LAMPIRAN A
HASIL ANALISIS PROGRAM KOMPUTER

a. Kolom Persegi

1. Hasil *Output* K1 Kolom Persegi 4 Bentang

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ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY1               L=3000,000
Element      :  C12                  B=600,000        D=600,000        dc=40,000
Section ID   :  KOLOM1               E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID     :  COMB2                fy=0,420         fys=0,420
Station Loc  :  0,000                RLLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
              Capacity      Design      Design       Design     Minimum     Minimum
                 Ratio          Pu          M2           M3          M2          M3
                 0,746    4729,039  157168,024  -22419,624  157168,024  157168,024

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                            Cm     Delta_ns     Delta_s          K           L
                        Factor       Factor      Factor     Factor      Length
  Major Bending(M3)      0,400        1,000       1,000      1,000    3200,000
  Minor Bending(M2)      0,400        1,000       1,000      1,000    3200,000

  10          Eta0
                         Rebar        Shear       Shear      Shear       Shear
                          Av/s           Vu     phi*Vc     phi*Vs          Vp
  Major Shear(V2)        0,000       18,300     483,390      0,000       0,000
  Minor Shear(V3)        0,000       17,835     483,390      0,000      48,769
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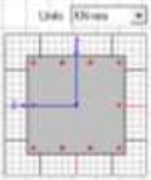

2. Hasil *Output* K2 Kolom Persegi 4 Bentang

Concrete Design Information ACI 318-05/IBC 2003

File

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ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY6               L=3000,000
Element      :  C12                  B=500,000        D=500,000        dc=40,000
Section ID   :  KOLOM2               E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID     :  COMB4                fy=0,420         fys=0,420
Station Loc  :  0,000                RLLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
              Capacity      Design      Design       Design     Minimum     Minimum
                 Ratio          Pu          M2           M3          M2          M3
                 0,455    1705,271   53986,601  -110316,827   53986,601   53986,601

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                            Cm     Delta_ns     Delta_s          K           L
                        Factor       Factor      Factor     Factor      Length
  Major Bending(M3)      0,400        1,000       1,000      1,000    3200,000
  Minor Bending(M2)      0,400        1,000       1,000      1,000    3200,000

  10          Eta0
                         Rebar        Shear       Shear      Shear       Shear
                          Av/s           Vu     phi*Vc     phi*Vs          Vp
  Major Shear(V2)        0,000       71,260     257,244      0,000      37,509
  Minor Shear(V3)        0,000        0,000     257,244      0,000      36,718
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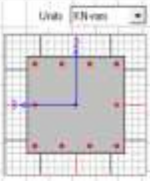

3. Hasil *Output* K3 Kolom Persegi 4 Bentang

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Concrete Design Information  ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level         :  STORY8              L=3600,000
Element       :  C12                 B=400,000        D=400,000        dc=40,000
Section ID    :  KOLOM3              E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID      :  COMB4               fy=0,420         fys=0,420
Station Loc   :  0,000               RLLF=0,526

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
           Capacity     Design      Design      Design     Minimum     Minimum
              Ratio         Pu          M2          M3          M2          M3
              0,412    765,078   20840,711  -75072,986   20840,711   20840,711

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                            Cm    Delta_ns     Delta_s           K           L
                        Factor      Factor      Factor      Factor      Length
   Major Bending(M3)     0,400       1,000       1,000       1,000    3200,000
   Minor Bending(M2)     0,400       1,000       1,000       1,000    3200,000

   10          Eta0
                         Rebar       Shear       Shear       Shear       Shear
                          Av/s          Vu      phi*Vc      phi*Vs          Vp
   Major Shear(V2)       0,000      46,178     142,982       0,000      28,987
   Minor Shear(V3)       0,000       7,957     142,982       0,000      29,864
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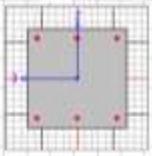

4. Hasil *Output* K1 Kolom Persegi 6 Bentang

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Concrete Design Information  ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level         :  STORY1              L=3600,000
Element       :  C16                 B=600,000        D=600,000        dc=40,000
Section ID    :  KOLOM1              E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID      :  COMB2               fy=0,420         fys=0,420
Station Loc   :  1600,000            RLLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
           Capacity     Design      Design      Design     Minimum     Minimum
              Ratio         Pu          M2          M3          M2          M3
              0,751   4711,217   -4578,716  156604,161  156604,161  156604,161

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                            Cm    Delta_ns     Delta_s           K           L
                        Factor      Factor      Factor      Factor      Length
   Major Bending(M3)     0,400       1,000       1,000       1,000    3200,000
   Minor Bending(M2)     0,400       1,000       1,000       1,000    3200,000

   10          Eta0
                         Rebar       Shear       Shear       Shear       Shear
                          Av/s          Vu      phi*Vc      phi*Vs          Vp
   Major Shear(V2)       0,000      10,293     402,556       0,000      40,724
   Minor Shear(V3)       0,000      12,005     402,556       0,000      38,704
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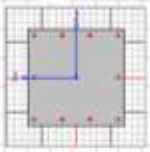

5. Hasil *Output* K2 Kolom Persegi 6 Bentang

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Concrete Design Information  ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level         :  STORY6              L=3600,000
Element       :  C16                 B=500,000        D=500,000        dc=40,000
Section ID    :  KOLOM2              E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID      :  COMB4               fy=0,420         fys=0,420
Station Loc   :  0,000               RLLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
           Capacity     Design      Design      Design     Minimum     Minimum
              Ratio         Pu          M2          M3          M2          M3
              0,454   1785,306   53987,638 -116951,100   53987,638   53987,638

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                            Cm    Delta_ns     Delta_s           K           L
                        Factor      Factor      Factor      Factor      Length
   Major Bending(M3)     0,400       1,000       1,000       1,000    3200,000
   Minor Bending(M2)     0,400       1,000       1,000       1,000    3200,000

   10          Eta0
                         Rebar       Shear       Shear       Shear       Shear
                          Av/s          Vu      phi*Vc      phi*Vs          Vp
   Major Shear(V2)       0,000      78,421     257,246       0,000      37,291
   Minor Shear(V3)       0,000       8,574     257,246       0,000      37,835
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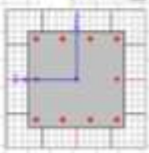

6. Hasil *Output* K3 Kolom Persegi 6 Bentang

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Concrete Design Information  ACI 318-05/IBC 2003
File                                                              Units: KN-mm

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY9               L=3000,000
Element      :  C16                  B=400,000        D=400,000        dc=40,000
Section ID   :  KOLOM3               E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID     :  COMB14               fy=0,420         fys=0,420
Station Loc  :  0,000                RLLF=0,817

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
            Capacity      Design       Design       Design      Minimum      Minimum
               Ratio          Pu           M2           M3           M2           M3
               0,269     250,502    27732,463   -40900,861     7041,603     7041,603

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                              Cm     Delta_ns      Delta_s            K            L
                          Factor       Factor       Factor       Factor       Length
   Major Bending(M3)       1,000        1,029        1,000        1,000     3200,000
   Minor Bending(M2)       1,000        1,029        1,000        1,000     3200,000

   10          Eta0
                           Rebar        Shear        Shear        Shear        Shear
                            Av/s           Vu       phi*Vc       phi*Vs           Vp
   Major Shear(U2)         0,000       20,706      110,540        0,000       20,706
   Minor Shear(U3)         0,000       20,007      110,540        0,000       20,007
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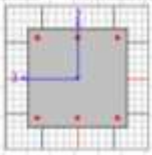

7. Hasil *Output* K1 Kolom Persegi 8 Bentang

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Concrete Design Information  ACI 318-05/IBC 2003
File                                                              Units: KN-mm

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY1               L=3800,000
Element      :  C24                  B=600,000        D=600,000        dc=40,000
Section ID   :  KOLOM1               E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID     :  COMB2                fy=0,420         fys=0,420
Station Loc  :  1600,000             RLLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
            Capacity      Design       Design       Design      Minimum      Minimum
               Ratio          Pu           M2           M3           M2           M3
               0,758    4060,225    -6142,015   161553,867   161553,867   161553,867

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                              Cm     Delta_ns      Delta_s            K            L
                          Factor       Factor       Factor       Factor       Length
   Major Bending(M3)       0,400        1,000        1,000        1,000     3200,000
   Minor Bending(M2)       0,400        1,000        1,000        1,000     3200,000

   10          Eta0
                           Rebar        Shear        Shear        Shear        Shear
                            Av/s           Vu       phi*Vc       phi*Vs           Vp
   Major Shear(U2)         0,000       19,321      409,983        0,000       41,069
   Minor Shear(U3)         0,000       16,137      409,983        0,000       42,012
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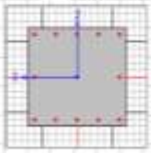

8. Hasil *Output* K2 Kolom Persegi 8 Bentang

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Concrete Design Information  ACI 318-05/IBC 2003
File                                                              Units: KN-mm

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY6               L=3800,000
Element      :  C24                  B=500,000        D=500,000        dc=40,000
Section ID   :  KOLOM2               E=27,806         fc=0,035         Lt.Wt. Fac.=1,000
Combo ID     :  COMB4                fy=0,420         fys=0,420
Station Loc  :  0,000                RLLF=0,600

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
            Capacity      Design       Design       Design      Minimum      Minimum
               Ratio          Pu           M2           M3           M2           M3
               0,466    1836,765    55543,774  -119329,618    55543,774    55543,774

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                              Cm     Delta_ns      Delta_s            K            L
                          Factor       Factor       Factor       Factor       Length
   Major Bending(M3)       0,400        1,000        1,000        1,000     3200,000
   Minor Bending(M2)       0,400        1,000        1,000        1,000     3200,000

   10          Eta0
                           Rebar        Shear        Shear        Shear        Shear
                            Av/s           Vu       phi*Vc       phi*Vs           Vp
   Major Shear(U2)         0,000       71,839      259,776        0,000       37,007
   Minor Shear(U3)         0,000       15,204      259,776        0,000       40,153
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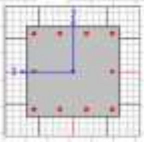

9. **Hasil *Output* K3 Kolom Persegi 8 Bentang**

Concrete Design Information ACI 318-05/IBC 2003

File

Units: KN-mm

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN Type: Sway Intermediate Units: KN-mm (Summary)

Level	: STORY8	L=3000,000			
Element	: C24	B=400,000	D=400,000	dc=40,000	
Section ID	: KOLOM3	E=27,806	Fc=0,035	Lt.Wt. Fac.=1,000	
Combo ID	: COMB5	Fy=0,420	Fys=0,420		
Station Loc	: 0,000	RLLF=0,536			

Phi(Compression-Spiral):	0,700
Phi(Compression-Tied):	0,650
Phi(Tension Controlled):	0,900
Phi(Shear):	0,750
Phi(Seismic Shear):	0,600
Phi(Joint Shear):	0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3

Capacity Ratio	Design Pu	Design M2	Design M3	Minimum M2	Minimum M3
0,437	777,862	66209,054	-38406,767	21188,958	21188,958

AXIAL FORCE & BIAXIAL MOMENT FACTORS

	Cm Factor	Delta_ns Factor	Delta_s Factor	B Factor	L Length
Major Bending(M3)	0,400	1,000	1,000	1,000	3200,000
Minor Bending(M2)	0,400	1,000	1,000	1,000	3200,000

I0	Eta0				
		Rebar Av/s	Shear Vu	Shear phi*Vc	Shear phi*Vs	Shear Vp
Major Shear(V2)		0,000	21,611	143,517	0,000	28,620
Minor Shear(V3)		0,000	30,193	143,517	0,000	32,417

b. **Persegi Panjang**

1. **Hasil *Output* K1 Kolom Persegi Panjang 4 Bentang**

Concrete Design Information ACI 318-05/IBC 2003

File

Units: KN-mm

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN Type: Sway Intermediate Units: KN-mm (Summary)

Level	: STORY1	L=3000,000			
Element	: C12	B=900,000	D=400,000	dc=40,000	
Section ID	: KOLOM1	E=27,806	Fc=0,035	Lt.Wt. Fac.=1,000	
Combo ID	: COMB2	Fy=0,420	Fys=0,420		
Station Loc	: 0,000	RLLF=0,400			

Phi(Compression-Spiral):	0,700
Phi(Compression-Tied):	0,650
Phi(Tension Controlled):	0,900
Phi(Shear):	0,750
Phi(Seismic Shear):	0,600
Phi(Joint Shear):	0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3

Capacity Ratio	Design Pu	Design M2	Design M3	Minimum M2	Minimum M3
0,730	4738,767	15331,849	-129086,019	200165,528	129086,019

AXIAL FORCE & BIAXIAL MOMENT FACTORS

	Cm Factor	Delta_ns Factor	Delta_s Factor	B Factor	L Length
Major Bending(M3)	0,400	1,000	1,000	1,000	3200,000
Minor Bending(M2)	0,400	1,000	1,000	1,000	3200,000

I0	Eta0				
		Rebar Av/s	Shear Vu	Shear phi*Vc	Shear phi*Vs	Shear Vp
Major Shear(V2)		0,000	15,210	466,642	0,000	0,000
Minor Shear(V3)		0,000	12,941	495,447	0,000	43,000

2. **Hasil *Output* K2 Kolom Persegi Panjang 4 Bentang**

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Concrete Design Information ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY4              L=3000,000
Element      :  C12                 B=650,000        D=400,000        dc=40,000
Section ID   :  KOLOM2              E=27,806         fc=0,025         Lt.Wt. Fac.=1,000
Combo ID     :  COMB2               fy=0,420         fys=0,420
Station Loc  :  0,000               ALLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
          Capacity      Design      Design      Design     Minimum     Minimum
             Ratio          Pu          M2          M3          M2          M3
             0,646    3808,533   23295,231   -82551,717  105288,714   82551,717

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                          Cm    Delta_ns     Delta_s           K           L
                      Factor      Factor      Factor      Factor      Length
   Major Bending(M3)   0,400       1,000       1,000       1,000    3200,000
   Minor Bending(M2)   0,400       1,000       1,000       1,000    3200,000

   IB        Eta0
                       Rebar       Shear       Shear       Shear       Shear
                        Av/s          Vu     phi*Vc     phi*Vs          Vp
   Major Shear(V2)     0,000      25,211     318,171       0,000       0,000
   Minor Shear(V3)     0,000      16,815     331,768       0,000      42,948
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3. **Hasil *Output* K3 Kolom Persegi Panjang 4 Bentang**

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Concrete Design Information ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY7              L=3000,000
Element      :  C12                 B=450,000        D=350,000        dc=40,000
Section ID   :  KOLOM3              E=27,806         fc=0,025         Lt.Wt. Fac.=1,000
Combo ID     :  COMB12              fy=0,420         fys=0,420
Station Loc  :  0,000               ALLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
          Capacity      Design      Design      Design     Minimum     Minimum
             Ratio          Pu          M2          M3          M2          M3
             0,586    1272,974   41200,976   -25953,408   36412,387   32798,557

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                          Cm    Delta_ns     Delta_s           K           L
                      Factor      Factor      Factor      Factor      Length
   Major Bending(M3)   1,000       1,376       1,000       1,000    3200,000
   Minor Bending(M2)   1,000       1,176       1,000       1,000    3200,000

   IB        Eta0
                       Rebar       Shear       Shear       Shear       Shear
                        Av/s          Vu     phi*Vc     phi*Vs          Vp
   Major Shear(V2)     0,000      36,054     163,005       0,000      33,425
   Minor Shear(V3)     0,000      23,690     167,797       0,000      33,392
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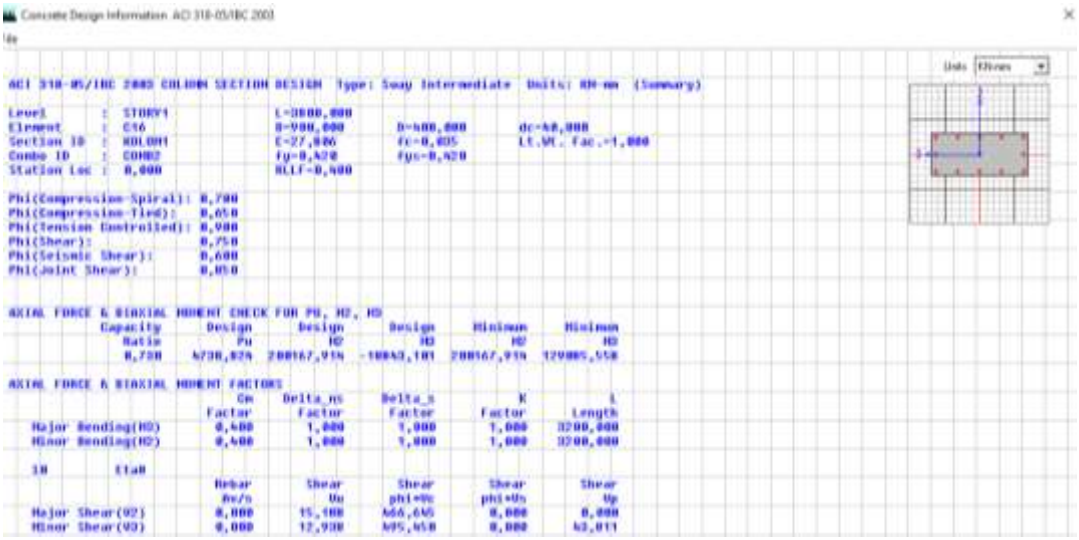
4. **Hasil *Output* K1 Kolom Persegi Panjang 6 Bentang**



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Concrete Design Information ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY1              L=3000,000
Element      :  C16                 B=900,000        D=400,000        dc=40,000
Section ID   :  KOLOM1              E=27,806         fc=0,025         Lt.Wt. Fac.=1,000
Combo ID     :  COMB2               fy=0,420         fys=0,420
Station Loc  :  0,000               ALLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
          Capacity      Design      Design      Design     Minimum     Minimum
             Ratio          Pu          M2          M3          M2          M3
             0,738    4738,829  200167,954   -100432,181  200167,954  129885,558

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                          Cm    Delta_ns     Delta_s           K           L
                      Factor      Factor      Factor      Factor      Length
   Major Bending(M3)   0,400       1,000       1,000       1,000    3200,000
   Minor Bending(M2)   0,400       1,000       1,000       1,000    3200,000

   IB        Eta0
                       Rebar       Shear       Shear       Shear       Shear
                        Av/s          Vu     phi*Vc     phi*Vs          Vp
   Major Shear(V2)     0,000      15,188     466,645       0,000       0,000
   Minor Shear(V3)     0,000      12,938     495,658       0,000      43,011
```

5. Hasil *Output* K2 Kolom Persegi Panjang 6 Bentang

```
Concrete Design Information ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY5             L=3600,000
Element      :  C16                B=650,000       D=400,000       dc=60,000
Section ID   :  KOLOM2             E=27,806        fc=0,035        Lt.Wt. Fac.=1,000
Combo ID     :  COMB12             fy=0,420        fys=0,420
Station Loc  :  0,000              RLLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
              Capacity     Design      Design       Design     Minimum     Minimum
                 Ratio         Pu          M2           M3          M2          M3
                 0,557   2302,296   84856,439 -111744,330   79981,761   62714,541

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                             Cm    Delta_ns     Delta_s           K           L
                         Factor      Factor      Factor      Factor      Length
   Major Bending(M3)      1,000       1,103       1,000       1,000    3200,000
   Minor Bending(M2)      1,000       1,062       1,000       1,000    3200,000

   10         Eta0
                          Rebar       Shear       Shear       Shear       Shear
                           Av/s          Vu      phi*Vc      phi*Vs          Vp
   Major Shear(V2)        0,000      54,593     283,149       0,000      48,760
   Minor Shear(V3)        0,000      37,061     295,361       0,000      38,640
```

6. Hasil *Output* K3 Kolom Persegi Panjang 6 Bentang

```
Concrete Design Information ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY8             L=3600,000
Element      :  C16                B=450,000       D=350,000       dc=40,000
Section ID   :  KOLOM3             E=27,806        fc=0,035        Lt.Wt. Fac.=1,000
Combo ID     :  COMB12             fy=0,420        fys=0,420
Station Loc  :  0,000              RLLF=0,526

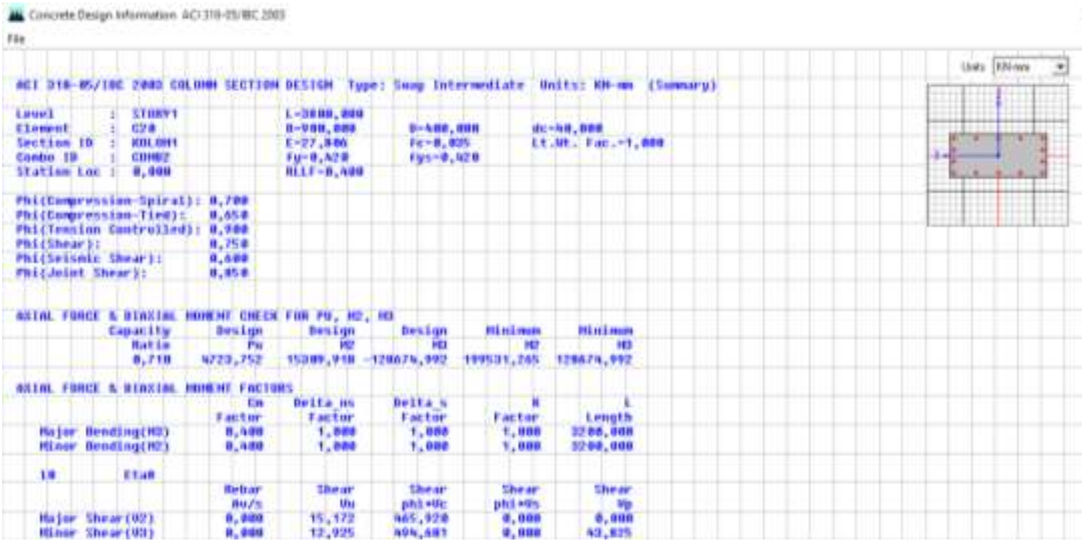
Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
              Capacity     Design      Design       Design     Minimum     Minimum
                 Ratio         Pu          M2           M3          M2          M3
                 0,453    765,816   32960,496  -67706,559   22000,562   19712,113

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                             Cm    Delta_ns     Delta_s           K           L
                         Factor      Factor      Factor      Factor      Length
   Major Bending(M3)      1,000       1,125       1,000       1,000    3200,000
   Minor Bending(M2)      1,000       1,072       1,000       1,000    3200,000

   10         Eta0
                          Rebar       Shear       Shear       Shear       Shear
                           Av/s          Vu      phi*Vc      phi*Vs          Vp
   Major Shear(V2)        0,000      35,007     139,037       0,000      28,843
   Minor Shear(V3)        0,000      22,750     143,051       0,000      29,642
```

7. Hasil *Output* K1 Kolom Persegi Panjang 8 Bentang



```
Concrete Design Information ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY1             L=3800,000
Element      :  C20                B=900,000       D=400,000       dc=60,000
Section ID   :  KOLOM1             E=27,806        fc=0,035        Lt.Wt. Fac.=1,000
Combo ID     :  COMB2              fy=0,420        fys=0,420
Station Loc  :  0,000              RLLF=0,400

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
              Capacity     Design      Design       Design     Minimum     Minimum
                 Ratio         Pu          M2           M3          M2          M3
                 0,718   4723,752   15309,918 -120674,992  199531,265  120674,992

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                             Cm    Delta_ns     Delta_s           K           L
                         Factor      Factor      Factor      Factor      Length
   Major Bending(M3)      0,400       1,000       1,000       1,000    3200,000
   Minor Bending(M2)      0,400       1,000       1,000       1,000    3200,000

   10         Eta0
                          Rebar       Shear       Shear       Shear       Shear
                           Av/s          Vu      phi*Vc      phi*Vs          Vp
   Major Shear(V2)        0,000      15,172     465,920       0,000       0,000
   Minor Shear(V3)        0,000      12,925     494,601       0,000      43,825
```

8. Hasil *Output* K2 Kolom Persegi Panjang 8 Bentang

```
Concrete Design Information  ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY6                L=3000,000
Element      :  C20                   B=650,000        D=400,000        dc=40,000
Section ID   :  KOLOM2                E=27,806         Fc=0,035         Lt.Wt. Fac.=1,000
Combo ID     :  COMB4                 fy=0,420         fys=0,420
Station Loc  :  0,000                 RLLF=0,400

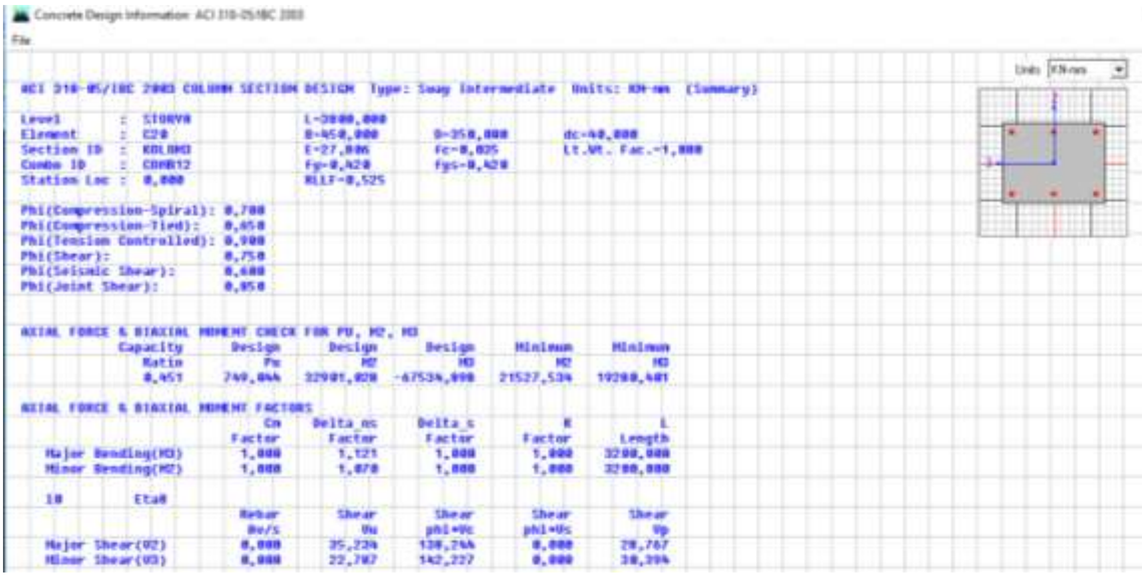
Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
             Capacity     Design      Design       Design     Minimum     Minimum
                Ratio         Pu          M2           M3          M2          M3
                0,468   1770,462   61505,845  -109872,289   61505,845   48227,381

AXIAL FORCE & BIAXIAL MOMENT FACTORS
                              Cm    Delta_ns     Delta_s           K           L
                          Factor      Factor      Factor      Factor      Length
  Major Bending(M3)        0,400       1,000       1,000       1,000    3200,000
  Minor Bending(M2)        0,400       1,000       1,000       1,000    3200,000

  10          Eta0
                           Rebar       Shear       Shear       Shear       Shear
                            Av/s          Vu      phi*Vc      phi*Vs          Vp
  Major Shear(V2)          0,000      64,735     257,571       0,000      37,460
  Minor Shear(V3)          0,000      10,822     260,579       0,000      37,429
```

9. Hasil *Output* K3 Kolom Persegi Panjang 8 Bentang



```
Concrete Design Information  ACI 318-05/IBC 2003
File

ACI 318-05/IBC 2003 COLUMN SECTION DESIGN  Type: Sway Intermediate  Units: KN-mm  (Summary)

Level        :  STORY8                L=3000,000
Element      :  C20                   B=450,000        D=350,000        dc=40,000
Section ID   :  KOLOM3                E=27,806         Fc=0,025         Lt.Wt. Fac.=1,000
Combo ID     :  COMB12                fy=0,420         fys=0,420
Station Loc  :  0,000                 RLLF=0,525

Phi(Compression-Spiral): 0,700
Phi(Compression-Tied):   0,650
Phi(Tension Controlled): 0,900
Phi(Shear):              0,750
Phi(Seismic Shear):      0,600
Phi(Joint Shear):        0,850

AXIAL FORCE & BIAXIAL MOMENT CHECK FOR PU, M2, M3
             Capacity     Design      Design       Design     Minimum     Minimum
                Ratio         Pu          M2           M3          M2          M3
                0,451    740,044   32901,028   -67534,098   21527,534   19200,401

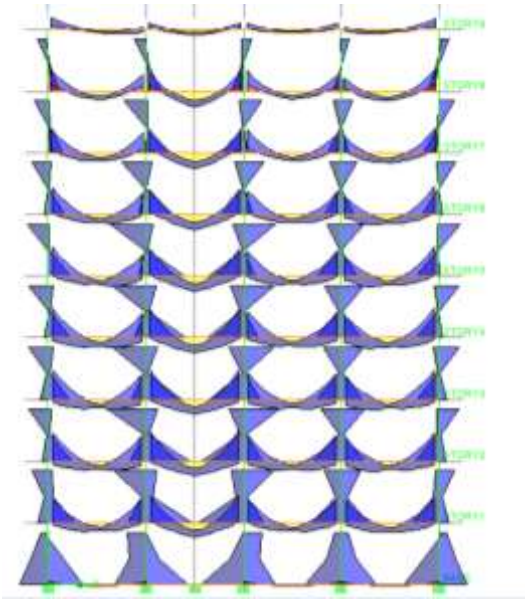
AXIAL FORCE & BIAXIAL MOMENT FACTORS
                              Cm    Delta_ns     Delta_s           K           L
                          Factor      Factor      Factor      Factor      Length
  Major Bending(M3)        1,000       1,121       1,000       1,000    3200,000
  Minor Bending(M2)        1,000       1,070       1,000       1,000    3200,000

  10          Eta0
                           Rebar       Shear       Shear       Shear       Shear
                            Av/s          Vu      phi*Vc      phi*Vs          Vp
  Major Shear(V2)          0,000      35,224     130,244       0,000      28,767
  Minor Shear(V3)          0,000      22,707     142,227       0,000      30,394
```

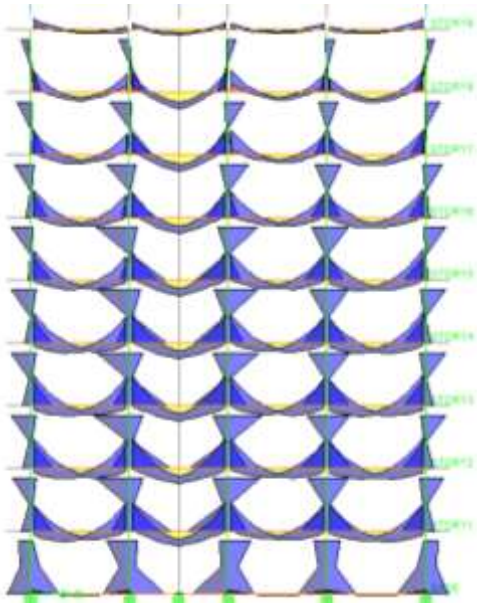
LAMPIRAN B
GAYA – GAYA DALAM

a. MOMEN

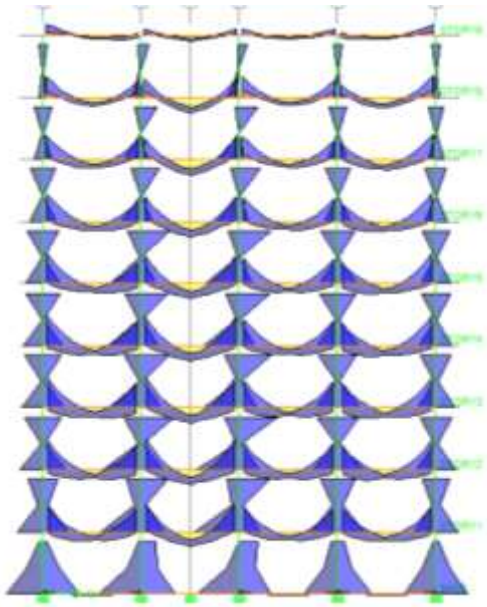
1. Pada Bangunan 4 Bentang



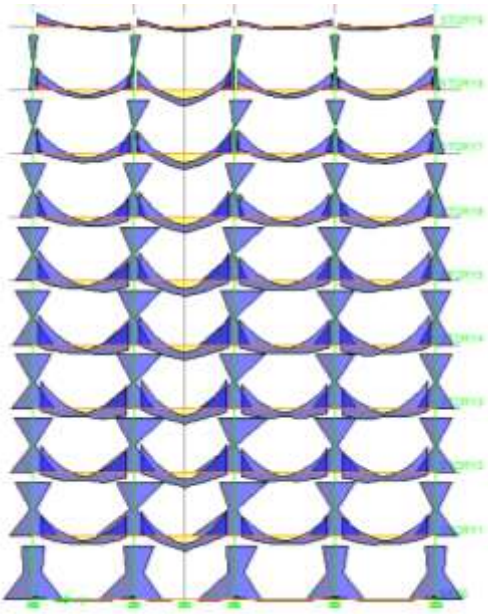
Momen Sumbu x bangunan
Kolom Persegi



Momen Sumbu x Bangunan
Kolom Persegi panjang

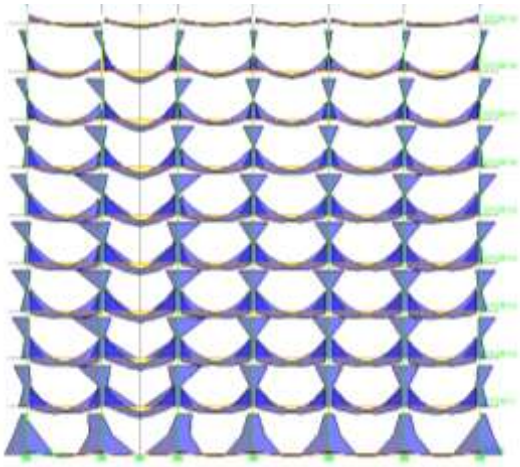


Momen Sumbu y Bangunan
Kolom Persegi

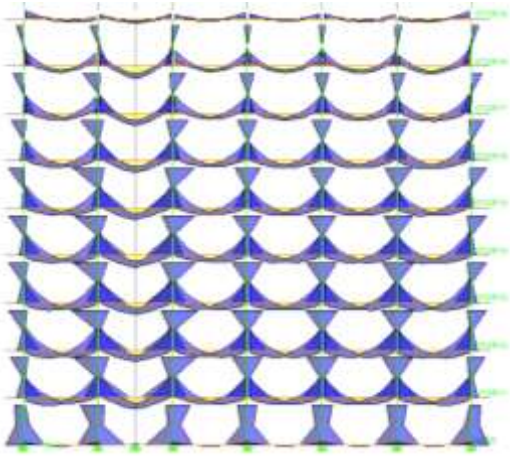


Momen Sumbu y Bangunan
Kolom Persegi panjang

2. Pada Bangunan 6 Bentang



Momen Sumbu x Bangunan Kolom Persegi



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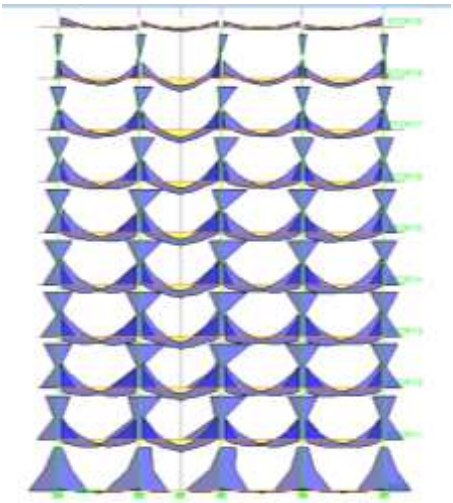
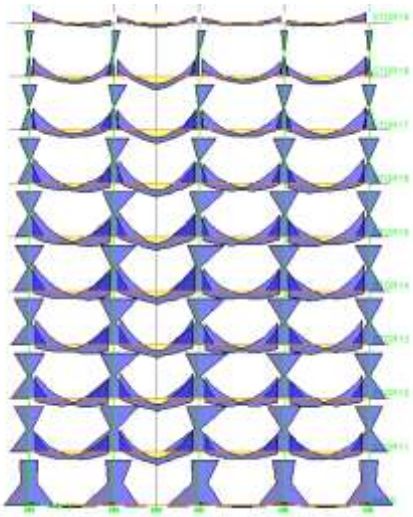
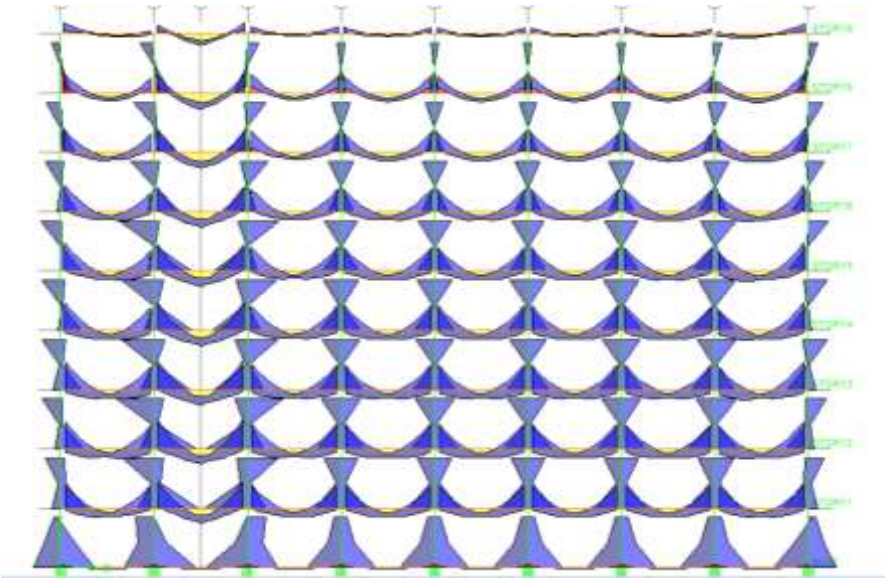


Momen Sumbu y Bangunan Kolom Persegi

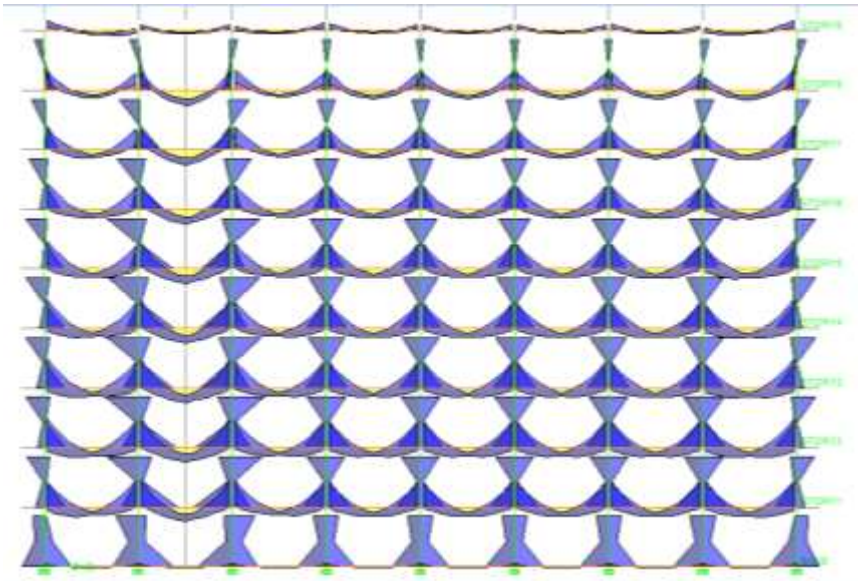


Momen Sumbu y Bangunan Kolom Persegi panjang

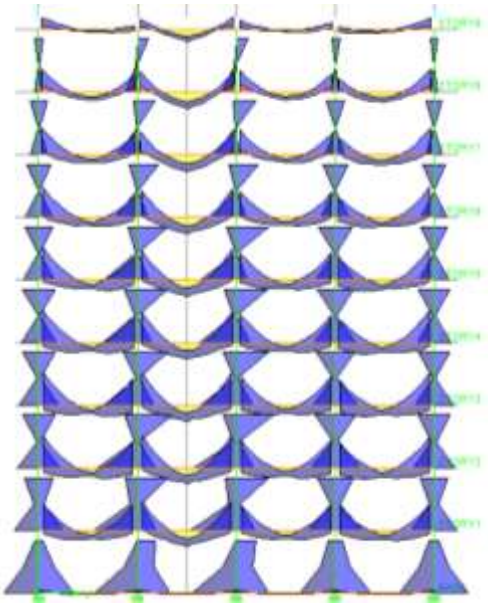
3. Pada Bangunan 8 Bentang



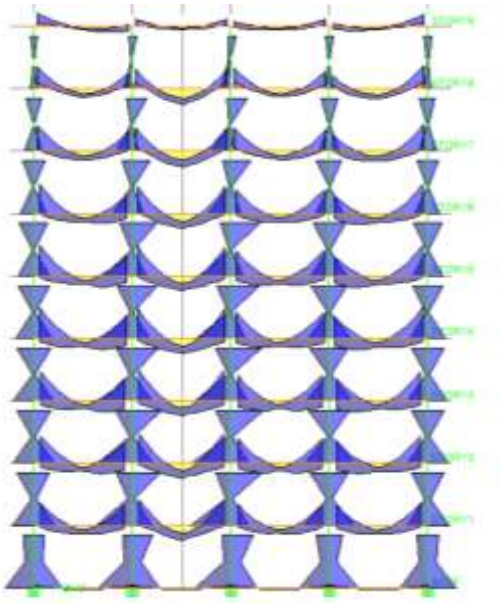
Momen Sumbu x Bangunan Kolom Persegi



Momen Sumbu x Bangunan Kolom Persegi panjang



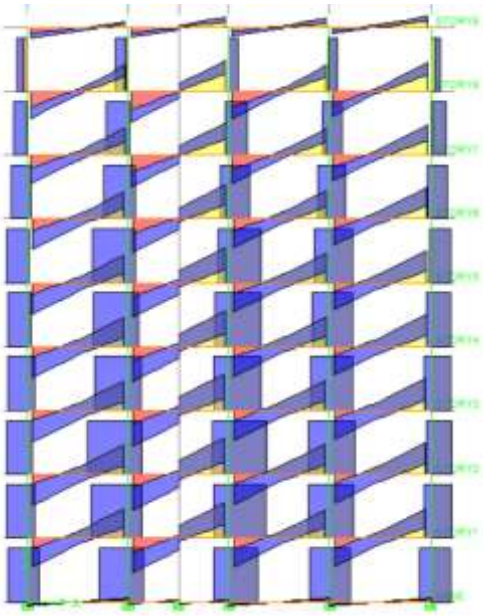
Momen Sumbu y Bangunan Kolom Persegi



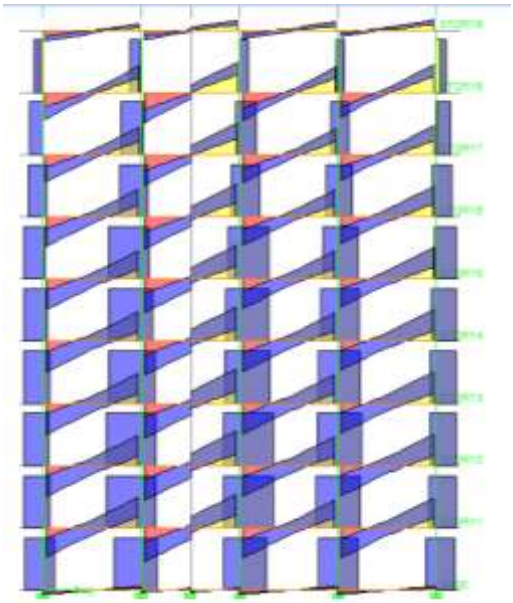
Momen Sumbu y Bangunan Kolom Persegi Panjang

b. GAYA GESER

1. Pada Bangunan 4 Bentang

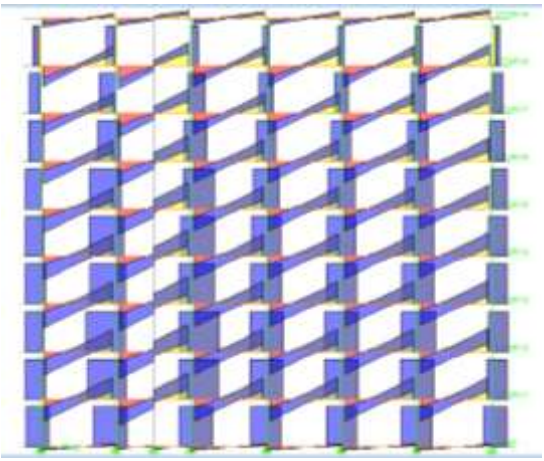


Gaya Geser Bangunan Kolom Persegi

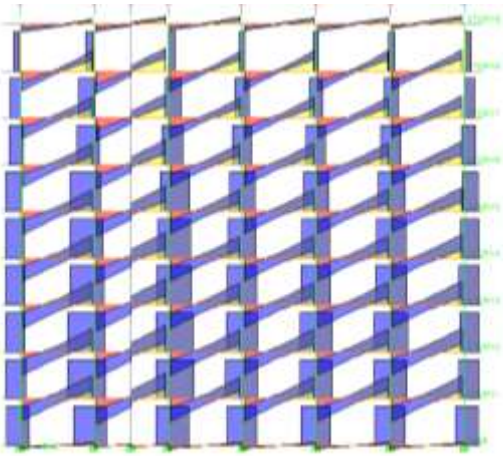


Gaya Geser Bangunan Kolom Persegi Panjang

2. Pada Bangunan 6 Bentang

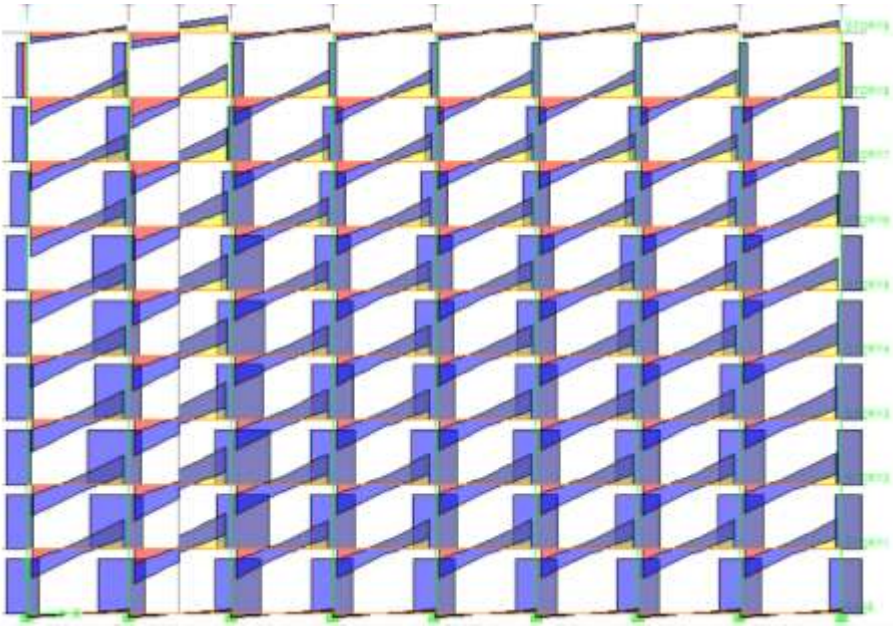


Gaya Geser Bangunan Kolom Persegi

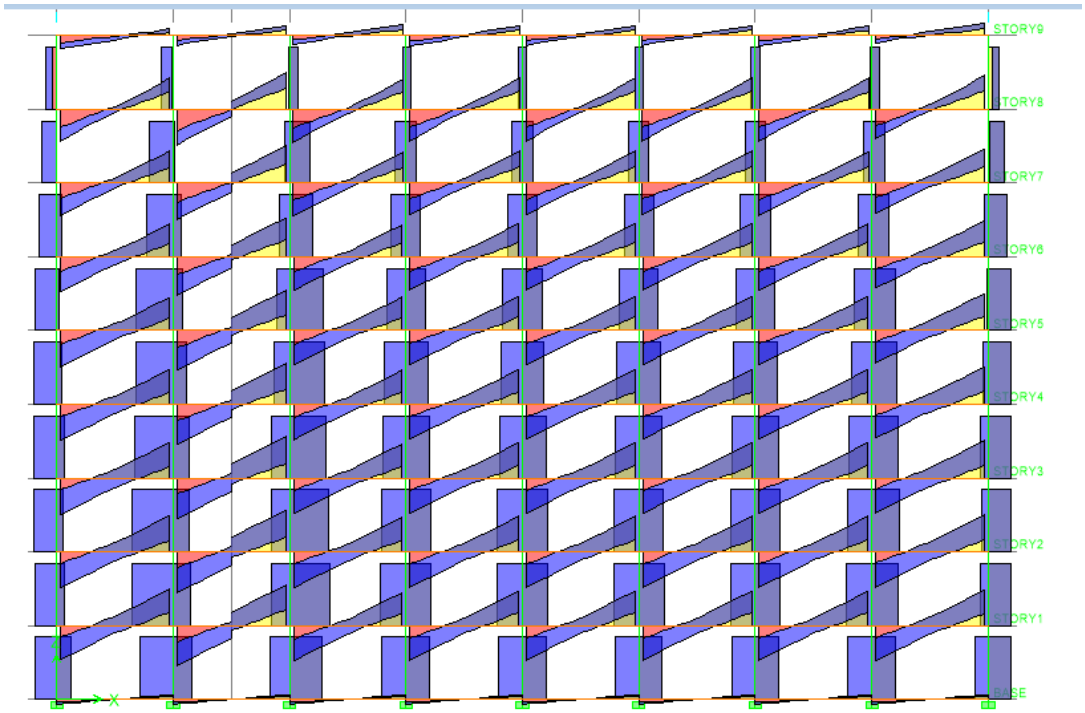


Gaya Geser Bangunan Kolom Persegi Panjang

3. Pada Bangunan 8 Bentang



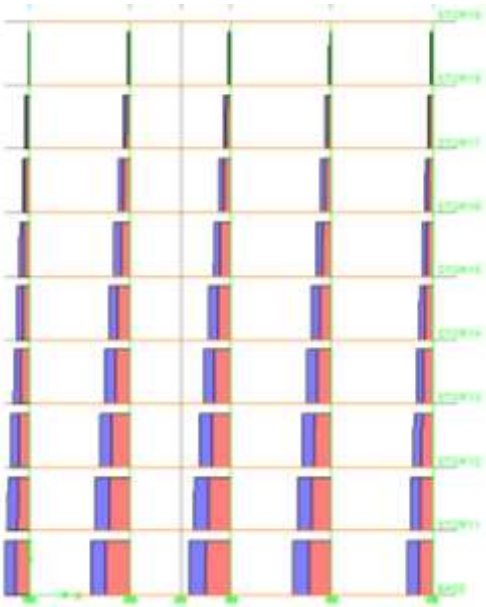
Gaya Geser Bangunan Kolom Persegi



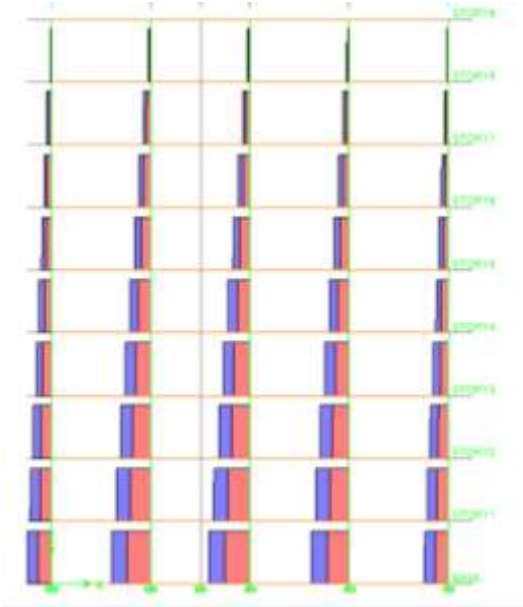
Gaya Geser Bangunan Kolom Persegi Panjang

c. AKSIAL

1. Pada Bangunan 4 Bentang

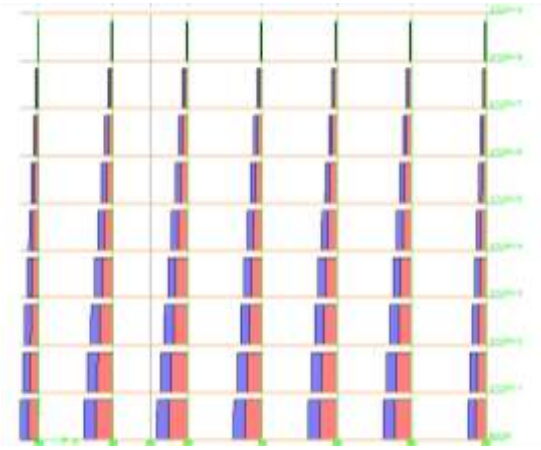


Gaya Aksial Bangunan Kolom Persegi

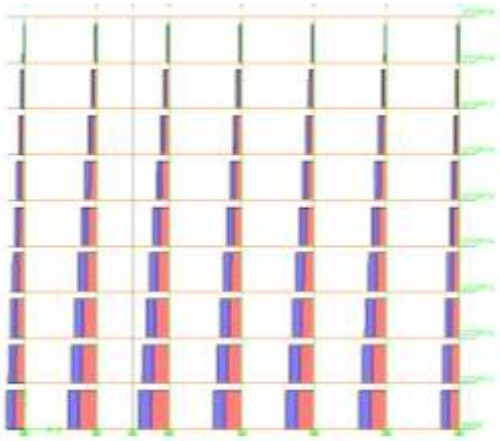


Gaya Aksial Bangunan Kolom Persegi Panjang

2. Pada Bangunan 6 Bentang

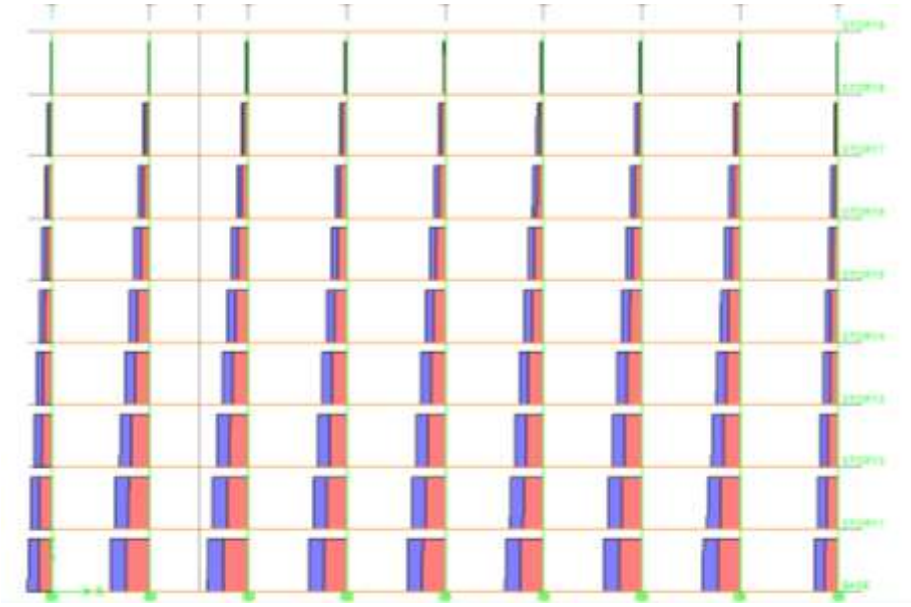


Gaya Aksial Bangunan Kolom Persegi

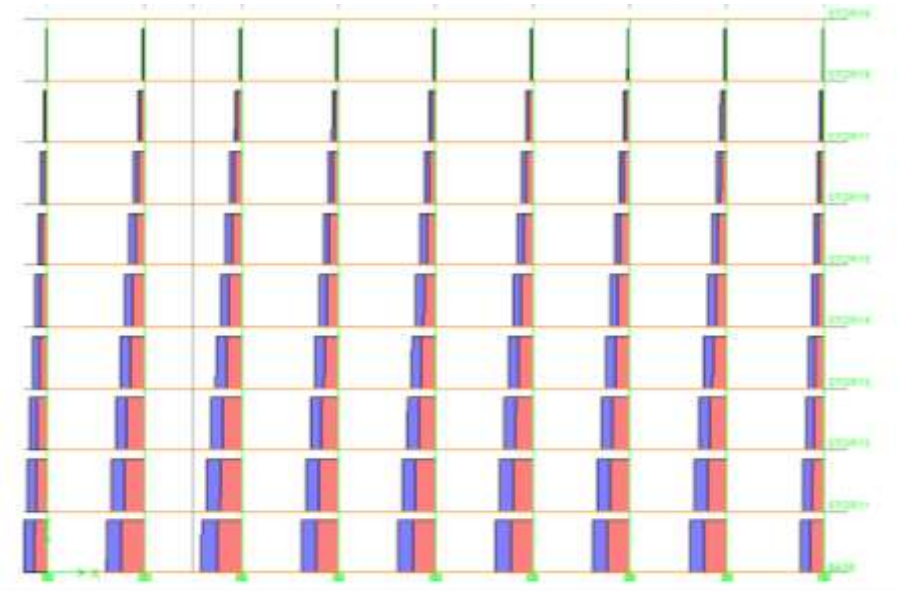


Gaya Aksial Bangunan Kolom Persegi Panjang

3. Pada Bangunan 8 Bentang



Gaya Aksial bangunan kolom persegi



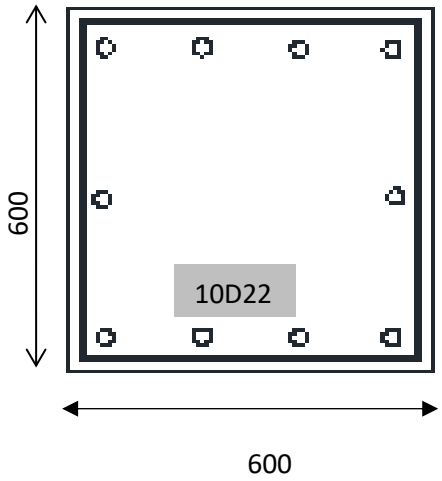
Gaya Aksial Bangunan Kolom Persegi Panjang

LAMPIRAN C
PENULANGAN

1. Penulangan Kolom Persegi

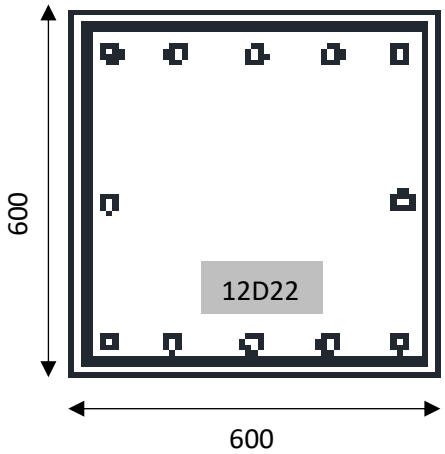
Bentang 4 dan Bentang 6

K1 60/60



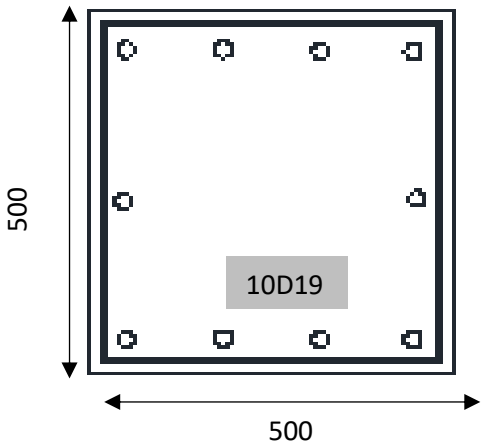
Bentang 8

K1 60/60



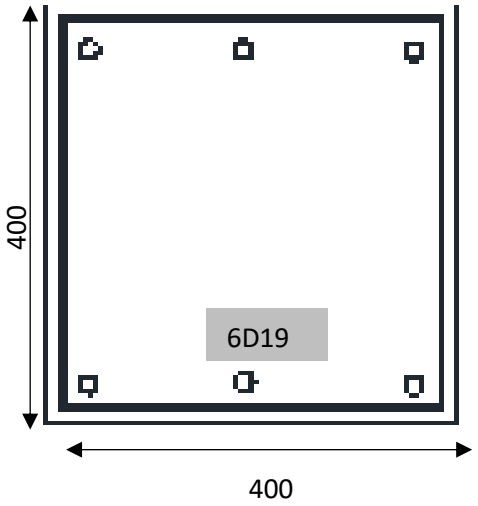
Bentang 4 , Bentang 6 dan Bentang 8

K2 50/50



Bentang 4 , Bentang 6 dan Bentang 8

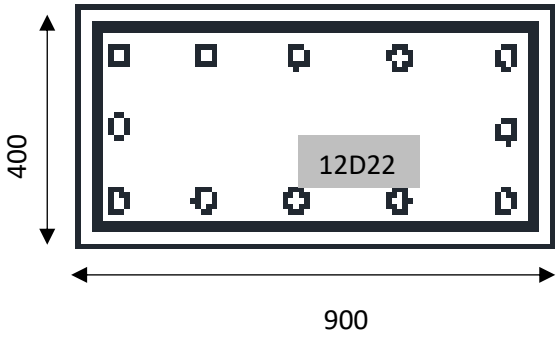
K3 40/40



2. Penulangan Kolom Persegi Panjang

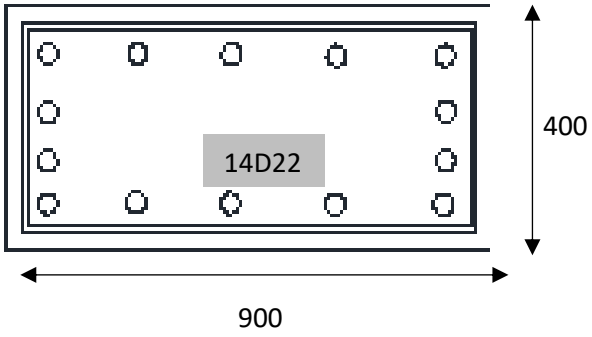
Bentang 4 dan Bentang 6

K1 40/90



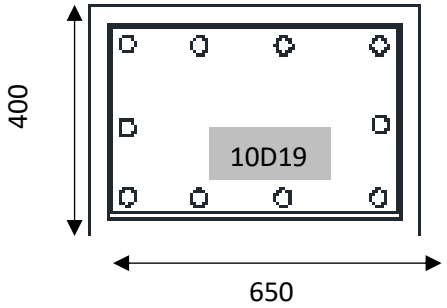
Bentang 8

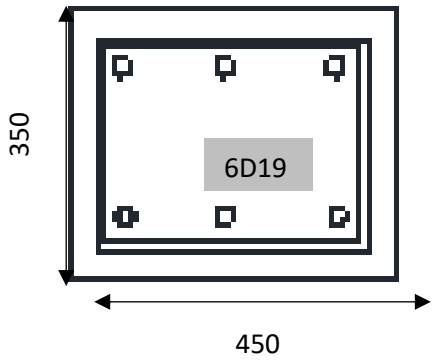
K1 40/90



Bentang 4, Bentang 6 dan Bentang 8

K2 40/65



Bentang 4, Bentang 6 dan Bentang 8

K3 35/45