 | .04 | .00 | .00 | .00 | .02 |
| | | 36 | .00 | →.04 | .00 | .00 | .00 | - 01 |
| 35 | 1 | 36 37 | .00 | 02 .02 | .00 .00 | .00 | .00 .00 | .01 02 |
| 36 | 1 | 37 | .00 | 03 | .00 | .00 | .00 | .02 |
| | | 38 | .00 | .03 | | .00 | .00 | - 03 |
| 37 | 1 | 38 39 | .00 | .03 03 | | .00 | .00 | .03 02 |
| | | | | | | | | |

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z | |
|--------|----------|----------|------------|---------------|------------|------------|------------|---------------|---------------------------------------|
| 38 | 1 | 39 40 | .00 | 04 .04 | .00 | .00 | .00 | .02 | · · · · · · · · · · · · · · · · · · · |
| 39 | 1 | 40 41 | .00 | .05 05 | .00 | .00 | .00 | .03 01 | |
| 40 | 1 | 41 42 | .00 | .04 04 | .00 | .00 | .00 | .01 | |
| 41 | 1 | 43 44 | .00 | 7.12 -7.12 | .00 | .00 | .00 | 4.35 -1.97 | |
| 42 | 1 | 44 45 | .00 | 3.72 -3.72 | .00 | .00 | .00 | 1.97 72 | |
| 43 | 1 | 45 46 | .00 | 1.59 -1.59 | .00 | .00 | .00 | .72 19 | |
| 44 | 1 | 46 47 | .00 | .70 70 | .00 | .00 | .00 .00 | .19 .05 | |
| 45 | 1 | 47 48 | .00 .00 | .38 38 | .00 .00 | .00 | .00 | 05 .17 | |
| 46 | 1 | 48 49 | .00 | .24 24 | .00 | .00 | .00 | 17 .25 | |
| 47 | 1 | 49 50 | .00 | .16 16 | .00 | .00 | .00 | 25 .31 | |
| 48 | 1 | 50 51 | .00 | .07 07 | .00 | .00 | .00 | 31 .33 | |
| 49 | 1 | 51 52 | .00 | 22 .22 | .00 | .00 | .00 | 33 .26 | |
| 50 | 1 | 52 53 | .00 .00 | -1.11 1.11 | .00 | .00 | .00 | - 26 - 11 | |
| 51 | 1 | 53 54 | .00 | 14 .14 | .00 | .00 | .00 | .11 16 | |
| 52 | 1 | 54 55 | .00 | .10 10 | .00 | .00 | .00 .00 | .16 13 | |
| 53 | 1 | 55 56 | .00 | .12 12 | .00 .00 | .00 | .00 | .13 09 | |
| 54 | 1 | 56 57 | .00 | 11 11 | .00 .00 | .00 | .00 | .09 05 | |
| 55 | 1 | 57 58 | .00 .00 | 08 | .00 .00 | .00 .00 | .00 | .05 | |
| 56 | 1 | 58 59 | .00 .00 | 10 .10 | .00 | .00 | .00 | .08 11 | |
| 57 | 1 | 59 60 | .00 | .09 09 | .00 | .00 | .00 | .11 08 | |
| 58 | 1 | 60 61 | .00 .00 | 01 .01 | .00 | .00 | .00 | .08 | |
| 59 | 1 | 61 62 | .00 | .04 04 | .00 | .00 | .00 | .08 07 | |
| 60 | 1 | 62 63 | .00 | .21 - 21 | .00 | .00 | .00 | .07 | |

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | мом-ч | MOM-Z | |
|--------|------|----------|------------|---------------|------------|------------|------------|---------------|--|
| 61 | 1 | 64 65 | .00 | 7.50 -7.50 | .00 | .00 | .00 | 4.96 -2.45 | |
| 62 | 1 | 65 66 | .00 .00 | 4.62 -4.62 | .00 | .00 | .00 .00 | 2.45 90 | |
| 63 | 1 | 66 67 | .00 | 2.43 -2.43 | .00 | .00 | .00 | .90 09 | |
| 64 | 1 | 67 68 | .00 | 1.11 -1.11 | .00 | .00 | .00 | .09 .28 | |
| 65 | 1 | 68 69 | .00 | . 48 48 | .00 | .00 | .00 | 28 .44 | |
| 66 | 1 | 69 70 | .00 | .22 22 | .00 | .00 | .00 | 44 .52 | |
| 67 | 1 | 70 71 | .00 | .10 10 | .00 | .00 .00 | .00 | 52 .55 | |
| 68 | 1 | 71 72 | .00 | 12 .12 | .00 | .00 | .00 .00 | 55 .51 | |
| 69 | 1 | 72 73 | .00 | 47 .47 | .00 | .00 | .00 .00 | 51 .35 | |
| 70 | 1 | 73 74 | .00 | -1.09 1.09 | .00 | -00 -00 | .00 | 35 01 | |
| 71 | 1 | 74 75 | .00 | 29 .29 | .00 .00 | .00 | .00 .00 | .01 11 | |
| 72 | 1 | 75 76 | .00 | 11 .11 | .00 .00 | .00 | .00 .00 | .11 14 | |
| 73 | 1 | 76 77 | .00 | 03 | .00 .00 | .00 .00 | .00 | .15 15 | |
| 74 | 1 | 77 78 | .00 | .02 02 | .00 | .00 .00 | .00 | - 15 - 15 | |
| 75 | 1 | 78 79 | .00 | 11 .11 | .00 | .00 | .00 | .15 18 | |
| 76 | 1 | 79 80 | .00 | 03 .03 | .00 | .00 | .00 | .18 19 | |
| 77 | 1 | 80 81 | .00 | 24 .24 | .00 | .00 | .00 | .19 28 | |
| 78 | 1 | 81 82 | .00 .00 | .53 53 | .00 | .00 | .00 | .28 10 | |
| 79 | 1 | 82 83 | .00 | .29 29 | .00 .00 | .00 | .00 .00 | .10 .00 | |
| 81 | 1 | 85 86 | .00 .00 | 7.39 -7.39 | .00 | .00 | .00 .00 | 5.27 -2.79 | |
| 82 | 1 | 86 87 | .00 | 4.96 -4.96 | | .00 | .00 | 2.79 -1.13 | |
| 83 | 1. | 87 88 | .00 .00 | 2.99 -2.99 | | .00 .00 | .00 .00 | 1.13 13 | |
| 84 | 1 | 88 89 | .00 | 1.54 -1.54 | | .00 .00 | .00 .00 | .13 .39 | |

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | мом-ч | MOM-Z | |
|--------|------|------------|------------|---------------|---------|------------|------------|---------------|--|
| 85 | 1 | 89 90 | .00 | .68 68 | .00 | .00 | .00 | 39 .62 | |
| 86 | 1 | 90 91 | .00 | .26 26 | .00 | .00 | .00 | 62 .70 | |
| 87 | 1 | 91 92 | .00 | .13 | .00 | .00 | .00 | 70 .75 | |
| 88 | 1 | 92 93 | .00 | 10 .10 | .00 | .00 | .00 | 75 .71 | |
| 89 | 1 | 93 94 | .00 | 67 .67 | .00 | .00 | .00 | 71 .49 | |
| 90 | 1 | 94 95 | .00 .00 | 80 .80 | .00 | .00 | .00 | 49 .22 | |
| 91 | 1 | 95 96 | .00 | 41 .41 | .00 | .00 | .00 | 22 .08 | |
| 92 | 1 | 96 97 | .00 | 42 .42 | .00 | .00 | .00 | 08 06 | |
| 93 | 1 | 97 98 | .00 | 27 .27 | .00 | .00 | .00 | .06 - 15 | |
| 94 | 1 | 98 99 | .00 | 78 .78 | .00 | .00 | .00 | .15 41 | |
| 95 | 1 | 99 100 | .00 | .22 22 | .00 | .00 | .00 | .41 | |
| 96 | 1 | 100 101 | .00 | .44 44 | .00 | .00 | .00 | .34 19 | |
| 97 | 1 | 101 102 | .00 .00 | .56 56 | .00 | .00 | .00 | .19 | |
| 101 | 1 | 106 107 | .00 .00 | 6.76 -6.76 | .00 | .00 | .00 | 5.24 -2.98 | |
| 102 | 1 | 107 108 | .00 | 4.80 -4.80 | .00 | .00 | .00 | 2.98 -1.37 | |
| 103 | 1 | 108 109 | .00 | 3.19 -3.19 | .00 | .00 | .00 .00 | 1.37 30 | |
| 104 | . 1 | 109 110 | .00 .00 | 1.86 -1.86 | .00 | .00 .00 | .00 | .30 | |
| 105 | 1 | 110 111 | .00 .00 | .90 90 | .00 | .00 .00 | .00 | 32 .63 | |
| 106 | 1 | 111 112 | .00 | .41 41 | .00 | .00 .00 | .00 | 63 .76 | |
| 107 | 1 | 112 113 | .00 | .22 22 | .00 | .00 | .00 | 76 .84 | |
| 108 | 1 | 113 114 | .00 .00 | .38 38 | .00 | .00 | .00 | 84 .97 | |
| 109 | 1 | 114 115 | .00 | 60 .60 | .00 | .00 | .00 | 97 .77 | |
| 110 | 1 | 115 116 | .00 | 60 .60 | .00 | .00 | .00 | 77 .56 | |

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z |
|--------|------|------------|------------|---------------|------------|------------|------------|---------------|
| 111 | 1 | 116 117 | .00 | 84 .84 | .00 | .00 | .00 | 56 .28 |
| 112 | 1 | 117 118 | .00 | 28 .28 | .00 | .00 | .00 | 28 .19 |
| 113 | 1 | 118 119 | .00 | 80 .80 | .00 | .00 | .00 | 19 08 |
| 114 | 1 | 119 120 | .00 | .23 23 | .00 | .00 .00 | .00 | .08 |
| 121 | 1 | 127 128 | .00 | 5.78 -5.78 | .00 | .00 | .00 .00 | 4.94 -3.00 |
| 122 | 1 | 128 129 | .00 | 4.26 -4.26 | .00 | .00 | .00 .00 | 3.00 -1.57 |
| 123 | 1 | 129 130 | .00 | 2.92 -2.92 | .00 .00 | .00 | .00 | 1.58 60 |
| 124 | 1 | 130 131 | .00 | 2.07 -2.07 | .00 | .00 | .00 .00 | .60 .10 |
| 125 | 1 | 131 132 | .00 | 1.00 -1.00 | .00 | .00 .00 | .00 | 10 .43 |
| 126 | 1 | 132 133 | .00 | .88 88 | .00 | .00 .00 | .00 .00 | - 43 .73 |
| 127 | 1 | 133 134 | .00 | .36 36 | .00 | .00 | .00 .00 | 73 .85 |
| 128 | 1 | 134 135 | .00 | .72 72 | .00 | .00 .00 | ,00 .00 | 85 1.09 |
| 129 | 1 | 135 136 | .00 | 1.54 -1.54 | .00 | .00 .00 | .00 | -1.09 1.61 |
| 130 | 1 | 136 137 | .00 | -2.23 2.23 | .00 | .00 .00 | .00 | -1.61 .86 |
| 131 | 1 | 137 138 | .00 | -1.52 1.52 | .00 | .00 | .00 | 86 .35 |
| 132 | 1 | 138 139 | .00 .00 | -1.06 1.06 | .00 | .00 .00 | .00 | 35 .00 |
| 141 | 1 | 148 149 | .00 | 4.46 -4.46 | .00 | .00 | .00 .00 | 4.40 -2.91 |
| 142 | 1 | 149 150 | .00 | 3.60 -3.60 | .00 | .00 .00 | .00 .00 | 2.91 -1.70 |
| 143 | 1 | 150 151 | .00 .00 | 2.01 -2.01 | .00 | .00 | .00 | 1.70 -1.03 |
| 144 | 1 | 151 152 | .00 .00 | 2.11 -2.11 | .00 | .00 | .00 | 1.03 32 |
| 145 | 1 | 152 153 | .00 | 1.14 -1.14 | .00 | .00 | .00 .00 | .32 .06 |
| 146 | 1 | 153 154 | .00 .00 | 1.55 -1.55 | | .00 .00 | .00 .00 | 06 .58 |
| 147 | 1 | 154 155 | .00 | 1.69 -1.69 | | .00 | .00 .00 | 58 1.14 |

C\BoxCulvert\W2_219.doc Page 10 of 28

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z | |
|--------|------|------------|---------------------|----------------|------------|------------|-------|---------------|------|
| 148 | 1 | 155 156 | .00 | -1.14 1.14 | .00 | .00 | .00 | -1.14 .76 | |
| 149 | 1 | 156 157 | .00 | -2.26 2.26 | .00 | .00 | .00 | 76 .00 | |
| 161 | 1 | 169 170 | .00 | 2.55 -2.55 | .00 | .00 | .00 | 3.62 -2.76 | |
| 162 | 1 | 170 171 | .00 | 2.85 -2.85 | .00 | .00 | .00 | 2.76 -1.81 | |
| 163 | 1 | 171 172 | .00 | 1.23 -1.23 | .00 | .00 | .00 | 1.81 -1.39 | |
| 164 | 1 | 172 173 | .00 | .30 30 | .00 | .00 | .00 | 1.39 -1.29 | |
| 165 | 1 | 173 174 | .00 .00 | 3.43 -3.43 | .00 | .00 | .00 | 1.30 | |
| 166 | 1 | 174 175 | .00 | 1.06 -1.06 | .00 | .00 | .00 | .15 | |
| 167 | 1 | 175 176 | .00 | 60 .60 | .00 | .00 | .00 | 20 .00 | |
| 181 | 1 | 190 191 | .00 | 1.10 -1.10 | .00 | .00 | .00 | 2.69 -2.32 | |
| 182 | 1 | 191 192 | .00 .00 | 70 .70 | .00 | .00 | .00 | 2.32 -2.56 | |
| 183 | 1 | 192 193 | .00 | 4.27 -4.27 | .00 | .00 | .00 | 2.56 -1.13 | |
| 184 | 1 | 193 194 | .00 | 3.38 -3.38 | .00 | .00 | .00 | 1.13 | |
| 191 | 1 | 211 212 | .00 .00 | 2.88 -2.88 | .00 | .00 | .00 | 2.12 -1.16 | |
| 192 | 1 | 212 213 | .00 | 3.44 -3.44 | .00 | .00 | .00 | 1.16 .00 | |
| 201 | 1 | 2 23 | .00 .00 | .93 93 | .00 | .00 | .00 | .52 24 | |
| 202 | 1 | 23 44 | .00 | 1.02 -1.02 | .00 | .00 .00 | .00 | .24 | |
| 203 | 1 | 44 65 | .00 | . 48 48 | .00 | .00 | .00 | 06 .21 | |
| 204 | 1 | 65 86 | .00 | .07 07 | .00 .00 | .00 | .00 | 21 .23 | |
| 205 | 1 | 86 107 | .00 | 12 .12 | .00 | .00 | .00 | 23 .19 | |
| 206 | 1 | 107 128 | .00 | 13 .13 | .00 | .00 .00 | .00 | 19 .15 | |
| 207 | 1 | 128 149 | .00 | .03 03 | .00 | .00 | .00 | 15 .16 | |
| 208 | 1 | 149 170 | .00 | 10 .10 | .00 | .00 .00 | .00 | 16 .13 | |
| | | 100 | Markey State (2007) | eet Naviga (15 | | | | | 4475 |

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z | |
|--------|------|------------|-------|-----------------|------------|------------|------------|---------------|--|
| 209 | 1 | 170 191 | .00 | -1.01 1.01 | .00 | .00 .00 | .00 | 13 16 | |
| 210 | 1 | 191 212 | .00 | .57 57 | .00 | .00 | .00 | .17 | |
| 211 | 1 | 3 24 | .00 | 6.06 -6.06 | .00 | .00 | .00 | 2.40 61 | |
| 212 | 1 | 24 45 | .00 | 2.90 -2.90 | .00 | .00 | .00 | .61 .25 | |
| 213 | 1 | 45 66 | .00 | 1.23 -1.23 | .00 | .00 | .00 .00 | 25 .61 | |
| 214 | 1 | 66 87 | .00 | .27 27 | .00 | .00 | .00 | 61 .69 | |
| 215 | 1 | 87 108 | .00 | 24 .24 | .00 .00 | .00 .00 | .00 | 69 . 62 | |
| 216 | 1 | 108 129 | .00 | 43 . 43 | .00 | .00 | .00 | 62 .49 | |
| 217 | 1 | 129 150 | .00 | 31 .31 | .00 | .00 | .00 .00 | 49 .40 | |
| 218 | 1 | 150 171 | .00 | .45 45 | .00 | .00 | .00 .00 | 40 .54 | |
| 219 | 1 | 171 192 | .00 | 1.61 -1.61 | .00 | .00 | .00 | 54 1.01 | |
| 220 | 1 | 192 213 | .00 | -3.44 3.44 | .00 | .00 | .00 .00 | -1.01 .00 | |
| 221 | 1 | 4 25 | .00 | 9.12 -9.12 | .00 | .00 | .00 | 3.93 -1.24 | |
| 222 | 1 | 25 46 | .00 | 5.10 -5.10 | .00 | .00 | .00 | 1.24 .26 | |
| 223 | 1 | 46 67 | .00 | 2.34 -2.34 | .00 | .00 | .00 .00 | 26 .95 | |
| 224 | 1 | 67 88 | .00 | .67 67 | .00 | .00 | .00 .00 | 95 1.15 | |
| 225 | 1 | 88 109 | .00 | 20 .20 | | .00 .00 | .00 | -1.15 1.09 | |
| 226 | 1 | 109 130 | .00 | 53 .53 | | .00 | .00 | -1.09 .93 | |
| 227 | 1 | 130 151 | .00 | 74 .74 | | .00 | .00 | 93 .72 | |
| 228 | 1 | 151 172 | .00 | -1.53 1.53 | | -00 -00 | .00 .00 | 72 .26 | |
| 229 | 1 | 172 193 | .00 | 89 .89 | | .00 | .00 .00 | 26 .00 | |
| 231 | 1 | 5 26 | .00 | 10.58 -10.58 | | .00 | .00 | 4.95 -1.83 | |
| 232 | 1 | 26 47 | .00 | 6.54 -6.54 | | .00 .00 | .00 | 1.83 .10 | |

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z | |
|--------|------|------------|------------|-----------------|------------|------------|------------|---------------|--|
| 233 | 1 | 47 68 | .00 | 3.36 -3.36 | .00 | .00 | .00 | 10 1.09 | |
| 234 | 1 | 68 89 | .00 | 1.16 -1.16 | .00 .00 | .00 | .00 | -1.09 1.43 | |
| 235 | 1 | 89 110 | .00 | 15 .15 | .00 | .00 | .00 | -1.43 1.39 | |
| 236 | 1 | 110 131 | .00 | 70 .70 | .00 | .00 | .00 | -1.39 1.18 | |
| 237 | 1 | 131 152 | .00 | 54 .54 | .00 | .00 | .00 | -1.18 1.02 | |
| 238 | . 1 | 152 173 | .00 | 10 .10 | .00 | .00 | .00 | -1.02 .99 | |
| 239 | 1 | 173 194 | .00 | -3.38 3.38 | .00 | .00 | .00 | -1.00 .00 | |
| 241 | 1 | 6 27 | .00 | 11.06 -11.06 | .00 | .00 | .00 | 5.50 -2.24 | |
| 242 | 1 | 27 48 | .00 | 7.14 -7.14 | .00 | .00 | .00 | 2.24 13 | |
| 243 | 1 | 48 69 | .00 | 3.93 -3.93 | .00 | .00 | .00 | .13 1.03 | |
| 244 | 1 | 69 90 | .00 .00 | 1.51 -1.51 | .00 | .00 | .00 | -1.03 1.47 | |
| 245 | 1 | 90 111 | .00 | 09 .09 | .00 | .00 | .00 | -1.47 1.45 | |
| 246 | 1 | 111 132 | .00 | 95 .95 | .00 | .00 | .00 | -1.45 1.17 | |
| 247 | 1 | 132 153 | .00 .00 | -1.58 1.58 | .00 | .00 | .00 | -1.17 .70 | |
| 248 | 1 | 153 174 | .00 | -2.38 2.38 | .00 | .00 .00 | .00 | 70 .00 | |
| 251 | 1 | 7 28 | .00 | 10.87 -10.87 | .00 | .00 | .00 | 5.65 -2.45 | |
| 252 | 1 | 28 49 | .00 | 7.08 -7.08 | .00 | .00 | .00 | 2.45 36 | |
| 253 | 1 | 49 70 | .00 | 3.97 -3.97 | .00 | .00 | .00 | .36 .81 | |
| 254 | 1 | 70 91 | .00 | 1.56 -1.56 | .00 | .00 | .00 | 81 1.27 | |
| 255 | 1 | 91 112 | .00 | 18 .18 | .00 | .00 .00 | .00 | -1.27 1.22 | |
| 256 | 1 | 112 133 | .00 | -1.19 1.19 | .00 .00 | .00 | .00 .00 | -1.22 .87 | |
| 257 | 1 | 133 154 | .00 | -1.29 1.29 | .00 .00 | .00 | .00 | 87 .49 | |
| 258 | . 1 | 154 175 | .00 | -1.66 1.66 | .00 | .00 | .00 | 49 .00 | |

| MEMBER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | мом-ч | мом-г |
|--------|------|------------|------------|-----------------|------------|------------|------------|---------------|
| 261 | 1 | 8 29 | .00 | 10.12 -10.12 | .00 | .00 | .00 | 5.45 -2.47 |
| 262 | 1 | 29 50 | .00 | 6.47 -6.47 | .00 | .00 | .00 | 2.47 56 |
| 263 | 1 | 50 71 | .00 | 3.53 -3.53 | .00 | .00 | .00 .00 | .56 .48 |
| 264 | 1 . | 71 92 | .00 | 1.37 -1.37 | .00 | .00 | .00 | 48 .89 |
| 265 | 1 | 92 113 | .00 | 12 .12 | .00 .00 | .00 | .00 .00 | 89 .85 |
| 266 | 1 | 113 134 | .00 | -1.33 1.33 | .00 | .00 | .00 | 85 .46 |
| 267 | 1 | 134 155 | .00 | -2.14 2.14 | .00 | .00 | .00 .00 | 46 17 |
| 268 | 1 | 155 176 | .00 | .60 60 | .00 | .00 | .00 | .18 |
| 271 | 1 | 9 30 | .00 | 8.81 -8.81 | .00 | .00 | .00 .00 | 4.92 -2.32 |
| 272 | 1 | 30 51 | .00 | 5.39 -5.39 | .00 | .00 .00 | .00 | 2.32 73 |
| 273 | 1 | 51 72 | .00 | 2.79 -2.79 | .00 | .00 | .00 .00 | .73 .09 |
| 274 | 1 | 72 93 | .00 | .91 91 | .00 .00 | .00 | .00 | 09 .36 |
| 275 | 1 | 93 114 | .00 | 08 .08 | .00 | .00 | .00 .00 | 36 .33 |
| 276 | 1 | 114 135 | .00 | 01 .01 | .00 | .00 | .00 .00 | 33 .33 |
| 277 | 1 | 135 156 | .00 | -1.13 1.13 | .00 | .00 .00 | .00 .00 | - 33 .00 |
| 281 | 1 | 10 31 | .00 | 6.59 -6.59 | .00 | .00 .00 | .00 | 4.03 -2.09 |
| 282 | 1 | 31 52 | .00 | 3.98 -3.98 | .00 | .00 .00 | .00 | 2.09 - 91 |
| 283 | . 1 | 52 73 | .00 .00 | 2.13 -2.13 | | .00 | .00 | .91 28 |
| 284 | 1 | 73 94 | .00 | .67 67 | | .00 .00 | .00 .00 | .28 09 |
| 285 | 1 | 94 115 | .00 | 61 .61 | | .00 | .00 | .09 27 |
| 286 | 1 | 115 136 | .00 | -1.35 1.35 | | .00 | .00 .00 | .27 66 |
| 287 | 1 | 136 157 | .00 | 2.26 -2.26 | | .00 .00 | .00 .00 | .67 .00 |
| 291 | 1 | 11 32 | .00 | 3.39 -3.39 | 00 | .00 | .00 | 2.86 -1.86 |

| MEMBER | LOAD JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOMY | MOM-Z | · . · . |
|--------|--------------|------------|---------------|---------|------------|------------|------------------|---------|
| 292 | 1 32 53 | .00 | 2.62 -2.62 | .00 | .00 | .00 | 1.86 -1.09 | |
| 293 | 1 53 74 | .00 | 1.65 -1.65 | .00 | .00 | .00 | 1.09 - 60 | |
| 294 | 1 74 95 | .00 | .86 86 | .00 | .00 | .00 | .60 35 | |
| 295 | 1 95 116 | .00 | .47 47 | .00 | .00 | .00 | .35 21 | |
| 296 | 1 116 137 | .00 | .70 70 | .00 | .00 | .00 | .21 | |
| 301 | 1 12 33 | .00 | 1.53 -1.53 | .00 | .00 | .00 | 1.96 -1.51 | |
| 302 | 1 33 54 | .00 | 1.44 -1.44 | .00 | .00 | .00 | 1.51 -1.09 | |
| 303 | 1 54 75 | .00 | 1.19 | .00 | .00 | .00 | 1.09 | |
| 304 | 1 75 96 | .00 | 1.01 -1.01 | .00 | .00 | .00 | 74 .74 44 | |
| 305 | 1 96 117 | .00 | 1.02 -1.02 | .00 | .00 | .00 | .44 .44 14 | |
| 306 | 1 117 138 | .00 .00 | .46 46 | .00 | .00 | .00 | .14 | |
| 311 | 1 13 34 | .00 | .77 77 | .00 | .00 | .00 | 1.36 -1.14 | |
| 312 | 1 34 55 | .00 | .79 79 | .00 | .00 | .00 | 1.14 90 | |
| 313 | 1 55 76 | .00 | .77 77 | .00 | .00 | .00 | .90 67 | |
| 314 | 1 76 97 | .00 | .69 69 | .00 | .00 | .00 | . 67 47 | |
| 315 | 1 97 118 | .00 | .54 54 | .00 | .00 | .00 | .47 31 | |
| 316 | 1 118 139 | .00 | 1.06 -1.06 | .00 | .00 | .00 | .31 .00 | |
| 321 | 1 14 35 | .00 .00 | .51 51 | .00 | .00 .00 | .00 | .94 79 | |
| 322 | 1 35 56 | .00 | .55 55 | .00 | .00 | .00 | .79 63 | |
| 323 | 1 56 77 | .00 | .56 56 | .00 | .00 | .00 | .62 46 | |
| 324 | 1 77 98 | .00 .00 | .52 52 | .00 | .00 .00 | .00 | .46 30 | |
| 331 | 1 15 36 | .00 | .39 39 | .00 | .00 | .00 .00 | .60 49 | |
| 332 | 1 36 57 | .00 | .46 46 | .00 | .00 | .00 | .49 35 | |

| MEMB ER | LOAD | JT | AXIAL | SHEAR-Y | SHEAR-Z | TORSION | MOM-Y | MOM-Z |
|----------|------|-----------|------------|-------------|------------|------------|------------|------------|
| 333 | 1 | 57 78 | .00 | .65 65 | .00 | .00 | .00 | .35 |
| 334 | 1 | 78 99 | .00 | .77 -,77 | .00 | .00 | .00 | .16 .07 |
| 335 | 1 | 99 120 | .00 | 23 .23 | .00 | .00 | .00 | 07 .00 |
| 341 | 1 | 16 37 | .00 | .27 | .00 | .00 | .00 | .31 |
| 342 | 1 | 37 58 | .00 | .28 28 | .00 | .00 | .00 | .23 15 |
| 343 | 1 | 58 79 | .00 | .30 30 | .00 | .00 | .00 | .15 06 |
| 351 | 1 | 17 38 | .00 | .16 16 | .00 | .00 | .00 | .09 04 |
| 352 | 1 | 38 59 | .00 | .10 | .00 | .00 | .00 | .04 01 |
| 353 | 1 | 59 80 | .00 | 09 .09 | .00 .00 | .00 | .00 | .01 04 |
| 354 | 1 | 80 101 | .00 | .12 | .00 | .00 .00 | .00 | .04 .00 |
| 361 | 1 | 18 39 | .00 | .04 04 | .00 | .00 | .00 | 06 .07 |
| 362 | 1 | 39 60 | .00 | .11 | .00 | .00 | .00 | 07 .10 |
| 363 | 1 | 60 81 | .00 .00 | .21 21 | .00 | .00 | .00 .00 | 10 .17 |
| 364 | 1 | 81 102 | .00 | 56 .56 | .00 | .00 | .00 | 17 .00 |
| 371 | 1 | 19 40 | .00 | 10 .10 | .00 | .00 | .00 .00 | 15 .12 |
| 372 | 1 | 40 61 | .00 | 18 .18 | .00 | .00 | .00 | 12 .07 |
| 373 | 1 | 61 82 | .00 | 23 .23 | .00 | .00 | .00 | 07 .00 |
| 381 | 1 | 20 41 | .00 | 13 .13 | .00 | .00 | .00 | 16 .12 |
| 382 | 1 | 41 62 | .00 | 12 .12 | .00 | .00 | .00 | 12 .09 |
| 383 | 1 | 62 83 | .00 | 29 .29 | .00 | .00 | .00 | 09 .00 |
| 391 | 1 | 21 42 | .00 | 25 .25 | .00 | .00 | .00 | 14 .06 |
| 392 | 1 | 42 63 | .00 | 21 .21 | . 00 | | .00 | 06 .00 |
| salay is | | | | | | | | |

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

```
241. FC 25000
 242. CLEAR 0.065
 243. TRACK 1
 244. MAXMAIN 25
 245. DESIGN BEAM 141 TO 144 161 TO 164 251 TO 254 261 TO 264
       BEAM NO. 141 DESIGN RESULTS - FLEXURE
        335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS
 LEN -
 LEVEL
        REIGHT
                    BAR INFO
                                   FROM
                                                TO
                                                            ANCHOR
          (MM)
                                   (MM)
                                               (MM)
                                                           STA END
   1 166. 2 - 12MM
                                   0.
                                               335.
   CRITICAL NEG MOMENT= 4.40 KN-MET AT 0.MM, LOAD 1 |
    REQD STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181. MMS |
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS |
       BEAM NO. 141 DESIGN RESULTS - SHEAR
  AT START SUPPORT - Vu=
                          4.46 KNS Vc= 39.09 KNS Vs=
                                                           .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
  AT END SUPPORT - Vu= 4.46 KNS Vc= 39.09 KNS Vs=
                                                            .00 KNS
                   STIRRUPS ARE NOT REQUIRED.
   148J
                             334X 294X 249
2No12 H 166. 0.TO 335
                                                              00
 2#12
                           I 2#12
                                                        2#12
       BEAM NO. 142 DESIGN RESULTS - FLEXURE
        335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS
 LEN -
         HEIGHT
 LEVEL
                   BAR INFO
                                  FROM
                                               TO
                                                           ANCHOR
          (MM)
                                   (MM)
                                               (MM)
                                                           STA END
                 2 - 12MM 0.
          166
                                                335. YES YES
```

240. START CON DESIGN

| BASIC/REQD. DEVEL | OPMENT LENGT | H = 177./ | / 181, MMS 359, MMS | | |
|--|--|---|---|---|--------------------------------|
| BEAM NO. | 142 DESI | GN RES | ицтя - SH | EAR | |
| AT START SUPPORT - V | | | | .00 | KNS |
| AT END SUPPORT - V | u⇒ 3.60 K | NOT REQUIRED NS VC= 39 NOT REQUIRED | .09 KNS Vs= | .00 | KNS |
| 149J | 334 | X 294X 249_ | | | 150J |
| | | | | | |
| No12 H 166. 0.TO | | | | | |
| | 1 | | 1 1 2 1 2 1 3 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 | | |
| | | 00 | | 00 | |
| #12 | 2#12 | | | 2#12 | |
| | region of the section | | | 4 1 4 4 | |
| B E A M N O. EN - 335. MM FY | | | | | ммз |
| EN - 335. MM FY - | - 414. FC - | - 25. MPA, FROM | SIZE - 295 | | IOR |
| EN - 335. MM FY EVEL HEIGHT I | - 414. FC - | - 25. MPA, FROM (MM) | SIZE 295 TO (MM) | X 250. ANCE STA | IOR END |
| EN - 335. MM FY - EVEL HEIGHT I (MM) | - 414. FC - | - 25. MPA, FROM (MM) | SIZE - 295 | X 250. ANCE STA | IOR END |
| EN - 335. MM FY - EVEL HEIGHT I (MM) | - 414. FC BAR INFO 2 - 12MM ENT= 1. 4.MM2, ROW= AR SPACING= | - 25. MPA, FROM (MM) 0. 70 KN-MET AT .0033, ROWMX= 181./ 37. | SIZE - 295 TO (MM) 335. 0.MM,0194 ROWM | X 250. ANCH STA YES LOAD 1 N= .0033 | OR END YES |
| EN - 335. MM FY EVEL HEIGHT I (MM) 1 166. CRITICAL NEG MOM REQD STEEL= 16 MAX/MIN/ACTUAL B BASIC/REQD. DEVE | - 414. FC BAR INFO 2 - 12MM ENT= 1. 4.MM2, ROW= AR SPACING= LOPMENT LENG | - 25. MPA, FROM (MM) 0. 70 KN-MET AT. 0033, ROWMX= 181./ 37. TH = 177./ | TO (MM) 335. 0.MM,0194 ROWM / 181 MMS 359. MMS | X 250. ANCH STA YES LOAD 1 N= .0033 | OR END YES |
| EN - 335. MM FY - EVEL HEIGHT I (MM) 1 166. CRITICAL NEG MOM REQD STEEL= 16 MAX/MIN/ACTUAL B | - 414. FC BAR INFO 2 - 12MM ENT= 1. 4.MM2, ROW= AR SPACING= LOPMENT LENG | - 25. MPA, FROM (MM) 0. 70 KN-MET AT. 0033, ROWMX= 181./ 37. TH = 177./ | TO (MM) 335. 0.MM,0194 ROWM / 181 MMS 359. MMS | X 250. ANCH STA YES LOAD 1 N= .0033 | OR END YES |
| EN - 335. MM FY EVEL HEIGHT I (MM) 1 166. CRITICAL NEG MOM REQD STEEL= 16 MAX/MIN/ACTUAL B BASIC/REQD. DEVE BEAM NO. AT START SUPPORT - | - 414. FC BAR INFO 2 - 12MM ENT= 1. 4.MM2, ROW= AR SPACING= LOPMENT LENG 143 D E S Vu= 2.01 | - 25. MPA, FROM (MM) 0. 70 KN-MET AT0033, ROWMX= 181./ 37. TH = 177./ I G N R E S KNS Vc= 39 | TO (MM) 335. 0 MM, -0194 ROWM / 181 MMS 359 MMS | X 250. ANCESTA YES LOAD 1 N= .0033 | OR END YES |
| EN - 335. MM FY EVEL HEIGHT I (MM) 1 166. CRITICAL NEG MOM REQD STEEL= 16 MAX/MIN/ACTUAL B BASIC/REQD. DEVE BEAM NO. AT START SUPPORT - | - 414. FC BAR INFO 2 - 12MM ENT= 1. 4.MM2, ROW= AR SPACING= LOPMENT LENG 143 D E S Vu= 2.01 STIRRUPS ARE Vu= 2.01 | - 25. MPA, FROM (MM) 0. 70 KN-MET AT .0033, ROWMX= 181./ 37. TH = 177./ I G N R E S KNS Vc= 39 NOT REQUIRE | TO (MM) 335. 0 MM, -0194 ROWM / 181 MMS 359 MMS U L T S - S 0.09 KNS Vs | X 250. ANCESTA YES LOAD 1 N= .0033 | OR END YES |
| EN - 335. MM FY EVEL HEIGHT I (MM) 1 166. CRITICAL NEG MOM REQD STEEL= 16 MAX/MIN/ACTUAL B BASIC/REQD. DEVE BEAM NO. AT START SUPPORT - | - 414. FC BAR INFO 2 - 12MM ENT= 1. 4.MM2, ROW= AR SPACING= LOPMENT LENG 143 D E S Vu= 2.01 STIRRUPS ARE Vu= 2.01 STIRRUPS ARE | - 25. MPA, FROM (MM) 0. 70 KN-MET AT0033, ROWMX= 181./ 37. TH = 177./ I G N R E S KNS Vc= 39. NOT REQUIRES | TO (MM) 335. 0.MM, -0194 ROWM / 181. MMS 359. MMS U L T S - S 0.09 KNS Vs 0. | X 250. ANCESTA YES LOAD 1 N= .0033 HEAR00 | OR END YES KNS KNS |
| EN - 335. MM FY EVEL HEIGHT II (MM) 1 166. CRITICAL NEG MOM REQD STEEL= 16 MAX/MIN/ACTUAL B BASIC/REQD. DEVE BEAM NO. AT START SUPPORT - AT END SUPPORT - | - 414. FC BAR INFO 2 - 12MM ENT= 1. 4.MM2, ROW= AR SPACING= LOPMENT LENG 143 D E S Vu= 2.01 STIRRUPS ARE Vu= 2.01 STIRRUPS ARE | - 25. MPA, FROM (MM) 0. 70 KN-MET AT0033, ROWMX= 181./ 37. TH = 177./ I G N R E S KNS Vc= 38 NOT REQUIRER | TO (MM) 335. 0.MM, -0194 ROWM / 181. MMS 359. MMS U L T S - S 0.09 KNS Vs 0. | X 250. ANCESTA YES LOAD 1 N= .0033 HEAR00 | OR END YES KNS KNS |

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| oc 2#12 | • | 1 | 00 2#12 | | | 2#12 | 0 |
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| in section distribution in the section of the section in the secti | | İ | | | | | |
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| | | N O. 144 D | property and a second | | | | |
| fants is | 34 | FY - 414. | the April 1995 at | MPA, S | IZE - 29 | 5. X 250. | MMS |
| LEVEL | HEIGHT (MM) | BAR INFO |) FRO |)M (1) | TO (MM) | ANC STA | HOR END |
| 1 | 166. | 2 - 12MM | 1 |). | 335. | YES | YES |
| REQI MAX/ | O STEEL= /MIN/ACTU | MOMENT= 164.MM2, F AL BAR SPACI DEVELOPMENT | ROW= .0033, ING= 181. | ROWMX= / 37 / | .0194 ROW 181 MM | MN= .0033 IS | |
| | ar a filipara | | | | | | |
| | | | | | | | 4.0 |
| E | 3 E A M | N O. 144 D | ESIGN | RESU | LTS- | SHEAR | |
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| AT STAF | RT SUPPOR | T - Vu= 2 STIRRUPS | 2.11 KNS V 3 ARE NOT F | /c= 39. REQUIRED. | 09 KNS V | 's= .00 | KNS |
| AT STAF | RT SUPPOR | T - Vu= 2 STIRRUPS T - Vu= 2 | 2.11 KNS V 3 ARE NOT F | /c= 39. REQUIRED. /c= 39. | 09 KNS V | 's= .00 | far en |
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| AT STAF AT END 151J No12 H | RT SUPPOR | T - Vu= 2 STIRRUPS T - Vu= 2 STIRRUPS | 2.11 KNS V S ARE NOT F 2.11 KNS V S ARE NOT F | /c= 39. REQUIRED. /c= 39. REQUIRED. | 09 KNS V | (s= .000) (s= .000) | KNS 152J |
| AT STAF AT END 151J 2No12 H | RT SUPPOR | T - Vu= 2 STIRRUPS T - Vu= 2 STIRRUPS | 2.11 KNS V 5 ARE NOT F 2.11 KNS V 5 ARE NOT F 334X 294 | /c= 39. REQUIRED. /c= 39. REQUIRED. | 09 KNS V | 's= .000 | KNS 152J |
| AT STAF AT END 151J 2No12 H | RT SUPPOR | T - Vu= 2 STIRRUPS T - Vu= 2 STIRRUPS | 2.11 KNS V 5 ARE NOT F 2.11 KNS V 5 ARE NOT F 334X 294 | /c= 39. REQUIRED. /c= 39. REQUIRED. | 09 KNS V | (s= .000) (s= .000) | KNS 152J |
| AT STAF AT END 151J No12 H | SUPPOR | T - Vu= 2 STIRRUPS T - Vu= 2 STIRRUPS .TO 335 | 2.11 KNS V S ARE NOT F 2.11 KNS V S ARE NOT F 334X 294 | /c= 39. REQUIRED. /c= 39. REQUIRED. IX 249 | 09 KNS V | (S= .000 (S= .000 | KNS 152J |
| AT STAF AT END 151J No12 H | RT SUPPOR' SUPPOR' | T - Vu= 2 STIRRUPS T - Vu= 2 STIRRUPS .TO 335 | 2.11 KNS V S ARE NOT F 2.11 KNS V S ARE NOT F 334X 294 | C= 39. REQUIRED. C= 39. REQUIRED. IX 249 RESU | 09 KNS V | S= .00 S= .00 1 | KNS 152J |
| AT STAF AT END 151J No12 H | RT SUPPOR' SUPPOR' | T - Vu= 2 STIRRUPS T - Vu= 2 STIRRUPS .TO 335 | 2.11 KNS V S ARE NOT F 2.11 KNS V S ARE NOT F 334X 294 | C= 39. REQUIRED. C= 39. REQUIRED. IX 249 RESU | 09 KNS V | S= .00 S= .00 1 | KNS 152J |

3.62 KN-MET AT 0.MM, LOAD CRITICAL NEG MOMENT= REQD STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181. MMS | BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS BEAM NO. 161 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= 2.55 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. SUPPORT - Vu= 2.55 KNS Vc= 39.09 KNS Vs= .00 KNS AT END STIRRUPS ARE NOT REQUIRED. 334X 294X 249 169J 2No12 H 166. 0.TO 335 00 2#12 2#12 | 2#12 BEAM NO. 162 DESIGN RESULTS - FLEXURE 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS HEIGHT BAR INFO LEVEL FROM TO ANCHOR (MM) STA END (MM) (MM) 166. 2 - 12MM 335. 0. MOMENT= 2.76 KN-MET AT 0.MM, LOAD CRITICAL NEG MOMENT= REQD STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181. MMS BASIC/REOD. DEVELOPMENT LENGTH = 177./ 359. MMS BEAM NO. 162 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= 2.85 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. SUPPORT - Vu= 2.85 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 334X 294X 249 2No12 H 166. 0.TO 335

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| BEAM NO. 164 DESIGNRESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS | 22 | | | | | |
|---|---|------------------------|--|---|-------------------------------|-------------------------------|
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR (NMM) (NMM) STA END 1 166. 2 - 12MM 0. 335. YES YES CRITICAL NEG MOMENT= 1.81 KN-WET AT 0.MM, LOAD 1 RECO STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS BEAM NO. 163 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J PNO12 H 166. 0.TO 335 BEAM NO. 164 DESIGN RESULTS - FLEXURE BEAM NO. 164 DESIGN RESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | | · . | | | • |
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR (MM) (MM) (MM) STA END 1 166. 2 - 12MM 0. 335. YES YES CRITICAL NEG MOMENT= 1.81 KN-WET AT 0.MM, LOAD 1 REQD STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWNN= .0033 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181.MMS BASIC/REQD DEVELOPMENT LENGTH = 177./ 359.MMS BEAM NO. 163 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J PRO12 H 166. 0.TO 335 BEAM NO. 164 DESIGN RESULTS - FLEXURE BEAM NO. 164 DESIGN RESULTS - FLEXURE EN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | | | | | 1 |
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR (NMM) (NMM) STA END 1 166. 2 - 12MM 0. 335. YES YES CRITICAL NEG MOMENT= 1.81 KN-WET AT 0.MM, LOAD 1 RECO STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS BEAM NO. 163 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J PNO12 H 166. 0.TO 335 BEAM NO. 164 DESIGN RESULTS - FLEXURE BEAM NO. 164 DESIGN RESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | | | | | |
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR (NMM) (NMM) STA END 1 166. 2 - 12MM 0. 335. YES YES CRITICAL NEG MOMENT= 1.81 KN-WET AT 0.MM, LOAD 1 RECO STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS BEAM NO. 163 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J PNO12 H 166. 0.TO 335 BEAM NO. 164 DESIGN RESULTS - FLEXURE BEAM NO. 164 DESIGN RESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | | | | ' | |
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR (NMM) (NMM) STA END 1 166. 2 - 12MM 0. 335. YES YES CRITICAL NEG MOMENT= 1.81 KN-WET AT 0.MM, LOAD 1 RECO STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS BEAM NO. 163 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J PNO12 H 166. 0.TO 335 BEAM NO. 164 DESIGN RESULTS - FLEXURE BEAM NO. 164 DESIGN RESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | | 162 8 7 6 | | | |
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR (MM) (MM) STA END 1 166. 2 - 12MM 0. 335. YES YES CRITICAL NEG MOMENT= 1.81 KN-MET AT 0.MM, LOAD 1 1 REQD STEEL= 164.MM2, ROW=.0033, ROWMX=.0194 ROWMN=.0033 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181. MMS BASIC/REQD DEVELOPMENT LENGTH = 177./ 359. MMS B E A M N O. 163 D E S I G N R E S U L T S - SHEAR AT START SUPPORT - Vu= 1.23 KNS VC= 39.09 KNS VS= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS VC= 39.09 KNS VS= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J 2No12 H 166. 0.TO 335 B E A M N O. 164 D E S I G N R E S U L T S - FLEXURE B E A M N O. 164 D E S I G N R E S U L T S - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | | | | | |
| (MM) (MM) (MM) STA END 1 166. 2 - 12MM 0. 335. YES YES CRITICAL NEG MOMENT= 1.81 KN-MET AT 0.MM, LOAD 1 1 REQD STEEL= 164.MM2, ROW= .0033, ROWNXE .0194 ROWNM= .0033 1 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS BE A M N O. 163 DE S I G N R E S U L T S - SHEAR AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J PNo12 H 166. 0.TO 335 BE A M N O. 164 DE S I G N R E S U L T S - FLEXURE BE A M N O. 164 DE S I G N R E S U L T S - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | | | | , SIZE - 295 | 6. X 250. MMS |
| CRITICAL NEG MOMENT= 1.81 KN-MET AT 0.MM, LOAD 1 REQD STEEL= 164.MM2, ROW=.0033, ROWMX=.0194 ROWMN=.0033 MAX/MIN/ACTUAL BAR SPACINC= 181./ 37./ 181.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS BE A M N O. 163 DESIGNRESULTS - SHEAR AT START SUPPORT - Vu= 1.23 KNS VC= 39.09 KNS VS= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS VC= 39.09 KNS VS= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J | | | BAR INFO | | | *, |
| CRITICAL NEG MOMENT= 1.81 KN-MET AT 0.MM, LOAD 1 REQD STEEL= 164.MM2, ROW=.0033, ROWMX=.0194 ROWMN=.0033 MAX/MIN/ACTUAL BAR SPACINC= 181./ 37./ 181.MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359.MMS BE A M N O. 163 DESIGNRESULTS - SHEAR AT START SUPPORT - Vu= 1.23 KNS VC= 39.09 KNS VS= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS VC= 39.09 KNS VS= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J | 1 | 166 | 2 12484 | | 22- | |
| REQD STEEL= 164.MM2, ROW= 0033, ROWMX= 0194 ROWMX= 0033 MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181. MMS BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS BE A M N O. 163 DE S I G N R E S U L T S - SHEAR AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J 200 | | | | | | |
| AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J 2No12 H 166. 0.TO 335 BEAM NO. 164 DESIGNRESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR | REQD S | STEEL= 1 N/ACTUAL 1 | 64.MM2, ROW= BAR SPACING= | .0033, ROWM | X= .0194 ROWM 7./ 181. MMS | in= .0033 |
| AT START SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J 334X 294X 249 172J 2No12 H 166. 0.TO 335 BEAM NO. 164 DESIGNRESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR | | | | | | |
| STIRRUPS ARE NOT REQUIRED. 1.23 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 171J | 8 E | AM NO | . 163 DES | IGN RE | SULTS-S | SHEAR |
| STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu = 1.23 KNS Vc = 39.09 KNS Vs = .00 KNS STIRRUPS ARE NOT REQUIRED. 171J | ΑΤ START | SHPPORT - | Vu= 1.23 | KNS Va- | 20 00 KMC V- | |
| 200 | | | | | | - 00 KMG |
| PNO12 H 166. 0.TO 335 OO OO OO OO 2#12 2#12 2#12 2#12 B E A M N O. 164 D E S I G N R E S U L T S - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR | AT END | SUPPORT - | Vu= 1.23 | NOT REQUIR KNS Vc= | ED. 39.09 KNS Vs | and the second and the second |
| DEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS EVEL HEIGHT BAR INFO FROM TO ANCHOR | | SUPPORT - | Vu= 1.23 STIRRUPS ARE | E NOT REQUIR KNS VC= NOT REQUIR | ED. 39.09 KNS Vs ED. | = .00 KNS |
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| 2#12 2# | 171J | SUPPORT - | Vu= 1.23 STIRRUPS ARE | E NOT REQUIR KNS VC= NOT REQUIR | ED. 39.09 KNS Vs ED. | = .00 KNS |
| 2#12 2# | 171J | SUPPORT - | Vu= 1.23 STIRRUPS ARE | E NOT REQUIR KNS VC= NOT REQUIR | ED. 39.09 KNS Vs ED. | = .00 KNS |
| 2#12 2# | 171J | SUPPORT - | Vu= 1.23 STIRRUPS ARE | E NOT REQUIR KNS VC= NOT REQUIR | ED. 39.09 KNS Vs ED. | = .00 KNS |
| 2#12 2# | 171J | SUPPORT - | Vu= 1.23 STIRRUPS ARE | E NOT REQUIR KNS VC= NOT REQUIR | ED. 39.09 KNS Vs ED. | = .00 KNS |
| BEAM NO. 164 DESIGNRESULTS - FLEXURE LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR | 171J | SUPPORT - | Vu= 1.23 STIRRUPS ARE | E NOT REQUIR KNS VC= NOT REQUIR | ED. 39.09 KNS Vs ED. | = .00 KNS |
| LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR | 171J 2No12 H 16 | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 | E NOT REQUIRI KNS VC= E NOT REQUIRI B4X 294X 24 | ED. 39.09 KNS Vs ED. | = .00 KNS 172J |
| LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR | 171J 2No12 H 16 | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 | E NOT REQUIRI KNS VC= E NOT REQUIRI B4X 294X 24 | ED. 39.09 KNS Vs ED. | = .00 KNS 172J |
| LEN - 335. MM FY - 414. FC - 25. MPA, SIZE - 295. X 250. MMS LEVEL HEIGHT BAR INFO FROM TO ANCHOR | 171J 2No12 H 16 | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 | E NOT REQUIRI KNS VC= E NOT REQUIRI B4X 294X 24 | ED. 39.09 KNS Vs ED. | = .00 KNS 172J |
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR | 171J 2No12 H 16 | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 | E NOT REQUIRI KNS VC= E NOT REQUIRI B4X 294X 24 | ED. 39.09 KNS Vs ED. | = .00 KNS 172J |
| LEVEL HEIGHT BAR INFO FROM TO ANCHOR | 171J 2No12 H 16 | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 | E NOT REQUIRI KNS VC= E NOT REQUIRI 34X 294X 24 | ED. 39.09 KNS Vs ED. 9 | |
| raite de la co llega de la collega de la col | 171J 2No12 H 16 2#12 B E | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 335 | E NOT REQUIRI KNS VC= 1 NOT REQUIRI 34X 294X 24 1 G N R E | ED. 39.09 KNS Vs ED. 9 | |
| | 171J 2No12 H 16 2#12 B E EN = 33 | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 335 . 164 D E S - 414. FC | I NOT REQUIRED NOT REGULAR NOT REQUIRED NOT REQUIRED NOT REQUIRED NOT REGULAR NOT | ED. 39.09 KNS Vs ED. 9 | 172J 172J 1 00 |
| | 171J 2No12 H 16 2#12 B E LEN = 33 | SUPPORT - | Vu= 1.23 STIRRUPS ARE 33 335 335 . 164 D E S - 414. FC | I NOT REQUIRENS VC= NOT REQUIRENS VC= OO.2 | ED. 39.09 KNS Vs ED. 9 | 172J 172J 1 00 |

CRITICAL NEG MOMENT= 1.39 KN-MET AT 0.MM, LOAD 1 [REQD STEEL= 164.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | MAX/MIN/ACTUAL BAR SPACING= 181./ 37./ 181. MMS | BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS BEAM NO. 164 DESIGN RESULTS - SHEAR AT START SUPPORT - Vu= .30 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. AT END SUPPORT - Vu= .30 KNS Vc= 39.09 KNS Vs= .00 KNS STIRRUPS ARE NOT REQUIRED. 334X 294X 249 2No12 H 166. 0.TO 335 1 2#12 2#12 1 2#12 BEAM NO. 251 DESIGN RESULTS - FLEXURE 295. MM FY - 414. FC - 25. MPA, SIZE - 335. X 250. MMS BAR INFO FROM ANCHOR LEVEL HEIGHT ŤΟ (MM) STA END (MM) (MM) 295. 0. 1 166. 2 - 12MM FINT= 5.65 KN-MET AT 0.MM, LOAD CRITICAL NEG MOMENT= REQD STEEL= 186.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | MAX/MIN/ACTUAL BAR SPACING= 221./ 37./ 221. MMS | BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS BEAM NO. 251 DESIGN RESULTS - SHEAR 44.40 KNS Vs= .00 KNS AT START SUPPORT - Vu= 10.87 KNS Vc= STIRRUPS ARE NOT REQUIRED. SUPPORT - Vu= 10.87 KNS Vc= 44.40 KNS Vs= .00 KNS AT END STIRRUPS ARE NOT REQUIRED. 294X 334X 249 | 2No12 H 166. 0.TO 295

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| 2#12 | 00 | | 2#12 | 00 | 1 | | 00 2#12 | |
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| | R F A M | N O 252 |) DES | TCN D | ESUL | me 7 | er eveno | |
| | | | ti kalangan | | 化设施工作的 | 1.8 | 3 4 5 | |
| LEN - | 295. MM | EY - 4 | 114. FC | - 25. | MPA, SIZE | - 335. | . X 250. | MMS |
| LEVEL | HEIGHT (MM) | BAR | INFO | FROM (MM) | | 100 | ANC STA | |
| | | | | | | | | |
| 1 | 166. | 2 - | 12MM | 0. | | 295. | YES | YES |
| I REQU I MAX/ |) STEEL= 'MIN/ACTU | 186.MM AL BAR S | 12, ROW= SPACING= | .0033, Ro | T AT OWMX= .01 37./ 2 77./ 35 | 94 ROWMN 21. MMS | 1= .0033 | |
| | | | | | | | | 1 |
| (元)474 ()257 (4)4 ()373 <u>2</u> | | | | | | | | |
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| | SLAM | N O. 252 | . 065 | 1 0 11 11 | | to group to be | | |
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| AT STAR | RT SUPPOR | T - Vu= STIR | 7.08 RUPS ARE | KNS Vc= NOT REQ | 44.40 UIRED. | | | 在医疗企业 |
| AT STAR | RT SUPPOR | T - Vu= STIF T - Vu= | 7.08 RUPS ARE 7.08 | KNS VC= NOT REQI KNS VC= | 44.40 UIRED. 44.40 | | | 在医疗企业 |
| AT STAR | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RUPS ARE 7.08 RUPS ARE | KNS Vc= NOT REQU KNS Vc= NOT REQU | 44.40 UIRED. 44.40 UIRED. | KNS Vs= | - 00 | KNS |
| AT STAR | RT SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RUPS ARE 7.08 RUPS ARE | KNS Vc= NOT REQU KNS Vc= NOT REQU | 44.40 UIRED. 44.40 | KNS Vs= | - 00 | 在医疗企业 |
| AT STAR | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RUPS ARE 7.08 RUPS ARE | KNS Vc= NOT REQUENS Vc= NOT REQUENS 4X 334X | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | - 00 | KNS |
| AT STAR AT END | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE | KNS Vc= NOT REQUENS Vc= NOT REQUENS 4X 334X | 44.40 UIRED. 44.40 UIRED. | KNS Vs= | - 00 | KNS |
| AT STAR AT END | RT SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE | KNS Vc= NOT REQUENS Vc= NOT REQUENS 4X 334X | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | - 00 | KNS |
| AT STAR AT END | RT SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE | KNS Vc= NOT REQUENS Vc= NOT REQUENS 4X 334X | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | - 00 | KNS |
| AT STAR AT END | RT SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE | KNS Vc= NOT REQUENS Vc= NOT REQUENS 4X 334X | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | - 00 | KNS |
| AT STAR AT END | RT SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE | KNS Vc= NOT REQUENS Vc= NOT REQUENS 4X 334X | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | - 00 | KNS |
| AT STAR AT END 28J 2No12 H | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE | KNS Vc= NOT REQUENCE NOT REQUENCE AX 334X | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | -00 | KNS |
| AT STAR AT END 28J 2No12 H | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE | KNS VC= NOT REQUENCE NOT REQUEATE NOT REQUEATE NOT | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | - 00 | KNS |
| AT STAR AT END 28J 2No12 H | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE 29 | KNS VC= NOT REQUENCE NOT REQUEATE NOT REQUEATE NOT | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | -00 | KNS |
| AT STAR AT END 28J 2No12 H | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE 29 | KNS VC= NOT REQUENCE NOT REQUEATE NOT REQUEATE NOT | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | -00 | KNS |
| AT STAR AT END 28J 2No12 H | RT SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF | 7.08 RRUPS ARE 7.08 RRUPS ARE 29 | KNS VC= NOT REQUENCE NOT REQUEATE NOT REQUEATE NOT | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | -00 | KNS |
| AT STAR AT END 28J 2No12 H | SUPPOR SUPPOR | T - Vu= STIF T - Vu= STIF .TO 295 | 7.08 RUPS ARE 7.08 RUPS ARE 29 29 | KNS VC= NOT REQUENCE NOT REQUEATE NOT REQUEA | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | -00 | KNS |
| AT STAR AT END 28J 2No12 H | SUPPOR SUPPOR 166. 0 | T - Vu= STIF T - Vu= STIF .TO 295 | 7.08 RUPS ARE 7.08 RUPS ARE 29 29 3 | KNS VC= NOT REQUENCE NOT REQUEN | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | 00 2#12 FLEXURE | KNS 49J |
| AT STAR AT END 28J 2No12 H | SUPPOR SUPPOR 166. 0 | T - Vu= STIF T - Vu= STIF .TO 295 | 7.08 RUPS ARE 7.08 RUPS ARE 29 29 3 | KNS VC= NOT REQUENCE NOT REQUEN | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | 00 2#12 FLEXURE | KNS 49J |
| AT STAR AT END 28J 2No12 H | SUPPOR SUPPOR 166. 0 | T - Vu= STIF T - Vu= STIF .TO 295 | 7.08 RUPS ARE 7.08 RUPS ARE 29 29 3 | KNS VC= NOT REQUENCE NOT REQUEN | 44.40 UIRED. 44.40 UIRED. 249 | KNS Vs= | 00 2#12 FLEXURE | KNS 49J MMS HOR |

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CRITICAL POS MOMENT = .81 KN-MET AT 295.MM, LOAD 1 | REQD STEEL= 186.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
MAX/MIN/ACTUAL BAR SPACING= 221./ 37./ 221. MMS
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 295. MMS
           166.
                   2 - 12MM
  CRITICAL NEG MOMENT= .36 KN-MET AT 0.MM, LOAD 1 | REQD STEEL= 186.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 |
   MAX/MIN/ACTUAL BAR SPACING= 221./ 37./ 221. MMS
BASIC/REQD. DEVELOPMENT LENGTH = 177./ 359. MMS
       BEAM NO. 253 DESIGN RESULTS - SHEAR
                                               44.40 KNS Vs=
 AT START SUPPORT - Vu= 3.97 KNS Vc=
                                                                   .00 KNS
                      STIRRUPS ARE NOT REQUIRED.
           SUPPORT - Vu= 3.97 KNS Vc= 44.40 KNS Vs=
                                                                    .00 KNS
                      STIRRUPS ARE NOT REQUIRED.
                                294X 334X 249
     49J
2No12 H 184. 0.TO 295
                                       00
                                                                       00
                             2#12
                                                               2#12
2#12
                                                                       00
                                        00
        BEAM NO. 254 DESIGN RESULTS - FLEXURE
        295. MM FY - 414. FC - 25. MPA, SIZE - 335. X 250. MMS
                                                                     ANCHOR
                       BAR INFO
                                        FROM
                                                       TO
 LEVEL
        HEIGHT
                                                                     STA END
          (MM)
                                        (MM)
                                                       (MM)
            84. 2 - 12MM
                                         0.
                                                       295.
                           = 1.27 KN-MET AT 295.MM, LOAD 1 |
   CRITICAL POS MOMENT=
   REQD STEEL= 186.MM2, ROW= .0033, ROWMX= .0194 ROWMN= .0033 | MAX/MIN/ACTUAL BAR SPACING= 221./ 37./ 221. MMS | BASIC/REQD. DEVELOPMENT LENGTH = 177./ 295. MMS |
         BEAM NO. 254 DESIGN RESULTS - SHEAR
  AT START SUPPORT - Vu=
                             1.56 KNS Vc= 44.40 KNS Vs=
                                                                     .00 KNS
                      STIRRUPS ARE NOT REQUIRED.
            SUPPORT - Vu= 1.56 KNS Vc= 44.40 KNS Vs= .00 KNS
  AT END
                       STIRRUPS ARE NOT REQUIRED.
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| 70J | | | 2.745 | |) | | 915 |
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| 2No12 H | . 4 1 | .TO 295 | | | | .====== | |
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| 2#12 | 00 | | 2#12 | 00 | | 2#12 | 00 |
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| | BEAM | 0. 261 | DESI | GN RES | ULTS | - FLEXURE | |
| 医多点 食品 | | | | A SECTION | | 335. X 25 | |
| | HEIGHT | en di Properties | | | ТО | | NCHOR |
| | (MM) | | | and the second s | (MM) | And the second second | A END |
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| | Paragraphia | | | | to entre the second | | 1.5 1 1 1 |
| CRI | TICAL NEG | MOMENT= | 12MM 5.45 | KN-MET A | T 0.M | YE | ! |
| CRI REQ MAX | TICAL NEG D STEEL= /MIN/ACTU | MOMENT= 186.MM AL BAR S | 5.45 2, ROW= .0 PACING= | KN-MET A | T 0.M = .0194 R -/ 221. | M, LOAD OWMN= .003 | 1 3 |
| CRI REQ MAX | TICAL NEG D STEEL= /MIN/ACTU | MOMENT= 186.MM AL BAR S | 5.45 2, ROW= .0 PACING= | KN-MET A | T 0.M = .0194 R -/ 221. | M, LOAD OWMN= .003 | 1 3 |
| CRI REQ MAX BAS | TICAL NEG D STEEL= /MIN/ACTU. IC/REQD. | MOMENT= 186.MM AL BAR S DEVELOPM | 5.45 2, ROW= .0 PACING= ENT LENGTH | KN-MET A | T 0.M = .0194 R ./ 221. 359. M | M, LOAD OWMN= .003 MMS MS | 1 3 |
| CRI REQ MAX BAS | TICAL NEG D STEEL= /MIN/ACTU. IC/REQD. B E A M | MOMENT= 186.MM AL BAR S DEVELOPM | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I | G KN-MET A 0033, ROWMX 221./ 37 I = 177./ | T 0.M = .0194 R ./ 221. 359. M | M, LOAD OWMN= .003 MMS MS | 1 |
| CRI REQ MAX BAS | TICAL NEG D STEEL= /MIN/ACTU. IC/REQD. B E A M | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN | G N R E S IS VC= 4 | T 0.M = .0194 R ./ 221. 359. M U L T S | M, LOAD OWMN= .003 MMS MS | 1 |
| CRI REQ MAX BAS | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS Vc= 4 IOT REQUIRE | T 0.M = .0194 R ./ 221. 359. M U L T S 4.40 KNS D. | M, LOAD OWMN= .003 MMS MS | 1 |
| CRI REQ MAX BAS | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G N R E S IS VC= 4 IOT REQUIRE IS VC= 4 | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR | 1 |
| CRI REQ MAX BAS AT STA | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS VC= 4 HOT REQUIRE IS VC= 4 HOT REQUIRE | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR | 1 |
| CRI REQ MAX BAS AT STA AT END | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS VC= 4 HOT REQUIRE IS VC= 4 HOT REQUIRE | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR | 1 |
| CRI REQ MAX BAS AT STA AT END | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS VC= 4 HOT REQUIRE IS VC= 4 HOT REQUIRE | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR | 1 |
| CRI REQ MAX BAS AT STA AT END | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS VC= 4 HOT REQUIRE IS VC= 4 HOT REQUIRE | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR | 1 |
| CRI REQ MAX BAS AT STA AT END | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS VC= 4 HOT REQUIRE IS VC= 4 HOT REQUIRE | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR | 1 |
| CRI REQ MAX BAS AT STA AT END | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS VC= 4 HOT REQUIRE IS VC= 4 HOT REQUIRE | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR | 1 |
| CRI REQ MAX BAS AT STA AT END | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN RUPS ARE N 294X | G KN-MET A 1033, ROWMX 221./ 37 1 = 177./ G N R E S IS VC= 4 HOT REQUIRE IS VC= 4 HOT REQUIRE | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR Vs= . | 1 |
| CRI REQ MAX BAS AT STA AT END | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN | G KN-MET A 1033, ROWMX 221./ 37 I = 177./ G N R E S IS VC= 4 IOT REQUIRE IS VC= 4 IOT REQUIRE 334X 249 | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR Vs= . | 1 |
| CRI REQ MAX BAS AT STA AT END 8J | TICAL NEG D STEEL= /MIN/ACTU IC/REQD. B E A M RT SUPPOR' SUPPOR' | MOMENT= 186.MM AL BAR S DEVELOPM N O. 261 F - Vu= STIR F - Vu= STIR | 5.45 2, ROW= .0 PACING= ENT LENGTH D E S I 10.12 KN RUPS ARE N 10.12 KN RUPS ARE N 294X | G KN-MET A 1033, ROWMX 221./ 37 I = 177./ G N R E S IS VC= 4 IOT REQUIRE IS VC= 4 IOT REQUIRE 334X 249 | T 0.M = .0194 R ./ 221 359. M U L T S 4.40 KNS D. 4.40 KNS | M, LOAD OWMN= .003 MMS MS - SHEAR Vs= . Vs= . | 1 |

| 250. 111 21 | - 414. FC - | 25. MPA, S | SIZE - 335. | X 250. | MMS |
|--|--------------------------------|--|--|---|-------------------------------|
| VEL HEIGHT (MM) | BAR INFO | | TO (MM) | Anch Sta | |
| 1 166. | 2 - 12MM | 0. | 295. | YES | YES |
| CRITICAL NEG MOI REQD STEEL= 10 MAX/MIN/ACTUAL 1 BASIC/REQD. DEVI | 86.MM2, ROW= . BAR SPACING= | 0033, ROWMX= 221./ 37. | .0194 ROWMN / 221 MMS | | |
| BEAM NO | . 262 DESI | GN RES | U L T S - SE | IEAR | |
| AT END SUPPORT - | STIRRUPS ARE Vu= 6.47 K | NOT REQUIRED NS Vc= 44 | .40 KNS Vs= | | |
| 29J | STIRRUPS ARE 294 | X 334X 249_ | | | 50J |
| | Hair Duras. | | | | and b |
| | | | | | |
| | | | | | |
| 0.0 | 2#12 | 00 | | oo 2#12 | |
| 112 | | 00 | | 2#12 | |
| BEAM NO | 2#12 | OO I G N R E S | ULTS | 2#12 2#12 FLEXURE | |
| B E A M N C EN - 295. MM FY |). 263 DES1 | OO I G N R E S | ULTS | 2#12 2#12 FLEXURE | MMS |
| BEAM N C EN - 295. MM FY EVEL HEIGHT (MM) |). 263 DES1 | OO I G N R E S - 25. MPA, FROM | ULTS- SIZE - 335 | 2#12 FLEXURE . X 250. ANC | MMS HOR END |
| BEAM N C EN - 295. MM FY EVEL HEIGHT (MM) | 2#12 2 #12 2 | 00 I G N R E S - 25. MPA, FROM (MM) 0. 48 KN-MET A' .0033, ROWMX. 221./ 37 | U L T S - SIZE - 335 TO (MM) 295. F 295.MM, = .0194 ROWM | 2#12 FLEXURE . X 250. ANC STA YES LOAD 1 N= .0033 | MMS HOR END YES |
| B E A M N C EN - 295. MM FY EVEL HEIGHT (MM) 1 84. CRITICAL POS MC REQD STEEL= MAX/MIN/ACTUAL BASIC/REQD. DE | 2#12 2 #12 2 | 00 I G N R E S - 25. MPA, FROM (MM) 0. 48 KN-MET A' .0033, ROWMX. 221./ 37 | U L T S - SIZE - 335 TO (MM) 295. F 295.MM, = .0194 ROWM | 2#12 FLEXURE . X 250. ANC STA YES LOAD 1 N= .0033 | MMS HOR END YES I |

BEAM NO. 263 DESIGN RESULTS - SHEAR

| AT END SUPPORT - | STIRRUPS ARE NOT Vu= 3.53 KNS STIRRUPS ARE NOT | VC= 44.40 KNS REQUIRED. | Vs= .00 | KNS |
|--|--|--|--|-------------------|
| 50J | 294X 3 | 34X 249 | | 71.J |
| · · | .ma==================================== | | | ======= |
| No12 H 184. 0.TC |) 295 | | 352 ####### | |
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| The second secon | | | | |
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| 00 #12 | 2#12 | | 2#12 | |
| 00 | 00 | ° | 00 | |
| | | | | |
| | | | | |
| BEAM NC |). 264 DESIGI | N RESULTS | - FLEXURE | |
| EN - 295. MM FY | - 414. FC - 2: | 5. MPA, SIZE - | 335. X 250. | MMS |
| EVEL HEIGHT | BAR INFO FI | ROM TO | ANC | HOR |
| (MM) | 1) | MM) (MM) | STA | END |
| | 2 - 12MM | | YES | 1 |
| CRITICAL POS MO REQD STEEL= 1 MAX/MIN/ACTUAL | 2 - 12MM MENT= 89 K 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. | MM, LOAD 1 ROWMN= .0033 MMS | 1 |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV | MENT= .89 K 86.MM2, ROW= .003 BAR SPACING= 22 | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. 177./ 295. | MM, LOAD 1 ROWMN= .0033 MMS MMS | 1 |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C | MENT= .89 KT 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 D E S I G T | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. 177./ 295. N R E S U L T S Vc= 44.40 KNS | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR | |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C | MENT= .89 KI 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0.264 DESIGN Vu= 1.37 KNS STIRRUPS ARE NOT Vu= 1.37 KNS | N-MET AT 295. 3, ROWMX= 0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 | KNS |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - AT END SUPPORT - | MENT= .89 KI 86.MM2, ROW= .0033 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 D E S I G I Vu= 1.37 KNS STIRRUPS ARE NOT Vu= 1.37 KNS STIRRUPS ARE NOT | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS REQUIRED. | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 | KNS KNS |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - | MENT= .89 KI 86.MM2, ROW= .0033 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 D E S I G I Vu= 1.37 KNS STIRRUPS ARE NOT Vu= 1.37 KNS STIRRUPS ARE NOT | N-MET AT 295. 3, ROWMX= 0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 | KNS |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - AT END SUPPORT - | MENT= 89 KI 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 DESIGN VU= 1.37 KNS STIRRUPS ARE NOT VU= 1.37 KNS STIRRUPS ARE NOT 294X 3 | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS REQUIRED. | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 | KNS KNS |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - AT END SUPPORT - | MENT= 89 KI 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 DESIGN VU= 1.37 KNS STIRRUPS ARE NOT VU= 1.37 KNS STIRRUPS ARE NOT 294X 3 | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS REQUIRED. | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 | KNS KNS |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - AT END SUPPORT - 71J No12 H 84. 0.TC | MENT= 89 KI 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 DESIGN VU= 1.37 KNS STIRRUPS ARE NOT VU= 1.37 KNS STIRRUPS ARE NOT 294X 3 | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS REQUIRED. | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 | KNS KNS |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - AT END SUPPORT - 71J No12 H 84. 0.TC | MENT= 89 KI 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 DESIGN VU= 1.37 KNS STIRRUPS ARE NOT VU= 1.37 KNS STIRRUPS ARE NOT 294X 3 | N-MET AT 295. 3, ROWMX= .0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS REQUIRED. | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 | KNS KNS |
| CRITICAL POS MC REQD STEEL 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - AT END SUPPORT - 71J No12 H 84. 0.TC | MENT= 89 KM 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 DESIGN Vu= 1.37 KNS STIRRUPS ARE NOT Vu= 1.37 KNS STIRRUPS ARE NOT 294X 3 | N-MET AT 295. 3, ROWMX= 0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS REQUIRED. 34X 249 | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR Vs= .00 Vs= .00 | KNS KNS KNS |
| CRITICAL POS MC REQD STEEL= 1 MAX/MIN/ACTUAL BASIC/REQD. DEV B E A M N C AT START SUPPORT - AT END SUPPORT - 71J No12 H 84. 0.TC | MENT= 89 KM 86.MM2, ROW= .003 BAR SPACING= 22 ELOPMENT LENGTH = 0. 264 DESIGN VU= 1.37 KNS STIRRUPS ARE NOT VU= 1.37 KNS STIRRUPS ARE NOT 294X 3 | N-MET AT 295. 3, ROWMX= 0194 1./ 37./ 221. 177./ 295. N R E S U L T S VC= 44.40 KNS REQUIRED. VC= 44.40 KNS REQUIRED. 34X 249 | MM, LOAD 1 ROWMN= .0033 MMS MMS - SHEAR VS= .00 Vs= .00 | KNS KNS KNS |

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