

## CASH FLOW DESIGN STUDY IN ROAD WORKS-ROAD WIDENING PROJECT ON KURNIA STREET NORTH LANDASAN ULIN BANJARBARU

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### ABSTRACT

The effect of planning on construction projects will have an impact on income within the project itself. Usually, the realization of work plans in the field often experiences delays in the process, because the number of revenue was determined by the method of payment stipulated in the construction contract. Payment system aspects affect the working capital that needs to be provided by the contractor. Therefore, the role of planning the flow of cash flow is very substantial in the implementation of the project. The purpose of this study is to get a *cash flow* plan with a Monthly Payment system and Progress Payment system based on the project schedule of the Road Works-Road Widening On Kurnia Street North Landasan Ulin Banjarbaru. The method used to analyze the data is project scheduling by making the description and sequence each activity, determining the duration for each project work, and making a project network diagram using the PDM Method (*Precedence Diagram Method*). Then make a *cash flow* analysis with monthly payment system and progress payment with three payments, at cumulative progress 30.04%, 70.28%, and 100% on the conditions of EST (*Earliest Start Time*) and LST (*Latest Start Time*) schedule. The results of the data analysis show that the payment system that provides maximum benefits is the Monthly Payment system using a 20% down payment on the EST (*Earliest Start Time*) and LST (*Latest Start Time*) schedule conditions with a total loan of Rp. 653,000,000, the contractor gets a profit of Rp. 490,990,222 with a percentage of profits of 8,892%.

**Keywords:** *Cash flow, PDM, Earliest Start Time, Latest Start Time*

## 1. INTRODUCTION

### Background

In the construction services business, cost control is very substantial. So It is required a cash flow plan to control the financial, simplify implementation, and to monitor the work progress of the project. The fundamental meaning of cash flow is the amount of cash that goes in (cash advances, like bank loans, etc.), and that goes out. In other words, cash flow consists of cash inflows and outflows of a project and how much is the balance each period. The purpose of creating cash

flow is to ensure that the results of the implementation can be efficient, effective, and the quality determined is met.

Cash flow was made to compare the realization of the cost budget with the planned budget. The completed performance or volume of work has been assessed based on the implementation budget. To control project's finances, weekly targets were set out from the schedule. Weekly or other goals are the volumes of work to be completed in the week concerned.

## **2. LITERATURE REVIEW**

### **Project Organization**

According to Trisnawati (2017), the easy meaning of organizational forms is the integration of the activities of two or more individuals under one coordination, and it serves to bring them together as one goal.

According to Suwirdi (2014), the organization is part of project management, which will make an organization achieve its goals. This process is reflected by the organizational structure that includes substantial aspects of the organization and the organizing process, namely the division of labor, departmentalization, formal organizational chart, chain of command and command unity, levels of management hierarchy, communication channels, use of committees, and range of management and information groups cannot avoid.

### **Construction Contract**

According to Yasin (2006), construction contracts are divided based on the form of rewards, consisting of *lumps*, *unit* prices, and unit *lumps*, and unit prices combined. Then based on the implementation period consisting of a Single Year and a Plural Year. Finally, based on how the payment for work results consist of Monthly Payments, Progress Payments, and Payments After Work Completion

### **Cost**

According to Soeharto (1999), the cost is the sum of all the effort and expenditure in developing, producing, and applying a product. Costs are all sacrifices that must be done for a production process, which was expressed in terms of money according to the prevailing market prices, both those that have

occurred and will occur. Matters relating to costs in construction projects include the RAB and RAP. Cost budget plan (RAB) is a plan for the number of costs estimated in project work that arranged based on the volume of each activity in the planning picture or project plan. Implementation budget plan (RAP) is one of the documents as required in a complete operational implementation of the project, as a reference / operational guidelines for project implementation.

### **Project Management**

According to Ervianto (2002), project management is all about planning, implementation, control, and coordination of a project from the initial (idea) until the completion of the project to ensure that the project is implemented on time, on cost, and quality met. Another thing related to project management is project scheduling. Scheduling determines which activity begins, pending, and completed, so the financing and the use of resources will be adjusted by the time shortly sequence specified requirements.

### **Cash Flow**

According to Soeharto (1999), *cash flow* is an estimate of the money income (*inflow*) and expenditure (*outflow*) that occurs in investment within a fixed period. *Cash flow* from a project was defined as a list of cash receipts and disbursements received from a construction project; with the *cash flow* the nominal amount of project cash at a particular time can be defined. In cash flow, there are two substantial things, namely Initial and Final Finances. Initial Finances is an amount of money that must be provided by contractor at the beginning of work, which will this money should returned from the reception at the end of the project (Giatman, 2006). Final Finances is the condition at the end of the month, which is the total of after initial and total financial. Therefore, this cash flow originates from returns on working capital and sales and fixed assets (Asiyanto, 2005).

### **Overdraft**

What is meant by overdraft is the difference between expenditure on a project with payment from the owner to the contractor. Hence, it is a

requirement for the contractor to provide funds in advance before receiving payment from the owner (Halpin, 1998).

### 3. RESEARCH METHOD

#### Data Collection

The type of data used in this study is secondary data obtained from the parties involved in implementing the project, namely the contractor. Secondary data collected includes Contract Documents, Cost budget plan (RAB), Contractor's *Time Schedule*

#### Data Processing

Data processing was carried out from the aspect of scheduling. The researcher makes a description and sequence of each project's work. Then determine the grace period for each activity by using the PDM method .

After that, an analysis is carried out on the aspects of income and expenditure on the estimated cash flow so that the cash flow can be discovered and controlled.

#### Steps for *Cash Flow* Calculation

Cash Flow at this writing are as follows:

##### a. Initial Planning

1. The project data in the form of schedule, the S curve of the project rearrange to EST and LST bar chart. Then make the actual cost of the project in the form of RAP (Implementation Budget Plan), PPN tax of 10% of the contract value, and PPH tax of 3% of the contract value. To obtain the actual cost of the project in the form of an Implementation Budget Plan (RAP) as follows:

$$\text{RAB} = \text{RAP} + \text{Tax}$$

$$\text{RAP} = \text{RAB} - (\text{VAT} + \text{PPH})$$

$$\text{RAP} = \text{RAB} - (10\% + 3\%)$$

$$\text{RAP} = \text{RAB} - 13\% \text{ RAB}$$

$$\text{RAP} = 0,87 \text{ RAB}$$

2. For illustrative purposes, the actual project costs / RAP will be divided into:
  - Indirect costs/project overhead.

It was assumed that the amount of indirect project costs is 5% of the RAB to simplify the calculation. (Renardi, et al. 2013)

Indirect costs = 0,05 RAB

- Direct cost.

Represents the carrying out physical construction, the amount is the difference between RAP and indirect costs.

$$\begin{aligned}\text{Direct costs} &= \text{RAP} - \text{Indirect costs} \\ &= 0,87 \text{ RAB} - 0,05 \text{ RAB} \\ &= 0,82 \text{ RAB}\end{aligned}$$

**b. Income**

3. The amount of the contractor's *profit* was already listed in Unit Price Analysis (AHSP)

4. The amount of the bill from the contractor to the *owner* :

Bill from the contractor to the *owner* depends on the achieved achievements in the implementation of the project.

$$\begin{aligned}\text{Bill} &= \text{RAP} + \text{PPN and PPH Tax} \\ &= 0,87 \text{ RAB} + 0,13 \text{ RAB}\end{aligned}$$

$$\text{Bill} = \text{RAB}$$

**c. Outcome**

5. It was assumed the *owner* retains 5 % of the bill.

$$\text{Retention} = 0,05 \times \text{the bill}$$

$$= 0,05 \times \text{RAB}$$

The owner will pay 5 % retention at the end of the construction maintenance period as collateral for maintenance costs.

6. Payment from the owner to the contractor will be done after the construction work.

- a. For systems p embayaran no money down

$$\text{Payment} = \text{bill} - \text{retention}$$

- b. For a payment system with a down payment

$$\text{Payment} = \text{bill} - \text{retention} - (\text{down payment} / \text{payment amount})$$

7. *Overdraft* is the difference between the costs required and payment.

*Overdraft* = RAP - payment

8. *Overdraft* interest

*Overdraft* interest is taken based on the last interest rate in 2019, which is 1% per month from *overdraft*.

Overdraft interest = 0,01 x *overdraft*

#### 4. RESULTS AND DISCUSSION

This project will be a comparative analysis of two payment system variations. The first payment system is a monthly payment where payments to service providers are made every month according to the achievements/progress of work that have been done in that month. The second payment system is a progress payment system where payments to service providers based on the achieved achievements/progress of work or the advancement of work by the agreement.

The first step is to create a schedule by making a description and sequence of each project activity based on the project's schedule with the PDM (*Precedence Diagram Method*) method. After scheduling the PDM there will be two schedule conditions, namely EST and LST scheduling conditions. EST (Earliest Start Time) is the fastest time the project starts, while LST (Latest Start Time) is the slowest time the projects starts.

After the two scheduling conditions were obtained, then a *cash flow* analysis calculation is made for several alternatives, namely a monthly payment system and three times progress payment, on cumulative of 30.04%, 70.28%, and 100% with a down payment of 20% of the value contract under conditions of EST and LST scheduling. From the reviewed various alternatives or variations of the payment system, the magnitude of the benefits to be obtained.

a. Alternative Calculations 1

The calculation was based on the conditions of Earliest Start Time (EST) scheduling with a monthly payment system and with an advance of 20 % of the contract value (20% x Rp. 5.521.452.438 ), namely Rp. 1.104.290.488 in the

Kurnia Road Widening Project, North Landasan Ulin, Banjarbaru are as follows:

**1. 1st Cash Flow Period**

• **1st Month Cash Out**

$$\begin{aligned} \text{RAB1} &= \text{Job Performance} \times \text{RAP (Project Value)} \\ &= 3,51 \% \times \text{Rp} . 5.019.502.216 \\ &= \text{Rp} . 176.276.829 \end{aligned}$$

$$\begin{aligned} \text{RAP} &= 0,87 \times \text{RAB1} \\ &= 0,87 \times \text{Rp} . 176.276.829 \\ &= \text{Rp}.153.360.841 \end{aligned}$$

$$\begin{aligned} \text{Indirect Cost} &= 0,05 \times \text{RAB1} \\ &= 0,05 \times \text{Rp} . 176.276.829 \\ &= \text{Rp} . 8,813,841 \end{aligned}$$

$$\begin{aligned} \text{Direct Costs} &= 0,82 \times \text{RAB1} \\ &= 0,82 \times \text{Rp} . 176.276.829 \\ &= \text{Rp}. 144.547.000 \end{aligned}$$

• **1st Month Cash In**

$$\begin{aligned} \text{Receipt/Invoice} &= \text{Job Performance} \times \text{RAB (Contract Value)} \\ &= 3,51 \% \times \text{Rp} . 5.521.452.438 \\ &= \text{Rp}. 193.904.512 \end{aligned}$$

$$\text{PPN 10\%} = \text{Rp} . 17.627.683$$

$$\text{Receipt After PPN} = \text{Rp} . 176.276.829$$

$$\begin{aligned} \text{PPH 3\%} &= 3\% \times \text{Receipt After VAT} \\ &= 3\% \times \text{Rp}. 176.276.829 \\ &= \text{Rp}. 5.288.305 \end{aligned}$$

$$\begin{aligned} \text{Advances Installment} &= \text{Job Performance} \times \text{Advances} \\ &= 3,51 \% \times \text{Rp} . 1.104.290.488 \\ &= \text{Rp}. 38.780.902 \end{aligned}$$

$$\begin{aligned} \text{Retention} &= 5\% \times \text{Receipt / Invoice} \\ &= 5\% \times \text{Rp}. 193.904.512 \\ &= \text{Rp}. 9.955.226 \end{aligned}$$

1st Clean Receipts = Receipts After VAT - PPH 3% - Down Payment –  
Retention  
= Rp. 176.276.829 - Rp. 5.288.305 - Rp. 38.780.902  
- Rp. 9.955.226  
= Rp. 122.512.396

• **1st Month Balance**

Down Payment = 20% x RAB (Contract Value)  
= 20% x Rp. 5.521.452.438  
= Rp. 1.104.290.488

Balance 1 = Advance Payment - RAP Month 1  
= Rp. 1.104.290.488 - Rp. 153.360.841  
= Rp. 950.929.646

**2. 2nd Cash Flow Period**

• **2nd Month Cash Out**

RAB2 = Job Performance x RAP (Project Value)  
= 9,45% x Rp. 5.019.502.216  
= Rp. 474.095.518

RAP = 0,87 x RAB2  
= 0,87 x Rp. 474.095.518  
= Rp. 412.463.101

Indirect Cost = 0,05 x RAB2  
= 0,05 x Rp. 474.095,518  
= Rp. 23.704.776

Direct Costs = 0,82 x RAB2  
= 0,82 x Rp. 474.095.518  
= Rp. 388.758.325

• **2nd Month Cash in**

Receipt/Invoice = Job Performance x RAB (Contract Value)  
= 9,45 % x Rp . 5.521.452.438  
= Rp. 521.500.070

PPN 10% = Rp. 47.409.552



Receipt After PPN	= Rp. 474.095.518
PPH 3%	= 3% x Receipt After VAT = 3% x Rp. 474.095.518 = Rp . 14.222.866
Advances Installment	= Job Performance x Advances = 9,45 % x Rp. 1.104.290.488 = Rp. 104.301.014
Retention	= 5% x Receipt / Invoice = 5% x Rp. 521.500.070 = Rp. 26.075.253
2nd Net Revenue	= Revenue After PPN - PPH 3% -
Cicil an Advances	- Retention = Rp. 474.095.518 - Rp. 14.222.866 - Rp 104.301.014 - Rp. 26.075.253 = Rp. 329.496.385

• **2nd-month balance**

Saldo2	= Balance 1 + 1 Net Revenue – 2nd RAP Month = Rp. 950.929.646 + Rp. 122.512.396 - Rp. 412463.101 = Rp. 660.978.942
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For further alternative calculations, can be seen in the attached table on the next page.

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**Table 1** Cash Flow Monthly Payment System *Earliest Start Time (EST)* Conditions

URAIAN	PERIODE											TOTAL
	BULAN KE 0	BULAN KE 1	BULAN KE 2	BULAN KE 3	BULAN KE 4	BULAN KE 5	BULAN KE 6	BULAN KE 7	BULAN KE 8	BULAN KE 9	BULAN KE 15	
PRESTASI PEKERJAAN (%)		3,51%	9,45%	16,31%	9,56%	5,38%	6,92%	29,93%	18,93%			100%
<b>CASH OUT</b>												
RAB	Rp -	Rp 176.276.829	Rp 474.095.518	Rp 818.874.198	Rp 480.089.117	Rp 270.115.735	Rp 347.371.587	Rp 1.502.570.750	Rp 950.108.482	Rp -	Rp -	Rp 5.019.502.216
RAP	Rp -	Rp 153.360.841	Rp 412.463.101	Rp 712.420.552	Rp 417.677.531	Rp 235.000.690	Rp 302.213.281	Rp 1.307.236.552	Rp 826.594.379	Rp -	Rp -	Rp 4.366.966.928
BIAYA TIDAK LANGSUNG	Rp -	Rp 8.813.841	Rp 23.704.776	Rp 40.943.710	Rp 24.004.456	Rp 13.505.787	Rp 17.368.579	Rp 75.128.537	Rp 47.505.424	Rp -	Rp -	Rp 250.975.111
BIAYA LANGSUNG	Rp -	Rp 144.547.000	Rp 388.758.325	Rp 671.476.843	Rp 393.673.076	Rp 221.494.903	Rp 284.844.702	Rp 1.232.108.015	Rp 779.088.955	Rp -	Rp -	Rp 4.115.991.817
<b>CASH IN</b>												
PENERIMAAN/TAGIHAN	Rp -	Rp 193.904.512	Rp 521.505.070	Rp 900.761.618	Rp 528.098.028	Rp 297.127.309	Rp 382.108.746	Rp 1.652.827.825	Rp 1.045.119.330	Rp -	Rp -	Rp 5.521.452.438
UANG MUKA	Rp 1.104.290.488	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 1.104.290.488
PPN 10%	Rp -	Rp 17.627.683	Rp 47.409.552	Rp 81.887.420	Rp 48.008.912	Rp 27.011.574	Rp 34.737.159	Rp 150.257.075	Rp 95.010.848	Rp -	Rp -	Rp 501.950.222
PENERIMAAN SETELAH PPN	Rp -	Rp 176.276.829	Rp 474.095.518	Rp 818.874.198	Rp 480.089.117	Rp 270.115.735	Rp 347.371.587	Rp 1.502.570.750	Rp 950.108.482	Rp -	Rp -	Rp 5.019.502.216
PPH 3%	Rp -	Rp 5.288.305	Rp 14.222.866	Rp 24.566.226	Rp 14.402.673	Rp 8.103.472	Rp 10.421.148	Rp 45.077.122	Rp 28.503.254	Rp -	Rp -	Rp 150.585.066
CICILAN UANG MUKA	Rp -	Rp 38.780.902	Rp 104.301.014	Rp 180.152.324	Rp 105.619.606	Rp 59.425.462	Rp 76.421.749	Rp 330.565.565	Rp 209.023.866	Rp -	Rp -	Rp 1.104.290.488
RETENSI	Rp -	Rp 9.695.226	Rp 26.075.253	Rp 45.038.081	Rp 26.404.901	Rp 14.856.365	Rp 19.105.437	Rp 82.641.391	Rp 52.255.967	Rp -	Rp -	Rp 276.072.622
PENERIMAAN BERSIH	Rp -	Rp 122.512.396	Rp 329.496.385	Rp 569.117.568	Rp 333.661.936	Rp 187.730.436	Rp 241.423.253	Rp 1.044.286.671	Rp 660.325.395	Rp -	Rp -	Rp 3.488.554.040
<b>CASH FLOW</b>												
SALDO	Rp 1.104.290.488	Rp 950.929.646	Rp 660.978.942	Rp 278.054.774	Rp 429.494.811	Rp 528.156.057	Rp 413.673.212	Rp 652.140.087	Rp 218.552.205	Rp 662.347.600	Rp 214.917.600	
PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	
BUNGA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 6.530.000	Rp 4.430.000	
BAYAR PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 210.000.000	Rp 443.000.000	
KAS AKHIR	Rp 1.104.290.488	Rp 950.929.646	Rp 660.978.942	Rp 278.054.774	Rp 429.494.811	Rp 528.156.057	Rp 413.673.212	Rp 859.913	Rp 2.022.205	Rp 214.917.600	Rp 490.990.222	
SISA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 653.000.000	Rp 443.000.000	Rp -	

**Table 2** Cash Flow Monthly Payment System *Latest Start Time (LST)* Conditions

URAIAN	PERIODE											TOTAL
	BULAN KE 0	BULAN KE 1	BULAN KE 2	BULAN KE 3	BULAN KE 4	BULAN KE 5	BULAN KE 6	BULAN KE 7	BULAN KE 8	BULAN KE 9	BULAN KE 15	
PRESTASI PEKERJAAN (%)		3,51%	9,39%	16,21%	9,50%	5,60%	6,92%	29,93%	18,93%			100%
<b>CASH OUT</b>												
RAB	Rp -	Rp 176.276.829	Rp 471.130.676	Rp 813.871.239	Rp 477.098.853	Rp 281.073.800	Rp 347.371.587	Rp 1.502.570.750	Rp 950.108.482	Rp -	Rp -	Rp 5.019.502.216
RAP	Rp -	Rp 153.360.841	Rp 409.883.688	Rp 708.067.978	Rp 415.076.002	Rp 244.534.206	Rp 302.213.281	Rp 1.307.236.552	Rp 826.594.379	Rp -	Rp -	Rp 4.366.966.928
BIAYA TIDAK LANGSUNG	Rp -	Rp 8.813.841	Rp 23.556.534	Rp 40.693.562	Rp 23.854.943	Rp 14.053.690	Rp 17.368.579	Rp 75.128.537	Rp 47.505.424	Rp -	Rp -	Rp 250.975.111
BIAYA LANGSUNG	Rp -	Rp 144.547.000	Rp 386.327.155	Rp 667.374.416	Rp 391.221.059	Rp 230.480.516	Rp 284.844.702	Rp 1.232.108.015	Rp 779.088.955	Rp -	Rp -	Rp 4.115.991.817
<b>CASH IN</b>												
PENERIMAAN/TAGIHAN	Rp -	Rp 193.904.512	Rp 518.243.744	Rp 895.258.362	Rp 524.808.738	Rp 309.181.180	Rp 382.108.746	Rp 1.652.827.825	Rp 1.045.119.330	Rp -	Rp -	Rp 5.521.452.438
UANG MUKA	Rp 1.104.290.488	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 1.104.290.488
PPN 10%	Rp -	Rp 17.627.683	Rp 47.113.068	Rp 81.387.124	Rp 47.709.885	Rp 28.107.380	Rp 34.737.159	Rp 150.257.075	Rp 95.010.848	Rp -	Rp -	Rp 501.950.222
PENERIMAAN SETELAH PPN	Rp -	Rp 176.276.829	Rp 471.130.676	Rp 813.871.239	Rp 477.098.853	Rp 281.073.800	Rp 347.371.587	Rp 1.502.570.750	Rp 950.108.482	Rp -	Rp -	Rp 5.019.502.216
PPH 3%	Rp -	Rp 5.288.305	Rp 14.133.920	Rp 24.416.137	Rp 14.312.966	Rp 8.432.214	Rp 10.421.148	Rp 45.077.122	Rp 28.503.254	Rp -	Rp -	Rp 150.585.066
CICILAN UANG MUKA	Rp -	Rp 38.780.902	Rp 103.648.749	Rp 179.051.672	Rp 104.961.748	Rp 61.836.236	Rp 76.421.749	Rp 330.565.565	Rp 209.023.866	Rp -	Rp -	Rp 1.104.290.488
RETENSI	Rp -	Rp 9.695.226	Rp 25.912.187	Rp 44.762.918	Rp 26.240.437	Rp 15.459.059	Rp 19.105.437	Rp 82.641.391	Rp 52.255.967	Rp -	Rp -	Rp 276.072.622
PENERIMAAN BERSIH	Rp -	Rp 122.512.396	Rp 327.435.820	Rp 565.640.511	Rp 331.583.703	Rp 195.346.291	Rp 241.423.253	Rp 1.044.286.671	Rp 660.325.395	Rp -	Rp -	Rp 3.488.554.040
<b>CASH FLOW</b>												
SALDO	Rp 1.104.290.488	Rp 950.929.646	Rp 663.558.354	Rp 282.926.197	Rp 433.490.705	Rp 520.540.202	Rp 413.673.212	Rp 652.140.087	Rp 218.552.205	Rp 662.347.600	Rp 214.917.600	
PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	
BUNGA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 6.530.000	Rp 4.430.000	
BAYAR PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 210.000.000	Rp 443.000.000	
KAS AKHIR	Rp 1.104.290.488	Rp 950.929.646	Rp 663.558.354	Rp 282.926.197	Rp 433.490.705	Rp 520.540.202	Rp 413.673.212	Rp 859.913	Rp 2.022.205	Rp 214.917.600	Rp 490.990.222	
SISA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 653.000.000	Rp 443.000.000	Rp -	

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**Table 3** Cash Flow Progress Payment System *Earliest Start Time (EST)* Conditions

URAIAN	PERIODE											TOTAL
	BULAN KE 0	BULAN KE 1	BULAN KE 2	BULAN KE 3	BULAN KE 4	BULAN KE 5	BULAN KE 6	BULAN KE 7	BULAN KE 8	BULAN KE 9	BULAN KE 15	
<b>CASH OUT</b>												
PRESTASI PEKERJAAN (%)		3,51%	9,45%	16,31%	9,56%	5,38%	6,92%	29,93%	18,93%			71%
RAB	Rp -	Rp 176.276.829	Rp 474.095.518	Rp 818.874.198	Rp 480.089.117	Rp 270.115.735	Rp 347.371.587	Rp 1.502.570.750	Rp 950.108.482	Rp -	Rp -	Rp 3.550.255.671
RAP	Rp -	Rp 153.360.841	Rp 412.463.101	Rp 712.420.552	Rp 417.677.531	Rp 235.000.690	Rp 302.213.281	Rp 1.307.236.552	Rp 826.594.379	Rp -	Rp -	Rp 3.088.722.434
BIAYA TIDAK LANGSUNG	Rp -	Rp 8.813.841	Rp 23.704.776	Rp 40.943.710	Rp 24.004.456	Rp 13.505.787	Rp 17.368.579	Rp 75.128.537	Rp 47.505.424	Rp -	Rp -	Rp 177.512.784
BIAYA LANGSUNG	Rp -	Rp 144.547.000	Rp 388.758.325	Rp 671.476.843	Rp 393.673.076	Rp 221.494.903	Rp 284.844.702	Rp 1.232.108.015	Rp 779.088.955	Rp -	Rp -	Rp 2.911.209.650
<b>CASH IN</b>												
TERMIN DI BAYAR					30,04%			40,24%	29,72%			100%
PENERIMAAN/TAGIHAN	Rp -	Rp -	Rp -	Rp -	Rp 1.658.644.312	Rp -	Rp -	Rp 2.221.832.461	Rp 1.640.975.665	Rp -	Rp -	Rp 5.521.452.438
UANG MUKA	Rp 1.104.290.488	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 1.104.290.488
PPN 10%	Rp -	Rp -	Rp -	Rp -	Rp 150.785.847	Rp -	Rp -	Rp 201.984.769	Rp 149.179.606	Rp -	Rp -	Rp 501.950.222
PENERIMAAN SETELAH PPN	Rp -	Rp -	Rp -	Rp -	Rp 1.507.858.466	Rp -	Rp -	Rp 2.019.847.692	Rp 1.491.796.059	Rp -	Rp -	Rp 5.019.502.216
PPH 3%	Rp -	Rp -	Rp -	Rp -	Rp 45.235.754	Rp -	Rp -	Rp 60.595.431	Rp 44.753.882	Rp -	Rp -	Rp 150.585.066
CICILAN UANG MUKA	Rp -	Rp -	Rp -	Rp -	Rp 331.728.862	Rp -	Rp -	Rp 444.366.492	Rp 328.195.133	Rp -	Rp -	Rp 1.104.290.488
RETENSI	Rp -	Rp -	Rp -	Rp -	Rp 82.932.216	Rp -	Rp -	Rp 111.091.623	Rp 82.048.783	Rp -	Rp -	Rp 276.072.622
PENERIMAAN BERSIH	Rp 1.104.290.488	Rp -	Rp -	Rp -	Rp 1.047.961.634	Rp -	Rp -	Rp 1.403.794.146	Rp 1.036.798.261	Rp -	Rp -	Rp 3.488.554.040
<b>CASH FLOW</b>												
SALDO	Rp 1.104.290.488	Rp 950.929.646	Rp 538.466.546	Rp 173.954.007	Rp 417.631.538	Rp 813.589.406	Rp 205.436.125	Rp 1.204.740.428	Rp 577.519.339	Rp 1.100.307.600	Rp 190.297.600	
PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp 420.000.000	Rp -	Rp -	Rp 1.207.000.000	Rp -	Rp -	Rp -	
BUNGA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp 1.740.000	Rp 5.940.000	Rp 2.940.000	Rp 1.940.000	Rp 14.010.000	Rp 9.010.000	Rp -	
BAYAR PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 300.000.000	Rp 100.000.000	Rp -	Rp 500.000.000	Rp 901.000.000	Rp -	
KAS AKHIR	Rp 1.104.290.488	Rp 950.929.646	Rp 538.466.546	Rp 45.993	Rp 628.462	Rp 507.649.406	Rp 102.496.125	Rp 319.572	Rp 63.509.339	Rp 190.297.600	Rp 466.370.222	
SISA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp 174.000.000	Rp 594.000.000	Rp 294.000.000	Rp 194.000.000	Rp 901.000.000	Rp -	Rp -	

**Table 4** Cash Flow Progress Payment System *Latest Start Time (LST)* Conditions

URAIAN	PERIODE											TOTAL
	BULAN KE 0	BULAN KE 1	BULAN KE 2	BULAN KE 3	BULAN KE 4	BULAN KE 5	BULAN KE 6	BULAN KE 7	BULAN KE 8	BULAN KE 9	BULAN KE 15	
<b>CASH OUT</b>												
PRESTASI PEKERJAAN (%)		3,51%	9,39%	16,21%	9,50%	5,60%	6,92%	29,93%	18,93%			71%
RAB	Rp -	Rp 176.276.829	Rp 471.130.676	Rp 813.871.239	Rp 477.098.853	Rp 281.073.800	Rp 347.371.587	Rp 1.502.570.750	Rp 950.108.482	Rp -	Rp -	Rp 3.558.223.472
RAP	Rp -	Rp 153.360.841	Rp 409.883.688	Rp 708.067.978	Rp 415.076.002	Rp 244.534.206	Rp 302.213.281	Rp 1.307.236.552	Rp 826.594.379	Rp -	Rp -	Rp 3.095.654.421
BIAYA TIDAK LANGSUNG	Rp -	Rp 8.813.841	Rp 23.556.534	Rp 40.693.562	Rp 23.854.943	Rp 14.053.690	Rp 17.368.579	Rp 75.128.537	Rp 47.505.424	Rp -	Rp -	Rp 177.911.174
BIAYA LANGSUNG	Rp -	Rp 144.547.000	Rp 386.327.155	Rp 667.374.416	Rp 391.221.059	Rp 230.480.516	Rp 284.844.702	Rp 1.232.108.015	Rp 779.088.955	Rp -	Rp -	Rp 2.917.743.247
<b>CASH IN</b>												
TERMIN DI BAYAR					30,04%			40,24%	29,72%			100%
PENERIMAAN/TAGIHAN	Rp -	Rp -	Rp -	Rp -	Rp 1.658.644.312	Rp -	Rp -	Rp 2.221.832.461	Rp 1.640.975.665	Rp -	Rp -	Rp 5.521.452.438
UANG MUKA	Rp 1.104.290.488	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 1.104.290.488
PPN 10%	Rp -	Rp -	Rp -	Rp -	Rp 150.785.847	Rp -	Rp -	Rp 201.984.769	Rp 149.179.606	Rp -	Rp -	Rp 501.950.222
PENERIMAAN SETELAH PPN	Rp -	Rp -	Rp -	Rp -	Rp 1.507.858.466	Rp -	Rp -	Rp 2.019.847.692	Rp 1.491.796.059	Rp -	Rp -	Rp 5.019.502.216
PPH 3%	Rp -	Rp -	Rp -	Rp -	Rp 45.235.754	Rp -	Rp -	Rp 60.595.431	Rp 44.753.882	Rp -	Rp -	Rp 150.585.066
CICILAN UANG MUKA	Rp -	Rp -	Rp -	Rp -	Rp 331.728.862	Rp -	Rp -	Rp 444.366.492	Rp 328.195.133	Rp -	Rp -	Rp 1.104.290.488
RETENSI	Rp -	Rp -	Rp -	Rp -	Rp 82.932.216	Rp -	Rp -	Rp 111.091.623	Rp 82.048.783	Rp -	Rp -	Rp 276.072.622
PENERIMAAN BERSIH	Rp 1.104.290.488	Rp -	Rp -	Rp -	Rp 1.047.961.634	Rp -	Rp -	Rp 1.403.794.146	Rp 1.036.798.261	Rp -	Rp -	Rp 3.488.554.040
<b>CASH FLOW</b>												
SALDO	Rp 1.104.290.488	Rp 950.929.646	Rp 541.045.958	Rp 167.022.020	Rp 414.098.022	Rp 803.649.406	Rp 195.596.125	Rp 1.214.480.428	Rp 577.879.339	Rp 1.100.667.600	Rp 190.657.600	
PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp 416.000.000	Rp -	Rp -	Rp 1.217.000.000	Rp -	Rp -	Rp -	
BUNGA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp 1.680.000	Rp 5.840.000	Rp 2.840.000	Rp 1.840.000	Rp 14.010.000	Rp 9.010.000	Rp -	
BAYAR PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp -	Rp 300.000.000	Rp 100.000.000	Rp -	Rp 500.000.000	Rp 901.000.000	Rp -	
KAS AKHIR	Rp 1.104.290.488	Rp 950.929.646	Rp 541.045.958	Rp 977.980	Rp 221.978	Rp 497.809.406	Rp 92.756.125	Rp 679.572	Rp 63.869.339	Rp 190.657.600	Rp 466.730.222	
SISA PINJAMAN	Rp -	Rp -	Rp -	Rp -	Rp 168.000.000	Rp 584.000.000	Rp 284.000.000	Rp 184.000.000	Rp 901.000.000	Rp -	Rp -	

## 5. CONCLUSIONS AND SUGGESTIONS

### Conclusion

1. The analyzed payment system in this essay, there was a Monthly payment system and payment system according to the progress of work (*Progress Payment*). The project profits from these two payment systems are seen from the amount of final cash when the project was completed.
2. The profit obtained with the Monthly Payment System and payment according to the progress of the work (*Progress Payment*) by using a down payment of 20% is different. In the monthly payment system on the EST (*Earliest Start Time*) conditions contractor made a profit of Rp. 490.990.222, with 8,892 % profit and the LST (*Latest Start Time*) conditions, the contractor earn a profit of Rp. 490.990.222 with 8,892 % profit percentage of, making the number of obtained money by the contractor in the conditions of EST and LST the same. In the payment system, according to the progress of the work (*Progress Payment*) on the EST (*Earliest Start Time*) condition, the contractor gets a profit of Rp. 473.090.222 with a profit percentage of 8.568% and the LST (*Latest Start Time*) condition, contractors earn a profit of Rp. 473 270 .222 with a profit percentage of 8.571%.
3. Payment systems that provide maximum benefit to the contractor are the Monthly Payment System by using a down payment of 20 % on EST ( *Earliest Start Time* ) and LST (*Latest Start Time*) conditions. While the payment system that provides maximum benefits to the Owner is a Progress Payment system on EST (*Earliest Start Time*) condition

### Suggestion

1. In carrying out a construction work, the executor (contractor) needs to plan the schedule and flow of *Cash Flow* well to achieve the desired project goals. So that construction project management runs effectively and efficiently in terms of cost and time.

2. For more accurate results in the preparation of network diagrams and schedule, it was advised to master the state of the project to get results that match the project objectives.
3. For further research is recommended to add the analysis of the week period payment of cash flow and attach the procedure or regulation for loans corresponding to bank regulations to produce more accurate research.

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