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STUDY OF CASH FLOW PLANNING ON THE SUNGAI RASAU VILLAGE BRIDGE CONSTRUCTION PROJECT, BUMI MAKMUR DISTRICT, TANAH LAUT REGENCY

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ABSTRACT

In the current era, construction projects are closely related to the development and needs of human life for now. construction projects must be processed professionally with good and weighted management. Cost control is indeed very important in the world of construction services, so everyone who has a business in the field of civil engineering or the field of connectivity is required to control their finances so a cash flow plan is needed. This cash flow planning itself is analyzed based on a down payment of 30% of the contract value plus its capital and bank loans.

In the planning of cash flow with the MC payment system (Monthly Certificate) which is carried out according to the progress of monthly progress with a down payment of 30% in this planning, scheduling Earliest Start Time (EST) and Latest Start Time (LST) uses a down payment of 30% and then uses its capital and loans from banks. For scheduling Earliest Start Time (EST) and Latest Start Time (LST), both conditions have their advantages and disadvantages according to the company's capabilities.

Key Words: cash flow, monthly certificate, mc

1. INTRODUCTION

Background

In the current era, construction is very closely related to the development and needs of human life today. To fulfill this, a construction project must be made professionally with good and quality management, the success or failure of the project will be largely determined by the various decisions taken. This means when you want to start and finish a project that needs to be planned organized, directed, coordinated, and preferably well. Therefore, a building related to the field of civil engineering or the like requires good planning, among others, by considering efficient time, efficient cost, quality, and safety factors. Cost control plays a very important role in the world of construction services, so everyone who has a business in the construction sector is required to control his finances, so a cash flow plan is needed. A cash flow plan is made to facilitate the implementation of work dan project progress. In this cash flow plan, it is usually widely used by contractors, this cash flow itself is receipts that can be in the form of advances, loans from banks, or funds from themselves and the expenditures can be called payments. This cash flow plan itself is made to make it easier to carry out construction work efficiently and carry out the work effectively if it can meet the needs that have been set. If a construction company or one engaged in construction services cannot control the flow of cash (cash flow), it will pose a big risk and will be fatal for the company. In the implementation of the Rasau River village bridge construction project, Bumi Makmur district, a problem occurred, namely, the project did not use cash flow planning, in this case with a contract value of Rp 8.503.617.850 using the Monthly Certificate payment system using its capital either from company cash or loans. Bank with the assumption that the profit according to the standard provided by the government is 10% whether it will exceed or less of the profit. Therefore, to find a solution to the financing problem in the Rasau River village bridge construction projects, the author is interested in analyzing the cash flow planning study on this project.

2. THEORITICAL STUDY

Project Scheduling

Scheduling in the sense of a construction project is a tool to determine the activities needed to complete a project in a certain sequence and time frame, in which each activity must be carried out so that the project is completed on time at an economical cost (Callahan, 1992). Scheduling includes labor, materials, equipment, finance, and time. With proper scheduling, several kinds of losses can be avoided such as delays, cost overruns, and disputes.

Project Cost Estimate

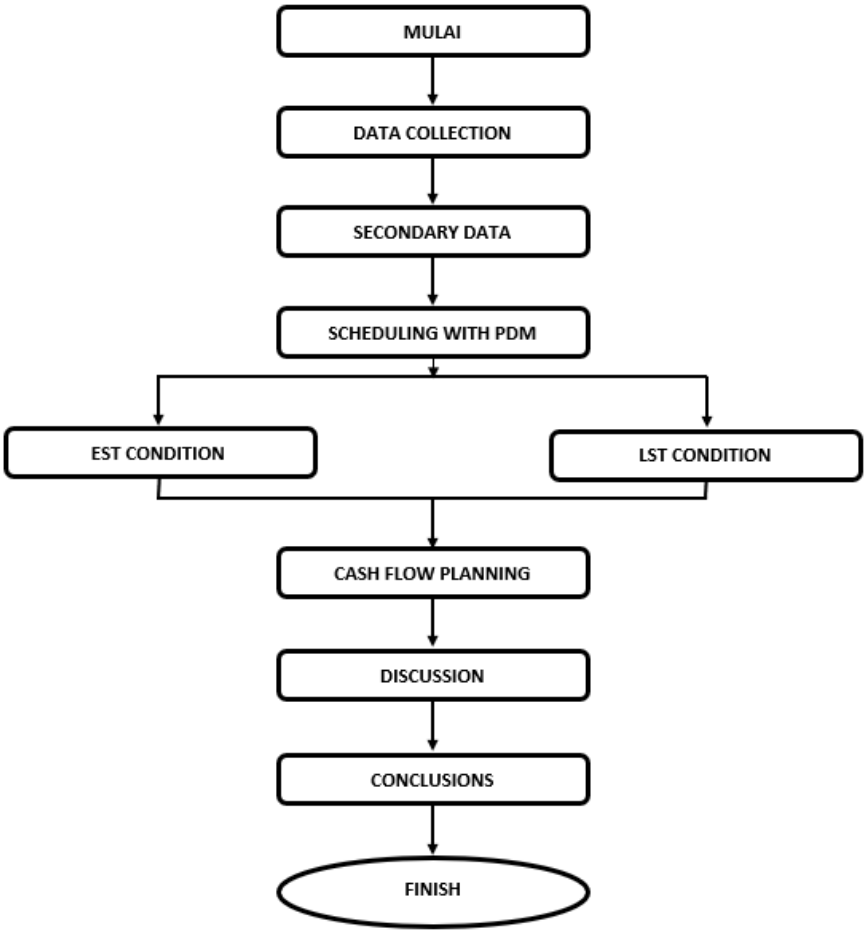
Construction cost estimation is a calculation analysis process based on the construction method, volume of work, and the availability of various resources, all of the wichs form an optimal implementation operation that requires finance Estimatesmate of overall construction costs usually include a calculation analysis of several elements of the project

Cash Flow

The definition of cash flow put forward by Sudarno provides an illustration that cash flow projections include planning for the disbursement of cash for operating activities and planning for future cash flows. With cash flow analysis, it can be seen when the company has a cash surplus or deficit in times to come. If it is estimated that in the months to come there will be a large cash surplus, planning for the effective and efficient use of these funds can be made in advance, and vice versa, it is possible to plan policies that will be taken to cover the cash deficit

3. METHOD

Then the stages of activities for research will follow the research flow chart as shown in the flow chart below.



Picture 3.1 Flow Chart

4. RESULT AND DISCUSSION

Data Analysis

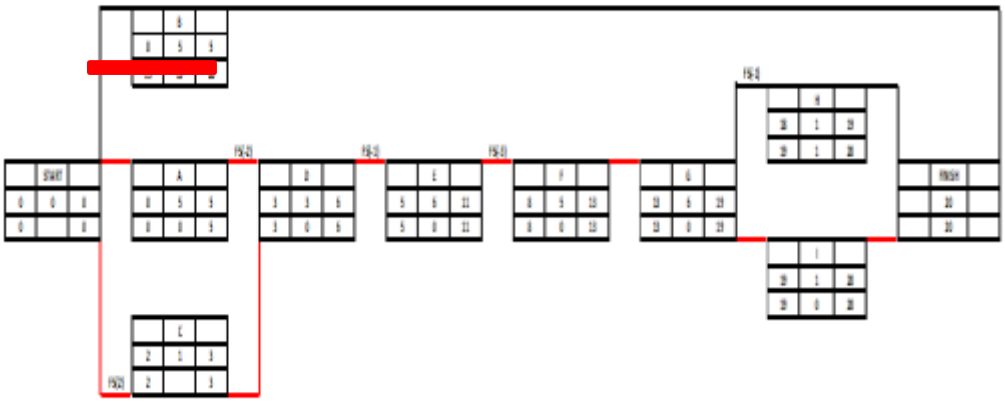
Earliest Start Time (EST) and Latest Start Time (LST) scheduling are compiled from the schedule (Time Schedule) plan using the PDM method, the Barchart is compiled from the identification of existing jobs and the relationship between these jobs.

Tabel 4.1 PDM Scheduling

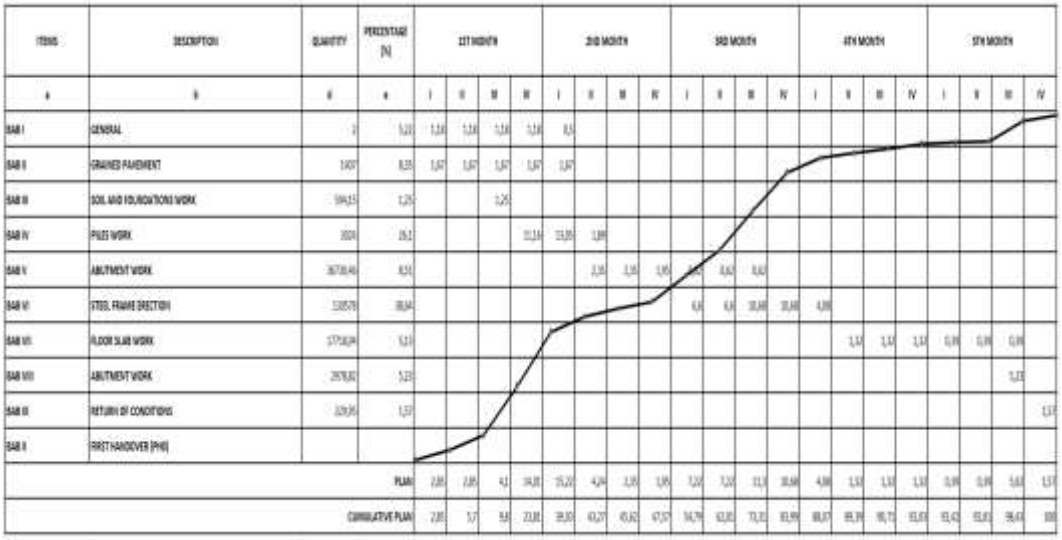
NO	NAMA PEKERJAAN	SIMBOL	DURASI PEKERJAAN (Minggu)	PEKERJAAN SEBELUMNYA	HUBUNGAN	
1	GENERAL	A	5			
2	GRAINED PAVEMENT	B	5			
3	SOIL AND FOUNDATIONS WORK	C	1	START	FS	2
4	PILES WORK	D	3	A,C	FS	-2
5	ABUTMENT WORK	E	6	D	FS	-1
6	STEEL FRAME ERECTION	F	5	E	FS	-3
7	FLOOR SLAB WORK	G	6	F		
8	ABUTMENT WORK	H	1	G	FS	-1
9	RETURN OF CONDITIONS	I	1	G		

Description :

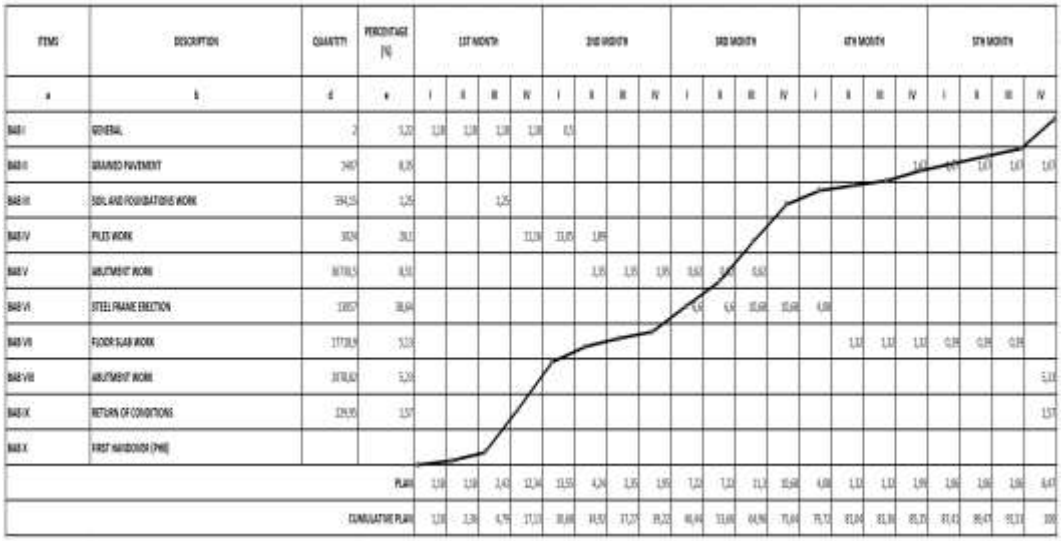
= Critical Path



Picture 4.1 PDM Diagram with Normal Duration



Picture 4.2 Scheduling S curve with EST Conditions



Picture 4.3 Scheduling S curve with LST Conditions

Table 4.2 Weight of Progress

Month	Weight of Progress EST (%)	RAB of Work Based on EST	Weight of Progress LST (%)	RAB of Work Based on LST
1	23,81%	Rp2.024.711.410	17,13%	Rp1.456.669.738
2	23,76%	Rp2.020.459.601	22,09%	Rp1.878.449.183
3	36,42%	Rp3.097.017.621	36,42%	Rp3.097.017.621
4	8,04%	Rp683.690.875	9,71%	Rp825.701.293
5	7,97%	Rp677.738.343	14,65%	Rp1.245.780.015
Total	100%	Rp8.503.617.850	100%	Rp8.503.617.850

Table 4.5 Cash Flow Scenario Earliest Start Time (EST) Condition with a 30% Down Payment with Own Capital

NO.		DESCRIPTION	TIME (MONTH)					
			1	2	3	4	5	6
I		INCOME						
		A. Operational						
	a	- Monthly Certificate (MC)	-	2.024.711.410	2.020.459.601	3.097.017.621	683.690.875	677.738.343
		- Tax	-	(232.841.812)	(232.352.854)	(356.157.026)	(78.624.451)	(77.939.909)
		B. Non Operational						
	b	- Capital	-	-	-	-	-	-
	c	- Down Payment	2.551.085.355	-	587.106.785	-	-	-
	d	- Bank Loans	-	-	-	-	-	-
	e	**Amount of Income**	**2.551.085.355**	**1.791.869.598**	**2.375.213.532**	**2.740.860.595**	**605.066.424**	**599.798.433**
II		EXPENCE						
	f	- Direct Cost	1.488.162.886	1.485.037.807	2.276.307.951	502.512.793	498.137.682	-
	g	- Indirect Cost	85.036.179	85.036.179	85.036.179	85.036.179	85.036.179	
	h	- Bank Interest	-	-	-	-	-	-
	i	- Down Payment Installments	-	607.413.423	606.137.880	929.105.286	205.107.263	203.321.503
	j	- Capital Instalments				587.106.785		
	k	- Bank Loans Installments	-	-	-	-	-	-
	l	**Jumlah Pengeluaran**	**1.573.199.065**	**2.177.487.409**	**2.967.482.011**	**2.103.761.044**	**788.281.123**	**203.321.503**
IV		BALANCE						
	m	- Initial Balance		**977.886.290**	**592.268.479**	**(0)**	**637.099.551**	**453.884.852**
	n	- Final Balance	**977.886.290**	**592.268.479**	**(0)**	**637.099.551**	**453.884.852**	**850.361.782**

Table 4.6 Cash Flow Scenario Earliest Start Time (EST) Condition with a 30% Down Payment with Bank Loans

NO.		DESCRIPTION	TIME (MONTH)					
			1	2	3	4	5	6
I		INCOME						
		A. Operational						
	a	- Monthly Certificate (MC)	-	2.024.711.410	2.020.459.601	3.097.017.621	683.690.875	677.738.343
		- Tax	-	(232.841.812)	(232.352.854)	(356.157.026)	(78.624.451)	(77.939.909)
		B. Non Operational						
	b	- Capital	-	-	-	-	-	-
	c	- Down Payment	2.551.085.355	-	-	-	-	-
	d	- Bank Loans	-	-	590.000.000	-	-	-
	e	**Amount of Income**	**2.551.085.355**	**1.791.869.598**	**2.378.106.747**	**2.740.860.595**	**605.066.424**	**599.798.433**
II		EXPENCE						
	f	- Direct Cost	1.488.162.886	1.485.037.807	2.276.307.951	502.512.793	498.137.682	-
	g	- Indirect Cost	85.036.179	85.036.179	85.036.179	85.036.179	85.036.179	
	h	- Bank Interest	-	-	-	5.162.500	3.456.636	1.735.847
	i	- Down Payment Installments	-	607.413.423	606.137.880	929.105.286	205.107.263	203.321.503
	j	- Capital Instalments						
	k	- Bank Loans Installments	-	-	-	194.955.827	196.661.691	198.382.482
	l	**Jumlah Pengeluaran**	**1.573.199.065**	**2.177.487.409**	**2.967.482.011**	**1.716.772.586**	**988.399.450**	**403.439.832**
IV		BALANCE						
	m	- Initial Balance		**977.886.290**	**592.268.479**	**2.893.215**	**1.026.981.224**	**643.648.198**
	n	- Final Balance	**977.886.290**	**592.268.479**	**2.893.215**	**1.026.981.224**	**643.648.198**	**840.006.799**

Table 4.7 Cash Flow Scenario Latest Start Time (LST) Condition with a 30% Down Payment with Own Capital

NO.		DESCRIPTION	TIME (MONTH)					
			1	2	3	4	5	6
I		INCOME						
		A. Operational						
	a	- Mounthly Certificate (MC)	-	1.456.669.738	1.878.449.183	3.097.017.621	825.701.293	1.245.780.015
		- Tax	-	(167.517.020)	(216.021.656)	(356.157.026)	(94.955.649)	(143.264.702)
		B. Non Operational						
	b	- Capital	-	-	480.598.972	-	-	-
	c	- Down Payment	2.551.085.355	-	-	-	-	-
	d	- Bank Loans	-	-	-	-	-	-
	f = a + e	**Amount of Income**	**2.551.085.355**	**1.289.152.718**	**2.143.026.499**	**2.740.860.595**	**730.745.645**	**1.102.515.313**
II		EXPENCE						
	g	- Direct Cost	1.070.652.257	1.380.660.150	2.276.307.951	606.890.451	915.648.311	-
		- Indirect Cost	85.036.179	85.036.179	85.036.179	85.036.179	85.036.179	
	m	- Bank Interest	-	-	-	-	-	-
	n	- Down Payment Installments	-	437.000.921	563.534.755	929.105.286	247.710.388	373.734.005
	o	- Capital Instalments				480.598.972		
	p	- Bank Loans Installments	-	-	-	-	-	-
	s = r + g	**Jumlah Pengeluaran**	**1.155.688.436**	**1.902.697.250**	**2.924.878.885**	**2.101.630.888**	**1.248.394.878**	**373.734.005**
IV		BALANCE						
	u = x (o-m)	- Initial Balance		1.395.396.919	781.852.387	0	639.229.707	121.580.474
	x = u + t	- Final Balance	1.395.396.919	781.852.387	0	639.229.707	121.580.474	850.361.783

Table 4.8 Cash Flow Scenario Latest Start Time (LST) Condition with a 30% Down Payment with Bank Loans

NO.		DESCRIPTION	TIME (MONTH)					
			1	2	3	4	5	6
I		INCOME						
		A. Operational						
	a	- Mounthly Certificate (MC)	-	1.456.669.738	1.878.449.183	3.097.017.621	825.701.293	1.245.780.015
		- Tax	-	(167.517.020)	(216.021.656)	(356.157.026)	(94.955.649)	(143.264.702)
		B. Non Operational						
	b	- Capital	-	-	-	-	-	-
	c	- Down Payment	2.551.085.355	-	-	-	-	-
	d	- Bank Loans	-	-	485.000.000	-	-	-
	f = a + e	**Amount of Income**	**2.551.085.355**	**1.289.152.718**	**2.147.427.527**	**2.740.860.595**	**730.745.645**	**1.102.515.313**
II		EXPENCE						
	g	- Direct Cost	1.070.652.257	1.380.660.150	2.276.307.951	606.890.451	915.648.311	-
		- Indirect Cost	85.036.179	85.036.179	85.036.179	85.036.179	85.036.179	-
	m	- Bank Interest	-	-	-	4.243.750	2.841.472	1.426.924
	n	- Down Payment Installments	-	437.000.921	563.534.755	929.105.286	247.710.388	373.734.005
	o	- Capital Instalments						
	p	- Bank Loans Installments	-	-	-	160.260.299	161.662.576	163.077.125
	s = r + g	**Jumlah Pengeluaran**	**1.155.688.436**	**1.902.697.250**	**2.924.878.885**	**1.785.535.965**	**1.412.898.926**	**538.238.054**
IV		BALANCE						
	u = x (o-m)	- Initial Balance		1.395.396.919	781.852.387	4.401.028	959.725.658	277.572.377
	x = u + t	- Final Balance	1.395.396.919	781.852.387	4.401.028	959.725.658	277.572.377	841.849.637

5. CONCLUSION

From the result of the cash flow planning analysis reviewed on the Sungai Rasau Village Bridge Construction Project in 4 scenarios, the following conclusions were obtained:

Cash flow analysis with a down payment receipt system of 30% of the contract value of Rp. 8,503,617,850 plus Capital and Bank Loans. Earliest Start Time (EST) and Latest Start Time (LST) conditions require capital and bank loans.

It can be concluded from the four cash flow scenario planning that the biggest profit is in the first and third scenarios. But if the company does not have capital, it can make bank loans under Earliest Start Time (EST) Conditions because it has less deficit than the Latest Start Time (LST) Conditions.

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