B-1 Design Calculation for Power Supply

Design Calculation for Power Supply Facilities

I. Main AFL Substation at Runway 17.

1. Capacity calculation of 10 kV transformers at Runway 17 side is made as follows:

Item		Actual	Reckoned as
a) Load capacity of CCR	:	546.8 kVA	550 kVA
b) AFL substation	:	158.57 kVA	160 kVA
c) Monitoring/control facility	:	50 kVA	50 kVA
d) Radio navigational acids	:	*75 kVA	75 kVA
		—	835 kVA

*: This is given by Chinese experts.

Transformer capacity becomes 1,000 kVA considering redundancy (Current is 1,269 A).

2. Capacity calculation of generator is added 10% to the capacity of transformer.

$1{,}000 \times 1.1 = 1{,}100$ kVA

3. Rating of vacuum circuit breaker (VCB) is calculated as follows.

a) Short-circuit current is calculated on the assumption that CVT underground cable (150 sq.mm^2) will be laid with 1 km distance from main substation.

% r 3.63 (constant) × 1 km = 3.63

% x 2.37 (constant) × 1 km = 2.37

% z $\sqrt{(3.63)^2 + (2.37)^2} = 4.3$ (%)

$$Is = \frac{1{,}000 \text{ kVA}}{\sqrt{3} \times 10{,}000 \times \%\, z} \times 100 = 13.4 \text{ kVA}$$

The short-circuit is determined by 26.8 kVA (= 13.4 × 2) considering redundancy, and final rating of VCB becomes as follows.

Rated voltage : 12 kV

Short-circuit current : 25 kA

Rated current : 800 A

4. Rating of current transformer (CT) is calculated as below.

   10,000 kVA (transformer capacity) ÷ 10,000 V ÷ $\sqrt{3}$ = 57.7 A

   57.7 ÷ 0.8 (Power Factor) × 1.5 = 108 A.

   The rating of CT becomes 150 / 5 A.

   Burden of CT is decided by referring to Japanese standard.

5. Rating of Voltage Transformer (VT) and Lighting Arrester (LA) are determined as follows referring available equipment in China.

   Rated voltage of LA : 24 kV

   Rated voltage of VT : 15 kV

   Burden of VT is decided by referring to Japanese Standard.

6. Molded Circuit Breaker (MCB) for CCR (380 V 2 W).

   Current capacity of MCB is calculated as follows.

Type of CCR	Current × Constant (1.2)	Current Capacity of MCB
4 kVA	10.6 A × 1.2	15 AT
7.5 kVA	19.8 A × 1.2	30 AT
10 kVA	26.4 A × 1.2	40 AT
15 kVA	39.5 A × 1.2	50 AT
20 kVA	52.7 A × 1.2	75 AT
25 kVA	65.8 A × 1.2	100 AT
30 kVA	79.0 A × 1.2	100 AT

7. Main MCB for CCR.

   Capacity of MCB is decided by as follows.

Panel Number	Summing up of load	Current Capacity of MCB
No.1 ~ 5 by way of UPS	288.0 kVA (= 438 A)	600 AT
No.11 ~ No.15 by way of UPS	288.0 kVA (= 438 A)	600 AT
No.6 ~ No.10	451.8 kVA(= 686 A)	800 AT
No.16 ~ No.20	451.8 kVA (= 686 A)	800 AT

8. MCB for UPS.

   Capacity of MCB (No.3 to No.5) is determined by as below.

   Load total of UPS is 150 kVA.

   This load is divided by 0.84 (= 272 A), and then capacity of MCB becomes 300 AT.

   Capacity of MCB (No.2) is 438 A, and then capacity of MCB becomes 600 AT.

9. Main ACB for UPS (No.3 of panel number 13 and 18).

Capacity 1,400 A is decided considering redundancy by followings.

UPS 150 kVA × 2 (÷ 0.84) ÷ 451.8 kVA = 809.0 kVA (= 1,230 A)

10. MCB for facilities of AFL substation

Total load 160 kVA is assumed that 80 kVA is for power facilities and remaining 80 kVA is for lighting facilities.

Capacity of MCB (50 AT) is decided as below.

80 kVA (= 122 A) ÷ 3 = 40.5 A

Capacity of MCB is determined by 150 AT referring to the above 122 A.

11. Main circuit of transformer secondary side.

Current capacity (1,800 A) of the transformer secondary side is decided by following conditions.

a) Total load : 835 kVA (=1,269 A)

b) Summing value of breaker trip : 1,700 A

c) Current at secondary transformer : 1,519 A

Design Calculation for Power Supply Facilities

II. Secondary AFL Substation at Runway 35.

1. Capacity calculation of 10 kV transformers at Runway 35 side is made as follows:

Item		Actual	Reckoned as
a) Load capacity of CCR	:	454.4 kVA	455 kVA
b) AFL substation	:	66.76 kVA	70 kVA
c) Monitoring/control facility	:	20 kVA	20 kVA
d) Radio navigational acids	:	*75 kVA	75 kVA
		---	620 kVA

*: This is given by Chinese experts.

Transformer capacity becomes 800 kVA considering redundancy (Current is 1,216 A).

2. Capacity calculation of generator is added 10% to the capacity of transformer.

$800 \times 1.1 = 880$ kVA

3. Rating of vacuum circuit breaker (VCB) is calculated as follows.

a) Short-circuit current is calculated on the assumption that CVT underground cable (150 sq.mm^2) will be laid with 1 km distance from main substation.

% r 3.63 (constant) × 1 km = 3.63

% x 2.37 (constant) × 1 km = 2.37

% z $\sqrt{(3.63)^2 + (2.37)^2} = 4.3$ (%)

$$Is = \frac{800\ \text{kVA}}{\sqrt{3} \times 10{,}000 \times \%\ z} \times 100 = 10.7\ \text{kVA}$$

The short-circuit is determined by 21.4 kVA (= 10.7 × 2) considering redundancy, and final rating of VCB becomes as follows.

Rated voltage	:	12 kV
Short-circuit current	:	25 kA
Rated current	:	800 A

4. Rating of current transformer (CT) is calculated as below.

800 kVA (transformer capacity) ÷ 10,000 V ÷ $\sqrt{3}$ = 46.2 A

46.2 ÷ 0.8 (Power Factor) × 1.5 = 86.6 A.

The rating of CT becomes 100 / 5 A.

Burden of CT is decided by referring to Japanese standard.

5. Rating of Voltage Transformer (VT) and Lighting Arrester (LA) are determined as follows referring available equipment in China.

Rated voltage of LA : 24 kV

Rated voltage of VT : 15 kV

Burden of VT is decided by referring to Japanese Standard.

6. Molded Circuit Breaker (MCB) for CCR (380 V 2 W).

Current capacity of MCB is calculated as follows.

Type of CCR	Current × Constant (1.2)	Current Capacity of MCB
4 kVA	10.6 A × 1.2	15 AT
7.5 kVA	19.8 A × 1.2	30 AT
10 kVA	26.4 A × 1.2	40 AT
15 kVA	39.5 A × 1.2	50 AT
20 kVA	52.7 A × 1.2	75 AT
25 kVA	65.8 A × 1.2	100 AT
30 kVA	79.0 A × 1.2	100 AT

7. Main MCB for CCR.

Capacity of MCB is decided by as follows.

Panel Number	Summing up of load	Current Capacity of MCB
No.1 ~ 3 by way of UPS	167.5 kVA (= 438 A)	400 AT
No.9 ~ No.11 by way of UPS	167.5 kVA (= 255 A)	400 AT
No.4 ~ No.8	451.8 kVA (= 686 A)	800 AT
No.12 ~ No.16	451.8 kVA (= 686 A)	800 AT

8. MCB for UPS.

Capacity of MCB (No.3 to No.5) is determined by as below.

Load total of UPS is 100 kVA.

This load is divided by 0.84 (= 184 A), and then capacity of MCB becomes 200 AT.

Capacity of MCB (No.2) is 255 A, and then capacity of MCB becomes 400 AT.

9. Main ACB for UPS (No.3 of panel number 13 and 18).

Capacity 1,200 A is decided considering redundancy by followings.

UPS 1,000 kVA × 2 (+ 0.84) + 451.8 kVA = 692.8 kVA (= 1,053 A)

10. MCB for facilities of AFL substation

Total load 70 kVA is assumed that 35 kVA is for power facilities and remaining 35 kVA is for lighting facilities.

Capacity of MCB (40 AT) is decided as below.

70 kVA (= 106 A) + 3 = 35 A

Capacity of MCB is determined by 125 AT referring to the above 106 A.

11. Main circuit of transformer secondary side.

Current capacity (1,400 A) of the transformer secondary side is decided by following conditions.

a) Total load : 620 kVA (=942 A)

b) Summing value of breaker trip : 1,400 A

c) Current at secondary transformer : 1,216 A

B-2 Structure Calculation Sheets for Buildings

DESIGN CALCULATION

of Aviation Lighting Works
--Main Lighting Substation

Calculation Book

I. Name of Project: Shanghai Pudong Airport Aviation Lighting Works
--Main Lighting substation

II. Seismic intensity: 7

III. Frame seismic grade: 3

IV. Structure importance parameter: Ro=1.0

V. Site soil type: IV

VI. Soil endurance: R=110KPa

VII. Foundation load-bearing layer elevation:

VIII. Materials: column -- C25 beam board -- C25
wall: clay brick 240mm (5.40KN/m2)

I. Load:

1. Living load: roof 0.7KN/m2
floor 2.0KN/m2

2. Static load: roof ceiling 0.50KN/m2
structure layer (100mm) 2.50KN/m2
roof (roof 1) 2.64KN/m2
total 5.64KN/m2

3. Wind load: 0.55 KN/m2

X. Selection of main members

1. Main beam
bxh=250x600mm
bxh=300x850mm

2. Board thickness
h=100mm

XI. Design basis

1. Current national architecture & structure standards and codes;
2. Shanghai City's << Base Foundation Design Codes >> DBJ08--11--89;
3. Shanghai City's << Base Treatment Technical Codes >> DBJ08--40--94;
4. Shanghai City's << Building Anti-seismic Design Standards >> DBJ08--09--92;

XII. Computer programs

China Building Science Research Institue CAD Engineering Department

PMCAD	August, 1996
PK	August, 1996
JCCAD	August, 1996

XIII. Conclusion:

It is concluded from calculation above, the integral strength and deformation of structure meet the design requirements, the geometric dimensions also meet the requirements of strength and deformation regulated by Codes. The primary data of structural model, major calculation results, combining results of main internal forces of each member, structural layout, internal force drawing, reinforcing results of major members refer the next page, based on which construction drawings are made.

Main Lightion Substation

"PM" PROGRAM DESIGN DATA

```
C---NST MST NAXIS  NYS KCL  KBE  KDK  MLOD ALIVE  MXD  MYD BLKD
DWS  BLP
    -2,   2,  25,  -1,   4,   5,   4,   2, 1.00,   1,   1, 0.00, 1.00,100.0
C---(HLA(i),i=1,NST)
 5.800, 4.200,
C---(MSH(i),i=1,MST)
      1,    2,
C---((XY(I,J),J=1,2),I=1,NJ)
      1,      -5.218,      -3.974
      2,      -5.218,       2.026
      3,      -5.218,       8.026
      4,      -5.218,      10.426
      5,      -5.218,      15.526
      6,      -5.218,      21.526
      7,      -1.318,      -3.974
      8,      -1.318,       2.026
      9,      -1.318,       8.026
     10,      -1.318,      10.426
     11,      -1.318,      15.526
     12,      -1.318,      21.526
     13,       2.582,      -3.974
     14,       2.582,       2.026
     15,       2.582,       8.026
     16,       2.582,      10.426
     17,       2.582,      15.526
     18,       2.582,      21.526
     19,       5.582,      -3.974
     20,       5.582,       2.026
     21,       5.582,       8.026
     22,       5.582,      10.426
     23,       5.582,      15.526
     24,       5.582,      21.526
     25,       8.582,      -3.974
     26,       8.582,      -0.374
```

27,	8.582,	2.026
28,	8.582,	8.026
29,	8.582,	10.426
30,	8.582,	15.526
31,	8.582,	21.526
32,	12.182,	-3.974
33,	12.182,	-0.374
34,	12.182,	2.026
35,	12.182,	8.026
36,	12.182,	10.426
37,	12.182,	15.526
38,	12.182,	21.526
39,	15.782,	-3.974
40,	15.782,	-0.374
41,	15.782,	2.026
42,	15.782,	8.026
43,	15.782,	10.426
44,	15.782,	15.526
45,	15.782,	21.526
46,	19.382,	-3.974
47,	19.382,	-0.374
48,	19.382,	2.026
49,	19.382,	8.026
50,	19.382,	10.426
51,	19.382,	15.526
52,	19.382,	21.526
53,	22.982,	-3.974
54,	22.982,	-0.374
55,	22.982,	2.026
56,	22.982,	5.026
57,	22.982,	8.026
58,	22.982,	10.426
59,	22.982,	15.526
60,	22.982,	21.526
61,	25.982,	-3.974
62,	25.982,	-0.374
63,	25.982,	2.026
64,	25.982,	5.026
65,	25.982,	8.026
66,	25.982,	10.426

67,	25.982,	15.526
68,	25.982,	21.526
69,	28.982,	-3.974
70,	28.982,	-0.374
71,	28.982,	2.026
72,	28.982,	5.026
73,	28.982,	8.026
74,	28.982,	10.426
75,	28.982,	15.526
76,	28.982,	21.526
77,	32.582,	-3.974
78,	32.582,	-0.374
79,	32.582,	2.026
80,	32.582,	5.026
81,	32.582,	8.026
82,	32.582,	10.426
83,	32.582,	15.526
84,	32.582,	21.526
85,	36.782,	-3.974
86,	36.782,	-0.374
87,	36.782,	2.026
88,	36.782,	5.026
89,	36.782,	8.026
90,	36.782,	10.426
91,	36.782,	15.526
92,	36.782,	21.526
93,	39.182,	-3.974
94,	39.182,	-0.374
95,	39.182,	2.026
96,	39.182,	5.026
97,	39.182,	8.026
98,	39.182,	10.426
99,	39.182,	15.526
100,	40.982,	15.526
101,	40.982,	21.526
102,	42.182,	-3.974
103,	42.182,	-0.374
104,	42.182,	2.026
105,	42.182,	5.026
106,	42.182,	8.026

```
  107,      42.182,      10.426
  108,      42.182,      15.526
  109,      43.982,      -3.974
  110,      43.982,      -0.374
  111,      43.982,       2.026
  112,      43.982,       5.026
  113,      43.982,       8.026
  114,      43.982,      10.426
  115,      43.982,      15.526
  116,      43.982,      21.526
0
C---((AXIS(I),I=1,NAXIS)
    1,   6,   1,   2,   3,   4,   5,   6,
    2,   6,   7,   8,   9,  10,  11,  12,
    3,   6,  13,  14,  15,  16,  17,  18,
    4,   6,  19,  20,  21,  22,  23,  24,
    5,   7,  25,  26,  27,  28,  29,  30,  31,
    6,   7,  32,  33,  34,  35,  36,  37,  38,
    7,   7,  39,  40,  41,  42,  43,  44,  45,
    8,   7,  46,  47,  48,  49,  50,  51,  52,
    9,   8,  53,  54,  55,  56,  57,  58,  59,  60,
   10,   8,  61,  62,  63,  64,  65,  66,  67,  68,
   11,   8,  69,  70,  71,  72,  73,  74,  75,  76,
   12,   8,  77,  78,  79,  80,  81,  82,  83,  84,
   13,   8,  85,  86,  87,  88,  89,  90,  91,  92,
   14,   6,  93,  94,  95,  96,  97,  98,
   15,   7, 102, 103, 104, 105, 106, 107, 108,
   16,   8, 109, 110, 111, 112, 113, 114, 115, 116,
   17,  16,   1,   7,  13,  19,  25,  32,  39,  46,  53,  61,
              69,  77,  85,  93, 102, 109,
   18,  12,  26,  33,  40,  47,  54,  62,  70,  78,  86,  94,
             103, 110,
   19,  16,   2,   8,  14,  20,  27,  34,  41,  48,  55,  63,
              71,  79,  87,  95, 104, 111,
   20,   8,  56,  64,  72,  80,  88,  96, 105, 112,
   21,  16,   3,   9,  15,  21,  28,  35,  42,  49,  57,  65,
              73,  81,  89,  97, 106, 113,
   22,  16,   4,  10,  16,  22,  29,  36,  43,  50,  58,  66,
              74,  82,  90,  98, 107, 114,
   23,  17,   5,  11,  17,  23,  30,  37,  44,  51,  59,  67,
```

```
                75,   83,   91,   99,  100,  108,  115,
   24,   15,    6,   12,   18,   24,   31,   38,   45,   52,   60,   68,
                76,   84,   92,  101,  116,
   25,    2,  100,  101,
0
C---(CL(i),i=1,KCL)
   1.000,   6.000,   0.600,   0.600,
   1.000,   6.000,   0.350,   0.450,
   1.000,   6.000,   0.240,   0.240,
   1.000,   6.000,   0.450,   0.450,
C---(BE(i),i=1,KBE)
   1.000,   6.000,   0.300,   0.850,
   1.000,   6.000,   0.300,   0.500,
   1.000,   6.000,   0.250,   0.600,
   1.000,   6.000,   0.250,   0.400,
   1.000,   6.000,   0.300,   0.600,
C---((QDK(i,j),j=1,2),i=1,KDK)
   2.100,   3.000,   1.200,   1.800,   1.500,   3.000,   1.000,   2.100,
C---((HSLD(i,j),j=1,3),i=1,MLOD)
   1.000,   6.000,   1.500,
   2.000,   6.000,   0.700,
C---QUE JEI DIAN
0
C=============================================================C
C                          LAYER    1
C=============================================================C
C---BHOU    RWB    BHC    IC    ICC       IG
   0.100, 25.0,0.015, 25.0, 25.0,     2
C---((AXIS(I),I=1,NAXIS)
     1,    6,    1,    2,    3,    4,    5,    6,
     2,    6,    7,    8,    9,   10,   11,   12,
     3,    6,   13,   14,   15,   16,   17,   18,
     4,    6,   19,   20,   21,   22,   23,   24,
     5,    7,   25,   26,   27,   28,   29,   30,   31,
     6,    7,   32,   33,   34,   35,   36,   37,   38,
     7,    7,   39,   40,   41,   42,   43,   44,   45,
     8,    7,   46,   47,   48,   49,   50,   51,   52,
     9,    8,   53,   54,   55,   56,   57,   58,   59,   60,
    10,    8,   61,   62,   63,   64,   65,   66,   67,   68,
    11,    8,   69,   70,   71,   72,   73,   74,   75,   76,
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   12,    8,   77,   78,   79,   80,   81,   82,   83,   84,
   13,    8,   85,   86,   87,   88,   89,   90,   91,   92,
   14,    6,   93,   94,   95,   96,   97,   98,
   15,    7,  102,  103,  104,  105,  106,  107,  108,
   16,    8,  109,  110,  111,  112,  113,  114,  115,  116,
   17,   16,    1,    7,   13,   19,   25,   32,   39,   46,   53,   61,
              69,   77,   85,   93,  102,  109,
   18,   12,   26,   33,   40,   47,   54,   62,   70,   78,   86,   94,
             103,  110,
   19,   16,    2,    8,   14,   20,   27,   34,   41,   48,   55,   63,
              71,   79,   87,   95,  104,  111,
   20,    8,   56,   64,   72,   80,   88,   96,  105,  112,
   21,   16,    3,    9,   15,   21,   28,   35,   42,   49,   57,   65,
              73,   81,   89,   97,  106,  113,
   22,   16,    4,   10,   16,   22,   29,   36,   43,   50,   58,   66,
              74,   82,   90,   98,  107,  114,
   23,   16,    5,   11,   17,   23,   30,   37,   44,   51,   59,   67,
              75,   83,   91,  100,  108,  115,
   24,   15,    6,   12,   18,   24,   31,   38,   45,   52,   60,   68,
              76,   84,   92,  101,  116,
   25,    2,  100,  101,
0
C--- ZHU ---
  170410,    2,      0.000,      0.105
    1901,    4,     -0.105,      0.000
    1903,    1,      0.000,      0.000
    1905,    4,      0.000,      0.000
    1906,    2,      0.000,      0.000
    1907,    4,      0.000,      0.000
    1908,    2,      0.000,      0.000
    1909,    4,      0.000,      0.000
    1910,    2,      0.000,      0.000
    2107,    4,      0.000,     -0.105
    2109,    4,      0.000,     -0.105
    2113,    4,      0.105,     -0.105
    2115,    4,      0.105,     -0.105
    2203,    4,      0.000,      0.105
    2207,    4,      0.000,      0.105
    2209,    4,      0.000,      0.105
    2212,    4,      0.000,      0.105
```

```
      2301,    4,    -0.105,    0.000
      2303,    1,     0.000,    0.000
      2305,    4,     0.000,    0.000
      2307,    4,     0.000,   -0.105
      2309,    4,     0.000,   -0.105
      2312,    4,     0.000,   -0.105
      2403,    2,     0.000,   -0.105
0
C--- LIANG ---
     20102,    3,     0.000
     20405,    3,     0.000
       303,    2,     0.000
     30405,    1,     0.000
     40102,    3,     0.000
     40405,    3,     0.000
       504,    4,     0.000
     60203,    3,     0.000
     60506,    3,     0.000
     70103,    5,     0.000
       704,    2,     0.000
       705,    5,     0.000
     80103,    3,     0.000
     80506,    3,     0.000
     90104,    5,     0.000
       905,    2,     0.000
       906,    5,     0.000
    100104,    3,     0.000
    100607,    3,     0.000
    110607,    3,     0.000
      1201,    2,     0.000
      1205,    2,     0.000
      1206,    5,     0.000
      1302,    4,     0.000
      1305,    4,     0.000
      1307,    3,     0.000
    140405,    4,     0.000
    160306,    3,     0.000
      1705,    3,     0.000
    190104,    1,     0.000
      2007,    3,     0.000
```

```
      211314,    5,     -0.030
      221315,    3,      0.000
      230104,    1,      0.000
        2501,    3,      0.000
0
C--- QIANG ---
       10105,      0.240,      0.000
       30102,      0.240,      0.000
       50103,      0.240,      0.000
       50506,      0.240,      0.000
         601,      0.240,      0.000
         706,      0.240,      0.000
         907,      0.240,      0.000
      110104,      0.240,      0.000
      120304,      0.240,      0.000
        1207,      0.240,      0.000
        1301,      0.240,      0.000
      130304,      0.240,      0.000
        1306,      0.240,      0.000
      140203,      0.240,      0.000
      150306,      0.240,      0.000
      160102,      0.240,      0.000
        1607,      0.240,      0.000
      170104,      0.240,      0.000
      170615,      0.240,      0.000
        1801,      0.240,      0.000
      180711,      0.240,      0.000
      190512,      0.240,      0.000
      191415,      0.240,      0.000
      200406,      0.240,      0.000
      210112,      0.240,      0.000
      220112,      0.240,      0.000
      230515,      0.240,      0.000
      240114,      0.240,      0.000
0
C--- DONG KOU ---
       10102,    1,      1.950,      1.000
         103,    3,      0.450,      1.000
         105,    1,      1.950,      1.000
         502,    3,      0.450,      1.000
```

```
    1102,    3,    0.450,    1.000
    1303,    4,    1.760,    1.000
    1402,    4,    1.160,    1.000
    1403,    4,    0.240,    1.000
    1504,    3,    1.050,    1.000
  170304,    2,    0.900,    2.800
  170608,    2,    1.200,    2.800
  170910,    2,    0.900,    2.800
    1712,    2,    2.400,    2.800
  171314,    2,    0.600,    2.800
    1801,    1,    0.750,    1.000
    1808,    4,    2.960,    1.000
    1809,    4,    0.240,    1.000
    1910,    3,    1.050,    1.000
    2005,    2,    0.600,    1.000
    2102,    3,    0.900,    1.000
    2103,    3,    0.450,    1.000
  211011,    3,    1.050,    1.000
    2112,    4,    2.960,    1.000
    2204,    3,    1.050,    1.000
    2205,    3,    0.450,    1.000
    2212,    3,    2.250,    1.000
    2305,    3,    0.450,    1.000
    2313,    4,    0.240,    1.000
    2402,    2,    1.800,    2.800
  240304,    2,    0.900,    2.800
  240508,    2,    1.200,    2.800
    2409,    1,    0.450,    1.000
  241011,    2,    1.200,    2.800
    2412,    2,    1.500,    2.800
    2413,    1,    0.150,    1.000
0
C=============================================================C
C                          LAYER    2
C=============================================================C
C---BHOU    RWB    BHC    IC    ICC      IG
    0.100, 25.0,0.015, 25.0, 25.0,      2
C---((AXIS(I),I=1,NAXIS)
      1,     6,     1,     2,     3,     4,     5,     6,
      2,     6,     7,     8,     9,    10,    11,    12,
```

```
  3,    6,   13,   14,   15,   16,   17,   18,
  4,    6,   19,   20,   21,   22,   23,   24,
  5,    7,   25,   26,   27,   28,   29,   30,   31,
  6,    7,   32,   33,   34,   35,   36,   37,   38,
  7,    7,   39,   40,   41,   42,   43,   44,   45,
  8,    7,   46,   47,   48,   49,   50,   51,   52,
  9,    8,   53,   54,   55,   56,   57,   58,   59,   60,
 10,    8,   61,   62,   63,   64,   65,   66,   67,   68,
 11,    8,   69,   70,   71,   72,   73,   74,   75,   76,
 12,    8,   77,   78,   79,   80,   81,   82,   83,   84,
 13,    8,   85,   86,   87,   88,   89,   90,   91,   92,
 14,    5,   93,   94,   95,   96,   97,
 15,    7,  102,  103,  104,  105,  106,  107,  108,
 16,    8,  109,  110,  111,  112,  113,  114,  115,  116,
 17,   16,    1,    7,   13,   19,   25,   32,   39,   46,   53,   61,
             69,   77,   85,   93,  102,  109,
 18,   12,   26,   33,   40,   47,   54,   62,   70,   78,   86,   94,
            103,  110,
 19,   16,    2,    8,   14,   20,   27,   34,   41,   48,   55,   63,
             71,   79,   87,   95,  104,  111,
 20,    8,   56,   64,   72,   80,   88,   96,  105,  112,
 21,   16,    3,    9,   15,   21,   28,   35,   42,   49,   57,   65,
             73,   81,   89,   97,  106,  113,
 22,   15,    4,   10,   16,   22,   29,   36,   43,   50,   58,   66,
             74,   82,   90,  107,  114,
 23,   17,    5,   11,   17,   23,   30,   37,   44,   51,   59,   67,
             75,   83,   91,   99,  100,  108,  115,
 24,   15,    6,   12,   18,   24,   31,   38,   45,   52,   60,   68,
             76,   84,   92,  101,  116,
 25,    2,  100,  101,
0
C--- ZHU ---
    170410,    2,      0.000,      0.105
      1716,    3,      0.000,      0.000
      1906,    2,      0.000,      0.000
      1907,    4,      0.000,      0.000
      1908,    2,      0.000,      0.000
      2107,    4,      0.000,     -0.105
      2115,    3,      0.000,      0.000
0
```

```
C--- LIANG ---
     40102,    3,      0.000
       404,    3,      0.000
     50102,    3,      0.000
       504,    4,      0.000
     60103,    3,      0.000
       605,    3,      0.000
     70103,    3,      0.000
       704,    4,      0.000
     80103,    3,      0.000
       805,    3,      0.000
     90102,    3,      0.000
       905,    4,      0.000
    100104,    3,      0.000
      1006,    3,      0.000
      1106,    3,      0.000
      1205,    4,      0.000
      1302,    4,      0.000
      1305,    4,      0.000
    160306,    3,      0.000
    170508,    4,      0.005
    200607,    3,      0.000
      2113,    4,      0.000
    221314,    3,      0.000
      2316,    3,      0.000
0
C--- QIANG ---
     30104,      0.240,      0.000
       503,      0.240,      0.000
       505,      0.240,      0.000
       705,      0.240,      0.000
     90304,      0.240,      0.000
       906,      0.240,      0.000
    110104,      0.240,      0.000
      1201,      0.240,      0.000
    120304,      0.240,      0.000
      1206,      0.240,      0.000
      1301,      0.240,      0.000
    130304,      0.240,      0.000
      1306,      0.240,      0.000
```

140204,	0.240,	0.000
150306,	0.240,	0.000
160102,	0.240,	0.000
170304,	0.240,	0.000
170915,	0.240,	0.000
180711,	0.240,	0.000
190312,	0.240,	0.000
191415,	0.240,	0.000
2004,	0.240,	0.000
210312,	0.240,	0.000
2114,	0.240,	0.000
220312,	0.240,	0.000
230315,	0.240,	0.000

0

C--- DONG KOU ---

301,	3,	4.050,	0.000
303,	3,	0.450,	0.000
1101,	4,	2.360,	0.000
1102,	2,	0.450,	0.000
130304,	4,	1.760,	0.000
1402,	4,	1.160,	0.000
1403,	4,	1.760,	0.000
1503,	2,	1.500,	1.000
1505,	3,	0.450,	0.000
170304,	2,	0.900,	1.000
170910,	2,	0.900,	1.000
1711,	2,	1.200,	1.000
1712,	2,	2.400,	1.000
171314,	2,	0.600,	1.000
1807,	4,	2.360,	0.000
1808,	4,	2.960,	0.000
1809,	4,	0.240,	0.000
1908,	2,	2.160,	0.000
1910,	2,	1.560,	0.000
1915,	2,	0.360,	1.000
2104,	2,	1.560,	0.000
2105,	2,	0.240,	0.000
2108,	2,	2.160,	0.000
2111,	4,	0.240,	0.000
2204,	2,	1.560,	0.000

```
     2206,    2,      2.160,     0.000
     2207,    2,      0.240,     0.000
     2209,    2,      0.240,     0.000
     2211,    2,      2.160,     0.000
     2212,    4,      2.960,     0.000
   230304,    2,      0.900,     1.000
   230508,    2,      1.200,     1.000
   230911,    2,      0.900,     1.000
     2312,    2,      1.500,     1.000
     2313,    2,      0.700,     1.000
     2314,    2,      0.500,     1.000
0
C=============================================================================C
C---KZDJ     NV      IB      IY       INF      CC
       2,     2,      7,    3.00,      0,     1.00
EOF
1     ,  ,2     ,  ,3     ,4     ,5     ,  ,6     ,  ,7     ,8     ,
9     ,10    ,11    ,12    ,A     ,B     ,C     ,D     ,E     ,F     ,G     ,H     ,
  ,
END
```

(ll-a)

Calculation Book of Main Lighting Substation

L-1 ~ L-8

****** PK11.EXE ******

DATA: 7/22/1997

OUTPUT DATA

---- Zhong xin xi ------

52 28 16 0 28 9 1 0 4 25 25 2

0 0

0.90 1.00

0

OUTPUT DATA

------- Jiao Dian Zuo Biao --------

(1)	0.00	-2.00	(2)	0.00	0.00	(3)	6.00 -2.00
(4)	6.00	0.00	(5)	12.00	-2.00	(6)	12.00 0.00
(7)	0.00	3.00	(8)	0.00	5.00	(9)	0.00 7.00
(10)	5.89	3.00	(11)	5.89	5.00	(12)	11.90 3.00
(13)	11.90	5.00	(14)	0.00	8.00	(15)	0.00 10.00
(16)	5.10	8.00	(17)	5.10	10.00	(18)	11.10 8.00
(19)	11.10	10.00	(20)	0.00	13.00	(21)	0.00 15.00
(22)	2.51	13.00	(23)	2.51	15.00	(24)	7.50 13.00
(25)	7.50	15.00	(26)	13.40	13.00	(27)	13.40 15.00
(28)	0.00	18.00	(29)	0.00	20.00	(30)	7.70 18.00
(31)	7.70	20.00	(32)	13.69	18.00	(33)	13.69 20.00
(34)	0.00	23.00	(35)	0.00	25.00	(36)	2.40 23.00
(37)	2.40	25.00	(38)	2.40	27.00	(39)	8.40 23.00
(40)	8.40	25.00	(41)	0.00	28.00	(42)	0.00 30.00
(43)	5.10	28.00	(44)	5.10	30.00	(45)	11.10 28.00
(46)	11.10	30.00	(47)	0.00	33.00	(48)	0.00 35.00
(49)	0.00	37.00	(50)	3.60	33.00	(51)	3.60 35.00
(52)	3.60	37.00					

OUTPUT DATA

------- Zhu Guan Lian Hao --------

(1)	1	2	(2)	3	4	(3)	5	6	(4)	7	8	(5) 8 9
(6)	10	11	(7)	12	13	(8)	14	15	(9)	16	17	(10) 18 19
(11)	20	21	(12)	22	23	(13)	24	25	(14)	26	27	(15) 28 29
(16)	30	31	(17)	32	33	(18)	34	35	(19)	36	37	(20) 37 38

(21) 39 40 (22) 41 42 (23) 43 44 (24) 45 46 (25) 47 48
(26) 48 49 (27) 50 51 (28) 51 52

------- Liang Guan Lian Hao --------

(1) 2 4 (2) 4 6 (3) 8 11 (4) 11 13 (5) 15 17
(6) 17 19 (7) 21 23 (8) 23 25 (9) 25 27 (10) 29 31
(11) 31 33 (12) 35 37 (13) 37 40 (14) 42 44 (15) 44 46
(16) 48 51

OUTPUT DATA

------- Zhi Zuo Yue Shu Xin Xi --------

(1) 1111 (2) 3111 (3) 5111 (4) 7111 (5) 9111
(6) 10111 (7) 12111 (8) 14111 (9) 16111 (10) 18111
(11) 20111 (12) 22111 (13) 24111 (14) 26111 (15) 28111
(16) 30111 (17) 32111 (18) 34111 (19) 36111 (20) 38111
(21) 39111 (22) 41111 (23) 43111 (24) 45111 (25) 47111
(26) 49111 (27) 50111 (28) 52111

OUTPUT DATA

------- Shang Xia Zhu Jian Dian Pian Xin --------

(1) 0.00 (2) 0.00 (3) 0.00 (4) 0.00 (5) 0.00 (6) 0.00 (7) 0.00
(8) 0.00 (9) 0.00 (10) 0.00 (11) 0.00 (12) 0.00 (13) 0.00 (14) 0.00
(15) 0.00 (16) 0.00 (17) 0.00 (18) 0.00 (19) 0.00 (20) 0.00 (21) 0.00
(22) 0.00 (23) 0.00 (24) 0.00 (25) 0.00 (26) 0.00 (27) 0.00 (28) 0.00
(29) 0.00 (30) 0.00 (31) 0.00 (32) 0.00 (33) 0.00 (34) 0.00 (35) 0.00
(36) 0.00 (37) 0.00 (38) 0.00 (39) 0.00 (40) 0.00 (41) 0.00 (42) 0.00
(43) 0.00 (44) 0.00 (45) 0.00 (46) 0.00 (47) 0.00 (48) 0.00 (49) 0.00
(50) 0.00 (51) 0.00 (52) 0.00

OUTPUT DATA

------- Biao Zhun Jie Mian Xin Xi --------

(1) 1, 250, 600, 6
(2) 1, 300, 500, 6
(3) 1, 300, 850, 6
(4) 1, 500, 240, 6
(5) 1, 500, 300, 6
(6) 1, 350, 450, 6

```
( 7)     1,   450,   450,   6
( 8)     1,   600,   600,   6
( 9)     1,   450,   350,   6

 OUTPUT   DATA

                ----- Zhu Ji Suan Chang Du(After consider steel) ------
( 1) 1.00  ( 2) 1.00  ( 3) 1.00  ( 4) 1.00  ( 5) 1.00  ( 6) 1.00  ( 7) 1.00
( 8) 1.00  ( 9) 1.00  (10) 1.00  (11) 1.00  (12) 1.00  (13) 1.00  (14) 1.00
(15) 1.00  (16) 1.00  (17) 1.00  (18) 1.00  (19) 1.00  (20) 1.00  (21) 1.00
(22) 1.00  (23) 1.00  (24) 1.00  (25) 1.00  (26) 1.00  (27) 1.00  (28) 1.00

 OUTPUT   DATA

              ---- Zhu Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----
( 1)   4   3   0  ( 2)   5   3   0  ( 3)   4   3   0
( 4)   6   3   0  ( 5)   6   3   0  ( 6)   5   3   0
( 7)   4   3   0  ( 8)   4   3   0  ( 9)   5   3   0
(10)   4   3   0  (11)   4   3   0  (12)   7   3   0
(13)   8   3   0  (14)   6   3   0  (15)   7   3   0
(16)   8   3   0  (17)   7   3   0  (18)   4   3   0
(19)   6   3   0  (20)   6   3   0  (21)   4   3   0
(22)   4   3   0  (23)   4   3   0  (24)   4   3   0
(25)   9   3   0  (26)   9   3   0  (27)   9   3   0
(28)   9   3   0

              ---- Liang Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----
( 1)   1   0   0  ( 2)   1   0   0  ( 3)   1   0   0
( 4)   1   0   0  ( 5)   1   0   0  ( 6)   1   0   0
( 7)   2   0   0  ( 8)   3   0   0  ( 9)   3   0   0
(10)   3   0   0  (11)   3   0   0  (12)   1   0   0
(13)   1   0   0  (14)   1   0   0  (15)   1   0   0
(16)   1   0   0
          IIQQ=        216

          STIF COMPUTE
          DEAD COMPUTE
JOINT  LOAD:     JR          XM          XN
                 0
```

COLUMN LOAD: JC KL P X KX

0

BEAM LOAD: NE LI KL P X P1

X1 KL P X P1 X1

1 2 1 3.80 0.00

6 23.40 1.95

1 2 1 3.80 0.00

6 23.40 1.95

1 2 1 3.80 0.00

6 13.50 1.50

1 2 1 3.80 0.00

6 18.00 1.50

1 2 1 3.80 0.00

6 23.40 1.95

1 2 1 3.80 0.00

6 23.40 1.95

1 2 1 25.40 0.00

6 14.40 1.20

1 3 1 40.50 0.00

6 11.70 1.95

6 9.00 1.50

1 3 1 6.40 0.00

6 11.70 1.95

6 9.00 1.50

1 5 2 6.40 3.90

10 23.40 0.00 0.00 1.95

4 103.30 3.90

3 6.40 3.90

10 23.40 3.90 0.00 1.95

1 5 2 55.00 3.00

10 15.80 0.00 0.00 1.50

4 83.10 3.00

3 61.00 3.00

10 15.80 3.00 0.00 1.50

1 2 1 9.40 0.00

6 5.40 1.20

1 2 1 3.80 0.00

6 16.20 1.80

1 2 1 3.80 0.00

6 21.60 1.80

1 2 1 3.80 0.00

6 21.60 1.80

1 2 1 3.80 0.00

6 8.10 1.80

DEAD LOAD

STIF COMPUTE

LIVE COMPUTE

JOINT LOAD: JR XM XN

0

COLUMN LOAD: JC KL P X KX

0

BEAM LOAD: NE LI KL P X PI

X1 KL P X PI X1

1 1 6 5.80 1.95

1 1 6 5.80 1.95

1 1 6 9.00 1.50

1 1 6 9.00 1.50

1 1 6 5.80 1.95

1 1 6 5.80 1.95

1 2 6 4.20 1.20

1 0.00 0.00

1 3 6 2.90 1.95

6 3.00 1.50

1 0.80 0.00

1 2 6 2.90 1.95

6 2.30 1.50

1 3 10 5.80 0.00 0.00 1.95

4 21.10 3.90

10 5.80 3.90 0.00 1.95

1 5 10 9.00 0.00 0.00 1.50

2 3.00 3.00

4 38.30 3.00

10 9.00 3.00 0.00 1.50

3 3.30 3.00

1 2 6 3.60 1.20

1	3.80	0.00				
		1	1	6	10.80	1.80
		1	1	6	7.20	1.80
		1	1	6	5.40	1.80
		1	1	6	5.40	1.80

EART COMPUTE
COMBI COMPUTE

COMBINATION AND REINFORCEMENT

Concrete COLUMN 1(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.02 N= 39.00 NO 6 As= 0. M= -0.03 N= -39.00
GG= 300.

Concrete COLUMN 2(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 300

NO 2 As= 0. M= 0.00 N= 152.14 NO 2 As= 0. M= 0.00 N= -152.14
GG= 375.

Concrete COLUMN 3(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= 0.02 N= 39.00 NO 8 As= 0. M= 0.03 N= -39.00
GG= 300.

Concrete COLUMN 4(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 6 As= 0. M= -0.01 N= 11.59 NO

6 As= 0. M= -0.02 N= -11.59
GG= 394.

Concrete COLUMN 5(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 7 As= 46. M= -0.04 N= -28.31 NO 7 As= 46. M= -0.01 N= 28.31
GG= 394.

Concrete COLUMN 6(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 300

NO 2 As= 0. M= -0.01 N= 119.31 NO 2 As= 0. M= -0.01 N= -119.31
GG= 375.

Concrete COLUMN 7(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 8 As= 0. M= 0.01 N= 34.76 NO 8 As= 0. M= 0.02 N= -34.76
GG= 300.

Concrete COLUMN 8(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.01 N= 26.04 NO 6 As= 0. M= -0.02 N= -26.04
GG= 300.

Concrete COLUMN 9(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 300

NO 2 As= 0. M= -0.01 N= 137.40 NO

2 As= 0. M= -0.01 N= -137.40
GG= 375.

Concrete COLUMN 10(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 8 As= 0. M= 0.02 N= 42.52 NO 8 As= 0. M= 0.03 N= -42.52
GG= 300.

Concrete COLUMN 11(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 6 As= 0. M= 0.00 N= 18.13 NO 6 As= 0. M= 0.00 N= -18.13
GG= 300.

Concrete COLUMN 12(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 0. M= 0.00 N= 178.03 NO 12 As= 0. M= -0.01 N= -178.03
GG= 506.

Concrete COLUMN 13(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 600, H= 600

NO 12 As= 0. M= 0.00 N= 231.79 NO 12 As= 0. M= 0.00 N= -231.79
GG= 900.

Concrete COLUMN 14(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 8 As= 0. M= 0.00 N= 38.73 NO

8 As= 0. M= 0.01 N= -38.73
GG= 394.

Concrete COLUMN 15(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 6 As= 0. M= -0.01 N= 71.23 NO 6 As= 0. M= -0.03 N= -71.23
GG= 506.

Concrete COLUMN 16(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 600, H= 600

NO 2 As= 0. M= -0.01 N= 457.44 NO 2 As= 0. M= -0.01 N= -457.44
GG= 900.

Concrete COLUMN 17(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 0. M= 0.02 N= 181.08 NO 8 As= 0. M= 0.04 N= -181.08
GG= 506.

Concrete COLUMN 18(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 11 As= 47. M= -0.01 N= -29.01 NO 11 As= 47. M= 0.00 N= 29.01
GG= 300.

Concrete COLUMN 19(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 2 As= 0. M= -0.01 N= 47.15 NO

2 As= 0. M= -0.02 N= -47.15
GG= 394.

Concrete COLUMN 20(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 11 As= 145. M= -0.01 N= -89.56 NO 11 As= 144. M= 0.00 N= 89.56
GG= 394.

Concrete COLUMN 21(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= 0.01 N= 35.30 NO 8 As= 0. M= 0.02 N= -35.30
GG= 300.

Concrete COLUMN 22(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.01 N= 25.63 NO 6 As= 0. M= -0.02 N= -25.63
GG= 300.

Concrete COLUMN 23(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= -0.01 N= 132.93 NO 2 As= 0. M= -0.01 N= -132.93
GG= 300.

Concrete COLUMN 24(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 8 As= 0. M= 0.01 N= 40.61 NO

8 As= 0. M= 0.03 N= -40.61
GG= 300.

Concrete COLUMN 25(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 350

NO 2 As= 0. M= 0.00 N= 7.06 NO 2 As= 0. M= -0.01 N= -7.06
GG= 394.

Concrete COLUMN 26(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 350

NO 7 As= 19. M= -0.01 N= -11.88 NO 7 As= 19. M= 0.00 N= 11.88
GG= 394.

Concrete COLUMN 27(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 350

NO 2 As= 0. M= 0.00 N= 7.06 NO 2 As= 0. M= 0.01 N= -7.06
GG= 394.

Concrete COLUMN 28(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 350

NO 5 As= 19. M= 0.01 N= -11.88 NO 5 As= 19. M= 0.00 N= 11.88
GG= 394.

Concrete BEAM 1(SECTION TYPE= 1 ANG= 0, L= 6.00)
Section property: B= 250, H= 600
BOTTOM
SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.00 -32.03 -60.65 -83.49 -98.23 -103.05 -97.69 -82.14
-56.40 -20.75 0.00 0.00 0.00
As(1)= 375. 186. 357. 497. 589. 620. 586. 488.
331. 120. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.05 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 2.98 38.74 80.66 138.99
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 17. 225. 479. 853.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 853.

Vl= 63.75 NO 1 Vr= 112.72 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.004 Umaxt= 0.006

Concrete BEAM 2(SECTION TYPE= 1 ANG= 0, L= 6.00)
Section property: B= 250, H= 600

BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 -20.75 -56.40 -82.14 -97.69 -103.05
-98.23 -83.49 -60.65 -32.03 0.00
As(1)= 375. 0. 0. 120. 331. 488. 586. 620.
589. 497. 357. 186. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 138.99 80.66 38.74 2.98 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.05
As(1)= 853. 479. 225. 17. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 853. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 112.72 NO 1 Vr= 63.75 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.004 Umaxt= 0.006

Concrete BEAM 3(SECTION TYPE= 1 ANG= 0, L= 5.89)
Section property: B= 250, H= 600
BOTTOM

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	0.00	-27.79	-52.29	-71.13	-82.37	-85.55	-80.69
-67.77	-46.80	-18.19	0.00	0.00	0.00		
As(1)=	375.	161.	306.	420.	490.	510.	479.
400.	273.	105.	0.	0.	375.		
As(2)=	375.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	375.		

TOP

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	0.08	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.85	19.51	45.79	75.75	129.58		
As(1)=	375.	0.	0.	0.	0.	0.	0.
0.	5.	112.	267.	449.	791.		
As(2)=	375.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	791.		

Vl= 56.62 NO 1 Vr= 101.14 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.003 Umaxt= 0.005

Concrete BEAM 4(SECTION TYPE= 1 ANG= 0, L= 6.00)
Section property: B= 250, H= 600
BOTTOM

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	0.00	0.00	0.00	-36.90	-70.13	-93.67	-107.52
-111.68	-106.15	-90.93	-66.49	-35.22	0.00		
As(1)=	375.	0.	0.	214.	414.	560.	648.
675.	639.	543.	392.	204.	375.		
As(2)=	375.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	375.		

TOP

SECTION	1	2	3	4	5	6	7

8 9 10 11 12 13

M= 129.60 67.60 31.38 2.60 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.05

As(1)= 791. 399. 182. 15. 0. 0. 0. 0.
0. 0. 0. 0. 375.

As(2)= 791. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 114.62 NO 1 Vr= 70.62 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.004 Umaxt= 0.005

Concrete BEAM 5(SECTION TYPE= 1 ANG= 0, L= 5.10)

Section property: B= 250, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 -19.85 -37.48 -51.43 -60.29 -62.63 -57.67 -45.34
-25.70 -1.06 0.00 0.00 0.00

As(1)= 375. 114. 218. 301. 354. 369. 339. 265.
149. 6. 0. 0. 375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.02 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 20.01 47.35 77.74 118.33

As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 115. 277. 461. 717.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 717.

Vl= 46.03 NO 1 Vr= 94.42 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.002 Umaxt= 0.005

Concrete BEAM 6(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 0.00 0.00 -32.34 -66.70 -91.16 -105.42 -109.49
-103.38 -87.35 -63.23 -33.32 0.00
As(1)= 375. 0. 0. 187. 393. 545. 635. 661.
622. 521. 372. 193. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 118.35 60.76 20.65 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.05
As(1)= 718. 357. 119. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 718. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 108.89 NO 1 Vr= 66.61 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.004 Umaxt= 0.005

Concrete BEAM 7(SECTION TYPE= 1 ANG= 0, L= 2.51)
Section property: B= 300, H= 500
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 -5.69 -9.88 -12.38 -13.04 -11.66 -8.08 -2.32
0.00 0.00 0.00 0.00 0.00
As(1)= 375. 40. 69. 87. 91. 81. 56. 16.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3.59 11.72 21.71 33.43 46.73 63.44
As(1)= 375. 0. 0. 0. 0. 0. 0. 25.
82. 153. 236. 333. 457.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 457.

Vl= 28.06 NO 1 Vr= 81.43 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.002 Umaxt= 0.003

Concrete BEAM 8(SECTION TYPE= 1 ANG= 0, L= 4.99)

Section property: B= 300, H= 850

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-1.17	-53.70	-94.90	-123.32	-137.89	-138.13	-124.03	-95.62	-53.34	0.00	0.00	0.00
As(1)=	638.	5.	215.	382.	500.	561.	562.	503.	385.	213.	0.	0.	638.
As(2)=	638.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	638.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	63.45	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.13	78.22	158.02
As(1)=	638.	7.	0.	0.	0.	0.	0.	0.	0.	0.	68.	314.	645.
As(2)=	638.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	645.

Vl= 159.98 NO 1 Vr= 199.82 NO 3 Asv/s= 0.00 As(3)= 638. Umaxb= 0.002 Umaxt= 0.003

Concrete BEAM 9(SECTION TYPE= 1 ANG= 0, L= 5.90)

Section property: B= 300, H= 850

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-2.98	-37.77	-64.57	-81.77	-89.36	-87.35	-75.90	-56.13	-30.09	0.00
As(1)=	638.	0.	0.	12.	151.	259.	329.	360.	352.	305.	225.	120.	638.
As(2)=	638.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	638.

TOP

SECTION	1	2	3	4	5	6	7

8 9 10 11 12 13

M= 158.01 97.40 53.74 15.34 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.01

As(1)= 645. 393. 215. 61. 0. 0. 0. 0.
0. 0. 0. 0. 638.

As(2)= 645. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 638.

Vl= 118.93 NO 1 Vr= 61.11 NO 3 Asv/s= 0.00 As(3)=
638. Umaxb= 0.002 Umaxt= 0.003

Concrete BEAM 10(SECTION TYPE= 1 ANG= 0, L= 7.70)

Section property: B= 300, H= 850

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 -76.75 -145.49 -201.28 -240.66 -266.70 -284.27 -206.15
-112.31 -9.20 0.00 0.00 0.00

As(1)= 638. 308. 592. 829. 999. 1114. 1192. 850.
454. 36. 0. 0. 638.

As(2)= 638. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 638.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.04 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 52.18 159.42 278.04 441.91

As(1)= 638. 0. 0. 0. 0. 0. 0. 0.
0. 209. 651. 1164. 1923.

As(2)= 638. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 1923.

Vl= 117.73 NO 1 Vr= 243.11 NO 3 Asv/s= 0.11 As(3)=
638. Umaxb= 0.005 Umaxt= 0.008

Concrete BEAM 11(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 300, H= 850

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 0.00 0.00 -116.47 -243.55 -347.82 -431.91 -419.95
-385.90 -327.14 -241.92 -131.97 0.00
As(1)= 638. 0. 0. 471. 1012. 1479. 1875. 1817.
1656. 1385. 1005. 536. 638.
As(2)= 638. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 638.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 441.93 233.07 85.59 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.06
As(1)= 1923. 966. 344. 0. 0. 0. 0. 0.
0. 0. 0. 0. 638.
As(2)= 1923. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 638.

Vl= 422.15 NO 1 Vr= 276.90 NO 3 Asv/s= 0.81 As(3)=
638. Umaxb= 0.007 Umaxt= 0.008

Concrete BEAM 12(SECTION TYPE= 1 ANG= 0, L= 2.40)
Section property: B= 250, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 5.11 10.71 16.85 23.56 30.91 38.92
47.62 56.99 66.99 77.57 88.68 101.89
As(1)= 375. 29. 61. 97. 136. 179. 226. 278.
335. 395. 460. 529. 612.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 612.

Vl= -20.34 NO 1 Vr= 74.00 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.002 Umaxt= 0.004

Concrete BEAM 13(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-38.19	-70.91	-93.94	-107.19	-110.65	-104.34	-88.34	-64.02	-33.76	0.00
As(1)=	375.	0.	0.	222.	419.	562.	646.	668.	628.	527.	377.	196.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	101.94	49.82	3.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
As(1)=	612.	291.	23.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.
As(2)=	612.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

Vl= 105.13 NO 1 Vr= 67.68 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.004 Umaxt= 0.004

Concrete BEAM 14(SECTION TYPE= 1 ANG= 0, L= 5.10)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-20.95	-39.57	-54.29	-63.59	-66.03	-61.15	-48.95	-29.42	-4.41	0.00	0.00	0.00
As(1)=	375.	121.	230.	318.	374.	389.	360.	286.	170.	25.	0.	0.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7

8 9 10 11 12 13

M= 0.03 0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 18.64 45.01 74.42 116.43

As(1)= 375. 0. 0. 0. 0. 0. 0. 0.

0. 107. 263. 441. 705.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 705.

Vl= 48.70 NO 1 Vr= 96.39 NO 3 Asv/s= 0.00 As(3)=

375. Umaxb= 0.003 Umaxt= 0.005

Concrete BEAM 15(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 0.00 0.00 -31.05 -63.55 -86.63 -100.19 -104.25

-98.79 -83.91 -60.94 -32.18 0.00

As(1)= 375. 0. 0. 180. 374. 516. 601. 627.

593. 499. 358. 187. 375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 375.

TOP

SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 116.45 60.81 22.02 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.00 0.00 0.04

As(1)= 705. 358. 127. 0. 0. 0. 0. 0.

0. 0. 0. 0. 375.

As(2)= 705. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 375.

Vl= 105.54 NO 1 Vr= 64.41 NO 3 Asv/s= 0.00 As(3)=

375. Umaxb= 0.004 Umaxt= 0.005

Concrete BEAM 16(SECTION TYPE= 1 ANG= 0, L= 3.60)

Section property: B= 250, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 -6.86 -13.07 -18.35 -22.45 -25.09 -26.03 -25.09
-22.45 -18.35 -13.07 -6.86 0.00
As(1)= 375. 39. 75. 106. 130. 145. 150. 145.
130. 106. 75. 39. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.02 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.02
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 23.76 NO 1 Vr= 23.76 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.002 Umaxt= 0.002
PK1 COMPUTE END

Calculation Book of Main Lighting Substation

L-9 ~ L-16

****** PK11.EXE ******
DATA: 7/22/1997

OUTPUT DATA

---- Zhong xin xi ------

57 32 17 0 32 10 1 0 4 25 25 2
0 0
0.90 1.00
0

OUTPUT DATA

------- Jiao Dian Zuo Biao --------

(1) 0.00 -2.00 (2) 0.00 0.00 (3) 0.00 2.00 (4) 5.89 -2.00
(5) 5.89 0.00 (6) 5.89 2.00 (7) 11.79 -2.00 (8) 11.79 0.00
(9) 11.79 2.00 (10) 14.40 -2.00 (11) 14.40 0.00 (12) 19.29 -2.00
(13) 19.29 0.00 (14) 0.00 3.00 (15) 0.00 5.00 (16) 0.00 7.00
(17) 5.89 3.00 (18) 5.89 5.00 (19) 5.89 7.00 (20) 11.90 3.00
(21) 11.90 5.00 (22) 0.00 8.00 (23) 0.00 10.00 (24) 0.00 12.00
(25) 5.89 8.00 (26) 5.89 10.00 (27) 11.79 8.00 (28) 11.79 10.00
(29) 14.40 8.00 (30) 14.40 10.00 (31) 19.29 8.00 (32) 19.29 10.00
(33) 0.00 13.00 (34) 0.00 15.00 (35) 2.51 13.00 (36) 2.51 15.00
(37) 7.39 13.00 (38) 7.39 15.00 (39) 0.00 18.00 (40) 0.00 20.00
(41) 3.60 18.00 (42) 3.60 20.00 (43) 0.00 23.00 (44) 0.00 25.00
(45) 6.00 23.00 (46) 6.00 25.00 (47) 0.00 28.00 (48) 0.00 30.00
(49) 5.40 28.00 (50) 5.40 30.00 (51) 5.40 32.00 (52) 0.00 33.00
(53) 0.00 35.00 (54) 2.97 33.00 (55) 2.97 35.00 (56) 5.40 33.00
(57) 5.40 35.00

OUTPUT DATA

------- Zhu Guan Lian Hao --------

(1) 1 2 (2) 2 3 (3) 4 5 (4) 5 6 (5) 7 8

(6) 8 9 (7) 10 11 (8) 12 13 (9) 14 15 (10) 15 16
(11) 17 18 (12) 18 19 (13) 20 21 (14) 22 23 (15) 23 24
(16) 25 26 (17) 27 28 (18) 29 30 (19) 31 32 (20) 33 34
(21) 35 36 (22) 37 38 (23) 39 40 (24) 41 42 (25) 43 44
(26) 45 46 (27) 47 48 (28) 49 50 (29) 50 51 (30) 52 53
(31) 54 55 (32) 56 57

------- Liang Guan Lian Hao --------

(1) 2 5 (2) 5 8 (3) 8 11 (4) 11 13 (5) 15 18
(6) 18 21 (7) 23 26 (8) 26 28 (9) 28 30 (10) 30 32
(11) 34 36 (12) 36 38 (13) 40 42 (14) 44 46 (15) 48 50
(16) 53 55 (17) 55 57

OUTPUT DATA

------- Zhi Zuo Yue Shu Xin Xi --------

(1) 1111 (2) 3111 (3) 4111 (4) 6111 (5) 7111
(6) 9111 (7) 10111 (8) 12111 (9) 14111 (10) 16111
(11) 17111 (12) 19111 (13) 20111 (14) 22111 (15) 24111
(16) 25111 (17) 27111 (18) 29111 (19) 31111 (20) 33111
(21) 35111 (22) 37111 (23) 39111 (24) 41111 (25) 43111
(26) 45111 (27) 47111 (28) 49111 (29) 51111 (30) 52111
(31) 54111 (32) 56111

OUTPUT DATA

------- Shang Xia Zhu Jian Dian Pian Xin --------

(1)0.00 (2)0.00 (3)0.00 (4)0.00 (5)0.00 (6)0.00 (7)0.00
(8)0.00 (9)0.00 (10)0.00 (11)0.00 (12)0.00 (13)0.00 (14)0.00
(15)0.00 (16)0.00 (17)0.00 (18)0.00 (19)0.00 (20)0.00 (21)0.00
(22)0.00 (23)0.00 (24)0.00 (25)0.00 (26)0.00 (27)0.00 (28)0.00
(29)0.00 (30)0.00 (31)0.00 (32)0.00 (33)0.00 (34)0.00 (35)0.00
(36)0.00 (37)0.00 (38)0.00 (39)0.00 (40)0.00 (41)0.00 (42)0.00
(43)0.00 (44)0.00 (45)0.00 (46)0.00 (47)0.00 (48)0.00 (49)0.00
(50)0.00 (51)0.00 (52)0.00 (53)0.00 (54)0.00 (55)0.00 (56)0.00
(57)0.00

OUTPUT DATA

------- Biao Zhun Jie Mian Xin Xi --------

```
(  1)     1,   300,   600,   6
(  2)     1,   300,   500,   6
(  3)     1,   250,   600,   6
(  4)     1,   250,   400,   6
(  5)     1,   350,   450,   6
(  6)     1,   450,   450,   6
(  7)     1,   500,   240,   6
(  8)     1,   240,   240,   6
(  9)     1,   500,   300,   6
( 10)     1,   500,   250,   6
```

OUTPUT DATA

```
----- Zhu Ji Suan Chang Du(After consider steel) ------
(  1) 1.00  (  2) 1.00  (  3) 1.00  (  4) 1.00  (  5) 1.00  (  6) 1.00  (  7) 1.00
(  8) 1.00  (  9) 1.00  ( 10) 1.00  ( 11) 1.00  ( 12) 1.00  ( 13) 1.00  ( 14) 1.00
( 15) 1.00  ( 16) 1.00  ( 17) 1.00  ( 18) 1.00  ( 19) 1.00  ( 20) 1.00  ( 21) 1.00
( 22) 1.00  ( 23) 1.00  ( 24) 1.00  ( 25) 1.00  ( 26) 1.00  ( 27) 1.00  ( 28) 1.00
( 29) 1.00  ( 30) 1.00  ( 31) 1.00  ( 32) 1.00
```

OUTPUT DATA

```
---- Zhu Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----
(  1)   5   3   0  (  2)   5   3   0  (  3)   6   3   0
(  4)   6   3   0  (  5)   6   3   0  (  6)   6   3   0
(  7)   6   3   0  (  8)   6   3   0  (  9)   5   3   0
( 10)   5   3   0  ( 11)   5   3   0  ( 12)   5   3   0
( 13)   7   3   0  ( 14)   5   3   0  ( 15)   5   3   0
( 16)   6   3   0  ( 17)   6   3   0  ( 18)   6   3   0
( 19)   6   3   0  ( 20)   7   3   0  ( 21)   6   3   0
( 22)   6   3   0  ( 23)   7   3   0  ( 24)   7   3   0
( 25)   7   3   0  ( 26)   7   3   0  ( 27)   6   3   0
( 28)   6   3   0  ( 29)   8   3   0  ( 30)   7   3   0
( 31)   9   3   0  ( 32)  10   3   0

---- Liang Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----
(  1)   1   0   0  (  2)   1   0   0  (  3)   2   0   0
(  4)   1   0   0  (  5)   3   0   0  (  6)   3   0   0
(  7)   1   0   0  (  8)   1   0   0  (  9)   2   0   0
( 10)   1   0   0  ( 11)   2   0   0  ( 12)   1   0   0
```

(13)	2	0	0	(14)	1	0	0	(15)	1	0	0
(16)	4	0	0	(17)	4	0	0				

HQQ= 228

STIF COMPUTE

DEAD COMPUTE

JOINT LOAD:	JR	XM	XN
	0		

COLUMN LOAD:	JC	KL	P	X	KX
	0				

BEAM LOAD:	NE	LI	KL	P	X	P1
X1	KL	P	X	P1	X1	
	1	2	1	4.50		0.00
6	16.20	1.80				
	1	2	1	4.50		0.00
6	16.20	1.80				
	1	2	1	3.80		0.00
6	14.40	1.20				
	1	2	1	41.80		0.00
6	21.60	1.80				
	1	2	1	3.80		0.00
6	16.20	1.80				
	1	2	1	3.80		0.00
6	16.20	1.80				
	1	3	1	4.50		0.00
6	8.10	1.80				
		6	6.80	1.50		
	1	2	2	57.20		3.00
3	52.60	3.00				
	1	2	1	3.80		0.00
6	14.40	1.20				
	1	3	1	41.00		0.00
6	10.80	1.80				
		6	9.00	1.50		
	1	2	1	3.80		0.00
6	14.40	1.20				
	1	3	1	42.10		0.00
6	10.80	1.80				

```
6 12.60 2.10
1 2 1 36.50 0.00
6 21.60 1.80
1 2 1 3.80 0.00
6 25.20 2.10
1 7 2 4.50 2.40
10 14.40 0.00 0.00 1.20
4 65.50 2.40
3 38.80 3.00
10 18.00 2.40 0.00 1.50
10 -0.10 3.90 0.00 0.01
10 -1.70 3.60 0.00 0.28
1 3 1 40.50 0.00
6 7.20 1.20
6 8.90 1.49
1 2 1 2.50 0.00
6 14.50 1.20
```

DEAD LOAD

```
STIF COMPUTE
LIVE COMPUTE
JOINT LOAD: JR XM XN
0

COLUMN LOAD: JC KL P X KX
0

BEAM LOAD: NE LI KL P X P1
X1 KL P X P1 X1
1 1 6 10.80 1.80
1 1 6 10.80 1.80
1 1 6 4.80 1.20
1 2 6 7.20 1.80
1 1.60 0.00
1 1 6 10.80 1.80
1 1 6 10.80 1.80
1 2 6 5.40 1.80
6 4.50 1.50
1 2 2 9.50 3.00
```

```
3       9.20    3.00
                1       1       6       4.80    1.20
                1               3               6               3.60            1.80
6       3.00    1.50
                                        1       1.60    0.00
                1       1       6       4.80    1.20
                1               3               6               3.60            1.80
6       4.20    2.10
                                        1       1.60    0.00
                1               2               6               7.20            1.80
1       1.10    0.00
                1       1       6       6.30    2.10
                1       6       10      4.80    0.00    0.00    1.20
4       9.30    2.40
                                10      6.80    2.40    0.00    1.50
3       1.30    3.00
                                10      0.00    3.90    0.00    0.01
10      -0.60   3.60    0.00    0.28
                1               3               6               2.40            1.20
6       3.70    1.49
                                        1       1.70    0.00
                1       1       6       4.80    1.20
```

EART COMPUTE
COMBI COMPUTE

COMBINATION AND REINFORCEMENT

Concrete COLUMN 1(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 350, H= 450

NO 12 As= 0. M= -0.01 N= 14.84 NO 12 As= 0. M= -0.02 N= -14.84

GG= 394.

Concrete COLUMN 2(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 350, H= 450

NO 7 As= 54. M= -0.04 N= -33.02 NO 7 As= 53. M= -0.02 N= 33.02
GG= 394.

Concrete COLUMN 3(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 0. M= 0.00 N= 58.68 NO 12 As= 0. M= 0.00 N= -58.68
GG= 506.

Concrete COLUMN 4(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 11 As= 176. M= 0.01 N= -109.15 NO 11 As= 176. M= 0.00 N= 109.15
GG= 506.

Concrete COLUMN 5(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 2. M= 0.01 N= -1.42 NO 12 As= 2. M= 0.01 N= 1.42
GG= 506.

Concrete COLUMN 6(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 11 As= 56. M= 0.03 N= -34.38 NO 11 As= 56. M= 0.02 N= 34.38
GG= 506.

Concrete COLUMN 7(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 0. M= -0.02 N= 189.98 NO 12
As= 0. M= -0.04 N= -189.98
GG= 506.

Concrete COLUMN 8(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 8 As= 0. M= 0.02 N= 115.46 NO 8 As= 0. M= 0.05 N= -115.46
GG= 506.

Concrete COLUMN 9(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 6 As= 0. M= -0.01 N= 13.17 NO 6 As= 0. M= -0.02 N= -13.17
GG= 394.

Concrete COLUMN 10(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 7 As= 52. M= -0.05 N= -31.92 NO 7 As= 52. M= -0.02 N= 31.92
GG= 394.

Concrete COLUMN 11(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 2 As= 0. M= 0.00 N= 57.89 NO 2 As= 0. M= 0.00 N= -57.89
GG= 394.

Concrete COLUMN 12(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 11 As= 178. M= 0.01 N= -110.29 NO 11 As= 178. M= 0.01 N= 110.29
GG= 394.

Concrete COLUMN 13(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 8 As= 0. M= 0.01 N= 27.99 NO 8 As= 0. M= 0.01 N= -27.99
GG= 300.

Concrete COLUMN 14(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 12 As= 0. M= 0.00 N= 8.67 NO 12 As= 0. M= 0.00 N= -8.67
GG= 394.

Concrete COLUMN 15(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 450

NO 7 As= 41. M= -0.02 N= -25.09 NO 7 As= 41. M= -0.01 N= 25.09
GG= 394.

Concrete COLUMN 16(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 0. M= -0.02 N= 244.69 NO 12 As= 0. M= -0.04 N= -244.69
GG= 506.

Concrete COLUMN 17(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 0. M= 0.02 N= 155.65 NO 12 As= 0. M= 0.04 N= -155.65
GG= 506.

Concrete COLUMN 18(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 12 As= 0. M= -0.02 N= 142.36 NO 12 As= 0. M= -0.05 N= -142.36
GG= 506.

Concrete COLUMN 19(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 8 As= 0. M= 0.02 N= 116.58 NO 8 As= 0. M= 0.05 N= -116.58
GG= 506.

Concrete COLUMN 20(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 11 As= 60. M= 0.00 N= -36.90 NO 5 As= 60. M= 0.01 N= 36.90
GG= 300.

Concrete COLUMN 21(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 2 As= 0. M= -0.03 N= 211.18 NO 2 As= 0. M= -0.04 N= -211.18
GG= 506.

Concrete COLUMN 22(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 8 As= 0. M= 0.02 N= 116.61 NO 8 As= 0. M= 0.05 N= -116.61
GG= 506.

Concrete COLUMN 23(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= -0.02 N= 85.14 NO 2 As= 0. M= -0.04 N= -85.14
GG= 300.

Concrete COLUMN 24(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= 0.02 N= 85.14 NO 2 As= 0. M= 0.04 N= -85.14
GG= 300.

Concrete COLUMN 25(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= -0.03 N= 60.54 NO 2 As= 0. M= -0.06 N= -60.54
GG= 300.

Concrete COLUMN 26(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= 0.03 N= 60.54 NO 2 As= 0. M= 0.06 N= -60.54
GG= 300.

Concrete COLUMN 27(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 450, H= 450

NO 2 As= 0. M= -0.02 N= 97.91 NO
2 As= 0. M= -0.06 N= -97.91
GG= 506.

Concrete COLUMN 28(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 450, H= 450

NO 2 As= 0. M= 0.07 N= 107.90 NO
2 As= 0. M= 0.11 N= -107.90
GG= 506.

Concrete COLUMN 29(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 240, H= 240

NO 5 As= 69. M= 0.09 N= -41.63 NO
5 As= 68. M= 0.03 N= 41.63
GG= 144.

Concrete COLUMN 30(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 500, H= 240

NO 6 As= 0. M= -0.01 N= 60.85 NO
6 As= 0. M= -0.03 N= -60.85
GG= 300.

Concrete COLUMN 31(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 500, H= 300

NO 2 As= 0. M= 0.02 N= 111.24 NO
2 As= 0. M= 0.03 N= -111.24
GG= 375.

Concrete COLUMN 32(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 500, H= 250

NO 11 As= 8. M= 0.00 N= -4.93 NO 7 As= 8. M= 0.00 N= 4.93

GG= 312.

Concrete BEAM 1(SECTION TYPE= 1 ANG= 0, L= 5.89)

Section property: B= 300, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-32.34	-61.19	-84.17	-99.05	-104.39	-100.08	-86.13	-62.54	-29.42	0.00	0.00	0.00
As(1)=	450.	187.	358.	497.	589.	622.	595.	509.	366.	170.	0.	0.	450.
As(2)=	450.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	450.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.98	35.25	67.74	129.60
As(1)=	450.	0.	0.	0.	0.	0.	0.	0.	0.	46.	204.	397.	781.
As(2)=	450.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	781.

Vl= 66.04 NO 1 Vr= 111.09 NO 3 Asv/s= 0.00 As(3)= 450. Umaxb= 0.003 Umaxt= 0.004

Concrete BEAM 2(SECTION TYPE= 1 ANG= 0, L= 5.89)

Section property: B= 300, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-27.39	-57.58	-78.24	-89.26	-90.63	-82.36	-64.56	-38.64	-16.17	-5.73
As(1)=	450.	0.	0.	158.	336.	461.	529.	537.	486.	378.	224.	93.	450.
As(2)=	450.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	450.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 129.59 74.04 41.10 13.04 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 33.00
As(1)= 781. 436. 238. 75. 0. 0. 0. 0.
0. 0. 0. 0. 450.
As(2)= 781. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 450.

Vl= 107.22 NO 1 Vr= 73.73 NO 3 Asv/s= 0.00 As(3)=
450. Umaxb= 0.003 Umaxt= 0.004

Concrete BEAM 3(SECTION TYPE= 1 ANG= 0, L= 2.61)
Section property: B= 300, H= 500
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= -5.76 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 32.95 31.56 35.05 39.05 43.71 49.18 55.60
63.05 71.45 80.66 90.54 100.92 120.25
As(1)= 375. 223. 248. 277. 311. 351. 399. 454.
518. 588. 664. 746. 901.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 901.

Vl= -33.87 NO 3 Vr= 72.41 NO 7 Asv/s= 0.00 As(3)=
375. Umaxb= 0.002 Umaxt= 0.006

Concrete BEAM 4(SECTION TYPE= 1 ANG= 0, L= 4.89)
Section property: B= 300, H= 600
BOTTOM
SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 0.00 -37.43 -95.57 -140.95 -172.26 -188.90 -190.86 -178.17 -151.40 -111.87 -60.93 0.00

As(1)= 450. 0. 217. 567. 854. 1060. 1171. 1185. 1099. 922. 669. 356. 450.

As(2)= 450. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

TOP

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 120.30 34.90 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.07

As(1)= 722. 202. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

As(2)= 722. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

Vl= 211.06 NO 1 Vr= 158.37 NO 3 Asv/s= 0.35 As(3)= 450. Umaxb= 0.007 Umaxt= 0.004

Concrete BEAM 5(SECTION TYPE= 1 ANG= 0, L= 5.89)

Section property: B= 250, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.00 -31.34 -59.40 -81.81 -96.30 -101.46 -97.18 -83.46 -60.30 -27.81 0.00 0.00 0.00

As(1)= 375. 182. 349. 486. 577. 609. 582. 497. 355. 161. 0. 0. 375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 375.

TOP

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 15.31 42.94 75.08 134.21

As(1)= 375. 0. 0. 0. 0. 0. 0. 0. 0. 88. 250. 445. 821.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 821.

Vl= 63.85 NO 1 Vr= 109.48 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.004 Umaxt= 0.005

Concrete BEAM 6(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-31.21	-64.71	-88.51	-102.53	-106.78	-101.24	-86.01	-62.47	-32.98	0.00
As(1)=	375.	0.	0.	181.	381.	528.	616.	643.	608.	512.	368.	191.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	134.21	72.59	39.62	11.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
As(1)=	821.	429.	231.	68.	0.	0.	0.	0.	0.	0.	0.	0.	375.
As(2)=	821.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

Vl= 111.10 NO 1 Vr= 65.96 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.004 Umaxt= 0.005

Concrete BEAM 7(SECTION TYPE= 1 ANG= 0, L= 5.89)

Section property: B= 300, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	-0.01	-25.19	-46.84	-62.63	-70.44	-69.34	-59.28	-40.26	-15.32	0.00	0.00	0.00	0.00
As(1)=	450.	145.	272.	367.	414.	407.	347.	234.	88.	0.	0.	0.	450.
As(2)=	450.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	450.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.04 0.00 0.00 0.00 0.00 0.00 0.00
9.95 32.16 60.39 93.69 130.86 195.64
As(1)= 450. 0. 0. 0. 0. 0. 0. 57.
186. 353. 556. 789. 1217.
As(2)= 450. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 1217.

Vl= 50.18 NO 1 Vr= 119.94 NO 3 Asv/s= 0.00 As(3)=
450. Umaxb= 0.003 Umaxt= 0.007

Concrete BEAM 8(SECTION TYPE= 1 ANG= 0, L= 5.89)
Section property: B= 300, H= 600
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 -35.84 -109.43 -163.24 -197.28 -211.44 -202.69
-175.49 -129.94 -66.05 0.00 0.00
As(1)= 450. 0. 208. 654. 1000. 1229. 1326. 1266.
1081. 783. 387. 0. 450.
As(2)= 450. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 450.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 195.68 76.64 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 16.18 121.06
As(1)= 1218. 451. 0. 0. 0. 0. 0. 0.
0. 0. 0. 93. 727.
As(2)= 1218. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 727.

Vl= 257.53 NO 1 Vr= 223.38 NO 3 Asv/s= 0.61 As(3)=
450. Umaxb= 0.007 Umaxt= 0.007

Concrete BEAM 9(SECTION TYPE= 1 ANG= 0, L= 2.61)
Section property: B= 300, H= 500
BOTTOM
SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00

As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 121.00 110.43 104.54 99.16 94.44 90.53 87.57
85.64 84.66 84.49 84.98 85.98 95.85

As(1)= 907. 822. 775. 732. 695. 664. 641. 626.
619. 617. 621. 629. 706.

As(2)= 907. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 706.

Vl= 42.60 NO 1 Vr= 27.11 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.002 Umaxt= 0.006

Concrete BEAM 10(SECTION TYPE= 1 ANG= 0, L= 4.89)

Section property: B= 300, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 0.00 -54.16 -108.74 -150.72 -179.02 -193.31 -193.58
-179.83 -152.41 -112.38 -61.10 0.00

As(1)= 450. 0. 316. 649. 918. 1105. 1201. 1203.
1110. 929. 672. 358. 450.

As(2)= 450. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 450.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 95.90 14.67 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.07

As(1)= 570. 84. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 450.

As(2)= 570. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 450.

Vl= 200.78 NO 1 Vr= 159.16 NO 3 Asv/s= 0.29 As(3)= 450. Umaxb= 0.007 Umaxt= 0.003

Concrete BEAM 11(SECTION TYPE= 1 ANG= 0, L= 2.51)

Section property: B= 300, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(1)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	6.69	13.72	21.21	29.29	38.09	47.75	58.34	69.78	81.95	94.71	107.92	122.91
As(1)=	375.	47.	96.	149.	207.	270.	341.	419.	505.	598.	697.	802.	923.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	923.

Vl= -36.90 NO 3 Vr= 74.18 NO 7 Asv/s= 0.00 As(3)= 375. Umaxb= 0.002 Umaxt= 0.006

Concrete BEAM 12(SECTION TYPE= 1 ANG= 0, L= 4.89)

Section property: B= 300, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	-31.07	-90.84	-137.79	-170.59	-188.33	-190.83	-178.28	-151.57	-112.05	-61.05	0.00
As(1)=	450.	0.	180.	538.	834.	1048.	1168.	1185.	1100.	923.	670.	357.	450.
As(2)=	450.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	450.

TOP

Vl= 200.78 NO 1 Vr= 159.16 NO 3 Asv/s= 0.29 As(3)= 450. Umaxb= 0.007 Umaxt= 0.003

Concrete BEAM 11(SECTION TYPE= 1 ANG= 0, L= 2.51)

Section property: B= 300, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(1)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	6.69	13.72	21.21	29.29	38.09	47.75	58.34	69.78	81.95	94.71	107.92	122.91
As(1)=	375.	47.	96.	149.	207.	270.	341.	419.	505.	598.	697.	802.	923.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	923.

Vl= -36.90 NO 3 Vr= 74.18 NO 7 Asv/s= 0.00 As(3)= 375. Umaxb= 0.002 Umaxt= 0.006

Concrete BEAM 12(SECTION TYPE= 1 ANG= 0, L= 4.89)

Section property: B= 300, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	-31.07	-90.84	-137.79	-170.59	-188.33	-190.83	-178.28	-151.57	-112.05	-61.05	0.00
As(1)=	450.	0.	180.	538.	834.	1048.	1168.	1185.	1100.	923.	670.	357.	450.
As(2)=	450.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	450.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 122.96 40.17 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.06

As(1)= 739. 233. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 450.

As(2)= 739. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 450.

Vl= 214.03 NO 1 Vr= 158.50 NO 3 Asv/s= 0.37 As(3)=
450. Umaxb= 0.007 Umaxt= 0.004

Concrete BEAM 13(SECTION TYPE= 1 ANG= 0, L= 3.60)

Section property: B= 300, H= 500

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 -32.02 -59.47 -81.76 -98.36 -108.71 -112.28 -108.71
-98.36 -81.76 -59.47 -32.02 0.00

As(1)= 375. 226. 428. 597. 726. 808. 836. 808.
726. 597. 428. 226. 375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.05 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.05

As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 114.01 NO 1 Vr= 114.01 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.006 Umaxt= 0.002

Concrete BEAM 14(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 300, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 -43.89 -84.39 -119.10 -145.70 -162.05 -167.51 -162.05 -145.70 -119.10 -84.39 -43.89 0.00

As(1)= 450. 255. 499. 715. 885. 992. 1028. 992. 885. 715. 499. 255. 450.

As(2)= 450. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

TOP

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.07

As(1)= 450. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

As(2)= 450. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

Vl= 89.85 NO 1 Vr= 89.85 NO 3 Asv/s= 0.00 As(3)= 450. Umaxb= 0.006 Umaxt= 0.003

Concrete BEAM 15(SECTION TYPE= 1 ANG= 0, L= 5.40)

Section property: B= 300, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.00 -60.46 -118.07 -170.97 -218.71 -262.92 -275.83 -264.40 -240.02 -200.96 -146.85 -79.16 0.00

As(1)= 450. 354. 708. 1051. 1377. 1696. 1792. 1707. 1529. 1254. 892. 467. 450.

As(2)= 450. 0. 0. 0. 0. 1800. 1905. 1812. 0. 0. 0. 0. 450.

TOP

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.22

As(1)= 450. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

As(2)= 450. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 450.

Vl= 136.41 NO 1 Vr= 187.99 NO 3 Asv/s= 0.22 As(3)= 450. Umaxb= 0.010 Umaxt= 0.003

Concrete BEAM 16(SECTION TYPE= 1 ANG= 0, L= 2.97)

Section property: B= 250, H= 400

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-19.10	-34.81	-46.77	-54.67	-58.19	-57.07	-51.17	-40.62	-25.70	-6.72	0.00	0.00
As(1)=	250.	173.	321.	437.	517.	553.	541.	481.	377.	234.	60.	0.	250.
As(2)=	250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	250.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.01	43.43
As(1)=	250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	144.	404.
As(2)=	250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	404.

Vl= 82.30 NO 1 Vr= 114.29 NO 3 Asv/s= 0.30 As(3)= 250. Umaxb= 0.006 Umaxt= 0.004

Concrete BEAM 17(SECTION TYPE= 1 ANG= 0, L= 2.43)

Section property: B= 250, H= 400

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.46	-0.66	-0.45	0.00
As(1)=	250.	0.	0.	0.	0.	0.	0.	0.	0.	4.	6.	4.	250.
As(2)=	250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	250.

TOP

```
  SECTION      1        2        3        4        5        6        7
8        9       10       11       12       13
       M=     43.40    35.81    29.72    23.99    18.75    14.11    10.19
7.08     4.70     2.92     1.62     0.69     0.00
   As(1)=     404.     330.     272.     218.     169.     127.      91.      63.
42.      26.      14.       6.     250.
   As(2)=     404.       0.       0.       0.       0.       0.       0.       0.
0.       0.       0.       0.     250.

   Vl=   38.32   NO  1    Vr=   -4.63   NO  5    Asv/s=   0.00      As(3)=
250.       Umaxb=  0.002       Umaxt=  0.004
     PK1  COMPUTE  END
```

Calculation Book of Main Lighting Substation

L-17

****** PK11.EXE ******

DATA: 7/22/1997

OUTPUT DATA

---- Zhong xin xi ------

5 2 2 0 2 2 1 0 4 25 25 2
0 0
0.90 1.00
0

OUTPUT DATA

------- Jiao Dian Zuo Biao --------

(1) 0.00 -2.00 (2) 0.00 0.00 (3) 5.40 -2.00 (4) 5.40 0.00
(5) 7.20 0.00

OUTPUT DATA

------- Zhu Guan Lian Hao --------

(1) 1 2 (2) 3 4

------- Liang Guan Lian Hao --------

(1) 2 4 (2) 4 5

OUTPUT DATA

------- Zhi Zuo Yue Shu Xin Xi --------

(1) 1111 (2) 3111

OUTPUT DATA

------- Shang Xia Zhu Jian Dian Pian Xin --------

(1) 0.00 (2) 0.00 (3) 0.00 (4) 0.00 (5) 0.00

OUTPUT DATA

------- Biao Zhun Jie Mian Xin Xi --------

(1) 1, 250, 700, 6
(2) 1, 500, 240, 6

OUTPUT DATA

----- Zhu Ji Suan Chang Du(After consider steel) ------

(1) 1.00 (2) 1.00

OUTPUT DATA

---- Zhu Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1) 2 3 0 (2) 2 3 0

---- Liang Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1) 1 0 0 (2) 1 0 0

IIQQ= 27

STIF COMPUTE

DEAD COMPUTE

JOINT LOAD: JR XM XN

0

COLUMN LOAD: JC KL P X KX

0

BEAM LOAD: NE LI KL P X P1
X1 KL P X P1 X1

1 8 2 6.50 2.40
10 7.20 0.00 0.00 1.20

4 33.40 1.50
4 20.80 2.40

3 6.70 3.00
4 33.40 3.90

10 9.00 2.40 0.00 1.50
10 -1.70 3.60 0.00 0.28

1 3 4 67.50 1.80

1 3.80 0.00

6 10.80 0.90

DEAD LOAD

STIF COMPUTE

LIVE COMPUTE

JOINT LOAD: JR XM XN

0

COLUMN LOAD: JC KL P X KX

0

BEAM LOAD: NE LI KL P X PI

X1 KL P X PI X1

1 8 10 2.40 0.00 0.00 1.20

4 7.90 1.50

2 0.90 2.40

4 2.60 2.40

4 7.90 3.90

3 1.00 3.00

10 3.00 2.40 0.00 1.50

10 -0.60 3.60 0.00 0.28

1 2 4 9.20 1.80

6 4.50 0.90

EART COMPUTE

COMBI COMPUTE

COMBINATION AND REINFORCEMENT

Concrete COLUMN 1(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 6 As= 0. M= 0.01 N= 42.51 NO 6 As= 0. M= 0.00 N= -42.51

GG= 300.

Concrete COLUMN 2(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= 0.01 N= 181.27 NO 2 As= 0. M= 0.00 N= -181.27

GG= 300.

Concrete BEAM 1(SECTION TYPE= 1 ANG= 0, L= 5.40)

Section property: B= 250, H= 700

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-35.70	-68.67	-98.00	-108.11	-107.51	-96.08	-77.83	-56.15	-23.31	0.00	0.00	0.00
As(1)=	438.	175.	341.	492.	545.	542.	482.	388.	278.	114.	0.	0.	438.
As(2)=	438.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	438.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.29	70.39	120.44	172.78
As(1)=	438.	0.	0.	0.	0.	0.	0.	0.	0.	114.	350.	610.	893.
As(2)=	438.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	893.

Vl= 78.72 NO 1 Vr= 143.56 NO 3 Asv/s= 0.00 As(3)= 438. Umaxb= 0.003 Umaxt= 0.005

Concrete BEAM 2(SECTION TYPE= 1 ANG= 0, L= 1.80)

Section property: B= 250, H= 700

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(1)=	438.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

0. 0. 0. 0. 438.
As(2)= 438. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 438.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 191.97 174.12 156.45 139.02 121.91 105.19 88.94
73.20 57.92 43.03 28.47 14.15 0.00
As(1)= 1000. 901. 803. 709. 618. 530. 445. 364.
287. 212. 139. 69. 438.
As(2)= 1000. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 438.

Vl= 119.42 NO 1 Vr= 0.00 NO 3 Asv/s= 0.00 As(3)=
438. Umaxb= 0.002 Umaxt= 0.006
PK1 COMPUTE END

ll-d_____

Calculation Book of Main Lighting Substation

L-18 ~ L-19

****** PK11.EXE ******
DATA: 7/22/1997

OUTPUT DATA

---- Zhong xin xi ------

12 6 4 0 6 4 1 0 4 25 25 2
0 0
0.90 1.00
0

OUTPUT DATA

------- Jiao Dian Zuo Biao --------

(1) 0.00 -2.00 (2) 0.00 0.00 (3) 3.00 -2.00 (4) 3.00 0.00
(5) 8.40 -2.00 (6) 8.40 0.00 (7) 13.50 -2.00 (8) 13.50 0.00
(9) 0.00 3.00 (10) 0.00 5.00 (11) 2.40 3.00 (12) 2.40 5.00

OUTPUT DATA

------- Zhu Guan Lian Hao --------

(1) 1 2 (2) 3 4 (3) 5 6 (4) 7 8 (5) 9 10
(6) 11 12

------- Liang Guan Lian Hao --------

(1) 2 4 (2) 4 6 (3) 6 8 (4) 10 12

OUTPUT DATA

------- Zhi Zuo Yue Shu Xin Xi --------

(1) 1111 (2) 3111 (3) 5111 (4) 7111 (5) 9111
(6) 11111

OUTPUT DATA

------- Shang Xia Zhu Jian Dian Pian Xin --------

(1) 0.00 (2) 0.00 (3) 0.00 (4) 0.00 (5) 0.00 (6) 0.00 (7) 0.00
(8) 0.00 (9) 0.00 (10) 0.00 (11) 0.00 (12) 0.00

OUTPUT DATA

------- Biao Zhun Jie Mian Xin Xi --------

(1) 1, 250, 600, 6
(2) 1, 250, 400, 6
(3) 1, 500, 240, 6
(4) 1, 500, 250, 6

OUTPUT DATA

----- Zhu Ji Suan Chang Du(After consider steel) ------

(1) 1.00 (2) 1.00 (3) 1.00 (4) 1.00 (5) 1.00 (6) 1.00

OUTPUT DATA

---- Zhu Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1) 3 3 0 (2) 4 3 0 (3) 4 3 0
(4) 3 3 0 (5) 3 3 0 (6) 3 3 0

---- Liang Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1) 1 0 0 (2) 1 0 0 (3) 1 0 0
(4) 2 0 0

IIQQ= 54

STIF COMPUTE
DEAD COMPUTE

JOINT LOAD: JR XM XN
0

COLUMN LOAD: JC KL P X KX
0

BEAM LOAD: NE LI KL P X PI
X1 KL P X PI X1
1 2 1 9.30 0.00

6	5.40	0.90					
		1	2	1	9.30	0.00	
6	5.40	0.90					
		1	2	1	9.30	0.00	
6	5.40	0.90					
		1	2	1	2.50	0.00	
6	14.40	1.20					

DEAD LOAD

STIF COMPUTE
LIVE COMPUTE

JOINT LOAD:	JR	XM	XN
	0		

COLUMN LOAD:	JC	KL	P	X	KX
	0				

BEAM LOAD:	NE	LI	KL	P	X	PI
XI	KL	P	X	PI	XI	
	1	1	6	2.30	0.90	
	1	1	6	2.30	0.90	
	1	1	6	2.30	0.90	
	1	1	6	4.80	1.20	

EART COMPUTE
COMBI COMPUTE

COMBINATION AND REINFORCEMENT

Concrete COLUMN 1(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 6 As= 0. M= 0.00 N= 9.23 NO 6 As= 0. M= 0.00 N= -9.23
GG= 300.

Concrete COLUMN 2(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 250

NO 12 As= 0. M= 0.00 N= 60.32 NO 12 As= 0. M= 0.00 N= -60.32
GG= 312.

Concrete COLUMN 3(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 250

NO 12 As= 0. M= 0.00 N= 83.75 NO 12 As= 0. M= 0.00 N= -83.75
GG= 312.

Concrete COLUMN 4(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 8 As= 0. M= 0.00 N= 25.75 NO 8 As= 0. M= 0.01 N= -25.75
GG= 300.

Concrete COLUMN 5(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= 0.00 N= 11.64 NO 2 As= 0. M= -0.01 N= -11.64
GG= 300.

Concrete COLUMN 6(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= 0.00 N= 11.64 NO 2 As= 0. M= 0.01 N= -11.64
GG= 300.

Concrete BEAM 1(SECTION TYPE= 1 ANG= 0, L= 3.00)
Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-4.09	-7.32	-9.51	-10.50	-10.20	-8.59	-5.67	-1.72	0.00	0.00	0.00	0.00
As(1)=	375.	23.	42.	55.	60.	58.	49.	32.	10.	0.	0.	0.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	5.00	10.47	16.98	24.41	33.69
As(1)=	375.	0.	0.	0.	0.	0.	0.	6.	29.	60.	98.	141.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

Vl= 16.88 NO 1 Vr= 39.40 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.002 Umaxt= 0.002

Concrete BEAM 2(SECTION TYPE= 1 ANG= 0, L= 5.40)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	-5.31	-18.61	-27.68	-32.53	-33.16	-29.56	-21.74	-9.69	0.00	0.00	0.00
As(1)=	375.	0.	30.	107.	160.	189.	192.	171.	125.	56.	0.	0.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	33.69	12.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.22	30.18	55.12
As(1)=	375.	69.	0.	0.	0.	0.	0.	0.	0.	0.	70.	175.	375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 48.55 NO 1 Vr= 56.87 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.002 Umaxt= 0.002

Concrete BEAM 3(SECTION TYPE= 1 ANG= 0, L= 5.10)
Section property: B= 250, H= 600
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 -11.26 -24.93 -34.84 -40.98 -43.34
-41.95 -36.78 -27.85 -15.34 0.00
As(1)= 375. 0. 0. 65. 144. 202. 239. 253.
244. 214. 161. 88. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 55.12 29.50 11.08 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.02
As(1)= 375. 171. 64. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 60.83 NO 1 Vr= 37.71 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.002 Umaxt= 0.002

Concrete BEAM 4(SECTION TYPE= 1 ANG= 0, L= 2.40)
Section property: B= 250, H= 400
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 -3.50 -6.74 -9.53 -11.72 -13.16 -13.67 -13.16
-11.72 -9.53 -6.74 -3.50 0.00
As(1)= 250. 31. 60. 85. 105. 118. 123. 118.
105. 85. 60. 31. 250.
As(2)= 250. 0. 0. 0. 0. 0. 0. 0.

```
0.      0.      0.      0.      250.
        TOP
  SECTION     1       2       3       4       5       6       7
8       9      10      11      12      13
       M=     0.01    0.00    0.00    0.00    0.00    0.00    0.00
0.00    0.00    0.00    0.00    0.00    0.01
    As(1)=    250.    0.      0.      0.      0.      0.      0.      0.
0.      0.      0.      0.      250.
    As(2)=    250.    0.      0.      0.      0.      0.      0.      0.
0.      0.      0.      0.      250.

    Vl=   18.00   NO  1     Vr=   18.00   NO  3     Asv/s=   0.00     As(3)=
250.        Umaxb=  0.002       Umaxt=  0.002
     PK1  COMPUTE  END
```

II-e

Calculation Book of Main Lighting Substation

L-20 ~ L-27

****** PK11.EXE ******

DATA: 7/22/1997

OUTPUT DATA

---- Zhong xin xi ------

42 20 14 0 20 6 1 0 4 25 25 2
0 0
0.90 1.00
0

OUTPUT DATA

------- Jiao Dian Zuo Biao --------

(1) 0.00 -2.00 (2) 0.00 0.00 (3) 5.89 -2.00 (4) 5.89 0.00
(5) 11.90 -2.00 (6) 11.90 0.00 (7) 0.00 3.00 (8) 0.00 5.00
(9) 5.10 3.00 (10) 5.10 5.00 (11) 0.00 8.00 (12) 0.00 10.00
(13) 5.89 8.00 (14) 5.89 10.00 (15) 0.00 13.00 (16) 0.00 15.00
(17) 2.40 13.00 (18) 2.40 15.00 (19) 0.00 18.00 (20) 0.00 20.00
(21) 5.89 18.00 (22) 5.89 20.00 (23) 11.90 18.00 (24) 11.90 20.00
(25) 0.00 23.00 (26) 0.00 25.00 (27) 5.89 23.00 (28) 5.89 25.00
(29) 11.79 23.00 (30) 11.79 25.00 (31) 14.30 23.00 (32) 14.30 25.00
(33) 0.00 28.00 (34) 0.00 30.00 (35) 3.00 28.00 (36) 3.00 30.00
(37) 4.80 30.00 (38) 0.00 33.00 (39) 0.00 35.00 (40) 5.40 33.00
(41) 5.40 35.00 (42) 7.20 35.00

OUTPUT DATA

------- Zhu Guan Lian Hao --------

(1) 1 2 (2) 3 4 (3) 5 6 (4) 7 8 (5) 9 10
(6) 11 12 (7) 13 14 (8) 15 16 (9) 17 18 (10) 19 20
(11) 21 22 (12) 23 24 (13) 25 26 (14) 27 28 (15) 29 30
(16) 31 32 (17) 33 34 (18) 35 36 (19) 38 39 (20) 40 41

------- Liang Guan Lian Hao --------

(1) 2 4 (2) 4 6 (3) 8 10 (4) 12 14 (5) 16 18
(6) 20 22 (7) 22 24 (8) 26 28 (9) 28 30 (10) 30 32
(11) 34 36 (12) 36 37 (13) 39 41 (14) 41 42

OUTPUT DATA

------- Zhi Zuo Yue Shu Xin Xi --------

(1) 1111 (2) 3111 (3) 5111 (4) 7111 (5) 9111
(6) 11111 (7) 13111 (8) 15111 (9) 17111 (10) 19111
(11) 21111 (12) 23111 (13) 25111 (14) 27111 (15) 29111
(16) 31111 (17) 33111 (18) 35111 (19) 38111 (20) 40111

OUTPUT DATA

------- Shang Xia Zhu Jian Dian Pian Xin --------

(1) 0.00 (2) 0.00 (3) 0.00 (4) 0.00 (5) 0.00 (6) 0.00 (7) 0.00
(8) 0.00 (9) 0.00 (10) 0.00 (11) 0.00 (12) 0.00 (13) 0.00 (14) 0.00
(15) 0.00 (16) 0.00 (17) 0.00 (18) 0.00 (19) 0.00 (20) 0.00 (21) 0.00
(22) 0.00 (23) 0.00 (24) 0.00 (25) 0.00 (26) 0.00 (27) 0.00 (28) 0.00
(29) 0.00 (30) 0.00 (31) 0.00 (32) 0.00 (33) 0.00 (34) 0.00 (35) 0.00
(36) 0.00 (37) 0.00 (38) 0.00 (39) 0.00 (40) 0.00 (41) 0.00 (42) 0.00

OUTPUT DATA

------- Biao Zhun Jie Mian Xin Xi --------

(1) 1, 250, 600, 6
(2) 1, 250, 400, 6
(3) 1, 350, 450, 6
(4) 1, 500, 240, 6
(5) 1, 450, 450, 6
(6) 1, 250, 650, 6

OUTPUT DATA

----- Zhu Ji Suan Chang Du(After consider steel) ------

(1) 1.00 (2) 1.00 (3) 1.00 (4) 1.00 (5) 1.00 (6) 1.00 (7) 1.00
(8) 1.00 (9) 1.00 (10) 1.00 (11) 1.00 (12) 1.00 (13) 1.00 (14) 1.00
(15) 1.00 (16) 1.00 (17) 1.00 (18) 1.00 (19) 1.00 (20) 1.00

OUTPUT DATA

---- Zhu Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1)	3	3	0	(2)	4	3	0	(3)	4	3	0
(4)	4	3	0	(5)	4	3	0	(6)	3	3	0
(7)	4	3	0	(8)	4	3	0	(9)	4	3	0
(10)	3	3	0	(11)	3	3	0	(12)	4	3	0
(13)	3	3	0	(14)	5	3	0	(15)	5	3	0
(16)	4	3	0	(17)	4	3	0	(18)	4	3	0
(19)	4	3	0	(20)	4	3	0				

---- Liang Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1)	1	0	0	(2)	1	0	0	(3)	1	0	0
(4)	1	0	0	(5)	2	0	0	(6)	1	0	0
(7)	1	0	0	(8)	1	0	0	(9)	1	0	0
(10)	2	0	0	(11)	1	0	0	(12)	1	0	0
(13)	6	0	0	(14)	6	0	0				

IIQQ= 192

STIF COMPUTE

DEAD COMPUTE

JOINT LOAD:	JR	XM	XN
	0		

COLUMN LOAD:	JC	KL	P	X	KX
	0				

BEAM LOAD:	NE	LI	KL	P	X	P1
X1	KL	P	X	P1	X1	
	1	2	1	3.80		0.00
6	18.00	1.50				
	1	2	1	3.80		0.00
6	18.00	1.50				
	1	2	1	3.80		0.00
6	21.60	1.80				
	1	3	1	3.80		0.00
6	10.80	1.80				
		6	9.00	1.50		
	1	2	1	2.50		0.00
6	14.40	1.20				
	1	2	1	3.80		0.00

```
6       21.60       1.80
                    1          2              1              3.80          0.00
6       21.60       1.80
                    1          2              1              3.80          0.00
6       21.60       1.80
                    1          2              1              3.80          0.00
6       21.60       1.80
                    1          2              1              2.50          0.00
6       14.40       1.20
                    1          2              1              3.80          0.00
6       18.00       1.50
                    1          3              4             43.30          1.80
1        3.80       0.00
                               6          10.80          0.90
                    1          3              1              7.80          0.00
6        7.20       1.20
                               4          39.90          2.70
                    1          3              4             81.30          1.80
1        3.80       0.00
                               6          10.80          0.90

                          **DEAD  LOAD**

          STIF COMPUTE
          LIVE COMPUTE
JOINT  LOAD:      JR          XM          XN
                  0

COLUMN LOAD:      JC          KL          P           X           KX
                  0

BEAM     LOAD:     NE          LI          KL          P           X           PI
XI          KL          P           X           PI          XI
                  1          1           6          2.10        1.50
                  1          1           6          2.10        1.50
                  1          1           6          2.50        1.80
                  1          2           6          1.30        1.80
6        1.10       1.50
                  1          1           6          1.70        1.20
                  1          1           6          2.50        1.80
```

		1	1	6	2.50	1.80		
		1	1	6	2.50	1.80		
		1	1	6	2.50	1.80		
		1	1	6	1.70	1.20		
		1	1	6	2.10	1.50		
		1	2	4		1.60	1.80	
6	1.30	0.90						
		1	3	6		0.80	1.20	
4	3.50	2.70						
				1	0.50	0.00		
		1	2	4		3.10	1.80	
6	1.30	0.90						

EART COMPUTE
COMBI COMPUTE

COMBINATION AND REINFORCEMENT

Concrete COLUMN 1(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 350, H= 450

NO 12 As= 0. M= -0.01 N= 34.91 NO 6 As= 0. M= -0.03 N= -34.91

GG= 394.

Concrete COLUMN 2(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= 0.00 N= 132.09 NO 2 As= 0. M= 0.00 N= -132.09

GG= 300.

Concrete COLUMN 3(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 12 As= 0. M= 0.01 N= 36.38 NO 8 As= 0. M= 0.03 N= -36.38

GG= 300.

Concrete COLUMN 4(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= -0.02 N= 45.33 NO 2 As= 0. M= -0.04 N= -45.33

GG= 300.

Concrete COLUMN 5(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= 0.02 N= 45.33 NO 2 As= 0. M= 0.04 N= -45.33

GG= 300.

Concrete COLUMN 6(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 350, H= 450

NO 2 As= 0. M= -0.03 N= 53.09 NO 2 As= 0. M= -0.06 N= -53.09

GG= 394.

Concrete COLUMN 7(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= 0.03 N= 53.09 NO 2 As= 0. M= 0.06 N= -53.09

GG= 300.

Concrete COLUMN 8(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= 0.00 N= 11.64 NO 2 As= 0. M= -0.01 N= -11.64

GG= 300.

Concrete COLUMN 9(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= 0.00 N= 11.64 NO 2 As= 0. M= 0.01 N= -11.64

GG= 300.

Concrete COLUMN 10(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 350, H= 450

NO 12 As= 0. M= -0.01 N= 37.76 NO 6 As= 0. M= -0.03 N= -37.76

GG= 394.

Concrete COLUMN 11(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 350, H= 450

NO 2 As= 0. M= 0.00 N= 144.96 NO 2 As= 0. M= 0.00 N= -144.96

GG= 394.

Concrete COLUMN 12(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 12 As= 0. M= 0.02 N= 39.47 NO 8 As= 0. M= 0.03 N= -39.47

GG= 300.

Concrete COLUMN 13(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 350, H= 450

NO 6 As= 0. M= -0.01 N= 39.44 NO 6 As= 0. M= -0.03 N= -39.44

GG= 394.

Concrete COLUMN 14(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 450, H= 450

NO 12 As= 0. M= 0.00 N= 136.32 NO 12 As= 0. M= 0.01 N= -136.32

GG= 506.

Concrete COLUMN 15(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 450, H= 450

NO 12 As= 0. M= 0.01 N= 66.03 NO 12 As= 0. M= 0.02 N= -66.03

GG= 506.

Concrete COLUMN 16(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 8 As= 0. M= 0.00 N= 0.32 NO 8 As= 0. M= 0.00 N= -0.32

GG= 300.

Concrete COLUMN 17(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 5 As= 26. M= 0.01 N= -15.93 NO 5 As= 26. M= 0.02 N= 15.93

GG= 300.

Concrete COLUMN 18(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= -0.01 N= 110.01 NO 2 As= 0. M= -0.02 N= -110.01

GG= 300.

Concrete COLUMN 19(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 6 As= 0. M= 0.01 N= 24.55 NO 6 As= 0. M= 0.01 N= -24.55

GG= 300.

Concrete COLUMN 20(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)

Section property: B= 500, H= 240

NO 2 As= 0. M= 0.00 N= 183.85 NO 2 As= 0. M= -0.02 N= -183.85

GG= 300.

Concrete BEAM 1(SECTION TYPE= 1 ANG= 0, L= 5.89)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-23.89	-44.78	-60.69	-69.95	-72.19	-67.40	-55.60	-36.77	-10.92	0.00	0.00	0.00
As(1)=	375.	138.	261.	357.	413.	427.	398.	326.	214.	63.	0.	0.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.86	62.46	104.88
As(1)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	161.	368.	631.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	631.

Vl= 48.61 NO 1 Vr= 87.13 NO 3 Asv/s= 0.00 As(3)=

375. Umaxb= 0.003 Umaxt= 0.004

Concrete BEAM 2(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-14.10	-40.61	-59.84	-71.80	-76.48	-73.88	-64.02	-47.21	-25.18	0.00
As(1)=	375.	0.	0.	81.	236.	352.	425.	453.	437.	377.	276.	145.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	104.88	61.00	25.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
As(1)=	631.	359.	147.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.
As(2)=	631.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

Vl= 88.31 NO 1 Vr= 50.41 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.003 Umaxt= 0.004

Concrete BEAM 3(SECTION TYPE= 1 ANG= 0, L= 5.10)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-24.91	-47.78	-67.32	-82.27	-91.48	-94.55	-91.48	-82.27	-67.32	-47.78	-24.91	0.00
As(1)=	375.	144.	279.	397.	489.	547.	566.	547.	489.	397.	279.	144.	375.
As(2)=	375.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13

M= 0.04 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.04
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 60.17 NO 1 Vr= 60.17 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.004 Umaxt= 0.002

Concrete BEAM 4(SECTION TYPE= 1 ANG= 0, L= 5.89)
Section property: B= 250, H= 600
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 -33.85 -64.71 -90.58 -109.65 -121.12 -124.94 -121.12
-109.65 -90.58 -64.71 -33.85 0.00
As(1)= 375. 196. 381. 541. 662. 735. 760. 735.
662. 541. 381. 196. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.07 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.07
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 70.82 NO 1 Vr= 70.82 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.005 Umaxt= 0.002

Concrete BEAM 5(SECTION TYPE= 1 ANG= 0, L= 2.40)
Section property: B= 250, H= 400
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 -2.99 -5.74 -8.10 -9.95 -11.16 -11.59 -11.16

-9.95 -8.10 -5.74 -2.99 0.00

As(1)= 250. 27. 51. 72. 89. 100. 104. 100.
89. 72. 51. 27. 250.

As(2)= 250. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 250.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.01 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.01

As(1)= 250. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 250.

As(2)= 250. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 250.

Vl= 15.40 NO 1 Vr= 15.40 NO 3 Asv/s= 0.00 As(3)=
250. Umaxb= 0.002 Umaxt= 0.002

Concrete BEAM 6(SECTION TYPE= 1 ANG= 0, L= 5.89)

Section property: B= 250, H= 600

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 -26.04 -49.08 -67.15 -78.31 -81.37 -76.23 -62.88
-41.34 -11.69 0.00 0.00 0.00

As(1)= 375. 151. 287. 396. 465. 484. 452. 370.
241. 67. 0. 0. 375.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.04 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 31.88 70.18 116.97

As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 185. 415. 709.

As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 709.

Vl= 52.77 NO 1 Vr= 95.72 NO 3 Asv/s= 0.00 As(3)=

375. Umaxb= 0.003 Umaxt= 0.005

Concrete BEAM 7(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	0.00	0.00	0.00	-15.38	-45.82	-67.83	-81.35
-86.38	-82.91	-71.02	-51.88	-27.51	0.00		
As(1)=	375.	0.	0.	88.	267.	400.	483.
515.	493.	420.	304.	159.	375.		
As(2)=	375.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	375.		

TOP

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	116.98	68.52	29.03	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.04		
As(1)=	709.	404.	168.	0.	0.	0.	0.
0.	0.	0.	0.	0.	375.		
As(2)=	709.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	375.		

Vl= 97.12 NO 1 Vr= 54.86 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.003 Umaxt= 0.005

Concrete BEAM 8(SECTION TYPE= 1 ANG= 0, L= 5.89)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	0.00	-26.80	-50.60	-69.42	-81.34	-85.15	-80.76
-68.18	-47.39	-18.50	0.00	0.00	0.00		
As(1)=	375.	155.	296.	410.	483.	507.	480.
402.	277.	107.	0.	0.	375.		
As(2)=	375.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	375.		

TOP

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		

M= 0.04 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 23.15 60.58 106.86
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 134. 356. 644.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 644.

Vl= 54.48 NO 1 Vr= 93.81 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.003 Umaxt= 0.004

Concrete BEAM 9(SECTION TYPE= 1 ANG= 0, L= 5.89)
Section property: B= 250, H= 600
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 -11.23 -37.34 -55.35 -65.16 -66.77
-60.18 -45.48 -23.88 0.00 0.00
As(1)= 375. 0. 0. 64. 217. 325. 384. 394.
354. 265. 138. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 106.85 63.87 28.69 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 2.69 32.98
As(1)= 644. 376. 166. 0. 0. 0. 0. 0.
0. 0. 0. 15. 375.
As(2)= 644. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 87.96 NO 1 Vr= 60.92 NO 3 Asv/s= 0.00 As(3)=
375. Umaxb= 0.003 Umaxt= 0.004

Concrete BEAM 10(SECTION TYPE= 1 ANG= 0, L= 2.51)
Section property: B= 250, H= 400
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00 -

0.99 -1.87 -2.12 -1.79 -1.03 0.00
As(1)= 250. 0. 0. 0. 0. 0. 0. 9.
17. 19. 16. 9. 250.
As(2)= 250. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 250.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 32.96 26.54 21.06 15.97 11.41 7.50 4.38
2.12 0.75 0.01 0.00 0.00 0.00
As(1)= 303. 242. 191. 144. 102. 67. 39. 19.
7. 0. 0. 0. 250.
As(2)= 303. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 250.

Vl= 31.20 NO 1 Vr= 4.15 NO 3 Asv/s= 0.00 As(3)=
250. Umaxb= 0.002 Umaxt= 0.003

Concrete BEAM 11(SECTION TYPE= 1 ANG= 0, L= 3.00)
Section property: B= 250, H= 600
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= -0.02 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00
As(1)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 3.17 6.87 11.30 16.70 23.28 31.26
40.81 51.77 63.91 77.02 90.86 105.21
As(1)= 375. 18. 39. 65. 96. 134. 181. 238.
303. 376. 457. 543. 633.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 633.

Vl= -15.93 NO 3 Vr= 63.61 NO 11 Asv/s= 0.00 As(3)=

375. Umaxb= 0.002 Umaxt= 0.004

Concrete BEAM 12(SECTION TYPE= 1 ANG= 0, L= 1.80)

Section property: B= 250, H= 600

BOTTOM

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00		
As(1)=	375.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	375.			
As(2)=	375.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	375.			

TOP

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	116.92	105.62	94.49	83.56	72.90	62.57	52.62
43.09	33.93	25.10	16.54	8.19	0.00		
As(1)=	708.	636.	565.	497.	431.	368.	308.	251.
197.	145.	95.	47.	375.			
As(2)=	708.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	375.			

Vl= 75.71 NO 1 Vr= 0.00 NO 3 Asv/s= 0.00 As(3)= 375. Umaxb= 0.002 Umaxt= 0.005

Concrete BEAM 13(SECTION TYPE= 1 ANG= 0, L= 5.40)

Section property: B= 250, H= 650

BOTTOM

SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		
M=	-0.01	-17.67	-32.56	-43.94	-51.34	-54.72	-54.09	-25.70
0.00	0.00	0.00	0.00	0.00			
As(1)=	406.	93.	173.	235.	275.	293.	290.	136.
0.	0.	0.	0.	406.			
As(2)=	406.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	406.			

TOP

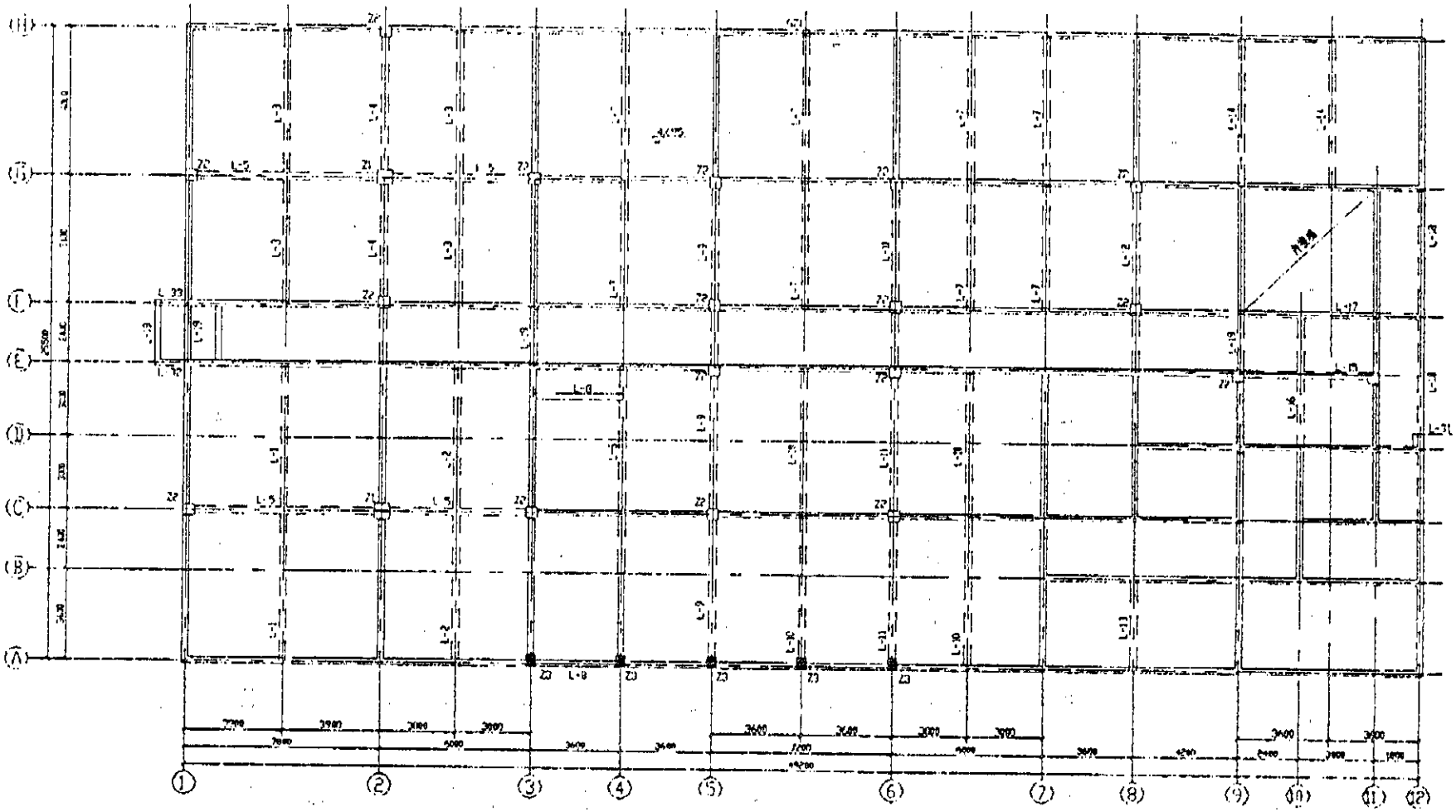
SECTION	1	2	3	4	5	6	7
8	9	10	11	12	13		

M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 22.31 57.40 96.11 138.02 182.48
As(1)= 406. 0. 0. 0. 0. 0. 0. 0.
118. 308. 525. 768. 1038.
As(2)= 406. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 1038.

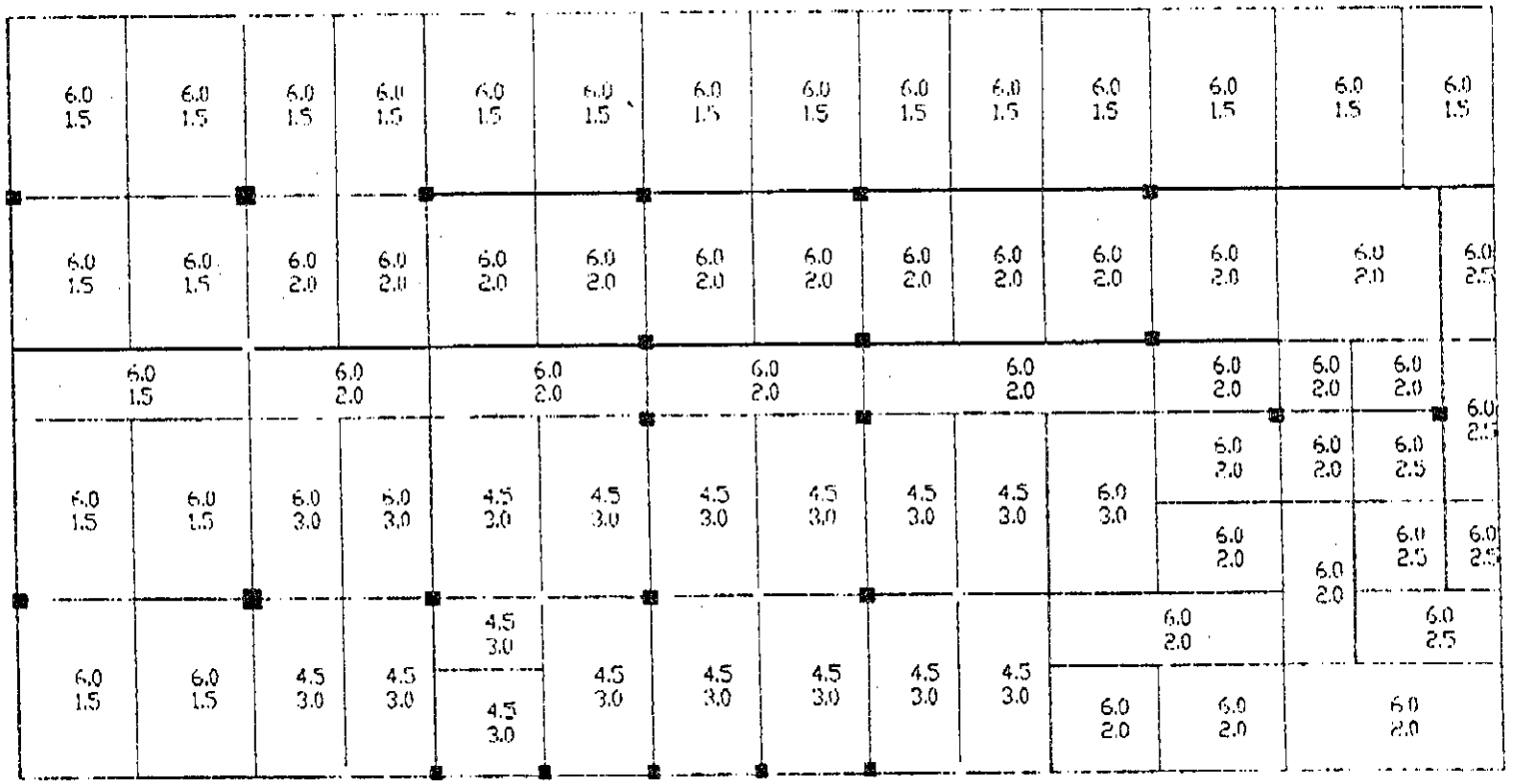
Vl= 38.22 NO 1 Vr= 111.60 NO 3 Asv/s= 0.00 As(3)=
406. Umaxb= 0.002 Umaxt= 0.006

Concrete BEAM 14(SECTION TYPE= 1 ANG= 0, L= 1.80)
Section property: B= 250, H= 650
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00
As(1)= 406. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 406.
As(2)= 406. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 406.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 202.78 184.33 166.04 147.96 130.14 112.66 95.55
78.86 62.55 46.57 30.85 15.35 0.00
As(1)= 1165. 1049. 936. 827. 722. 620. 522. 427.
337. 249. 164. 81. 406.
As(2)= 1165. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 406.

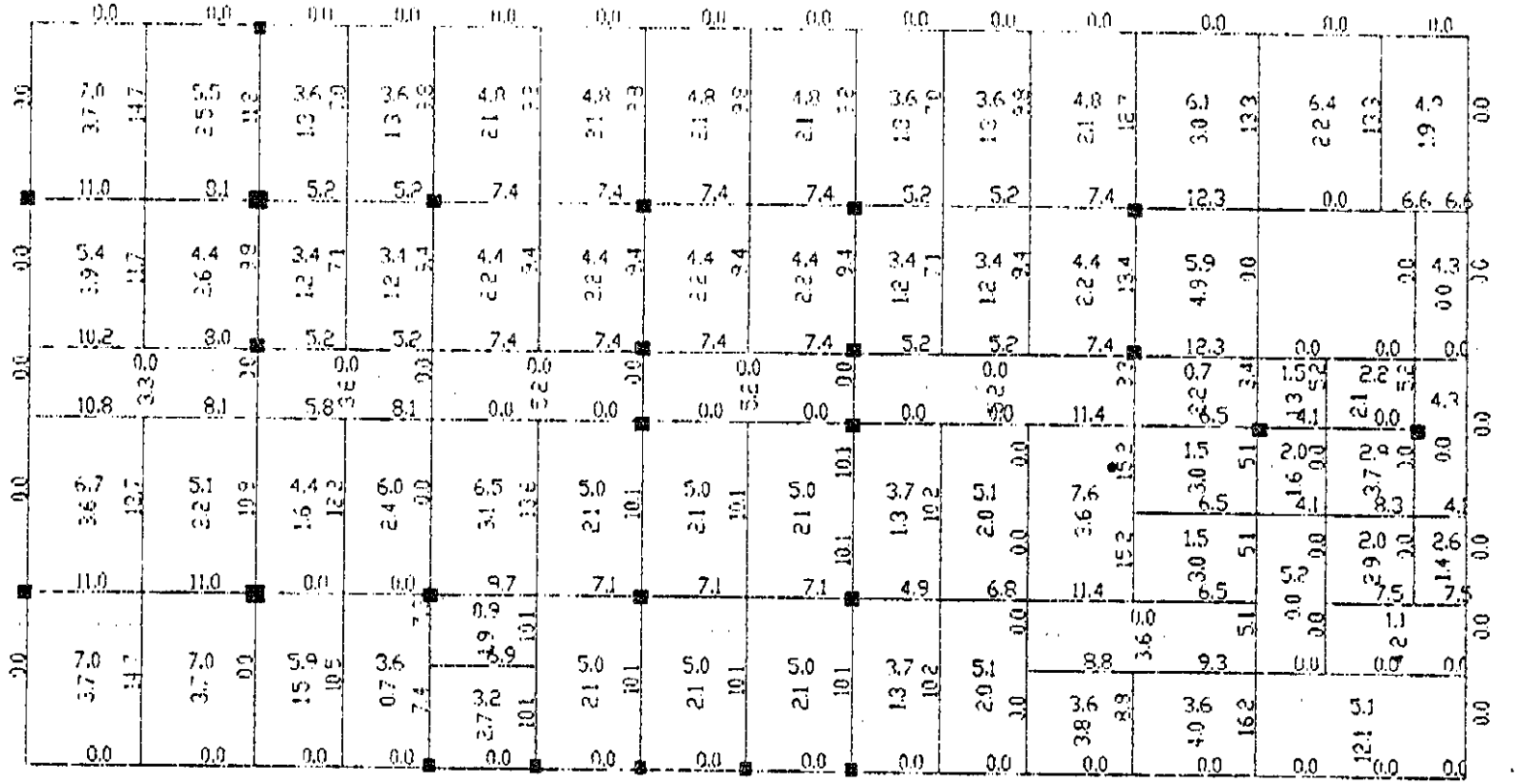
Vl= 123.41 NO 1 Vr= 0.00 NO 9 Asv/s= 0.00 As(3)=
406. Umaxb= 0.002 Umaxt= 0.007
PK1 COMPUTE END



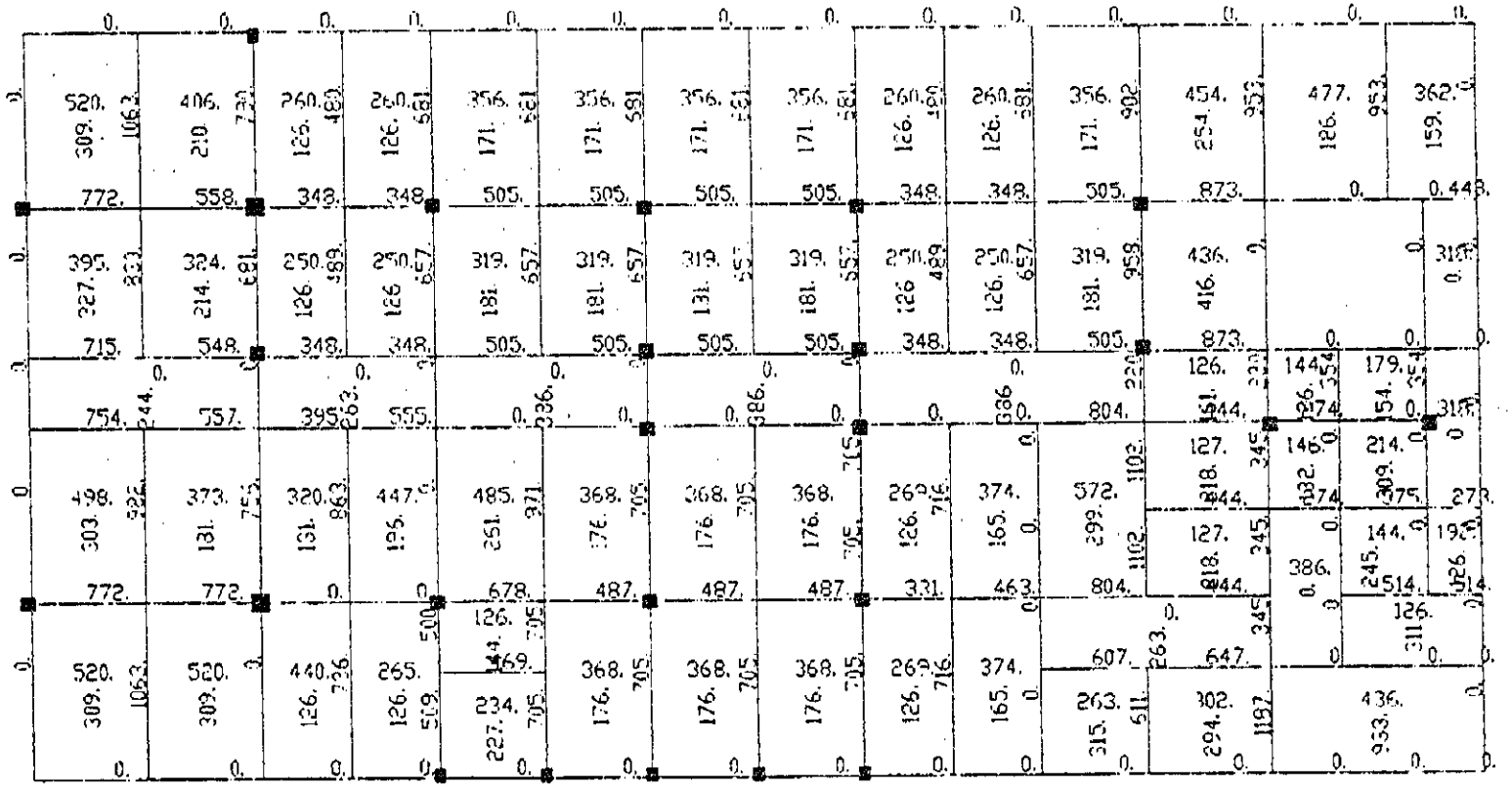
FLOOR STRUCURE PLAN(UNIT:CM) 1:100



1st floor load (static load / live load)

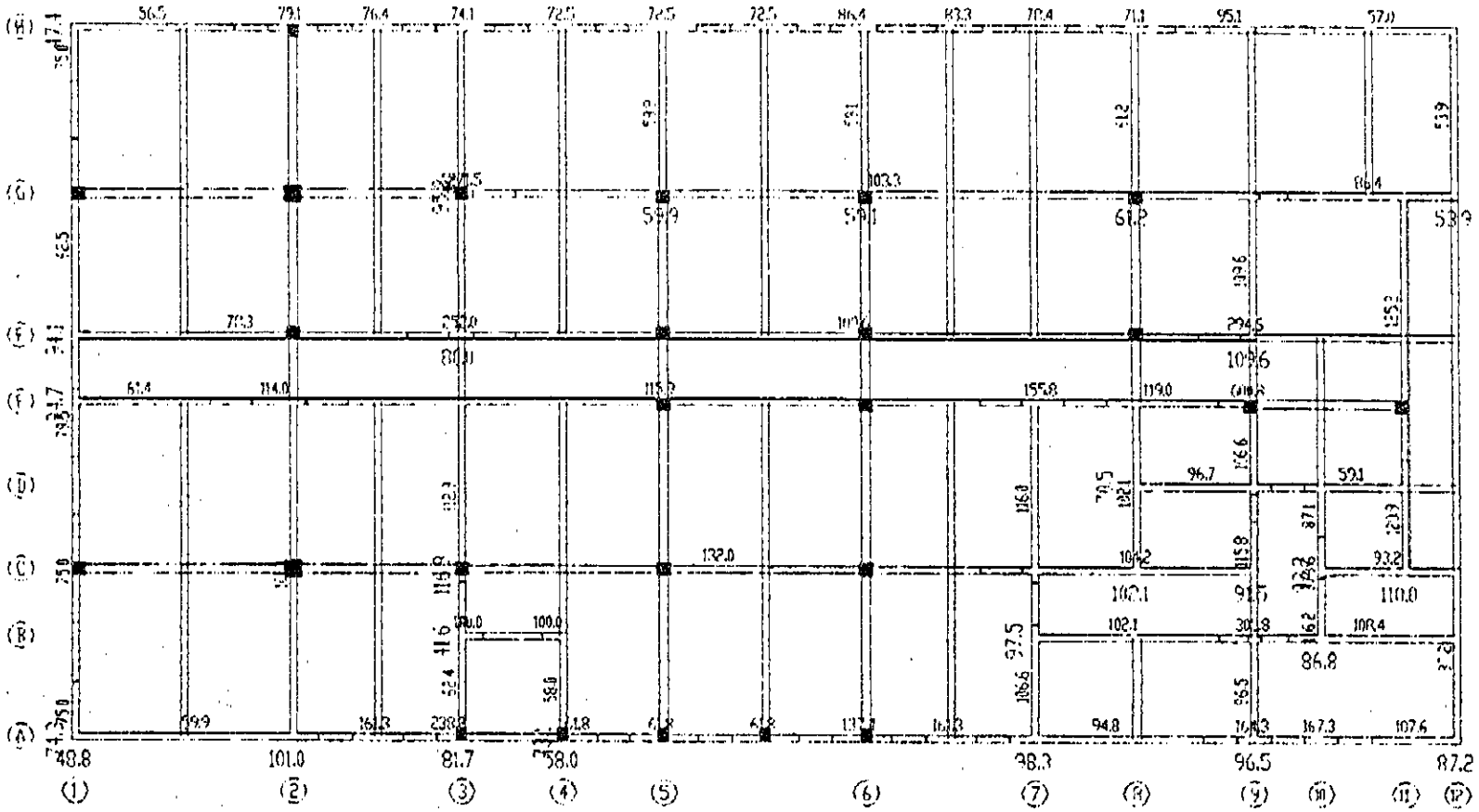


1st FLOOR CAST-IN-SITU BOARD
BENDING MOMENT DRAWING (UNIT:KN-M)

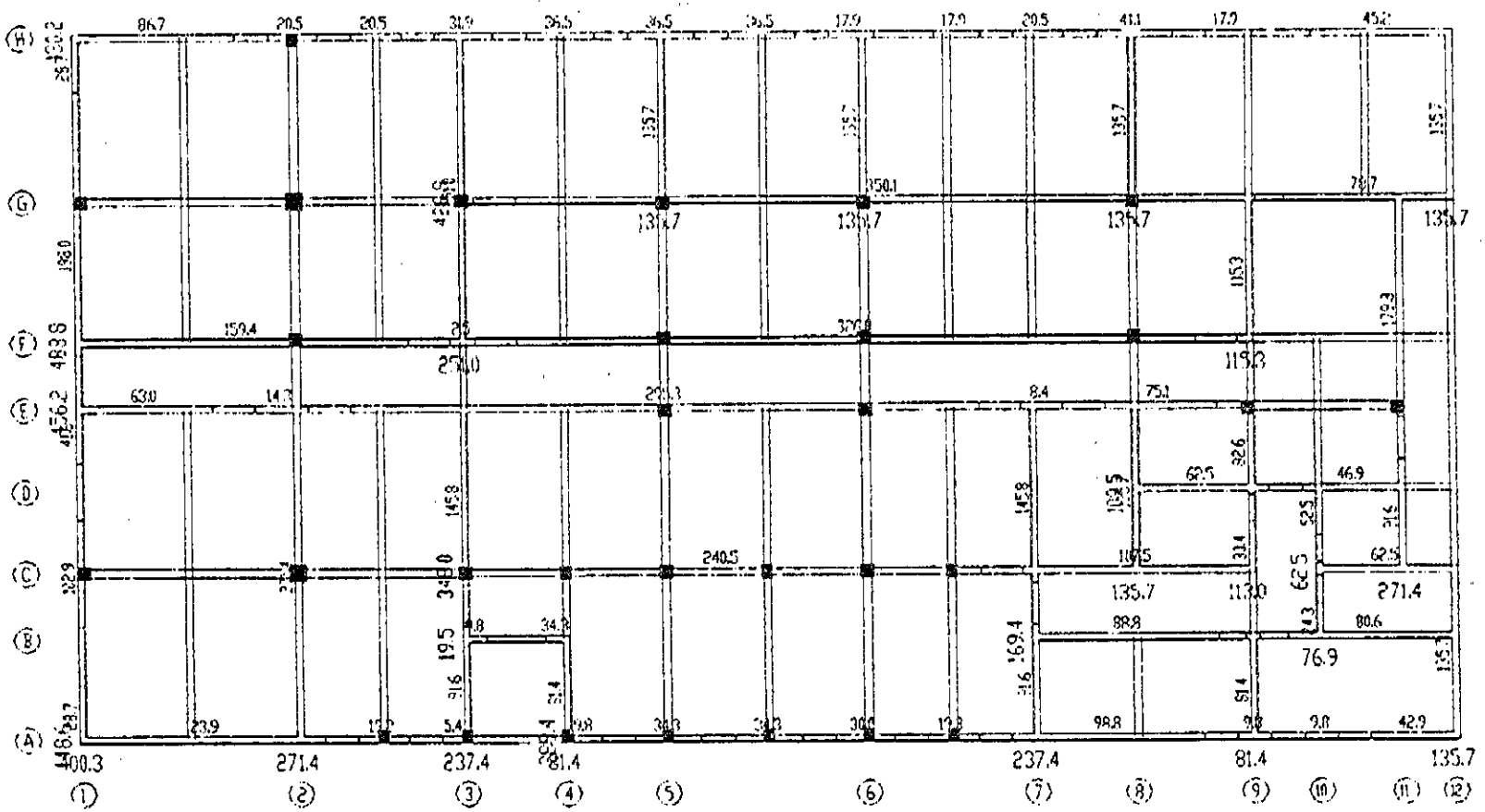


1st FLOOR CAST-IN-SITU BOARD
CALCULATION REINFORCEMENT

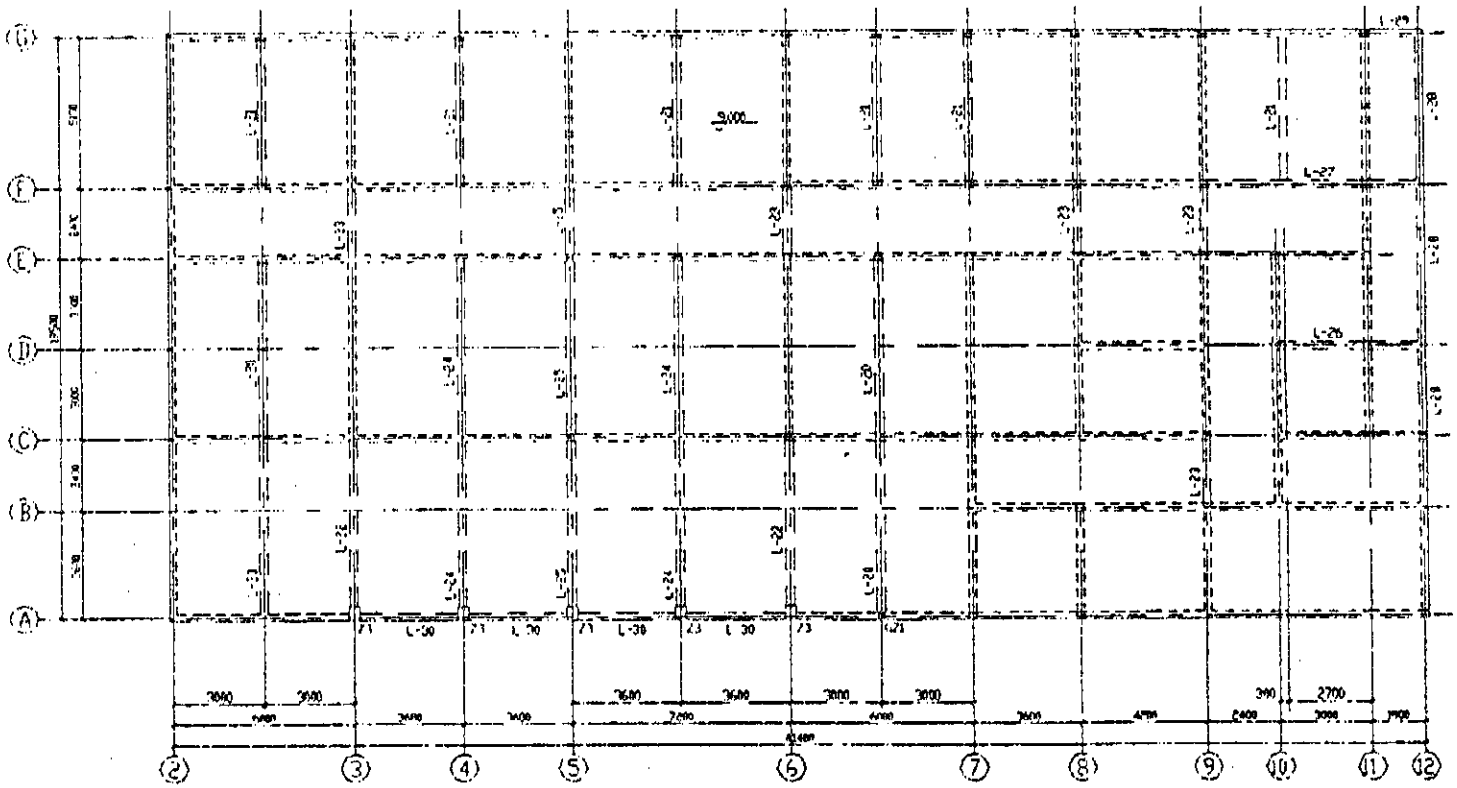
(UNIT:mm A_s;STEEL GRADE: I,II; CONCRETE:C25)



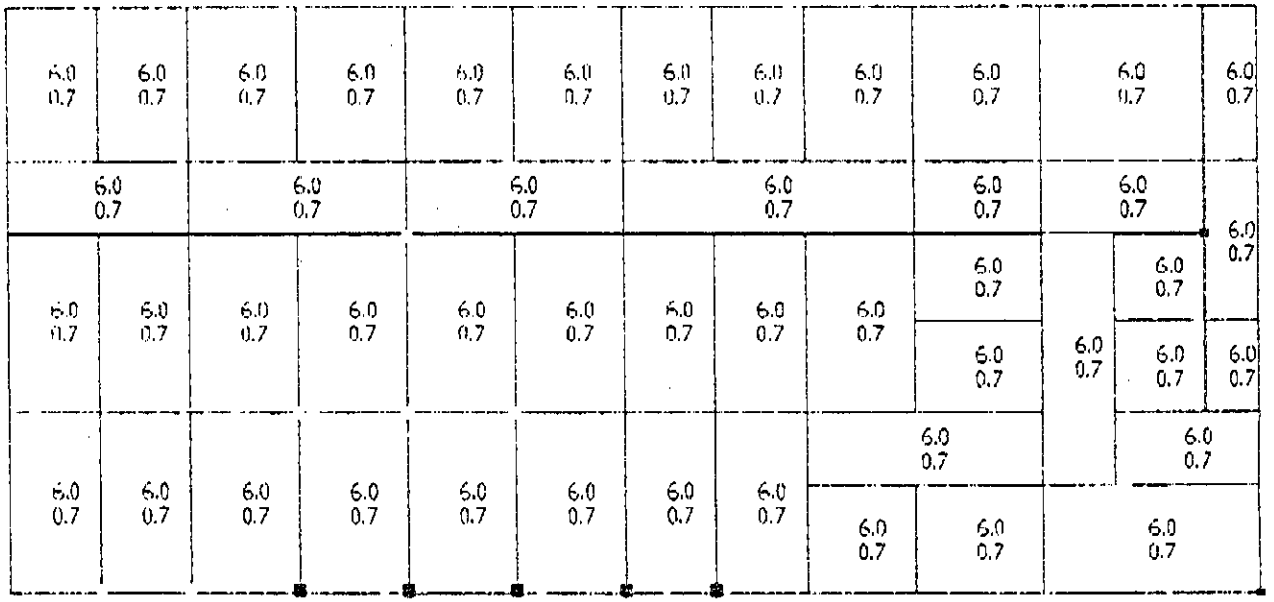
WALL AXIAL FORCE DESIGN VALUE DRAWING (KN/M)



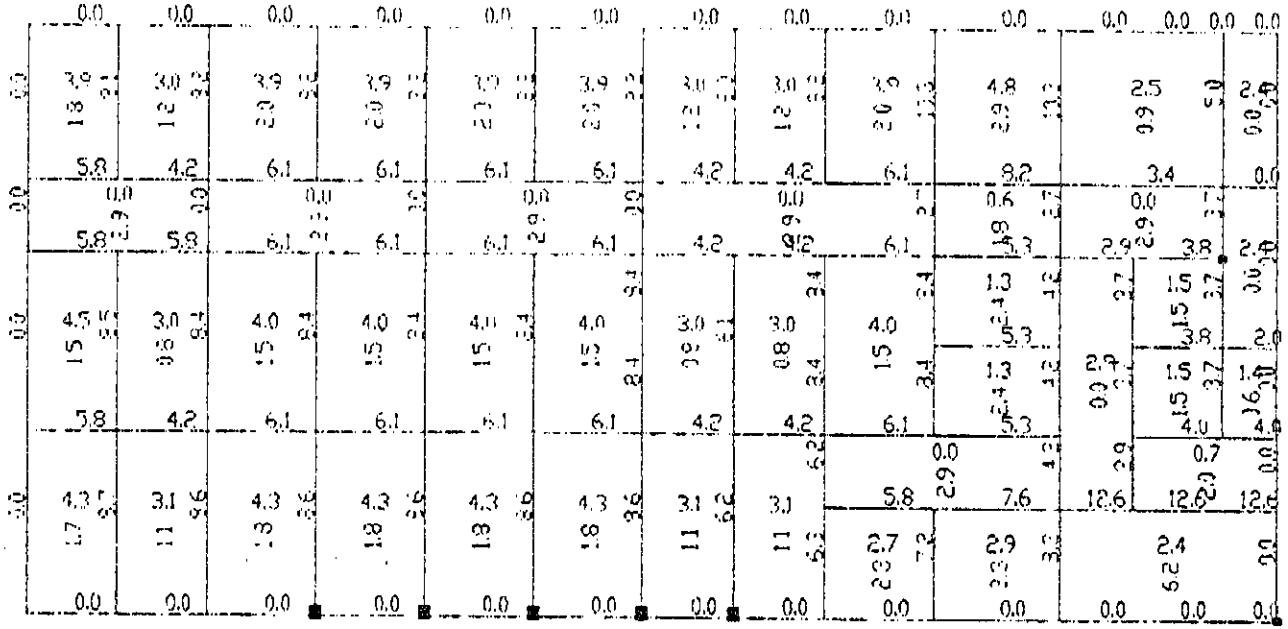
EARTHUAKE SHEAR FURCE DESIGN VALUE DRAWING (KN)



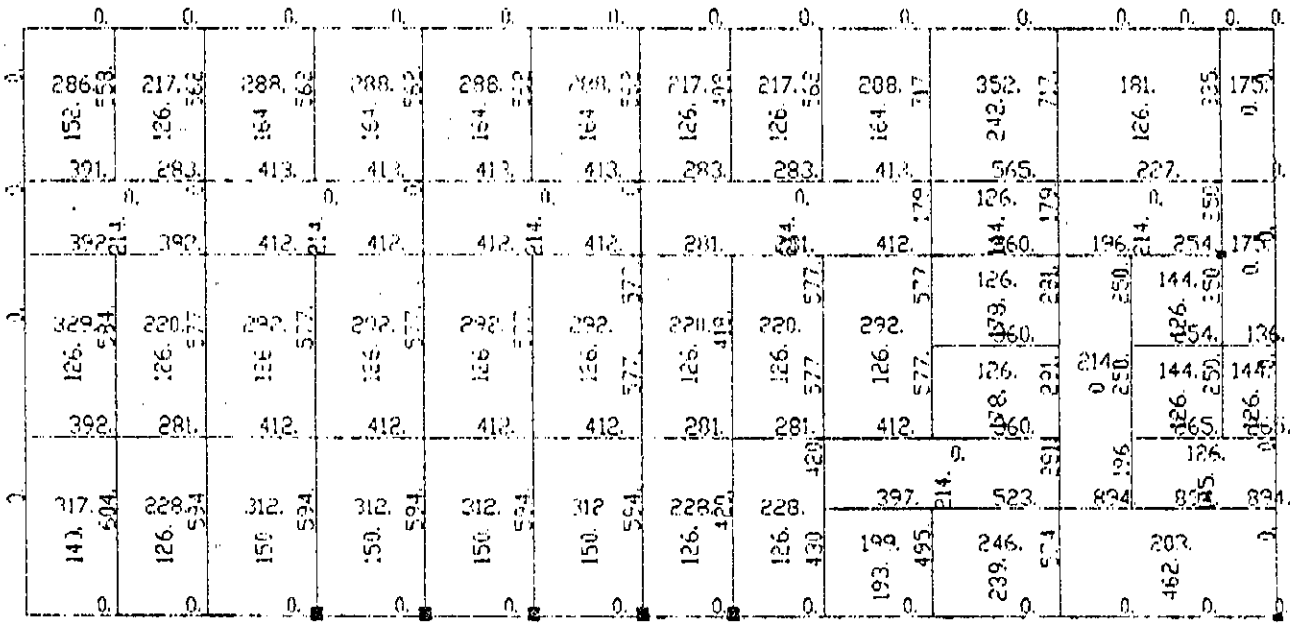
SECOND STRUCURE PLAN(UNIT:CM) 1:100



2st floor load (stotic load / live load)

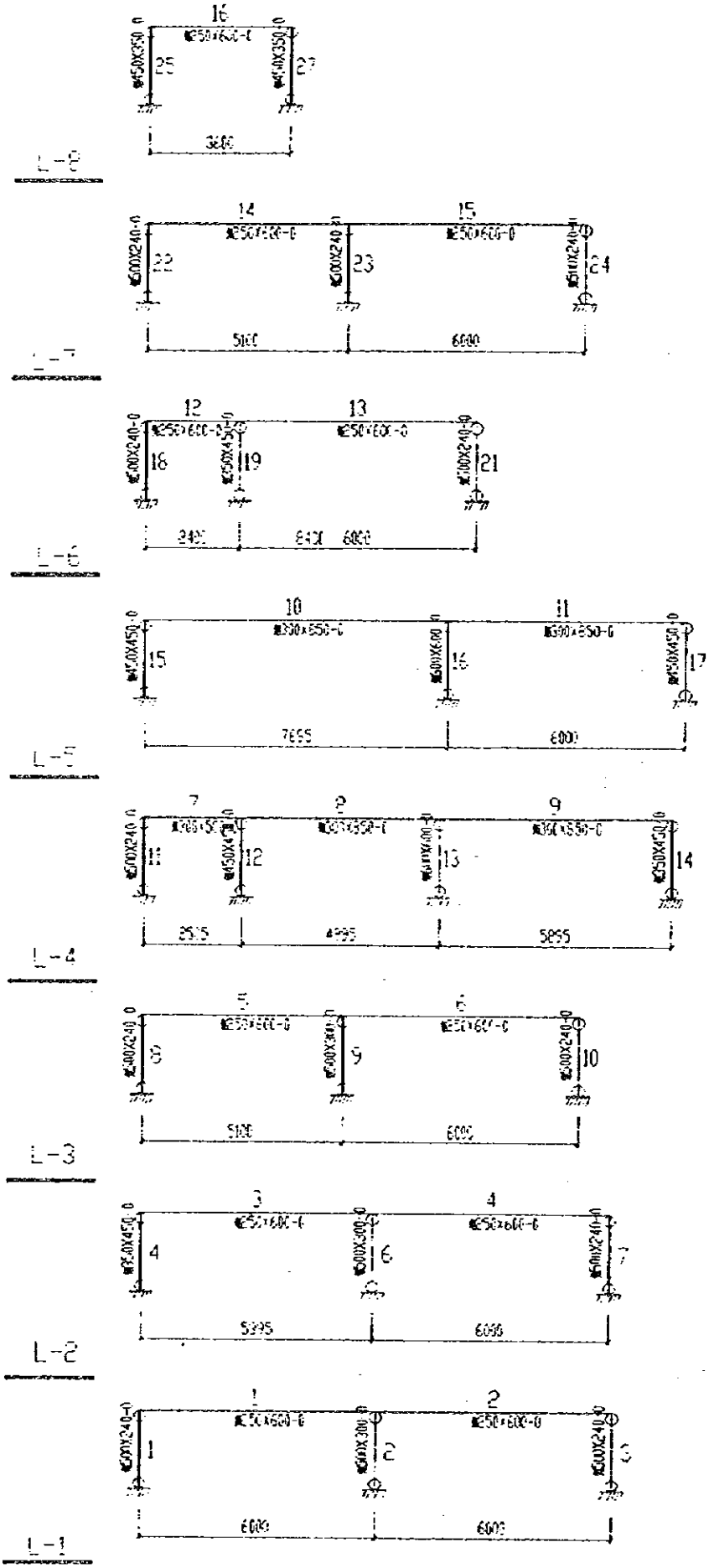


2st FLOOR CAST-IN-SITU BOARD
BENDING MOMENT DRAWING (UNIT:KN-M)



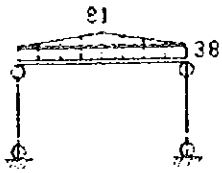
2st FLOOR CAST-IN-SITU BOARD
CALCULATION REINFORCEMENT

(UNIT:mm ²/m STEEL GRADE: I,II: CONCRETE:C25)

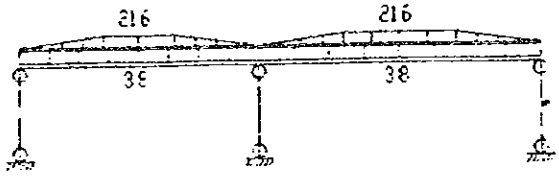


FRAME ELEVATION DRAWING

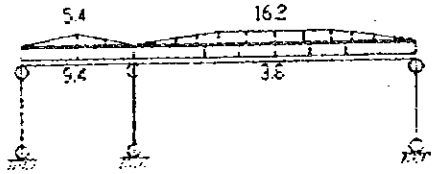
L-8



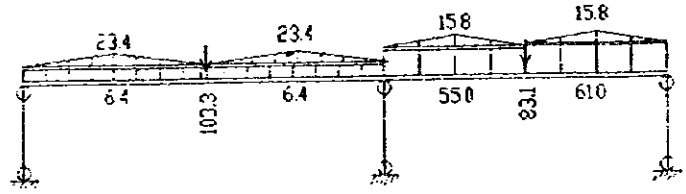
L-7



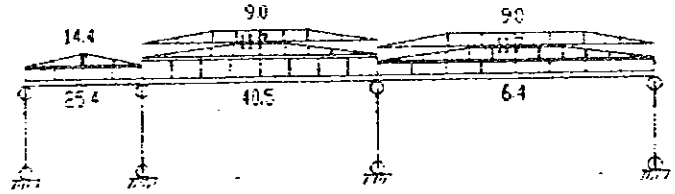
L-6



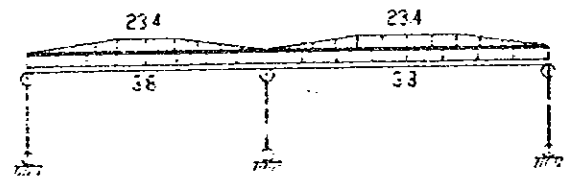
L-5



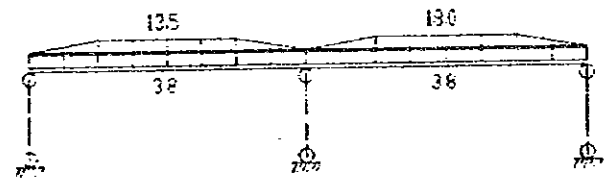
L-4



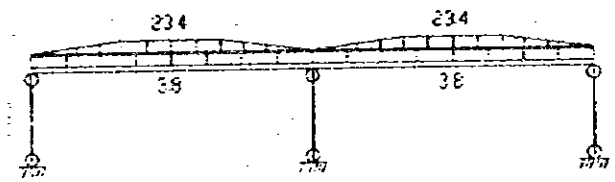
L-3



L-2

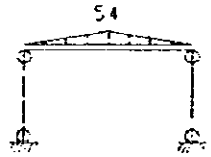


L-1

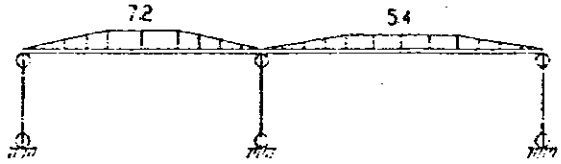


CONSTANT LOAD DRAWING (KN/M)

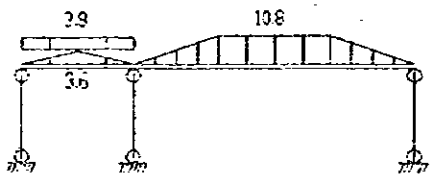
L-8



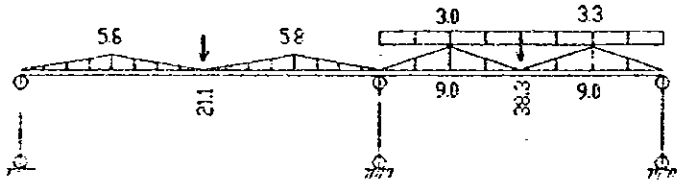
L-7



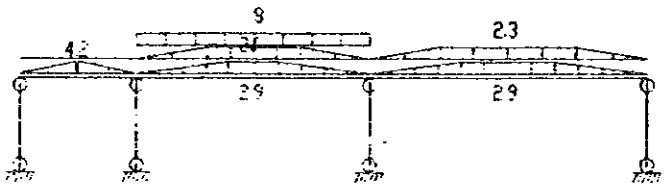
L-6



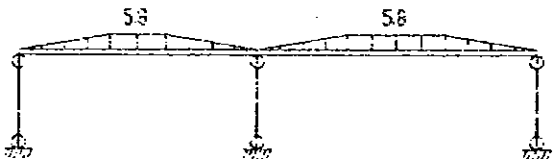
L-5



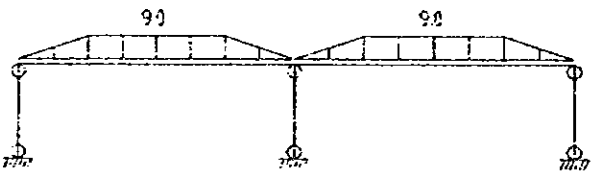
L-4



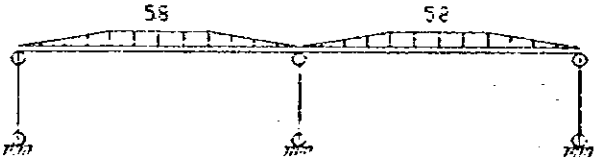
L-3



L-2

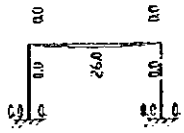


L-1

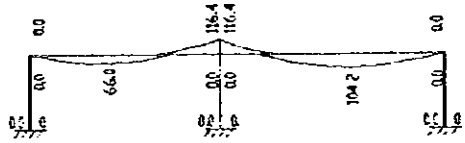


LIVING LOAD DRAWING (KN/M)

L-8



L-7



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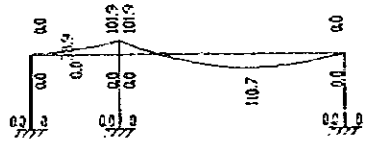

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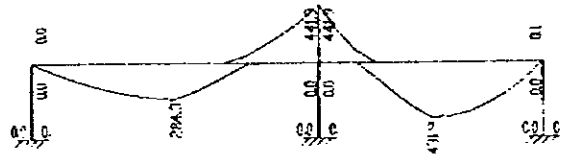

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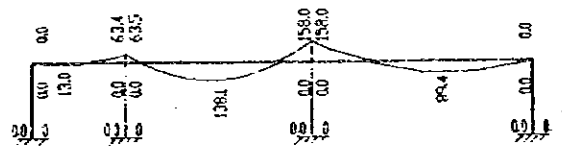
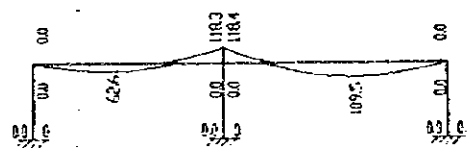


L-3



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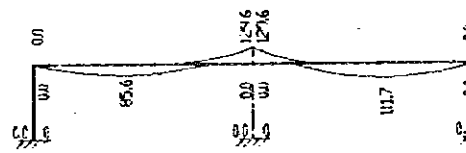
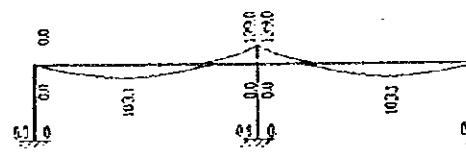
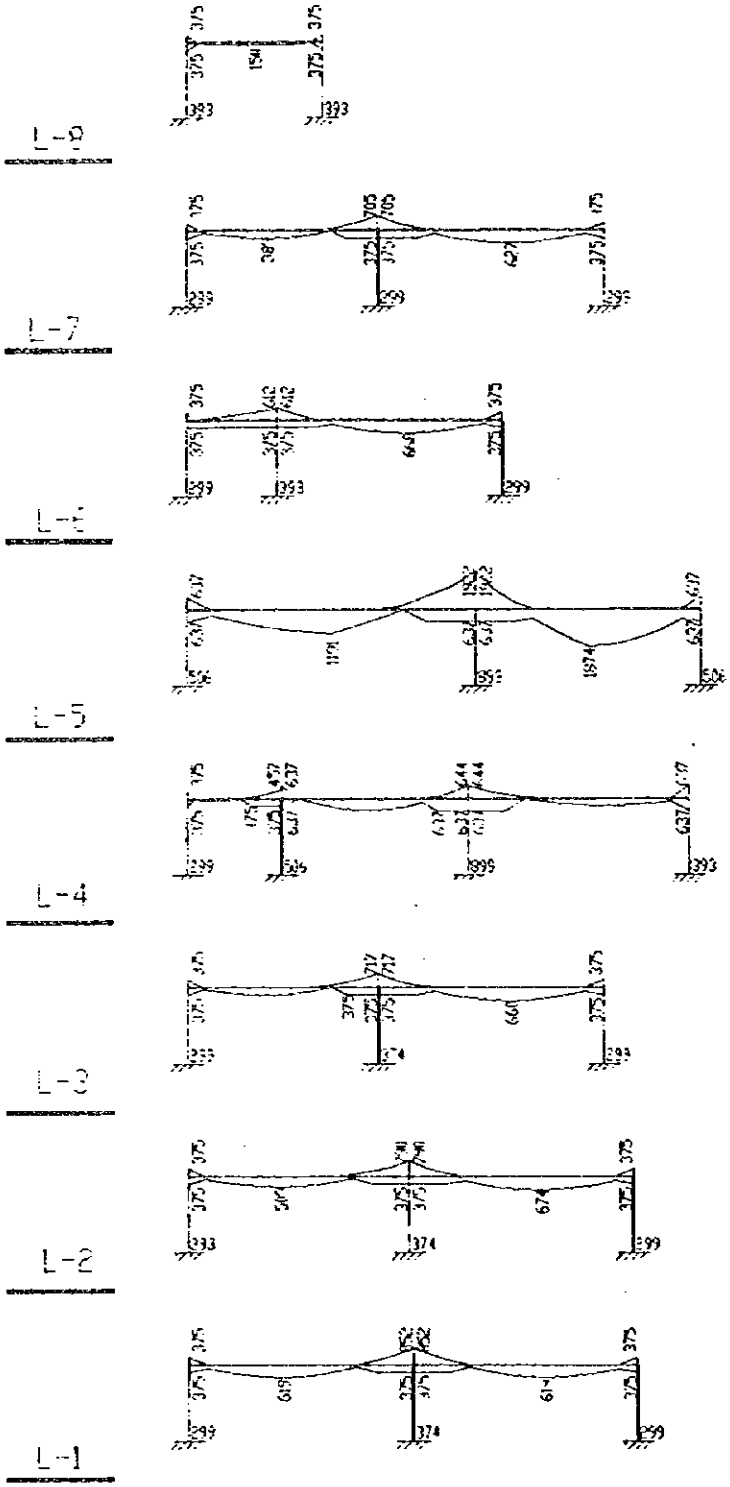


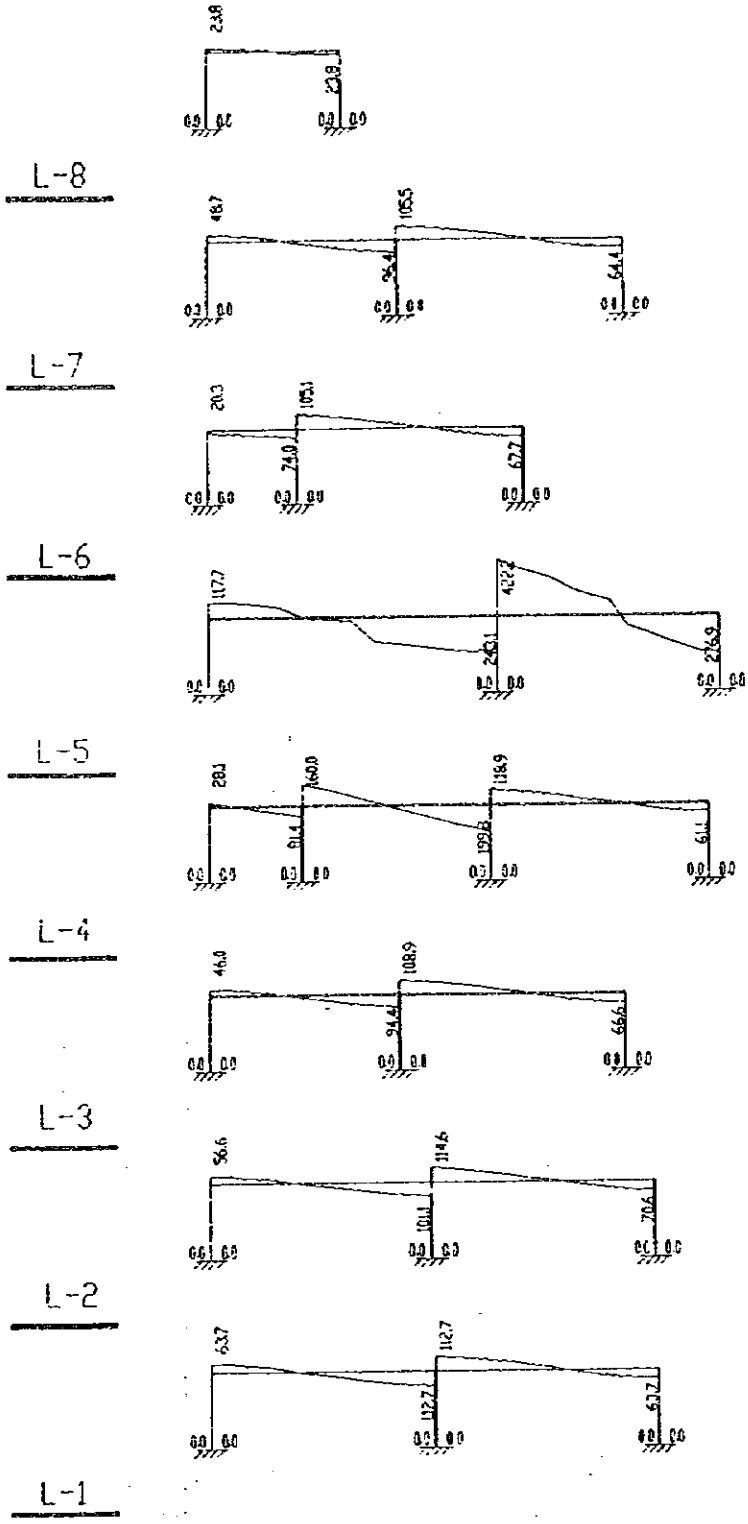
L-1



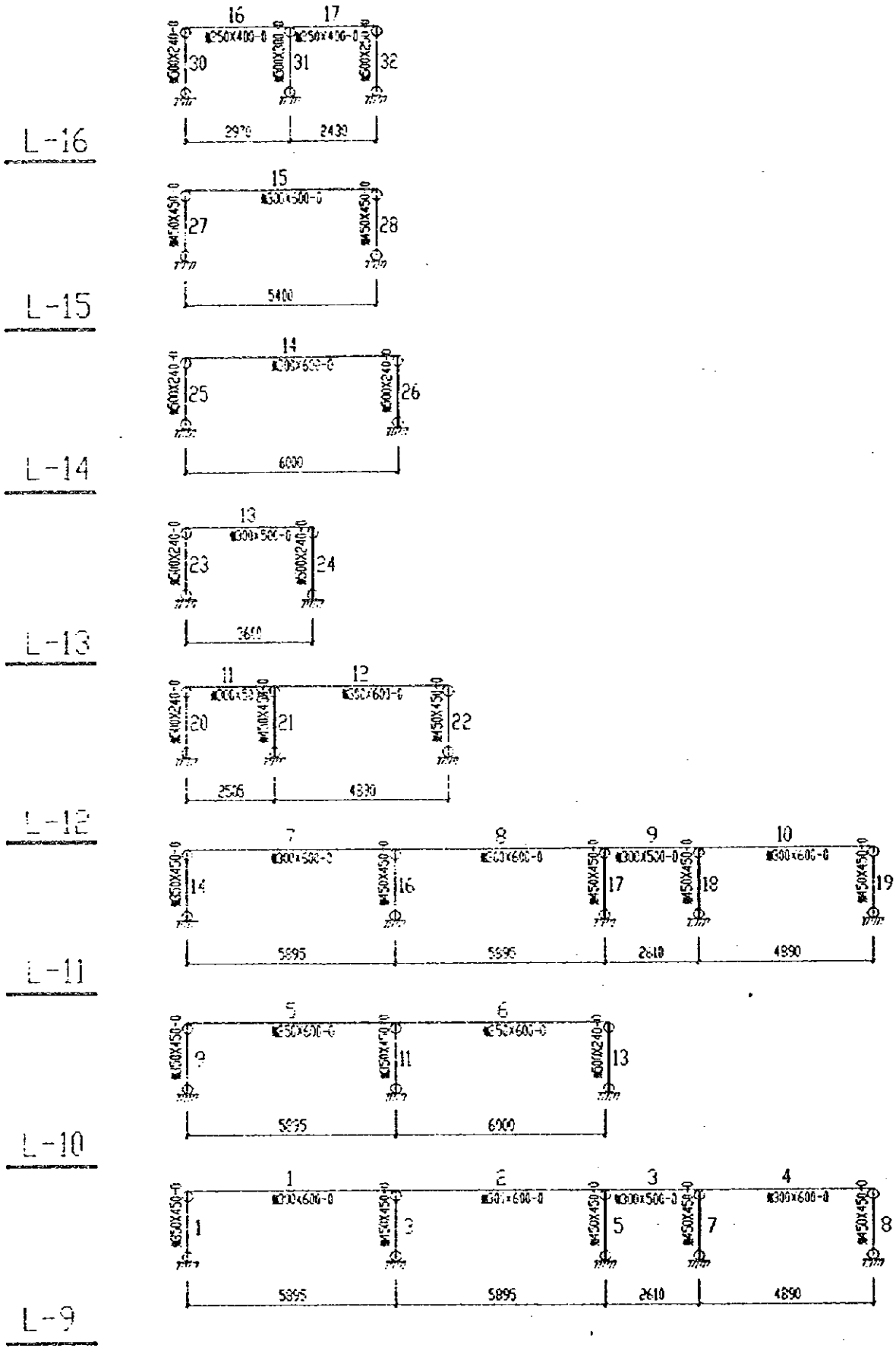
BENDING MOMENT OUTLINE (KN-M)



REINFORCEMENT OUTLINE (mm)

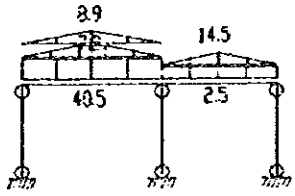


SHEAR FORCE OUTLINE (KN)

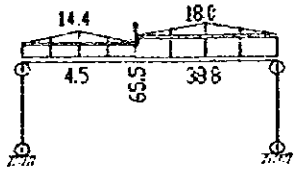


FRAME ELEVATION DRAWING

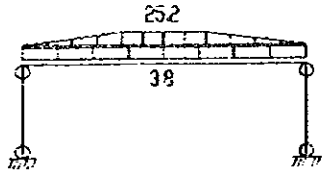
L-16



L-15



L-14



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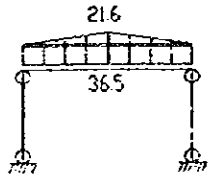
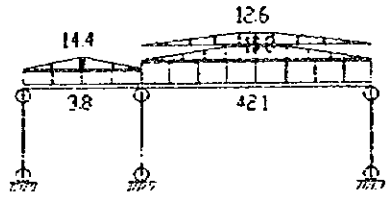
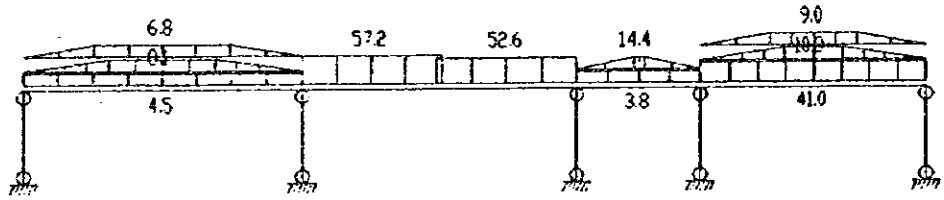


L-12



L-11



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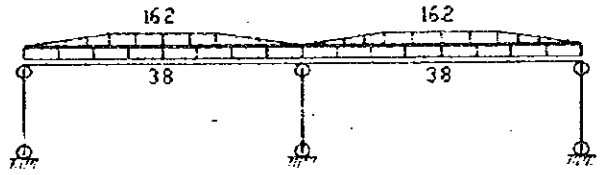

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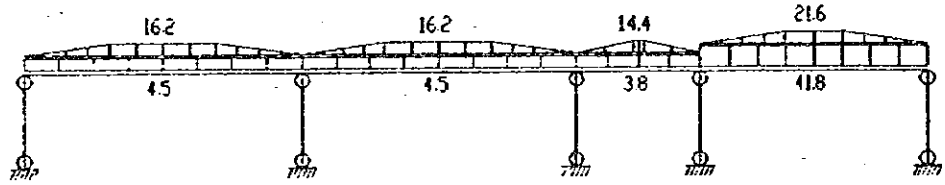
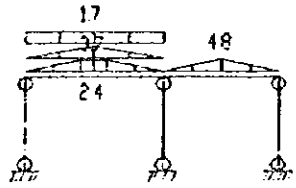


CONSTANT LOAD DRAWING (KN/M)

L-16



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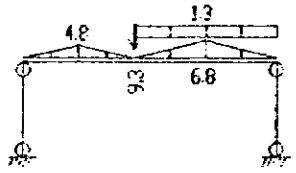

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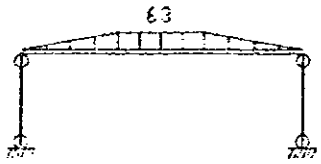

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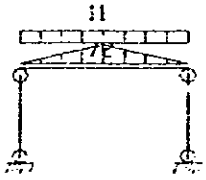

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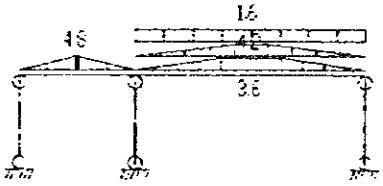

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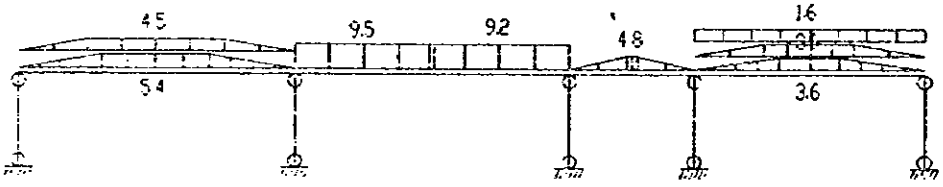

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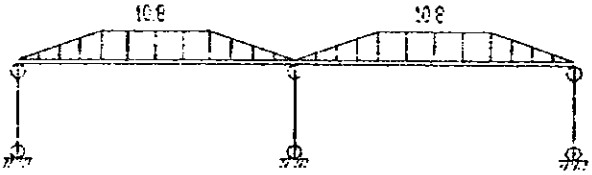

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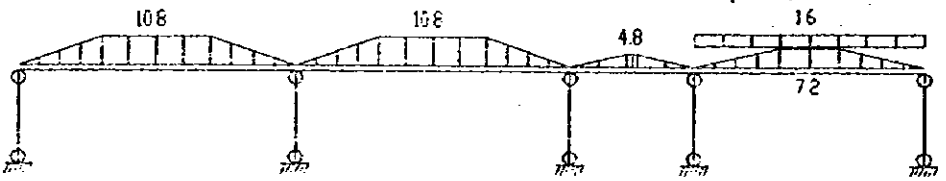
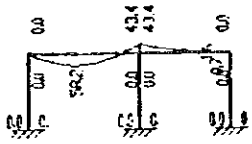


LIVING LOAD DRAWING (KN/M)

L-16



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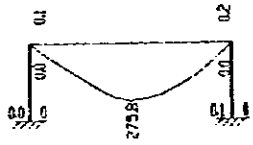

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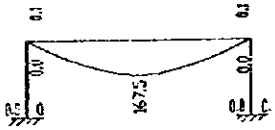

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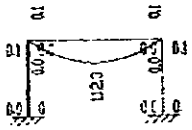

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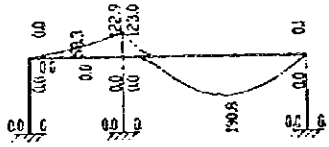

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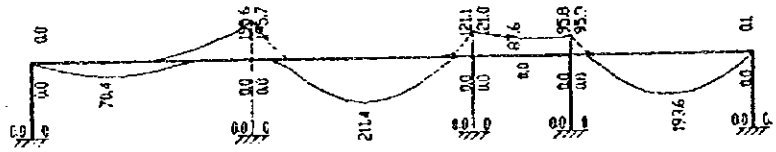

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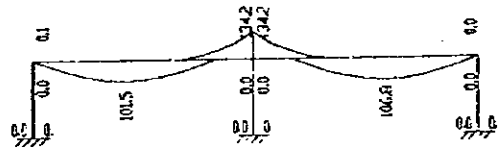

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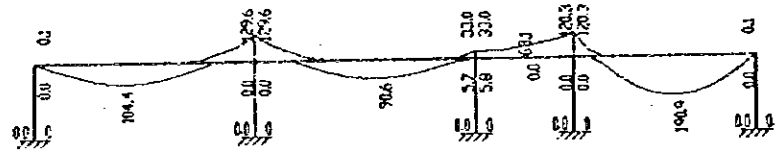
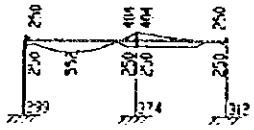
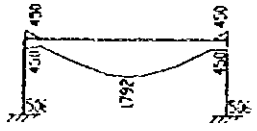


BENDING MOMENT OUTLINE (KN-M)

L-16



L-15



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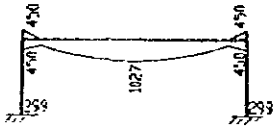
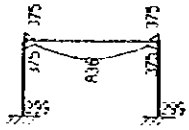


L-13



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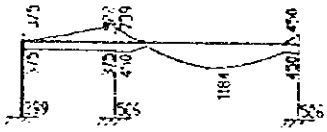

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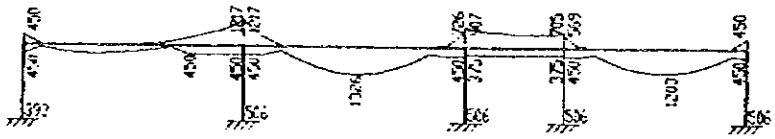

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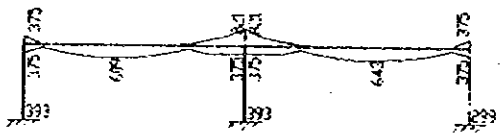

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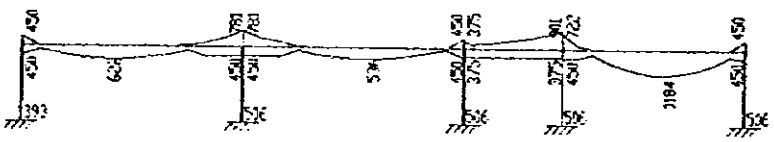
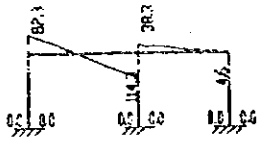
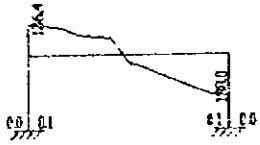


REINFORCEMENT OUTLINE (mm)

L-16



L-15



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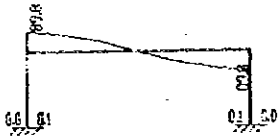
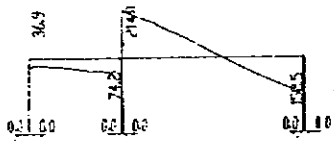
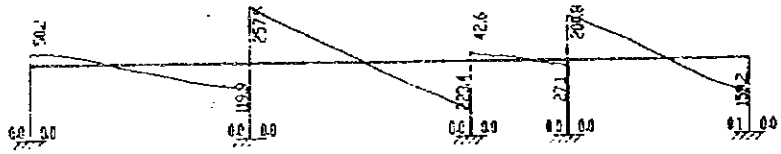


L-13

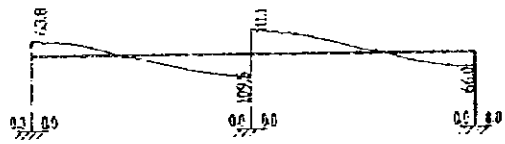
L-12



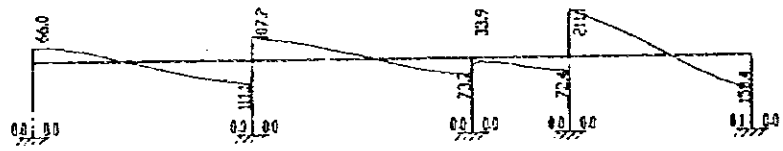
L-11



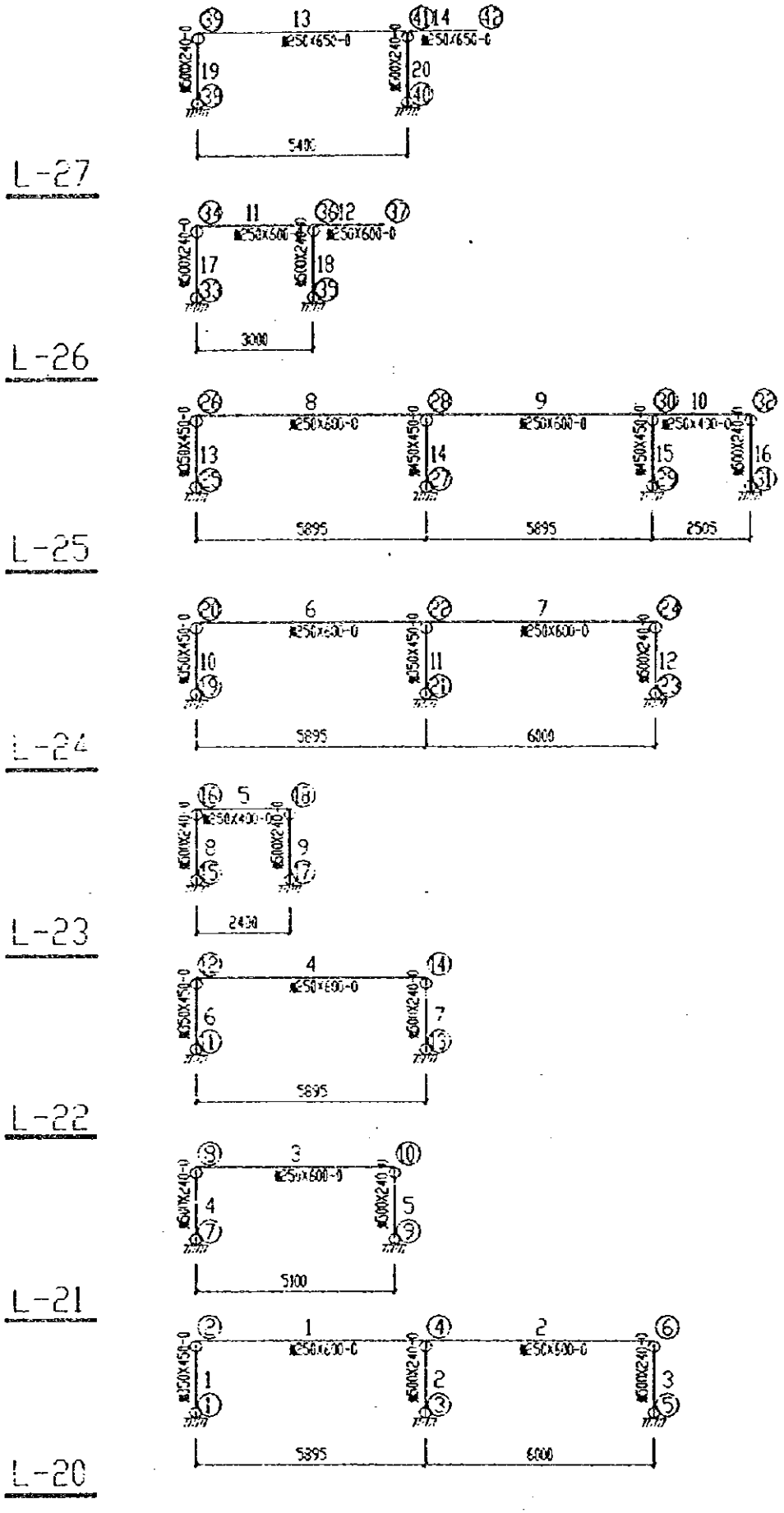
L-10



L-9

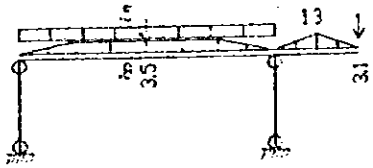


SHEAR FORCE OUTLINE (KN)

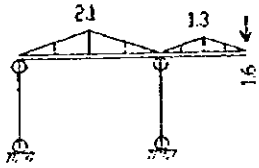


FRAME ELEVATION DRAWING

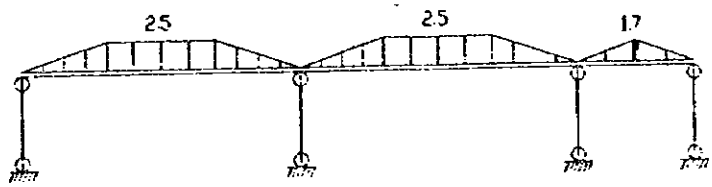
L-27



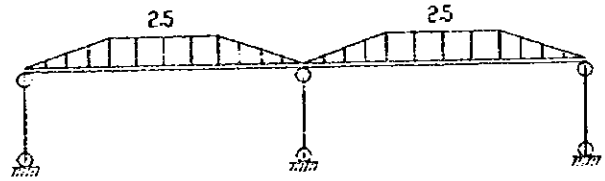
L-26



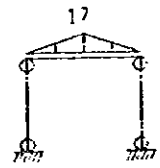
L-25



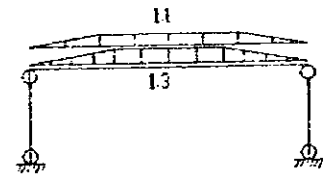
L-24



L-23



L-22



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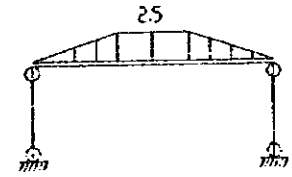

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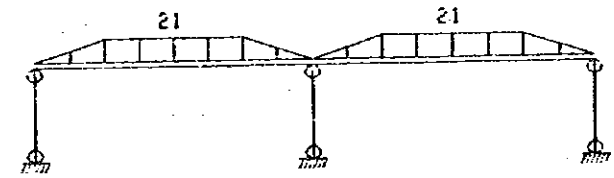
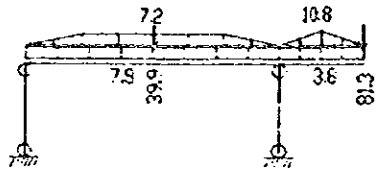


LIVING LOAD DRAWING (KN/M)

L-27



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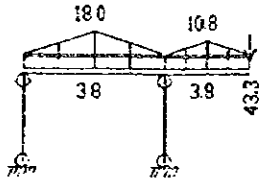

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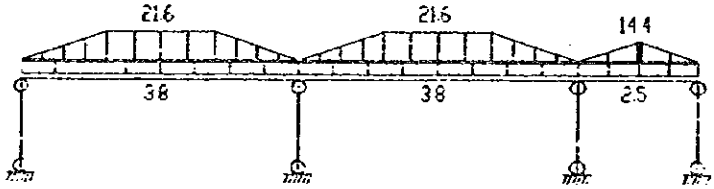

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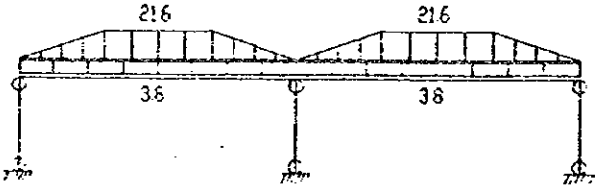

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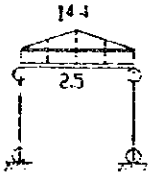

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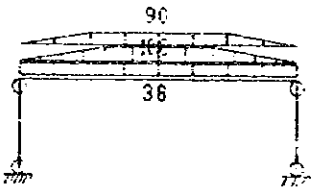

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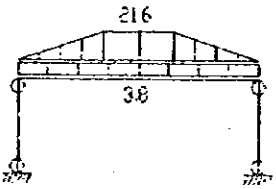

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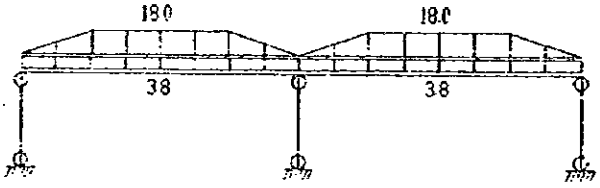

CONSTANT LOAD DRAWING (KN/M)

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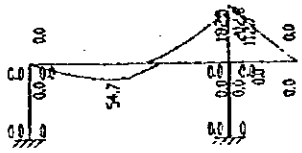

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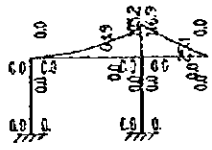

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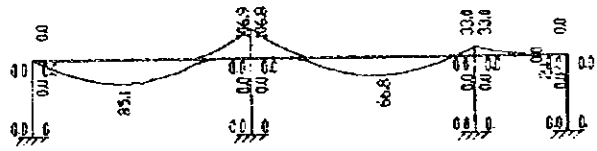

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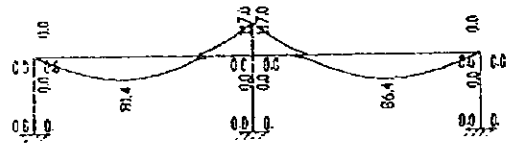

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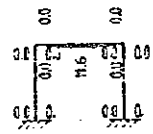

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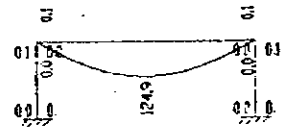

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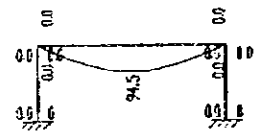

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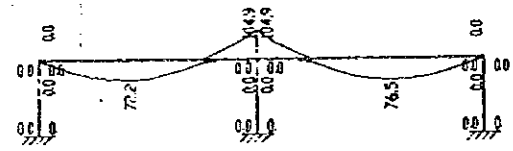
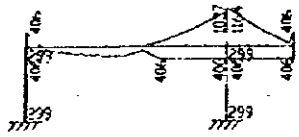


BENDING MOMENT OUTLINE (KN-M)

L-27



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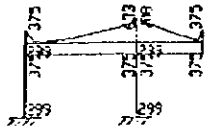

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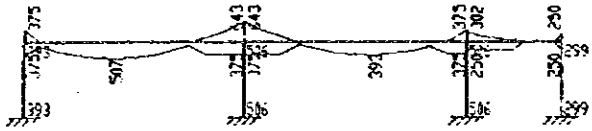

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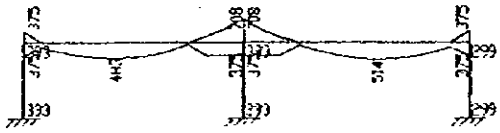

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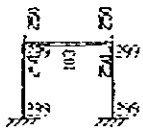

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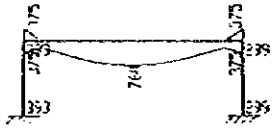
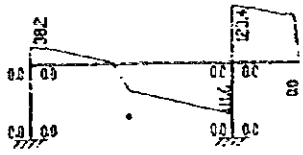


L-21

L-20

REINFORCEMENT OUTLINE (mm)

L-27



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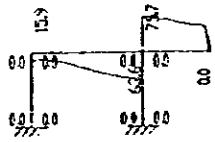

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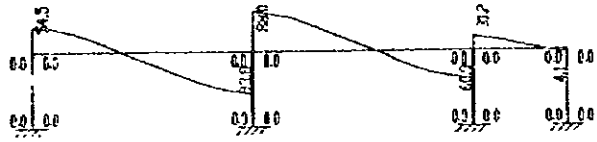

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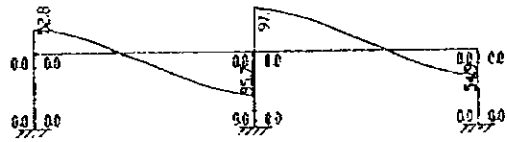

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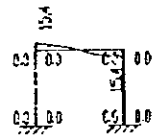

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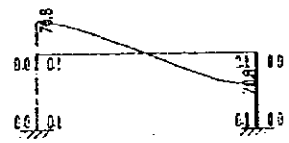

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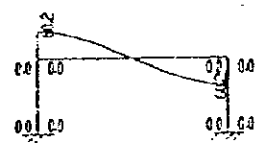

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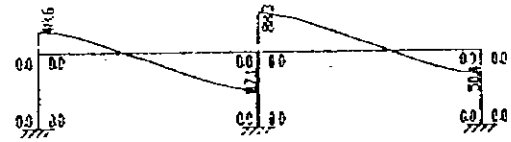
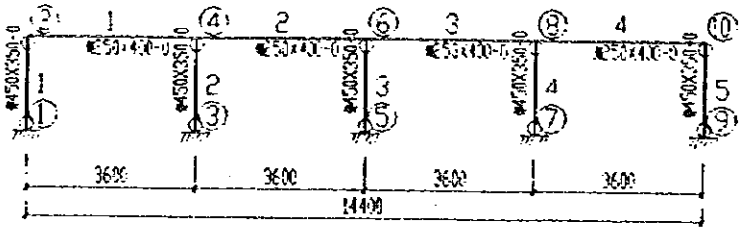


SHEAR FORCE OUTLINE (KN)



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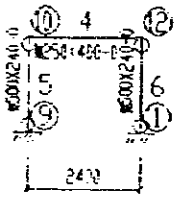

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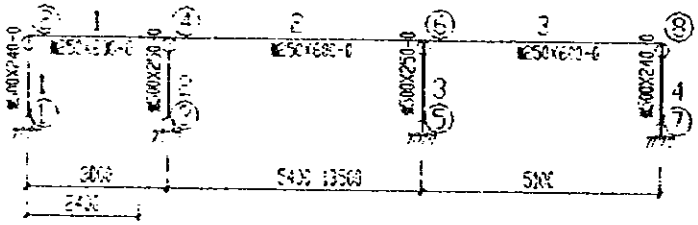

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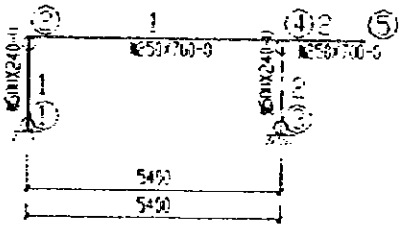
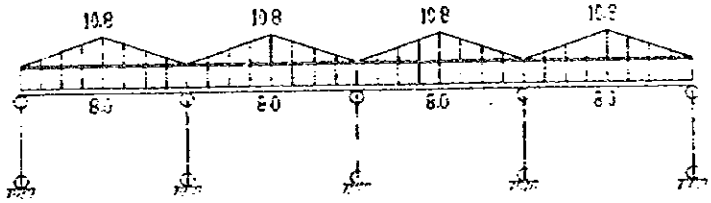


L-17

FRAME ELEVATION DRAWING

L-30



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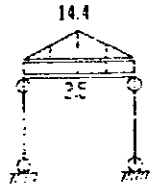

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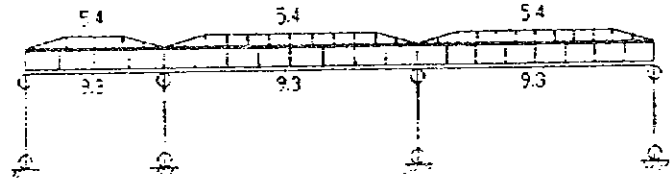

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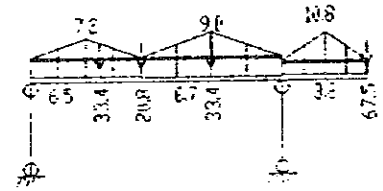
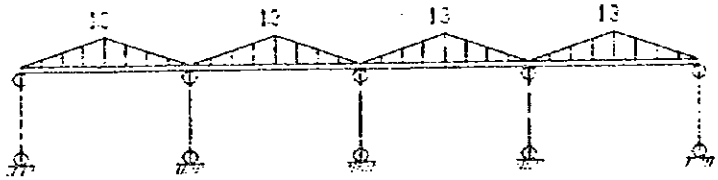


CONSTANT LOAD DRAWING (KN/M)

L-20



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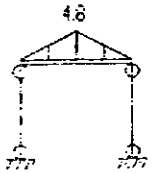

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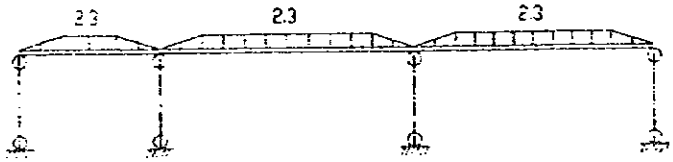

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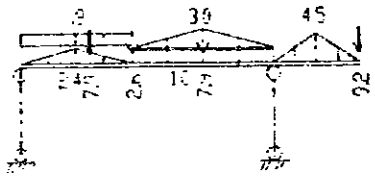
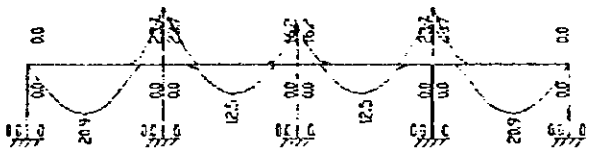


LIVING LOAD DRAWING (KN/M)

L-30



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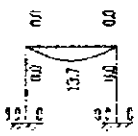

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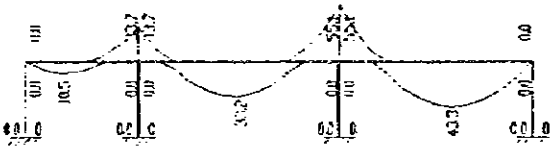

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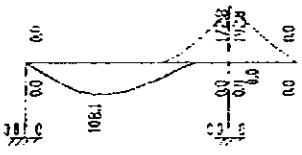
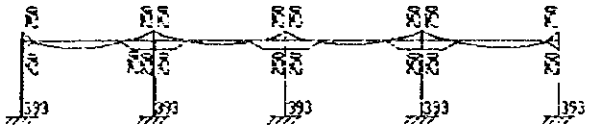


BENDING MOMENT DIAGRAM (KN-M)

L-30



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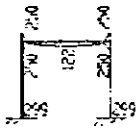

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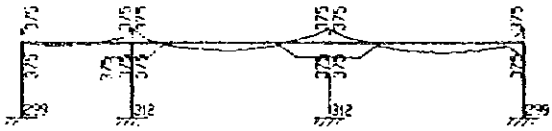

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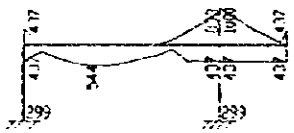
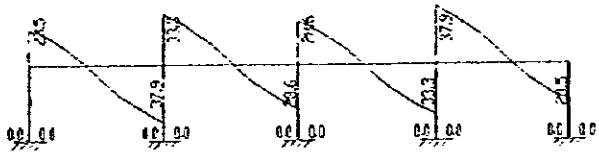


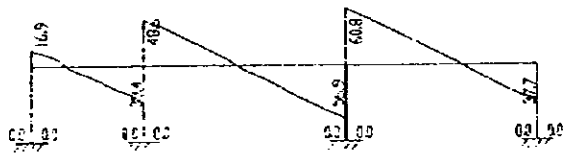
REINFORCEMENT OUTLINE (mm)

L-30



L-19

L-18



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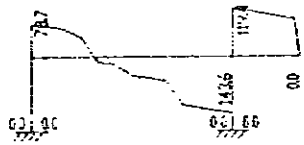


SHEAR FORCE OUTLINE (KN)

DESIGN CALCULATION

of Aviation Lighting Works

--Main Lighting Substation Garage

Calculation Book

I. Name of Project: Shanghai Pudong Airport Aviation Lighting Works
--Main Lighting substation Garage

II. Seismic intensity: 7

III. Frame seismic grade: 3

IV. Structure importance parameter: Ro=1.0

V. Site soil type: IV

VI. Soil endurance: R=110KPa

VII. Foundation load-bearing layer elevation:

VIII. Materials: column -- C25 beam board -- C25
wall: clay brick 240mm (5.40KN/m2)

I. Load:

1. Living load: roof 0.7KN/m2

2. Static load: roof ceiling 0.50KN/m2
structure layer (100mm) 2.50KN/m2
roof (roof 1) 2.64KN/m2
total 5.64KN/m2

3. Wind load: 0.55 KN/m2

X. Selection of main members

1. Main beam
bxh
bxh

2. Board thickness
h=100mm

XI. Design basis

1. Current national architecture & structure standards and codes;
2. Shanghai City's << Base Foundation Design Codes >> DBJ08--11--89;
3. Shanghai City's << Base Treatment Technical Codes >> DBJ08--40--94;
4. Shanghai City's << Building Anti-seismic Design Standards >> DBJ08--09--92;

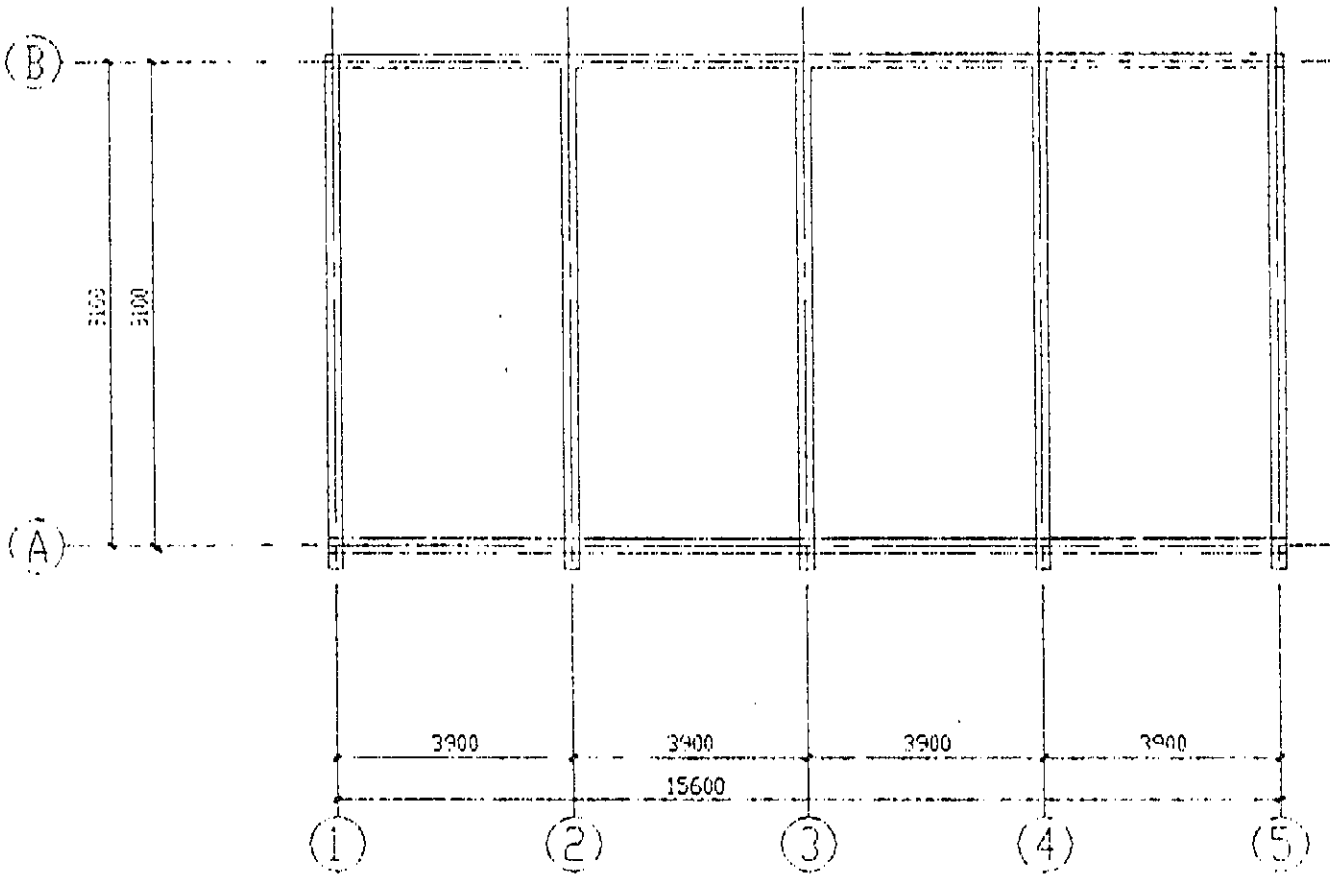
XII. Computer programs

China Building Science Research Institue CAD Engineering Department

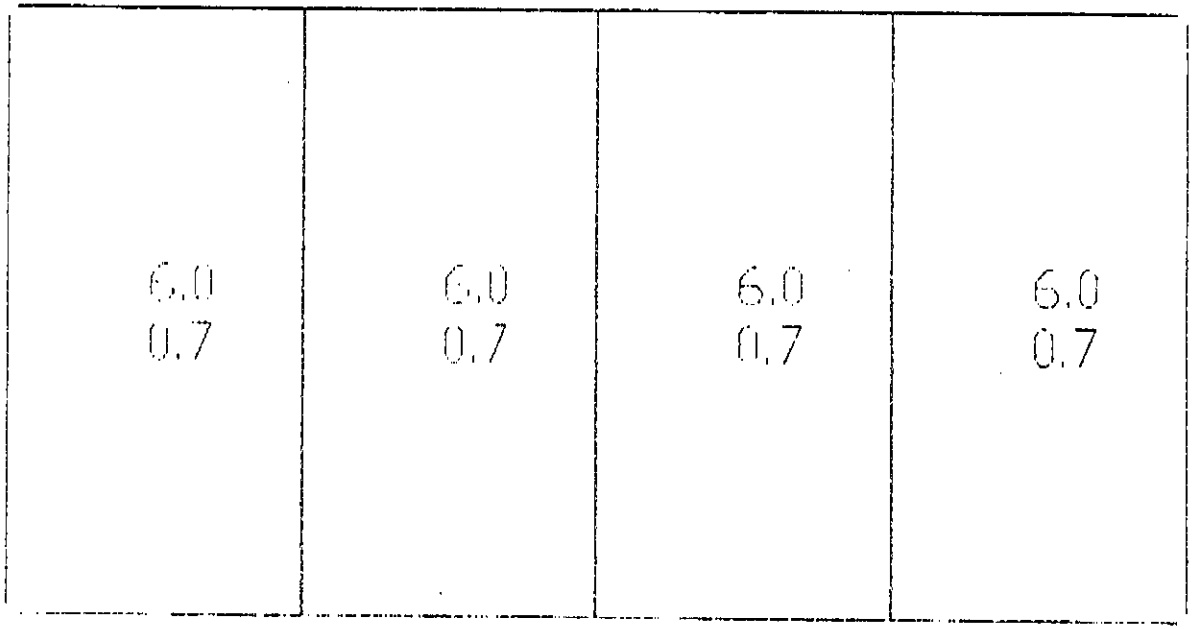
PMCAD	August, 1996
PK	August, 1996
JCCAD	August, 1996

XIII. Conclusion:

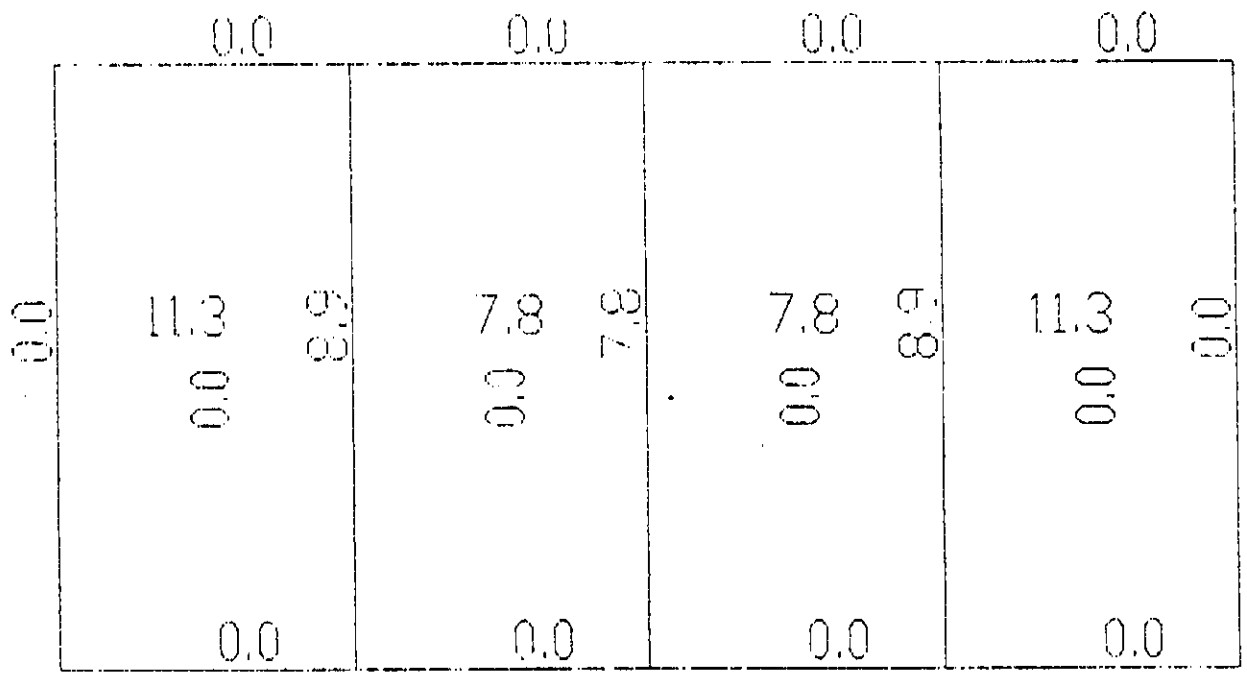
It is concluded from calculation above, the integral strength and deformation of structure meet the design requirements, the geometric dimensions also meet the requirements of strength and deformation regulated by Codes. The primary data of structural model, major calculation results, combining results of main internal forces of each member, structural layout, internal force drawing, reinforcing results of major members refer the next page, based on which construction drawings are made.



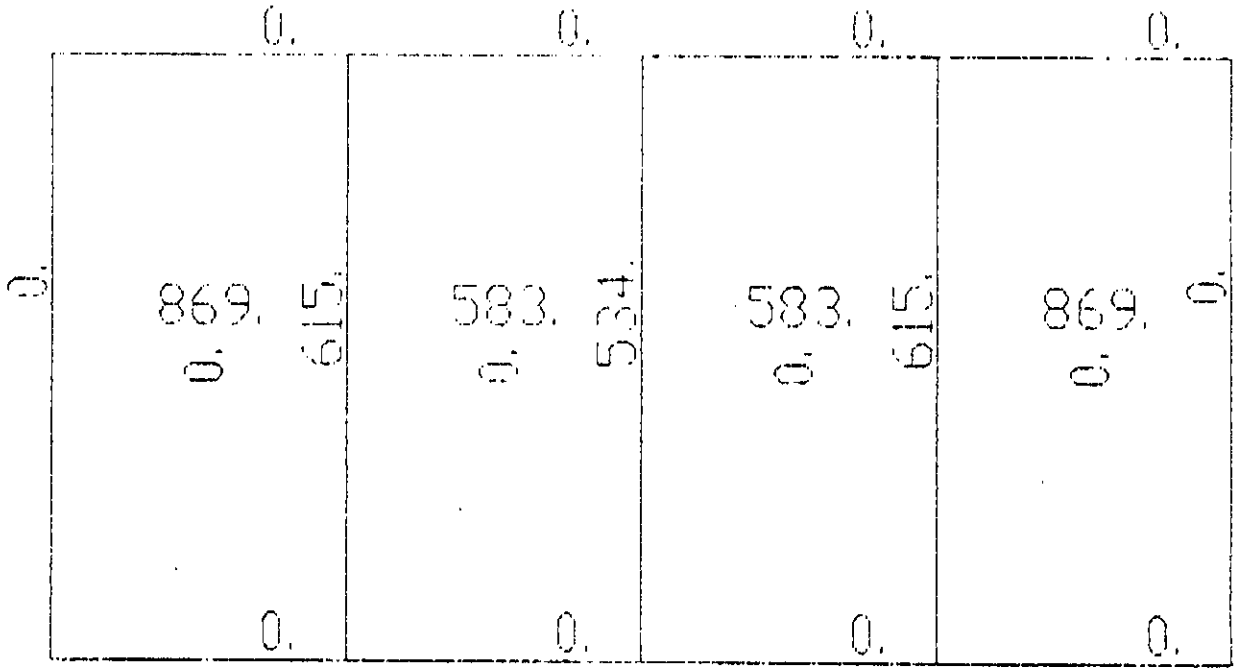
FLOOR STRUCURE PLAN(UNIT: M)



1st floor load (stotic load / live load)

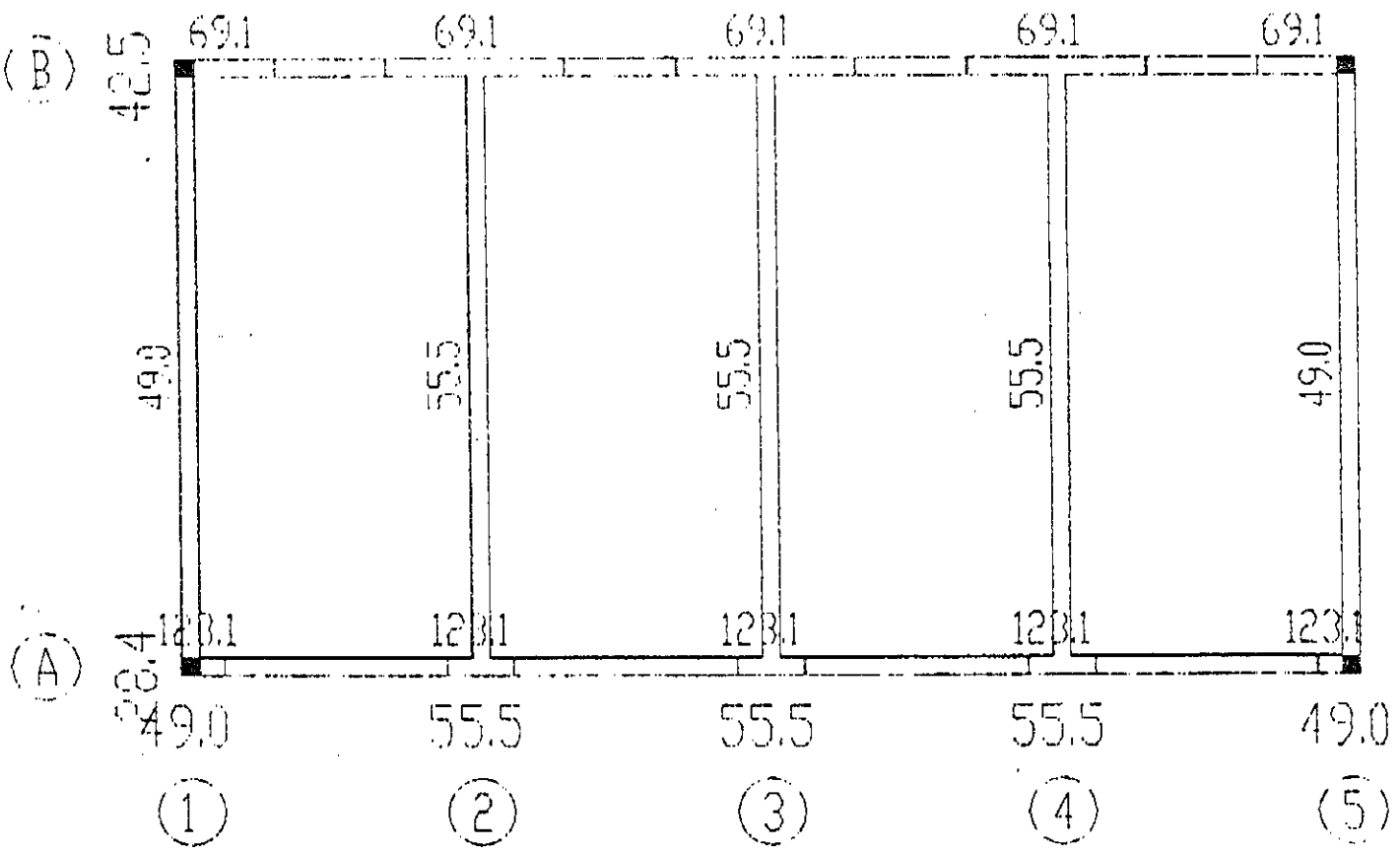


1st FLOOR CAST-IN-SITU BOARD
BENDING MOMENT DRAWING (UNIT:KN-M)

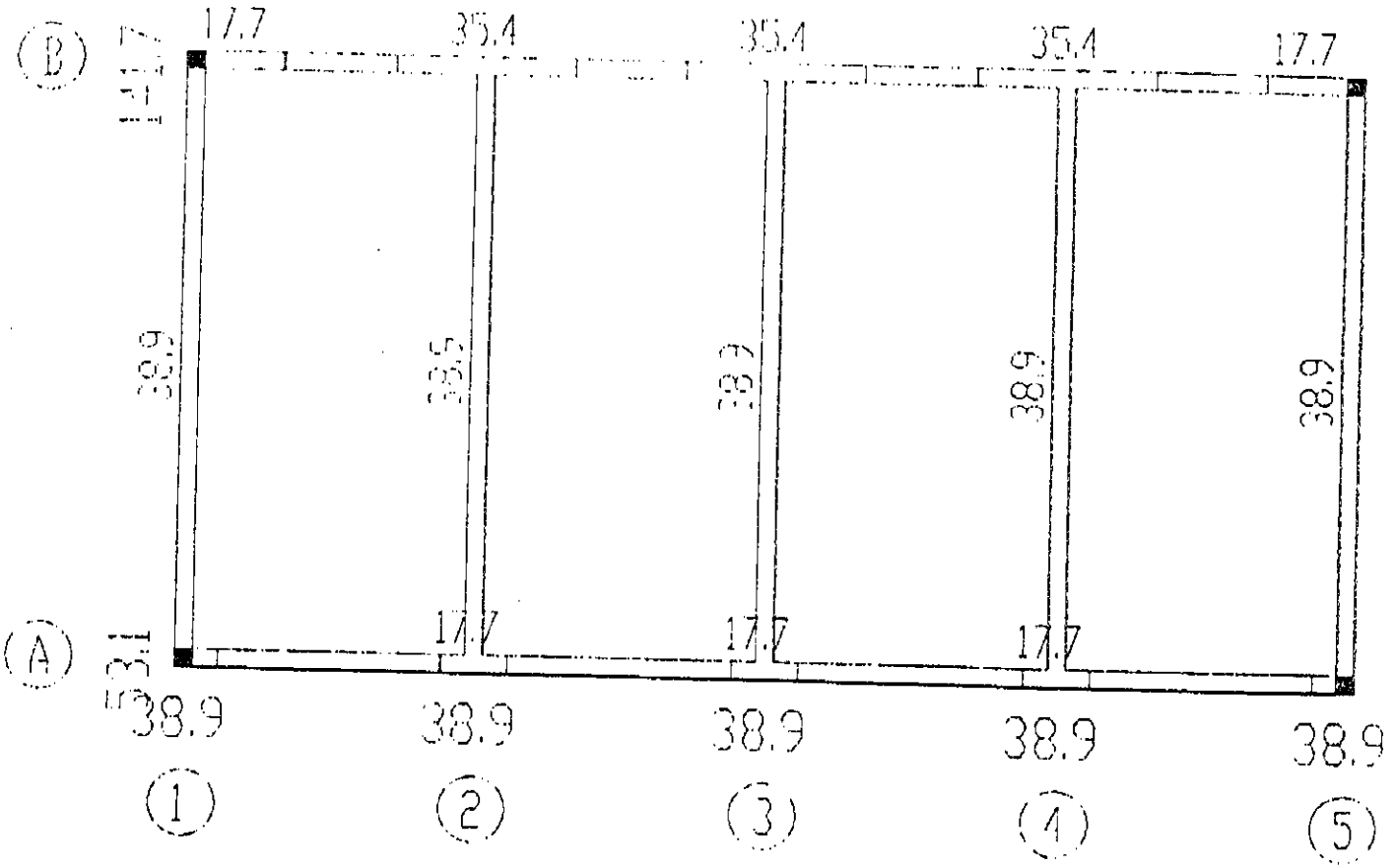


1st FLOOR CAST-IN-SITU BOARD
CALCULATION REINFORCEMENT

(UNIT:mm A_s;STEEL GRADE: I,II; CONCRETE:C25)



WALL AXIAL FORCE DESIGN VALUE DRAWING (KN/M)
(KN/M)



EARTHUAKE SHEAR FORCE DESIGN VALUE DRAWING (KN)

DESIGN CALCULATION

of Aviation Lighting Works

-- Sub-lighting Substation

Calculation Book

I. Name of Project: Shanghai Pudong Airport Aviation Lighting Works
--Sub- Lighting substation

II. Seismic intensity: 7

III. Frame seismic grade: 3

IV. Structure importance parameter: Ro=1.0

V. Site soil type: IV

VI. Soil endurance: R=110KPa

VII. Foundation load-bearing layer elevation:

VIII. Materials: column -- C25 beam board -- C25
wall: clay brick 240mm (5.40KN/m2)

I. Load:

1. Living load: roof 0.7KN/m2

2. Static load: roof ceiling 0.50KN/m2
structure layer (100mm) 2.50KN/m2
roof (roof 1) 2.64KN/m2
total 5.64KN/m2

3. Wind load: 0.55 KN/m2

X. Selection of main members

1. Main beam
bxh=250x500mm
bxh=300x800mm
2. Board thickness
h=100mm

XI. Design basis

1. Current national architecture & structure standards and codes;
2. Shanghai City's << Base Foundation Design Codes >> DBJ08--11--89;
3. Shanghai City's << Base Treatment Technical Codes >> DBJ08--40--94;
4. Shanghai City's << Building Anti-seismic Design Standards >> DBJ08--09--92;

XII. Computer programs

China Building Science Research Institue CAD Engineering Department

PMCAD	August, 1996
PK	August, 1996
JCCAD	August, 1996

XIII. Conclusion:

It is concluded from calculation above, the integral strength and deformation of structure meet the design requirements, the geometric dimensions also meet the requirements of strength and deformation regulated by Codes. The primary data of structural model, major calculation results, combining results of main internal forces of each member, structural layout, internal force drawing, reinforcing results of major members refer the next page, based on which construction drawings are made.

" PM " PROGRAM DESIGE DATA

```
C---NST MST NAXIS  NYS KCL  KBE  KDK  MLOD ALIVE  MXD  MYD BLKD
DWS  BLP
    -1,   1,  19,  -1,   2,   3.   4,   1, 1.00,   1.   1. 0.00, 1.00,100.0
C---(HLA(i),i=1,NST)
 5.800,
C---(MSH(i),i=1,MST)
      1.
C---((XY(I,J),J=1,2),I=1,NJ)
      1,      -2.407,      -3.037
      2,      -2.407,       2.963
      3,      -2.407,       5.363
      4,      -2.407,      10.463
      5,      -2.407,      16.463
      6,       0.593,      -3.037
      7,       0.593,       2.963
      8,       0.593,       5.363
      9,       0.593,      10.463
     10,       0.593,      16.463
     11,       3.593,      -3.037
     12,       3.593,       2.963
     13,       3.593,       5.363
     14,       3.593,      10.463
     15,       3.593,      16.463
     16,       6.593,      -3.037
     17,       6.593,       2.963
     18,       6.593,       5.363
     19,       6.593,      10.463
     20,       6.593,      16.463
     21,       9.593,      -3.037
     22,       9.593,       2.963
     23,       9.593,       5.363
     24,       9.593,      10.463
     25,       9.593,      16.463
     26,      13.193,      -3.037
     27,      13.193,       2.963
     28,      13.193,       5.363
     29,      13.193,      10.463
     30,      13.193,      16.463
     31,      16.793,      -3.037
     32,      16.793,      -0.037
     33,      16.793,       2.963
```

```
34,     16.793,      5.363
35,     16.793,     10.463
36,     16.793,     16.463
37,     19.193,     -3.037
38,     19.193,     -0.037
39,     19.193,      2.963
40,     19.193,      5.363
41,     19.193,     10.463
42,     19.193,     16.463
43,     21.593,     -3.037
44,     21.593,     -0.037
45,     21.593,      2.963
46,     21.593,      5.363
47,     21.593,     10.463
48,     21.593,     16.463
49,     23.993,     -4.537
50,     23.993,     -3.037
51,     23.993,     -0.037
52,     23.993,      2.963
53,     23.993,      5.363
54,     23.993,     10.463
55,     23.993,     16.463
56,     27.893,     -4.537
57,     27.893,     -3.037
58,     27.893,     -0.037
59,     27.893,      5.363
60,     27.893,     10.463
61,     27.893,     16.463
62,     31.793,     -4.537
63,     31.793,     -3.037
64,     31.793,     -0.037
65,     31.793,      5.363
66,     31.793,     10.463
67,     31.793,     16.463
0
C---((AXIS(I),I=1,NAXIS)
  1,  7,  49,  50,  51,  52,  53,  54,  55,
  2,  6,  56,  57,  58,  59,  60,  61,
  3,  6,  62,  63,  64,  65,  66,  67,
  4, 12,   5,  10,  15,  20,  25,  30,  36,  42,  48,  55,
           61,  67,
  5,  5,   1,   2,   3,   4,   5,
  6, 12,   4,   9,  14,  19,  24,  29,  35,  41,  47,  54,
```

```
J       7,    5,    60,   66,   8,    9,    10,
        8,    5,    6,    7,    13,   14,   15,
        9,    5,    11,   12,   18,   19,   20,
        10,   5,    16,   17,   23,   24,   25,
        11,   5,    21,   22,   28,   29,   30,
        12,   6,    26,   27,   33,   34,   35,   36,
        13,   6,    31,   32,   39,   40,   41,   42,
        14,   6,    37,   38,   45,   46,   47,   48,
        15,   12,   3,    8,    13,   18,   23,   28,   34,   40,   46,   53,
                    59,   65,
        16,   10,   2,    7,    12,   17,   22,   27,   33,   39,   45,   52,
        17,   6,    32,   38,   44,   51,   58,   64,
        18,   12,   1,    6,    11,   16,   21,   26,   31,   37,   43,   50,
                    57,   63,
        19,   3,    49,   56,   62,
0
C---(CL(i),i=1,KCL)
    1.000,    6.000,    0.240,    0.240,
    1.000,    6.000,    0.350,    0.400,
C---(BE(i),i=1,KBE)
    1.000,    6.000,    0.250,    0.300,
    1.000,    6.000,    0.250,    0.500,
    1.000,    6.000,    0.300,    0.700,
C---((QDK(i,j),j=1,2),i=1,KDK)
    1.200,    1.800,    2.100,    2.700,    1.500,    2.700,    1.000,    2.100,
C---((HSLD(i,j),j=1,3),i=1,MLOD)
    1.000,    6.000,    0.700,
C---QUE JEI DIAN
0
C=============================================================C
C                          LAYER    1
C=============================================================C
C---BHOU    RWB    BHC    IC    ICC       IG
    0.100, 25.0,0.015, 25.0, 25.0,      2
C---((AXIS(I),I=1,NAXIS)
        1,    7,    49,   50,   51,   52,   53,   54,   55,
        2,    6,    56,   57,   58,   59,   60,   61,
        3,    6,    62,   63,   64,   65,   66,   67,
        4,    12,   5,    10,   15,   20,   25,   30,   36,   42,   48,   55,
                    61,   67,
        5,    5,    1,    2,    3,    4,    5,
        6,    12,   4,    9,    14,   19,   24,   29,   35,   41,   47,   54,
```

```
J
      7,    5,    6,   60,   66,    8,    9,   10,
      8,    5,   11,   12,   13,   14,   15,
      9,    5,   16,   17,   18,   19,   20,
     10,    5,   21,   22,   23,   24,   25,
     11,    5,   26,   27,   28,   29,   30,
     12,    6,   31,   32,   33,   34,   35,   36,
     13,    6,   37,   38,   39,   40,   41,   42,
     14,    6,   43,   44,   45,   46,   47,   48,
     15,   12,    3,    8,   13,   18,   23,   28,   34,   40,   46,   53,
                59,   65,
     16,   10,    2,    7,   12,   17,   22,   27,   33,   39,   45,   52,
     17,    6,   32,   38,   44,   51,   58,   64,
     18,   12,    1,    6,   11,   16,   21,   26,   31,   37,   43,   50,
                57,   63,
     19,    3,   49,   56,   62,
0
C--- ZHC ---
    105,    2,    0.000,    -0.080
    304,    2,    0.000,     0.080
    401,    1,    0.000,     0.000
    408,    1,    0.000,     0.000
    412,    1,    0.000,     0.000
    601,    1,    0.000,     0.000
    608,    1,    0.000,     0.000
    610,    1,    0.000,     0.000
    612,    1,    0.000,     0.000
   1501,    1,    0.000,     0.000
 150207,    2,    0.000,     0.080
   1509,    2,    0.000,     0.080
   1601,    1,    0.000,     0.000
 160206,    2,    0.000,    -0.080
   1607,    1,    0.000,     0.000
   1609,    1,    0.000,     0.000
   1704,    1,    0.000,     0.000
   1706,    1,    0.000,     0.000
   1801,    1,    0.000,     0.000
 180206,    2,    0.000,     0.080
   1807,    1,    0.000,     0.000
 180910,    1,    0.000,     0.000
   1901,    1,    0.000,     0.000
   1903,    1,    0.000,     0.000
0
```

```
C--- LIANG ---
      106,    2,    0.000
    20105,    2,    0.000
      701,    2,    0.000
      702,    1,    0.000
    70304,    2,    0.000
      801,    2,    0.000
      802,    1,    0.000
      803,    2,    0.000
      901,    2,    0.000
      902,    1,    0.000
    90304,    2,    0.000
     1001,    2,    0.000
     1002,    1,    0.000
     1003,    2,    0.000
     1101,    2,    0.000
     1102,    1,    0.000
   110304,    2,    0.000
     1203,    1,    0.000
   120405,    2,    0.000
     1403,    1,    0.000
     1404,    2,    0.000
   151011,    3,    0.000
0
C--- QIANG ---
    10105,    0.240,    0.000
    30105,    0.240,    0.000
    40111,    0.240,    0.000
    50104,    0.240,    0.000
    60111,    0.240,    0.000
      804,    0.240,    0.000
     1004,    0.240,    0.000
   120102,    0.240,    0.000
     1302,    0.240,    0.000
     1305,    0.240,    0.000
   140102,    0.240,    0.000
   150109,    0.240,    0.000
   160108,    0.240,    0.000
   170102,    0.240,    0.000
   170405,    0.240,    0.000
   180109,    0.240,    0.000
   190102,    0.240,    0.000
0
```

```
C--- DONG KOU ---
          102,    4,      1.630,      0.000
          103,    4,      0.370,      0.000
          105,    4,      0.370,      0.000
          302,    1,      0.300,      1.900
          303,    2,      1.800,      0.000
          304,    2,      1.200,      0.000
        40104,    1,      0.900,      1.900
          405,    1,      1.200,      1.900
          406,    2,      0.750,      0.000
          409,    1,      0.000,      1.900
          410,    2,      1.050,      0.000
          411,    1,      1.500,      1.900
          501,    2,      1.950,      0.000
          503,    2,      1.500,      0.000
          601,    3,      0.370,      0.000
          609,    4,      1.030,      0.000
          804,    3,      0.370,      0.000
         1201,    4,      1.630,      0.000
         1305,    4,      0.370,      0.000
         1401,    4,      1.630,      0.000
         1506,    3,      1.050,      0.000
       160708,    4,      0.370,      0.000
       180104,    1,      0.900,      1.900
       180507,    1,      1.200,      1.900
         1809,    3,      0.450,      0.000
0
C=============================================================C
C---KZDJ     NV      IB      IY      INF     CC
      2,     1,      7,    2.00,     0,    1.00
EOF
7    ,□□□□□.8    ,G    ,1    .F    ,□□□□□,2    ,□□□□□,3    ,□□□□□,4    ,
5    ,6    ,E    .D    .C    .B    .A    ,
END
```

Calculation Book of Sub-Lightion Substation

L-1 ~ L-7

****** PK11.EXE ******

DATA: 7/22/1997

OUTPUT DATA

---- Zhong xin xi ------

50 25 18 0 25 7 1 0 4 25 25 2
0 0
0.90 1.00
0

OUTPUT DATA

------- Jiao Dian Zuo Biao --------

(1) 0.00 -2.00 (2) 0.00 0.00 (3) 5.84 -2.00 (4) 5.84 0.00
(5) 8.40 -2.00 (6) 8.40 0.00 (7) 13.42 -2.00 (8) 13.42 0.00
(9) 19.42 -2.00 (10) 19.42 0.00 (11) 0.00 3.00 (12) 0.00 5.00
(13) 5.84 3.00 (14) 5.84 5.00 (15) 8.40 3.00 (16) 8.40 5.00
(17) 13.42 3.00 (18) 13.42 5.00 (19) 0.00 8.00 (20) 0.00 10.00
(21) 2.48 8.00 (22) 2.48 10.00 (23) 7.50 8.00 (24) 7.50 10.00
(25) 13.50 8.00 (26) 13.50 10.00 (27) 0.00 13.00 (28) 0.00 15.00
(29) 2.48 13.00 (30) 2.48 15.00 (31) 7.50 13.00 (32) 7.50 15.00
(33) 0.00 18.00 (34) 0.00 20.00 (35) 6.00 18.00 (36) 6.00 20.00
(37) 0.00 23.00 (38) 0.00 25.00 (39) 4.50 23.00 (40) 4.50 25.00
(41) 9.90 23.00 (42) 9.90 25.00 (43) 15.00 23.00 (44) 15.00 25.00
(45) 21.00 23.00 (46) 21.00 25.00 (47) 0.00 28.00 (48) 0.00 30.00
(49) 7.64 28.00 (50) 7.64 30.00

OUTPUT DATA

------- Zhu Guan Lian Hao --------

(1) 1 2 (2) 3 4 (3) 5 6 (4) 7 8 (5) 9 10
(6) 11 12 (7) 13 14 (8) 15 16 (9) 17 18 (10) 19 20
(11) 21 22 (12) 23 24 (13) 25 26 (14) 27 28 (15) 29 30

(16) 31 32 (17) 33 34 (18) 35 36 (19) 37 38 (20) 39 40
(21) 41 42 (22) 43 44 (23) 45 46 (24) 47 48 (25) 49 50

------- Liang Guan Lian Hao --------

(1) 2 4 (2) 4 6 (3) 6 8 (4) 8 10 (5) 12 14
(6) 14 16 (7) 16 18 (8) 20 22 (9) 22 24 (10) 24 26
(11) 28 30 (12) 30 32 (13) 34 36 (14) 38 40 (15) 40 42
(16) 42 44 (17) 44 46 (18) 48 50

OUTPUT DATA

------- Zhi Zuo Yue Shu Xin Xi --------

(1) 1111 (2) 3111 (3) 5111 (4) 7111 (5) 9111
(6) 11111 (7) 13111 (8) 15111 (9) 17111 (10) 19111
(11) 21111 (12) 23111 (13) 25111 (14) 27111 (15) 29111
(16) 31111 (17) 33111 (18) 35111 (19) 37111 (20) 39111
(21) 41111 (22) 43111 (23) 45111 (24) 47111 (25) 49111

OUTPUT DATA

------- Shang Xia Zhu Jian Dian Pian Xin --------

(1) 0.00 (2) 0.00 (3) 0.00 (4) 0.00 (5) 0.00 (6) 0.00 (7) 0.00
(8) 0.00 (9) 0.00 (10) 0.00 (11) 0.00 (12) 0.00 (13) 0.00 (14) 0.00
(15) 0.00 (16) 0.00 (17) 0.00 (18) 0.00 (19) 0.00 (20) 0.00 (21) 0.00
(22) 0.00 (23) 0.00 (24) 0.00 (25) 0.00 (26) 0.00 (27) 0.00 (28) 0.00
(29) 0.00 (30) 0.00 (31) 0.00 (32) 0.00 (33) 0.00 (34) 0.00 (35) 0.00
(36) 0.00 (37) 0.00 (38) 0.00 (39) 0.00 (40) 0.00 (41) 0.00 (42) 0.00
(43) 0.00 (44) 0.00 (45) 0.00 (46) 0.00 (47) 0.00 (48) 0.00 (49) 0.00
(50) 0.00

OUTPUT DATA

------- Biao Zhun Jie Mian Xin Xi --------

(1) 1, 250, 500, 6
(2) 1, 250, 300, 6
(3) 1, 300, 800, 6
(4) 1, 350, 400, 6
(5) 1, 500, 240, 6
(6) 1, 240, 240, 6
(7) 1, 500, 300, 6

OUTPUT DATA

----- Zhu Ji Suan Chang Du(After consider steel) ------

(1) 1.00 (2) 1.00 (3) 1.00 (4) 1.00 (5) 1.00 (6) 1.00 (7) 1.00
(8) 1.00 (9) 1.00 (10) 1.00 (11) 1.00 (12) 1.00 (13) 1.00 (14) 1.00
(15) 1.00 (16) 1.00 (17) 1.00 (18) 1.00 (19) 1.00 (20) 1.00 (21) 1.00
(22) 1.00 (23) 1.00 (24) 1.00 (25) 1.00

OUTPUT DATA

---- Zhu Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1)	4	3	0	(2)	4	3	0	(3)	4	3	0
(4)	5	3	0	(5)	5	3	0	(6)	4	3	0
(7)	4	3	0	(8)	4	3	0	(9)	5	3	0
(10)	6	3	0	(11)	4	3	0	(12)	5	3	0
(13)	5	3	0	(14)	6	3	0	(15)	4	3	0
(16)	5	3	0	(17)	6	3	0	(18)	5	3	0
(19)	5	3	0	(20)	5	3	0	(21)	7	3	0
(22)	5	3	0	(23)	5	3	0	(24)	4	3	0
(25)	4	3	0								

---- Liang Bu Zhi(Hao)Jie Mian Hao,Jiao Jie,Jiao Du -----

(1)	1	0	0	(2)	2	0	0	(3)	1	0	0
(4)	1	0	0	(5)	1	0	0	(6)	2	0	0
(7)	1	0	0	(8)	2	0	0	(9)	1	0	0
(10)	1	0	0	(11)	2	0	0	(12)	1	0	0
(13)	1	0	0	(14)	1	0	0	(15)	1	0	0
(16)	1	0	0	(17)	1	0	0	(18)	3	0	0

IIQQ= 237

STIF COMPUTE

DEAD COMPUTE

JOINT LOAD:	JR	XM	XN
	0		

COLUMN LOAD:	JC	KL	P	X	KX
	0				

BEAM LOAD:	NE	LI	KL	P	X	PI

X1	KL	P	X	P1	X1		
		1	2	1		3.10	0.00
6	21.60	1.80					
		1	2	1		1.90	0.00
6	14.40	1.20					
		1	2	1		3.10	0.00
6	21.60	1.80					
		1	2	1		3.10	0.00
6	21.60	1.80					
		1	3	1		3.10	0.00
6	9.00	1.50					
			6	10.80	1.80		
		1	2	1		1.90	0.00
6	14.40	1.20					
		1	3	1		3.10	0.00
6	9.00	1.50					
			6	10.80	1.80		
		1	2	1		1.90	0.00
6	14.40	1.20					
		1	3	1		3.10	0.00
6	10.80	1.80					
			6	14.40	2.40		
		1	3	1		3.10	0.00
6	10.80	1.80					
			6	7.20	1.20		
		1	2	1		8.00	0.00
6	7.20	1.20					
		1	3	1		3.10	0.00
6	14.40	2.40					
			6	7.20	1.20		
		1	3	1		3.10	0.00
6	14.40	2.40					
			6	11.70	1.95		
		1	2	1		3.10	0.00
6	23.40	1.95					
		1	2	1		3.10	0.00
6	23.40	1.95					
		1	2	1		3.10	0.00
6	23.40	1.95					
		1	2	1		3.10	0.00

6	23.40	1.95							
		1	5		2		5.30		3.90
10	23.40	0.00	0.00	1.95					
			4			76.00			3.90
3	5.30	3.90							
			10	23.40	3.90	0.00	1.95		

DEAD LOAD

STIF COMPUTE
LIVE COMPUTE

JOINT	LOAD:	JR	XM	XN
		0		

COLUMN	LOAD:	JC	KL	P	X	KX
		0				

BEAM	LOAD:	NE	LI	KL	P	X	P1
X1	KL	P	X	P1	X1		
		1	1	6	2.50	1.80	
		1	1	6	1.70	1.20	
		1	1	6	2.50	1.80	
		1	1	6	2.50	1.80	
		1	2	6		1.00	1.50
6	1.30	1.80					
		1	1	6	1.70	1.20	
		1	2	6		1.00	1.50
6	1.30	1.80					
		1	1	6	1.70	1.20	
		1	2	6		1.30	1.80
6	1.70	2.40					
		1	2	6		1.30	1.80
6	0.80	1.20					
		1	2	6		0.80	1.20
1	0.70	0.00					
		1	2	6		1.70	2.40
6	0.80	1.20					
		1	2	6		1.70	2.40
6	1.40	1.95					
		1	1	6	2.70	1.95	

		1	1	6	2.70	1.95		
		1	1	6	2.70	1.95		
		1	1	6	2.70	1.95		
		1	3	10	2.70	0.00	0.00	1.95
4	7.40	3.90						
				10	2.70	3.90	0.00	1.95

EART COMPUTE
COMBI COMPUTE

COMBINATION AND REINFORCEMENT

Concrete COLUMN 1(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 12 As= 0. M= -0.04 N= 46.37 NO 12 As= 0. M= -0.08 N= -46.37
GG= 350.

Concrete COLUMN 2(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 12 As= 0. M= 0.03 N= 83.41 NO 12 As= 0. M= 0.06 N= -83.41
GG= 350.

Concrete COLUMN 3(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 12 As= 0. M= -0.01 N= 19.86 NO 12 As= 0. M= -0.02 N= -19.86
GG= 350.

Concrete COLUMN 4(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.01 N= 126.52 NO 12 As= 0. M= -0.02 N= -126.52
GG= 300.

Concrete COLUMN 5(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= 0.03 N= 40.52 NO 12 As= 0. M= 0.06 N= -40.52
GG= 300.

Concrete COLUMN 6(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 6 As= 0. M= -0.04 N= 45.18 NO 6 As= 0. M= -0.07 N= -45.18
GG= 350.

Concrete COLUMN 7(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 12 As= 0. M= 0.03 N= 72.29 NO 12 As= 0. M= 0.06 N= -72.29
GG= 350.

Concrete COLUMN 8(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 12 As= 0. M= -0.02 N= 47.33 NO 12 As= 0. M= -0.04 N= -47.33
GG= 350.

Concrete COLUMN 9(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 8 As= 0. M= 0.03 N= 38.06 NO 8 As= 0. M= 0.05 N= -38.06
GG= 300.

Concrete COLUMN 10(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 240, H= 240

NO 6 As= 0. M= 0.00 N= 4.61 NO 6 As= 0. M= 0.00 N= -4.61
GG= 144.

Concrete COLUMN 11(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 12 As= 0. M= -0.01 N= 48.20 NO 12 As= 0. M= -0.02 N= -48.20
GG= 350.

Concrete COLUMN 12(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.01 N= 116.80 NO 12 As= 0. M= -0.02 N= -116.80
GG= 300.

Concrete COLUMN 13(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 8 As= 0. M= 0.02 N= 36.46 NO 8 As= 0. M= 0.05 N= -36.46
GG= 300.

Concrete COLUMN 14(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 240, H= 240

NO 6 As= 0. M= 0.00 N= 3.50 NO 6 As= 0. M= 0.00 N= -3.50
GG= 144.

Concrete COLUMN 15(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 2 As= 0. M= -0.02 N= 69.94 NO 2 As= 0. M= -0.04 N= -69.94
GG= 350.

Concrete COLUMN 16(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= 0.02 N= 35.25 NO 8 As= 0. M= 0.04 N= -35.25
GG= 300.

Concrete COLUMN 17(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 240, H= 240

NO 2 As= 0. M= -0.06 N= 58.91 NO 2 As= 0. M= -0.11 N= -58.91
GG= 144.

Concrete COLUMN 18(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 2 As= 0. M= 0.06 N= 58.91 NO 2 As= 0. M= 0.11 N= -58.91
GG= 300.

Concrete COLUMN 19(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.01 N= 23.64 NO 12
As= 0. M= -0.02 N= -23.64
GG= 300.

Concrete COLUMN 20(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.01 N= 98.83 NO 12
As= 0. M= -0.01 N= -98.83
GG= 300.

Concrete COLUMN 21(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 500, H= 300

NO 12 As= 0. M= 0.00 N= 80.71 NO
12 As= 0. M= 0.01 N= -80.71
GG= 375.

Concrete COLUMN 22(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= -0.02 N= 119.79 NO 12
As= 0. M= -0.03 N= -119.79
GG= 300.

Concrete COLUMN 23(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 500, H= 240

NO 12 As= 0. M= 0.03 N= 43.38 NO
12 As= 0. M= 0.06 N= -43.38
GG= 300.

Concrete COLUMN 24(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly=
2.00)
Section property: B= 350, H= 400

NO 2 As= 0. M= -0.03 N= 102.55 NO 2 As= 0. M= -0.07 N= -102.55
GG= 350.

Concrete COLUMN 25(SECTION TYPE= 1, ANG= 0, Lx= 2.00, Ly= 2.00)
Section property: B= 350, H= 400

NO 2 As= 0. M= 0.03 N= 106.05 NO 2 As= 0. M= 0.07 N= -106.05
GG= 350.

Concrete BEAM 1(SECTION TYPE= 1 ANG= 0, L= 5.84)
Section property: B= 250, H= 500
BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-29.84	-57.02	-79.54	-95.54	-103.79	-104.20	-96.76	-81.47	-58.44	-28.88	0.00	0.00
As(1)=	312.	211.	412.	586.	713.	780.	783.	723.	601.	423.	204.	0.	312.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.36	43.90
As(1)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	44.	314.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	314.

Vl= 62.19 NO 1 Vr= 78.63 NO 3 Asv/s= 0.00 As(3)= 312. Umaxb= 0.006 Umaxt= 0.003

Concrete BEAM 2(SECTION TYPE= 1 ANG= 0, L= 2.56)
Section property: B= 250, H= 300
BOTTOM

SECTION	1	2	3	4	5	6	7

8 9 10 11 12 13

M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 -2.16

As(1)= 188. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 188.

As(2)= 188. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 188.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 43.84 35.78 29.57 23.75 18.45 13.81 9.98
7.02 4.86 3.37 2.40 1.82 3.60

As(1)= 595. 475. 386. 305. 234. 173. 124. 87.
60. 41. 29. 22. 188.

As(2)= 595. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 188.

Vl= 35.79 NO 1 Vr= -4.57 NO 2 Asv/s= 0.00 As(3)=
188. Umaxb= 0.002 Umaxt= 0.008

Concrete BEAM 3(SECTION TYPE= 1 ANG= 0, L= 5.02)

Section property: B= 250, H= 500

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= -2.14 -14.23 -28.12 -38.97 -45.58 -46.81 -42.25 -31.89
-15.74 0.00 0.00 0.00 0.00

As(1)= 312. 100. 199. 278. 327. 336. 302. 226.
110. 0. 0. 0. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 3.62 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 14.34 38.56 65.53 97.76

As(1)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 100. 275. 477. 731.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 731.

Vl= 37.47 NO 1 Vr= 78.25 NO 3 Asv/s= 0.00 As(3)= 312. Umaxb= 0.003 Umaxt= 0.006

Concrete BEAM 4(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-25.34	-53.83	-74.10	-86.09	-89.80	-85.21	-72.42	-52.59	-27.75	0.00
As(1)=	312.	0.	0.	179.	388.	543.	637.	667.	630.	530.	379.	196.	312.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	97.78	51.41	14.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
As(1)=	731.	370.	102.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.
As(2)=	731.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

Vl= 91.04 NO 1 Vr= 55.44 NO 3 Asv/s= 0.00 As(3)= 312. Umaxb= 0.005 Umaxt= 0.006

Concrete BEAM 5(SECTION TYPE= 1 ANG= 0, L= 5.84)

Section property: B= 250, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-28.91	-55.15	-76.74	-91.92	-99.88	-100.57	-93.99	-80.14	-59.07	-31.59	0.00	0.00
As(1)=	312.	205.	398.	564.	684.	748.	754.	700.	590.	428.	224.	0.	312.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.09 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 1.42 36.80
As(1)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 10. 312.
As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

Vl= 60.47 NO 1 Vr= 74.18 NO 3 Asv/s= 0.00 As(3)=
312. Umaxb= 0.006 Umaxt= 0.002

Concrete BEAM 6(SECTION TYPE= 1 ANG= 0, L= 2.56)
Section property: B= 250, H= 300
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00
As(1)= 188. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 188.
As(2)= 188. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 188.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 36.73 30.71 26.32 22.32 18.83 16.01 13.99
12.85 12.51 12.84 13.69 14.92 18.35
As(1)= 488. 402. 341. 286. 239. 202. 176. 161.
157. 161. 172. 188. 233.
As(2)= 488. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 233.

Vl= 25.92 NO 1 Vr= 10.36 NO 3 Asv/s= 0.00 As(3)=
188. Umaxb= 0.002 Umaxt= 0.007

Concrete BEAM 7(SECTION TYPE= 1 ANG= 0, L= 5.02)
Section property: B= 250, H= 500
BOTTOM
SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 -7.24 -29.08 -47.87 -62.43 -71.85 -75.90 -74.58 -67.89 -56.06 -40.00 -20.89 0.00

As(1)= 312. 50. 206. 344. 453. 526. 557. 547. 495. 405. 286. 147. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 312.

TOP

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 18.40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06

As(1)= 312. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 312.

Vi= 58.66 NO 1 Vr= 50.98 NO 3 Asv/s= 0.00 As(3)= 312. Umaxb= 0.004 Umaxt= 0.002

Concrete BEAM 8(SECTION TYPE= 1 ANG= 0, L= 2.48)

Section property: B= 250, H= 300

BOTTOM

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.00 -1.76 -3.29 -4.43 -5.05 -4.98 -4.10 -2.30 0.00 0.00 0.00 0.00 0.00

As(1)= 188. 22. 40. 54. 62. 61. 50. 28. 0. 0. 0. 0. 188.

As(2)= 188. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 188.

TOP

SECTION 1 2 3 4 5 6 7 8 9 10 11 12 13

M= 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.33 2.82 6.08 9.82 13.92 19.00

As(1)= 188. 0. 0. 0. 0. 0. 0. 4. 34. 75. 122. 175. 241.

As(2)= 188. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 241.

Vl= 8.21 NO 1 Vr= 23.92 NO 3 Asv/s= 0.00 As(3)= 188. Umaxb= 0.002 Umaxt= 0.003

Concrete BEAM 9(SECTION TYPE= 1 ANG= 0, L= 5.02)

Section property: B= 250, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-0.51	-17.43	-31.30	-40.91	-45.10	-43.06	-34.43	-19.56	-0.04	0.00	0.00	0.00
As(1)=	312.	4.	122.	222.	292.	323.	308.	245.	138.	0.	0.	0.	312.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	19.02	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.85	31.70	57.31	88.17
As(1)=	312.	2.	0.	0.	0.	0.	0.	0.	0.	62.	225.	415.	654.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	654.

Vl= 44.92 NO 1 Vr= 74.55 NO 3 Asv/s= 0.00 As(3)= 312. Umaxb= 0.003 Umaxt= 0.005

Concrete BEAM 10(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-21.59	-46.27	-63.91	-74.49	-78.01	-74.46	-63.89	-46.88	-24.90	0.00
As(1)=	312.	0.	0.	152.	332.	465.	546.	574.	546.	464.	336.	176.	312.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 88.19 46.68 13.76 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.06
As(1)= 654. 335. 96. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.
As(2)= 654. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

Vl= 81.94 NO 1 Vr= 49.96 NO 3 Asv/s= 0.00 As(3)=
312. Umaxb= 0.005 Umaxt= 0.005

Concrete BEAM 11(SECTION TYPE= 1 ANG= 0, L= 2.48)
Section property: B= 250, H= 300
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 -1.45 -2.38 -2.72 -2.38 -1.31 0.00 0.00
0.00 0.00 0.00 0.00 0.00
As(1)= 188. 18. 29. 33. 29. 16. 0. 0.
0. 0. 0. 0. 188.
As(2)= 188. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 188.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 0.00 0.00 0.62 2.60
5.41 8.94 13.15 17.95 23.29 29.92
As(1)= 188. 0. 0. 0. 0. 8. 32. 67.
111. 165. 227. 299. 391.
As(2)= 188. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 391.

Vl= 6.94 NO 1 Vr= 32.77 NO 3 Asv/s= 0.00 As(3)=
188. Umaxb= 0.002 Umaxt= 0.005

Concrete BEAM 12(SECTION TYPE= 1 ANG= 0, L= 5.02)
Section property: B= 250, H= 500
BOTTOM
SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 0.00 -17.77 -37.26 -52.66 -63.30 -68.58 -68.15
-62.36 -51.81 -37.17 -19.48 0.00

As(1)= 312. 0. 125. 265. 380. 460. 501. 497.
453. 373. 265. 137. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 29.96 5.68 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.05

As(1)= 312. 40. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

Vl= 60.35 NO 1 Vr= 47.29 NO 3 Asv/s= 0.00 As(3)=
312. Umaxb= 0.004 Umaxt= 0.002

Concrete BEAM 13(SECTION TYPE= 1 ANG= 0, L= 6.00)

Section property: B= 250, H= 500

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 -38.53 -74.22 -104.88 -128.46 -143.14 -148.06 -143.14
-128.46 -104.88 -74.22 -38.53 0.00

As(1)= 312. 275. 544. 789. 987. 1116. 1160. 1116.
987. 789. 544. 275. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.14 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.14

As(1)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

Vl= 78.95 NO 1 Vr= 78.95 NO 3 Asv/s= 0.00 As(3)= 312. Umaxb= 0.009 Umaxt= 0.002

Concrete BEAM 14(SECTION TYPE= 1 ANG= 0, L= 4.50)

Section property: B= 250, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	-12.90	-24.45	-33.75	-39.94	-42.16	-39.63	-32.09	-19.80	-3.54	0.00	0.00	0.00
As(1)=	312.	90.	173.	240.	285.	301.	283.	228.	139.	25.	0.	0.	312.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

TOP

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43	21.53	41.68	66.07
As(1)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	24.	152.	298.	481.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	481.

Vl= 33.95 NO 1 Vr= 65.30 NO 3 Asv/s= 0.00 As(3)= 312. Umaxb= 0.002 Umaxt= 0.004

Concrete BEAM 15(SECTION TYPE= 1 ANG= 0, L= 5.40)

Section property: B= 250, H= 500

BOTTOM

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13
M=	0.00	0.00	0.00	-18.68	-37.49	-49.67	-54.65	-52.43	-43.01	-26.96	-5.68	0.00	0.00
As(1)=	312.	0.	0.	131.	267.	357.	394.	378.	308.	191.	40.	0.	312.
As(2)=	312.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	312.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 66.08 33.62 8.85 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.38 22.46 52.01
As(1)= 481. 239. 62. 0. 0. 0. 0. 0.
0. 0. 3. 158. 375.
As(2)= 481. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 375.

Vl= 69.18 NO 1 Vr= 63.02 NO 3 Asv/s= 0.00 As(3)=
312. Umaxb= 0.003 Umaxt= 0.004

Concrete BEAM 16(SECTION TYPE= 1 ANG= 0, L= 5.10)
Section property: B= 250, H= 500
BOTTOM
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 0.00 0.00 0.00 -10.72 -22.78 -29.16 -29.17 -22.74
-9.94 0.00 0.00 0.00 0.00
As(1)= 312. 0. 0. 75. 161. 207. 207. 160.
69. 0. 0. 0. 312.
As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.
TOP
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13
M= 52.00 27.76 10.73 0.00 0.00 0.00 0.00
0.00 1.20 17.62 38.77 62.81 92.78
As(1)= 375. 196. 75. 0. 0. 0. 0. 0.
8. 124. 277. 456. 691.
As(2)= 375. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 691.

Vl= 52.59 NO 1 Vr= 70.03 NO 3 Asv/s= 0.00 As(3)=
312. Umaxb= 0.002 Umaxt= 0.006

Concrete BEAM 17(SECTION TYPE= 1 ANG= 0, L= 6.00)
Section property: B= 250, H= 500
BOTTOM
SECTION 1 2 3 4 5 6 7

8 9 10 11 12 13

M= 0.00 0.00 0.00 -33.62 -63.00 -83.72 -95.55 -98.48
-92.52 -77.92 -56.25 -29.57 0.00

As(1)= 312. 0. 0. 239. 458. 619. 713. 737.
689. 573. 407. 209. 312.

As(2)= 312. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 312.

TOP

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 92.81 45.24 7.59 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.08

As(1)= 691. 324. 53.

0. 312.

Vl= 92.85 NO 1 Vr= 59.24 NO 3 Asv/s= 0.00 As(3)=
312. Umaxb= 0.006 Umaxt= 0.006

Concrete BEAM 18(SECTION TYPE= 1 ANG= 0, L= 7.64)

Section property: B= 300, H= 800

BOTTOM

SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.00 -84.10 -161.48 -227.86 -280.16 -320.92 -354.34 -326.57
-284.39 -231.72 -165.11 -86.44 0.00

As(1)= 600. 361. 706. 1012. 1261. 1460. 1627. 1488.
1281. 1030. 722. 371. 600.

As(2)= 600. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 600.

TOP

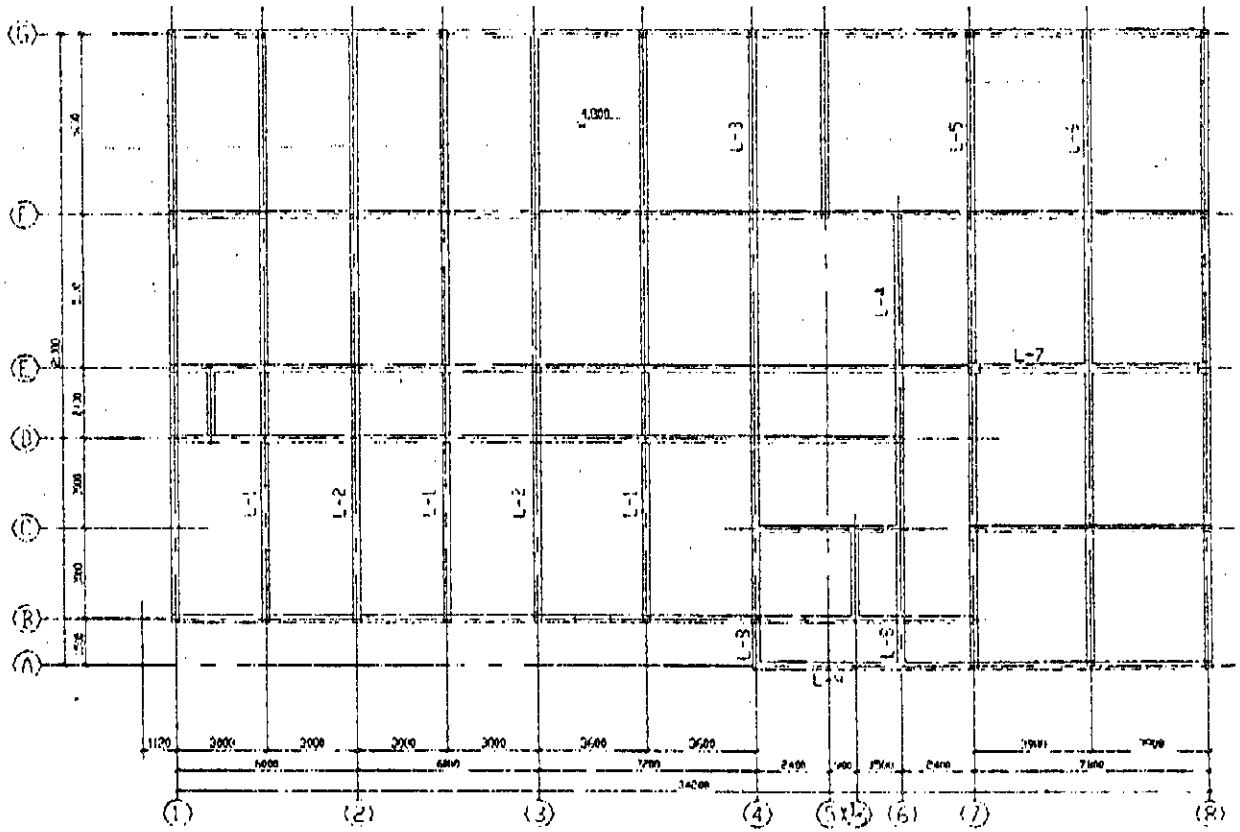
SECTION 1 2 3 4 5 6 7
8 9 10 11 12 13

M= 0.08 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.08

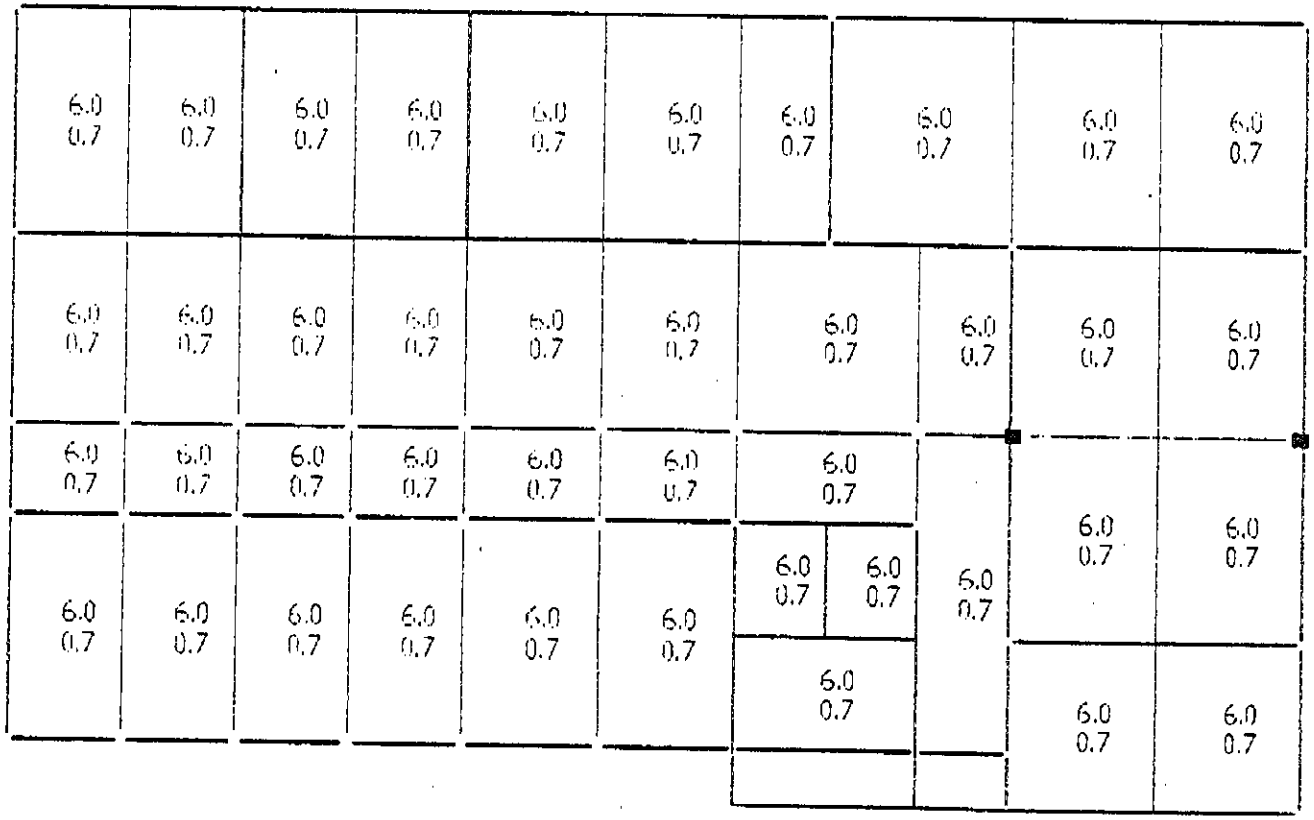
As(1)= 600. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 600.

As(2)= 600. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 600.

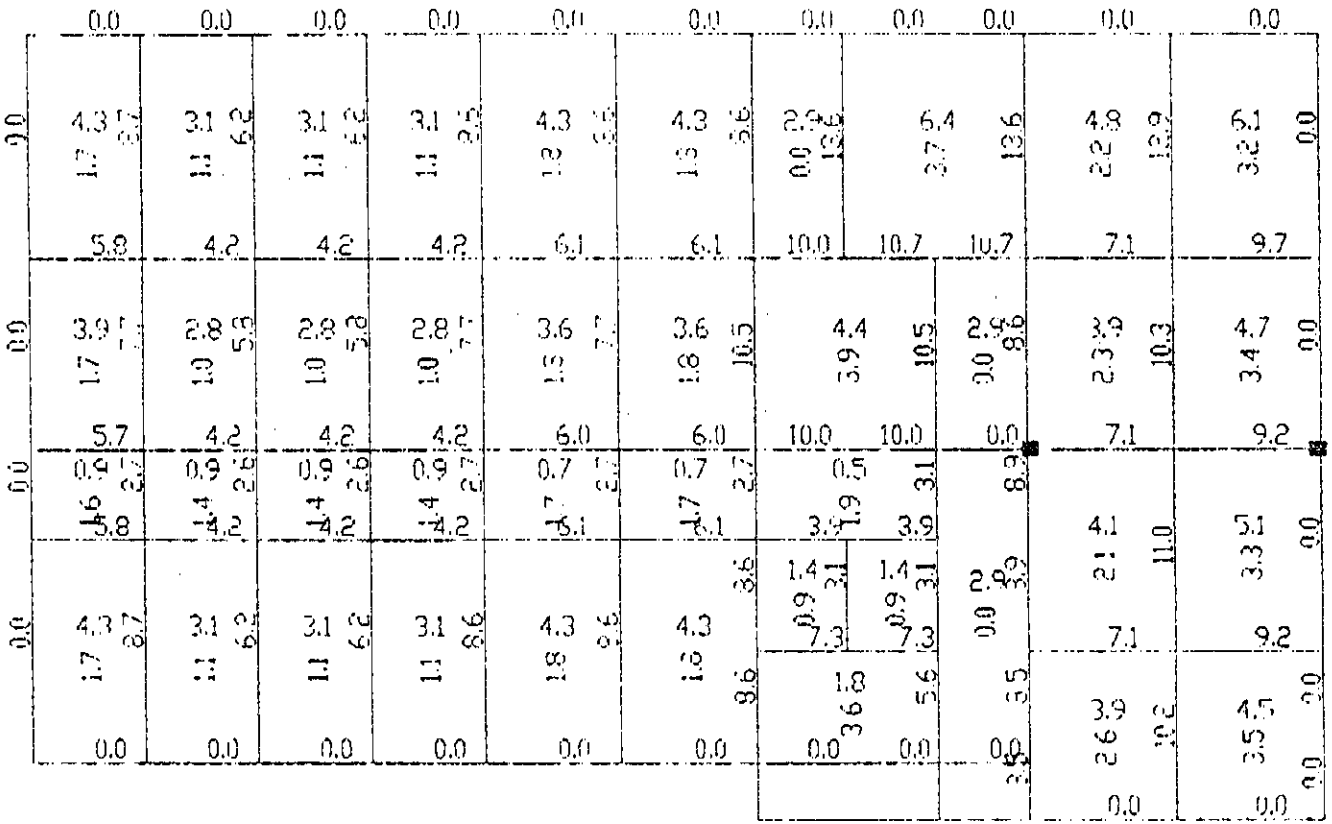
Vl= 135.35 NO 1 Vr= 140.08 NO 3 Asv/s= 0.00 As(3)=
600. Umaxb= 0.007 Umaxt= 0.002
PK1 COMPUTE END



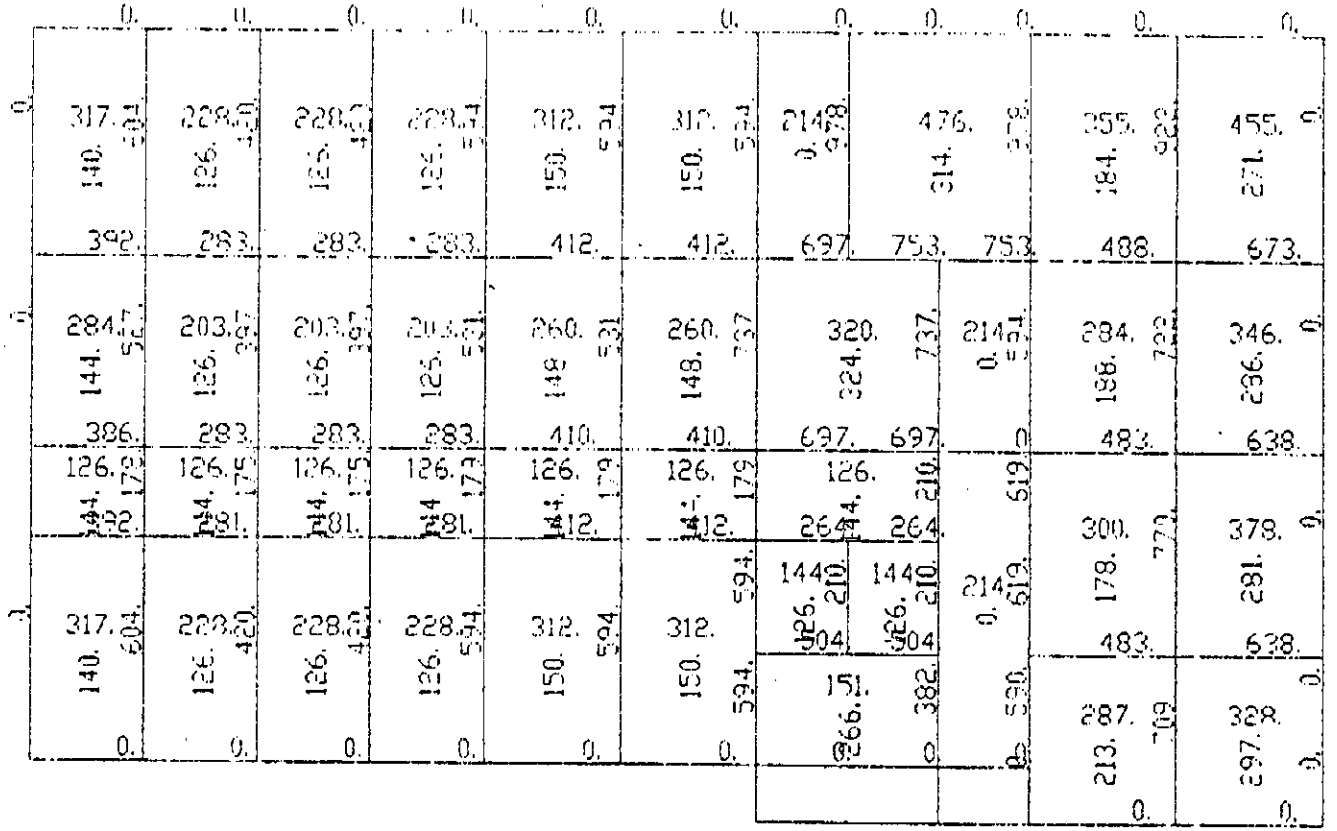
FLOOR STRUCURE PLAN(UNIT:MM) 1:100



1st floor load (static load / live load) (UNIT:KN/M^2)

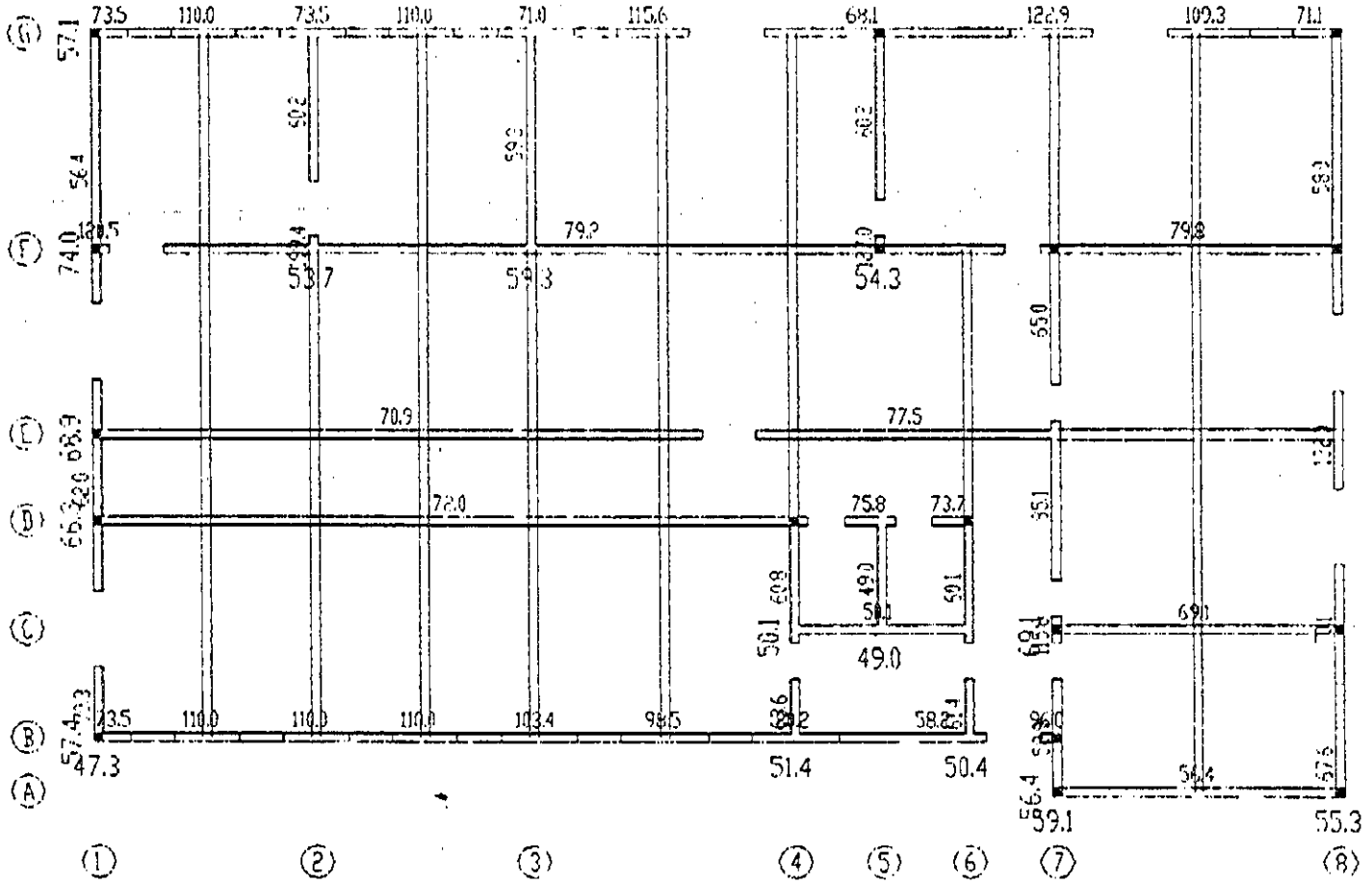


1st FLOOR CAST-IN-SITU BOARD
BENDING MOMENT DRAWING (UNIT:KN-M)



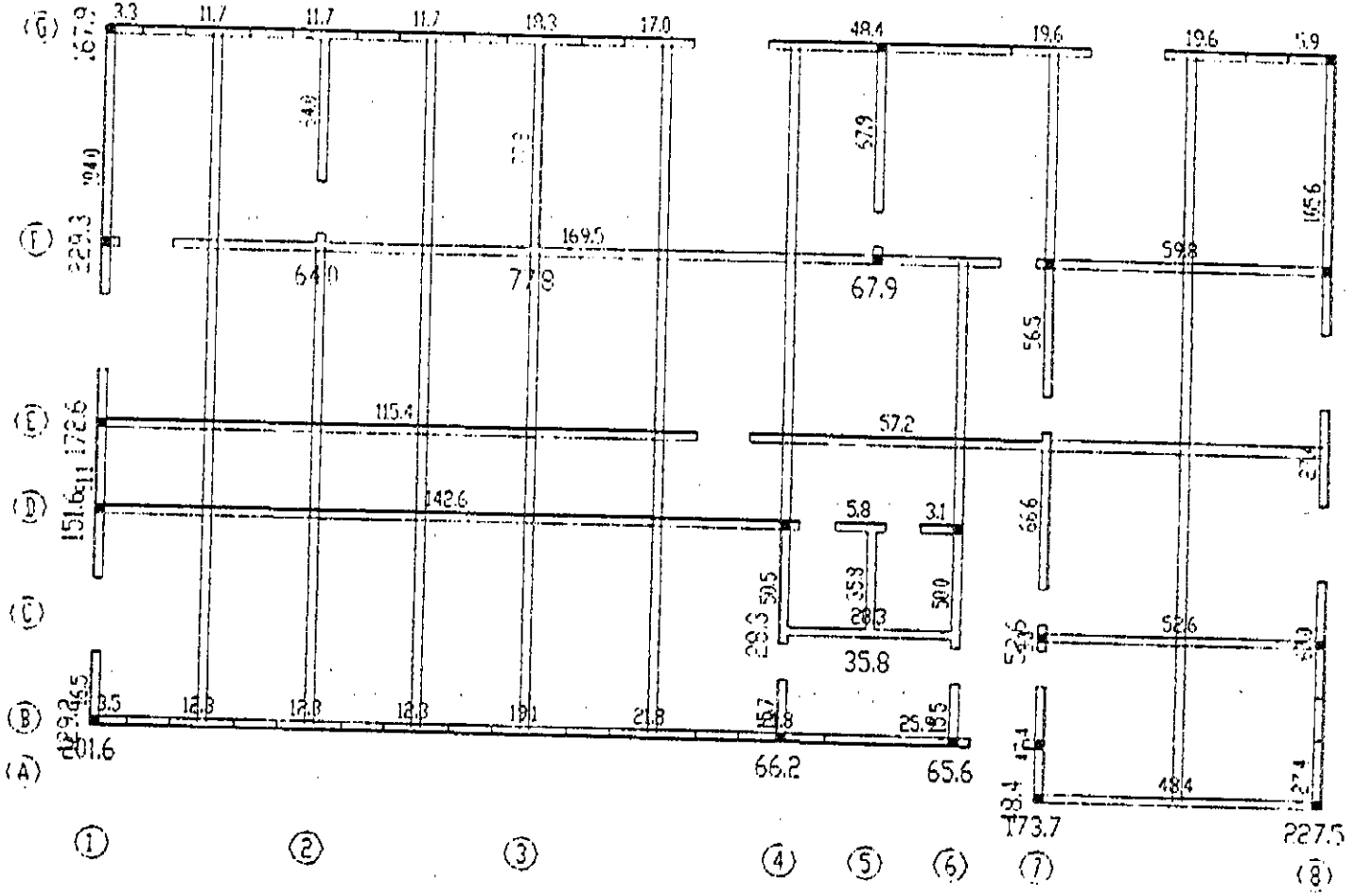
1st FLOOR CAST-IN-SITU BOARD
CALCULATION REINFORCEMENT

(UNIT:mm /m;STEEL GRADE: I,II; CONCRETE:C25)

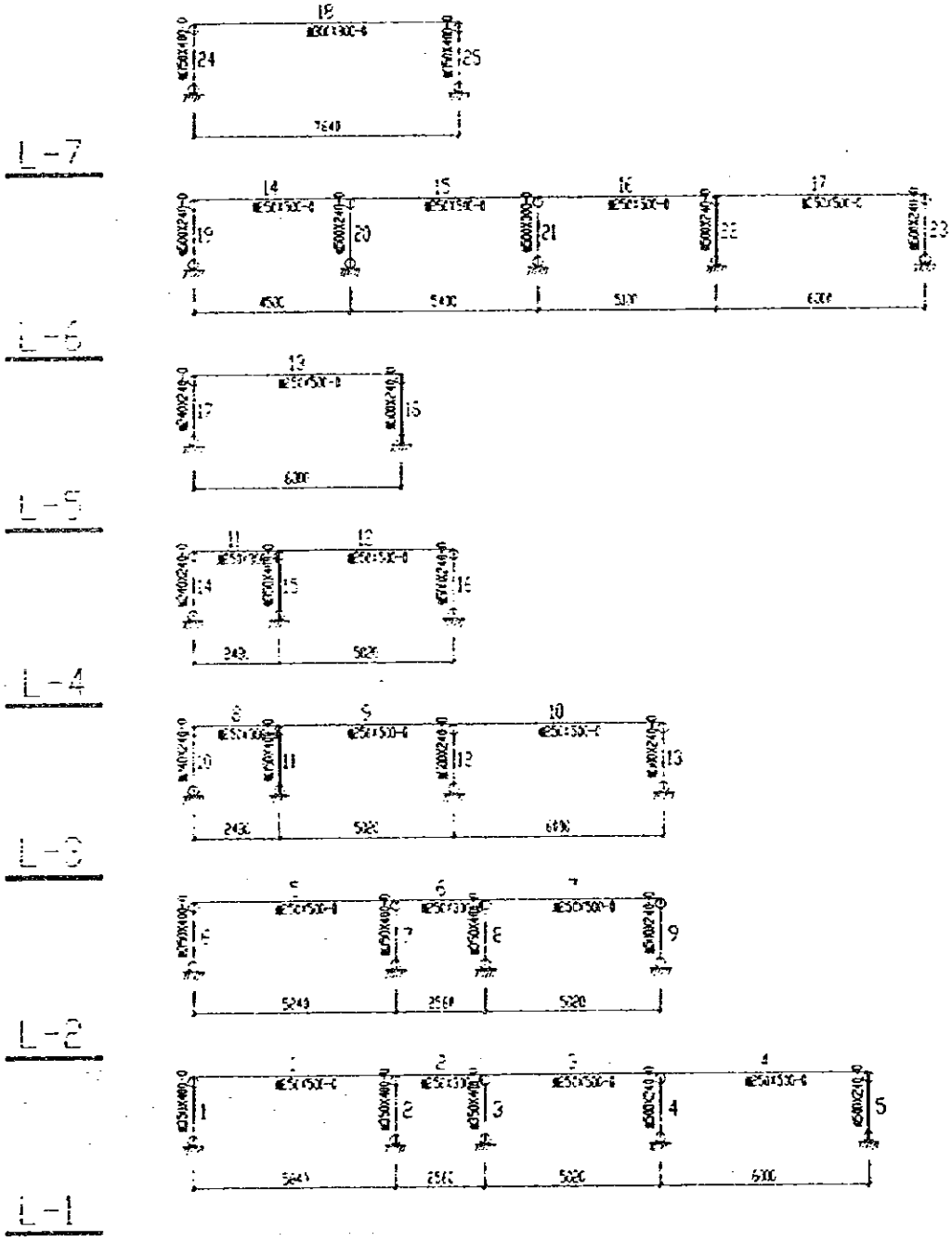


WALL AXIAL FORCE DESIGN VALUE DRAWING (KN/M)

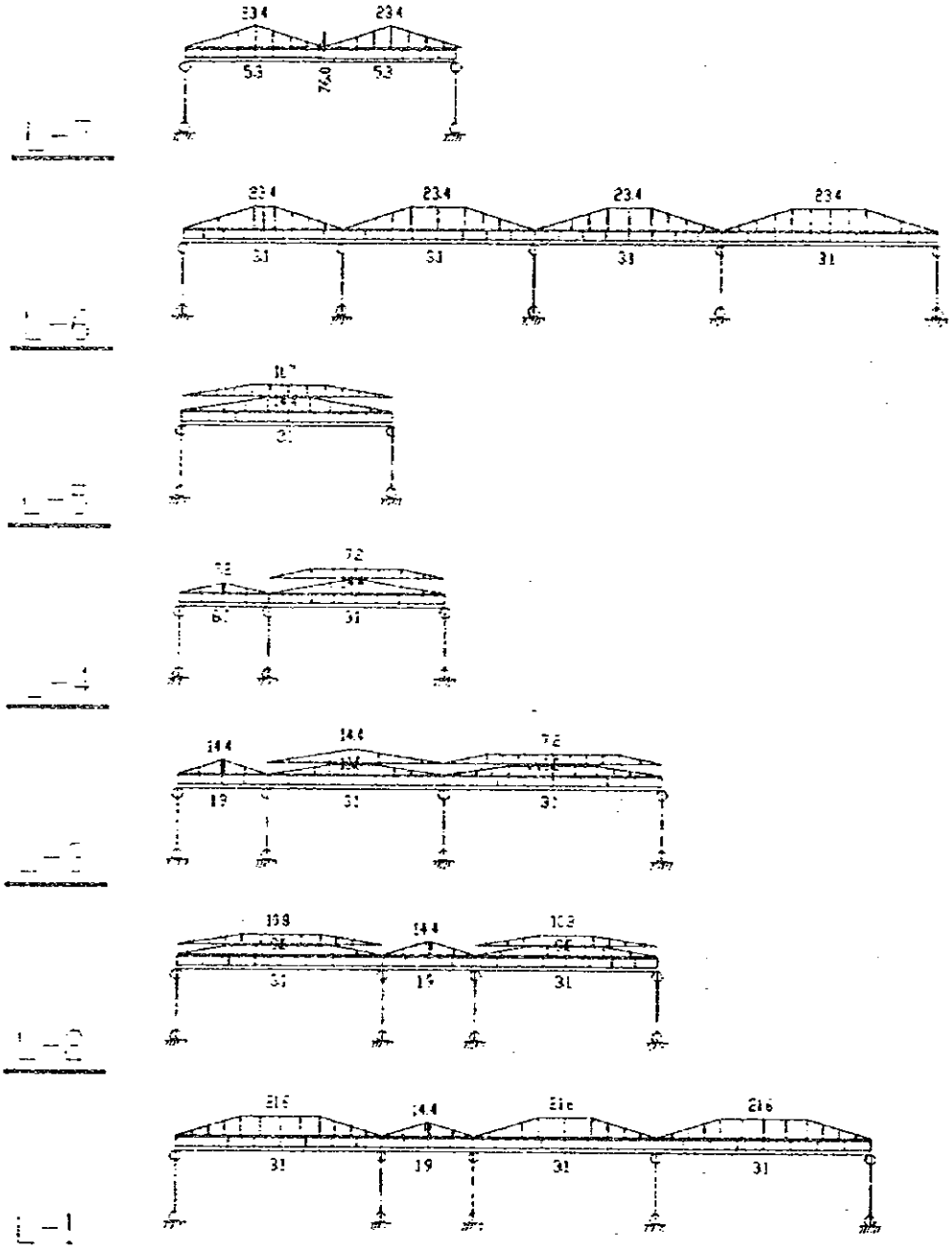
1 层墙轴力设计值图 (KN/M)



EARTHUAKE SHEAR FORCE DESIGN VALUE DRAWING (KN)

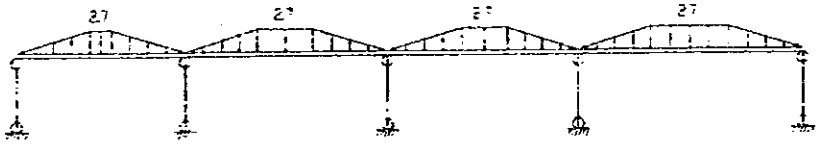


FRAME ELEVATION DRAWING

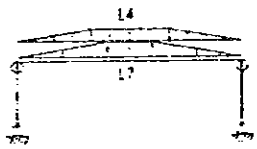


CONSTANT LOAD DRAWING

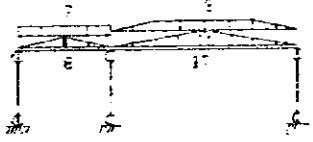
L-7



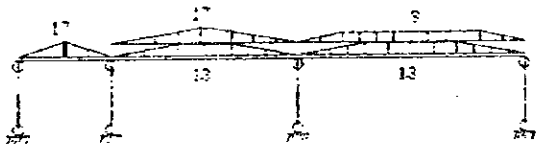
L-6



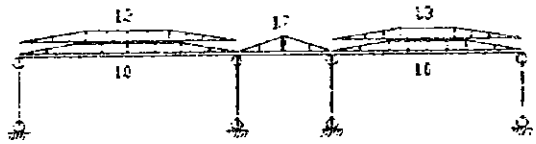
L-5



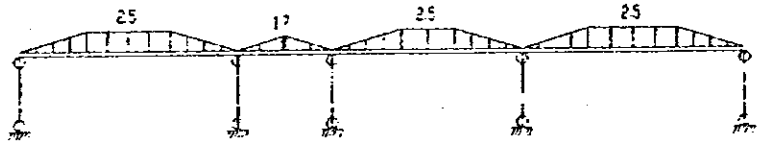
L-4



L-3

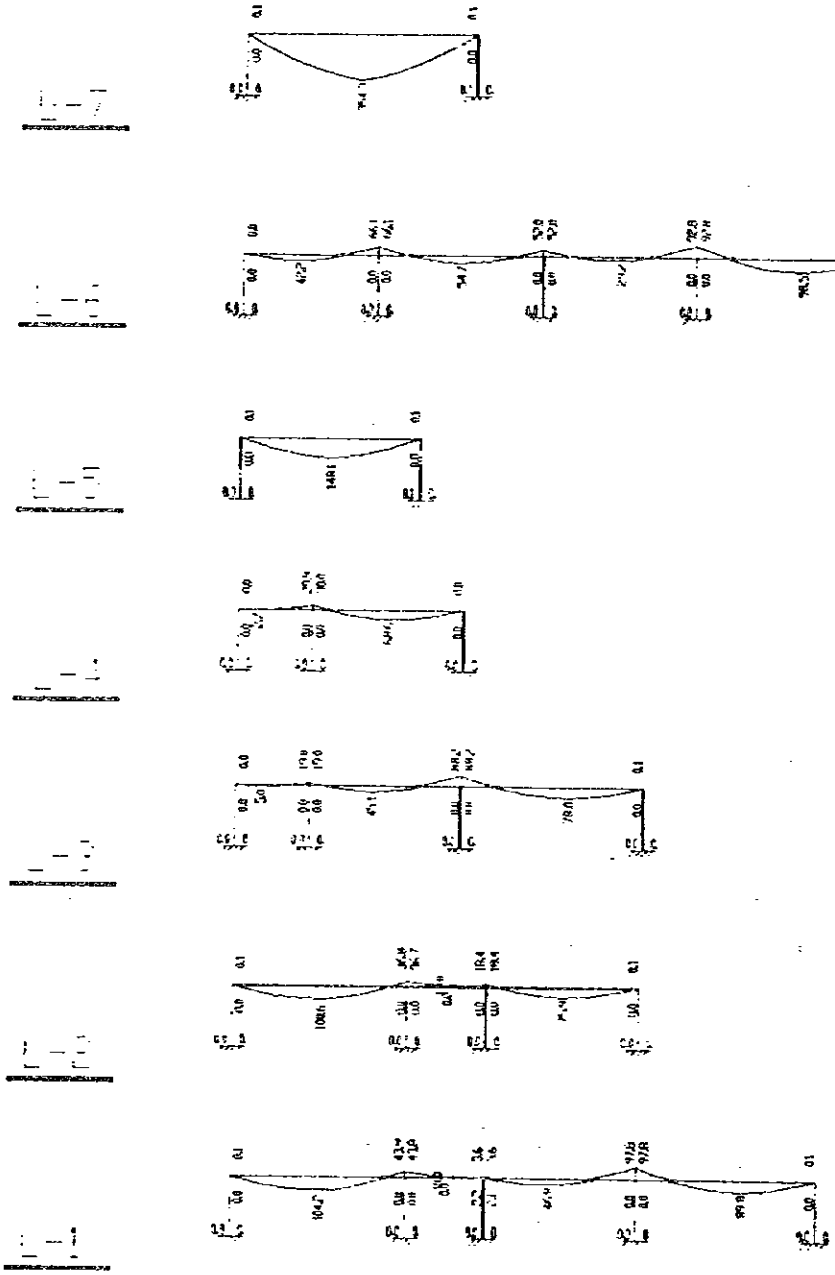


L-2



L-1

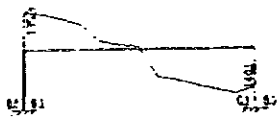
LIVING LOAD DRAWING



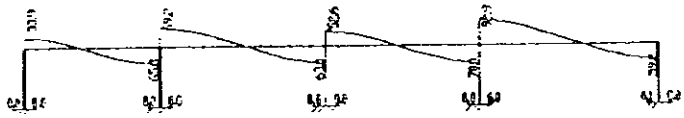
BENDING MOMENT OUTLINE

(KN-M)

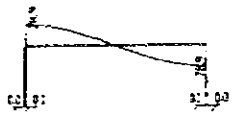
L-7



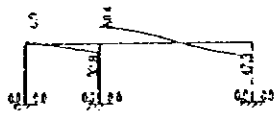
L-6



L-5

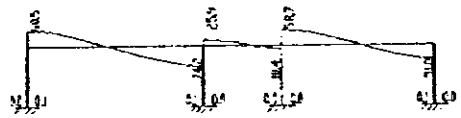


L-4

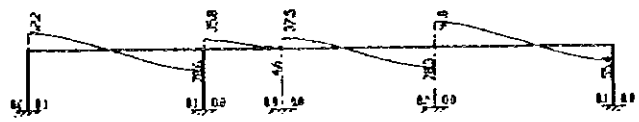


L-3

L-2



L-1



SHEAR FORCE OUTLINE