

On the other hand, in the case the renovation plan is carried out, a certain amount of new facilities will be added. A certain amount of increased production, and a certain degree of intensified control of operations will call for an increased number of workers in some of the sections. Then, section to section transposition of workers should be carried out without increasing the total number of employees. In this way, the total personnel costs for the mill as a whole has been fixed.

- 3) An increase in the fixed cost in the case of carrying out the renovation plan is expected due to the total capital required for the renovation plan.

### 13-8 Total funds required

The total funds required shall comprise the funds required for carrying out the project within the scope stated in Chapter 11 "Renovation Plan Execution" and expenses for the consulting services and training, the initial working capital and the costs (interests) required for capital procurement during the period of the execution of the plan, and has been calculated based on the execution processes of Chapter 11. The details are shown in Table 13-8.1.

#### 13-8-2 Annual Investment Plan of Total Funds Required

Also, the investment schedule by year for the renovation plan is shown in Table

13-8-2.

Unit: Rp 1000

(A)	Equipment Cost	4,237,999
(B)	Engineering Fee	403,630
(C)	Construction Work	1,240,891
(D)	Operation Supervision	139,079
(E)	Training Fee	211,270
(F)	Overhead	211,900
(G)	Contingency	429,144
	<b>Total</b>	<b>6,873,913</b>
(H)	Interest payable during renovation	836,652
(I)	Repayment	151,304
(J)	Initial Working Capital	120,739
	<b>Grand Total</b>	<b>Rp 7,982,608</b>

### **13-8-1 Plant cost**

#### **1) Equipment & Machinery**

This cost covers all the equipment and machinery purchased from abroad for the renovation plan.

Equipment and machinery that can be purchased within Indonesia will wherever possible be purchased in Indonesia. The imported equipment and machinery shall be on a FOB price basis.

#### **2) Ocean freight and marine insurance**

This cost includes the ocean freight and marine insurance for the imported equipment and machinery, as well as materials provided by suppliers.

#### **3) Custom duties and import charges**

This cost is for custom duties (10%) and import charges (2.5%) for the imported items. It is strongly desired that in view of the purpose of this renovation the custom duties (10%) be exempted.

#### **4) Inland transportation cost**

This cost covers the transportation of the equipment and machinery, as well as the materials, within Indonesia.

### **13-8-2 Construction work cost**

#### **1) Locally procured equipments**

This cost covers the arrival price of the equipments and materials procured within the country at the mill.

**2) Civil and building works**

This cost covers the costs required for the civil works, the foundation works, and other concrete works and building work, as well as the equipments and materials costs required for the above works.

**3) Installation cost**

This cost covers the local costs such as the transportation, storage, and installation and assembly, etc. of the equipments arrived to the mill, as well as the equipments, machinery and materials costs required for the local work.

**13-8-3 Pre-operation cost**

This cost covers the following costs required during the execution of the renovation plan.

- (1) Workers training
- (2) Survey, sketching, and designing work for carrying out the plan.
- (3) Bidding procedures and analysis and evaluation.
- (4) Management and supervision on the execution of the project.
- (5) Instruction and assistance given to the local operators during test runs.

The costs have been estimated based on the condition that assistance will be received from a foreign consulting company or a foreign paper company.

**13-8-4 Initial operating funds**

**1) The following costs are listed**

**a. Spare parts cost:**

Spare parts necessary for operating one year.

**b. Cash:**

Cash reserve to manage current assets and current liabilities as well as operation and technical assistance costs during the initial year of operation, as well as operating reserve cost.

However, for the renovation plan, the situation will differ as the renovation will be carried out while the plant is in actual operation.

**2) Spare parts cost**

There is no need for a reserve for spare parts and consumable materials.

The renewal equipment, or the so-called spare parts, have been included in the equipment and machinery cost.

**3) Cash**

In the case the renovation plan has been carried out, 60% of the increase in sales revenue per month during the average year shall be listed as an increase in the working capital.

**13-8-5 The costs (interest) required for capital procurement during the renovation plan period.**

This is the interest payable during the period of the plan for the long term loans, as concerns the total required funds for the project.

**13-9 Funds Procurement**

30% of the total funds required is the equity and 70% is loaning. (The financing conditions are pending at this moment, and so they are preconditions in calculation.)

**Table 13-9-1**

**Unit Rp, 1000**

	PPM	
	Foreign	Local
Equity	—	2,394,782
Long Term Loan	5,026,087	561,739

**13-10 Interest for Long-term Loans**

**13-10-1 Interest rate for long-term loans**

- The rate will be:
- a. Foreign 12%
  - b. Local 16%

(The financing conditions are not decided yet, and are consequently preconditions. They will have no influence on IRROI.)

**13-10-2 Interest for long term Loans in each year**

The interest for long term borrowings is shown in Table 13-10-1.

**13-11 Repayment Method for Long Term Borrowings**

**13-11-1 Equal annual repayment for a period of 10 years after 2 years grace period.**

**13-11-2 Repayment plan**

The repayment plan is as shown in Table 13-10-1.

**13-12 Depreciation Method**

**13-12-1 Number of years for depreciation**

- a. Machinery and equipment 10 years
- b. Civil and building works 30 years
- c. Vehicles 5 years

**13-12-2 After the depreciation on the fixed installment method is completed, the book value will become zero.**

### 13-12-3 Amount of depreciation

The amount of depreciation per year is as shown in Table 13-12.1.

### 13-13 Corporation Taxes

The corporation taxes shall be only on the profits and shall be as follows:

	Unit: 1,000
Profit $\leq$ Rp 10,000 :	15% of profit
Rp 10,000 < Profit $\leq$ Rp 40,000 :	25% of profit
40,000 < Profit :	35% of profit

### 13-14 Profit and Loss Calculation by Years

All factors as stated above are taken into account to make "Profit and loss calculation by years", which is shown in Table 13-14-1.

### 13-15 Break-even Point by Grades and Machines

Under the slow growth of economy, it is an important matter that at what point the profit and loss is balanced, even under the lowered operating rate. Such a break even point by grades and machines is calculated in Table 13-15-1.

### 13-16 Calculation of I.R.R.O.I.

This is a calculation to check the profitability against the investment for the project. The calculation is made on an assumption that the total investment is met by own equity. Consequently, the loan conditions and the rate of equity used against the total investment, which is the usual case for any project, are not reflected in this calculation. The profit figures are calculated the net profit after tax payment.

The I.R.R.O.I. is indicated in Table 13-16-1 and Table 13-16-2.

## 13-17 Sensitivity analysis

### 13-17-1 Sales prices

In the calculation of I.R.R. (O.I), two cases, where the sales price is increased by 5% or decreased by 5% are taken for calculation as shown in Table 13-17-1 to Table 13-17-4. and Fig. 13-17-1.

### 13-17-2 Total amount of investment

In the calculation of I.R.R.O.I., two cases, where the total amount of investment is increased or decreased by 5%, are taken for calculation as shown in Table 13-17-5 to Table 13-17-8 and Fig. 13-17-2.

## 13-18 Financial Indexes

Financial Indexes worked out by this financial evaluation are indicated in Table 13-18-1 as a whole.

- (1) Aft. Tax Profit-to-Sales Rev. (percentage)  
Rate of net profit against sales revenue (%)

$$\frac{\text{Net profit after tax}}{\text{Sales Revenue}} \times 100$$

- (2) Bef. Tax Profit-to-Investment (percentage)  
Rate of profit before tax against total investment

$$\frac{\text{Profit before tax}}{\text{Total investment}} \times 100$$

- (3) Debt Service Ratio  
Ability of Repayment of loans

$$\frac{\text{Depreciation} + \text{Interst payable (long-term)} + \text{Net profit after tax}}{\text{Repayment of long term loans} + \text{Interest for long term loans}} \times 100$$







Table 13-2-1 Sales Plan

PM	Kinds	Basis weight	Present			After Improved			Increase/Decrease	M/C	Kinds	Basis weight	Present			After Improved			Increase/Decrease	Remarks
			Day	Daily production	Sales	Day	Daily production	Sales					Day	Daily production	Sales	Day	Daily production	Sales		
			t	t	t	t	t	t					t	t	t	t	t	t		
1	H.V. Offset Pih	60	16.19	6.98	113	11.14	9.90	110	-3	3	Golden Bird	26	199.3	9.39	1,871	199.3	9.39	1,871	0	
	Cylostyle Pih	69	10.60	9.22	92	8.20	11.25	92	0		Silver Bird	26	99.8	9.20	918	47.8	9.20	440	-478	
	Mail Zegel	80	52.10	4.99	260	29.18	8.91	260	0		Sig. Eagle	26	11.7	8.54	100	63.7	8.54	543.5	443.5	
	Banderol	60	126.19	6.91	872	94.17	9.26	872	0		Sig. Coklat	26	5.8	8.54	50	5.8	8.54	50	0	
	Reform	120	9.19	7.62	70	7.09	9.87	70	0											
	S.P.R. Biasa	80	2.06	5.82	12	1.23	9.75	12	0											
	Cheque Putih	100	1.53	5.24	8	0.83	9.60	8	0											
	Kertas Water Mark	100	20.04	4.99	100	10.64	9.40	100	0											
	Post Wesel	175	12.42	7.49	93	9.23	10.08	93	0											
	Kartu Post Ch	175	8.14	7.49	61	6.01	10.15	61	0											
	Couverture Warna	60	7.88	7.49	59	5.66	10.43	59	0											
	Omslog Warna	80	4.21	7.83	33	2.95	11.18	33	0											
	Omslog Warna	200	25.59	8.87	227	19.65	11.55	227	0											
	Omslog Biru Tua	70	2.67	8.23	22	1.93	11.39	22	0											
	Straw Paper Export	200				90.30	10.63	960	960											
		Total		298.21	6.78	2,022	298.21	9.99	2,979	957										
	2	H.V.S. Putih	50	13.36	6.81	91	9.52	9.56	91	0										
Cylostyle Pih		69	91.23	9.22	869	77.23	11.25	869	0											
Dooslag Pih		28	104.09	3.18	331	64.77	5.11	331	0											
Bank Post		44	1.94	4.65	9	1.13	7.93	9	0											
Sigaret Putih		26	33.96	3.18	108	20.42	5.29	108	0											
Kraft Coklat		45	49.56	6.80	337	37.78	8.92	337	0											
Sigaret Putih		26				86.29	5.29	456	456											
	Total		297.14		1,745	297.14	7.41	2,201	456		3 units M/C Total		911.95	7.35	6,206	911.95	8.87	8,084.5	1,378.5	

Table 13-3-1 List of Daily Production and Efficiencies

No.	Kinds	Basis weight (g/m <sup>2</sup> )	Trim width (mm)	Operation speed (m/min)		Operation efficiency (%)		Sheet making efficiency (%)		Finish yield (%)		Total efficiency (%)		Theoretical production (AD/d)		Production on reel (AD/d)		Production finished (AD/d)		Total yield (%)		
				Present	Improved	Present	Improved	Present	Improved	Present	Improved	Present	Improved	Present	Improved	Present	Improved	Present	Improved	Present	Improved	Present
-1	HVS Warna	I	80	1950	46	57	90	88	92.31	95	84.52	90	70.21	75.24	10.34	12.80	8.59	10.70	7.26	9.63	76.9	86.9
-2	HV Offset	I	60	1860	62	80	92	92	90.91	93	83.79	90	70.08	77.00	9.96	12.86	8.33	11.00	6.93	9.90	74.8	84.8
-3	HVS Putih	I	50	2050	65	85	92	92	94.19	92	81.95	90	71.01	76.18	9.59	12.55	8.31	10.62	6.81	9.56	72.4	82.4
-4	Kertas Water Mark Pth	III	70	1950	46	65	92	90	94.99	95	87.22	90	76.22	76.95	9.04	12.78	7.90	10.93	6.89	9.84	71.0	81.0
-5	Water Mark Warna	III	70	1950	46	65	92	90	94.99	95	87.22	90	76.22	76.95	9.04	12.78	7.90	10.93	6.89	9.84	68.4	78.4
-6	Cyclo Style	II	69	1980	65	67	92	92	79.46	94	98.61	98.61	72.09	85.28	12.79	13.18	9.35	11.41	9.22	11.25	78.2	88.2
-7	Zour Froef	III	70	2020	46	65	90	88	82.06	95	88.15	90	65.10	75.24	9.37	13.24	6.92	11.07	6.10	9.96	72.2	82.2
-8	Mail Zegel	III	80	2080	30	50	89	87	94.85	95	82.21	90	69.40	74.39	7.19	11.98	6.07	9.90	4.99	8.91	82.3	90.0
-9	Bandrol	III	60	2040	62	73	88	86	80.16	93	89.62	90	63.22	71.98	10.93	12.87	7.71	10.29	6.91	9.26	82.2	90.0
-10	Bandrol	III	50	2040	65	85	90	88	89.71	92	89.62	90	72.36	72.86	9.55	12.48	7.71	10.10	6.91	9.09	82.2	90.0
-11	Reform	III	120	2010	32	37	88	88	90.53	97	86.10	90	68.59	76.82	11.11	12.85	8.85	10.97	7.62	9.87	82.2	90.0
-12	SPR Water Mark Ind	III	80	2010	30	50	92	88	93.38	95	83.58	90	71.80	75.24	6.95	11.58	5.97	9.68	4.99	8.71	76.8	86.8
-13	SPR Biasa	III	80	2010	40	56	88	88	83.33	95	85.71	90	62.85	75.24	9.26	12.96	6.79	10.84	5.82	9.25	71.7	81.7
-14	Cheque Putih	III	100	1950	30	46	86	86	81.62	96	88.66	90	62.23	74.30	8.42	12.92	5.91	10.67	5.24	9.60	79.2	89.2
-15	Ijazah (STTB)	III	130	1854	24	29	80	80	81.32	97	82.40	70	34.09	54.32	8.33	10.06	5.42	7.81	2.84	5.47	57.3	67.3
-16	Post Wesel	IV	175	1940	22	26	90	90	85.19	97	90.79	90.79	69.61	79.26	10.76	12.71	8.25	11.10	7.49	10.08	83.1	90.0
-17	Kartu Post	IV	175	2050	22	25	90	90	81.20	97	90.13	90.13	65.88	78.68	11.37	12.91	8.31	11.27	7.49	10.15	83.1	90.0
-18	London Warna	IV	190	2080	20	23	90	90	91.49	97	86.45	90	71.18	78.57	11.38	13.09	9.37	11.43	8.10	10.29	79.8	89.8
-19	Door Slag Putih	V	28	1760	68	100	94	92	81.66	87	86.41	90	65.84	72.04	4.83	7.10	3.68	5.68	3.18	5.11	85.5	90.0
-20	Door Slag Warna	V	28	1760	68	100	94	92	81.66	87	86.41	90	65.84	72.04	4.83	7.10	3.68	5.68	3.18	5.11	85.5	90.0
-21	Bank Post Putih	V	41	1950	70	90	88	88	72.65	90	84.09	90	53.76	71.28	8.65	11.12	5.53	8.81	4.65	7.93	75.2	85.2
-22	Corona	V	37	1840	70	100	90	88	80.00	88	84.62	90	60.93	69.70	6.86	9.80	4.94	7.59	4.18	6.83	68.4	78.4
-23	Buku Telephone	V	37	1860	70	100	92	92	82.69	88	81.63	90	62.10	72.86	6.94	9.91	5.28	8.02	4.31	7.22	72.2	82.2
-24	Sigaret Putih	VI	26	1910	64	100	96	92	86.25	88	82.60	90	68.39	72.86	4.65	7.26	3.85	5.88	3.18	5.29	81.1	90.0
-25	Sigaret Nankin	VI	26	1910	64	100	96	92	86.25	88	82.60	90	68.39	72.86	4.65	7.26	3.85	5.88	3.18	5.29	81.1	90.0
-26	Coverture Warna	VII	60	1950	65	77	93	93	79.14	93	92.93	92.93	68.40	80.38	10.75	12.97	8.06	11.22	7.49	10.43	75.7	85.7
-27	HV Omslag	VIII	80	1950	44	58	93	93	87.71	95	97.15	97.15	79.25	85.83	9.88	13.03	8.06	11.51	7.83	11.18	77.3	87.3
-28	HV Omslag	VIII	200	2000	20	23	93	93	85.69	97	96.62	96.62	77.00	87.16	11.52	13.24	9.18	11.95	8.87	11.55	77.3	87.3
-29	HVO Biro Tua	VIII	70	2050	46	63	95	93	93.97	97	96.94	96.94	86.54	87.45	9.51	13.02	8.49	11.75	8.23	11.39	77.3	87.3
-30	Kraft Coklat	VIII	45	1800	70	90	95	93	90.30	94	97.14	97.14	83.33	84.92	8.16	10.50	7.00	9.18	6.80	8.92	77.3	87.3
-31	Water Mark	III	100	1950	30	45	86	86	81.61	96	84.84	90	59.26	74.30	8.42	12.64	5.91	10.44	4.99	9.40	76.8	86.8
	Total and average		80.3	1954	48.45	65.48	90.84	89.68	86.13	93.48	86.80	90.66	68.10	76.00	8.87	11.66	6.94	9.77	6.08	8.86	76.9	86.0
	PM 1				39.4	51.4	90.0	89.1	86.95	95.43	87.32	90.63	68.53	77.17	9.82	12.69	7.68	10.80	6.77	9.83	76.4	85.7
	PM 2				67.4	95.0	92.7	90.9	84.4	89.4	85.71	90.71	67.20	73.76	6.87	9.51	5.38	7.74	4.64	7.04	78.1	86.6

Table 13-4-1 Production Cost of Own Bleached Pulp

Items	Present	Improved	Difference	Remarks
Production	100,000kg	100,000kg	0	Contents of improvement
Yield	25%	35%	10%	1. Yield 25% → 35%
Straw	400,000kg x 33Rp/kg = 13,200,000Rp	285,714kg x 33Rp/kg = 9,428,562 Rp	-3,771,438	2. Steam unit cost 21,591.16Rp/ton → 16,000Rp/ton
Caustic soda	34,160kg x 400/488 x 437.50Rp/kg = 12,250,000Rp	34,160kg x 285.714/488 x 437.50Rp/kg = 8,749,991Rp	-3,500,009	3. Steam unit consumption ratio 6.0T/T → 4.5 T/T
Bleaching powder	4,270kg x 100/122 x 2,000Rp/kg = 7,000,000Rp	4,270kg x 160/122 x 2,000 Rp/kg = 7,000,000Rp	0	
Power cost	54,900kWh x 100/122 x 73.72Rp/kWh = 3,317,400Rp	54,900kWh x 100/122 x 73.72Rp/kWh = 3,317,400Rp	0	
Steam cost	732ton x 400/488 x 21,591.16Rp/ton = 12,954,696Rp	732 t x 4.5/6 x 285.714/488 x 16,000Rp/ton = 5,142,852Rp	-7,811,844	
Consumable materials	400H x 3,101.20Rp/H = 1,240,480	285.714H x 3,101.20Rp/H = 886,056	- 354,424	
Total	49,962,576	34,524,861	-15,437,715	
Pulp cost/kg	499.63Rp/kg	345.25Rp/kg	-154.38Rp/kg	

Table 13-4-2 a. Operation Profit for Every Grade of Paper

FM	Kinds	Basis weight	Present								Improved								Sales (production)			Remarks	
			Daily production	Days	Sales		Variable cost		Operation profit		Daily production	Days	Sales		Variable cost		Operation profit		Present	Improved	Increase Decrease		
					Rp/kg	Amount 1000Rp	Rp/kg	Amount 1000 Rp	Rp/kg	Amount 1000 Rp			Rp/kg	Amount 1000 Rp	Rp/kg	Amount 1000 Rp	Rp/kg	Amount 1000 Rp					t
1	H.V. Offset Pih	60	6.98	16.19	893.5	100,966	859.7	97,146	33.8	3,820	9.90	11.14	920.3	101,234	672.5	73,977	247.8	27,257	113	110	-3		
	Cylostyle Pih	69	9.22	10.00	704.0	64,768	658.8	63,370	15.2	1,398	11.25	8.20	725.1	66,711	546.0	50,231	179.1	16,459	92	92	0		
	Mail zegel	80	4.99	52.10	2,175.9	565,734	973.1	253,006	1,202.8	312,728	8.91	29.18	2,241.2	582,707	814.8	211,843	1,426.4	370,864	260	260	0		
	Banderol	60	6.91	126.19	2,411.8	2,103,090	823.0	717,656	1,588.8	1,385,434	9.26	91.17	2,454.1	2,166,179	659.2	574,840	1,824.9	1,591,339	872	872	0		
	Reform	120	7.62	9.19	1,324.7	92,729	851.1	59,577	473.6	33,152	9.87	7.09	1,364.4	95,511	692.4	48,465	672.0	47,015	70	70	0		
	S.P.R. Bias	80	5.82	2.06	2,476.2	29,714	1,193.5	14,322	1,282.7	15,392	9.75	1.23	2,550.5	30,696	961.9	11,544	1,588.6	19,062	12	12	0		
	Cheque path	100	5.24	1.53	975.2	7,802	849.4	6,795	125.8	1,007	9.60	0.83	1,004.5	8,036	690.4	5,523	314.1	2,513	8	8	0		
	Kertas water mark	100	4.99	20.04	1,700.2	170,020	982.0	98,200	718.2	71,820	9.40	10.64	1,751.2	175,121	791.5	79,154	959.7	95,967	100	100	0		
	Post wesel	175	7.49	12.42	910.3	87,448	881.1	81,912	59.2	5,506	10.08	9.23	968.5	90,071	723.8	67,314	244.7	22,757	93	93	0		
	Kartu post Ch	175	7.49	8.14	844.8	51,533	837.6	51,094	7.2	439	10.15	6.01	870.1	53,079	650.4	41,503	189.7	11,576	61	61	0		
	Couverture warna	60	7.49	7.88	732.7	43,229	282.2	16,650	450.5	26,579	10.43	5.66	754.7	41,526	254.9	15,037	499.8	29,459	59	59	0		
	Omslag warna	80	7.83	4.21	452.2	14,923	369.6	12,857	62.6	2,066	11.18	2.95	465.8	15,370	358.2	11,820	107.6	3,550	33	33	0		
	Omslag warna	200	8.87	25.59	413.8	93,933	370.9	84,194	42.9	9,739	11.55	19.65	426.2	96,750	339.5	77,060	86.7	19,690	227	227	0		
	Omslag biru tua	70	8.23	2.67	302.7	6,659	356.4	8,494	-83.4	-1,835	11.39	1.93	311.8	6,559	360.3	7,927	-48.5	-1,068	22	22	0		
	Straw paper export	200		0							10.63	90.30	870.4	835,584	452.6	434,496	417.8	401,058	0	960	960		
		Sub Total		6.78	298.21	1,697.6	3,432,548	774.2	1,565,303	923.4	1,567,245	9.99	298.21	1,466.4	4,368,344	574.3	1,710,734	592.1	2,657,610	2,022	2,979	957	
	2	H.V.S. Putih	50	6.81	13.36	343.4	31,249	879.8	80,062	-536.4	-48,813	9.56	9.52	353.7	32,187	699.9	63,691	-316.2	-31,584	91	91	0	
Cylostyle Pih		69	9.22	91.23	704.0	611,776	658.8	598,567	15.2	13,209	11.25	77.23	725.1	630,112	546.0	474,474	179.1	155,638	669	669	0		
Doorslag Pih		28	3.18	104.09	858.8	284,263	856.6	293,465	-27.8	-9,202	5.11	64.77	884.6	292,803	738.8	248,543	145.8	48,260	331	331	0		
Bark post		41	4.65	1.94	852.5	7,943	933.1	8,398	-50.6	-455	7.93	1.13	909.0	8,181	730.2	6,572	178.8	1,609	9	9	0		
Sigaret path		26	3.18	33.96	1,303.4	140,767	957.6	103,421	345.8	37,346	5.29	20.42	1,342.5	144,990	763.3	82,436	579.2	62,554	108	108	0		
Kraft coklat		45	6.80	49.56	323.9	109,154	261.1	87,991	62.8	21,163	8.92	37.78	333.6	112,423	235.3	79,296	98.3	33,127	337	337	0		
Sigaret path		26	3.18	0	1,303.4	0	957.6	0	345.8	0	5.29	86.29	1,342.5	612,180	763.3	348,065	579.2	264,115	0	456	456		
	Sub Total		5.87	297.14	679.1	1,185,152	671.5	1,171,904	7.6	13,248	7.41	297.14	832.7	1,832,876	590.2	1,290,077	242.5	533,749	1,745	2,201	456		
	Total FM 1 & 2		6.33	595.35	1,225.8	4,617,700	726.6	2,737,207	499.2	1,580,493	8.70	595.35	1,197.1	6,201,220	581.0	3,009,811	616.1	3,191,409	3,767	5,180	1,413		

Table 13-4-2 b. Operation Profit for Every Grade of Paper

PM	Kinds	Basis weight	Present								Improved								Sales (production)			Remarks
			Daily production	Days	Sales		Variable cost		Operation profit		Daily production	Days	Sales		Variable cost		Operation profit		Present	Improved	Increase Decrease	
					/kg Rp/kg	Amount 1000Rp	/kg Rp/kg	Amount 1000 Rp	/kg Rp/kg	Amount 1000 Rp			/kg Rp/kg	Amount 1000 Rp	/kg Rp/kg	Amount 1000 Rp	/kg Rp/kg	Amount 1000 Rp				
3	Golden bird	26	9.39	199.3	1,562.1	2,922,659	1,023.5	1,914,969	538.6	1,007,720	9.39	199.3	1,562.1	2,922,659	1,002.9	1,876,426	559.2	1,046,263	1,871	1,871	0	
	Silver bird	26	9.20	99.8	1,503.0	1,379,754	932.4	855,943	570.6	523,811	9.20	47.8	1,503.0	661,320	913.1	401,764	589.9	259,556	918	419	-478	
	Sig. Eagle	26	8.54	11.7	2,021.7	202,170	1,273.4	127,340	748.3	74,830	8.54	63.7	2,021.7	1,098,794	1,248.3	678,451	773.4	420,343	100	543.5	443.5	
	Sig. Coklat	26	8.54	5.8	2,268.2	113,410	1,749.8	87,490	518.4	25,920	8.54	5.8	2,268.2	113,410	1,729.4	86,470	538.8	26,940	50	50	0	
	PM3 Total		9.28	316.6	1,571.3	4,648,023	1,015.9	2,955,742	555.4	1,632,281	9.17	316.6	1,651.3	4,796,213	1,047.7	3,043,111	603.6	1,753,102	2,939	2,904.5	-34.5	
Grand Total		7.35	911.95	1,377.2	9,235,723	853.4	5,722,949	523.8	3,512,774	8.87	911.95	1,360.3	10,997,433	748.7	6,052,922	611.6	4,944,511	6,706	8,064.5	1,378.5		

Table 13-8-1 Total Funds Required (Excl. Interest During Construction)

No.	Item	Condition	Amount	RP x 1000		Capital Disbursement plan Rp x 1000			
			Rp x 1000	Foreign	Local	1st Year	2nd Year	3rd Year	4th Year
A	<u>Equipment Cost</u>								
-1	FOB Price		3,402,652 --						
-2	CIF Charge	6% of FOB price	204,156 --	170,130	34,026				
	CIF Price		3,606,808 --	3,572,782		1,086,956	2,519,852		
-3	Import taxes & Duties	12.5% of CIF price	450,852 --		450,852		450,852		
-4	Inland Transportation	5% Incl insurance	180,339 --		180,339		180,339		
-5	Other Charges		0						
	Import Price		a) 4,237,999 --	3,572,782	665,217	1,086,956	3,151,043		
B	<u>Engineering Fee</u>								
-1	Field Sketch	Engineering cost 5mm Daily allowance & Air fare	44,804 -- 15,348 --	44,804 15,348		44,804 15,348			m.m. MAN MONTH
-2	Design & Drawing work	In Japan 25mm	217,391 --	217,391		217,391			
-3	Tender Evaluation	In Japan 8mm	69,565 --	69,565		69,565			
-4	Inspection & Report	In Japan 2mm	17,391 --	17,391		17,391			
-5	Documentation	Manual report etc.	39,131 --	39,131		39,131			
	Engineering Total		d) 403,630	403,630		403,630			
C	<u>Construction Works</u>								
-1	Local Equipment	Import limitation item	151,304		151,304	125,217	26,087		
-2	Civil & Bldg. Work	Incl. Foundation	548,044		548,044	274,022	274,022		
-3	Installation Work	Incl. Piping Elec./Inst.	380,130		380,130		380,130		
-4	Field Supervision	Inst'n Supervision and Start up commission 14.5	161,413	161,413			161,413		
			1,240,891	161,413	1,079,478	399,239	841,652		
D	<u>Operation Supervision</u>								
		Engineering cost 12mm	d) 111,948	111,948			73,165	38,783	
		Daily Allowance & Air fare	d) 27,131	27,131			18,087	9,044	
E	<u>Training Fee</u>								
		Expenses for trainer 28mm	d) 87,652	87,652			87,652		
		Expenses for trainer 4mm	d) 123,618	123,618			123,618		
	Overhead	Import price x 5%	d) 211,900	178,639	33,261	70,635	141,265		
	Contingency	Import price x 10%	d) 429,144	359,274	69,870	143,887	285,257		
			991,393	888,262	103,131	214,522	729,044	47,827	
	Grand Total		6,873,913	5,026,087	1,847,826	2,104,347	4,721,739	47,827	

Table 13-8-2 Annual Investment Plan of Total Funds Required

(Unit: 1,000 RP)

No.	Item	- 2 (1985)		- 1 (1986)		I (1987)		Total		
		Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Total
A	Equipment cost	1,076,604	10,352	2,496,178	654,865	0	0	3,572,782	665,217	4,237,999
B	Engineering fee	403,630	0	0	0	0	0	403,630	0	403,630
C	Construction works	0	399,239	161,413	680,239	0	0	161,413	1,079,478	1,240,891
D	Operation supervision	0	0	91,252	0	47,827	0	139,079	0	139,079
E	Training fee	0	0	211,270	0	0	0	211,270	0	211,270
F	Overhead	59,548	11,087	119,091	22,174	0	0	178,639	33,261	211,900
G	Contingency	121,087	22,800	238,187	47,070	0	0	359,274	69,870	429,144
	<b>Total</b>	<b>1,660,869</b>	<b>443,478</b>	<b>3,317,391</b>	<b>1,404,348</b>	<b>47,827</b>	<b>0</b>	<b>5,026,087</b>	<b>1,847,826</b>	<b>6,873,913</b>
	Interest (Foreign)	0	199,304	0	597,391	0	0	0	796,695	796,695
	Interest (Local)	0	0	0	39,957	0	0	0	39,957	39,957
	Repayment	0	0	0	151,304	0	0	0	151,304	151,304
	Working capital	0	0	0	0	0	120,739	0	120,739	120,739
	<b>Grand Total</b>	<b>1,660,869</b>	<b>642,782</b>	<b>3,317,391</b>	<b>2,193,000</b>	<b>47,827</b>	<b>120,739</b>	<b>5,026,087</b>	<b>2,956,521</b>	<b>7,982,608</b>



Table 13-10-1 List of Repayment Schedule of Foreign Loan and Interest

(Unit: 1,000 RP)

Year	-2 (1985)			-1 (1986)			1 (1987)			Total			Interest paid	Remarks
	Balance at the beginning of the period	Amount of repayment	Balance at the term-end	Balance at the beginning of the period	Amount of repayment	Balance at the term-end	Balance at the beginning of the period	Amount of repayment	Balance at the term-end	Balance at the beginning of the period	Amount of repayment	Balance at the term-end		
-2 (1985)	1,660,869	0	1,660,869							1,660,869	0	1,660,869	199,391	Precondition 1. Loan shall be executed at the beginning of the period (Jan. 1st). 2. Repayment of principal and interest payment shall be executed at the term-end (Dec. 31st). 3. Interest shall be post-paid. 4. Interest rate shall be 12% yearly. 5. Equal annual repayment for a period of 10 years after two years grace.
-1 (1986)		151,299	1,509,570	3,317,391	0	3,317,391				1,660,869 3,317,391	151,299	4,826,961	597,391	
1 (1987)		150,957	1,358,613		301,741	3,015,650	47,827	0	47,827	4,826,961 47,827	452,698	4,422,090	584,974	
2 (1988)		150,957	1,207,656		301,565	2,714,085		4,347	43,450		456,869	3,965,221	530,652	
3 (1989)		150,957	1,056,699		301,565	2,412,520		4,348	39,132		456,870	3,508,351	475,826	
4 (1990)		150,957	905,742		301,565	2,110,955		4,348	34,784		456,870	3,051,481	421,000	
5 (1991)		150,957	754,785		301,565	1,809,390		4,348	30,436		456,870	2,594,611	366,178	
6 (1992)		150,957	603,828		301,565	1,507,825		4,348	26,088		456,870	2,137,741	311,352	
7 (1993)		150,957	452,871		301,565	1,206,260		4,348	21,740		456,870	1,680,871	256,530	
8 (1994)		150,957	301,914		301,565	904,695		4,348	17,392		456,870	1,224,001	201,704	
9 (1995)		150,957	150,957		301,565	603,130		4,348	13,044		456,870	767,131	146,878	
10 (1996)		150,957	0		301,565	301,565		4,348	8,696		456,870	310,261	92,057	
11 (1997)					301,565	0		4,348	4,348		305,913	4,348	37,230	
12 (1998)								4,348	0		4,348	0	522	



**Table 13-12-1 Depreciation Expense**

- (1) Depreciation shall be made by the fixed installment method.
- (2) No residual book value shall be left (Total amount shall be depreciated.)
- (3) Working capital and spare parts shall not be depreciated.
- (4) Installation expense and foundation of the equipment shall be depreciated with the machinery and equipment.
- (5) Annual depreciation amount.

Item	Amount to be depreciated	Depreciation years	Annual depreciation amount
	1000Rp	year	1000 Rp/year
Equipment	5,180,312	10	518,031
Civil and building	484,391	30	16,146
Vehicles & transport equipment	26,087	5	5,217
Others	2,171,079	10	217,108
<b>Total</b>	<b>7,861,869</b>	<b>10.4</b>	<b>756,502</b>

$$\text{Depreciation period} = \frac{7,861,869}{756,502} = 10.4 \text{ years}$$

$$\frac{7,861,869 \text{ thousand Rp}}{10 \text{ years}} = 786,187 \text{ (1,000 Rp)}$$

The depreciation amount for building and civil works usually spread out over a period of 30 years.

On this basis the actual depreciation of the mill should be 756,502 thousand Rp.

For practical reasons, however, in our instance, calculation of depreciation is made on the assumed basis of 10 years.

Thus assumed, the depreciation charges are 786,187 thousand Rp. as indicated above.

Table 13-16-2 Financial Internal Rate of Return on Investment (I.R.R.O.I.)

Unit: 1000 Rp

Year	Net flow	12%		14%	
		Discount factor	Present worth	Discount factor	Present worth
	1000 Rp		1000 Rp		1000 Rp
- 2 (1985)	- 2,104,347	0.893	- 1,879,182	0.877	- 1,845,512
- 1 (1986)	- 4,795,375	0.797	- 3,821,914	0.769	- 687,643
1 (1987)	1,140,837	0.712	812,276	0.675	770,065
2 (1988)	1,499,873	0.636	953,919	0.592	887,925
3 (1989)	1,424,329	0.567	807,595	0.519	739,227
4 ~ 10 (1990~1996)	1,384,843	2.589	3,585,359	2.227	3,084,045
Total			458,053		- 51,893

$$\text{I.R.R.O.I.} = 12\% + 2\% \times \frac{458,053}{458,053 + 51,893} = 13.80\%$$

$$\text{Payout period} = \frac{7,068,287}{1,384,843} = 5.10 \text{ years}$$



Table 13-14-1 Annual Statement of Profit and Loss

(Unit: 1,000 RP)

Items	Present	- 2 (1985)	- 4 (1986)	1 (1987)	2 (1988)	3 (1989)	4 (1990)	5 (1991)	6 (1992)	7 (1993)	8 (1994)	9 (1995)	10 (1996)	Remarks
Sales (Qty. 1)	9,235,723 (6,706)	9,235,723 (6,706)	8,976,683 (6,508)	10,674,711 (7,845.3)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	10,997,433 (8,084.5)	
Manufacturing cost														
Variable cost	5,722,919	5,722,919	5,577,196	6,023,233	6,052,922	6,052,922	6,052,922	6,052,922	6,052,922	6,052,922	6,052,922	6,052,922	6,052,922	
Personnel expenses	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	1,526,264	
Depreciation (present) (A)	328,657	328,657	328,657	328,657	328,657	112,816	0	0	0	0	0	0	0	
Depreciation (new) (A)	0	0	0	786,187	786,187	786,187	786,187	786,187	786,187	786,187	786,187	786,187	786,187	
Other fixed cost	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	
Total	7,886,870	7,886,870	7,741,117	8,973,341	9,669,000	8,787,189	8,674,373	8,674,373	8,674,373	8,674,373	8,674,373	8,674,373	8,674,373	
Operating income	1,348,853	1,348,853	1,235,566	1,701,370	1,924,493	2,210,244	2,323,060	2,323,060	2,323,060	2,323,060	2,323,060	2,323,060	2,323,060	
Selling expenses	180,500	180,500	180,500	180,500	180,500	180,500	180,500	180,500	180,500	180,500	180,500	180,500	180,500	
Administrative expenses	367,210	367,210	367,210	367,210	367,210	367,210	367,210	367,210	367,210	367,210	367,210	367,210	367,210	
Total	547,710	547,710	547,710	547,710	547,710	547,710	547,710	547,710	547,710	547,710	547,710	547,710	547,710	
Total cost	8,434,580	8,434,580	8,288,827	9,521,051	9,550,740	9,334,599	9,222,083	9,222,083	9,222,083	9,222,083	9,222,083	9,222,083	9,222,083	
Interest payable														
Present	264,912	264,912	264,912	264,912	264,912	264,912	264,912	264,912	264,912	264,912	264,912	264,912	264,912	
New (Long-term loan)	0	0	0	584,974	530,652	475,826	421,000	366,178	311,352	256,530	201,704	146,878	92,057	
New (Short-term loan)	0	0	0	89,878	73,878	57,878	41,878	25,878	9,878	0	0	0	0	
Total	264,912	264,912	264,912	939,764	869,442	798,616	727,790	656,968	586,142	521,442	466,616	411,790	356,969	
Profit	536,231	536,231	422,944	213,596	577,251	853,918	1,047,560	1,118,382	1,189,203	1,253,908	1,308,734	1,363,590	1,418,381	
Corporation tax	182,681	182,681	143,030	69,554	197,038	297,371	361,646	386,434	411,223	433,868	453,057	472,216	491,433	
Profit after tax (B)	353,550	353,550	279,914	144,042	380,213	556,547	685,914	731,948	777,980	820,040	855,677	891,374	926,948	
(A + B)	682,207	682,207	608,571	1,258,876	1,493,067	1,455,550	1,472,101	1,518,135	1,564,172	1,606,227	1,641,864	1,677,591	1,713,135	
Loan repayment (Foreign)				452,686	456,870	456,870	456,870	456,870	456,870	456,870	456,870	456,870	456,870	
Loan repayment (Local)				100,000	100,000	100,000	100,000	100,000	61,739	0	0	0	0	

Table 13-15-1a Break-even Point for Every Kind of Paper

FM	Kinds	Basis weight	Present					Improved					Remarks																																																																											
			Daily production	Operation profit	Fixed cost	Break-even point	Ratio of operation	Daily production	Operation profit	Fixed cost	Break-even point	Ratio of operation																																																																												
			t/D	Rp/kg	1000 Rp	t/day	%	t/day	Rp/kg	1000 Rp	t/day	%																																																																												
1	H.V. Offset Pth	60	6.98	33.8	3,264	96.6	1,384	9.90	247.8	4,254	17.2	174	<p>(1) Annual fixed cost (present)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">1000 Rp</td> <td style="text-align: right;">(1000 Rp)</td> </tr> <tr> <td>Personnel expenses</td> <td style="text-align: right;">1,526,264</td> <td style="text-align: right;">(1000 Rp)</td> </tr> <tr> <td>Depreciation</td> <td style="text-align: right;">328,657</td> <td></td> </tr> <tr> <td>Other fixed cost</td> <td style="text-align: right;">309,000</td> <td></td> </tr> <tr> <td>Selling expenses</td> <td style="text-align: right;">180,500</td> <td></td> </tr> <tr> <td>Administrative expenses</td> <td style="text-align: right;">367,210</td> <td></td> </tr> <tr> <td>Interest paid</td> <td style="text-align: right;">264,912</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>2,976,543</b></td> <td></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td colspan="3"><math>2,976,543 (1000Rp) \div 911.95 (day)</math></td> </tr> <tr> <td colspan="3"><math>= 3,264 (1000 Rp/day)</math></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td colspan="3"><p>(2) Annual fixed cost (after improved)</p></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td colspan="3"><table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">1000 Rp</td> <td></td> </tr> <tr> <td>Personnel expenses</td> <td style="text-align: right;">1,526,264</td> <td></td> </tr> <tr> <td>Depreciation</td> <td style="text-align: right;">863,200</td> <td></td> </tr> <tr> <td>Other fixed cost</td> <td style="text-align: right;">309,000</td> <td></td> </tr> <tr> <td>Selling expenses</td> <td style="text-align: right;">180,500</td> <td></td> </tr> <tr> <td>Administrative expenses</td> <td style="text-align: right;">367,210</td> <td></td> </tr> <tr> <td>Interest paid</td> <td style="text-align: right;">633,554</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>3,879,728</b></td> <td></td> </tr> </table></td> </tr> <tr> <td colspan="3"><math>3,879,728 (1,000 Rp) \div 911.95 (day)</math></td> </tr> <tr> <td colspan="3"><math>= 4,254 (1000 Rp/day)</math></td> </tr> </table>		1000 Rp	(1000 Rp)	Personnel expenses	1,526,264	(1000 Rp)	Depreciation	328,657		Other fixed cost	309,000		Selling expenses	180,500		Administrative expenses	367,210		Interest paid	264,912		<b>Total</b>	<b>2,976,543</b>		 			$2,976,543 (1000Rp) \div 911.95 (day)$			$= 3,264 (1000 Rp/day)$			 			<p>(2) Annual fixed cost (after improved)</p>			 			<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">1000 Rp</td> <td></td> </tr> <tr> <td>Personnel expenses</td> <td style="text-align: right;">1,526,264</td> <td></td> </tr> <tr> <td>Depreciation</td> <td style="text-align: right;">863,200</td> <td></td> </tr> <tr> <td>Other fixed cost</td> <td style="text-align: right;">309,000</td> <td></td> </tr> <tr> <td>Selling expenses</td> <td style="text-align: right;">180,500</td> <td></td> </tr> <tr> <td>Administrative expenses</td> <td style="text-align: right;">367,210</td> <td></td> </tr> <tr> <td>Interest paid</td> <td style="text-align: right;">633,554</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>3,879,728</b></td> <td></td> </tr> </table>				1000 Rp		Personnel expenses	1,526,264		Depreciation	863,200		Other fixed cost	309,000		Selling expenses	180,500		Administrative expenses	367,210		Interest paid	633,554		<b>Total</b>	<b>3,879,728</b>		$3,879,728 (1,000 Rp) \div 911.95 (day)$			$= 4,254 (1000 Rp/day)$		
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Table 13-15-1b Break-even Point for Every Kind of Paper

PM	Kinds	Basis weight	Present					Improved					Remarks
			Daily production	Operation profit	Fixed cost	Break-even point	Ratio of operation	Daily production	Operation profit	Fixed cost	Break-even point	Ratio of operation	
			t/D	Rp/kg	1000 Rp	t/day	%	t/day	Rp/kg	1000 Rp	t/day	%	
3	Golden bird	26	9.39	538.6	3,264	6.1	65	9.39	559.2	4,254	7.6	81	
	Silver bird	26	9.20	570.6	3,264	5.7	62	9.20	589.9	4,254	7.2	78	
	Sig. Eagle	26	8.54	748.3	3,264	4.4	52	8.54	773.4	4,254	5.5	64	
	Sig. Coklat	26	8.54	518.4	3,264	6.3	74	8.54	538.8	4,254	7.9	92	
	PM3 average		9.28	555.4	3,264	5.9	64	9.17	603.6	4,254	7.0	76	
	Total average		7.35	523.8	3,264	6.2	84	8.87	611.6	4,254	7.0	79	



Table 13-16-1 Profit & Loss Statement for Internal Rate of Return on Investment (I.R.R.O.I.)

(Unit: 1,000 RP)

	Present	- 2 (1985)	- 1 (1986)	1 (1987)	2 (1988)	3 (1989)	4 ~ 10 (1990 ~ 1996)	Remarks
Sales	9,235,723			10,674,711	10,997,433	10,997,433	10,997,433	
Manufacturing cost								
Variable cost	5,722,949			6,023,233	6,052,922	6,052,922	6,052,922	
Personnel expenses	1,526,264			1,526,264	1,526,264	1,526,264	1,526,264	
Depreciation (present)	328,657			328,657	328,657	112,816	0	
Depreciation (new)	0			687,391	687,391	687,391	687,391	
Other fixed cost	309,000			309,000	309,000	309,000	309,000	
Total	7,886,870			8,874,545	8,904,234	8,688,393	8,575,577	
Selling expenses	180,500			180,500	180,500	180,500	180,500	
Administrative expenses	367,210			367,210	367,210	367,210	367,210	
	547,710			547,710	547,710	547,710	547,710	
Total cost	8,434,580			9,422,255	9,451,944	9,236,103	9,123,287	
Gross profit	801,143			1,252,456	1,545,489	1,761,330	1,874,146	
Present interest	264,912			264,912	264,912	264,912	264,912	
Profit before tax.	536,231			987,544	1,280,577	1,496,418	1,609,234	
Corporation tax	182,681			340,640	443,202	518,746	558,232	
Profit after tax	353,550			646,904	837,375	977,672	1,051,002	
Investment amount		-2,104,347	-4,721,739	(-168,565)				
Production cutback loss due to construction			-73,636					
Depreciation (present)				328,657	328,657	112,816	0	
Depreciation (new)				687,391	687,391	687,391	687,391	
Profit				646,904	837,375	977,672	1,051,002	
Present profit				-353,550	-353,550	-353,550	-353,550	
Net flow		-2,104,347	-4,795,375	1,140,837	1,499,873	1,424,329	1,384,843	

Table 13-17-1 Sensitivity Analysis -- Variation of +5% base selling price

(Unit: 1,000 RP)

	Present	- 2 (1985)	- 1 (1986)	1 (1987)	2 (1988)	3 (1989)	4 ~ 10 (1990 ~ 1996)	Remarks
Sales	9,235,723			11,208,446	11,547,304	11,547,304	11,547,304	
Manufacturing cost								
Variable cost	5,722,949			6,023,233	6,052,922	6,052,922	6,052,922	
Personnel expenses	1,526,264			1,526,264	1,526,264	1,526,264	1,526,264	
Depreciation (present)	328,657			328,657	328,657	112,816	0	
Depreciation (new)	0			687,391	687,391	687,391	687,391	
Other fixed cost	309,000			309,000	309,000	309,000	309,000	
Total	7,886,870			8,874,545	8,904,234	8,688,393	8,575,577	
Selling expenses	180,500			180,500	180,500	180,500	180,500	
Administrative expenses	367,210			367,210	367,210	367,210	367,210	
Total	547,710			547,710	547,710	547,710	547,710	
Total cost	8,434,580			9,422,255	9,451,944	9,236,103	9,123,287	
Gross profit	801,143			1,786,191	2,095,360	2,311,201	2,424,017	
Present interest	264,912			264,912	264,912	264,912	264,912	
Profit before tax	536,231			1,521,279	1,830,448	2,046,289	2,159,105	
Corporation tax	182,681			527,448	635,657	711,201	750,687	
Profit after tax	353,550			993,831	1,194,791	1,335,088	1,408,418	
Investment amount		-2,104,347	-4,721,739	(-168,565)				
Production cutback loss due to construction			-73,636					
Depreciation (present)				328,657	328,657	112,816	0	
Depreciation (new)				687,391	687,391	687,391	687,391	
Profit				993,831	1,194,791	1,335,088	1,408,418	
Present profit				-353,550	-353,550	-353,550	-353,550	
Net flow		-2,104,347	-4,795,375	1,487,764	1,857,289	1,781,745	1,742,259	



Table 13-17-2 Financial Internal Rate of Return on Investment  
(I.R.R.O.I.)

For +5% base selling price

Unit: 1000 Rp

Year	Capital Investment	Net Cash Flow	18%		20%	
			D.F.	P.W.	D.F.	P.W.
- 2 (1985)	- 2,104,347		0.847	- 1,782,382	0.833	- 1,752,921
- 1 (1986)	- 4,795,375		0.718	- 3,443,079	0.694	- 3,327,990
1 (1987)		1,487,764	0.609	906,048	0.579	861,415
2 (1988)		1,857,289	0.516	958,361	0.482	895,213
3 (1989)		1,781,745	0.437	778,623	0.402	716,261
4 ~ 10 (1990 ~ 1996)		1,742,259	1.666	2,902,603	1.468	2,557,636
<b>Total</b>				<b>320,174</b>		<b>- 50,386</b>

$$\text{I.R.R.O.I.} = 18\% + 2\% \times \frac{320,174}{320,174 + 50,386} = 19.73\%$$

$$\text{Payout Period} = \frac{7,068,287}{1,742,259} = 4.06 \text{ years}$$

Table 13-17-3 Sensitivity Analysis -- Variation of -5% base selling price

(Unit: 1,000 RP)								
	Present	- 2 (1985)	- 1 (1986)	1 (1987)	2 (1988)	3 (1989)	4 ~ 10 (1990 ~ 1996)	Remarks
Sales	9,235,723			10,140,975	10,447,561	10,447,561	10,447,561	
Manufacturing cost								
Variable cost	5,722,949			6,023,233	6,052,922	6,052,922	6,052,922	
Personnel expenses	1,526,264			1,526,264	1,526,264	1,526,264	1,526,264	
Depreciation (present)	328,657			328,657	328,657	112,816	0	
Depreciation (new)	0			687,391	687,391	687,391	687,391	
Other fixed cost	309,000			309,000	309,000	309,000	309,000	
Total	7,886,870			8,874,545	8,904,234	8,688,393	8,575,577	
Selling expenses	180,500			180,500	180,500	180,500	180,500	
Administrative expenses	367,210			367,210	367,210	367,210	367,210	
	547,710			547,710	547,710	547,710	547,710	
Total cost	8,434,580			9,422,255	9,451,944	9,236,103	9,123,287	
Gross profit	801,143			718,720	995,617	1,211,458	1,324,274	
Present interest	264,912			264,912	264,912	264,912	264,912	
Profit before tax	536,231			453,808	730,705	946,546	1,059,362	
Corporation tax	182,681			153,833	250,747	326,291	365,777	
Profit after tax	353,550			299,975	479,958	620,255	693,585	
Investment amount		-2,104,347	-4,721,739	(-168,565)				
Production cutback loss due to construction			-73,636					
Depreciation (present)				328,657	328,657	112,816	0	
Depreciation (new)				687,391	687,391	687,391	687,391	
Profit				299,975	479,958	620,255	693,585	
Present profit				-353,550	-353,550	-353,550	-353,550	
Net flow		-2,104,347	-4,795,375	793,908	1,142,456	1,066,912	1,027,426	



Table 13-17-4 Financial Internal Rate of Return on Investment  
(I.R.R.O.I.)

For -5% base selling price

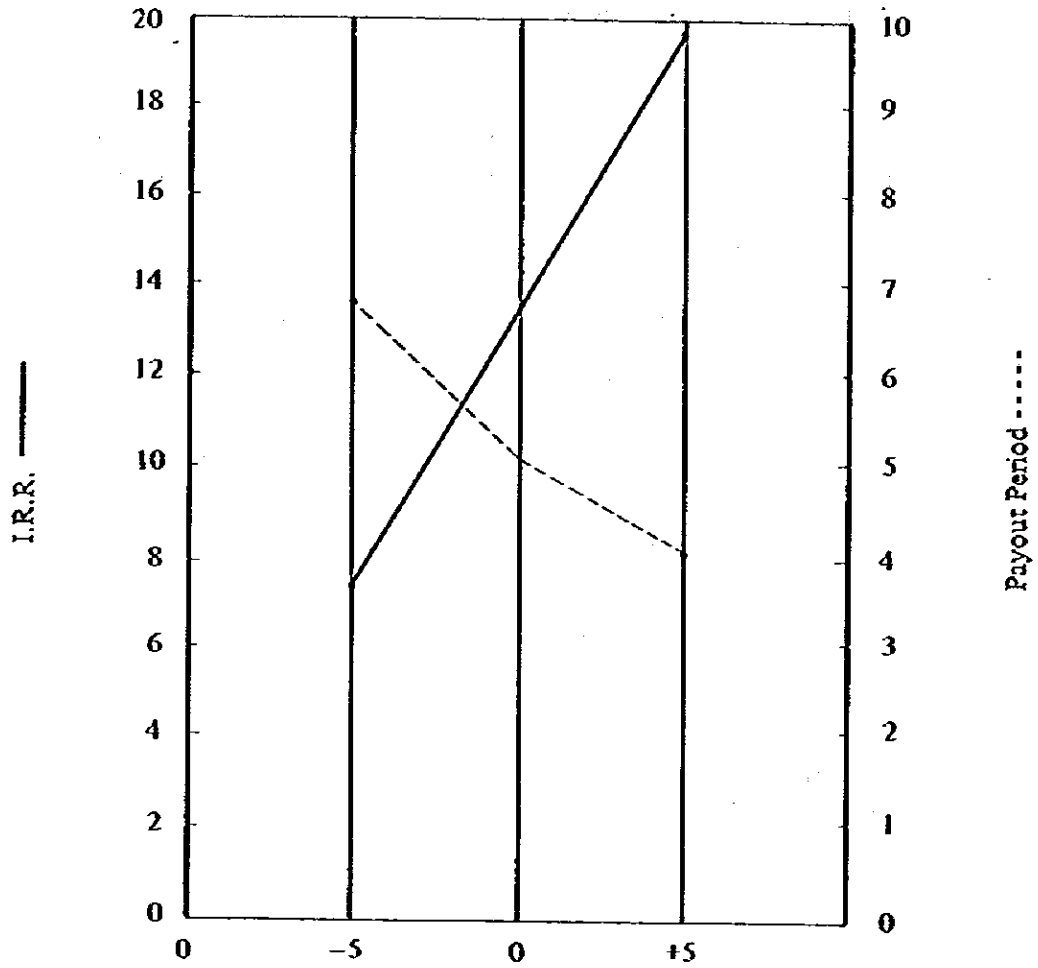
Unit: 1000 Rp

Year	Capital Investment	Net Cash Flow	6%		8%	
			D.F.	P.W.	D.F.	P.W.
- 2 (1985)	- 2,104,347		0.943	- 1,984,399	0.926	- 1,948,625
- 1 (1986)	- 4,795,375		0.890	- 4,267,884	0.857	- 4,109,636
1 (1987)		793,908	0.840	666,883	0.794	630,363
2 (1988)		1,142,456	0.792	904,825	0.735	839,705
3 (1989)		1,066,912	0.747	796,983	0.681	726,567
4 ~ 10 (1990 ~ 1996)		1,027,426	4.172	4,286,421	3.543	3,640,170
Total				402,829		- 221,456

$$\text{I.R.R.O.I.} = 6\% + 2\% \times \frac{402,829}{402,829 + 221,456} = 7.29\%$$

$$\text{Payout Period} = \frac{7,068,287}{1,027,426} = 6.88 \text{ years}$$

Fig. 13-17-1 I.R.R. & Payout Period vs Variation of Selling Price



	-5%	0	+5%
I.R.R.	7.29	13.80	19.73
Payout Period	6.88	5.10	4.06





Table 13-17-5 Sensitivity Analysis Variation of +5% Base Investment Cost

	Present	- 2 (1985)	- 1 (1986)	1 (1987)	2 (1988)	3 (1989)	4 ~ 10 (1990 ~ 1996)	Remarks
Sales	9,235,723			10,674,711	10,997,433	10,997,433	10,997,433	
Manufacturing cost								
Variable cost	5,722,949			6,023,233	6,052,922	6,052,922	6,052,922	
Personnel expenses	1,526,264			1,526,264	1,526,264	1,526,264	1,526,264	
Depreciation (present)	328,657			328,657	328,657	112,816	0	
Depreciation (new)	0			721,761	721,761	721,761	721,761	
Other fixed cost	309,000			309,000	309,000	309,000	309,000	
Total	7,886,870			8,908,915	8,938,604	8,722,763	8,609,947	
Selling expenses	180,500			180,500	180,500	180,500	180,500	
Administrative expenses	367,210			367,210	367,210	367,210	367,210	
	547,710			547,710	547,710	547,710	547,710	
Total cost	8,434,580			9,456,625	9,486,314	9,270,473	9,157,657	
Gross profit	801,143			1,218,086	1,511,119	1,726,960	1,839,776	
Present interest	264,912			264,912	264,912	264,912	264,912	
Profit before tax	536,231			953,174	1,246,207	1,462,048	1,574,864	
Corporation tax	182,681			328,611	431,172	506,717	546,202	
Profit after tax	353,550			624,563	815,035	955,331	1,028,662	
Investment amount		-2,209,564	-4,957,826	-176,993				
Production cutback loss due to construction			-73,636					
Depreciation (present)				328,657	328,657	112,816	0	
Depreciation (new)				721,761	721,761	721,761	721,761	
Profit				624,563	815,035	955,331	1,028,662	
Present profit				-353,550	-353,550	-353,550	-353,550	
Net flow		-2,209,564	-5,031,462	1,144,438	1,511,903	1,436,358	1,396,873	



**Table 13-17-6 Financial Internal Rate of Return on Investment  
(I.R.R.O.I.)**

**For +5% Investment Cost**

**Unit: 1000 Rp**

Year	Capital Investment	Net Cash Flow	12%		14%	
			D.F.	P.W.	D.F.	P.W.
- 2 (1985)	- 2,209,564		0.893	- 1,973,141	0.877	- 1,937,788
- 1 (1986)	- 5,031,462		0.797	- 4,010,075	0.769	- 3,869,194
1 (1987)		1,144,438	0.712	814,840	0.675	772,496
2 (1988)		1,511,903	0.636	961,570	0.592	895,047
3 (1989)		1,436,358	0.567	814,415	0.519	745,470
4 ~ 10 (1990 ~ 1996)		1,396,873	2.589	3,616,504	2.227	3,110,836
Total				224,113		- 283,133

$$\text{I.R.R.O.I.} = 12\% + 2\% \times \frac{224,113}{224,113 + 283,133} = 12,88\%$$

$$\text{Payout Period} = \frac{7,418,019}{1,396,873} = 5.31 \text{ years}$$

Table 13-17-7 Sensitivity Analysis Variation of -5% Base Investment Cost

	Present	- 2 (1985)	- 1 (1986)	1 (1987)	2 (1988)	3 (1989)	4 ~ 10 (1990 ~ 1996)	Remarks
Sales	9,235,723			10,674,711	10,997,433	10,997,433	10,997,433	
Manufacturing cost								
Variable cost	5,722,949			6,023,233	6,052,922	6,052,922	6,052,922	
Personnel expenses	1,526,264			1,526,264	1,526,264	1,526,264	1,526,264	
Depreciation (present)	328,657			328,657	328,657	112,816	0	
Depreciation (new)	0			653,021	653,021	653,021	653,021	
Other fixed cost	309,000			309,000	309,000	309,000	309,000	
Total	7,886,870			8,840,175	8,869,864	8,654,023	8,541,207	
Selling expenses	180,500			180,500	180,500	180,500	180,500	
Administrative expenses	367,210			367,210	367,210	367,210	367,210	
	547,710			547,710	547,710	547,710	547,710	
Total cost	8,434,580			9,387,885	9,417,574	9,201,733	9,088,917	
Gross profit	801,143			1,286,826	1,579,859	1,795,700	1,908,516	
Present interest	264,912			264,912	264,912	264,912	264,912	
Profit before tax	536,231			1,021,914	1,314,947	1,530,788	1,643,604	
Corporation tax	182,681			352,670	455,231	530,776	570,261	
Profit after tax	353,550			669,244	859,716	1,000,012	1,073,343	
Investment amount		-1,999,130	-4,485,652	-160,137				
Production cutback loss due to construction			-73,636					
Depreciation (present)				328,657	328,657	112,816	0	
Depreciation (new)				653,021	653,021	653,021	653,021	
Profit				669,244	859,716	1,000,012	1,073,343	
Present profit				-353,550	-353,550	-353,550	-353,550	
Net flow		-1,999,130	-4,559,288	1,137,235	1,487,844	1,412,299	1,372,814	



Table 13-17-8 Financial I.R.R.O.I.

For -5% base Investment Cost

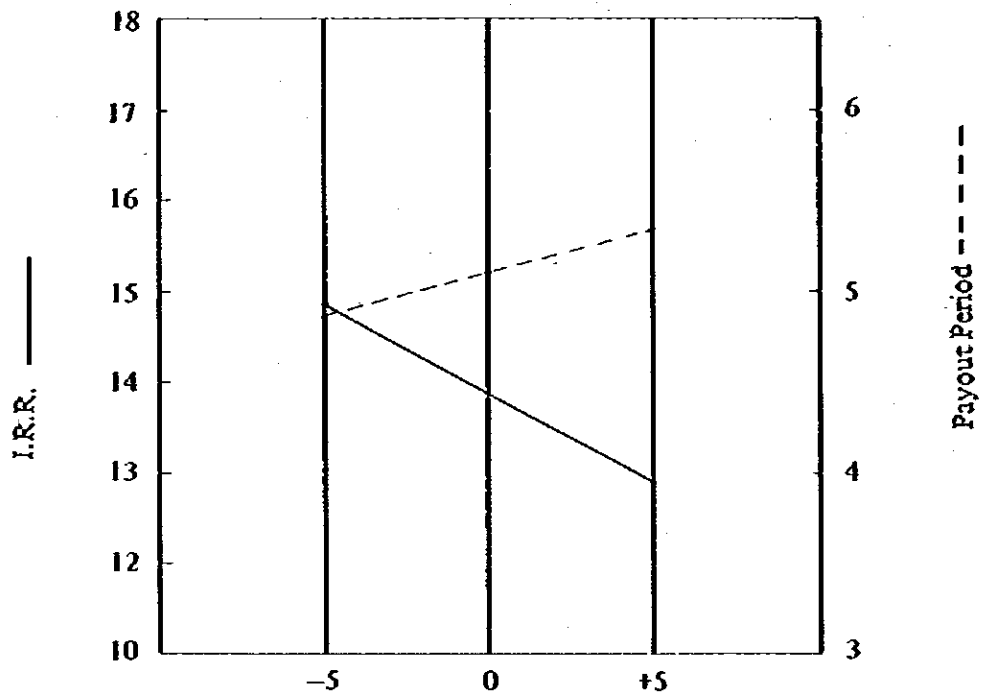
Unit: 1000 Rp

Year	Capital Investment	Net Cash Flow	14%		15%	
			D.F.	P.W.	D.F.	P.W.
- 2 (1985)	- 1,999,130		0.877	- 1,753,237	0.870	- 1,739,243
- 1 (1986)	- 4,559,288		0.769	- 3,506,093	0.756	- 3,446,822
1 (1987)		1,137,235	0.675	767,634	0.658	748,301
2 (1988)		1,487,844	0.592	880,804	0.572	851,047
3 (1989)		1,412,299	0.519	732,983	0.497	701,913
4 ~ 10 (1990 ~ 1996)		1,372,814	2.227	3,057,257	2.069	2,840,352
Total				179,348		- 44,452

$$\text{I.R.R.O.I.} = 14\% + 1\% \times \frac{179,348}{179,348 + 44,452} = 14.80\%$$

$$\text{Payout Period} = \frac{6,718,555}{1,372,814} = 4.89 \text{ years}$$

Fig. 13-17-2 I.R.R. & Payout Period vs. Investment Cost



	-5%	0	+5%
I.R.R.	14.80	13.80	12.88
Payout Period	4.89	5.10	5.31



**Table 13-18-1 Financial Indexes**

<b>Year</b>	<b>Ratio of after tax to sales</b>	<b>Ratio of pretax profit to investment</b>	<b>Debt service ratio</b>
	<b>%</b>	<b>%</b>	<b>%</b>
<b>1 (1987)</b>	1.3	2.7	179.7
<b>2 (1988)</b>	3.5	7.2	205.1
<b>3 (1989)</b>	5.2	10.8	208.1
<b>4 (1990)</b>	6.2	13.1	215.6
<b>5 (1991)</b>	6.7	14.0	228.9
<b>6 (1992)</b>	7.1	14.9	244.1
<b>7 (1993)</b>	7.5	15.7	261.1
<b>8 (1994)</b>	7.8	16.4	279.9
<b>9 (1995)</b>	8.1	17.1	302.2
<b>10 (1996)</b>	8.4	17.8	328.9

**If debt service ratio will be over 100%, loan payment could be expected to pay.**

**Chapter 14.**

**ECONOMIC EVALUATION**

## Chapter 14. Economic Evaluation

- 1) The earnings of PPM maintain a surplus at present, but as to its profitability a deterioration is foreseen in the future. In particular, it is foreseen that the Unit 1 will lose the competitive abilities of products it produces and 1 out of 2 paper machines will have to be forced to stop its operation in the worst case. By means of carrying out this renovation plan, PPM will regain its stabilized position, and the contribution to the area development and the securement of employment will become achievable.
- 2) By means of carrying out this renovation plan the life of equipment aged more than 60 years can be reactivated, and the production can be continued in the future.
- 3) Products to be expanded in sales this time are those to replace the products now imported or export-oriented products, resulting in a saving of foreign currency.
- 4) For the future consolidation of PPM and for the saving of foreign currency, the installation of the paper machine No. 4 can be considered in due time, and this renovation is the first step to realize such a project.

As to the equipment to be renovated this time, consideration has been given to the interchangeability of parts and equipment with those of PM 3 when required.

## **APPENDICES**

### Appendix 1 Itinerary

February 1984

26	(Sun.)	9-persons	Lv. NRT - Av. JKT	9-persons (Messrs. Kano, Masuda, K. Suzuki, Y. Suzuki, Omachi, Fujii, Nakayama, Shibata, Sakai)
27	(Mon.)	9-persons		Visit to Embassy of Japan, JICA and JETRO
28	(Tue.)	9-persons		Visit to DGBCI, Victory Offset Prima, Gama Cipta Offset Daei and Toppa Printing Indonesia
29	(Wed.)	2-persons 7-persons	Lv. JKT - BRPP	2-persons (Messrs. Omachi, Fujii) Visit to DGBCI, IPPA, RI KAYASA, JP

March 1984

1	(Thu.)	5-persons  1-person 2-persons 1-person	Lv. JKT - Av. PPM  Lv. JKT - Av. BRPP	5-persons (Messrs. Kano, K. Suzuki, Nakayama, Shibata, Sakai) 1-person (Mr. Y. Suzuki) 2-persons (Messrs. Omachi, Fujii) Study in BRPP 1-person (Mr. Masuda) Visit to NAC
2	(Fri.)	Team A Team B Team C Team D		A Team (Messrs. Omachi, Fujii) Study in PPM B Team (Messrs. Y. Suzuki, Omachi, Fujii) Study in BRPP C Team (Messrs. Nakayama, Shibata) Study in PPM D Team (Mr. Masuda) Visit to Dainippon Gitekarya Printing and Toppa, Indonesia
3	(Sat.)	Teams A and C Team B Team D		Study in PPM Study in BRPP Market Study in JKT
4	(Sun.)	Team B and C Team D	Lv. JKT - Av. PPM	Study of Documents Study of Documents
5	(Mon.)	Teams A, C and D Team B		Study in PPM  Study in BRPP
6	(Tue.)	Team A Team B Team C Team D	Lv. PPM - Av. BRPP  Lv. PPM - Av. JKT	Study in BRPP Study in PPM Visit to Sastra Daya and Karya Nusantara, Study in PPM
7	(Wed.)	Teams A and B Team C Team D		Study in BRPP Study in PPM Visit to Perun Percetakan Uang, Perdagangan & Percetakan and Margano
8	(Thu.)	Teams A and B Team C Team D		Study in BRPP Study in PPM Visit to Daei
9	(Fri.)	Teams A and B Team C Team D 1-person	Lv. NRT - Av. JKT	Study in BRPP Study in PPM Visit to Central Statistic Bureau 1-person (Mr. Yamagiwa)

10	(Sat.)	Teams A and B Team C Team D and Mr. Yamagiwa	Lv. JKT - Av. DPS	Study in BRPP Study in PPM
11	(Sun.)	Teams A and B Team C Team D and Mr. Yamagiwa	Lv. DPS - Av. BRPP	Study in BRPP Study in PPM Study in BRPP
12	(Mon.)	Teams New A, B and D Team C		Team, Mew A (Messrs. Kano, K. Suzuki, Yamagiwa) Study in BRPP Study in PPM Study in BRPP
13	(Tue.)	Teams New A B and D Team C		Study PPM Final Meeting with BRPP
14	(Wed.)	Teams New A and B Team C Team D	Lv. BRPP - Av. Surabaya	Study in PPM Final Meeting with BRPP
15	(Thu.)	Teams New A and B Team C Team D	Lv. BRPP - Av. DPS	Final Meeting with BRPP  Study in PPM Visit to Sentral Cemilang, Panca Puji Bangun, Areka Kertas, C-V Nusantara Bina Trading, Hasan Ryongag, Ubanasi, NAC U.D. National
16	(Fri.)	Team New A Team B  Team C Team D	Lv. DPS - Av. PPM Lv. DPS - Via JKT - For NRT	Study in PPM Visit Bendoel, Gedong Batu Study in PPM
17	(Sat.)	Team New A Team B Team C Team D	Av. NRT	Team B (Messrs. Y. Suzuki, Omachi, Fujii) Study in PPM Study of Documents
18	(Sun.)	Team New A Team C Team D	Lv. Surabaya - Av. Semarang	Study in PPM Study in PPM Study in PPM
19	(Tue.)	Teams New A and C Team D		Study in PPM  Visit to Djarum, Jambul, Noyotono
20	(Tue.)	Teams New A and C Team D	Lv. Semarang - Av. JKT	Study in PPM
21	(Wed.)	Teams New A and C Team D		Final Meeting with PPM
22	(Thu.)	3-persons  3-persons  Team D	Lv. PPM - Av. JKT	Visit to JETRO 3-persons (Messrs. Kano, Nakayama, K. Suzuki) Final Meeting with PPM 3-persons (Messrs. Shibata, Sakai, Yamagiwa) Final Meeting with PPM Study of Documents
23	(Fri.)	4-persons  3-persons		4-persons (Messrs. Kano, Nakayama, K. Suzuki, Masuda) Final Meeting with DGBCI, BRPP and PPM Study in PPM

24	(Sat.)	4-persons 3-persons	Lv. PPM - Av. JKT	Final Meeting with DGBCI, BRPP and PPM Study in PPM
25	(Sun.)	7-persons		7-persons (Messrs. Kaño, Nakayama, K. Suzuki, Masuda, Shibata, Sakai, Yamagiwa) Off
26	(Mon.)	7-persons	Lv. JKT - For NRT	Visit to DGBCI, Embassy of Japan, JICA and JETRO
27	(Tue.)	7-persons	Av. NRT	

## **Appendix 2 Members of JICA Study Team**

**Mr. Tadao Kano** : **Team Leader**  
**Mr. Yasuharu Masuda** : **Marketing**  
**Mr. Kazuma Suzuki** : **Finance**  
**Mr. Tadahiko Yamagiwa** : **Electric and Instrument**

### **In Charge of Basuki Rachmat**

**Mr. Yasuhiko Suzuki** : **Chief and Machinery Equipment**  
**Mr. Hideo Omachi** : **Pulping**  
**Mr. Tsunetoyo Fujii** : **Paper Manufacturing**

### **In Charge of Padalarang**

**Mr. Heihachiro Nakayama** : **Chief and Machinery Equipment**  
**Mr. Yoshihito Shibata** : **Pulping**  
**Mr. Kazuo Sakai** : **Paper Manufacturing**



### Appendix 3

#### Member of the Counter Team in the Directorate General of Basic Chemical Industries, Ministry of Industry

##### DGBCI

**Mr. Bintaldjemur** : Director of Programming DGBCI

**Mr. M. Mansur** : Sub Director Pulp and Rubber

**Mr. F. Manaf** : Sub Director Pulp and Rubber

**Mr. Soekirto** : Sub Director Pulp and Rubber

**Mr. Soepranyoto** : Dir. Gen's staff

**Mr. Sagaf** : Staff of DGBCI

**Mr. Syafii** : Staff of DGBCI

**IPPA** : Secretary General

**Mr. Kahar**

#### **Appendix 4**

#### **Members of the Cooperation Team in the Basuki Rachamat Pulp and Paper Mill**

<b>Mr. Murtedjo Kadarisman</b>	<b>: Team Leader Production/Technical Director</b>
<b>Mrs. Dawanhuri</b>	<b>: Secretary Production Division III</b>
<b>Mr. Muslich</b>	<b>: Production Department</b>
<b>Mr. Eddy Sunyoto</b>	<b>: Maintenance Department</b>
<b>Mr. Siswandi</b>	<b>: Logistic Department</b>
<b>Mr. Priyadi</b>	<b>: Accounting Department</b>
<b>Mr. Kadariaman</b>	<b>: Maintenance Division I</b>
<b>Mr. Dawanhuri</b>	<b>: Production Division I</b>
<b>Mr. Mulyadi</b>	<b>: Instrument Section</b>
<b>Mr. Heru Budiyanto</b>	<b>: Electrical Section</b>
<b>Mr. Soenarya</b>	<b>: Marketing Section Staff</b>
<b>Mr. Soegandi</b>	<b>: Marketing Section Staff</b>

## Appendix 5

### Members of the Cooperation Team in the Padalarang Pulp and Paper Mill

Mr. Soetamat	: Plant Manager
Mr. Suparmat	: Assistant Plant Manager
Mr. Wahyu Harun	: Administration Division Manager
Mr. Affandi	: Accounting Manager
Mr. Asikin, A.H.	: Engineering Manager
Mr. Suparman AL	: Production Manager
Mr. A. Syamsudin	: Maintenance Manager
Mr. U. Gunawan	: Electric & Instrument Manager
Mr. Martoyo. S.	: Plant Technical Staff
Mr. Yayan. S.	: Pulp Plant Section Chief
Mr. A. Sukendar	: Paper M/C Unit I Section Chief
Mr. Suwarno	: Finishing Unit I Section Chief
Mr. Hadras. H.	: Paper M/C Unit II Section Chief
Mr. Iyus. Y.	: Laboratory Section Chief
Mr. M. Yusuf WK.	: Domestic Purchasing Section Chief
Mr Paul Y. Rachwoto	: Marketing Manager
Mr. D. Ali Sofyandi	: Surabaya Representative

**Appendix 6 MACHINERY & EQUIPMENT LIST**  
**Required for RENOVATION PROJECT**

F: Foreign Supply Required  
L: Local Supply Required

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>A.</b>	<b>Pulp Plant</b>				
<b>A1</b>	<b>Straw Preparation</b>				<b>3 ADT/h Expected</b>
-1	Infeed Converyor	1	o	—	Flat Belt: 600 mmW
-2	Straw Cutter	1	o	—	45 kW Star Type
-3	Feedout Converyor	1	o	—	Inclined Flat Belt: 1 mW
-4	Weight Scale	1	o	—	Belt Scale Type
-5	Knife Grinder	1	o	—	For Straw Cutter
-6	Spare Knife Set	1	o	—	Rotary-6 pcs, Bed-2 pcs
<b>A2</b>	<b>Straw Transportation</b>				<b>3 ADT/h Expected</b>
-1	Transfer Converyor	1	o	—	Inclined, 3 roller Type C/W Steel Structure etc.
-2	Shuttle Converyor	1	o	—	Travelling 3 Roller Belt Type
-3	Spare Parts	1	o	—	5% Carrier & Return Roller 1-selfaligner, Pillow Block a Belt Cleaner
<b>A3</b>	<b>Digestor Overhaul</b>				
-1	Top Packing gland Seat	1	o	—	Piller Packing Type
-2	Top Cover Modification	1	o	—	Swing Opening Type
-3	Spare Parts	1	o	—	20-Piller Packing 5-Swing Bolts & Nuts
-4	Drainer Pit Overhaul	1	—		

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>A4</b>	<b>Pulper Overhaul</b>				
-1	Overhaul	1	—	o	Runner & Screen Plate
-2	Discharge Pump	1	o	—	0.7 m <sup>3</sup> /min. Self Primming Type
<b>A5</b>	<b>Pulper Intermediate Chest</b>				
-1	Brown Pulp Chest	1	—	o	15 m <sup>3</sup> Square Type
-2	Agitator	1	—	o	Relocation from Stock Prep
-3	CRC	1	—	o	Relocation from PMI
-4	Pulp Flow Meter	1	o	—	75mm dia Magna Flow Type
<b>A6</b>	<b>Spare Screen Plate for Cown Screen</b>	1	o	—	SUS 304, 2.2mm dia
<b>A7</b>	<b>Spare Wire Cloth</b>	1	o	—	15 mesh x 3mW x 50mL 40 mesh x 3mW x 50mL 30 mesh x 3mW x 50mL
<b>A8</b>	<b>Piping Material</b>	1	o	o	For Around Intermediate Chest
<b>B</b>	<b>Stock Preparation</b>				
<b>B1</b>	<b>Purchased Pulp Line</b>				
-1	Hydra Pulper	1	o	—	10m <sup>3</sup> SUS 304, 5% Cons
-2	Belt Conveyor	1	o	—	900mmW Flat Belt Type
-3	Dilution Head Tank	3	o	—	SUS 304, 2 x 2m <sup>3</sup> for 10m <sup>3</sup> 2 x 1.6m <sup>3</sup> for 8m <sup>3</sup> 2 x 1.0m <sup>3</sup> for 5m <sup>3</sup> Pulper
-4	3 way Remote Valve	6	o	—	For Dilution Head Tank
-5	Spare Parts	1	o	—	V-belt, Vane Edge, Packing Bearings.

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>B2</b>	<b>Chest &amp; Agitator</b>				
-1	Chest for NLBKP	4	—	o	20m <sup>3</sup> Square Type
-2	Agitator	4	o	—	Propeller Belt Drive
-3	Flooring Structure	4	—	o	For Top Flooring
-4	Spare Parts	1	o	—	Sleeve, Packing
<b>B3</b>	<b>Refiner</b>				
-1	Double Disk Refiner	1	o	—	110kW Unfloating Gap Control Type, C/W Control & Operation Panel
-2	Spare Parts	1	o	—	2-Disk Plates, 1-Metal Brg, Sleeve & Packing
<b>B4</b>	<b>Jordan Relocation</b>	<b>2</b>	<b>—</b>	<b>o</b>	<b>Overhaul to be Included</b>
<b>B5</b>	<b>Pulp Pump</b>				
-1	10m <sup>3</sup> Pulper Pump	1	o	—	3 m <sup>3</sup> /min x 15m Head
-2	12m <sup>3</sup> Dump Chest P	1	o	—	Ditto
-3	No. 1 Refined Chest P	1	o	—	Ditto
-4	No. 2 Refined Chest P	1	o	—	2m <sup>3</sup> /min x 15m Head
-5	Liquid Cyclon Feed P	1	o	—	2m <sup>3</sup> /min x 30m Head
-6	5m <sup>3</sup> Pulper Pump	1	o	—	1.6m <sup>3</sup> /min x 30m Head
-7	Spare Parts	1	o	—	Sleeve, Packing, Bearing
<b>B6</b>	<b>Cons'ty Control</b>				
-1	CRC	4	o	—	Inlinetype
-2	Head Tank	4	o	—	SUS 304 with Water Traps
-3	Spare Recording Chart	4	o	—	

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
B7	Three Way Valve				
-1	Remote Type	1	o	—	FC/SUS 150mm dia
-2	Normal Type	6	o	—	FC/SUS 150mm dia
B8	Measuring Tank				
-1	2m <sup>3</sup> for Broke	2	—	o	Existing to be Relocated
-2	for Clay	2	o	—	0.8m <sup>3</sup> , SUS 304
-3	for Starch	2	o	—	0.52m <sup>3</sup> , SUS 304
-4	for Alum	2	o	—	0.14m <sup>3</sup> , SUS 304
-5	for Losin	2	o	—	0.12m <sup>3</sup> , SUS 304
-6	for Dye	2	o	—	15 Lit, SUS 304
B9	Fork Lift Truck	1	—	o	2.5 Ton, Gasoline Type
B10	Magnetic Separator				
-1	Separator Chamber	2	o	—	SUS 304
-2	Magnetic Bar	10	o	—	50 x 100 x 300 mm
B11	Centri Cleaner				
-1	High Density Cleaner	1	o	—	BC No.8 Equivalent
-2	Liquid Cyclon	1	—	o	Existing to be Relocated
B12	Broke Flaker				
-1	Hydra Flaker	1	o	—	BC No, 16 Equivalent
-2	Refiner	1	—	o	Existing to be Relocated
-3	Spare Parts	1	o	—	Rotor & Stator Bearings Packing

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
B13	Vibrating Screen				
-1	Janson Screen	2	o	-	SUS 304, 3.5mm Hole Type Screen Plate; Spring Bearings
-2	Spare Parts	1	o	-	
B14	Wet Broke Thickner				
-1	Vacuum Filter	2	o	-	Diaphragm Filter Type Bearings, Oil Seal, Sleeve, Packing
-2	Spare Parts	2	o	-	
B15	White Water Chest	2		o	12m <sup>3</sup> Existing Reused
				o	12m <sup>3</sup> to be Built Newly
B16	Sedimentation Pit	1	-	o	As Pre-effluent Treatment
B17	Piping Materials	1	o	-	Special Valves & Piping Material (Valve: 14 pcs)
B18	Operation Panels				
-1	Remote Control Panel	1	o	-	For Measuring Remote Operation and Other Remote Valve Electrical Signal Recorder for Operation Standard at Stock Prep.
-2	Operation Recorder	1	o	-	
B19	Pulp Ware House	1	-	o	For Unit I Pulp Storage
-1	Floor Pavement	1	-	o	At Stock Prep.
-2	Electric Hoist	1	-	o	
-3	I beam	1	-	o	



No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>C</b>	<b>Chemical Prep.</b>				
<b>C1</b>	<b>Dissolving Agitator</b>				
-1	For Clay	2	o	--	1-Double Peller Stationally 1-Portable
-2	For Starch	1	o	--	130mm Dia Portable
-3	For Dye Stuff	2	o	--	Ditto
<b>C2</b>	<b>Clay Storage Tank</b>	1	--	o	10m <sup>3</sup> Concrete with Tile
<b>C3</b>	<b>Dyes Storage Tank</b>	2	o	--	2m <sup>3</sup> , SUS 304
<b>C4</b>	<b>Discharge Pump</b>				
-1	For Clay	1	o	--	200 ℓ/min. x 30m Head
-2	For Starch	1	o	--	100 ℓ/min. x 30m Head
-3	For Dyes	2	o	--	50 ℓ/min. x 15m Head
-4	For KNO <sub>3</sub>	1	o	--	50 ℓ/min. x 15m Head
<b>C5</b>	<b>Handling Device</b>				
-1	Electric Hoist	1	o	--	1 Ton, 5m Lift
-2	I beam	1	--	o	(250mm)
<b>C6</b>	<b>Piping &amp; Overhaul</b>	1	--	o	For Feeding System Change
<b>D</b>	<b>Paper Machine No. 1</b>				
<b>D1</b>	<b>Consistency Control</b>				
-1	CRC	1	o	--	Open Type
-2	Head Tank	1	o	--	SUS 304 with Water Traps
-3	Spare Recording Chart	1	o	--	

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			P	L	
<b>D2</b>	<b>Regulating/Mixing Box</b>				
-1	Stuff Regulate Box	1	o	—	SUS 304, Square Type
-2	White Water Reg Box	1	o	—	Ditto
-3	Mixing Box	1	o	—	Ditto
-4	Remote Control Valves	2	o	—	Magnet Scale Type
<b>D3</b>	<b>Approach Screening</b>				
-1	Pressure Screen	1	o	—	BC 12P Selectrifire, 1.6mm Dia
-2	Vibrating Screen	1	o	—	BC, 2mm Hole Type
-3	Spare Parts	1	o	—	Screen Cylinder, Mechanical Seal, Sleeve, Bearings, V-belt. Screen Plate, Spring
<b>D4</b>	<b>Stock Pump</b>				
-1	Back Water Pump	1	o	—	3m <sup>3</sup> /min. x 15m Head
-2	Couch Pit Pump	1	o	—	2m <sup>3</sup> /min. x 25m Head
-3	Cleaner Feed Pump	1	o	—	3m <sup>3</sup> /min. x 30m Head
-4	Shower Booster Pump	1	o	—	0.6m <sup>3</sup> /min. x 50m Head
-5	Spare Parts	1	o	—	Sleeve, Packing, Bearings
<b>D5</b>	<b>Table Roll</b>				
-1	For Replacement	22	o	—	80mm Dia x 2,250 mmL
-2	Spare Parts	4	o	—	Bearings, Oil Seals
<b>D6</b>	<b>Head Box Modified</b>				
-1	Flow Spreader	1	o	—	Double Taper Mainfold Header as 3,000 l/min. Max Flow Rate.

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
D7	Dandy Roll Ass'y				
-1	Mariking Dander Roll	1	o	—	406mm Dia x 2,590mmL with Cleaner & Steam Shower
-2	Loading Stand	1	o	—	Pneumatic Type, Non Drive
-3	Spare Parts	1	o	—	Bearings, Oil Seals
D8	Suction Cooch Roll				
-1	S. Couch Roll	1	o	—	560mm Dia x 2,490mmL Same as PM3 Existed
-2	Spare Parts	1	o	—	Side & End Deckles, Bearings Oil Seals
-3	Beams	1	o	—	Rider Beam, Canti Beam Suc- tion Box Rails
-4	Vacuum Pump	1	o	—	Water Sealed Type, 50mmHg
-5	Separator Tank	1	o	—	C/W Drain Pump, Silencer Vacuum Breaker, Vac Gage.
-6	Spare Parts	1	o	—	Bearings, Oil Seals, Sleeve.
-7	Knock Off Shower	1	o	—	C/W Flex Hose, Remote Valve and Local Panel
-8	Trim Knock Off Shower	1	o	—	C/W Flex Hose & Fittings
D9	Suction Box				
-1	For Dewatering	3	o	—	250mm Cover Plate Slotted
-2	For Dandy Roll	1	o	—	Tennach Type, HDPE Cover C/W Flex Hoses
D10	Wire Shaking Unit	1	o	—	Vibroflyte Type
-1	Spare Parts	1	o	—	Bearings, Oil Seals, Skeve, B-Belt

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>D11</b>	<b>Couch Pit</b>				
-1	Saveall Tray	1	—	o	SUS 304
-2	Dilution Jet Shower	2	—	o	40mm Dia C/W Solenoid Valve
-3	Concrete Works	1	—	o	Slope, Tunnel to Pump Pit
<b>D12</b>	<b>Press Part Cat Walks</b>	1	—	o	Instead of Nip Loading System
<b>D13</b>	<b>Driving Modification</b>				
-1	Sectional DC Drive	1	o	—	8 Section C/W S. Couch, P1, P2, P3, D1, D2, Calender & Reel Sections
-2	Speed Meter	2	o	—	Digital Type for Wire & Reel Part
-3	Sheet Break Counter	1	o	—	Time & Frequency Counter
-4	Photo Cell Units	2	o	—	For Sheet Breaks
-5	DC Motor Cooling Unit	1	o	o	Duct to be Provided Locally
-6	Spare Parts	1	o	—	Bearings, Oil Seals, Motor Brushes
<b>D14</b>	<b>Special Works</b>				
-1	Dismount Work	1	—	o	Driving Devices
-2	Reinforcement of Structure for Speed Up	1	—	o	Dryer Frame
-3	Civil Work	1	—	o	Special Quick Hardening Cement

No.	Name of Plant And Mach'ry & Equip't	Qty	Supply		Remarks and Major Specification
			F	L	
E	Paper Machine No. 2				
E1	Consistency Control				
-1	CRC	1	o	-	Open Type
-2	Head Tank	1	o	-	Sus 304 with Water Traps
-3	Spare Recording Chart	1	o	-	
E2	Regulating/Mixing Box				
-1	Stuff Regulating Box	1	o	-	SUS 304, Square Type
-2	White Water Reg Box	1	o	-	Ditto
-3	Mixing Box	1	o	-	Ditto
-4	Remote Controller	2	o	-	Magnet Scale Type
E3	Approach Screening				
-1	Screen Basket	1	o	-	PS400, 2.0mm Dia, Lamort
-2	Screen Plate	1	o	-	Janson Type, SUS 304
E4	Stock Pump				
-1	Back Water Pump	1	o	-	3m <sup>3</sup> /min. x 15m Head
-2	Couch Pit Pump	1	o	-	2m <sup>3</sup> /min. x 25m Head
-3	Cleaner Feed Pump	1	o	-	3m <sup>3</sup> /min. x 30m Head
-4	Shower Booster Pump	1	o	-	0.6m <sup>3</sup> /min. x 50m Head
-5	Spare Parts	1	o	-	Bearings, Oil Seals, Sleeves, Packings
E5	Suction Box				
-1	For Dewatering	3	o	-	250mm Top Cover Slotted
-2	For Dandy Roll	1	o	-	Tennach Type, HDPE Cover C/W Flex Hose

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
E6	Suction Couch Roll				
-1	S. Couch Roll	1	o	-	560mm Dia x 2,490mmL Same as PM3 Existed
-2	Spare Parts	1	o	-	Side & End Deckles, Bearings Oil Seals
-3	Beams	1	o	-	Rider Beam, Canti Beams Suction Box Rails
-4	Vacuum Pumps	1	o	-	Water Sealed Type 50mmHg
-5	Separator Tank	1	o	-	C/W Drain Pump, Silencer, Vacuum Breaker & Gauge
-6	Spare Parts	1	o	-	Bearings, Oil Seals, Sleeve
-7	Knock Off Shower	1	o	-	C/W Flex Hose, Remote Valve and Local Panel
-8	Trim Knock Off Shower	1	o	-	C/W Flex Hose & Fittings
E7	Wire Shaking Unit	1	o	-	Vibroflyte Type
-1	Spare Parts	1	o	-	Bearings, Oil Seal, Sleeve, V-Belt
E8	Couch P.T.	1	-	o	Small Modification only
E9	Chemical Press	1	o	-	3 Roll Type, Samp Tank & Screen, Supply Pump
-1	Drive Unit	1	o	-	Cone Pulle/Gear Drive
-2	Spare Parts	1	o	-	Bearings & Oil Sleeve
-3	Paper Roll	2	o	-	For Lead In & Out

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>D10</b>	<b>Driving Modification</b>				
-1	Driving System	1	o	-	2 Section DC Drive-Line Shaft: S. Couch
-2	Main Motor	1	o	-	45kW DC Motor
-3	S. Couch Motor	1	o	-	37kW DC Motor
-4	Remote Belt Shifter	8	o	-	Remote Inching Drive
-5	Air Clutch	8	o	-	With Operation Panel
-6	Speed Meter	2	o	-	Digital Type for Wire & Reel Part
-7	Sheet Break Counter	1	o	-	Time & Frequency Counter
-8	Photo Cell	2	o	-	For Sheet Breaks
-9	DC Motor Cooling Unit	1	o	o	Duct to be Provided Locally
-10	Spare Parts	1	o	-	Bearings, Oil Seals Motor Brushes
<b>E11</b>	<b>Special Works</b>				
-1	Dismount Work	1	-	o	Driving Devices
-2	Reinforcement of Structure for Speed Up	1	-	o	Dryer Frame
-3	Civil Work	1	-	o	Special Quick Hardening Sement
<b>F</b>	<b>Finishing Plant</b>				
<b>F1</b>	<b>Slitter Rewinder</b>				
-1	Accessories	1	o	-	TD12, Max. Speed 450m/min. Winding Length Meter
-2	Spare Parts	1	o	-	5 sets of Slitter Blades Drive Belt, Bearings, Oil Seals, Motor Brushes

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
F2	Spool Rolls	10	o	—	212mm Dia. x 2,650mmL
F3	Electric Hoist	1	o	—	3 Ton x 12m Lift
-1	I Beam	1	—	o	I 250
F4	Hand Lifter	2	o	—	
F5	Broke Press Baler	1	o	—	30kg/Bale (300 x 300 x 500)mm
-1	Accessories	2	o	—	Hand Strapping Tools
-2	Spare Parts	1	o	—	Bearings, Oil Seals
F6	Fork Lift Truck	1	—	o	2.5 Ton, Gasoline Type
F7	Product Ware House	1	—	o	For Semi Finished Products
F8	Floor and Road Pavement	1	—	o	For Inside Transportation
G	Unit II, PM3 Line				
G1	Pulp & Stock Prep				
-1	Beater Over Haul	1	o	—	Beating Element for SUKP at Unit I Pulp Plant
-2	DDR for Stock Prep	1	o	—	110kW Unfloating Gap or Conical Refiner
G2	Thickner for Wet				
	Broke Line	1	o	—	Vacuum Diaphragm Type
-1	Spare Parts	1	o	—	Bearings, Oil Seals Steeves, Packings



No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>G3</b>	<b>Wet Broke Control</b>				
-1	Photo Cell	3	o	-	
-2	Magnet Valve	1	o	-	
-3	Gate Valve	1	o	-	
-4	Agitator On/Off Controller	1	o	-	
<b>G4</b>	<b>Single Foil</b>	<b>5</b>	<b>o</b>	<b>-</b>	<b>SUS 304 Body, HDPE Blade</b>
<b>G5</b>	<b>Spare Marking Backup Roll</b>	<b>2</b>	<b>o</b>	<b>-</b>	<b>200mm Dia. x 2,390mmL</b>
<b>G6</b>	<b>Vacuum Drainage</b>				
-1	Vacuum Tank	1	o	-	C/W LC
-2	Heat Exchanger	1	o	-	C/W Vacuum Pump, Separator, Silencer, Gages
-3	Steam Traps	1	o	-	C/W Valves
<b>G7</b>	<b>Finishing</b>				
-1	Bobbin Slitter	1	o	-	Max. 300 m/min. x 27mm Bobbin x 120mm Core ID
-2	Spare Parts	1	o	-	41 Sets of Bobbin Slitter Blades, Bearings, Oil Seals
-3	Electric Hoist	1	o	-	2.5 Ton
-4	I Beam	1	-	o	250mm

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
H1	Laboratory Porosity Meter	1	o	--	Vacuum Type with Micro-meter, for Smoothness and Porosity Meter (TAPPI)
H2	Thickness Tester	1	o	--	Graduation: 1/1000mm (JIS P8118)
H3	Size Tester	1	o	--	112.8mm Dia. x 25mmH (JIS P8140)
H4	Stiffness Tester	1	o	--	Gurley Type, (1~4.5)" L x (1~2)" width, (5~200)g Load
H5	Centrifugal Extractor	1	o	--	150mm Dia. x 0.8 Lit 3,000 rpm, 750G
H6	Niagara Beater	1	o	--	For Flax and Straw Beating Examination
H7	Infrared Oven	1	o	--	Testing for Moisture Content of Raw Straw
H8	Thermometer	1	o	--	Thermo Measuring Tester
H9	Electric Oven	1	--	o	For Paper Moisture Content to be Provided by PPM

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
I	Maintenance and Utility				
11	Package Boiler	1	o	-	Type: SCM-160, Outdoor Nor: 14 kg/cm <sup>2</sup> G x 14 Ton/h Fuel: Heavy Oil Fuel Consumption: 1,081 kg/h
-1	Accessories	1	o	-	Automatic Combustion Control, Feed Water Regulator F.D.F., Feed Water Pump, Fuel Oil Burning Set, Instrument Panel Water Softener etc.
-2	Owner's Provision	1	-	o	Flue and Stack Raw Water Pump, Tank. Special Tools, Fuel Oil Tank Try Electric Power Source and It's Cable. Piping & Cable Work, Starup Supervision and Others.
12	Steam Flow Meter	1	o	-	Nor: 14 kg/cm <sup>2</sup> G x 14 Ton/h For Flow Measurement of Steam from New Boiler
13	Knife Grinder	1	o	-	Max. Grinding Length: 2,500mm Grinding Speed: 0.3 ~ 3 m/min.
-1	Spare Parts	1	o	-	300mm Dia. Grinding Stone

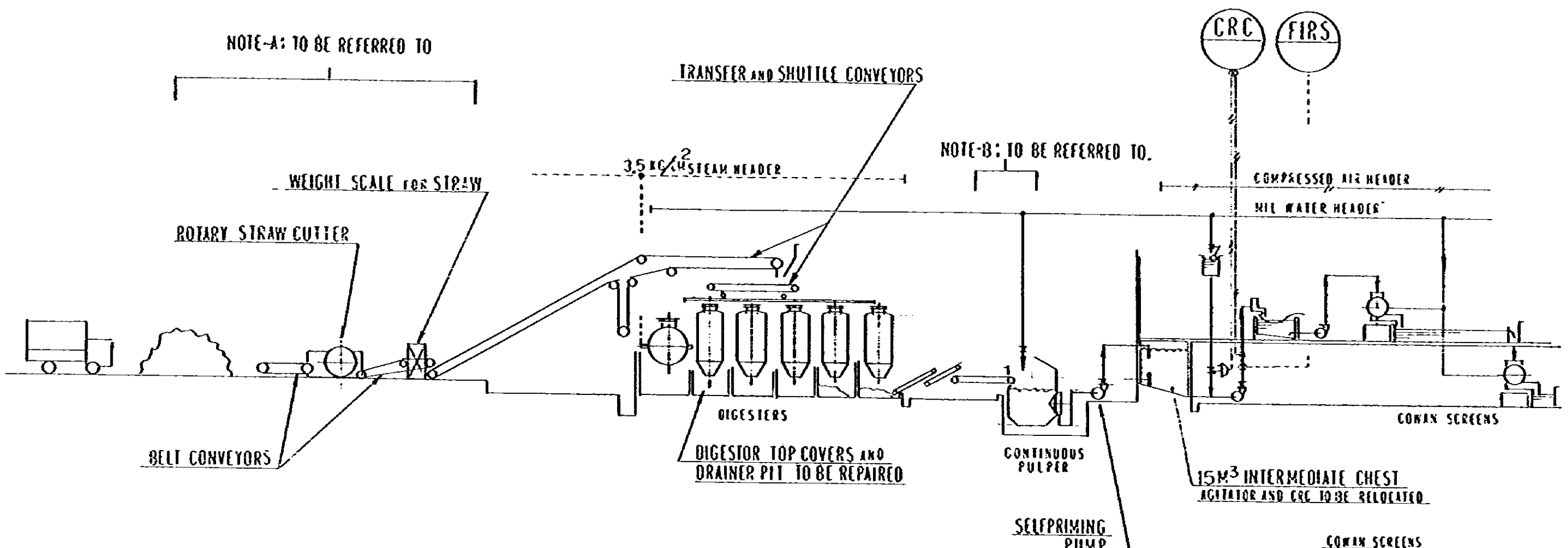
No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
14	Milling Machine	1	o	—	Horizontal Type 1500 x 300mm Working Surface
-1	Accessories	1	o	—	Vertical Attachment with Cutter
15	Manometer	1	o	—	U-type Manometer for Mercury use
16	Vacuum Gauge	20	o	—	0 ~ 250mmHg: 10pcs 0 ~ 760mmHg: 10 pcs
17	Pressure Gauge	5	o	—	0 ~ 6 kg/cm <sup>2</sup> G
18	Transformer	3	o	—	3 Ph, 630kVA, 6kV/380V
19	Spare Motors	15	o	—	Ind. Motor: 12 sets/218kW VS Motor: 1 set/7.5kW DC Motor: 1 set/0.75kW DC GM: 1 set/5.5kW
110	Electric Tester				
-1	Portable Recorder	1	o	—	100mm span, 2 pens Type
-2	Module Checker	1	o	—	YE Module TM-B Checker
-3	Resistance Tester	1	o	—	YEW 2769, Double Bridge
-4	kWh Meter	5	o	—	For Unit I
-5	Hand Tachometer	1	o	—	0 ~ 20,000 rpm
-6	Synchro Scope	1	o	—	2-Index Type
-7	Power Factor Meter	1	o	—	For Purchasing Power Adjustment
-8	Portable Wattmeter	1	o	—	YEW 2042

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
-9	Air Conditioner for Panel Room	1	--	o	Air Conditioner for Home use
111	Mill Water Lines				
-1	Valves for Overhaul	10	o	--	For Existing Lines
-2	Water Head Tank	1	o	--	10m <sup>3</sup> FRP with Fittings
-3	Structure Overhaul	1	--	o	For Head Tank Frame
-4	Piping Overhaul	1	--	o	For Overhaul of Leakage Pipes
112	Effluent Water Line				
-1	Effluent Ponds	2	--	o	800m <sup>3</sup> x 2 sets for Switching use
-2	Slurry Pumps	2	o	--	3 m <sup>3</sup> /min., 1m <sup>3</sup> /min.
-3	Recovery Piping	1	--	o	To Cooking Drainer and to Wet Machine
113	Product Storage and Transportation				
-1	Product Warehouse	1	--	o	500m <sup>2</sup> Space for Storage
-2	Fork Lift Truck	1	--	o	2.5 Ton, Gasoline Type
-3	Reclamation Work	1	--	o	1,000m <sup>2</sup> at Rail Road Existed
-4	Road Pavement	1	--	o	1,000m <sup>2</sup> on the Reclamation area for Transportation

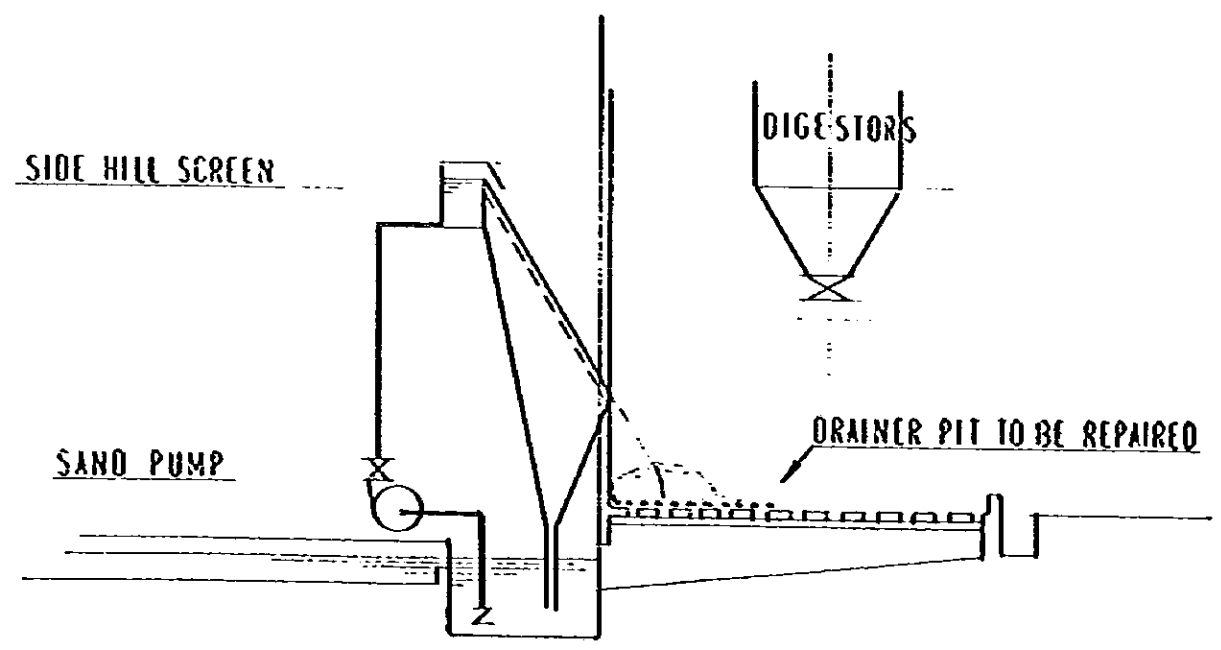
**STRAW PREPARATION**

**COOKING SECTION**

**SCREENING CLEANING BLEACHING SECTIONS**



COMMAN SCREENS  
INNER JET SHOWER TO BE HIGHER  
PRESSURE THAN 0.5 KG/CM<sup>2</sup>.  
SCREEN PLATE TO BE INSPECTED



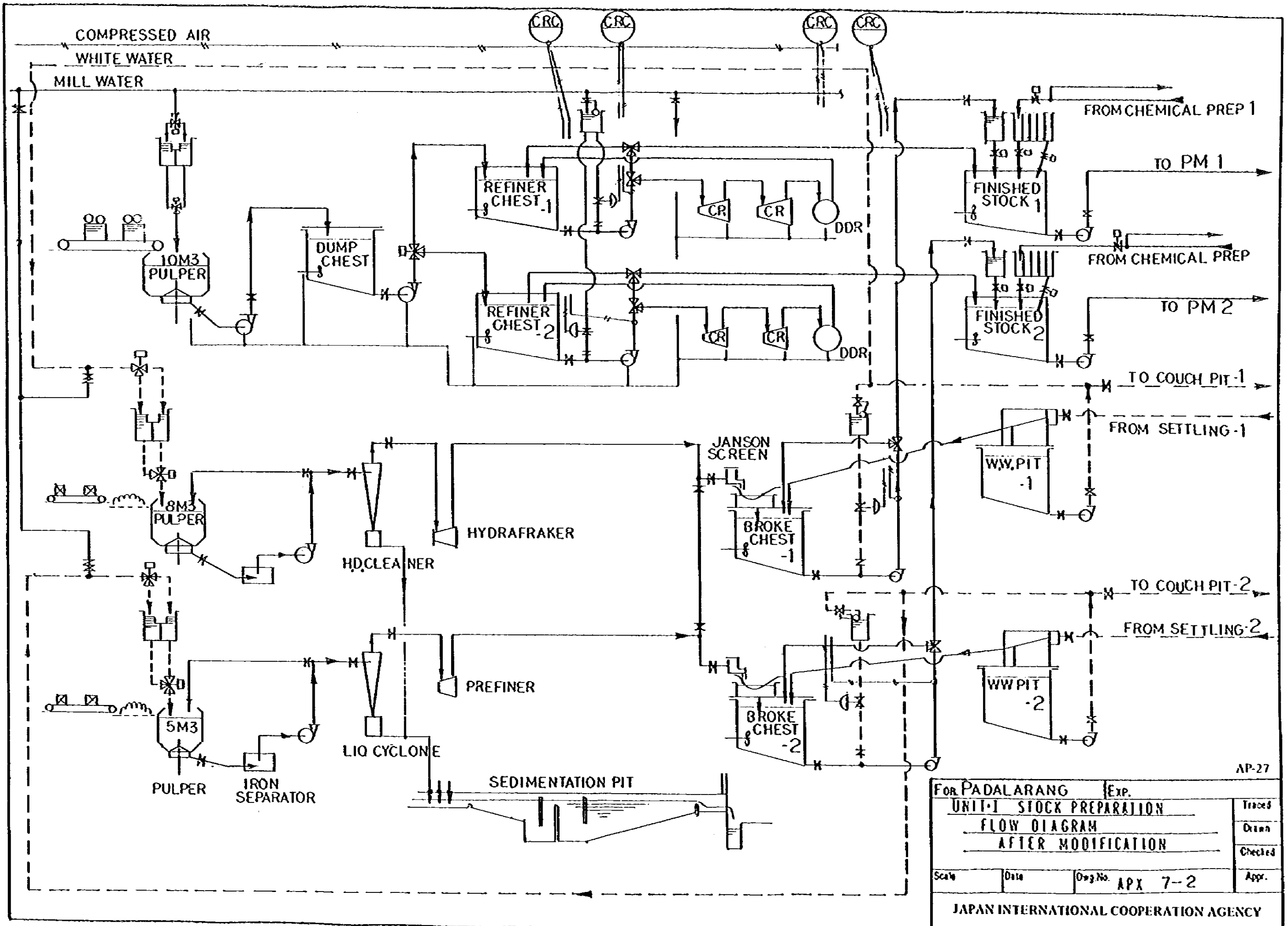
**PENDING MATTER TO BE MADE CLEAR**

**NOTE-A: STRAW CUTTER TO BE OF STAR KNIGH TYPE  
 & DUST CLEANING SEPARATOR ETC**

**NOTE-B: CONSISTENCY CONTROLLER FOR BROWN  
 STRAW PULP FEEDING TO PULPER  
 CONSIST OF PHOTO SENSERS AND  
 AUTO ON OFF VALVE**

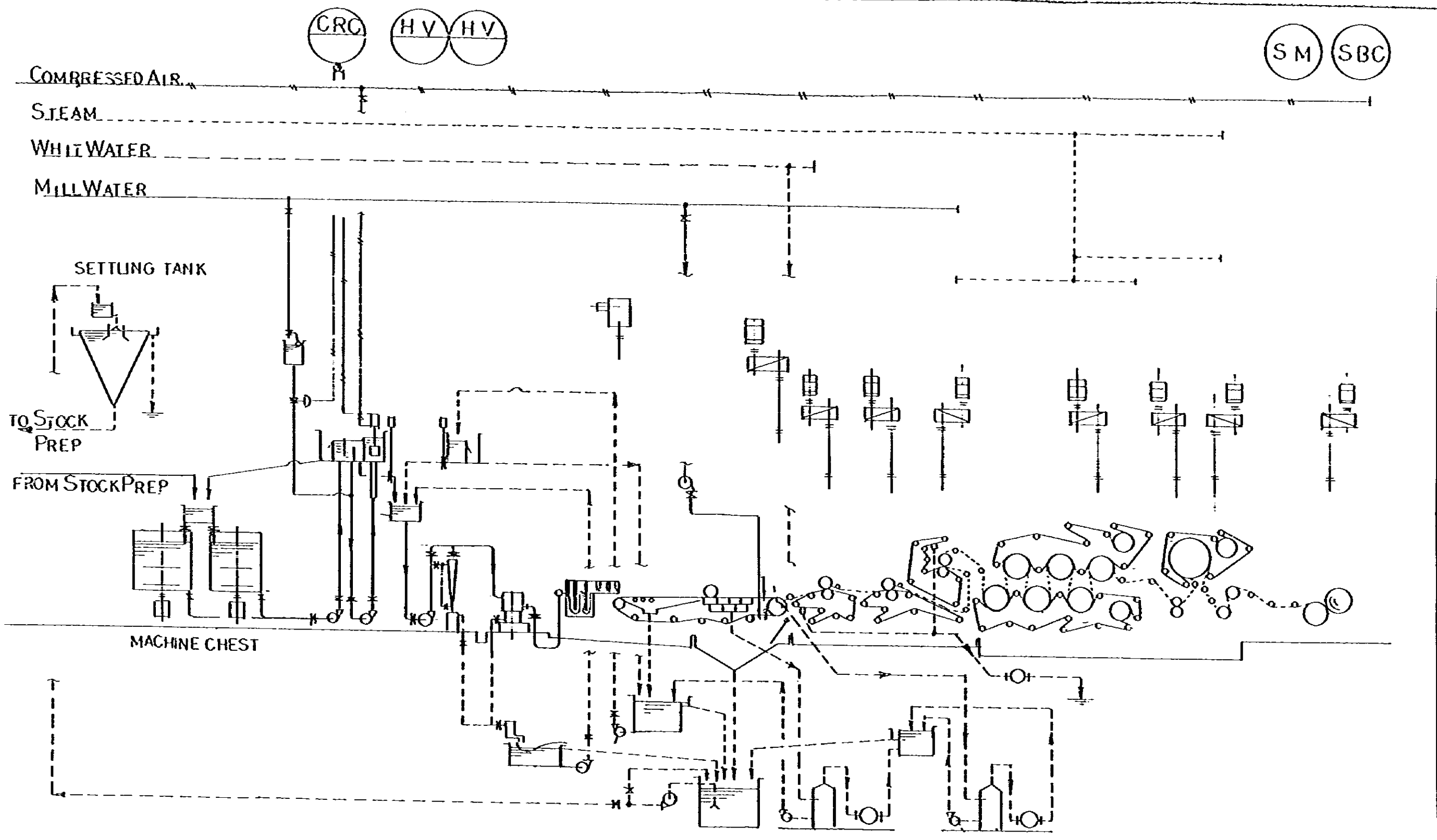
AP-26

FOR PADALARANG		Exp.	
STRAW PULP PLANT			Traced
FLOW DIAGRAM			Drawn
AFTER MODIFICATION			Checked
Scale	Date	Dwg No. APX 7-1	Appr.
JAPAN INTERNATIONAL COOPERATION AGENCY			



AP-27

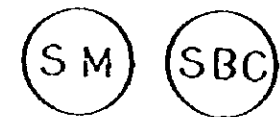
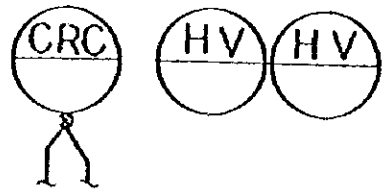
FOR PADALARANG			Exp.
UNIT-I STOCK PREPARATION			Traced
FLOW DIAGRAM			Drawn
AFTER MODIFICATION			Checked
Scale	Date	Org. No.	Appr.
		APX 7-2	
JAPAN INTERNATIONAL COOPERATION AGENCY			



AP-28

FOR PADALARANG		Exp.	
UNIT-1 PM-1			Traced
FLOW DIAGRAM			Drawn
AFTER MODIFICATION			Checked
Scale	Date	Orig No. APX 7-3	Appr.
JAPAN INTERNATIONAL COOPERATION AGENCY			



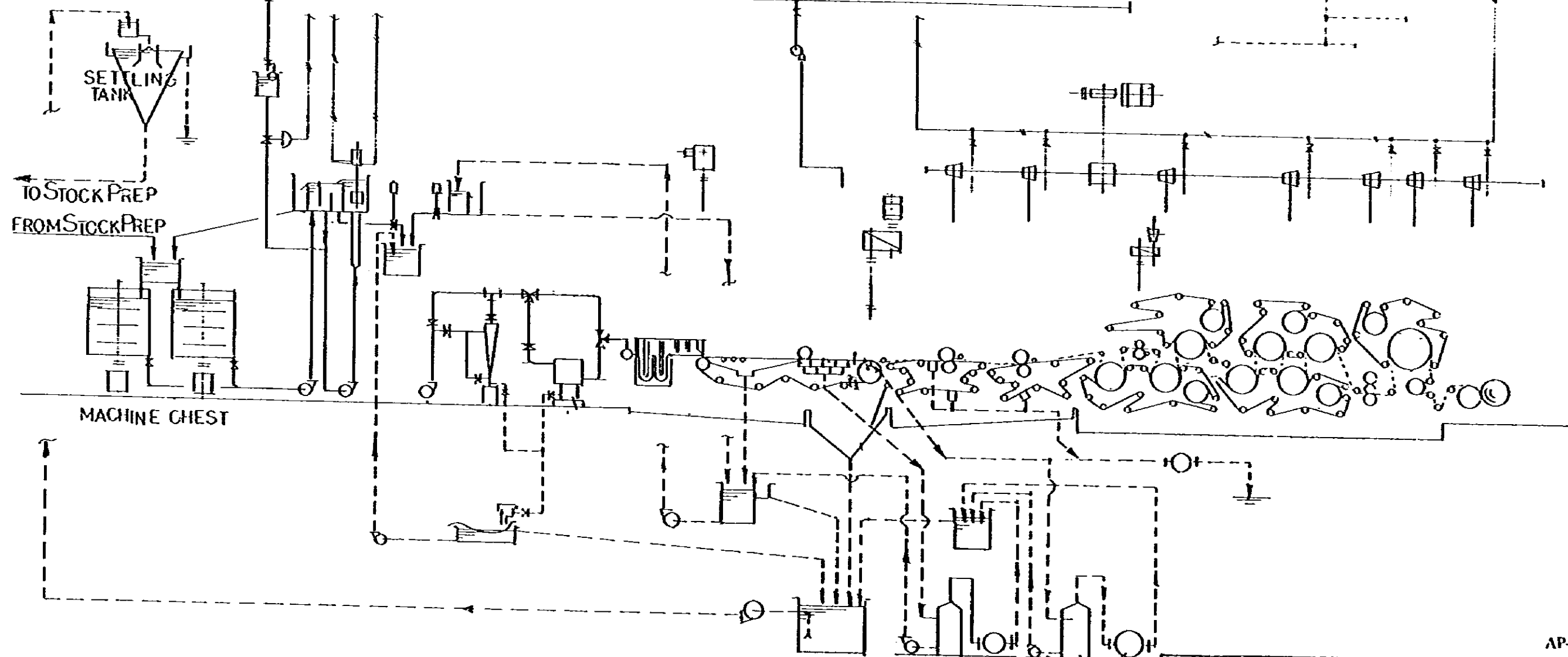


COMPRESSED AIR

STEAM

WHITE WATER

MILL WATER



AP-29

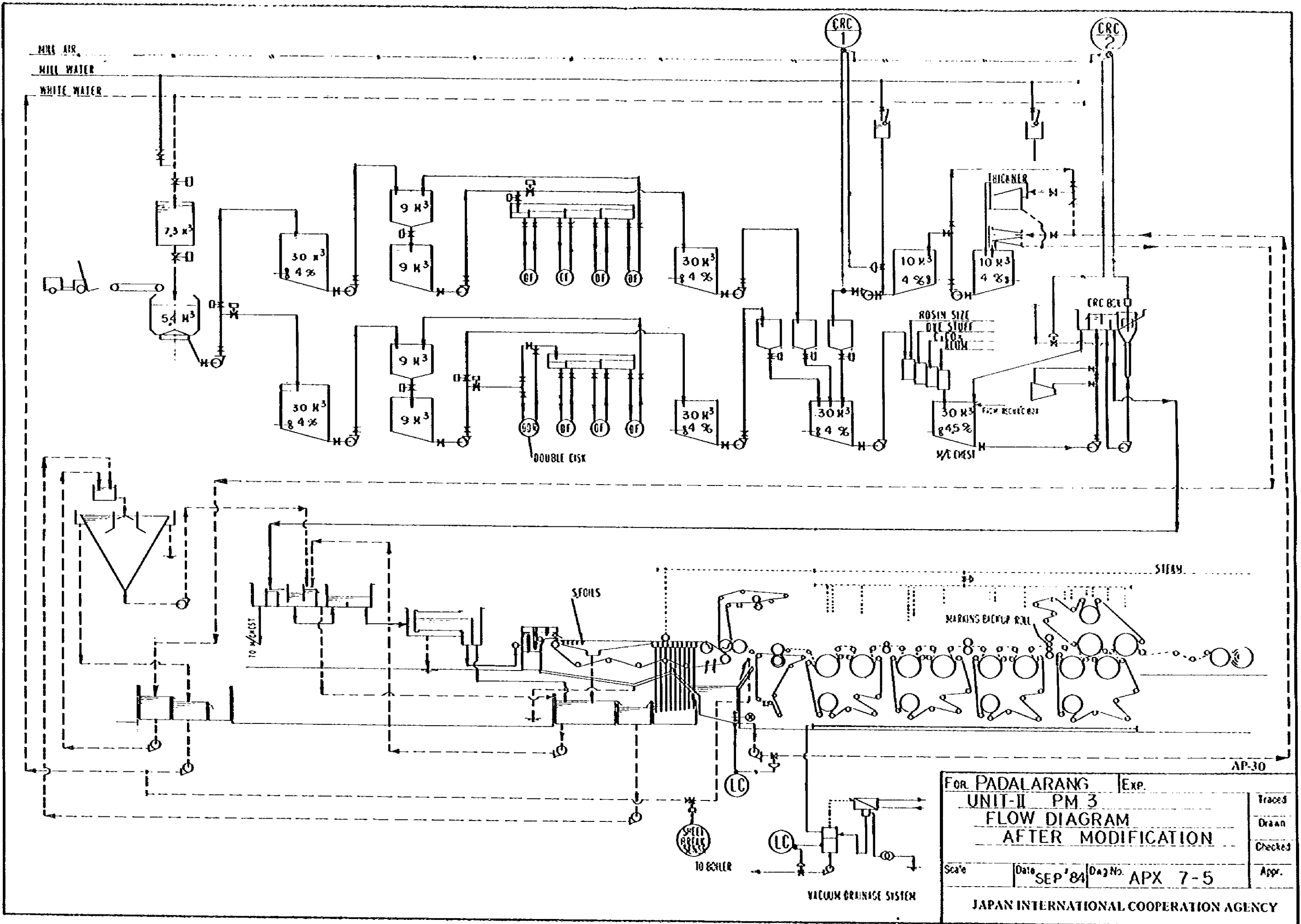
NOTE-3 DRY AIR COMPRESSOR FOR INSTRUMENT SHOULD BE SUPPLIED ADDITIONALLY.

PENDING MATTER TO BE MADE CLEAR

NOTE-1 THE POSITION OF CHEMICAL PRESS SHOWN IN THIS DRAWING SHOULD BE RELOCATED BETWEEN NO1 AND NO2 DRYING GROUPS

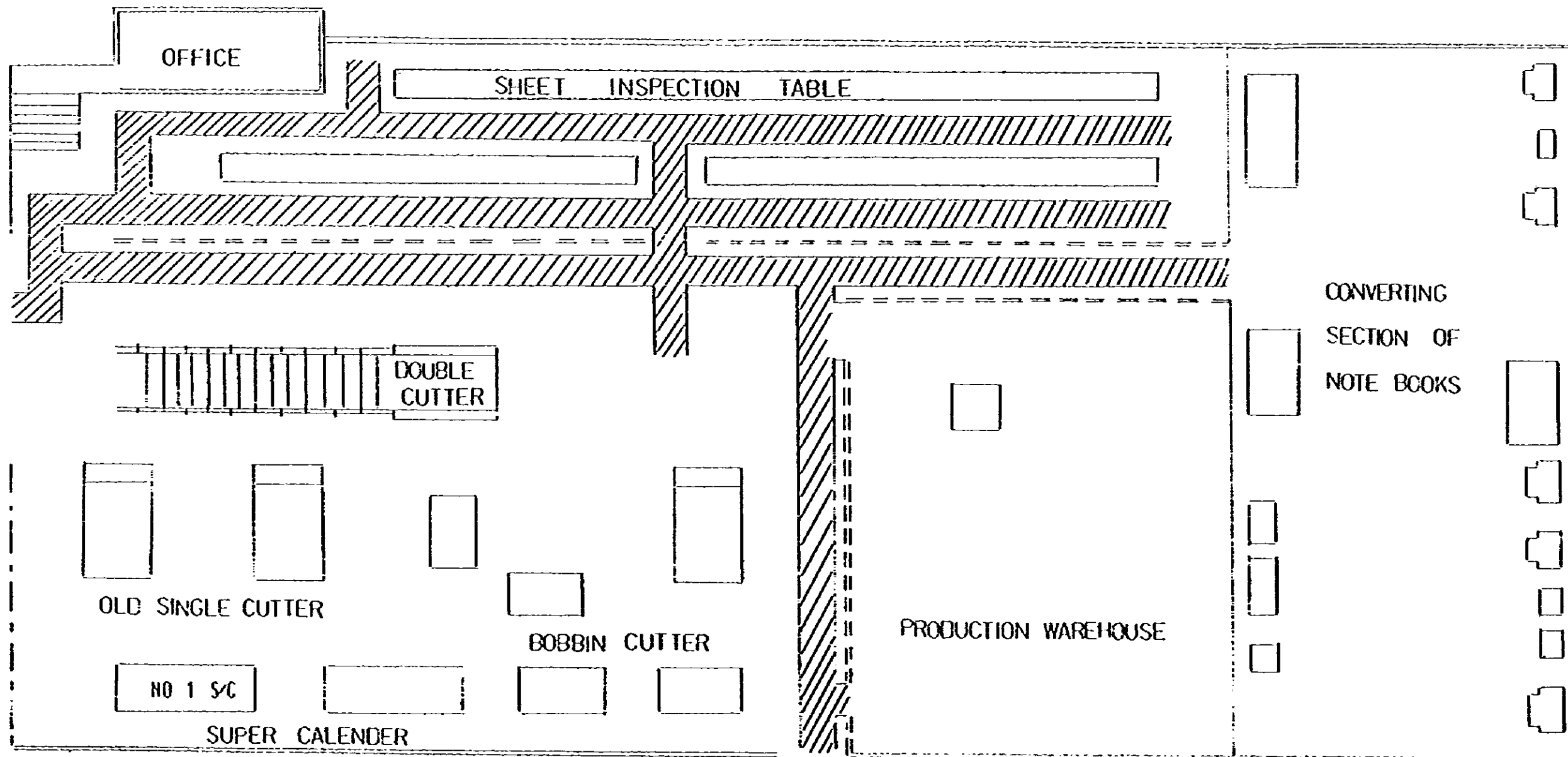
NOTE-2 AUTO GUIDERS FOR PRESS AND DRYER PART, 7 SETS FOR CLOTHING MATERIALS SHOULD BE INCLUDED

FOR PADALARANG		Exp.	
UNIT-1 PM-2			Traced
FLOW DIAGRAM			Drawn
AFTER MODIFICATION			Checked
Scale	Date	Org. No. APX-7-4	Appr.
JAPAN INTERNATIONAL COOPERATION AGENCY			

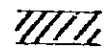


AP-30

FOR PADALARANG		Exp.	Traced
UNIT-II PM 3			
FLOW DIAGRAM			Drawn
AFTER MODIFICATION			Checked
Scale	Date	Drawn No.	Appr.
	SEP '84	APX 7-5	
JAPAN INTERNATIONAL COOPERATION AGENCY			



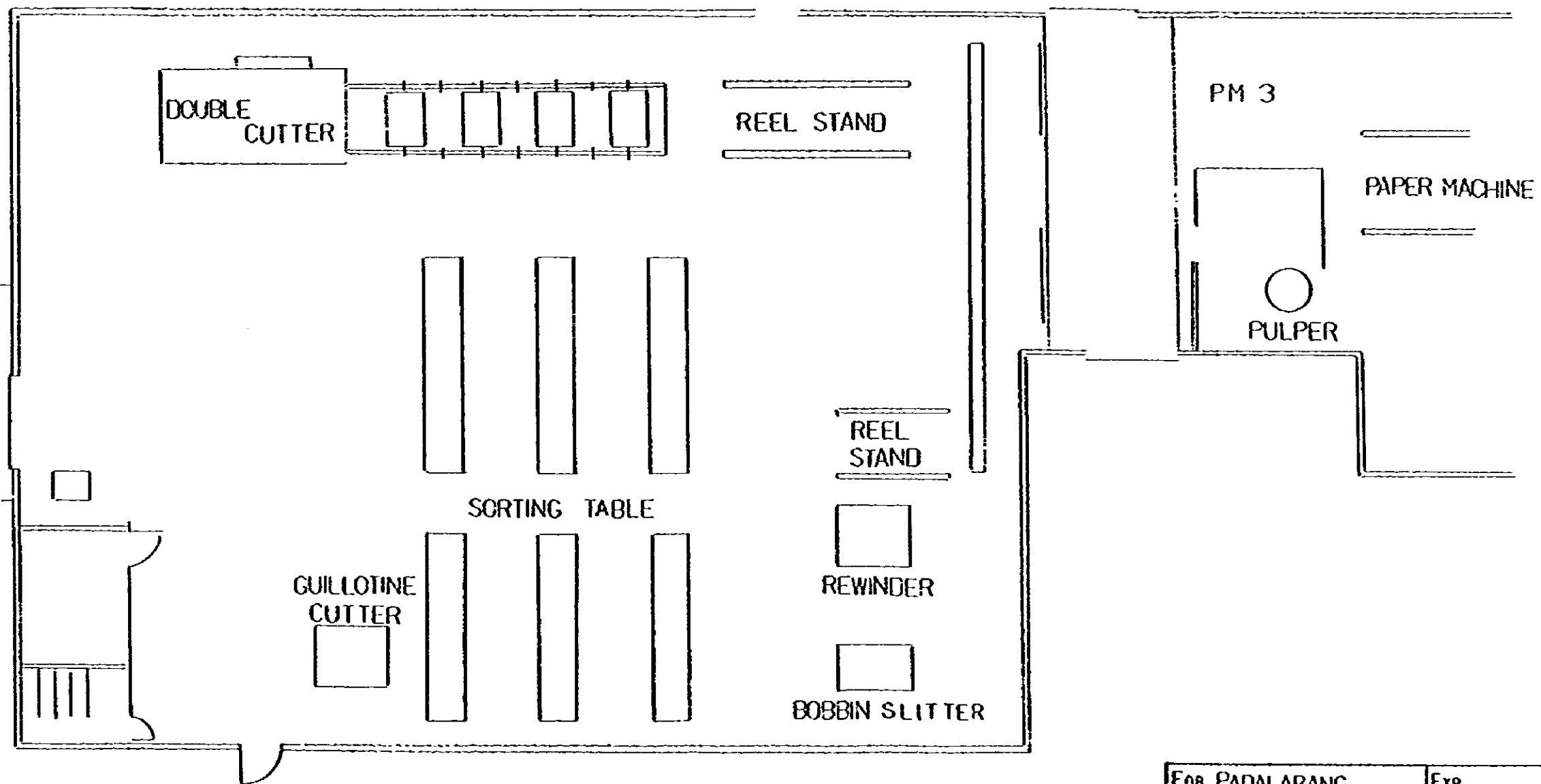
AP-31

REMARK : THE PART SHOWN BY  SHOULD BE OF PASSAGE WAY WITH COLORED MARKS ON FLOOR

PENDING MATTER TO BE MADE CLEAR

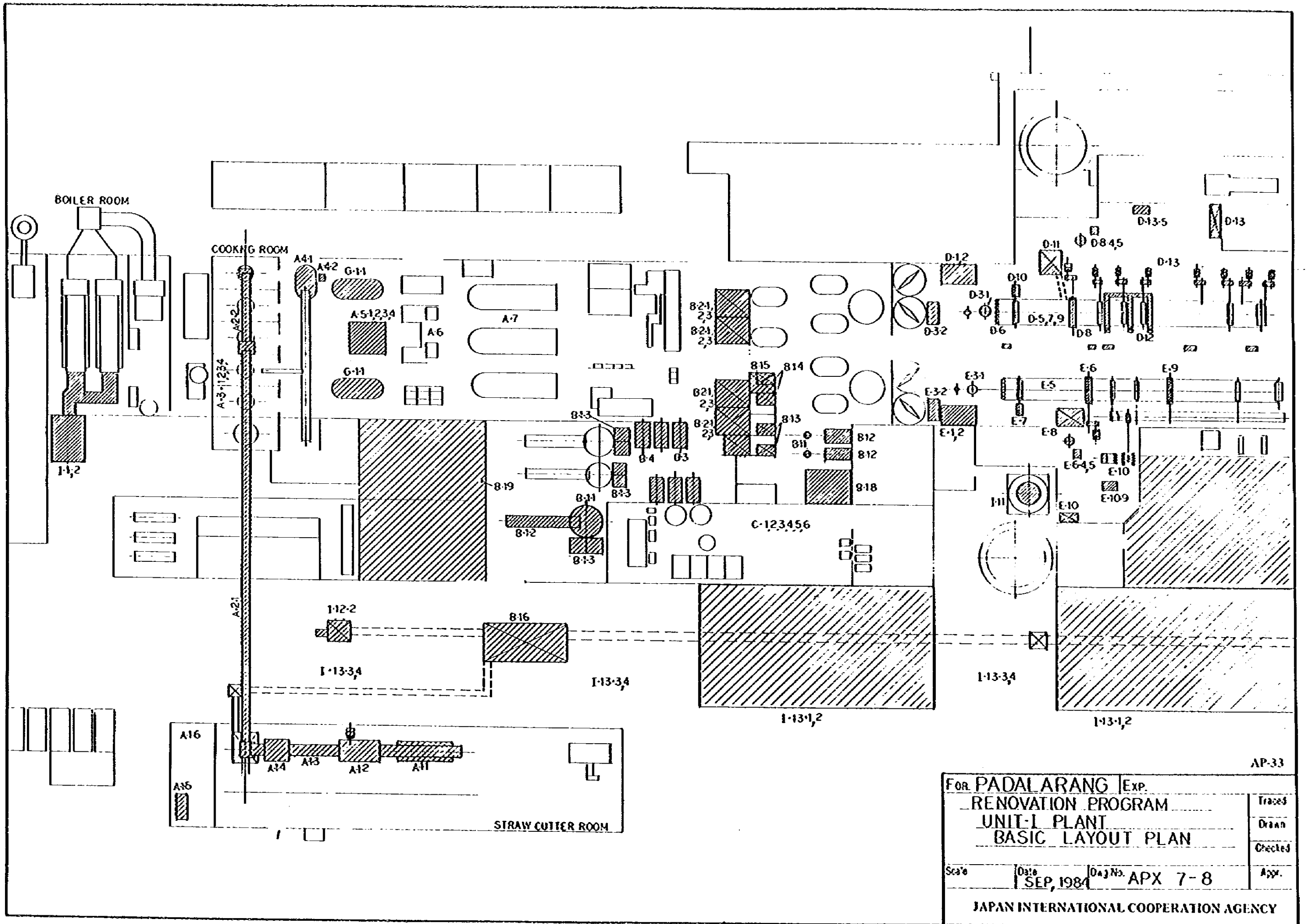
THE EXISTING NO 1 SUPER CALENDER SHOULD BE MODIFIED FOR FUTURE MARKET PROMOTION, PARTIAL MODIFICATION OR 2ND HAND RENEWAL COULD BE ACCEPTABLE FOR THIS PROJECT.

FOR PADALARANG		Exp.	
UNIT 1 FINISHING PLANT		Traced	
IMPROVING LAYOUT		Drawn	
		Checked	
Scale	Date	Des. No.	APX 7-6
JAPAN INTERNATIONAL COOPERATION AGENCY			

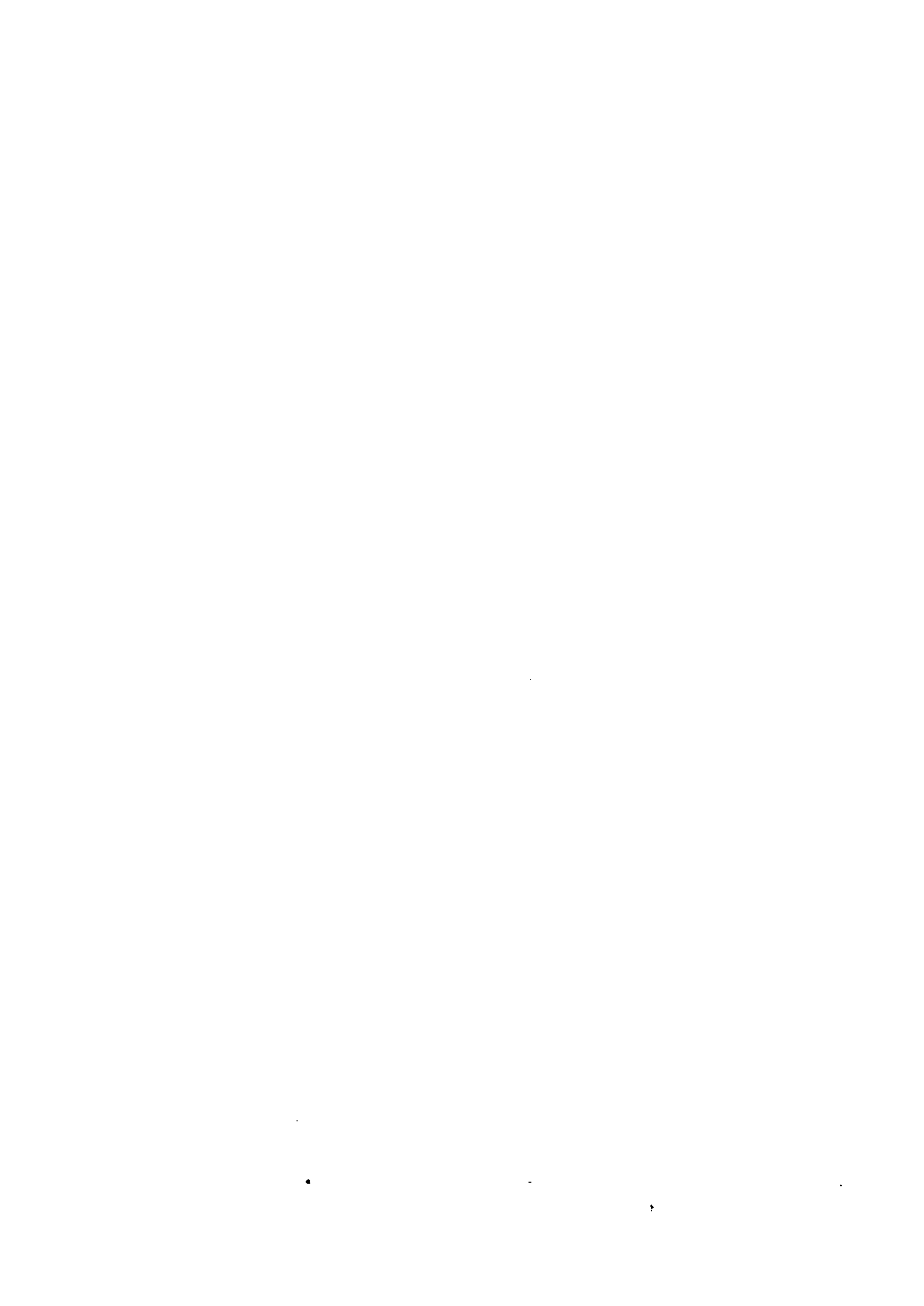


AP-32

FOR PADALARANG		Exp.	
UNIT II, PM 3 FINISHING PLANT			Traced
IMPROVING LAYOUT			Drawn
_____			Checked
Scale	Date	Dwg. No. A P X 7-7	Appr.
JAPAN INTERNATIONAL COOPERATION AGENCY			



FOR PADALARANG Exp.			AP-33
RENOVATION PROGRAM			Traced
UNIT-I PLANT			Drawn
BASIC LAYOUT PLAN			Checked
Scale	Date	Obj. No.	Appr.
	SEP, 1984	APX 7-8	
JAPAN INTERNATIONAL COOPERATION AGENCY			



### Appendix 8

#### Revision List of The Machinery & Equipment Shown in The Appendix 6

From result of the final meeting held on the 17th of September 1984 at 2PM, both partys, PPM and JICA were agreed mutually on the following amendment as for the scope of supply on the implementation schedule.

To freeze the total plant investment cost utilizing in the Chapter 13 relation to the FINANCIAL EVALUATION, the equipment and machinery of second-hand-brand may also be acceptable for this project, suggested by the Indonesian Government.

The budgetary source of this purpose is to be within the cost of contingency shown in the Chapter 13.

No.	Name of Plant and Machinery & Equipment	Q'ty	Supply		Remarks and Major Specification
			Foreign	Local	
1.	Plastics Strainer	1	O	O	Dust Washing & Dewatering
2.	Digestor Top Modification	-	-	-	To be cancelled
3.	Auto Dilution Control	1	O	-	SUKP Dissolving Consistency
4.	Auto Felt Guider	7	O	-	For PM 2 Speed-up
5.	Spool Roll	(20)	O	-	Instead of 10 pcs if possible within the budget.
6.	Slitting Rewinder	-	-	-	To be cancelled
7.	Supercallender	1	O	O	To be modified within the budget
8.	Transformer	3	O	-	630 kVA - 6,000/380 V
9.	OCB	4	O	-	For item 8
10.	Synchroscope	-	-	-	Cancelled
11.	Oilless Air Compressor	1	O	-	For instrument