

CHAPTER VI

CONCLUSION

6.1 Building Design Practice

From the data analysis obtained in the ETABS structure design and simulator, and the program PCACOL and calculating the result of analysis manually, this building is able to withstand its own forces and the simulated earthquake load. The structure results are:

1. Roof truss main member size is 2Lx60x60x3.2, purlin size is C200x75x20x2, gusset plate thickness is 8 mm, length of weld applied is 60mm.
2. Primary beam size is 600x350mm and the reinforcement is 2D10-250. The Secondary beam size is 350x200mm, and the reinforcement is 2D10-100.
3. Slab thickness size is 130mm, and the reinforcement is D8-200.
4. Stair rise used is 160mm, stair flight used is 300mm, the flight reinforcement is D8-150, the shrinkage reinforcement is D13-100, and the bordes beam reinforcement is 2D2-100.
5. Column size is 500x500m, and the reinforcement of column is 2D10-300 at mid span, and at the end support is 2D10-250.
6. The foundation is divided into external and internal, the size of external column is 2800x2800mm, while the internal column size is 3000x3000mm. Both uses the same reinforcement for the top part is D12-200 and for the bottom part is D19-200.

6.2 Road Design Practice

The cycle time obtained from the practice is 65 seconds for two traffic signals. The west traffic signal has a 36 seconds green time and the south traffic signal has 23 seconds. It is designed that the west traffic starts first then the south traffic

From the data analysis we get the amount of delay is 18.223 pcu/h. This means the delay of the total junction is 18.223 passenger car unit per hour. The result of traffic green time and traffic cycle time may differ from the real life because the recording was not done in the peak traffic.

6.3 Water Building Design Practice

From the data analysis it is obtained that the estimated flood discharge of the weir that caused by the rain is:

1. 2 years = 20.708 m³/s
2. 5 years = 102.372 m³/s
3. 10 years = 143.333 m³/s
4. 25 years = 231.559 m³/s
5. 50 years = 337.325 m³/s
6. 100 years = 493.457 m³/s
7. 200 years = 720.068 m³/s

The weir is determined as type is permanent weir. The weir crest type is round. The elevation of *mercu bendung* is 155.45m. The height of weir is 6m. The effective width of weir is 50.89m. The height of water above *mercu* is 0.645m. The radius of *mercu bulat* is 0.6m. The *kolam olak* type is III. The number of *pintu pembilas* is 1. The weir safety analysis is planned against these factors:

1. Against sliding 2.98 > SF = 1.5
2. Against overturning 2.4 > SF = 2.0
3. Against uplift 1.63 > SF = 1.5
4. Against seepage 2.89 > SF = 2.5
5. Against earthquake 1.85 > SF = 1.5

6.4 Cost and Time Planning Practice

By calculating work volume, unit price, then the construction project price will be known. Also estimating each of the work duration then planning it in the microsoft project, then the network diagram will be acquired. In the network diagram, the critical path of the project works will be known, if a delay occurs in the critical path then the construction progress will be delayed in accordance to the amount of delayed time. After creating the network diagram then the bar chart of the construction progress can be created so that the s-curve can be drawn based on the completion progress of the project and the duration of the building construction project.

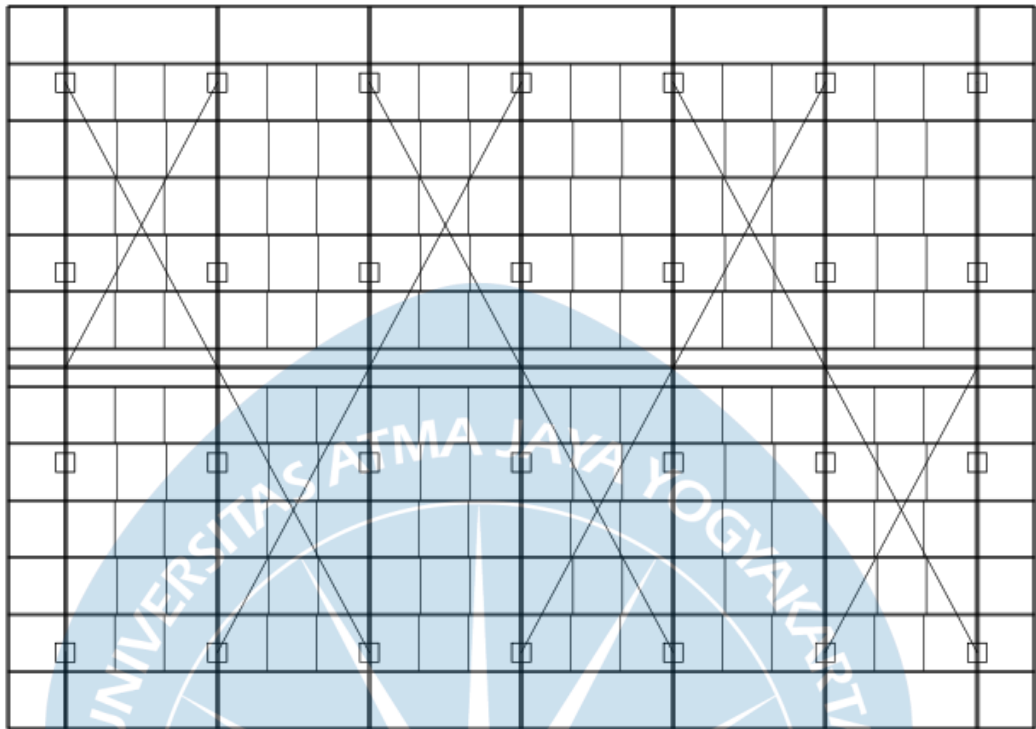
The project data can be found below as follows:

1. The total cost of the Karinakas office building project is Rp.1.840.166,966, -
2. The time required to complete Karinakas office building is 217 days according to the critical path that is shown in the project network diagram.

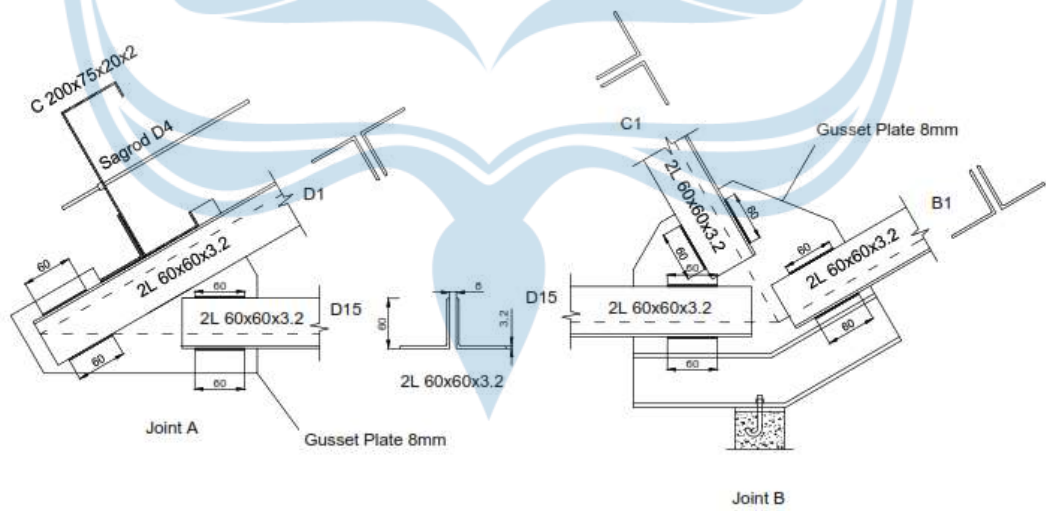
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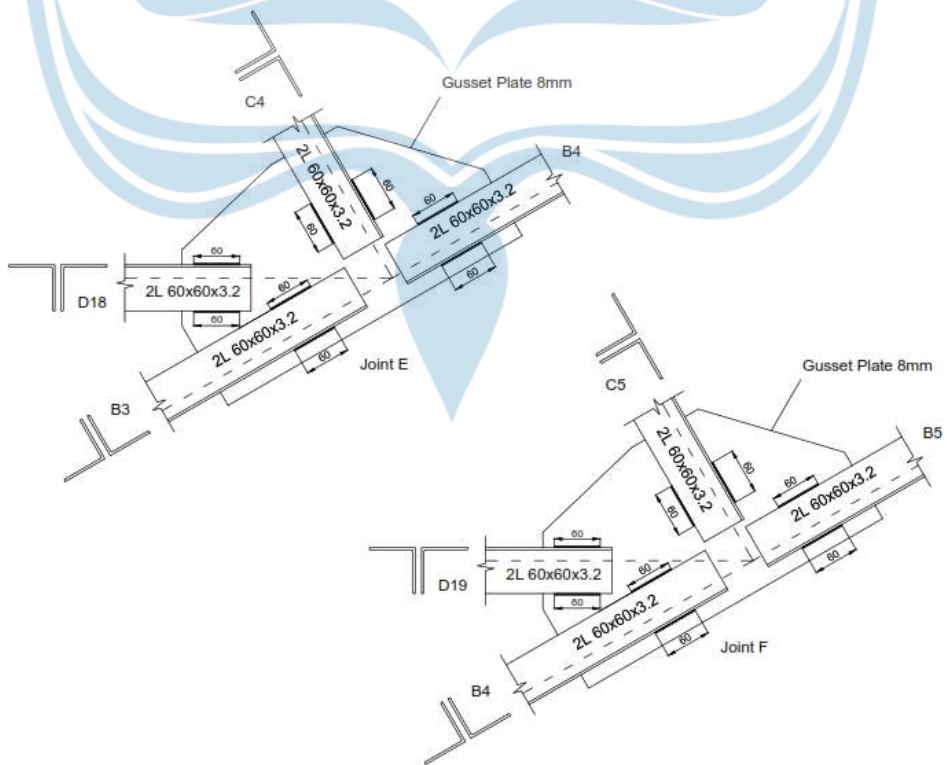
Roof Plan Detail



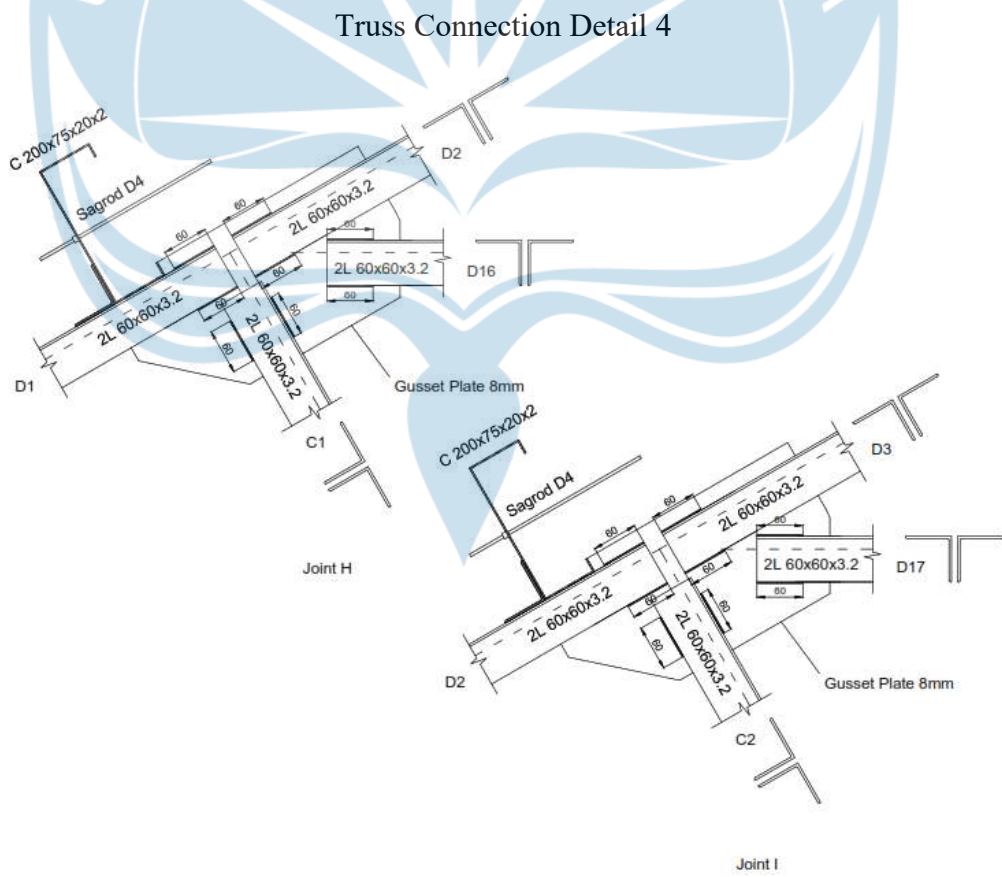
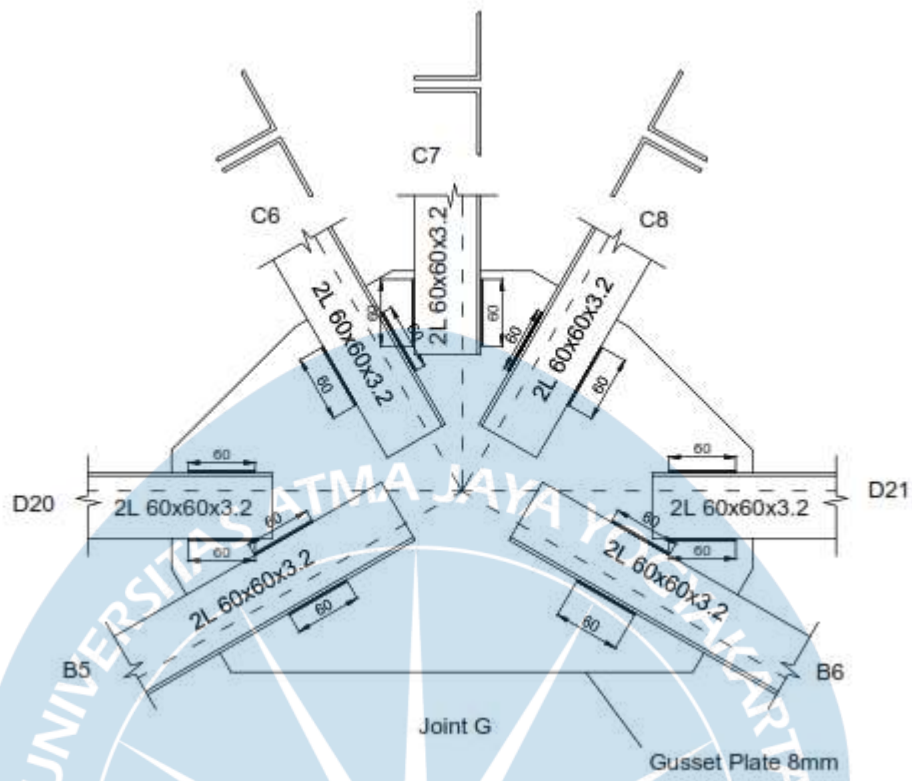
Truss Connection Detail 1

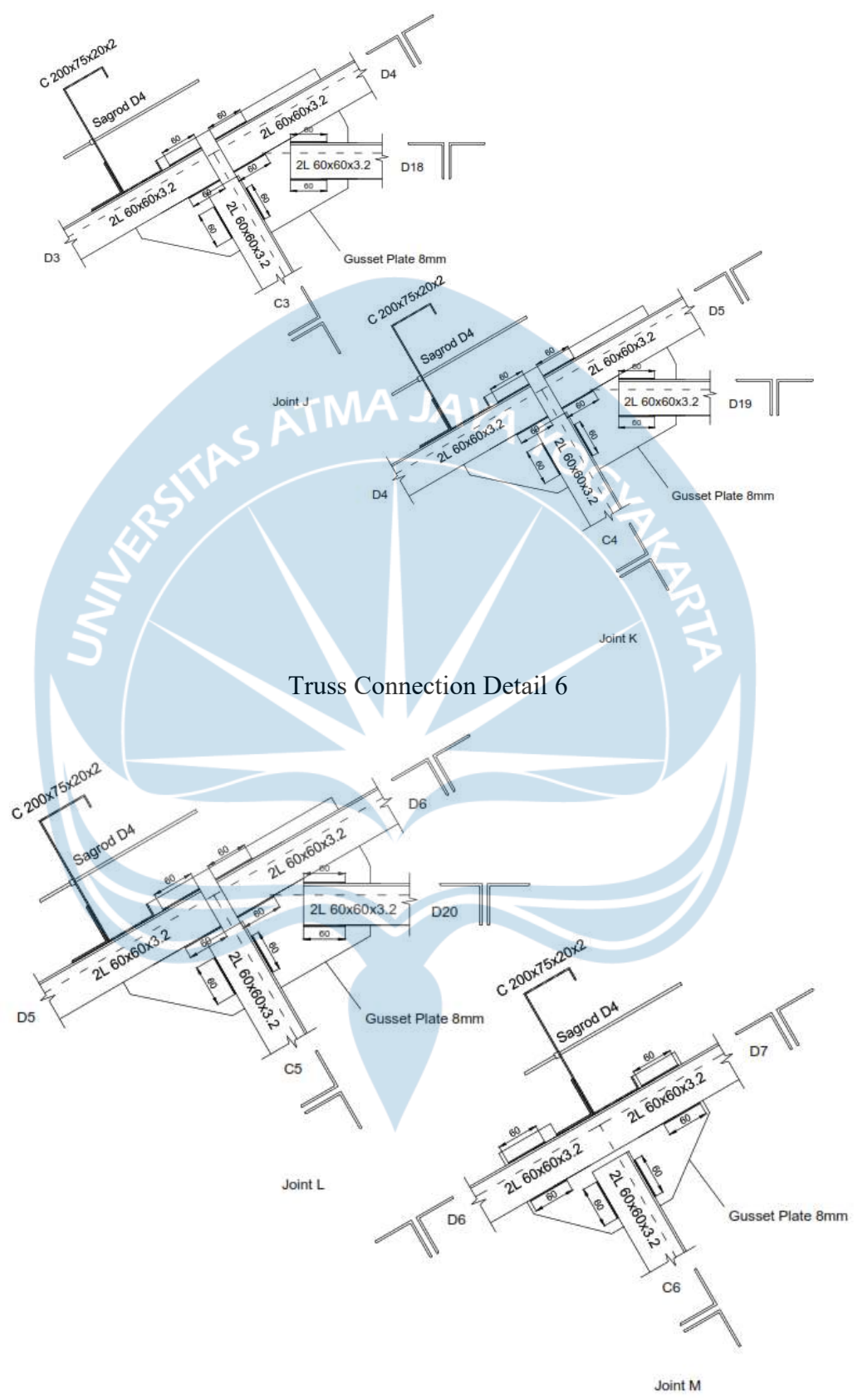


Truss Connection Detail 2



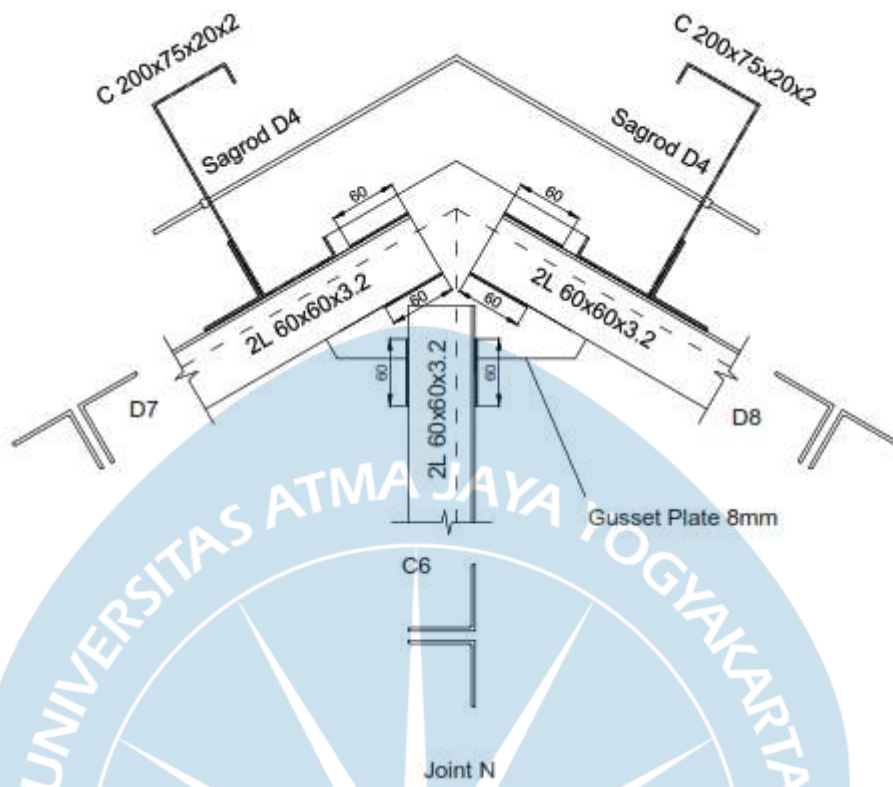
Truss Connection Detail 3



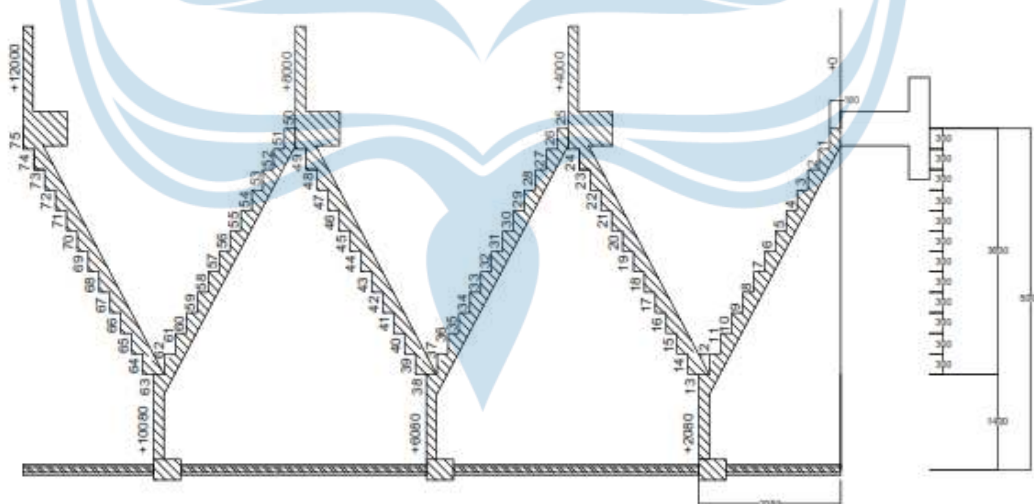


Truss Connection Detail 6

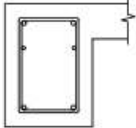
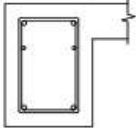
Truss Connection Detail 7



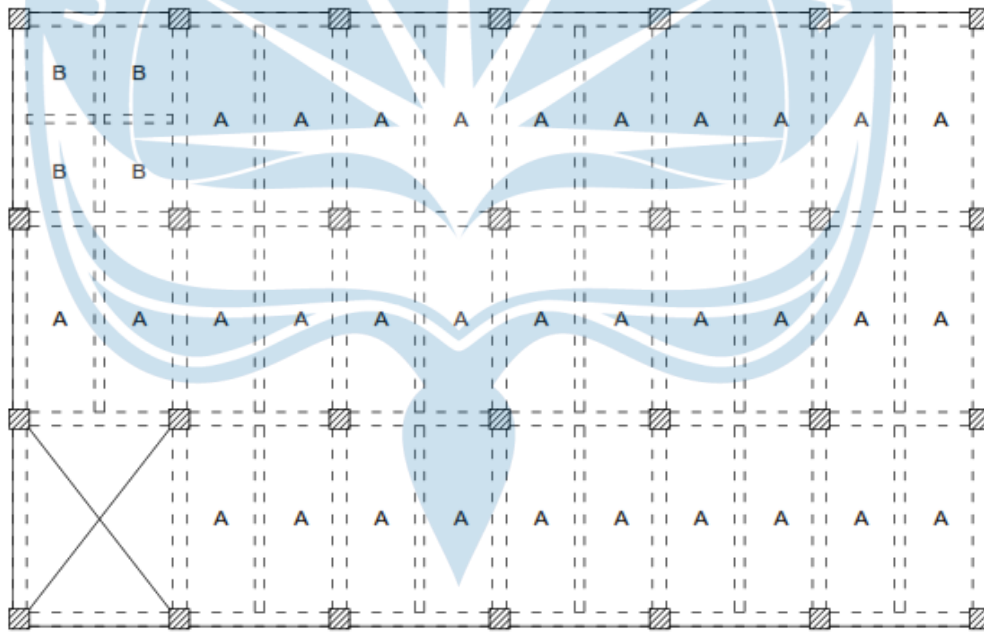
Truss Connection Detail 8



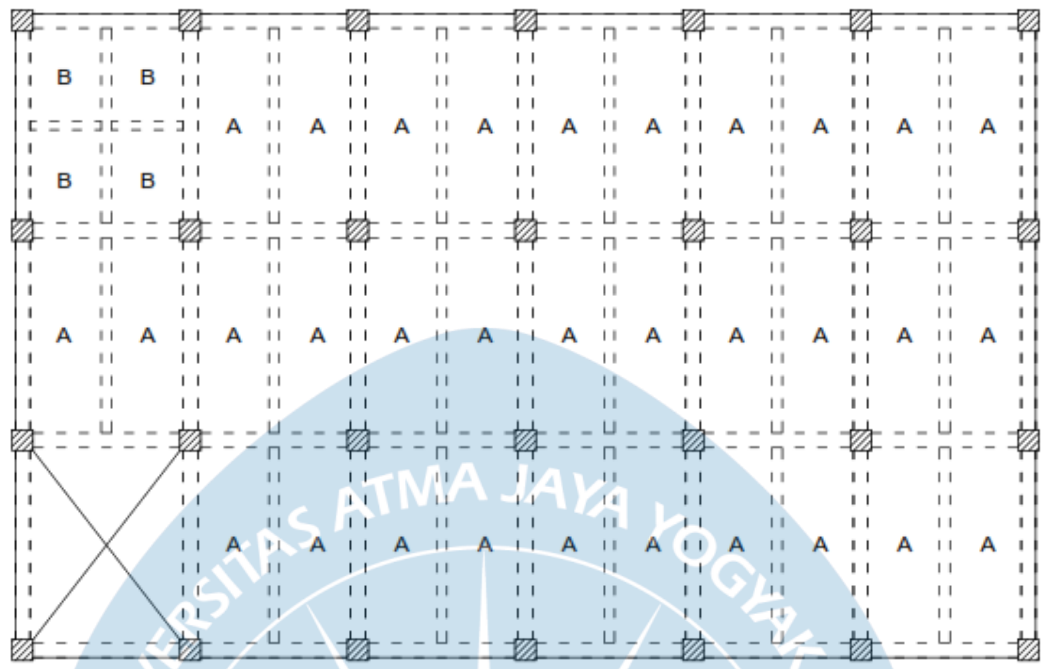
Stairs Detail

TYPE	BORDES BEAM	
	END SUPPORT	FIELD
SECTION		
DIMENSION	250 x 350	250 x 350
TOP REINFORCEMENT	2 D 13	2 D 13
MIDDLE REINFORCEMENT	2 D 10	2 D 10
BOTTOM REINFORCEMENT	2 D 13	2 D 13
STIRRUP	2 D 8 - 100	2 D 8 - 100

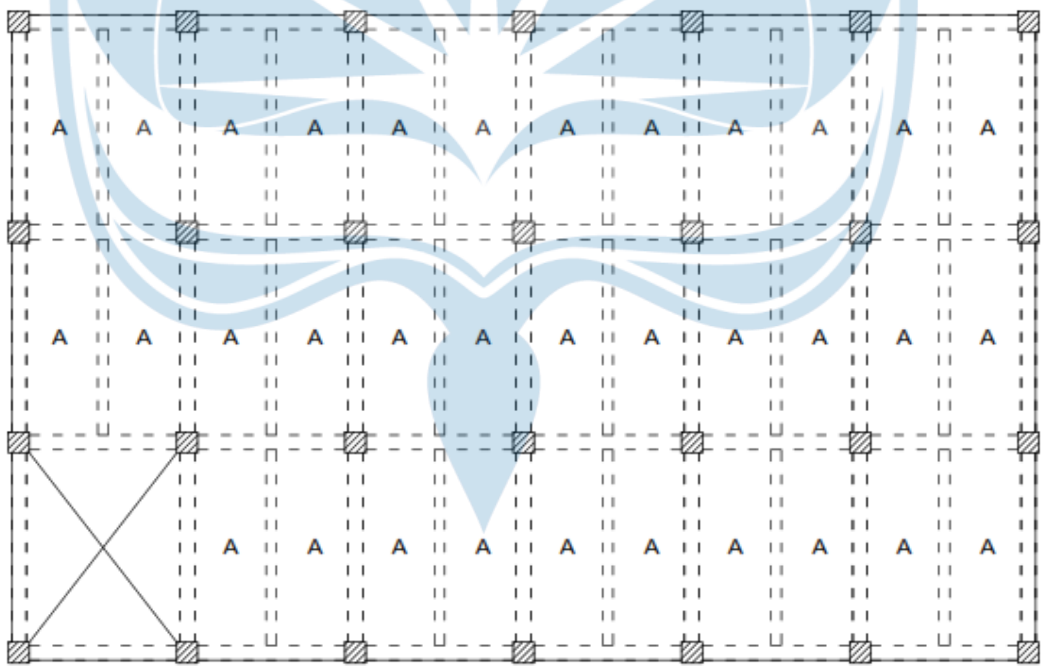
Bordes Beam Reinforcement



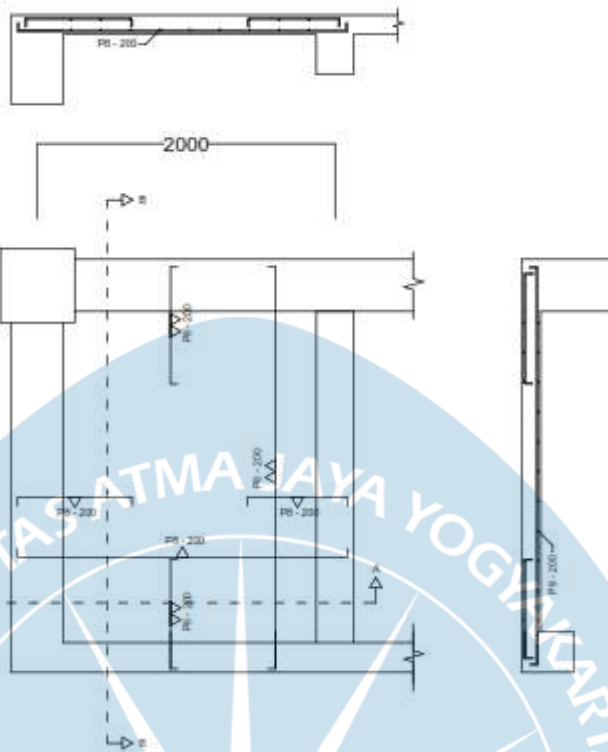
Slab Plan 2nd Floor



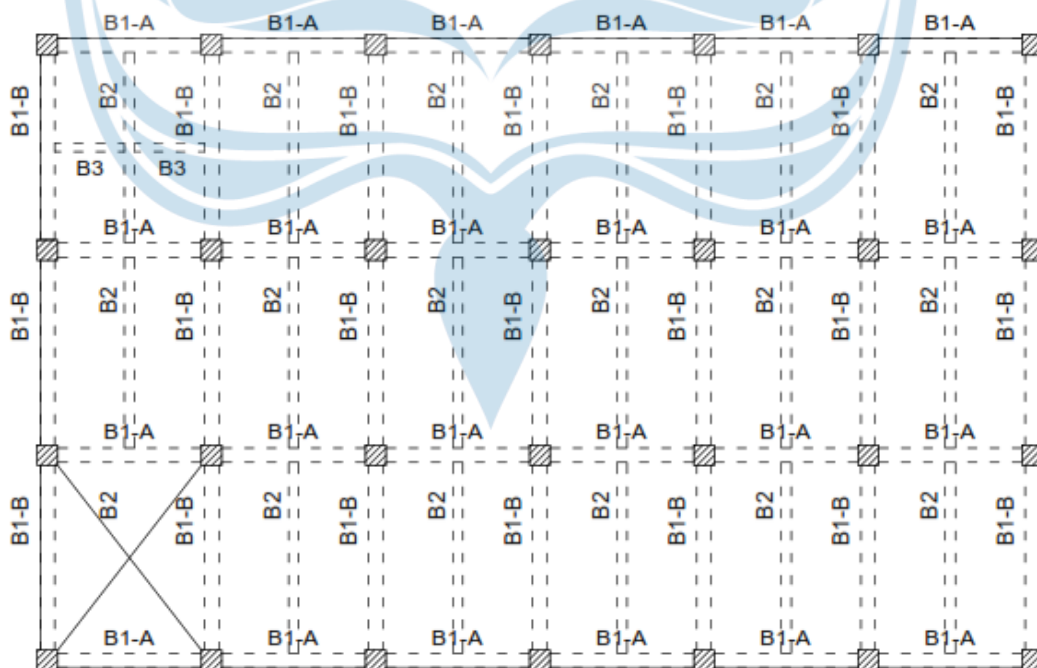
Slab Plan 3rd Floor



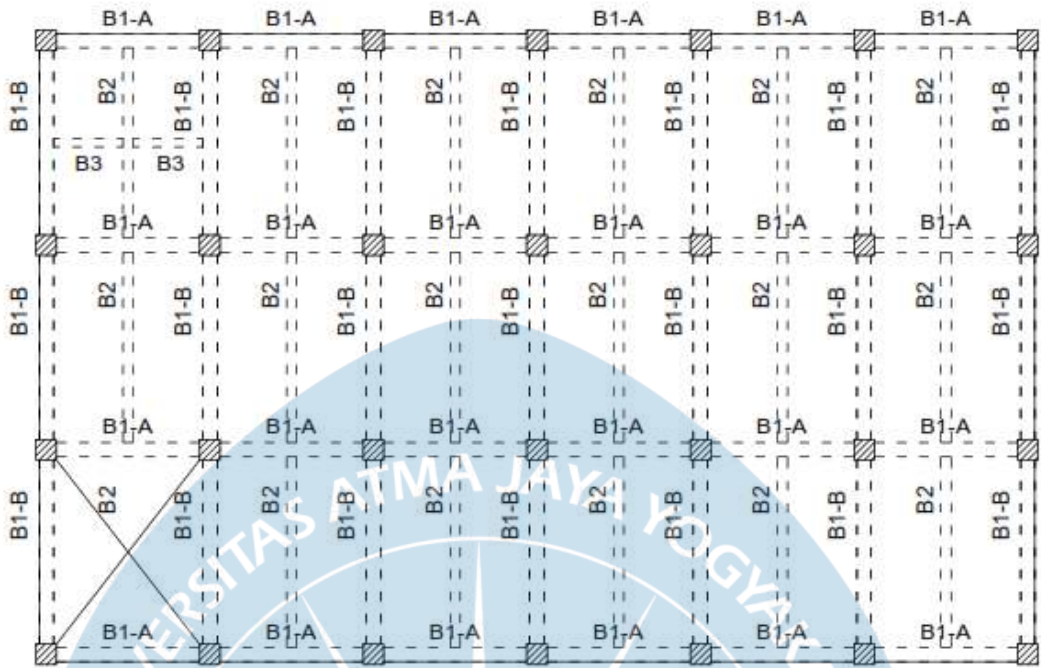
Slab Plan 4th Floor



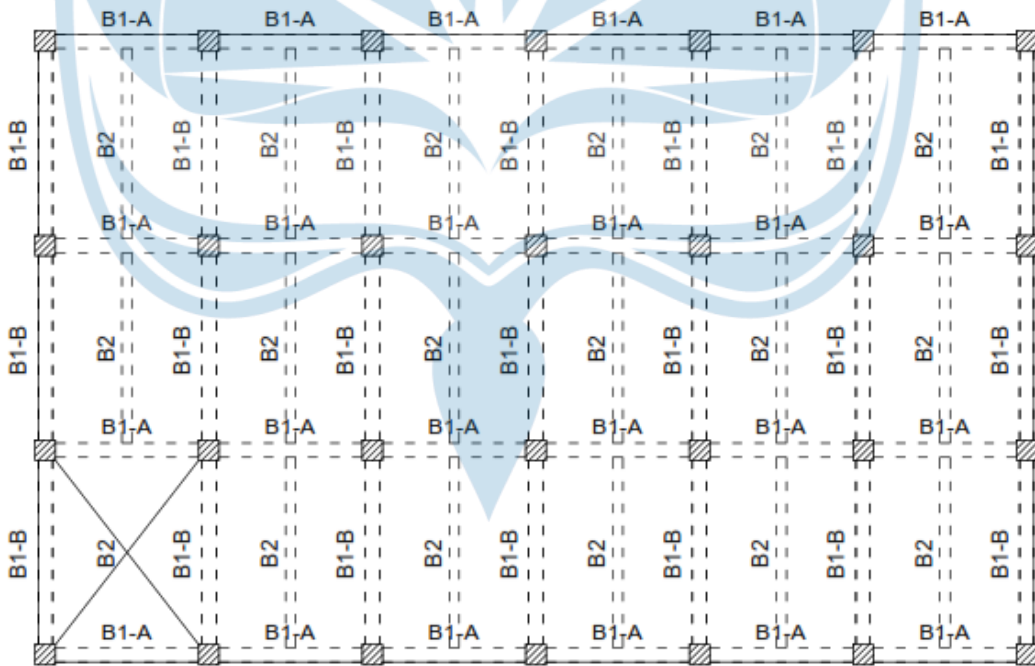
Slab B Detail



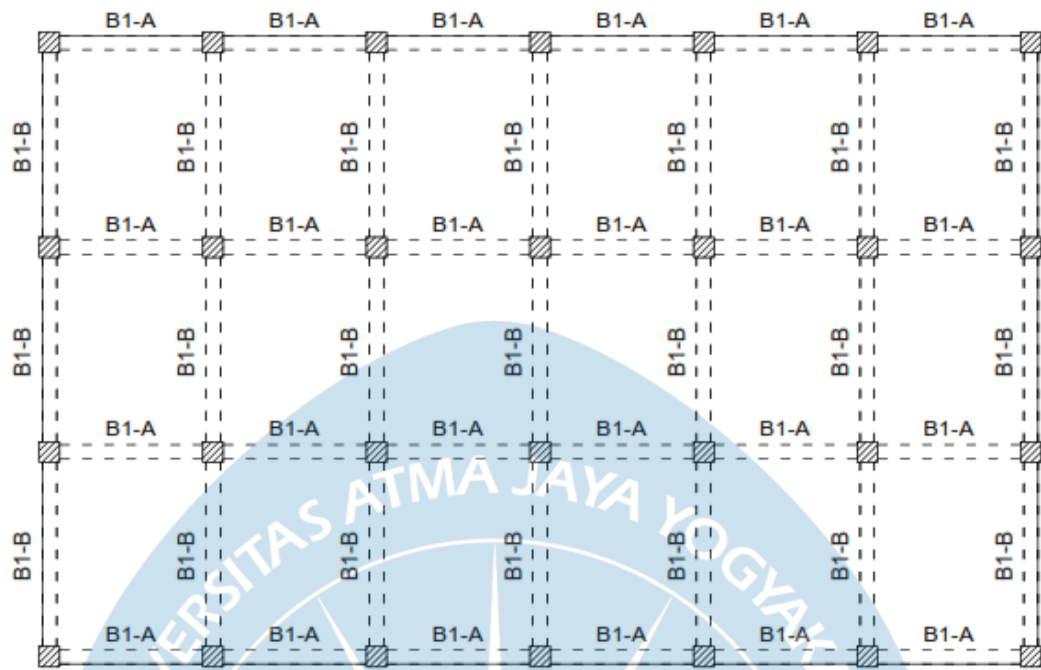
Beam Plan 2nd Floor



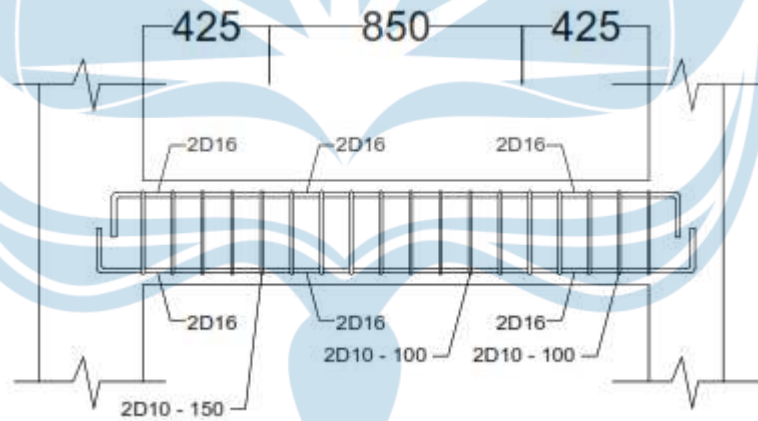
Beam Plan 3rd Floor



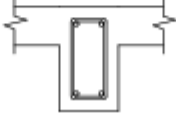
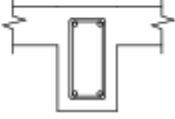
Beam Plan 4th Floor



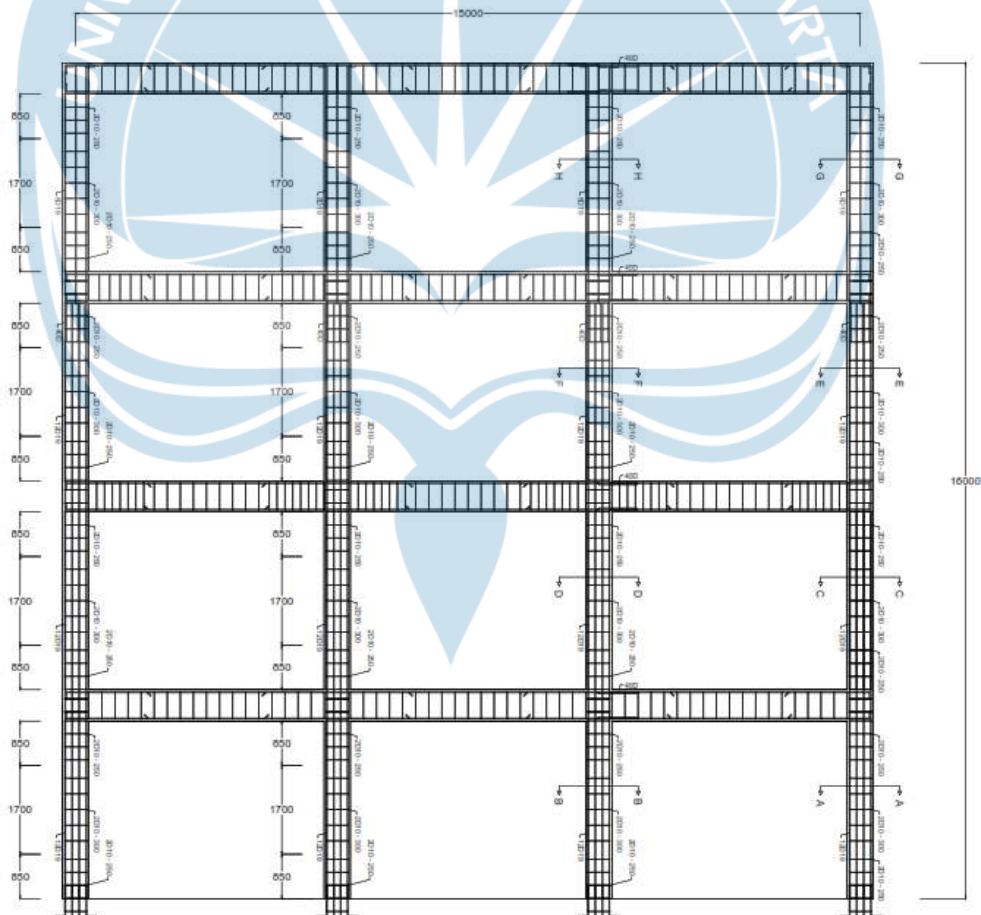
Ring Beam Plan



Secondary Beam Span Detail

TYPE POSITION	B14 - B	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	350 x 200	350 x 200
TOP REINFORCEMENT	2 D 16	2 D 16
BOTTOM REINFORCEMENT	2 D 16	2 D 16
STIRRUP	2D10 - 100	2D10 - 100

Secondary Beam Reinforcement



Column Reinforcement Plan

TYPE	STORY 1 EXTERNAL - A	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	12 D 19	12 D 19
STIRRUP	2D10 - 250	2D10 - 300

TYPE	STORY 2 EXTERNAL - C	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	12 D 19	12 D 19
STIRRUP	2D10 - 250	2D10 - 300

TYPE	STORY 3 EXTERNAL - E	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	12 D 19	12 D 19
STIRRUP	2D10 - 250	2D10 - 300

TYPE	STORY 1 INTERNAL - B	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	12 D 19	12 D 19
STIRRUP	2D10 - 250	2D10 - 300

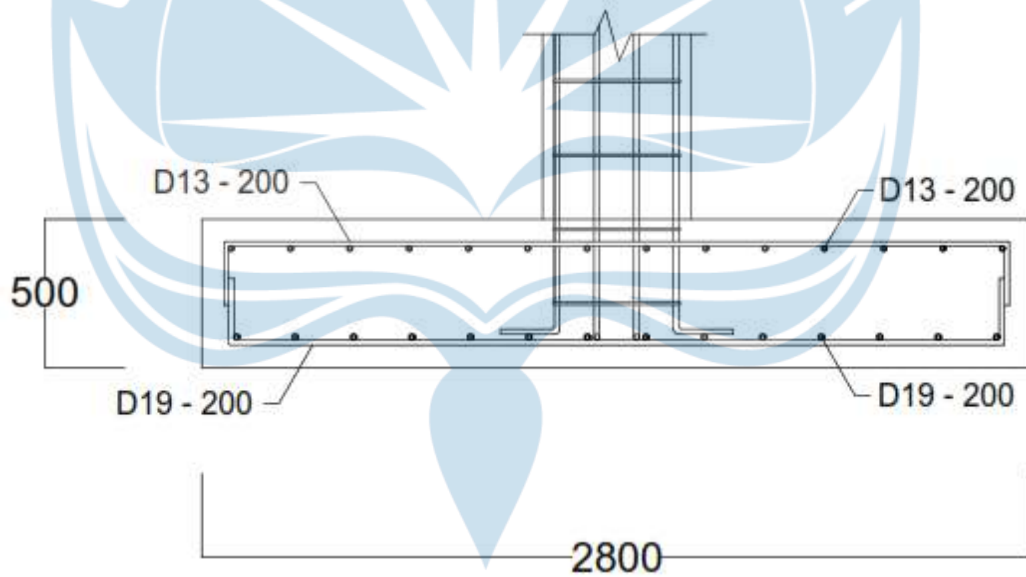
TYPE	STORY 2 INTERNAL - D	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	12 D 19	12 D 19
STIRRUP	2D10 - 250	2D10 - 300

TYPE	STORY 3 INTERNAL - F	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	12 D 19	12 D 19
STIRRUP	2D10 - 250	2D10 - 300

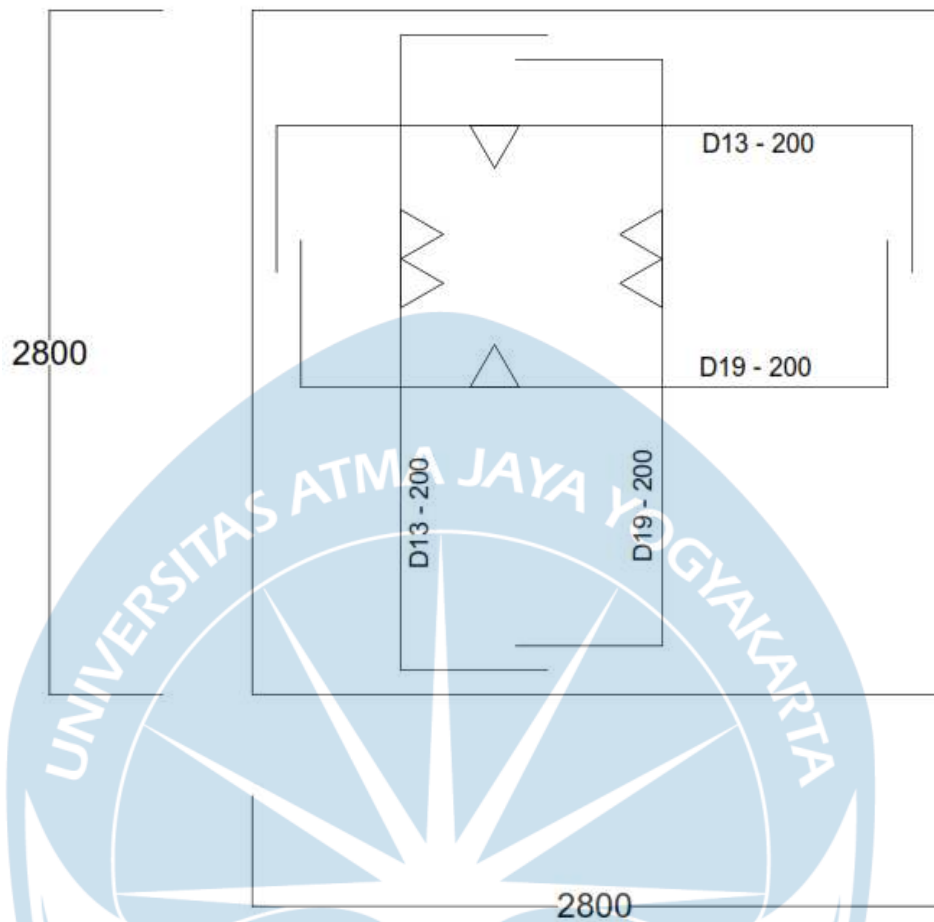
TYPE	STORY 4 EXTERNAL - G	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	8 D 19	8 D 19
STIRRUP	2D10 - 250	2D10 - 300

TYPE	STORY 4 INTERNAL - H	
	END SUPPORT	MIDSPAN
SECTION		
DIMENSION	500 x 500	500 x 500
REINFORCEMENT	8 D 19	8 D 19
STIRRUP	2D10 - 250	2D10 - 300

Column Reinforcement Detail



External Foundation Detail



External Foundation Reinforcement

WEIR DESIGN CALCULATION

Elevation of *mercu bendung*

Calculation of *mercu bendung* :

Elevation of river	= +148 m
Height of dam	= 6 m
Head loss water pressure	= 1.45 m +
Elevation of <i>mercu bendung</i>	= 155.45 m

From this calculation, we get height of weir:

$$\begin{aligned}
 P &= \text{Elevation of } \textit{mercu bendung} - \text{Riverbed elevation} \\
 &= 155.45 \text{ m} - 149.45 \text{ m} \\
 &= 6 \text{ m}
 \end{aligned}$$

Effective Width of Weir

Due to the pillar and *bangunan pembilas* in the weir, so not all of the width of the weir can be used. So, the effective width of weir is smaller than the real width of weir.

The equation of the effective width of weir:

$$B_e = B - 2(n.K_p + K_a).H_1$$

Where:

B _e	= Effective width of weir	(m)	
B	= Real width of weir		= 51.274 m
n	= number of pillar		= 2
K _p	= Coefficient of <i>kontraksi pilar</i>		= 0.01
K _a	= Coefficient of <i>kontraksi pangkal bendung</i>		= 0.2
H ₁	= Energy height	(m)	

Calculation:

Fig.1. Coefficient C₀ with H₁/r function

$$\begin{aligned}
 B_e &= B - 2(n.K_p + K_a).H_1 \\
 B_e &= 51.27 - 2(1 \times 0.01 + 0.2) H_1 \\
 B_e &= 51.27 - 0.44 H_1 \\
 B_e &= 51.27 - 0.44H_1 \\
 &= 51.27 - (0.44 \times 0,8719) \\
 &= 50.89
 \end{aligned}$$

Weir Design Calculation Part 1

Energy Height above *mercu* (H_1)

Calculation of H_1 used the following equation:

$$Q = C_d \times \frac{2}{3} \times \sqrt{\frac{2}{3}g} \times B_e \times H_1^{1.5}$$

Where,

$$Q = \text{Discharge} \quad (\text{m}^3/\text{s}) \quad = 139.681 \text{ m}^3/\text{s}$$

$$g = \text{Gravitation} \quad (g = 9.8 \text{ m/s}^2)$$

$$C_d = \text{Discharge coefficient} \quad (C_d = C_0 \times C_1 \times C_2)$$

planned $p/H_1 \geq 1.5$ and $r = 0.5H_1$. So, $H_1/r = 2$, from the table $C_0 = 1.34$.

Consider $C_1 = 1$ and $C_2 = 1$.

$$g = \text{Gravitation} \quad (g = 9.8 \text{ m/s}^2)$$

$$B_e = \text{Length of } \textit{mercu} \quad = 50.89$$

$$H_1 = \text{Height of energy above } \textit{mercu} \quad (\text{m})$$

Calculation:

$$139.681 = 1.33 \times \frac{2}{3} \times \sqrt{\frac{2}{3} \times 9.81} \times (50.89) \times H_1^{1.5}$$

$$H_1 = 0.8719 \text{ m}$$

From this calculation, the flood water level and height of water above *mercu* can be calculated, that is:

$$\text{Flood water level} = \text{elevation of } \textit{mercu} + H_1 = +155.45 + 0.8719 = +156.32$$

To find height of water above *mercu*, use the following equation:

$$H_d = H_1 - k$$

Where:

$$K = \frac{v^2}{2g}, \text{ with } v = \frac{Q}{B_e \times H_1} = \frac{93.701}{50.89 (0.8719)} = 2.11 \text{ m/s}$$

$$K = \frac{2.11^2}{2(9.81)} = 0.227 \text{ m}$$

So, the height of water above *mercu* = $H_d = 0.8719 - 0.227 = 0.645 \text{ m}$

Determination of *mercu bulat's* dimension

The radius of *mercu bendung* (r) can be choose between = $0.1H_1 - 0.7H_1$.

In this report, we choose:

$$r = 0.7.H_1 = 0.7 \times 0.8719 = 0.6 \text{ m}$$

Kolam Olak

1. Determination of the type of *kolam olak*

The calculation of *kolam olak* used Q_{50} . To check whether *kolam olak* is needed or not, Froude number (Fr) need to be found.

$$Fr = \frac{v_1}{\sqrt{g \times y_1}}$$

where:

Fr = Froude number

v_1 = Initial velocity jump (m/s)

g = gravity ($g = 9.81 \text{ m/s}^2$)

y_1 = depth of water in initial water jump (m)

q = discharge per width unit

Calculation:

$$q = Q/B = 2.082 \text{ m}^2/\text{s}$$

$$y_c = \sqrt[3]{\frac{q^2}{g}} = \sqrt[3]{\frac{2.082^2}{9.81}} = 0.762 \text{ m}$$

$$Fr = \frac{v_u}{\sqrt{g \times y_1}} = \frac{11.155}{\sqrt{9.81 \times 0.1867}} = 1.622 \text{ m}$$

$$n = 2$$

For $Fr \leq 1.7$, *kolam olak* is not required; on the land channel, downstream area should be protected from erosion; masonry or concrete do not need special protection.

After Trial

$$Z = 7.9 \text{ m}$$

Downstream floor elevation after being lowered = 147.1 m

$$V_u = 12.451 \text{ m}^2$$

$$Y_u = 0.167 \text{ m}$$

$$Fr_1 = 9.721$$

kolam olak USBR tipe III

$$y_2 = 2.299 \text{ m}$$

$$h_2' = 2.3599 \text{ m}$$

$$h_2' > y_2$$

$$Fr_2 = 0.944 \text{ m}$$

$$Fr_2 < 1$$

Weir Design Calculation Part 3

Width of weir and *Pembilas*

The width of *pembilas* is assumed 20% from the width of river, so:

$$\begin{aligned}\text{Width of weir} &= \text{Width of river} - \text{Width of } \textit{pembilas} \\ &= 45 \text{ m} - (20\% \times 45 \text{ m}) \\ &= 36 \text{ m}\end{aligned}$$

Pembilas building is divided into some gate and pillar, so it will not be too width. The maximum width of *pembilas* gate is 2 m and the maximum width of pillar is 1 m. So, used 1 *pembilas* gate and 1 pillar, then:

$$\begin{aligned}\text{Width of } \textit{pembilas} &= \sum \text{width of } \textit{pembilas} \text{ gate} + \sum \text{width of pillar} \\ (20\% \times 45) &= (1 \times 1.5 \text{ m}) + (1 \times 1.25 \text{ m}) \\ 9\text{m} &= 2.75 \text{ m}\end{aligned}$$

Weir Design Calculation Part 4



Forces	Base (KN/m ²)	Height (m)	Force = 0.5 x Base x Height (KN)
Ea 1	$6,35 \times 9.81 = 62,2935$	6,35	197,7819
Ea 2	$4.75 \times (18-9.81) \times 0.33 = 12,8378$	4.75	30,4898
Ea 3	$3.5 \times (18-9.81) \times 0.33 = 9,4595$	3.5	16,5540
Total Active Forces = Fx			244,8257
Ea 4 = Fy	$6,35 \times 9.81 = 62,2935$	16,05	499,9053
Ep 1	$8,0803 \times 9.81 = 79,2677$	8,0803	320,2536
Ep 2	$4.5 \times (18-9.81) \times 3 = 110,565$	4.5	248,7713
Total Passive Forces = Fz			569,0249

Horizontal Forces Calculation

Forces	Base (KN/m ²)	Height (m)	Force = Base x Height (KN)
W ₁	$1 \times 24 = 24$	4.75	114
W ₂	$1/2 \times (7,125-1) \times 24 = 73,5$	4,75	349,125
W ₃	$2.5 \times 24 = 60$	3.5	210
W ₄	$1 \times 24 = 24$	0.5	12
W ₅	$2 \times 24 = 48$	2,5	120
W ₆	$3,25 \times 24 = 78$	4.5	351
W ₇	$5.8 \times 24 = 139.2$	3.5	487,2
W ₈	$1.5 \times 24 = 36$	4.5	162
Total Weir Weight = W			1805,325

Weir Weight Calculation

Forces	Base (KN/m ²)	Height (m)	Force = 0.5 x Base x Height (KN)	Force Distance Against Point A (m)	Overturing Moment = Force x Distance (KNm)
Ea 1	6,35 x 9.81 = 62,2935	6,35	197,7819	6,62	1309,3638
Ea 2	4.75 x (18-9.81) x 0.33 = 12,8378	4.75	30,4898	6,08	185,378
Ea 3	3.5 x (18-9.81) x 0.33 = 9,4595	3.5	16,5540	2,12	35,0945
Ea 4	6,35 x 9.81 = 62,2935	16,05	499,9053	10,7	5348,9867
Total Overturing Moment					6878,823

Overturing Moment Calculation

Forces	Base (KN/m ²)	Height (m)	Force = Base x Height (KN)	Force Distance Against Point A (m)	Holding Moment = Force x Distance (KNm)
W ₁	1 x 24 = 24	4.75	114	15,55	1772,7
W ₂	1/2 x (7,125-1) x 24 = 73,5	4,75	349,125	13,008	4541,418
W ₃	2.5 x 24 = 60	3.5	210	14,8	3108
W ₄	1 x 24 = 24	0.5	12	13,05	156,6
W ₅	2 x 24 = 48	2,5	120	11,55	1386
W ₆	3,25 x 24 = 78	4.5	351	8,925	3132,675
W ₇	5.8 x 24 = 139.2	3.5	487,2	4,4	2143,68
W ₈	1.5 x 24 = 36	4.5	162	0,75	121,5
Ep 1	8,0803 x 9.81 = 79,2677	8,0803	320,2536	7,19	2302,6234
Ep 2	3.5 x (18-9.81) x 3 = 85,995	3.5	150,4913	1,5	225,7370
Total Holding Moment					17518,7934

Holding Moment Calculation

NO	DESCRIPTION	COEFF	VOLUME	UNIT	UNIT COST (IDR)	TOTAL COST (Rp)
I. PREPATORY						
1.1	BOWPLANK					
	Worker	0.1	312	OH	IDR 63.000	IDR 1,965.600
	Wood Worker	0.1	312	OH	IDR 77.000	IDR 2,402.400
	Head of Worker	0.01	312	OH	IDR 79.000	IDR 246.480
	Foreman	0.005	312	OH	IDR 79.000	IDR 123.240
	Beam Timber 5/7	0.012	312	M2	IDR 19.000	IDR 71.136
	Nails 2"-3"	0.012	312	KG	IDR 15.000	IDR 56.160
	Board 3/20	0.007	312	M2	IDR 85.000	IDR 185.640
1.2	WATER PROCUREMENT (1ls)					
	Worker	0.1	1	OH	IDR 79.000	IDR 7.900
	Pipe 3/4mm	1	1	BTG	IDR 26.000	IDR 26.000
1.3	TEMPORARY FENCES (Timber)					
	Worker	0.2	432	OH	IDR 63.000	IDR 5,443.200
	Wood Worker	0.2	432	OH	IDR 77.000	IDR 6,652.800
	Head of Worker	0.3	432	OH	IDR 79.000	IDR 10,238.400
	Foreman	0.02	432	OH	IDR 79.000	IDR 682.560
	Dolken kayu 8-10/400 cm	0.02	432	BTG	IDR 11.500	IDR 99.360
	Barbed Wire	2	432	KG	IDR 19.000	IDR 16,416.000
	Nail 2" - 5"	0.009	432	KG	IDR 15.000	IDR 58.320
1.4	TEMPORARY OFFICE					
	Worker	2	10	OH	IDR 63.000	IDR 1,260.000
	Wood Worker	2	10	OH	IDR 80.000	IDR 1,600.000
	Stone Worker	1	10	OH	IDR 80.000	IDR 800.000
	Head of Worker	0.3	10	OH	IDR 79.000	IDR 237.000
	Foreman	0.05	10	OH	IDR 79.000	IDR 39.500
	Dolken Timber ø 8 - 10 (cm)	1.25	10	BTG	IDR 11.500	IDR 143.750
	Nail 2" - 5"	0.08	10	KG	IDR 15.000	IDR 12.000
	Portland Cement/ 40 kg	35	10	KG	IDR 47.000	IDR 411.250
	Fine Sand	0.15	10	M3	IDR 200.000	IDR 300.000
	Coarse Sand	0.1	10	M3	IDR 200.000	IDR 200.000
	Stone 2/3	0.15	10	M3	IDR 225.000	IDR 337.500
	Seng Plate	0.25	10	LBR	IDR 44.000	IDR 110.000
	Window	0.2	10	M2	IDR 180.000	IDR 360.000
	Plywood	0.06	10	LBR	IDR 98.850	IDR 59.310
1.5	TEMPORARY WAREHOUSE					
	Worker	1	10	OH	IDR 63.000	IDR 630.000
	Wood Worker	2	10	OH	IDR 77.000	IDR 1,540.000
	Head of Worker	0.2	10	OH	IDR 79.000	IDR 158.000
	Foreman	0.05	10	OH	IDR 79.000	IDR 39.500
	Dolken Timber ø 8 - 10 (cm)	0.21	10	M2	IDR 11.500	IDR 24.150
	Nail 2" - 5"	0.08	10	KG	IDR 15.000	IDR 12.000
	Portland Cement/ 40 kg	10.5	10	KG	IDR 47.000	IDR 123.375
	Coarse Sand	0.15	10	M3	IDR 200.000	IDR 300.000
	Fine Sand	0.1	10	M3	IDR 200.000	IDR 200.000
	Stone 2/3	0.15	10	M3	IDR 225.000	IDR 337.500
	Seng Plate	0.25	10	LBR	IDR 44.000	IDR 110.000
	Plywood	0.06	10	LBR	IDR 98.850	IDR 59.310
1.6	Scaffolding					
	Worker	1	12	OH	IDR 63.000	IDR 756.000
	Wood Worker	0.3	12	OH	IDR 77.000	IDR 277.200
	Head of Worker	0.03	12	OH	IDR 79.000	IDR 28.440
	Foreman	0.05	12	OH	IDR 79.000	IDR 47.400
	Bamboo	1.25	12	BTG	IDR 15.000	IDR 225.000
	Rope	0.186	12	M	IDR 7.500	IDR 16.740
1.7	MATCHBOX (40x50x25cm) x 6					
	Wood Worker	0.3	0.3	OH	IDR 77.000	IDR 6.930
	Head of Worker	0.03	0.3	OH	IDR 79.000	IDR 0.711
	Board Class III	0.036	0.3	M3	IDR 80.000	IDR 0.864
	Beam Timber 5/7	0.014	0.3	M3	IDR 19.000	IDR 0.080
	Nails 2"-3"	0.08	0.3	KG	IDR 15.000	IDR 0.360
1.8	EXCAVATION					
	Worker	0.9	46	OH	IDR 63.000	IDR 2,608.200
	Foreman	0.045	46	OH	IDR 79.000	IDR 163.530
1.9	SOIL REMOVAL					
	Worker	0.5	46	OH	IDR 63.000	IDR 1,449.000
	Foreman	0.05	46	OH	IDR 79.000	IDR 181.700
1.10	COMPACTION					
	Worker	0.5	46	OH	IDR 63.000	IDR 1,449.000
	Foreman	0.05	46	OH	IDR 79.000	IDR 181.700

Total Cost Part 1

II. REINFORCEMENT							
2.1	CONCRETE K400						
	P4						
	Worker	1.5	0.28	OH	IDR	63.000	IDR 26.460
	Stone Worker	0.75	0.28	OH	IDR	75.000	IDR 15.750
	Head of Worker	0.075	0.28	OH	IDR	80.000	IDR 1.680
	Foreman	0.075	0.28	OH	IDR	79.000	IDR 1.659
	Stone 2/3	1.2	0.28	M3	IDR	200.000	IDR 67.200
	Coarse Sand	0.485	0.28	M3	IDR	225.000	IDR 30.555
	Portland Cement	202	0.28	KG	IDR	47.000	IDR 2,658.320
	FOUNDATION (P1,P2,P3)						
	Ready Mixing Concrete	1	26.72	M3	IDR	940.000	IDR 25,116.800
	SLOOF						
	Ready Mixing Concrete	1	18.01	M3	IDR	940.000	IDR 16,929.400
	COLUMN						
	Ready Mixing Concrete	1	18.68	M3	IDR	940.000	IDR 17,559.200
	BEAM						
	Ready Mixing Concrete	1	23.28	M3	IDR	940.000	IDR 21,883.200
	FLOOR PLATE						
	Ready Mixing Concrete	1	82.08	M3	IDR	940.000	IDR 77,155.200
	STAIR						
	Ready Mixing Concrete	1	2.1	M3	IDR	940.000	IDR 1,974.000
2.2	FORMWORK						
	FOUNDATION						
	Worker	0.52	115.92	OH	IDR	63.000	IDR 3,797.539
	Wood Worker	0.26	115.92	OH	IDR	77.000	IDR 2,320.718
	Head of Worker	0.26	115.92	OH	IDR	79.000	IDR 2,380.997
	Foreman	0.026	115.92	OH	IDR	79.000	IDR 238.100
	Timber Class III	0.04	115.92	BTG	IDR	19.000	IDR 88.099
	Nail 5-10cm	0.3	115.92	KG	IDR	15.000	IDR 521.640
	Oil	0.1	115.92	LS	IDR	8.500	IDR 98.532
	SLOOF						
	Worker	0.52	281.16	OH	IDR	63.000	IDR 9,210.802
	Wood Worker	0.26	281.16	OH	IDR	77.000	IDR 5,628.823
	Head of Worker	0.026	281.16	OH	IDR	79.000	IDR 577.503
	Foreman	0.026	281.16	OH	IDR	79.000	IDR 577.503
	Timber Class III	0.045	281.16	BTG	IDR	19.000	IDR 240.392
	Nail 5-10cm	0.3	281.16	KG	IDR	15.000	IDR 1,265.220
	Oil	0.1	281.16	LS	IDR	8.500	IDR 238.986
	COLUMN						
	Worker	0.66	115.68	OH	IDR	63.000	IDR 4,809.974
	Wood Worker	0.33	115.68	OH	IDR	77.000	IDR 2,939.429
	Head of Worker	0.033	115.68	OH	IDR	79.000	IDR 301.578
	Foreman	0.033	115.68	OH	IDR	79.000	IDR 301.578
	Timber Class III	0.04	115.68	BTG	IDR	19.000	IDR 87.917
	Nail 5-112cm	0.4	115.68	KG	IDR	15.000	IDR 694.080
	Oil	0.2	115.68	LS	IDR	8.500	IDR 196.656
	Timber Class III	0.015	115.68	BTG	IDR	39.000	IDR 67.673
	Plywood 9mm	0.35	115.68	LBR	IDR	98.850	IDR 4,002.239
	Dolken Timber ø 8 - 10 (cm)	2	115.68	BTG	IDR	13.000	IDR 3,007.680
	BEAM						
	Worker	0.66	12.69	OH	IDR	63.000	IDR 527.650
	Wood Worker	0.33	12.69	OH	IDR	77.000	IDR 322.453
	Head of Worker	0.033	12.69	OH	IDR	79.000	IDR 33.083
	Foreman	0.033	12.69	OH	IDR	79.000	IDR 33.083
	Timber Class III	0.04	12.69	BTG	IDR	19.000	IDR 9.644
	Nail 5-112cm	0.4	12.69	KG	IDR	15.000	IDR 76.140
	Oil	0.2	12.69	LS	IDR	8.500	IDR 21.573
	Timber Class II	0.015	12.69	BTG	IDR	19.000	IDR 3.617
	Plywood 9mm	0.35	12.69	LBR	IDR	98.850	IDR 439.042
	Dolken Timber ø 8 - 10 (cm)	2	12.69	BTG	IDR	13.000	IDR 329.940

Total Cost Part 2

	FLOOR PLATE						
	Worker	0.007	684	OH	IDR	63.000	IDR 301.644
	Wood Worker	0.076	684	OH	IDR	77.000	IDR 4,002.768
	Head of Worker	0.008	684	OH	IDR	79.000	IDR 432.288
	Foreman	0.001	684	OH	IDR	79.000	IDR 54.036
	Timber Class III	0.04	684	BTG	IDR	19.000	IDR 519.840
	Nail 5-112cm	0.4	684	KG	IDR	15.000	IDR 4,104.000
	Oil	0.2	684	LS	IDR	8.500	IDR 1,162.800
	Wood Beam Class II	0.015	684	BTG	IDR	19.000	IDR 194.940
	Plywood 9mm	0.35	684	LBR	IDR	98.850	IDR 11,832.345
	Dolken Timber ø 8 - 10 (cm)	6	684	BTG	IDR	13.000	IDR 1,333.800
	STAIR+BORDES						
	Worker	0.66	6.93	OH	IDR	63.000	IDR 288.149
	Wood Worker	0.33	6.93	OH	IDR	77.000	IDR 176.091
	Head of Worker	0.033	6.93	OH	IDR	79.000	IDR 18.067
	Foreman	0.033	6.93	OH	IDR	79.000	IDR 18.067
	Timber Class III	0.03	6.93	BTG	IDR	19.000	IDR 3.950
	Nail 5-112cm	0.4	6.93	KG	IDR	15.000	IDR 41.580
	Oil	0.2	6.93	LS	IDR	8.500	IDR 11.781
	Wood Beam Class II	0.02	6.93	BTG	IDR	19.000	IDR 2.633
	Plywood 9mm	0.35	6.93	LBR	IDR	98.850	IDR 239.761
	Dolken Timber ø 8 - 10 (cm)	3	6.93	BTG	IDR	13.000	IDR 270.270
2.3	STEEL BAR / 10kg						
	FOUNDATION						
	Worker	0.07	357.64	OH	IDR	63.000	IDR 157.719
	Steel Worker	0.07	357.64	OH	IDR	76.000	IDR 190.264
	Head of Worker	0.007	357.64	OH	IDR	80.000	IDR 20.028
	Foreman	0.004	357.64	OH	IDR	79.000	IDR 11.301
	Steel Reinforcement	10.5	357.64	KG	IDR	12.500	IDR 4,694.025
	Wire	0.15	357.64	M	IDR	13.000	IDR 69.740
	SLOOF						
	Worker	0.07	4324.35	OH	IDR	63.000	IDR 1,907.038
	Steel Worker	0.07	4324.35	OH	IDR	76.000	IDR 2,300.554
	Head of Worker	0.007	4324.35	OH	IDR	80.000	IDR 242.164
	Foreman	0.004	4324.35	OH	IDR	79.000	IDR 136.649
	Steel Reinforcement	10.5	4324.35	KG	IDR	12.500	IDR 56,757.094
	Wire	0.15	4324.35	M	IDR	13.000	IDR 843.248
	COLUMN						
	Worker	0.07	8656.16	OH	IDR	63.000	IDR 3,817.367
	Steel Worker	0.07	8656.16	OH	IDR	76.000	IDR 4,605.077
	Head of Worker	0.007	8656.16	OH	IDR	80.000	IDR 484.745
	Foreman	0.004	8656.16	OH	IDR	79.000	IDR 273.535
	Steel Reinforcement	10.5	8656.16	KG	IDR	12.500	IDR 113,612.100
	Wire	0.15	8656.16	M	IDR	13.000	IDR 1,687.951
	BEAM						
	Worker	0.07	2486.56	OH	IDR	63.000	IDR 1,096.573
	Steel Worker	0.07	2486.56	OH	IDR	76.000	IDR 1,322.850
	Head of Worker	0.007	2486.56	OH	IDR	80.000	IDR 139.247
	Foreman	0.004	2486.56	OH	IDR	79.000	IDR 78.575
	Steel Reinforcement	10.5	2486.56	KG	IDR	12.500	IDR 32,636.100
	Wire	0.15	2486.56	M	IDR	13.000	IDR 484.879
	FLOOR PLATE						
	Worker	0.07	1088.92	OH	IDR	63.000	IDR 480.214
	Steel Worker	0.07	1088.92	OH	IDR	76.000	IDR 579.305
	Head of Worker	0.007	1088.92	OH	IDR	80.000	IDR 60.980
	Foreman	0.004	1088.92	OH	IDR	79.000	IDR 34.410
	Steel Reinforcement	10.5	1088.92	KG	IDR	12.500	IDR 14,292.075
	Wire	0.15	1088.92	M	IDR	13.000	IDR 212.339
	STAIR						
	Worker	0.07	21.011	OH	IDR	63.000	IDR 9.266
	Steel Worker	0.07	21.011	OH	IDR	76.000	IDR 11.178
	Head of Worker	0.007	21.011	OH	IDR	80.000	IDR 1.177
	Foreman	0.004	21.011	OH	IDR	79.000	IDR 0.664
	Steel Reinforcement	10.5	21.011	KG	IDR	12.500	IDR 275.769
	Wire	0.15	21.011	M	IDR	13.000	IDR 4.097

Total Cost Part 3

III. WALL						
3.1 BRICK						
Worker	0.6	924	OH	IDR	63.000	IDR 34,927.200
Stone Worker	0.2	924	OH	IDR	75.000	IDR 13,860.000
Head of Worker	0.02	924	OH	IDR	80.000	IDR 1,478.400
Foreman	0.03	924	OH	IDR	79.000	IDR 2,189.880
Red Brick	140	924	BH	IDR	0.725	IDR 93,786.000
Portland Cement/ 40 kg	43.5	924	KG	IDR	47.000	IDR 47,227.950
Fine Sand	0.08	924	M3	IDR	200.000	IDR 14,784.000
3.2 DOOR + WINDOW FRAME						
Worker	7	0.0805	OH	IDR	63.000	IDR 35.501
Wood Worker	21	0.0805	OH	IDR	77.000	IDR 130.169
Head of Worker	2.1	0.0805	OH	IDR	79.000	IDR 13.355
Foreman	0.35	0.0805	OH	IDR	79.000	IDR 2.226
Timber Beam	1.1	0.0805	M2	IDR	19.000	IDR 1.682
Nail 10cm	1.25	0.0805	KG	IDR	15.000	IDR 1.509
Wood Glue	1	0.0805	BH	IDR	15.000	IDR 1.208
3.3 DOOR + WINDOW						
Worker	0.8	6.82	OH	IDR	63.000	IDR 343.728
Wood Worker	2.4	6.82	OH	IDR	77.000	IDR 1,260.336
Head of Worker	0.24	6.82	OH	IDR	79.000	IDR 129.307
Foreman	0.04	6.82	OH	IDR	79.000	IDR 21.551
Board	0.024	6.82	M2	IDR	110.000	IDR 18.005
Glue	0.3	6.82	BH	IDR	15.000	IDR 30.690
3.4 GLASS						
Worker	0.015	48	OH	IDR	63.000	IDR 45.360
Wood Worker	0.15	48	OH	IDR	77.000	IDR 554.400
Head of Worker	0.015	48	OH	IDR	79.000	IDR 56.880
Foreman	0.0008	48	OH	IDR	79.000	IDR 3.034
Glass 5mm	1.1	48	M2	IDR	110.000	IDR 5,808.000
Sealant	0.05	48	KG	IDR	15.000	IDR 36.000
3.5 DOOR AND WINDOW HINGE						
Worker	0.015	33	OH	IDR	63.000	IDR 31.185
Wood Worker	0.15	33	OH	IDR	77.000	IDR 381.150
Head of Worker	0.015	33	OH	IDR	79.000	IDR 39.105
Foreman	0.0008	33	OH	IDR	79.000	IDR 2.086
Hinge	1	33	UNIT	IDR	116.000	IDR 3,828.000
3.6 DOOR KEY						
Worker	0.01	11	OH	IDR	63.000	IDR 6.930
Wood Worker	0.5	11	OH	IDR	77.000	IDR 423.500
Head of Worker	0.05	11	OH	IDR	79.000	IDR 43.450
Foreman	0.005	11	OH	IDR	79.000	IDR 4.345
Lock	1	11	UNIT	IDR	192.000	IDR 2,112.000
3.6 STEEL DOOR						
Worker	0.01	1	OH	IDR	63.000	IDR 0.630
Wood Worker	0.5	1	OH	IDR	79.000	IDR 39.500
Head of Worker	0.05	1	OH	IDR	77.000	IDR 3.850
Foreman	0.005	1	OH	IDR	79.000	IDR 0.395
Steel Door	1	1	UNIT	IDR	12,000.000	IDR 12,000.000
3.7 PARTITION						
Worker (Lump-sum)	1	80.22	M2	IDR	175.000	IDR 14,038.500

Total Cost Part 4

IV. PLASTERING						
4.1 WALL						
Worker	0.3	924	OH	IDR	63.000	IDR 17,463.600
Stone Worker	0.15	924	OH	IDR	75.000	IDR 10,395.000
Head of Worker	0.015	924	OH	IDR	80.000	IDR 1,108.800
Foreman	0.015	924	OH	IDR	79.000	IDR 1,094.940
Portland Cement/ 40 kg	10.224	924	KG	IDR	47.000	IDR 11,100.197
Fine Sand	0.02	924	M3	IDR	200.000	IDR 3,696.000
4.2 FLOOR PLATE						
Worker	0.3	684	OH	IDR	63.000	IDR 12,927.600
Stone Worker	0.15	684	OH	IDR	75.000	IDR 7,695.000
Head of Worker	0.015	684	OH	IDR	80.000	IDR 820.800
Foreman	0.015	684	OH	IDR	79.000	IDR 810.540
Portland Cement/ 40 kg	10.224	684	KG	IDR	47.000	IDR 8,217.029
Fine Sand	0.02	684	M3	IDR	200.000	IDR 2,736.000
V. ROOF AND CEILING						
5.1 PURLIN						
Worker	0.06	1096	OH	IDR	63.000	IDR 4,142.880
Welder	0.06	1096	OH	IDR	77.000	IDR 5,063.520
Head of Worker	0.006	1096	OH	IDR	79.000	IDR 519.504
Foreman	0.003	1096	OH	IDR	79.000	IDR 259.752
Steel Profile 150x50x13x2.3 / 6m	1.15	1096	KG	IDR	257.600	IDR 10,909.914
5.2 TILE TRUSS						
Worker	6.7	1.568	OH	IDR	63.000	IDR 661.853
Wood Worker	20.1	1.568	OH	IDR	77.000	IDR 2,426.794
Head of Worker	2.01	1.568	OH	IDR	79.000	IDR 248.983
Foreman	0.335	1.568	OH	IDR	79.000	IDR 41.497
Rafter 5/7	0.014	1.568	M3	IDR	45.000	IDR 0.988
Reng 2/3	0.036	1.568	M3	IDR	15.500	IDR 0.875
Nail 5-10cm	0.25	1.568	KG	IDR	15.000	IDR 5.880
5.3 TILE						
Worker	0.4	433.5	OH	IDR	63.000	IDR 10,924.200
Wood Worker	0.2	433.5	OH	IDR	77.000	IDR 6,675.900
Head of Worker	0.02	433.5	OH	IDR	79.000	IDR 684.930
Foreman	0.002	433.5	OH	IDR	79.000	IDR 68.493
Tile	5	433.5	BH	IDR	8.000	IDR 17,340.000
Portland Cement/ 40 kg	8	433.5	KG	IDR	47.000	IDR 4,074.900
Fine Sand	0.032	433.5	M3	IDR	200.000	IDR 2,774.400
5.4 GYPSUM RM (Lump-sum)						
Worker	1	156.65	M2	IDR	120.000	IDR 18,798.000
5.5 GYPSUM RK (Lump-sum)						
Worker	1	391.1	M2	IDR	270.000	IDR 105,597.000
5.6 LIST GYPSUM (Lump-sum)						
Worker	1	543	M	IDR	20.000	IDR 10,860.000
5.7 Concrete Expose						
Worker	1	134.04	M2	IDR	37.000	IDR 4,959.480
5.8 Rafter						
Worker	6.7	10.8	OH	IDR	63.000	IDR 4,558.680
Wood Worker	20.1	10.8	OH	IDR	77.000	IDR 16,715.160
Head of Worker	2.01	10.8	OH	IDR	79.000	IDR 1,714.932
Foreman	0.335	10.8	OH	IDR	79.000	IDR 285.822
Reng	1.1	10.8	M2	IDR	31.400	IDR 373.032
Nail 3-4cm	3	10.8	KG	IDR	15.000	IDR 486.000

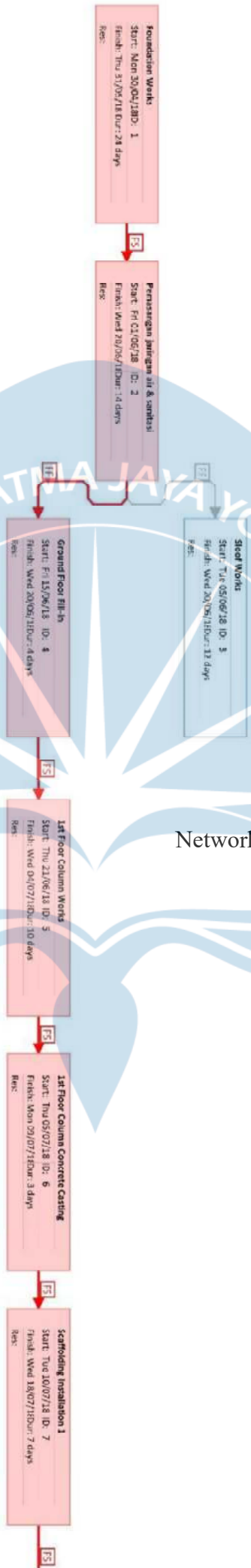
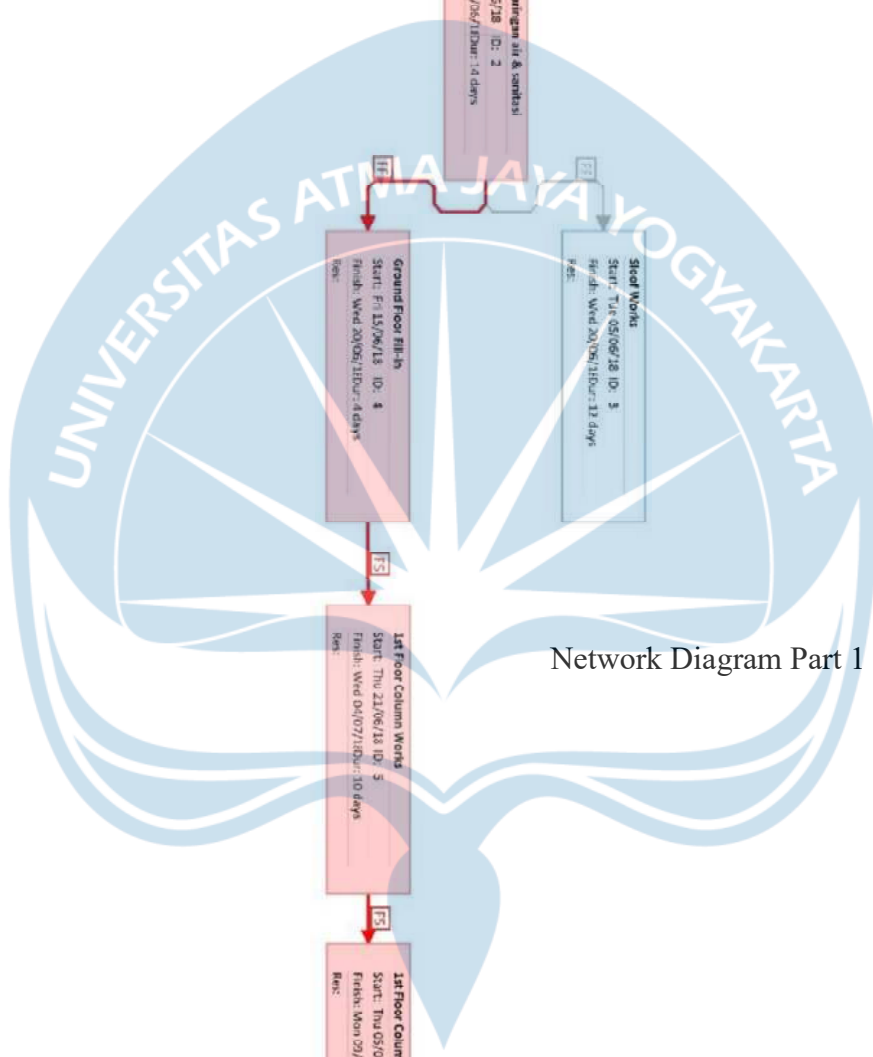
Total Cost Part 5

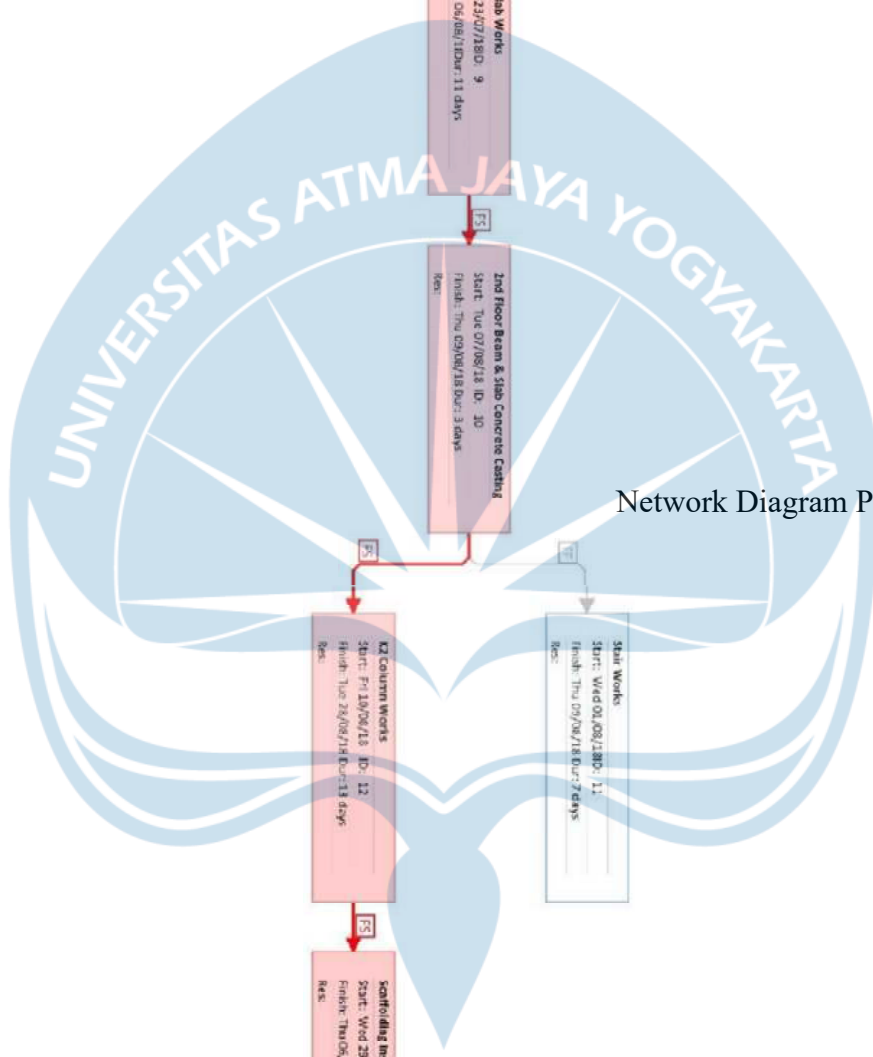
VI. MECHANICAL AND SANITATION						
6.1 CLOSET						
Worker	3.3	5 OH	IDR	63.000	IDR	1,039.500
Stone Worker	1.1	5 OH	IDR	75.000	IDR	412.500
Head of Worker	0.01	5 OH	IDR	80.000	IDR	4.000
Foreman	0.16	5 OH	IDR	79.000	IDR	63.200
Sitting Closet	1	5 BH	IDR	200.000	IDR	1,000.000
Equipment	0.35	%			IDR	350.000
6.2 WASTAFEL						
Worker	0.03	7 OH	IDR	63.000	IDR	13.230
Stone Worker	0.3	7 OH	IDR	75.000	IDR	157.500
Head of Worker	0.03	7 OH	IDR	80.000	IDR	16.800
Foreman	0.015	7 OH	IDR	79.000	IDR	8.295
Westafel	1	7 BH	IDR	350.000	IDR	2,450.000
Waterdrain	1	7 BH	IDR	85.000	IDR	595.000
Equipment	0.35	%			IDR	857.500
6.3 SEPTICTANK						
Worker (Lump-sum)	1	5 M2	IDR	250.000	IDR	1,250.000
6.4 CONTROL TUB						
Worker (Lump-sum)	1	1 UNIT	IDR	1,000.000	IDR	1,000.000
6.5 RECHARGING WELL						
Worker (Lump-sum)	1	5 M2	IDR	250.000	IDR	1,250.000
6.6 CLEAN WATER WELL						
Worker (Lump-sum)	1	5 M2	IDR	250.000	IDR	1,250.000
6.7 WATER TOWER						
Worker (Lump-sum)	1	1 UNIT	IDR	5,000.000	IDR	5,000.000
6.8 CLEAN WATER PIPE 3/4"						
Worker	0.054	64.5 OH	IDR	63.000	IDR	219.429
Stone Worker	0.09	64.5 OH	IDR	75.000	IDR	435.375
Head of Worker	0.009	64.5 OH	IDR	80.000	IDR	46.440
Foreman	0.027	64.5 OH	IDR	79.000	IDR	137.579
Galvanis Pipe 3/4" / 6M	1.2	64.5 BTG	IDR	200.000	IDR	2,580.000
Equipment	0.35	%			IDR	903.000
RAINFALL PIPE 3						
Worker	0.135	64.5 OH	IDR	63.000	IDR	548.573
Stone Worker	0.225	64.5 OH	IDR	75.000	IDR	1,088.438
Head of Worker	0.023	64.5 OH	IDR	80.000	IDR	118.680
Foreman	0.007	64.5 OH	IDR	79.000	IDR	35.669
Galvanis Pipe 3 / 6M	1.2	64.5 BTG	IDR	200.000	IDR	2,580.000
Equipment	0.35	%	IDR	129.000	IDR	903.000
6.9 DIRT WATER PIPE 3"						
Worker	0.135	72.5 OH	IDR	63.000	IDR	616.613
Stone Worker	0.225	72.5 OH	IDR	75.000	IDR	1,223.438
Head of Worker	0.023	72.5 OH	IDR	80.000	IDR	133.400
Foreman	0.007	72.5 OH	IDR	79.000	IDR	40.093
Galvanis Pipe 3" / 6M	1.2	72.5 M	IDR	200.000	IDR	2,900.000
Equipment	0.35	%	IDR	145.000	IDR	1,015.000
6.10 DIRT PIPE 4"						
Worker	0.135	30 OH	IDR	63.000	IDR	255.150
Stone Worker	0.225	30 OH	IDR	75.000	IDR	506.250
Head of Worker	0.023	30 OH	IDR	80.000	IDR	55.200
Foreman	0.007	30 OH	IDR	79.000	IDR	16.590
Galvanis Pipe 4"	1.2	30 M	IDR	200.000	IDR	1,200.000
Equipment	0.35	%	IDR	60.000	IDR	420.000
6.11 ELECTRICAL PLAN (Lump-sum)						
Single Saklar	1	20 UNIT	IDR	15.000	IDR	300.000
Double Saklar	1	13 UNIT	IDR	15.000	IDR	195.000
Stop Kontak	1	36 UNIT	IDR	75.000	IDR	2,700.000
Lamp ; 18watt	1	67 UNIT	IDR	70.000	IDR	4,690.000
Lamp ; 11watt	1	17 UNIT	IDR	70.000	IDR	1,190.000
MCB	1	1 UNIT	IDR	75.000	IDR	75.000
MCB panel	1	1 UNIT	IDR	75.000	IDR	75.000
Gauge	1	1 UNIT	IDR	75.000	IDR	75.000

Total Cost Part 6

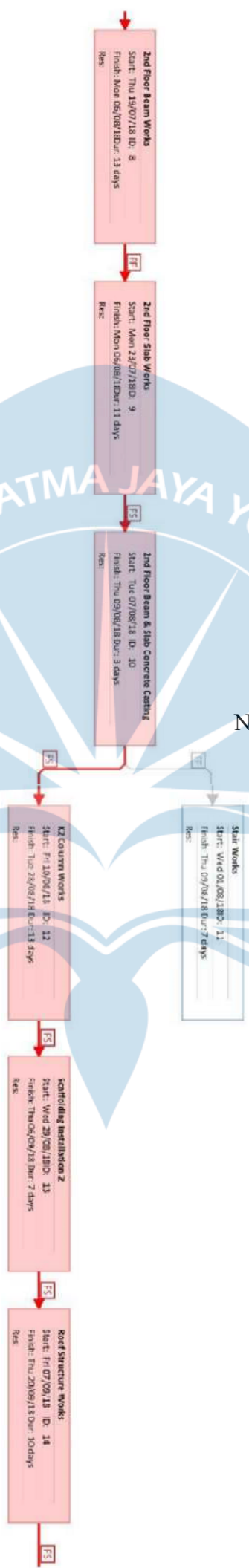
VI. FINISHING							
7.1	MULIA CERAMICS (40x40)						
	Worker	0.7	677.75	OH	IDR	63.000	IDR 29,888.775
	Stone Worker	0.35	677.75	OH	IDR	75.000	IDR 17,790.938
	Head of Worker	0.035	677.75	OH	IDR	80.000	IDR 1,897.700
	Foreman	0.035	677.75	OH	IDR	79.000	IDR 1,873.979
	Ceramics 40x40	1.05	677.75	BH	IDR	67.000	IDR 47,679.713
	Portland Cement/ 40 kg	8.19	677.75	KG	IDR	47.000	IDR 6,522.158
	Fine Sand	0.045	677.75	M3	IDR	200.000	IDR 6,099.750
	Cement	0.5	677.75	KG	IDR	11.000	IDR 3,727.625
7.2	MULIA CERAMICS (20x20)						
	Worker	0.7	44.25	OH	IDR	63.000	IDR 1,951.425
	Stone Worker	0.35	44.25	OH	IDR	75.000	IDR 1,161.563
	Head of Worker	0.035	44.25	OH	IDR	80.000	IDR 123.900
	Foreman	0.035	44.25	OH	IDR	79.000	IDR 122.351
	Ceramics 20x20	1.05	44.25	BH	IDR	46.000	IDR 2,137.275
	Portland Cement/ 40 kg	10.4	44.25	KG	IDR	47.000	IDR 540.735
	Fine Sand	0.045	44.25	M3	IDR	200.000	IDR 398.250
	Cement	0.5	44.25	KG	IDR	11.000	IDR 243.375
7.3	TEGEL (20x20)						
	Worker	0.27	22	OH	IDR	63.000	IDR 374.220
	Stone Worker	0.135	22	OH	IDR	75.000	IDR 222.750
	Head of Worker	0.014	22	OH	IDR	80.000	IDR 24.640
	Foreman	0.014	22	OH	IDR	79.000	IDR 24.332
	Tegel (20x20)	26.5	22	BH	IDR	48.000	IDR 27,984.000
	Portland Cement/ 40 kg	10.4	22	KG	IDR	47.000	IDR 268.840
	Fine Sand	0.045	22	M3	IDR	200.000	IDR 198.000
	Cement	1	22	KG	IDR	11.000	IDR 242.000
7.4	RAILING (Lump-sum)						
	Worker	1	185.4	M	IDR	370.000	IDR 68,598.000
7.5	TALANG						
	Worker	0.3	400.5	OH	IDR	63.000	IDR 7,569.450
	Head of Worker	0.03	400.5	OH	IDR	80.000	IDR 961.200
	Foreman	0.008	400.5	OH	IDR	79.000	IDR 253.116
	Seng Plate	1.05	400.5	OH	IDR	79.000	IDR 33,221.475
	Nail 1-2.5cm	0.01	400.5	LBR	IDR	15.000	IDR 60.075
	Steel Strip	0.5	400.5	KG	IDR	12.500	IDR 2,503.125
7.6	POT						
	Workers	1	2	M2	IDR	30.000	IDR 60.000
7.7	PAINTING						
	WALL						
	Worker	0.02	924	OH	IDR	63.000	IDR 1,164.240
	Painter	0.063	924	OH	IDR	70.000	IDR 4,074.840
	Head of Worker	0.0063	924	OH	IDR	77.000	IDR 448.232
	Foreman	0.003	924	OH	IDR	79.000	IDR 218.988
	Plamuur	0.1	924	KG	IDR	13.700	IDR 1,265.880
	Base Paint	0.1	924	KG	IDR	100.000	IDR 9,240.000
	Finishing Paint	0.26	924	KG	IDR	100.000	IDR 24,024.000
	RESURFACING TIMBER						
	Worker	0.04	87.6	OH	IDR	63.000	IDR 220.752
	Painter	0.06	87.6	OH	IDR	70.000	IDR 367.920
	Head of Worker	0.016	87.6	OH	IDR	77.000	IDR 107.923
	Foreman	0.003	87.6	OH	IDR	79.000	IDR 20.761
	Politur	0.15	87.6	KG	IDR	60.000	IDR 788.400
	Politur jadi	0.372	87.6	KG	IDR	60.000	IDR 1,955.232
	Ampelas	2	87.6	KG	IDR	3.000	IDR 525.600
	Paint Brush	0.01	87.6	UNIT	IDR	30.000	IDR 26.280
	TIMBER						
	Worker	0.07	87.6	OH	IDR	63.000	IDR 386.316
	Painter	0.009	87.6	OH	IDR	70.000	IDR 55.188
	Head of Worker	0.006	87.6	OH	IDR	77.000	IDR 40.471
	Foreman	0.003	87.6	OH	IDR	79.000	IDR 20.761
	Plamuur	0.15	87.6	KG	IDR	13.700	IDR 180.018
	Base Paint	0.17	87.6	KG	IDR	55.000	IDR 819.060
	Finishing Paint	0.26	87.6	KG	IDR	55.000	IDR 1,252.680
	Menie Paint	0.2	87.6	KG	IDR	50.000	IDR 876.000
	Diluent	0.03	87.6	KG	IDR	15.600	IDR 40.997
	Paint Brush	0.01	87.6	UNIT	IDR	27.000	IDR 23.652
	Ampelas	0.2	87.6	UNIT	IDR	3.000	IDR 52.560

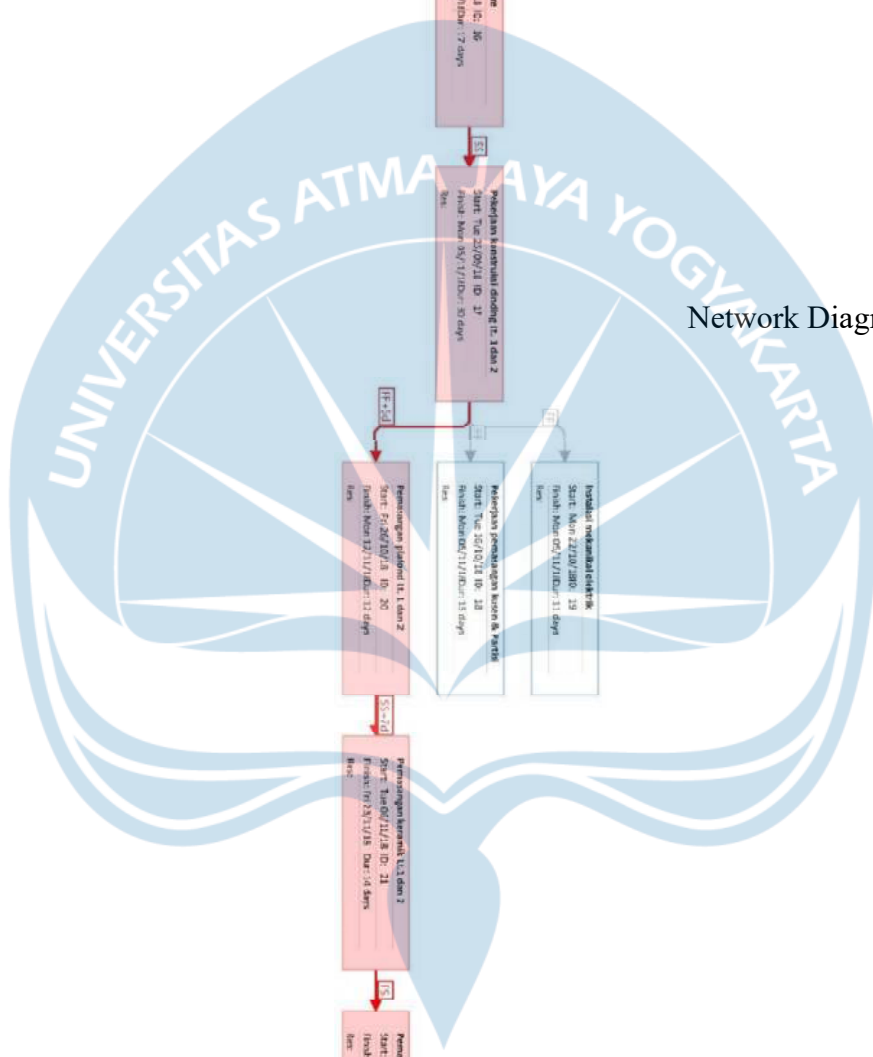
Total Cost Part 7



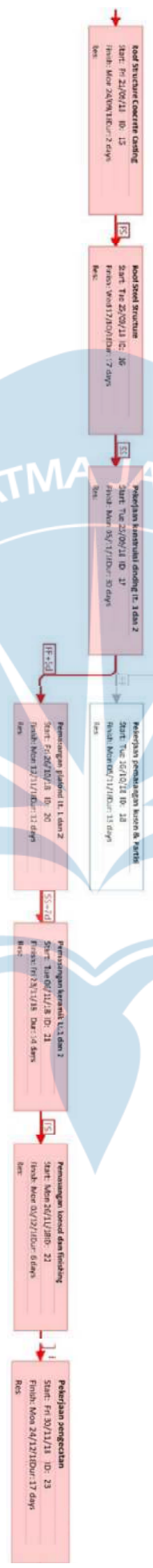


Network Diagram Part 2



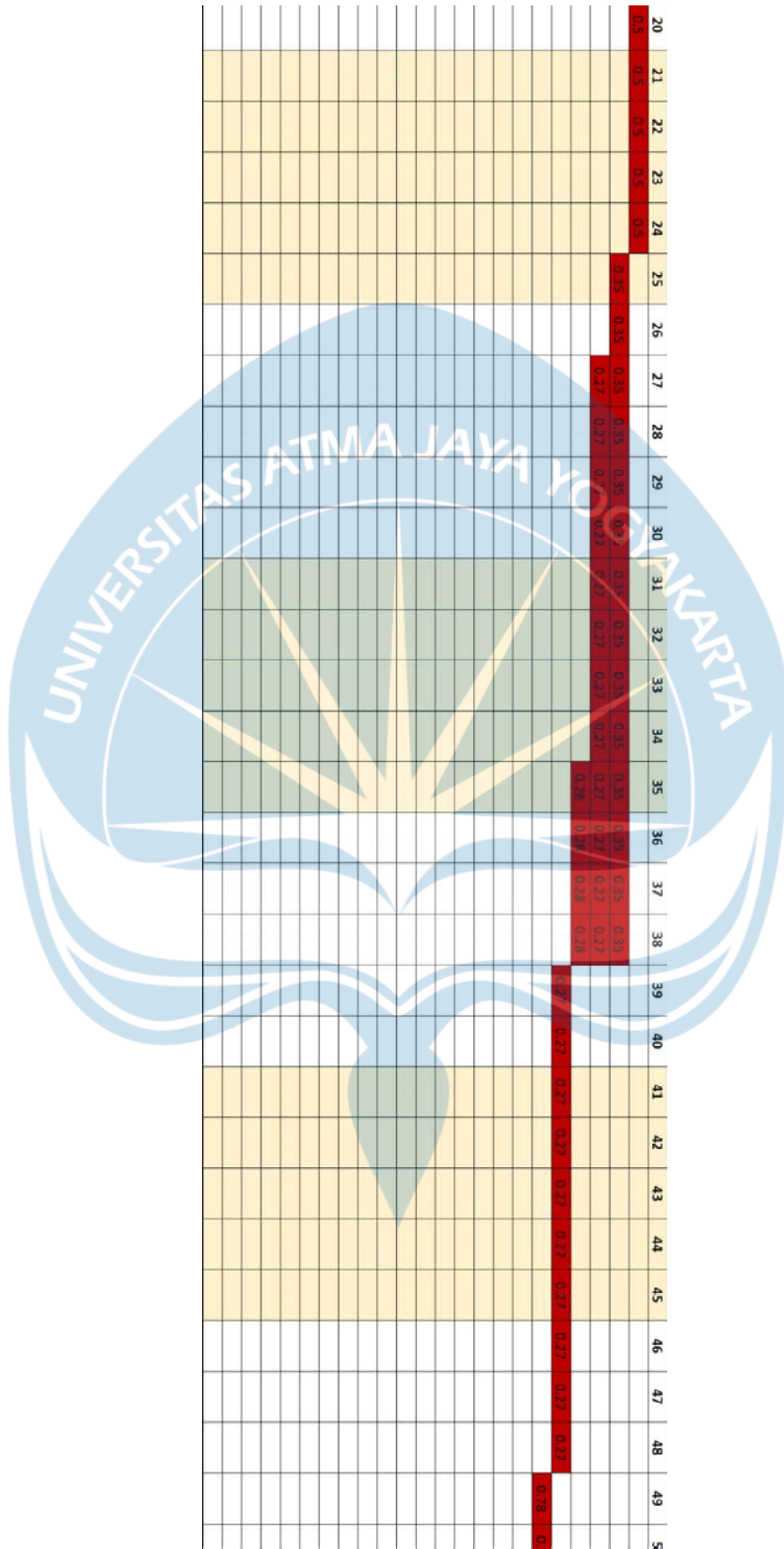


Network Diagram Part 3

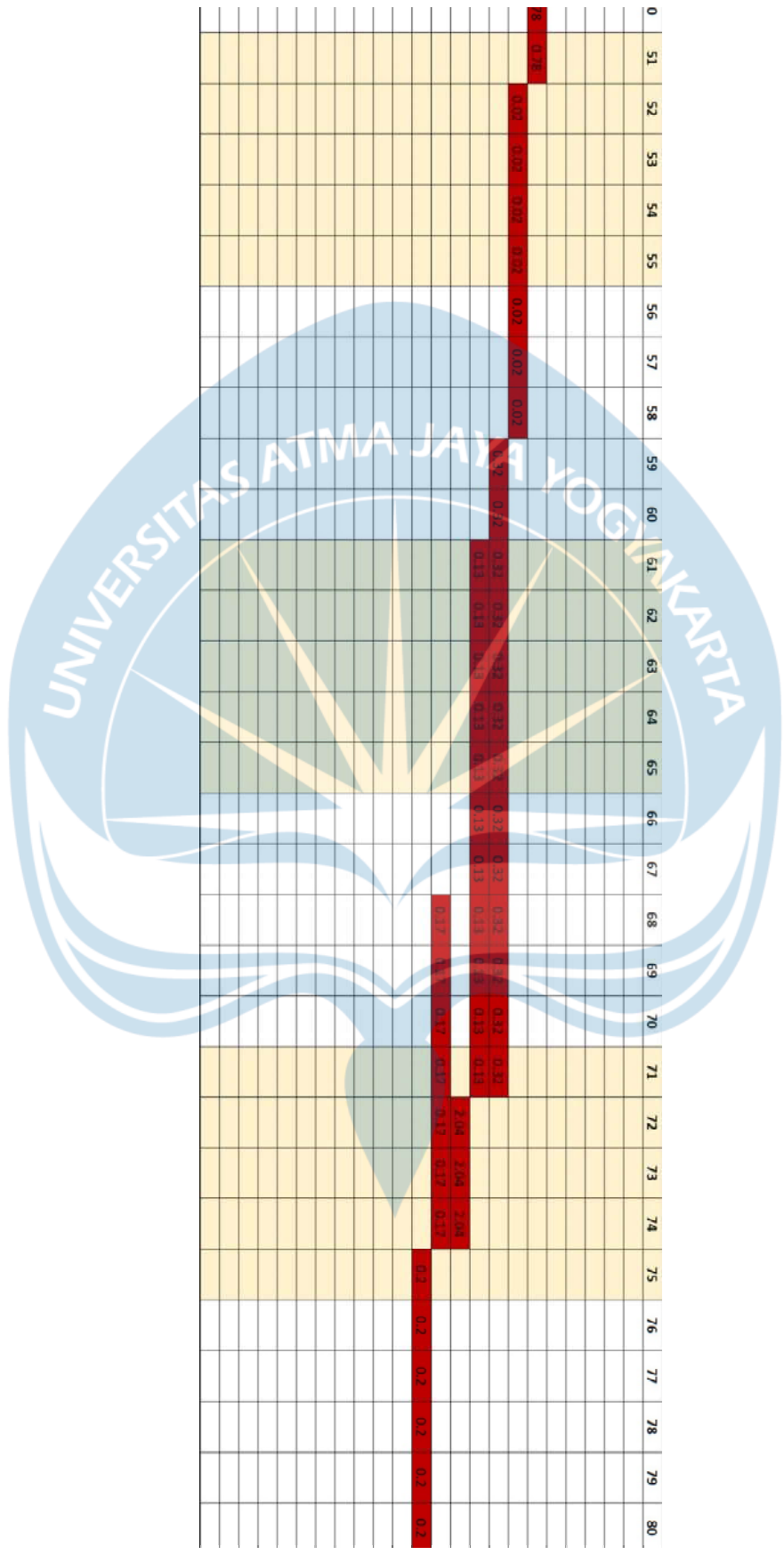


Activity	Durations (Day)	%	%/day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Foundation Works	24	12.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Pemasangan partingan air & sanitasi	14	4.84	0.35																			
Sluof Works	12	3.26	0.27																			
Ground Floor Fill-in	4	1.14	0.28																			
1st Floor Column Works	10	2.74	0.27																			
1st Floor Column Concrete Casting	3	2.33	0.78																			
Scaffolding Installation 1	7	0.16	0.02																			
2nd Floor Beam Works	13	4.19	0.32																			
2nd Floor Slab Works	11	1.41	0.13																			
2nd Floor Beam & Slab Concrete Casting	3	6.11	2.04																			
Slab Works	7	1.2	0.17																			
K2 Column Works	13	2.54	0.2																			
Scaffolding Installation 2	7	0.15	0.02																			
Roof Structure Works	10	5.37	0.54																			
Roof Structure Concrete Casting	2	1.62	0.81																			
Roof Steel Structure	17	4.95	0.29																			
Pekerjaan konstruksi dinding Lt. 1 dan 2	30	11.21	0.37																			
Pekerjaan pemasangan kusen & Partisi	15	9.42	0.63																			
Instalasi mekanikal elektrik	11	2.97	0.27																			
Pemasangan plafond Lt. 1 dan 2	12	4.22	0.35																			
Pemasangan keramik Lt. 1 dan 2	14	8.09	0.58																			
Pemasangan korsi dan finishing	6	3.7	0.62																			
Pekerjaan pengecatan	17	6.27	0.37																			

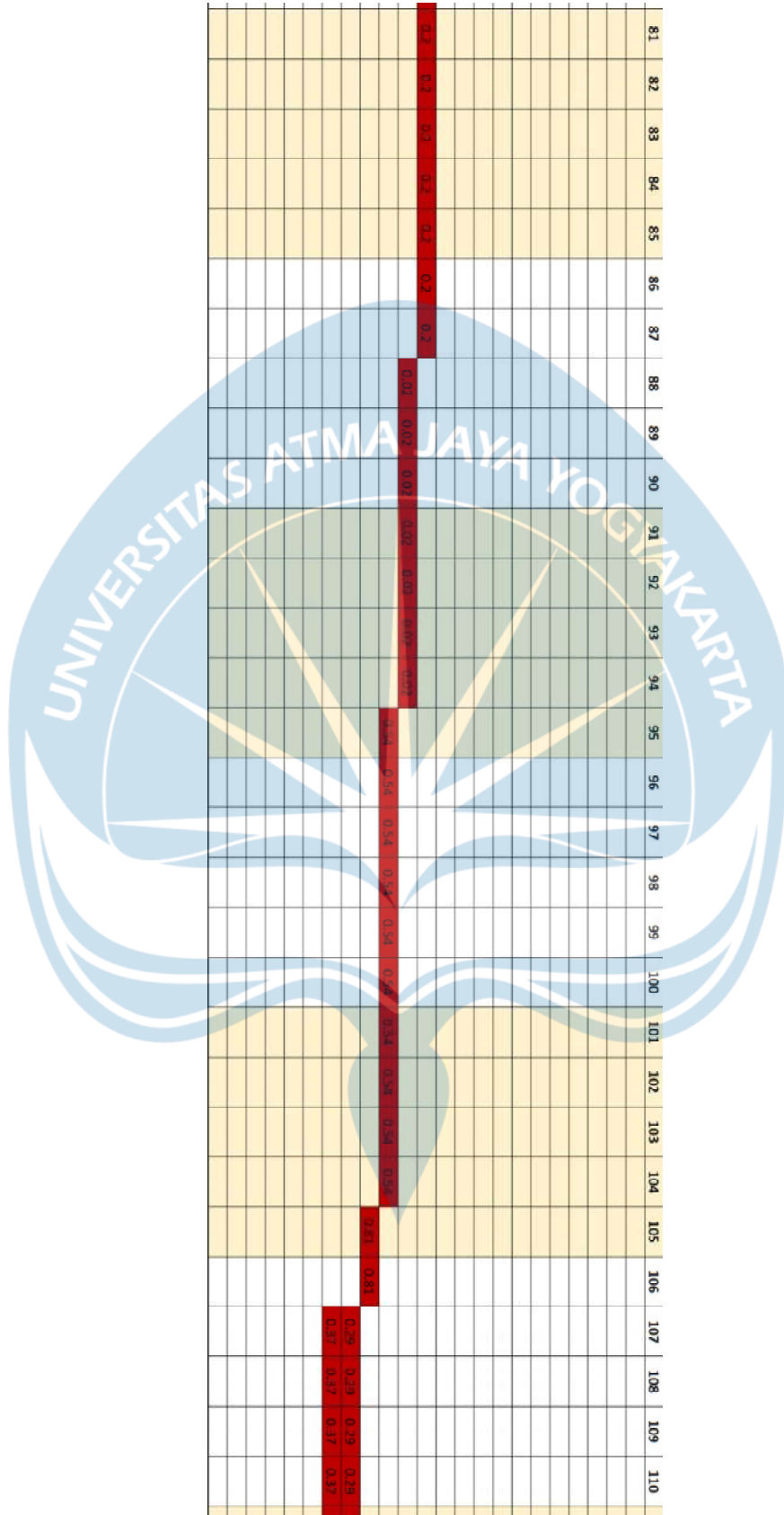
Bar Chart Part 1



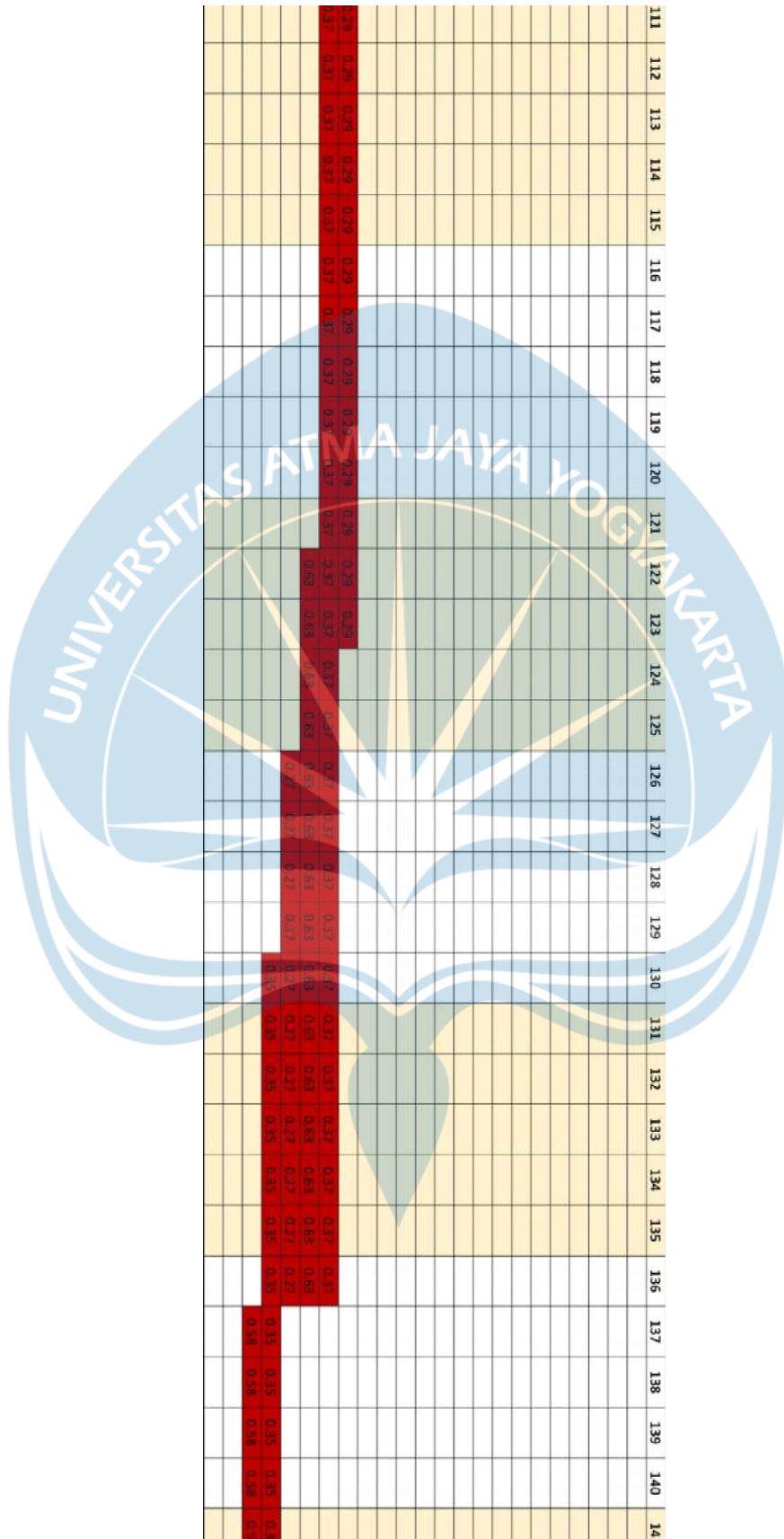
Bar Chart Part 2



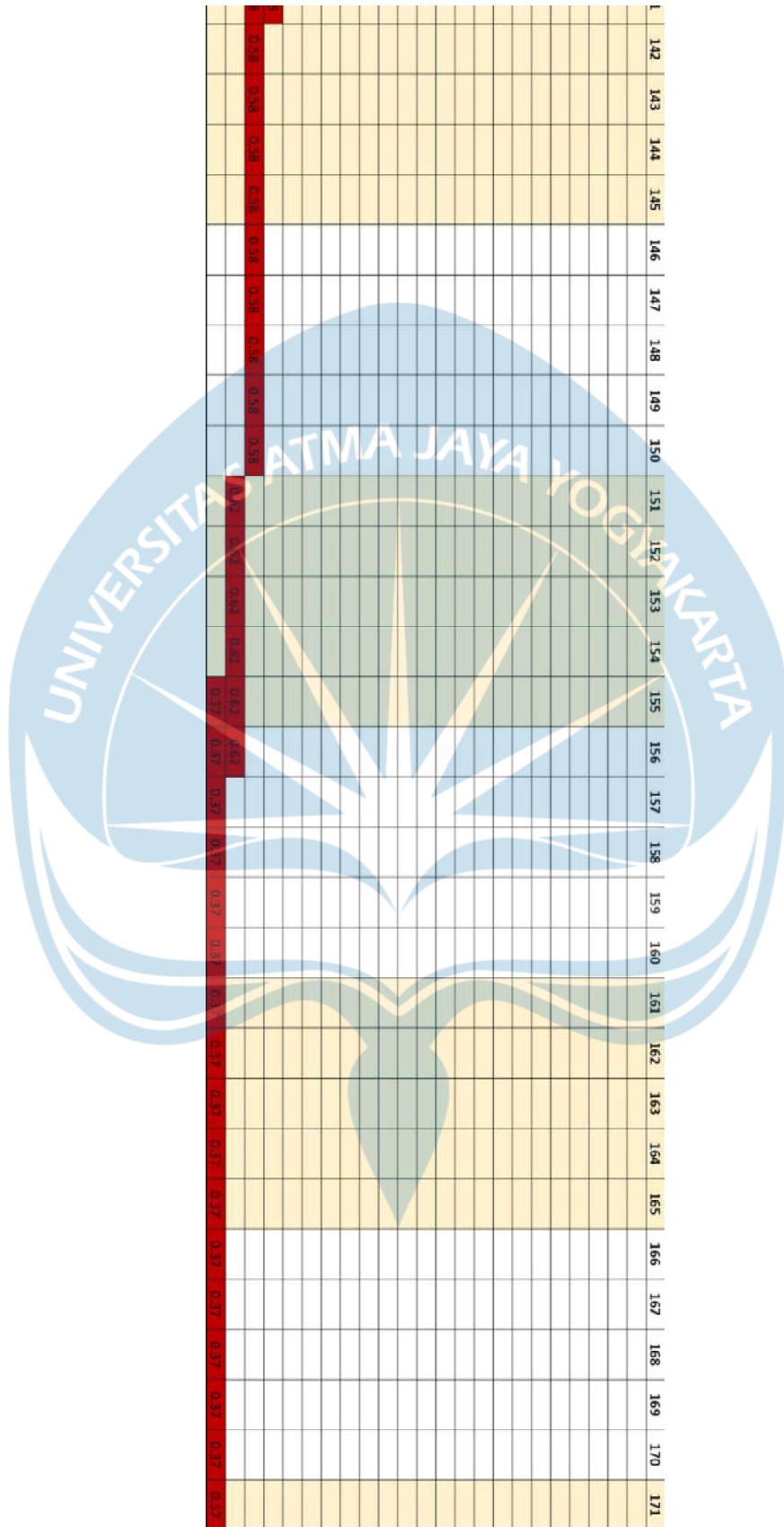
Bar Chart Part 3



Bar Chart Part 4



Bar Chart Part 5



Bar Chart Part 6