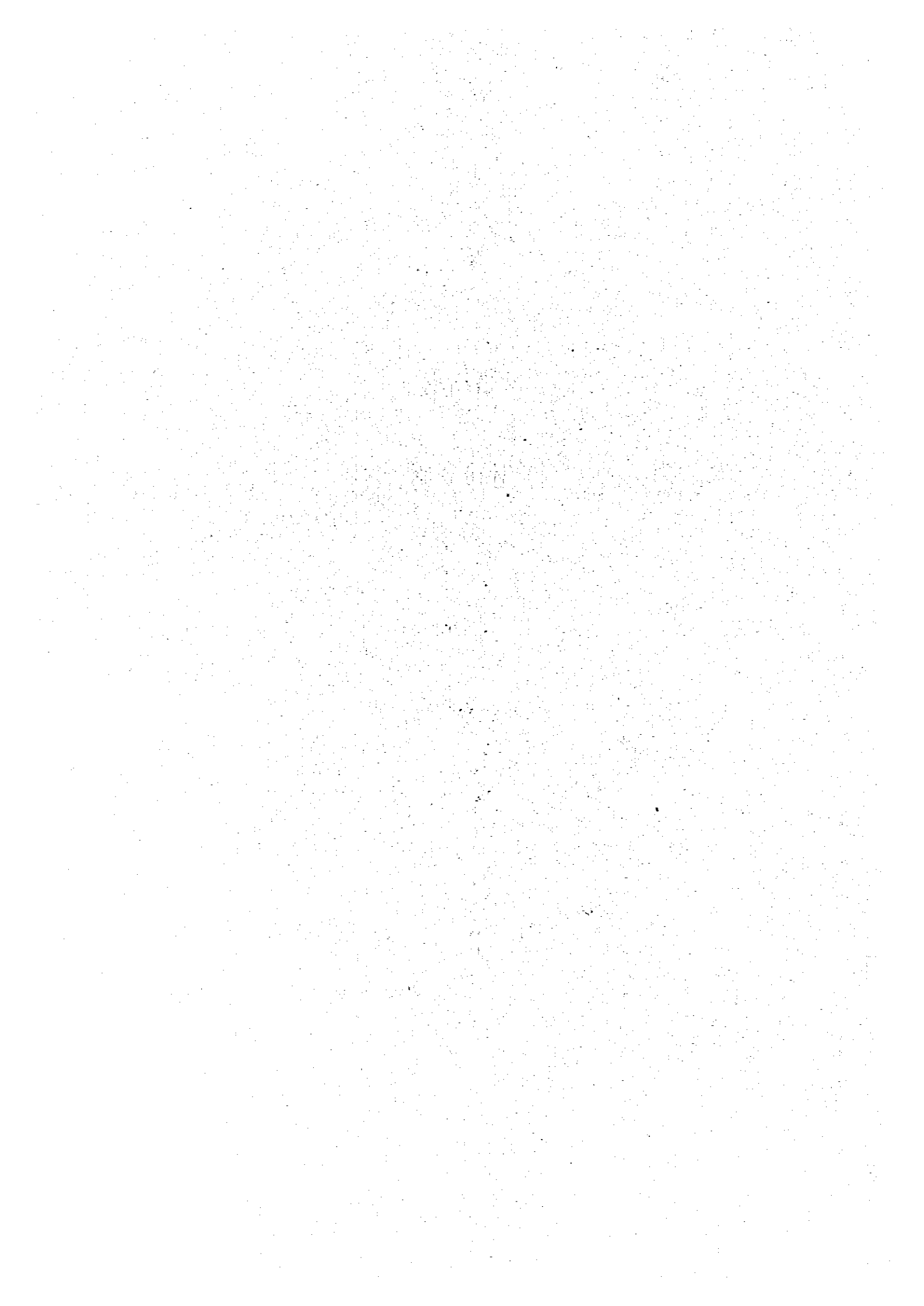


## 第13章

### 財務評価



## 第13章 財務評価

### 13-1 財務評価の基本方針

既設工場のリノベーション計画を実施し、その効果を判定する場合、既設投資分の効果が交絡し、新規投資分のみ効果の判定が困難である。

従って本リノベーション計画では下記のように評価を行なった。

- 1) 既設工場がリノベーション計画を行わない場合の既設工場の損益を検討した。
- 2) 既設工場がリノベーション計画を行なった場合の逐年損益を求め、これとリノベーション計画を行なわない場合の損益とを比較検討した。
- 3) リノベーション計画の効果を明らかにするためにリノベーション計画を行わない場合と行なった場合の損益の差をリノベーション計画の利益と考えて、内部収益率 (I.R.R.O.I) と投下資本回収年数を求めた。

4) リノベーション計画を行なった場合の工場総合の財務状況を明らかにするために既設を総合した損益を検討した。

5) この財務分析は工場より入手した資料のうち、1983年実績資料と1984年計画資料を基礎数値とした。

評価開始は、1985年とし、年度は工場の会計年度(1月-12月)とした。

6) 評価に使用したすべての価格は、1983年実績価格又は、1984年計画価格に固定した。

すなわち物価上昇分、人件費上昇分は見込まなかった。

7) リノベーション計画といった場合、とかく設備面の改善のみに注目する傾向があるが、我々がいうリノベーション計画とは、ソフトすなわち管理面の強化、従業員の教育訓練が車の両輪の片方の輪として極めて重要であることをここでも強調しておく。

8) 本章で表示される通貨はRpとし、換算レートは下記に示す通りとした。

$$US \$ 1 = 230$$

$$U.S. \$ 1 = Rp 1,000$$

### 13-2 生産販売計画

#### 13-2-1 作成条件

- 1) 生産量と販売量は同一とし、在庫量の増減はないものとした。

- 2) 年間操業日数は原則として変らないとした。
- 3) 生産品目別に操業日数を算出し、それらの合計が年間操業日数になるようにした。
- 4) リノベーション計画を行なった場合の品目別日産量は増速による期待日産増分並びに諸効率向上による期待日産増分をリノベーション計画を行わない場合の品目別日産に上乘せした。
- 5) 生産品目別の年間生産販売量は、既存銘柄についてはリノベーション計画を行なった場合も原則としてリノベーション計画を行なわない場合と同一数量とした。
- 6) リノベーション計画を行なった場合、日産増による余剰操業日は、販売可能な有利銘柄を生産することにした。
- 7) 極端に採算性の悪い品目については、この生産日数を減らし、その分は販売可能でかつ有利な品目及び販売可能な新規生産品目を生産することにした。

#### 13-2-2 生産販売計画

リノベーション計画を行なった場合と行なわない場合の生産販売計画をTable 13-2-1に示した。

#### 13-3 生産品目別日産

##### 13-3-1 生産品目別日産を決める方式

ある生産品目の日産は理論的な日産と総効率で決まる。

更に総効率は運転効率・抄造効率・仕上歩留で決まる。

この関係を数式で示すと

$$\text{理論的な日産} = \text{米坪} \times \text{抄紙機速度} \times \text{抄造幅} \times 1,440 \text{分/日}$$

$$\text{日産} = \text{理論的な日産} \times \text{総効率}$$

$$\text{総効率} = \text{運転効率} \times \text{抄造効率} \times \text{仕上歩留}$$

$$\text{運転効率} = (1,440 \text{分/日} - T1 \text{分/日}) \div 1,440 \text{分/日}$$

T1 : 突発的な機械故障等による抄紙機停止時間

$$\text{抄造効率} = (1,440 \text{分/日} - T2 \text{分/日}) \div 1,440 \text{分/日}$$

T2 : 紙切れ等により、抄紙機は稼働しているが、製品が出来ていない時間

$$\text{仕上歩留} = \text{販売可能な製品量} \div \text{抄紙機ロール上での紙出来高}$$

13-3-2 リノベーション計画を行わない場合の総効率、運転効率、抄造効率、仕上歩留  
リノベーション計画を行わない場合の総効率等は、1983年の実績、1984  
年の計画並びに我々が工場調査のため、工場に滞在していた期間の実績データ  
を考慮して作成した。

13-3-3 リノベーション計画を行なった場合の総効率、運転効率、抄造効率、仕上歩留  
リノベーション計画を行なった場合の総効率等は日本における平均的な値を勘  
案し、これらよりかなり低めに設定した。これは当然のことながら設備が改善さ  
れば自動的に達成できるというものではなく、操業面・管理面の強化が確実に  
実行されて始めて達成されるものである。

13-3-4 日産、総効率、運転効率、抄造効率、仕上歩留  
リノベーション計画を行なった場合とリノベーション計画を行わない場合と  
の日産、総効率、運転効率、抄造効率、仕上歩留はTable 13-3-1に示す。

#### 13-4 生産品目別年間稼働益

##### 13-4-1 稼働益の概念

1) 有利製品、不利製品の判定や増産した場合に増加する利益の算出、諸歩留及  
諸効率向上によって製造コストを低下させた場合に増加する利益の算出、並に  
新規品目を生産した場合に増加する利益の算出等のために我々は稼働益という  
概念を導入した。

2) 毎当り稼働益とは、毎当りの製品売価から毎当りの製品を生産するに要する  
全コストの中の比例する要素を差し引いた値である。

$$\text{毎当り稼働益} = \text{毎当り製品売価} - \text{毎当り変動費}$$

$$\text{毎当り製品コスト} = \text{毎当り変動費} + \text{毎当り固定的コスト}$$

すなわち、ある製品の毎当りの稼働益は、固定的にかかるコストを考慮しな  
い場合にある製品を1毎生産販売した時の粗利益を示している。

3) 操業1日当り稼働益とはある製品を1日間生産販売した時の稼働益である。

$$\begin{aligned} \text{1日当り稼働益} &= \text{毎当り稼働益} \times \text{日産} \\ &= (\text{毎当り製品売価} - \text{毎当り変動費}) \times \text{日産} \end{aligned}$$

4) 従ってある製品の1日当り稼働益と1日当り固定的コスト(原則的には製品  
種類には無関係に固定される)とを比較することにより、ある製品が全コスト  
との比較で利益があるかどうかの判定数値として使用する。

$$\text{1日当り稼働益} > \text{1日当り固定費} = \text{利益あり}$$

$$\text{1日当り稼働益} < \text{1日当り固定費} = \text{利益なし}$$

#### 13-4-2 紙の均当り変動費に影響を与える要素

紙の均当り変動費に影響を与える要素として、我々は紙1均を生産販売するのに必要な次の要素を考慮した。

パルプ費 (単価×数量)

填料薬品 (単価×数量)

蒸気・電気 (単価×数量)

販売諸掛 (単価×数量)

総歩留

#### 13-4-3 自製パルプの製造コスト

自製パルプの均当り製造コストは変動費で算出した。

変動費に影響を与える要素として次の要素を考慮した。

原木費、日産、未晒パルプ及晒パルプ歩留、薬品費

リノベーション計画を実施した場合とリノベーション計画を実施しない場合の自製パルプの変動費はTable 13-4-1に示した。

自製パルプの製造コスト低減による効果は、稼働利益を算出する場合に使用するパルプ単価に反映させた。

#### 13-4-4 ボイラ更新による蒸気コスト

現在PPMは旧式ボイラ3缶と新式ボイラ1缶を有している。

リノベーション計画では、新鋭ボイラ1缶を新設して、旧式ボイラ3缶を使用停止することを盛り込んだ。

これにより蒸気単価は第5章で記述した通り次のように廉価となる。

蒸気単価(リノベーション計画を行なった場合)……Rp 16,000/t

蒸気単価(リノベーション計画を行なわない場合)……Rp 21,670/t

蒸気原価の低減による効果は、稼働利益を算出する場合に使用する蒸気の単価に反映させた。

#### 13-4-5 生産品目別稼働益

リノベーション計画を実施した場合とリノベーション計画を実施しない場合における生産品目別の均当りの稼働益はTable 13-4-2に示した。

#### 13-4-6 年間稼働益

リノベーション計画を実施した場合とリノベーション計画を実施しない場合における年間稼働益はTable 13-2-1の生産販売計画をTable 13-4-2の生産品目別1日当り稼働益を組合わせて算出させる。

これをTable 13-4-2に示した。

リノベーション計画を実施した場合と実施しない場合との差異は

: Rp 1,431,737,000

この値は固定費が現状と変わらないと考えた時に今迄に述べた各要素が、リノベーション計画を実施することによって改善され、それら改善によって生じる利益の増加分を表わしている。

これには、売価復元による稼働益増加分も含まれるが、この売価復元による影響については、次節に記載した。

### 13-5 利益が増減する他の項目

#### 13-5-1 販売価格が復元することによる利益

第3章で述べた通り、現状では製品品質が不安定であること及び製品品質が他社に比較して劣ることの理由によって他社同一製品品目と比較して5%安い価格で販売されている。

リノベーション計画を行なった場合、第6章で詳細述べている通り製品品質が安定するだけでなく、他社同一製品品目と少なくともそん色ない所まで改善され、売価の復元が可能となる。復元率は安全をみて3%と低く査定した。

#### 13-5-2 工事期間中の減算損

1) リノベーション計画を行なう場合、工程改善工事のため工程が停止し、製品生産は一時中断又はスローダウンされる。このため製品生産量は減少し、収益的には損失を受ける。

これが減産損である。

本計画では、次の条件を考慮し、減産損は出来るだけ小さくするものとする。

- 停止時期は出来るだけ需要が停滞する時期とする。
- 採算的に不利な生産品目を減産する。
- 採算的に有利な生産品目や定期品(ある特定の客に定期的に納入する製品)は、停止前に停止期間中の量も加味して生産し、貯蔵しておく。
- 外国のコンサルタント会社又は外国の製紙会社で本計画のような改善工事について経験多い技術者の援助をうけて出来るだけ停止期間を短くする。

#### 2) 工事のための休転日数

休転日数

(PM1) 30日

(PM2) 21日

(PM3) なし

### 13-6 遂年稼働益を算出する時に考慮すべきその他の事項

#### 13-6-1 減産損

13-5-2に記載した休転日数で減産損は-1年目でRp113,287,000となる。

#### 13-6-2 増加稼働益達成率

1st Year	:	85%
2nd Year	:	100%
3rd Year	:	100%

#### 13-6-3 増加稼働益の合計

現 状	:	Rp 3,512,774,000
改善後(平年度)	:	Rp 4,944,511,000
差 異	:	Rp 1,431,737,000

### 13-7 固定費

#### 13-7-1 基本条件

1) リノベーション計画を行わない場合の固定費すなわち現状の固定費は、全て1983年実績資料と1984年計画資料を基礎数値として採用し固定した。

2) 同一生産品目の製造コストを下げ、市場競争力を強化するためには労働生産性の向上は重要である。

特に労働生産性の低いPPMの場合、これは不可欠の要因である。しかし、本計画ではPPMが有している使命、すなわち雇用を安定し、地域発展に寄与するという使命を達成するため省力化は考えず総人件費は固定した。

反面リノベーション計画を行なった場合、若干の設備新設・増産・操業・管理の改善強化が行なわれる。これに伴いある種の部門では若干の定員増が予想されるがこれらは配置転換等の内部努力で解決するものとし、工場全体としての総人件費は固定した。

3) リノベーション計画を行なった場合に増加する固定費の内投下される総所要資金として必要とするものは増加経費として考慮した。

4) 資金調達・金利・返済・償却・法人税等の諸条件はインドネシア政府より与えられた条件を採用した。



13-8 総所要資金

本総所要資金は、第12章“リノベーション計画の実施”で記載したプロジェクト工事範囲並びにコンサルティング業務の実施及び教育訓練の実施に要する資金、初期運転資金、及び計画実施期間中の資金調達に要する費用（金利）により構成され第12章実施工程を基準にして算出したものである。

詳細をTable 13-8-1に示す。

又、リノベーション計画の年度別の投資スケジュールをTable 13-8-2に示す。

	単位 Rp 1,000
(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) Over Head	211,900
(G) Contingency	429,144
合 計	6,873,913
(H) 建 中 金 利	836,652
(I) 返 済 金	151,304
(J) 初期運転資金	120,739
総 計	7,982,608

### 13-8-1 プラント建設費 (Plant Cost)

#### 1) 機 器 (Equipment & Machinery)

本費用はリノベーション計画で購入される全ての輸入機器の費用である。インドネシア国内で調達できる機器は出来るだけインドネシア国内で調達することにした。

#### 2) 海上運賃及び海上保険料

本費用は機器、材料等の輸入品の海上運賃及び保険料である。

#### 3) 輸入税及び輸入諸掛り

本費用は輸入品に対して輸入税 (10%) 及び輸入諸掛り (2.5%) が賦課されるものとした。輸入税 (10%) については、本リノベーションの趣旨に鑑み、免税措置を強く希望する。

#### 4) 内陸輸送費

本費用は機器、材料などのインドネシア国内の輸送費及び陸上保険料である。

### 13-8-2 機器据付け工事 (Construction Work Cost)

#### 1) 現地調達機器

本費用は国内で調達される機器材料の工場着価格である。

#### 2) 土木建築工事

本費用は土木工事、基礎工事、チェスト等のコンクリート工事及び建築工事の費用尚びに工事に要する機械、材料費である。

#### 3) 据付け費

本費用は工場に到着した機器の運搬、貯蔵、据付け、組立などの現地工事費並びに現地工事に要する機械材料費である。

### 13-8-3 操業前費用 (Pre-Operation Cost)

本費用はリノベーション計画実施期間中に必要となる下記の費用である。

#### 1) 従業員の教育訓練

#### 2) 計画実行のための調査、スケッチ、設計

#### 3) 入札手続き及び分析、評価

#### 4) プロジェクト実行の管理、監督

#### 5) 試運転中の操業指導

なお本費用は外国のコンサルタント会社あるいは外国の製紙会社の援助を受けるものとして見積ってある。

13-8-4 初期運転資金

- 1) 本費用は一般のプロジェクトでは
- a. 予備品費：1年間の操業に必要な予備品費
  - b. 現金：流動資産、流動負債発生に対して準備する資産、負債の相当額及び操業初年度の運転技術援助費、そして操業予備費が計上される。

しかし、リノベーション計画では、現実に工場が運転している状態で改造工事が行なわれるので事情は異なってくる。

2) 予備品費

1年間の操業に必要な予備品消耗品費は不要である。更新を要する機器部品等いわゆるスペアパーツ類は機械設備費として一括計上されている。

3) 現金

- 1) リノベーション計画を行なった場合、平年度において1ヶ月当り増加する売上高の60%を運転資金の増加として計上した。

13-8-5 リノベーション計画期間中の資金調達に要する費用(金利)

本計画の総所要資金に関する長期借入金に対する計画期間中の金利である。

13-9 資金調達

30%は資本金(Equity)、70%は長期借入れ金とする。

Table 13-9-1

Unit Rp, 1000

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

### 13-10 長期借入れ金の金利

#### 13-10-1 長期借入れ金の利率

利率は a. Foreign : 12%

b. Local : 16%

とする。

#### 13-10-2 年度別長期借入れ金の金利

長期借入れ金の金利は Table 13-10-1 に示す。

### 13-11 長期借入れ金の返済方法

#### 13-11-1 2年据置き10年間(年1回)均等返済とする。

#### 13-11-2 返済計画

返済計画を Table 13-10-1 に示す。

### 13-12 償却方法

#### 13-12-1 償却年数

償却年数は

a. 機械設備 : 10年

b. 土木、建築 : 30年

c. 車輛 : 5年

#### 13-12-2 定額法で残存簿価は零とする。

#### 13-12-3 償却金額

年間償却金額は Table 13-12-1 に示す。

- ① 定額法で償却する。
- ② 残存簿価は残さない(全額償却する)。
- ③ 運転資金及び予備品は償却しない。
- ④ 機器の据付費及び基礎は機器本体と共に償却する。
- ⑤ 年間償却額

項 目	償却対象額 (1,000 Rp)	償却年数 (年)	年間償却額 (1,000 Rp/年)
機 器	5,180,312	10	518,031
土 建	484,391	30	16,146
車輛運搬具	26,087	5	5,217
そ の 他	2,171,079	10	217,108
合 計	7,861,869	10.5	756,502

以上により、10年で償却することにする。

年間償却額 786,187,000 Rp

### 13-13 法人税

法人税は利益課税のみで次の通り課税される。

利 益 ≤ Rp 10,000	: 利益の15%
Rp 10,000 < 利益 ≤ Rp 40,000	: 利益の25%
Rp 40,000 < 利益	: 利益の35%

### 13-14 年度別損益計算書

以上を総括して年度別損益計算書を作成した。これをTable 13-14-1に示す。  
これは、プロジェクト期間中の工場の収益性や財務状態を判定する上で、極めて重要な表であり、プロジェクト全期間を通して、健全な推移をしている。

### 13-15 銘柄別・抄紙機別損益分枝点

低成長経済下では操業率が低下した場合に、どこで収支均衡するかは大事な意義をもっている。

銘柄別・抄紙機別の損益分岐点をTable 13-15-1に示した。

有利銘柄と不利銘柄との差異が大きい。全体としては、現状でも順当な損益分岐点であり、リノベーション後は、当然のことながら損益分岐点は下がり、競争力は強化される。

### 13-16 I.R.R.O.Iの算定

プロジェクト投下資金に対する収益性の算定である。

すなわち全投過資金は自己資金にて賄われるものとして収益性を算定するものである。

したがって、算定された値には、借入金条件及び自己資本率等、プロジェクトに存在する個々の条件は反映されていない。

算定結果をTable 13-16-1及びTable 13-16-2に示す。

算定された値は有利な投資であることを示している。

### 13-17 感度分析

#### 13-17-1 売 価

I.R.R.O.Iについて、売価を5%増減させた場合をTable 13-17-1 ~ Table 13-17-4及びFig 13-17-1に示した。

算定された値はいずれも有利な投資であることを示している。

#### 13-17-2 総投下資金

I.R.R.O.Iについて、総投下資金を5%増減させた場合を、Table 13-17-5 ~ Table 13-17-8及びFig 13-17-2に示した。

### 13-18 財務指標

本財務分析で算定される財務指標は下記の通り。

これらを一括してTable 13-19-1に示した。

各指標とも順調な推移をしており、財務状態に不安はない。

又、合理的な収益率であることを示している。

#### 1) AFT TAX PROFIT-TO-SALES REV (PCT)

売上高純利益率 (%)

税引後純利益

----- × 100

売上高

2) BFR TAX PROFIT-TO-INVESTMENT (PCT)

税引前投資利益率 (%)

$$\frac{\text{税引前純利益}}{\text{総投資額}} \times 100$$

3) DEBT SERVICE RATIO

借入金返済能力

$$\frac{\text{減価償却費} + \text{支払(長期)利息} + \text{税引後純利益}}{\text{長期借入金の返済額} + \text{支払(長期)利息}}$$

Table 13-2-1 Sales Plan

FM	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			Day	Daily production	Sales
			t	t	t	t	t	t					t	t	t	t	t	t			t	t	
1	H.V. Offset Pth	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 Pth	69	10.00	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 Pth		69	91.23	9.22	869	77.23	11.25	869	0														
Dooslag Pth		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	7.14	2,201	456		3 units M/C Total		911.95	7.35	6,706	911.95	8.87	8,084.5	1,378.5				



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

No.	Kinds	I	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
-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	6.98	9.90	74.8	84.8
-3	HVS Putih	I	50	2050	65	85	92	92	91.19	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	91.99	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	91.99	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 Zegei	III	80	2080	30	50	89	87	94.55	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	9.75	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	52.40	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	2050	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	81.06	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	81.06	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	44	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	1940	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	1940	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	Coverure 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 Biru 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	<b>Contents of improvement</b> 1. Yield 25% → 35% 2. Steam unit cost 21,591.16Rp/ton → 16,000Rp/ton 3. Steam unit consumption ratio 6.0T/T → 4.5 T/T
Yield	25%	35%	10%	
Straw	400,000kg x 33Rp/kg = 13,200,000Rp	285.714kg x 33Rp/kg = 9,428,562 Rp	-3,771,438	
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	
Bleaching powder	4,270kg x 160/122 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

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	
					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				
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	688.8	63,370	15.2	1,398	11.25	8.20	725.1	66,711	546.0	50,231	179.1	16,480	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	
	Bonderot	60	6.91	126.19	2,411.8	2,103,090	823.0	717,656	1,588.8	1,385,434	9.26	94.17	2,484.1	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	47,046	70	70	0	
	S.P.R. Biasa	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	30,606	961.9	11,544	1,588.6	19,062	12	12	0	
	Cheque putih	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	20.01	1,700.2	170,020	982.0	98,200	718.2	71,820	9.49	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	940.3	87,448	881.1	81,942	59.2	5,506	10.03	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	680.4	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	29,489	59	59	0	
	Omslog warna	80	7.83	4.21	452.2	14,923	389.6	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	
	Omslog 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	
	Omslog biru tua	70	8.23	2.67	302.7	6,659	386.1	8,494	-83.4	-1,835	11.39	1.93	311.8	6,859	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	714.2	1,565,303	923.4	1,867,245	9.99	298.21	1,466.4	4,368,344	574.3	1,710,734	892.1	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	-346.2	-31,504	91	91	0	
	Cylostyle Pih	69	9.22	94.23	704.0	611,776	688.8	598,567	15.2	13,209	11.25	77.23	725.1	630,112	546.0	474,474	179.1	155,638	869	869	0	
	Doorslag Pih	28	3.18	104.09	858.8	284,263	856.6	293,465	-27.8	-9,202	5.11	61.77	684.6	292,803	738.8	244,543	145.8	48,260	331	331	0	
	Bank post	41	4.65	1.94	882.5	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 putih	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 ecklat	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 putih	26	3.18	0	1,303.4	0	957.6	0	345.8	0	5.29	56.29	1,312.5	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	1,299,077	242.5	533,799	1,745	2,201	456	
	Total PM 1 & 2		6.33	595.35	1,225.8	4,617,700	726.6	2,737,207	499.2	1,880,493	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		Sales		Variable cost		Operation profit		Daily production		Sales		Variable cost		Operation profit		Present	Improved	Increase Decrease	
			t/day	day	/kg Rp/kg	Amount 1000Rp	/kg Rp/kg	Amount 1000 Rp	/kg Rp/kg	Amount 1000 Rp	t/day	day	/kg Rp/kg	Amount 1000 Rp	/kg Rp/kg	Amount 1000 Rp	/kg Rp/kg	Amount 1000 Rp	t	t	t	
3	Golden bird	26	9.39	199.3	1,562.1	2,922,689	1,023.5	1,914,969	538.6	1,007,720	9.39	199.3	1,562.1	2,922,689	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	855,913	570.6	523,811	9.20	41.8	1,503.0	661,320	913.1	401,764	589.9	259,556	918	440	-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	4,618,023	1,015.9	2,985,742	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	8,084.5	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
<b>A</b>	<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>B</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			
<b>C</b>	<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 commision 14.5	161,413	161,413			161,413		
			1,240,891	161,413	1,079,478	399,239	841,652		
<b>D</b>	<u>Operation Supervision</u>								
		Engineering cost 12mm	d) 111,948	111,948			73,165	38,783	
		Daily Allowance & Aire fare	d) 27,131	27,131			18,087	9,044	
<b>E</b>	<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	858,262	103,131	214,522	729,044	47,827	
	<b>Grand Total</b>		6,873,913	5,026,087	1,847,826	2,101,347	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)		1 (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	199,304	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	43,480		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	421,060	
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		4,438	17,392		456,870	1,224,001	201,704	
9 (1995)		150,957	150,957		301,565	603,130		4,438	13,011		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 13-14-1 Annual Statement of Profit and Loss

(Unit: 1,000 RP)

Items	Present	- 2 (1985)	- 1 (1986)	1 (1987)	2 (1988)	3 (1989)	4 (1990)	5 (1991)	6 (1992)	7 (1993)	8 (1994)	9 (1995)	10 (1996)	Remarks
Sales (Qty, t)	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	5,722,949	5,722,949	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	8,973,311	9,003,030	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	1,994,403	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	9,334,899	9,227,083	9,227,083	9,227,083	9,227,083	9,227,083	9,227,083	9,227,083	
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	69,878	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	213,896	577,251	863,918	1,047,560	1,118,382	1,189,208	1,253,908	1,308,734	1,363,560	1,418,381	
Corporation tax	182,681	182,681	143,030	69,864	197,038	297,371	361,646	386,434	411,223	433,868	453,057	472,246	491,433	
Profit after tax (B)	353,550	353,550	279,914	144,032	380,213	566,547	685,914	731,948	777,985	820,040	855,677	891,314	926,948	
(A + (B))	682,207	682,207	608,571	1,258,876	1,495,057	1,465,550	1,477,101	1,518,135	1,564,172	1,606,227	1,641,864	1,677,501	1,713,135	
Loan repayment (Foreign)				452,696	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

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	%																																																													
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></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> </table> <p>2,976,543 (1000Rp) ÷ 911.95 (day) = 3,264 (1000 Rp/day)</p> <p>(2) Annual fixed cost (after improved)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td></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> <p>3,879,728 (1,000 Rp) ÷ 911.95 (day) = 4,254 (1000 Rp/day)</p>		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>			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>													
		1000 Rp	(1000 Rp)																																																																						
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<b>Total</b>	<b>3,879,728</b>																																																																								
	Cylostyle Pth	69	9.22	15.2	3,264	214.7	2,329	11.25	179.1	4,254	23.8	212																																																													
	Mail zegel	80	4.99	1,202.8	3,264	2.7	54	8.91	1,426.4	4,254	3.0	34																																																													
	Bänderol	60	6.91	1,588.8	3,264	2.1	30	9.26	1,824.9	4,254	2.3	25																																																													
	Reform	120	7.62	473.6	3,264	6.9	91	9.87	672.0	4,254	6.3	64																																																													
	S.P.R. Biasa	80	5.82	1,282.7	3,264	2.5	43	9.75	1,588.6	4,254	2.7	28																																																													
	Cheque putih	100	5.24	125.8	3,264	25.9	494	9.60	314.1	4,254	13.5	141																																																													
	Kertas water mark	100	4.99	718.2	3,264	4.5	92	9.40	959.7	4,254	4.4	47																																																													
	Post wesel	175	7.49	59.2	3,264	55.1	736	10.08	244.7	4,254	17.4	173																																																													
	Kartu post Ch	175	7.49	7.2	3,264	453.3	6,052	10.15	189.7	4,254	22.4	221																																																													
	Couverture warna	60	7.49	450.5	3,264	7.2	96	10.43	499.8	4,254	8.5	81																																																													
	Omslog warna	80	7.83	62.6	3,264	52.1	665	11.18	107.6	4,254	39.5	353																																																													
	Omslog warna	200	8.87	42.9	3,264	76.1	858	11.55	86.7	4,254	49.1	425																																																													
	Omslog biru tua	70	8.23	- 83.4	3,264	-	-	11.39	- 48.5	4,254	-	-																																																													
	Straw pulp export	200						10.63	417.8	4,254	10.2	96																																																													
	PM1 average		6.78	923.4	3,264	3.5	52	9.99	892.1	4,254	4.8	48																																																													
2	H.V.S. Putih	50	6.81	- 536.4	3,264	-	-	9.56	-346.2	4,254	-	-																																																													
	Cylostyle Pth	69	9.22	15.2	3,264	214.7	2,329	11.25	179.1	4,254	23.8	212																																																													
	Doorslag Pth	28	3.18	- 27.8	3,264	-	-	5.11	145.8	4,254	29.2	571																																																													
	Bank post	44	4.65	- 50.6	3,264	-	-	7.93	178.8	4,254	23.8	300																																																													
	Sigaret putih	26	3.18	345.8	3,264	9.4	296	5.29	579.2	4,524	7.3	138																																																													
	Kraft coklat	45	6.80	62.8	3,264	52.0	765	8.92	98.3	4,254	43.3	435																																																													
	PM2 average		5.87	7.6	3,264	429.5	7,317	7.41	242.5	4,254	17.5	236																																																													
	PM1 & 2 average		6.33	499.2	3,264	6.5	103	8.70	616.1	4,254	6.9	79																																																													

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	Golder 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	81	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.)

	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	

THE STATE OF TEXAS, COUNTY OF [ ]

Know all men by these presents, that [ ] of the County of [ ] State of Texas, for and in consideration of the sum of [ ] Dollars, to [ ] in hand paid by [ ] the receipt of which is hereby acknowledged, have granted, sold and conveyed, and by these presents do grant, sell and convey unto the said [ ] of the County of [ ] State of Texas, all that certain [ ]

tract of land, situate in the County of [ ] State of Texas, containing [ ] acres, more or less, as the same may appear by the plat of [ ] filed for record in the County Clerk's Office of the County of [ ] State of Texas, on the [ ] day of [ ] A.D. 19[ ] and the corners of which are as follows, to-wit:

Beginning at the [ ] corner of the [ ] Section, [ ] Township, [ ] Range, [ ] Meridian, State of Texas; thence [ ] degrees [ ] minutes [ ] seconds North, [ ] feet to [ ]

thence [ ] degrees [ ] minutes [ ] seconds East, [ ] feet to [ ]

thence [ ] degrees [ ] minutes [ ] seconds South, [ ] feet to [ ]

thence [ ] degrees [ ] minutes [ ] seconds West, [ ] feet to [ ]

thence [ ] degrees [ ] minutes [ ] seconds North, [ ] feet to [ ]

thence [ ] degrees [ ] minutes [ ] seconds East, [ ] feet to [ ]

thence [ ] degrees [ ] minutes [ ] seconds South, [ ] feet to [ ]

thence [ ] degrees [ ] minutes [ ] seconds West, [ ] feet to [ ]

Table 13-16-2 Financial Internal Rate of Return on Investment (F.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 13-17-1 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	
<b>Total</b>	<b>7,886,870</b>			<b>8,874,545</b>	<b>8,904,234</b>	<b>8,688,393</b>	<b>8,575,577</b>	
Selling expenses	180,500			180,500	180,500	180,500	180,500	
Administrative expenses	367,210			367,210	367,210	367,210	367,210	
<b>Total</b>	<b>547,710</b>			<b>547,710</b>	<b>547,710</b>	<b>547,710</b>	<b>547,710</b>	
<b>Total cost</b>	<b>8,434,580</b>			<b>9,422,255</b>	<b>9,451,944</b>	<b>9,236,103</b>	<b>9,123,287</b>	
<b>Gross profit</b>	<b>801,143</b>			<b>1,786,191</b>	<b>2,095,360</b>	<b>2,311,201</b>	<b>2,424,017</b>	
Present interest	264,912			264,912	264,912	264,912	264,912	
<b>Profit before tax</b>	<b>536,231</b>			<b>1,521,279</b>	<b>1,830,448</b>	<b>2,046,289</b>	<b>2,159,105</b>	
Corporation tax	182,681			527,448	635,657	711,201	750,687	
<b>Profit after tax</b>	<b>353,550</b>			<b>993,831</b>	<b>1,194,791</b>	<b>1,335,088</b>	<b>1,408,418</b>	
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	
<b>Profit</b>				<b>993,831</b>	<b>1,194,791</b>	<b>1,335,088</b>	<b>1,408,418</b>	
<b>Present profit</b>				<b>-353,550</b>	<b>-353,550</b>	<b>-353,550</b>	<b>-353,550</b>	
<b>Net flow</b>		<b>-2,104,347</b>	<b>-4,795,375</b>	<b>1,487,764</b>	<b>1,857,289</b>	<b>1,781,745</b>	<b>1,742,259</b>	

THE HISTORY OF THE UNITED STATES OF AMERICA

CHAPTER I	THE DISCOVERY OF AMERICA	1492
CHAPTER II	THE EARLY SETTLEMENTS	1607
CHAPTER III	THE STRUGGLE FOR INDEPENDENCE	1776
CHAPTER IV	THE CONSTITUTION	1787
CHAPTER V	THE WESTERN EXPANSION	1800
CHAPTER VI	THE CIVIL WAR	1861
CHAPTER VII	THE RECONSTRUCTION	1865
CHAPTER VIII	THE GROWTH OF THE NATION	1870
CHAPTER IX	THE PROGRESSIVE MOVEMENT	1890
CHAPTER X	THE WORLD WAR	1914
CHAPTER XI	THE INTERWAR PERIOD	1918
CHAPTER XII	THE SECOND WORLD WAR	1939
CHAPTER XIII	THE COLD WAR	1945
CHAPTER XIV	THE MODERN ERA	1950
CHAPTER XV	THE FUTURE OF THE NATION	1960

**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
Total				320,174		- 50,386

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

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



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

	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	

## UNIT 1: THE HISTORY OF THE UNITED STATES

1.1 The Discovery of America	1.1.1 Christopher Columbus	1.1.2 Amerigo Vesputi	1.1.3 The first voyage
1.2 The Age of Exploration	1.2.1 The search for gold	1.2.2 The search for the Northwest Passage	1.2.3 The search for the Southwest Passage
1.3 The Colonization of America	1.3.1 The Pilgrims	1.3.2 The Puritans	1.3.3 The Virginians
1.4 The American Revolution	1.4.1 The Declaration of Independence	1.4.2 The Battle of Bunker Hill	1.4.3 The Battle of the Clouds
1.5 The Early Republic	1.5.1 The Federalist Papers	1.5.2 The Constitution	1.5.3 The Bill of Rights
1.6 The Westward Expansion	1.6.1 The Louisiana Purchase	1.6.2 The Trail of Tears	1.6.3 The Gold Rush
1.7 The Civil War	1.7.1 The Causes of the War	1.7.2 The Battle of Gettysburg	1.7.3 The Emancipation Proclamation
1.8 Reconstruction	1.8.1 The Reconstruction Act	1.8.2 The Freedmen's Bureau	1.8.3 The Ku Klux Klan
1.9 The Industrial Revolution	1.9.1 The Cotton Gin	1.9.2 The Steam Engine	1.9.3 The Factory System
1.10 The Progressive Era	1.10.1 The Muckrakers	1.10.2 The Progressive Movement	1.10.3 The New Deal
1.11 The Great Depression	1.11.1 The Stock Market Crash	1.11.2 The New Deal	1.11.3 The Great Migration
1.12 World War II	1.12.1 The Attack on Pearl Harbor	1.12.2 The Battle of Iwo Jima	1.12.3 The Atomic Bomb
1.13 The Cold War	1.13.1 The Marshall Plan	1.13.2 The Korean War	1.13.3 The Vietnam War
1.14 The 1960s	1.14.1 The Civil Rights Movement	1.14.2 The Vietnam War	1.14.3 The Space Race
1.15 The 1970s	1.15.1 The Watergate Scandal	1.15.2 The Vietnam War	1.15.3 The Energy Crisis
1.16 The 1980s	1.16.1 The Reagan Revolution	1.16.2 The Iran Hostage Crisis	1.16.3 The AIDS Crisis
1.17 The 1990s	1.17.1 The Gulf War	1.17.2 The Clinton Presidency	1.17.3 The Asian Financial Crisis
1.18 The 2000s	1.18.1 The 2000 Election	1.18.2 The War on Terror	1.18.3 The Great Recession
1.19 The 2010s	1.19.1 The Obama Presidency	1.19.2 The Syrian Civil War	1.19.3 The Brexit Referendum
1.20 The 2020s	1.20.1 The COVID-19 Pandemic	1.20.2 The Biden Presidency	1.20.3 The Ukraine War

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

For -5% base selling price

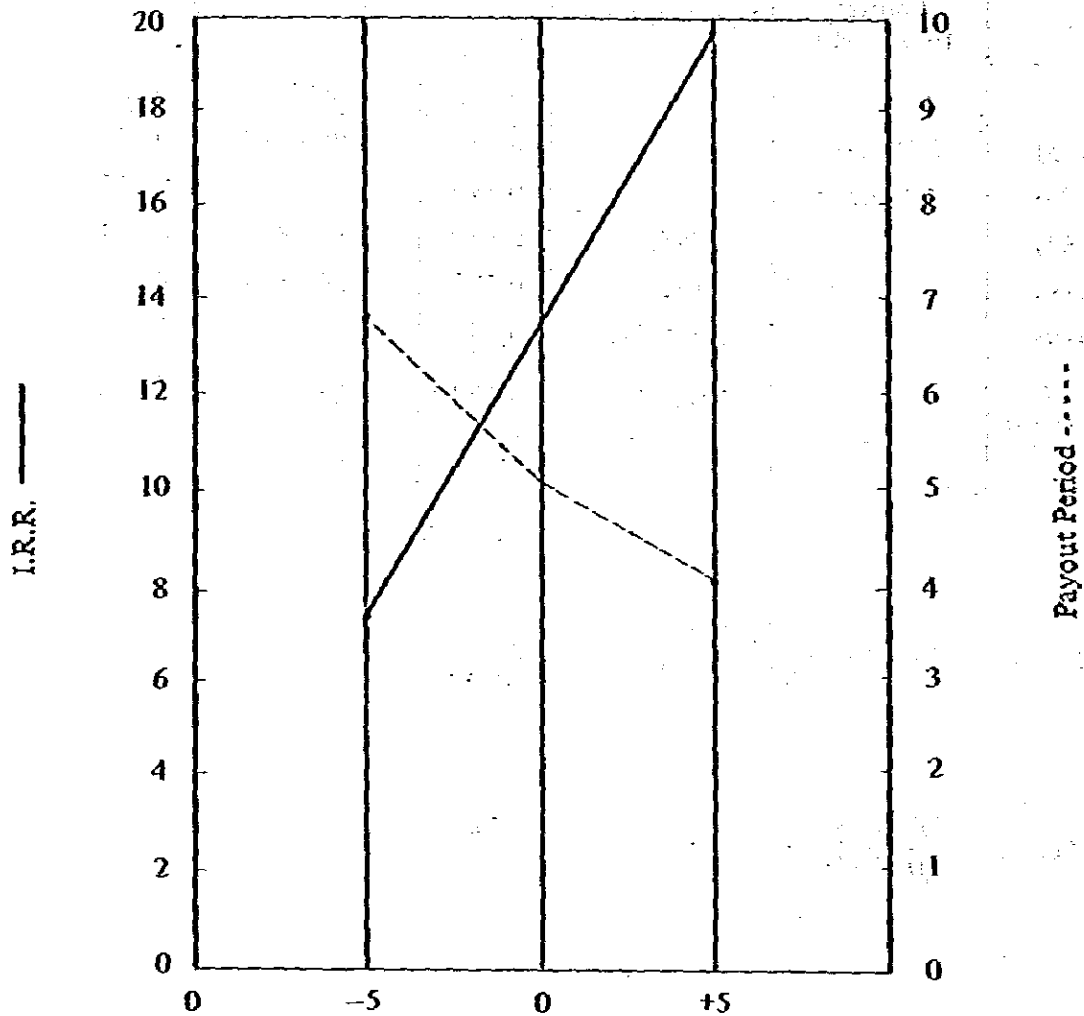
Unit: 1000 Rp

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	
<b>Total</b>	<b>7,886,870</b>			<b>8,908,915</b>	<b>8,938,604</b>	<b>8,722,763</b>	<b>8,609,947</b>	
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	
<b>Total cost</b>	<b>8,434,580</b>			<b>9,456,625</b>	<b>9,486,314</b>	<b>9,270,473</b>	<b>9,157,657</b>	
<b>Gross profit</b>	<b>801,143</b>			<b>1,218,086</b>	<b>1,511,119</b>	<b>1,726,960</b>	<b>1,839,776</b>	
Present interest	264,912			264,912	264,912	264,912	264,912	
<b>Profit before tax</b>	<b>536,231</b>			<b>953,174</b>	<b>1,246,207</b>	<b>1,462,048</b>	<b>1,574,864</b>	
Corporation tax	182,681			328,611	431,172	506,717	546,202	
<b>Profit after tax</b>	<b>353,550</b>			<b>624,563</b>	<b>815,035</b>	<b>955,331</b>	<b>1,028,662</b>	
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	
<b>Net flow</b>		<b>-2,209,564</b>	<b>-5,031,462</b>	<b>1,144,438</b>	<b>1,511,903</b>	<b>1,436,358</b>	<b>1,396,873</b>	

THE HISTORY OF THE UNITED STATES OF AMERICA

The history of the United States of America is a complex and multifaceted story that spans centuries. It begins with the early Native American civilizations, such as the Mayans, Aztecs, and Incas, who built sophisticated societies in the Americas. The arrival of European explorers in the late 15th century marked the beginning of a new era, as they sought to establish trade routes and colonies. The English, in particular, played a significant role in the development of the continent, founding the first permanent settlements and eventually expanding across the eastern seaboard.

The American Revolution (1775-1783) was a pivotal moment in the nation's history, as the colonies declared their independence from British rule. This led to the formation of the United States of America, a new nation based on the principles of liberty, democracy, and the rule of law. The Constitution of 1787 established the framework for the federal government, and the Bill of Rights guaranteed the fundamental rights of the citizens.

The 19th century was a period of rapid growth and expansion for the United States. The westward movement, driven by the desire for land and resources, led to the discovery of gold in California and the settlement of the Great Plains. The Civil War (1861-1865) was a defining event, as the nation grappled with the issue of slavery. The war resulted in the abolition of slavery and the preservation of the Union, but it also left a legacy of division and struggle for equality.

The 20th century was a time of significant social and political change. The Progressive Era (1890s-1920s) saw the rise of reform movements that sought to address social inequalities and improve government efficiency. The Great Depression (1930s) was a period of economic hardship, which led to the New Deal programs implemented by President Franklin D. Roosevelt. World War II (1941-1945) was a global conflict that tested the nation's resolve and led to the emergence of the United States as a superpower.

The latter half of the 20th century was characterized by the Cold War (1947-1991), a period of tension between the United States and the Soviet Union. The Civil Rights Movement (1950s-1960s) was a struggle for equality and justice, led by figures like Martin Luther King Jr. The Vietnam War (1955-1975) was a controversial conflict that tested the nation's military and political leadership.

The 21st century has seen the United States continue to evolve and shape the world. The September 11 attacks (2001) were a tragic event that led to a reevaluation of national security and foreign policy. The economic challenges of the late 2000s and the early 2010s led to the implementation of the Affordable Care Act (2010) and other significant policies. The ongoing struggle for racial and social justice remains a central theme in the nation's history.

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	

MEMORANDUM FOR THE RECORD

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

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

For -5% base Investment Cost

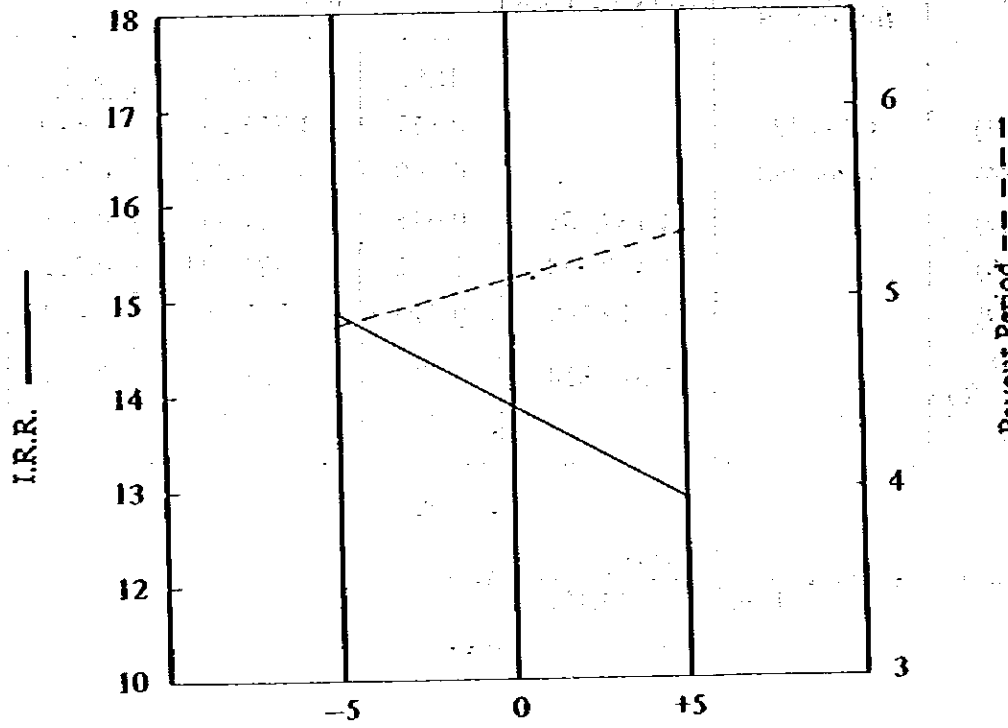
Unit: 1000 Rp

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

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

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

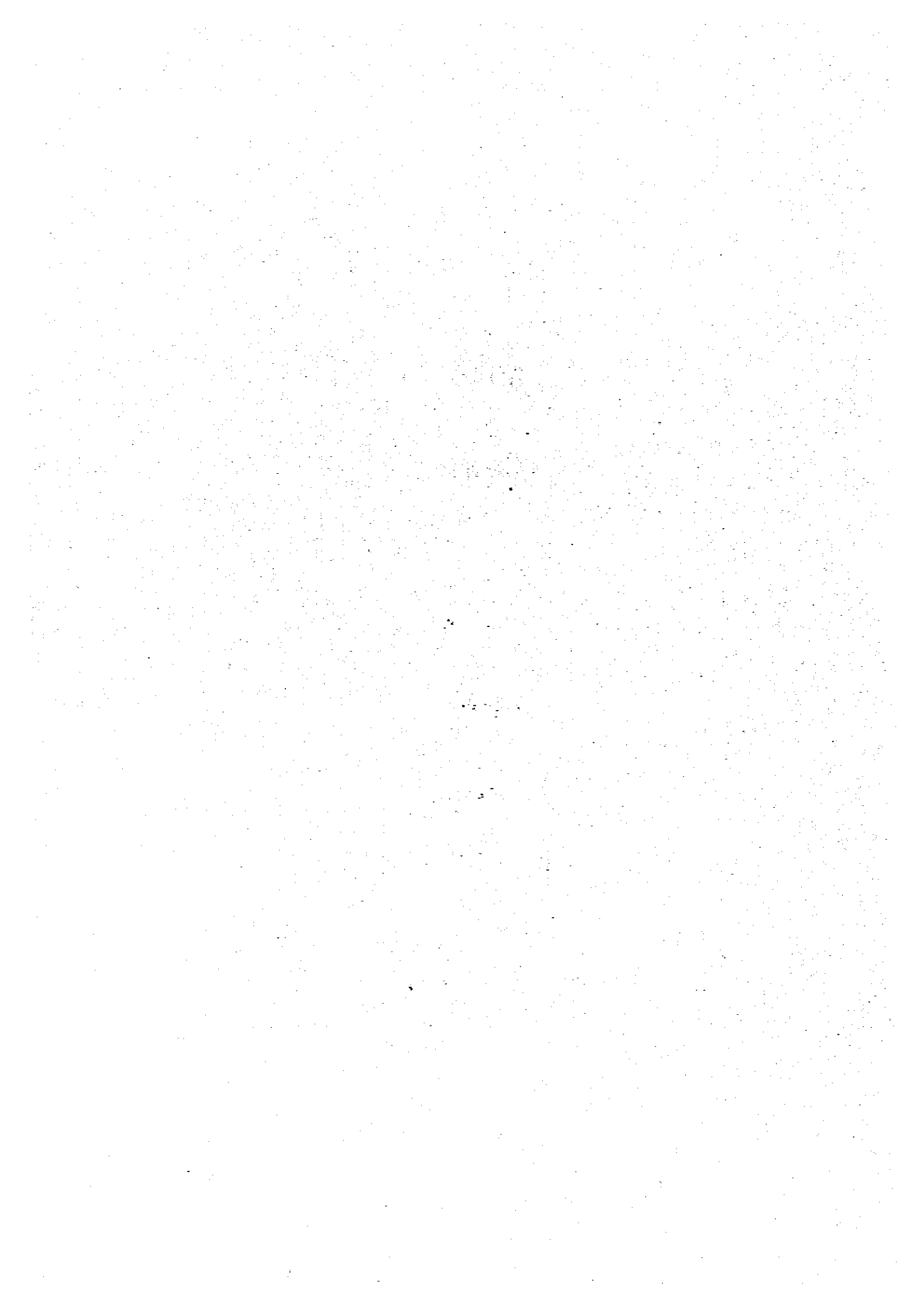
TABLE 1

Year	Number of cases	Percentage of total cases	Age group
1950	100	100	10-14
1951	120	120	10-14
1952	150	150	10-14
1953	180	180	10-14
1954	200	200	10-14
1955	220	220	10-14
1956	250	250	10-14
1957	280	280	10-14
1958	300	300	10-14
1959	320	320	10-14
1960	350	350	10-14
1961	380	380	10-14
1962	400	400	10-14
1963	420	420	10-14
1964	450	450	10-14
1965	480	480	10-14
1966	500	500	10-14
1967	520	520	10-14
1968	550	550	10-14
1969	580	580	10-14
1970	600	600	10-14
1971	620	620	10-14
1972	650	650	10-14
1973	680	680	10-14
1974	700	700	10-14
1975	720	720	10-14
1976	750	750	10-14
1977	780	780	10-14
1978	800	800	10-14
1979	820	820	10-14
1980	850	850	10-14
1981	880	880	10-14
1982	900	900	10-14
1983	920	920	10-14
1984	950	950	10-14
1985	980	980	10-14
1986	1000	1000	10-14
1987	1020	1020	10-14
1988	1050	1050	10-14
1989	1080	1080	10-14
1990	1100	1100	10-14
1991	1120	1120	10-14
1992	1150	1150	10-14
1993	1180	1180	10-14
1994	1200	1200	10-14
1995	1220	1220	10-14
1996	1250	1250	10-14
1997	1280	1280	10-14
1998	1300	1300	10-14
1999	1320	1320	10-14
2000	1350	1350	10-14
2001	1380	1380	10-14
2002	1400	1400	10-14
2003	1420	1420	10-14
2004	1450	1450	10-14
2005	1480	1480	10-14
2006	1500	1500	10-14
2007	1520	1520	10-14
2008	1550	1550	10-14
2009	1580	1580	10-14
2010	1600	1600	10-14
2011	1620	1620	10-14
2012	1650	1650	10-14
2013	1680	1680	10-14
2014	1700	1700	10-14
2015	1720	1720	10-14
2016	1750	1750	10-14
2017	1780	1780	10-14
2018	1800	1800	10-14
2019	1820	1820	10-14
2020	1850	1850	10-14
2021	1880	1880	10-14
2022	1900	1900	10-14
2023	1920	1920	10-14
2024	1950	1950	10-14
2025	1980	1980	10-14
2026	2000	2000	10-14
2027	2020	2020	10-14
2028	2050	2050	10-14
2029	2080	2080	10-14
2030	2100	2100	10-14

Source: [Source information]

## 第14章

### 経済評価





## 第14章 経済評価

1) PPMの収益は現在黒字であるが、その収益性は、今後悪化が予想される。特にUNIT 1は生産する製品が競争力を失い、2台の抄紙機のうち1台は停止せざるを得ない事態も予想される。

本リノベーション計画を実施することにより、PPMは安泰となり、地域開発の貢献と雇傭の確保が出来る。

2) 本リノベーション計画を実施することにより、60年以上を経過した設備の寿命が伸び、今後とも生産が続けられる。

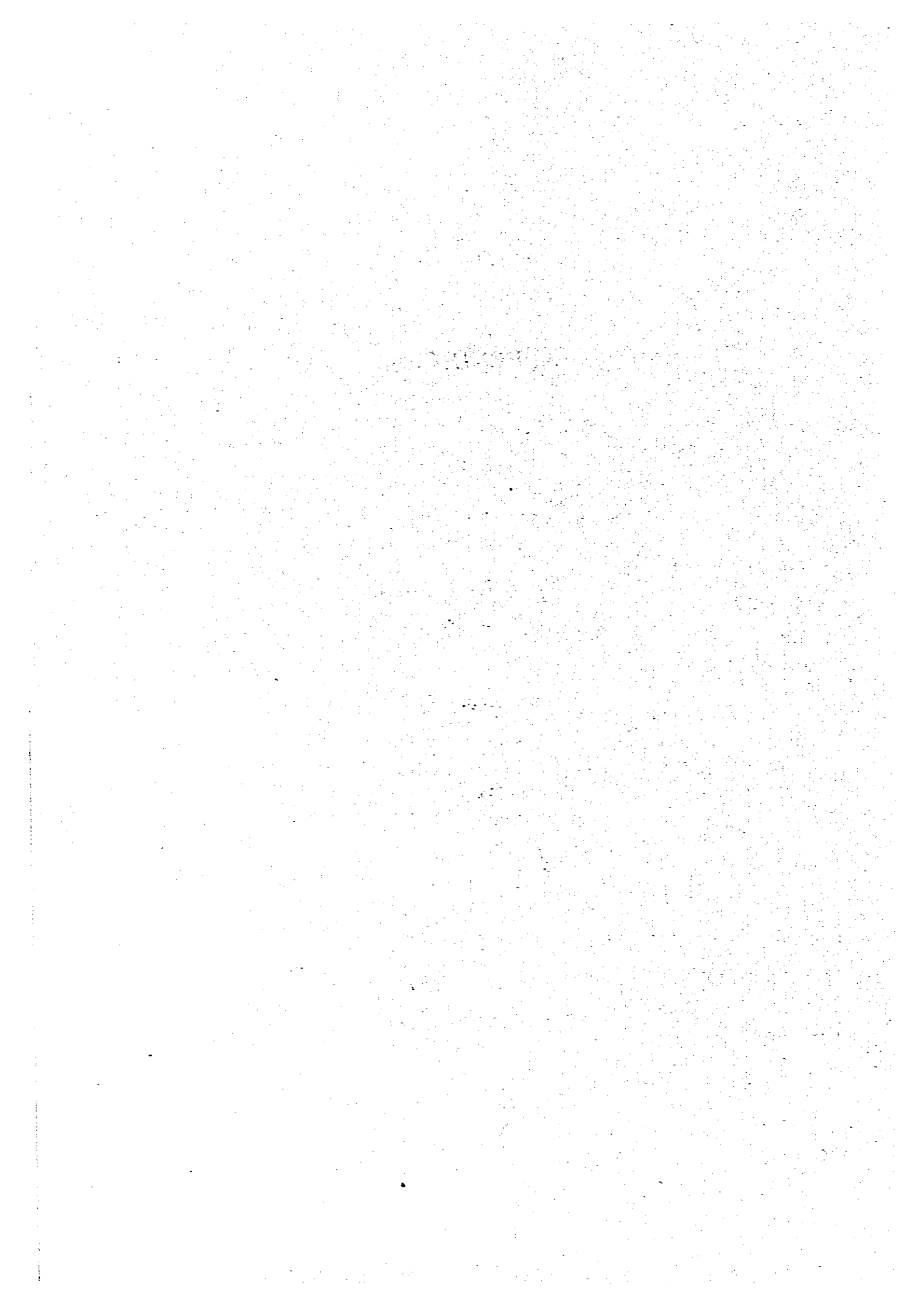
3) 今回拡張される製品は、現在輸入されている製品、又は輸出指向品であり、外貨節減となる。

4) PPMの将来の安泰と外貨節減のためにNo.4抄紙機の新設が将来考えられるが、本リノベーションはそれに至る第一段階でもある。

なお、今回更新される設備については、PM3との互換性を持たせ、必要に応じて転用が可能であるよう配慮した。



## **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 Daiji and Toppan Printing Indonesia
29	(Wed.)	2-persons 7-persons	Lv. JKT - BRPP	2-persons (Messrs. Omachi, Fujii) Visit to DGBCI, IPPA, REKAYASA, 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 Gitsakarya Printing and Toppan, 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 Nasantara, Study in PPM
7	(Wed.)	Teams A and B Team C Team D		Study in BRPP Study in PPM Visit to Perun Persoetakan Uang, Perdagangan dan Percetakan and Margano
8	(Thu.)	Teams A and B Team C Team D		Study in BRPP Study in PPM Visit to Daiji
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. Yamagawa)

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, New 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, Arka 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 Bentoel, Gedong Batu Study in PPM
17	(Sat.)	Team New A Team B Team C Team D	Ar. 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, Jambubal, Noyorono
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	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
23	(Fri.)	Team D 4-persons  3-persons		Study of Documents 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. Kano, 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**

<b>Mr. Tadao Kano</b>	<b>: Team Leader</b>
<b>Mr. Yasuharu Masuda</b>	<b>: Marketing</b>
<b>Mr. Kazuma Suzuki</b>	<b>: Finance</b>
<b>Mr. Tadahiko Yamagiwa</b>	<b>: Electric and Instrument</b>

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

<b>Mr. Yasuhiko Suzuki</b>	<b>: Chief and Machinery Equipment</b>
<b>Mr. Hideo Omachi</b>	<b>: Pulping</b>
<b>Mr. Tsunetoyo Fujii</b>	<b>: Paper Manufacturing</b>

### **In Charge of Padalarang**

<b>Mr. Heihachiro Nakayama</b>	<b>: Chief and Machinery Equipment</b>
<b>Mr. Yoshihito Shibata</b>	<b>: Pulping</b>
<b>Mr. Kazuo Sakai</b>	<b>: Paper Manufacturing</b>



### 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

Mr. Kahar : Secretary General

**Appendix 4**  
**Members of the Cooperation Team in the Basuki Rachamat Pulp and Paper Mill**

<b>Mr. Murtedjo Kadarisman</b>	<b>: Team Leader</b>	
	<b>: Production/Technical Director</b>	
<b>Mrs. Dawamhuri</b>	<b>: Secretary</b>	
	<b>: 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. Dawamhuri</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 Conveyor	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 Conveyor	1	o	—	Inclined, 3 roller Type C/W Steel Structure etc.
-2	Shuttle Conveyor	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 Priming 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>	—	o	Overhaul to be Included
<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	
<b>B7</b>	<b>Three Way Valve</b>				
-1	Remote Type	1	o	-	FC/SUS 150mm dia
-2	Normal Type	6	o	-	FC/SUS 150mm dia
<b>B8</b>	<b>Measuring Tank</b>				
-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
<b>B9</b>	<b>Fork Lift Truck</b>	<b>1</b>	<b>-</b>	<b>o</b>	<b>2.5 Ton, Gasoline Type</b>
<b>B10</b>	<b>Magnetic Separator</b>				
-1	Separator Chamber	2	o	-	SUS 304
-2	Magnetic Bar	10	o	-	50 x 100 x 300 mm
<b>B11</b>	<b>Centri Cleaner</b>				
-1	High Density Cleaner	1	o	-	BC No.8 Equivalent
-2	Liquid Cyclon	1	-	o	Existing to be Relocated
<b>B12</b>	<b>Broke Flaker</b>				
-1	Hydra Flaker	1	o	-	BC No, 16 Equivalent
-2	Prefiner	1	-	o	Existing to be Relocated
-3	Spare Parts	1	o	-	Rotor & Stator Bearings Packing

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

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
D2	Regulating/Mixing Box				
-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
D3	Approach Screening				
-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
D4	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	—	Sleeve, Packing, Bearings
D5	Table Roll				
-1	For Replacement	22	o	—	80mm Dia x 2,250 mmL
-2	Spare Parts	4	o	—	Bearings, Oil Seals
D6	Head Box Modified				
-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	Marking 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 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 Beam Suction 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, Sleeve, B-Belt

No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
D11	Couch Pit				
-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
D12	Press Part Cat Walks	1	—	o	Instead of Nip Loading System
D13	Driving Modification				
-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
D14	Special Works				
-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'y & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
<b>E</b>	<b>Paper Machine No. 2</b>				
<b>E1</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	—	
<b>E2</b>	<b>Regulating/Mixing Box</b>				
-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
<b>E3</b>	<b>Approach Screening</b>				
-1	Screen Basket	1	o	—	PS400, 2.0mm Dia, Lamort
-2	Screen Plate	1	o	—	Janson Type, SUS 304
<b>E4</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	—	Bearings, Oil Seals, Sleeves, Packings
<b>E5</b>	<b>Suction Box</b>				
-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
			P	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	o	—	TD12, Max. Speed 450m/min.
-1	Accessories	1	o	—	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	1250
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 Sleeves, 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	
1	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, Instru- ment 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

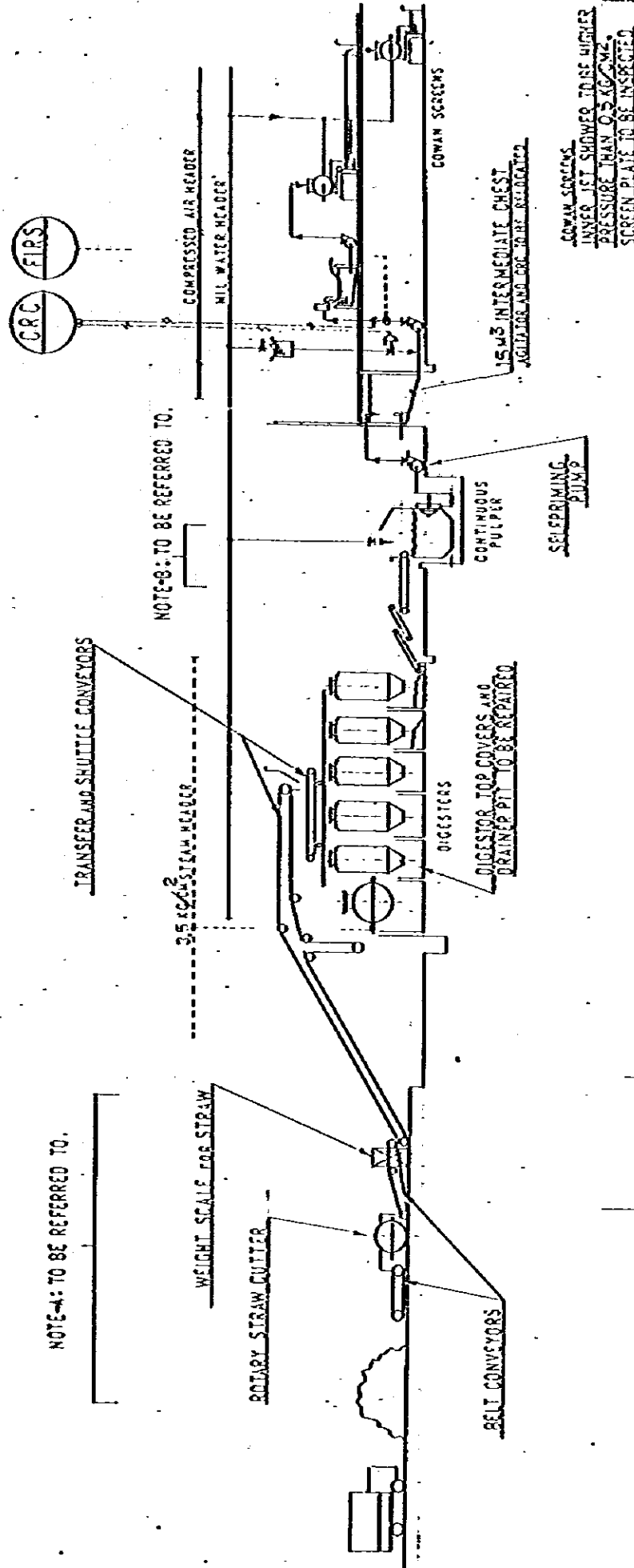
No.	Name of Plant And Mach'ry & Equip't	Q'ty	Supply		Remarks and Major Specification
			F	L	
-9	Air Conditioner for Panel Room	1	-	o	Air Conditioner for Home use
<b>111</b>	<b>Mill Water Lines</b>				
-1	Valves for Overhaul	10	o	-	For Existing Lines
-2	Water Head Tank	1	o	-	10m <sup>3</sup> FRP with Fittings
-3	Structure Overhaul	1	-	o	For Head Tank Frame
-4	Piping Overhaul	1	-	o	For Overhaul of Leakage Pipes
<b>112</b>	<b>Effluent Water Line</b>				
-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
<b>113</b>	<b>Product Storage and Transportation</b>				
-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

Date	Description	Amount	Page
1890	Jan 1 Balance	100.00	1
	Jan 10	50.00	2
	Jan 20	25.00	3
	Jan 30	15.00	4
	Feb 10	30.00	5
	Feb 20	40.00	6
	Feb 30	20.00	7
	Mar 10	10.00	8
	Mar 20	5.00	9
	Mar 30	15.00	10
	Apr 10	20.00	11
	Apr 20	10.00	12
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	May 10	15.00	14
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	Jun 20	5.00	18
	Jun 30	5.00	19
	Jul 10	10.00	20
	Jul 20	5.00	21
	Jul 30	5.00	22
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	Oct 10	10.00	29
	Oct 20	5.00	30
	Oct 30	5.00	31
	Nov 10	10.00	32
	Nov 20	5.00	33
	Nov 30	5.00	34
	Dec 10	10.00	35
	Dec 20	5.00	36
	Dec 30	5.00	37
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**STRAW PREPARATION**

**COOKING SECTION**

**SCREENING CLEANING BLEACHING SECTIONS**

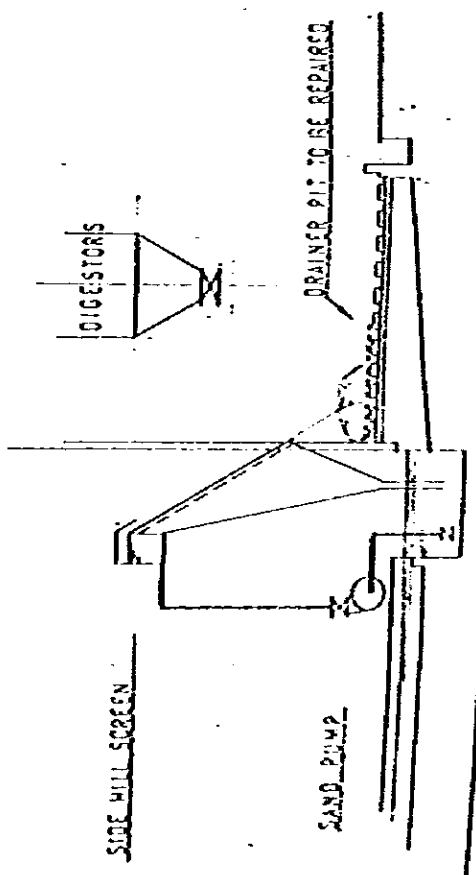


NOTE-4: TO BE REFERRED TO.

NOTE-6: TO BE REFERRED TO.

COWAN 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  
 CAN JUST CLEANING SEPARATOR ETC  
 NOTE-B: CONSISTENCY CONTROLLER FOR BROWN  
 STRAW PULP FEEDING TO PULPER  
 CONSIST OF PHOTO SENSERS AND  
 AUTO ON OFF VALVE



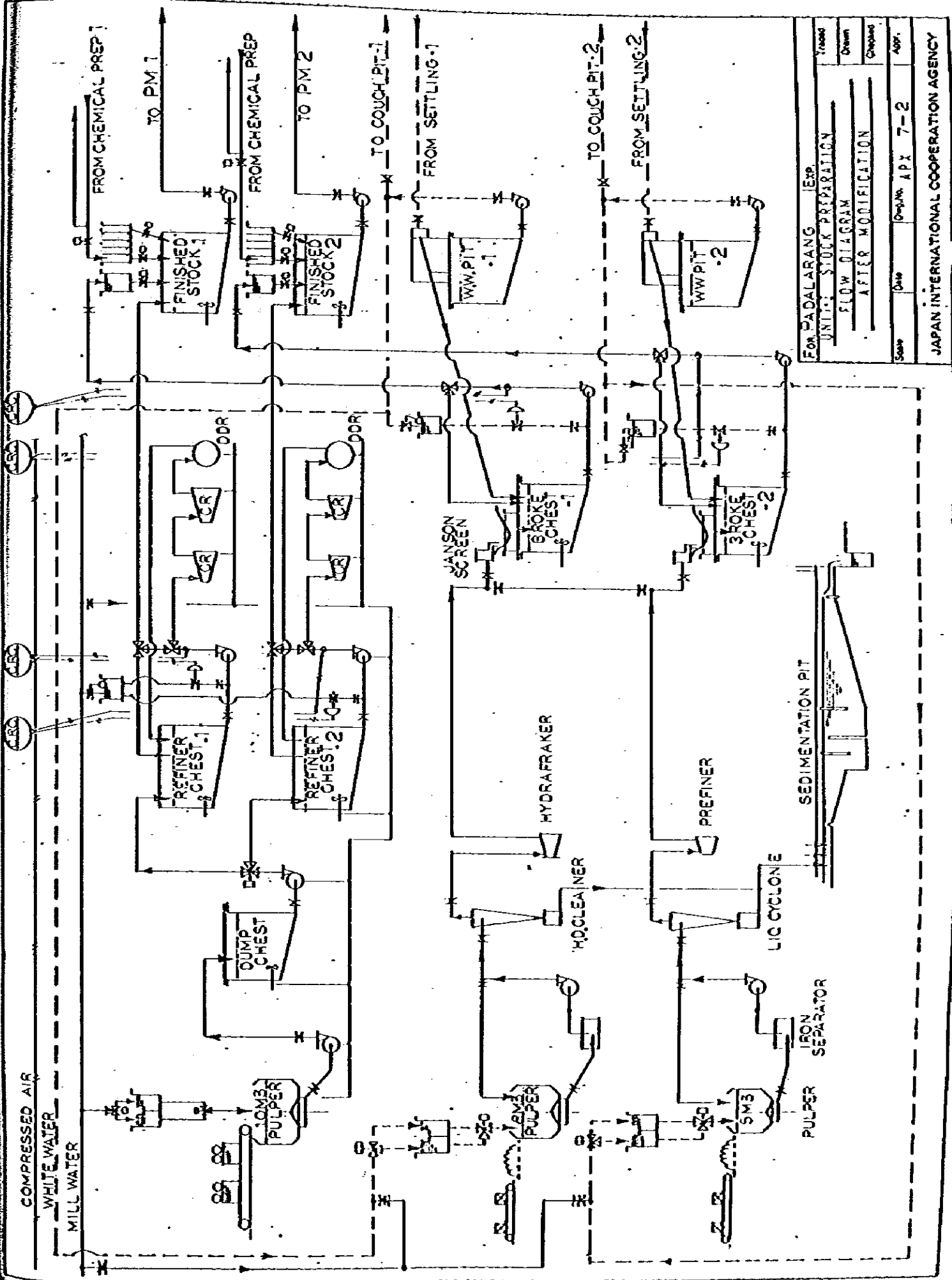
Scale	Date	Drawn	Checked	Appr.
FOR PADJARING IERP				
STRAW PULP PLANT				
FLOW DIAGRAM				
AFTER MODIFICATION				
JAPAN INTERNATIONAL COOPERATION AGENCY				

1947

1947

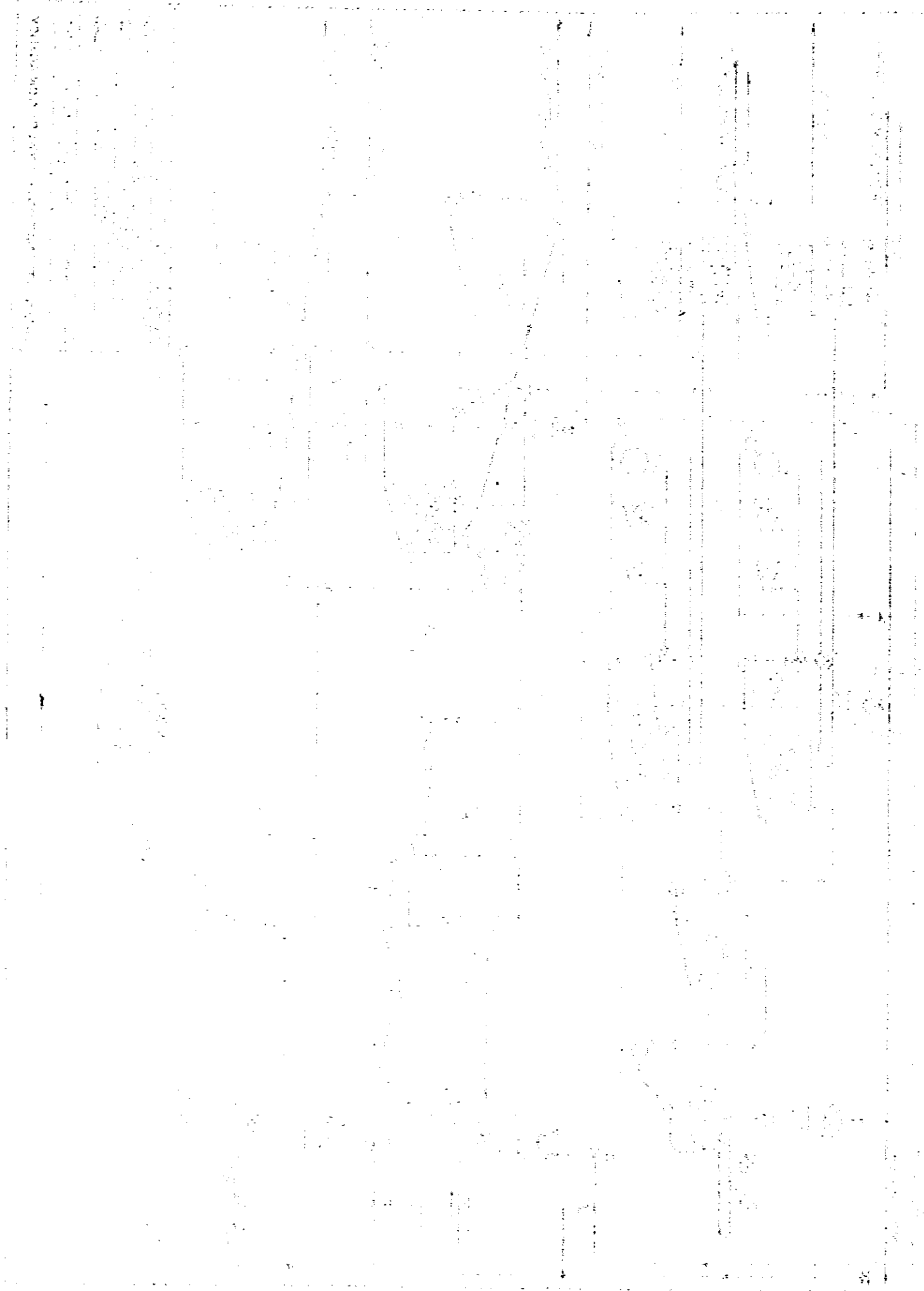
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FOR PADALARANG EXP.		Traced
UNIT: STOCK PREPARATION		Drawn
FLOW DIAGRAM		Checked
AFTER MODIFICATION		
Scale	Date	Drawn: APX 7-2
APR.		

JAPAN INTERNATIONAL COOPERATION AGENCY



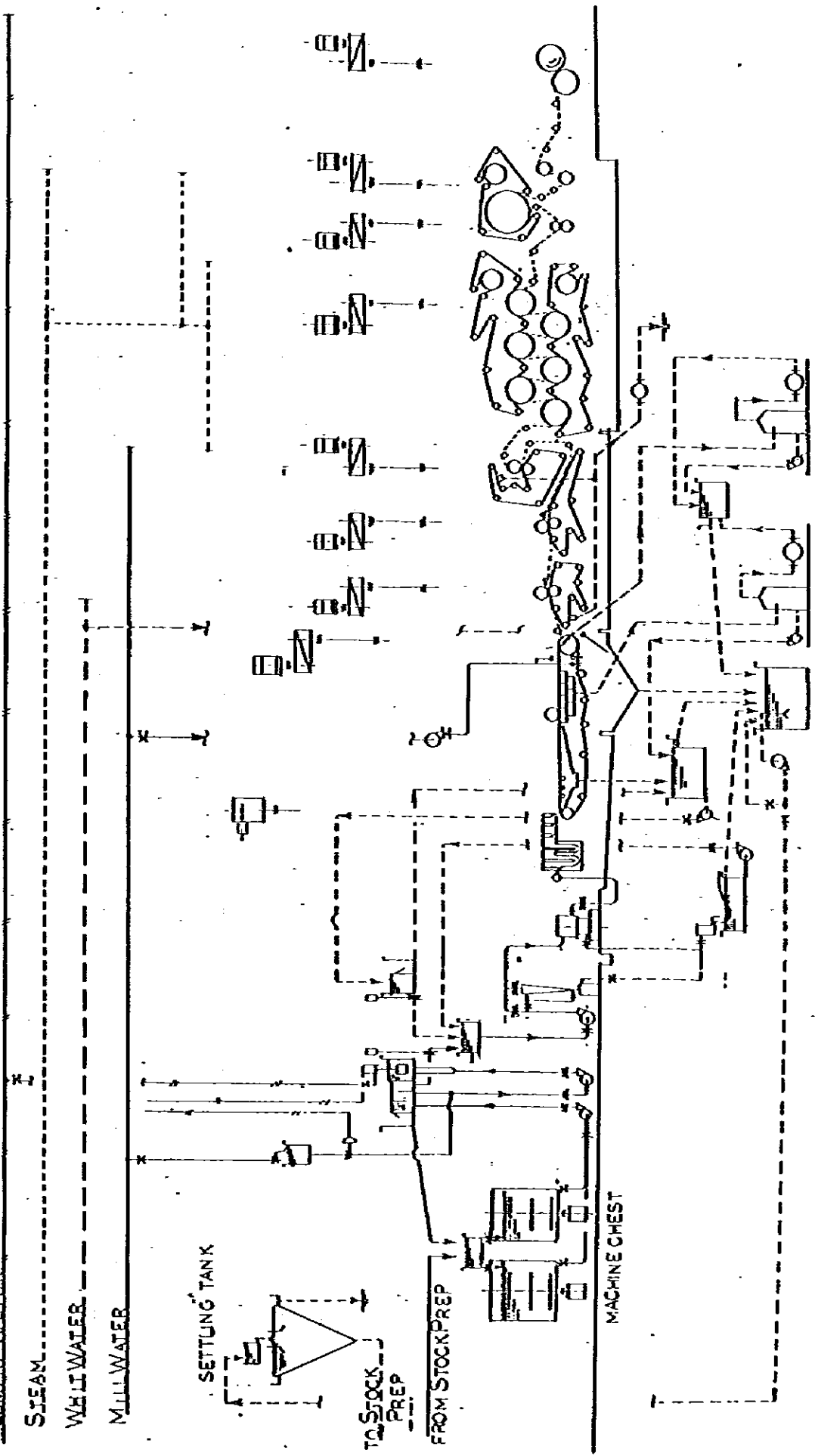
S M SBC

SBC HV HV

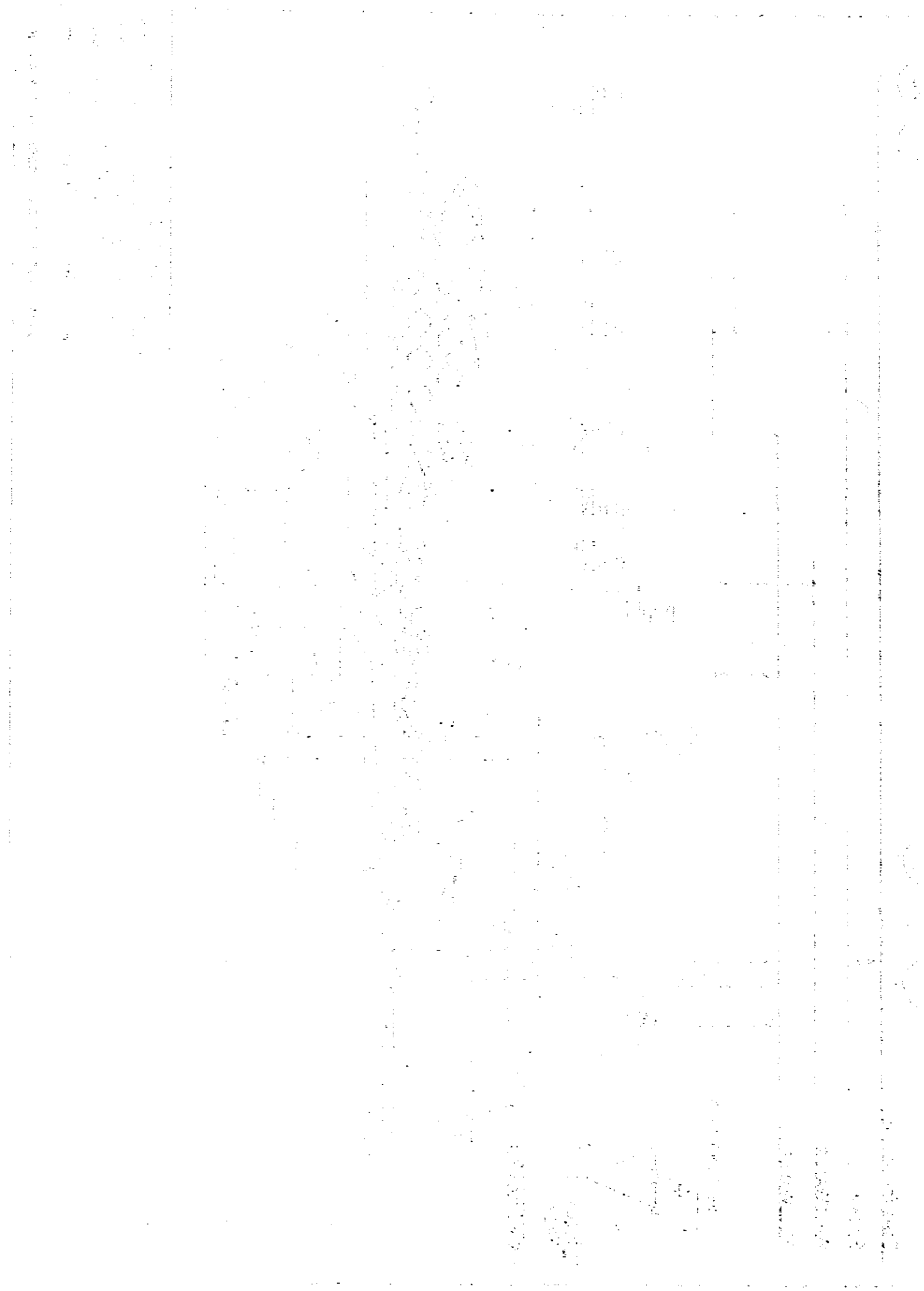
COMPRESSED AIR  
STEAM  
WELL WATER  
MILL WATER

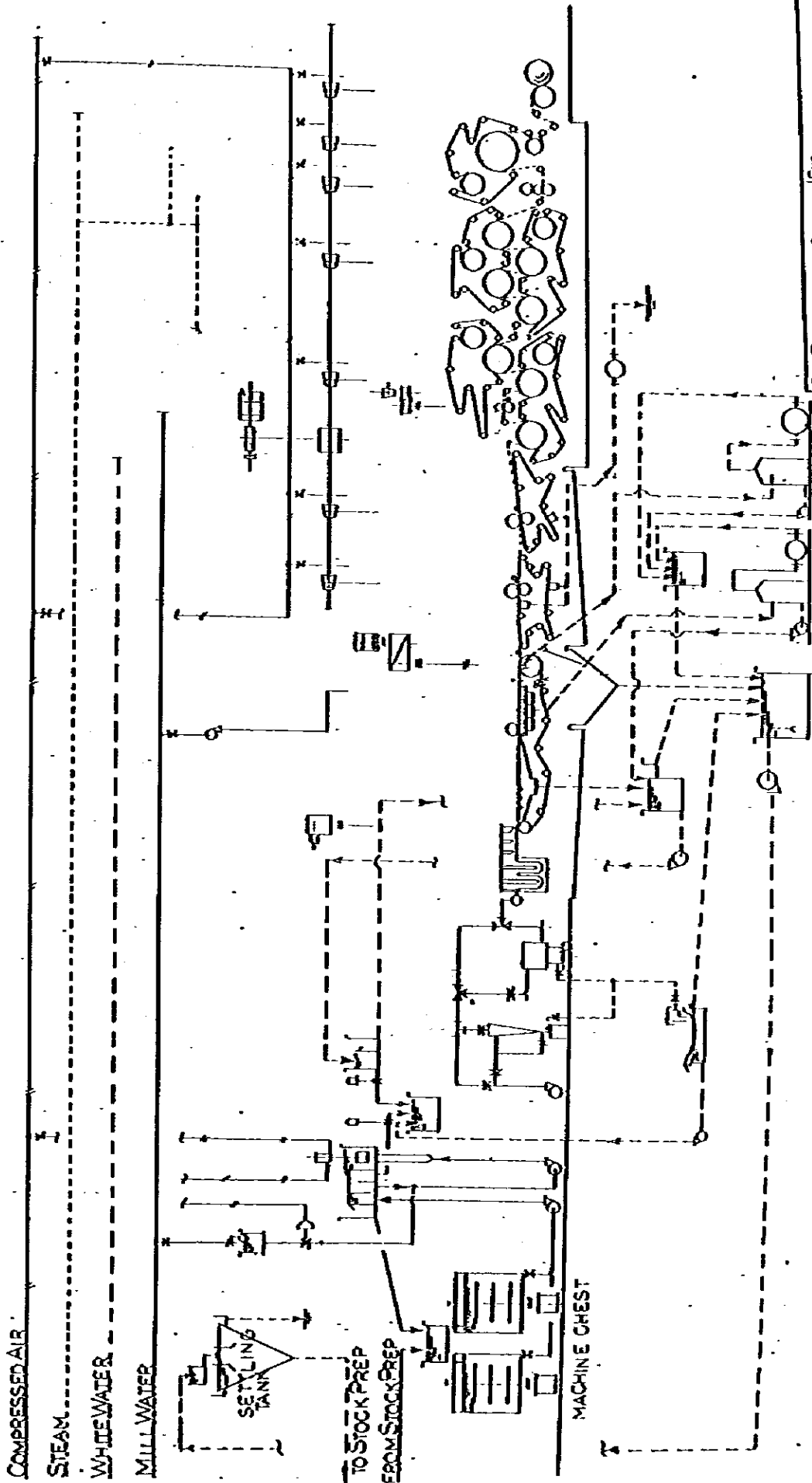
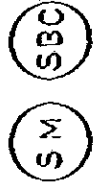
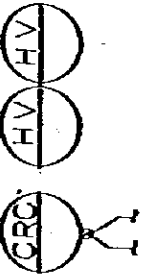
SETTING TANK  
TO STOCK PREP  
FROM STOCK PREP

MACHINE CHEST



For PADALARANG		Exp.
UNIT: PM-1		
FLOW DIAGRAM		
AFTER MODIFICATION		
Scale	Date	Appr.
	Comp. No. A P X 7-3	
JAPAN INTERNATIONAL COOPERATION AGENCY		





PENDING MATTER TO BE MADE CLEAR

NOTE-1 THE POSITION OF CHEMICAL PRESS SHOWN IN THIS DRAWING SHOULD BE RELOCATED BETWEEN NOT AND NO DRYING GROUPS

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

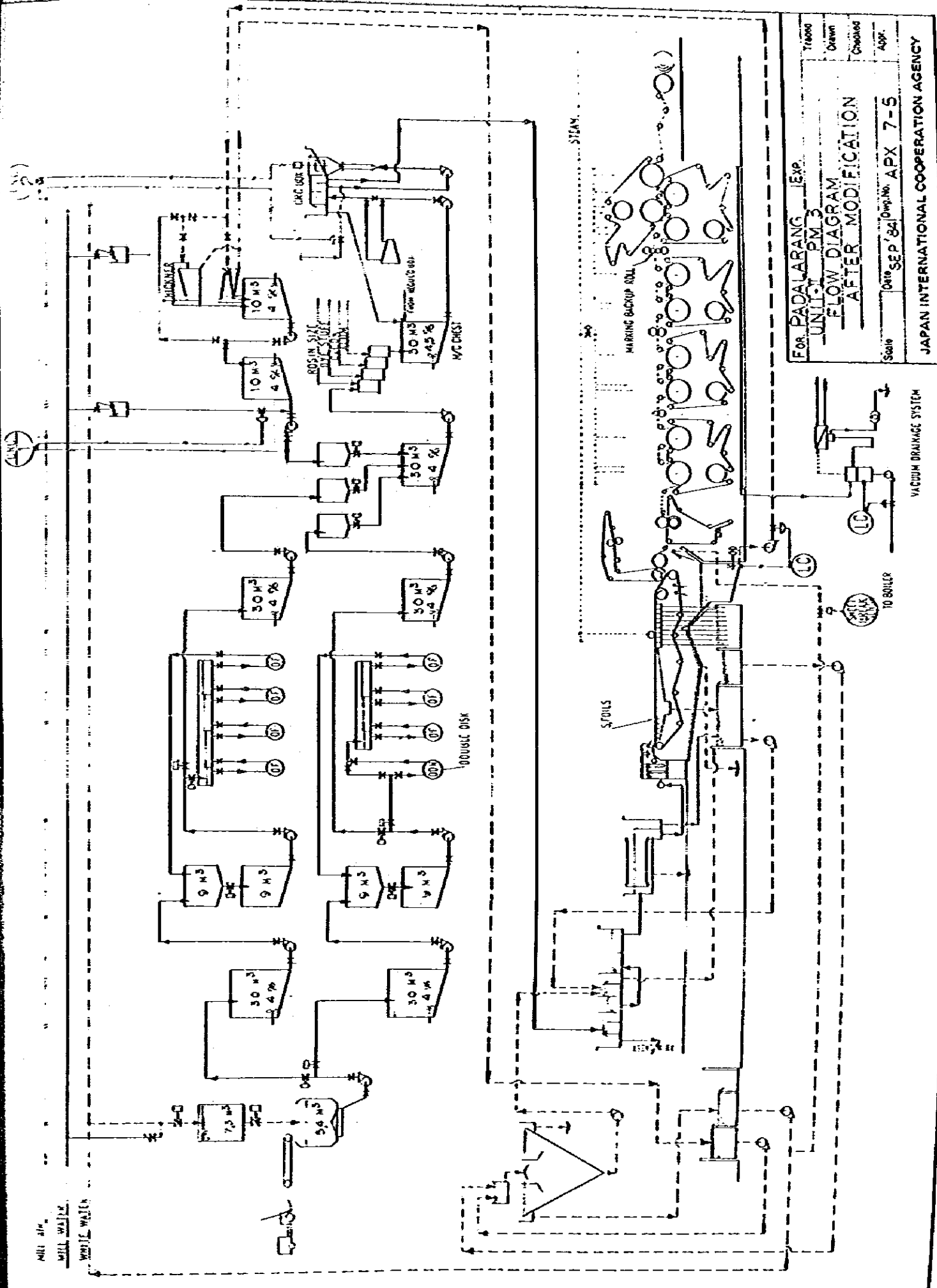
NOTE-3 DRY AIR COMPRESSOR FOR INSTRUMENT SHOULD BE SUPPLIED ADDITIONALLY.

FOR PADALABANG		Exp.
UNIT	PM-2	
FLOW DIAGRAM		
AFTER MODIFICATION		
Scale	Date	Drawn No. A.P.I. - 7 - 4
Checked		APP.
Drawn		
Tracing		

JAPAN INTERNATIONAL COOPERATION AGENCY

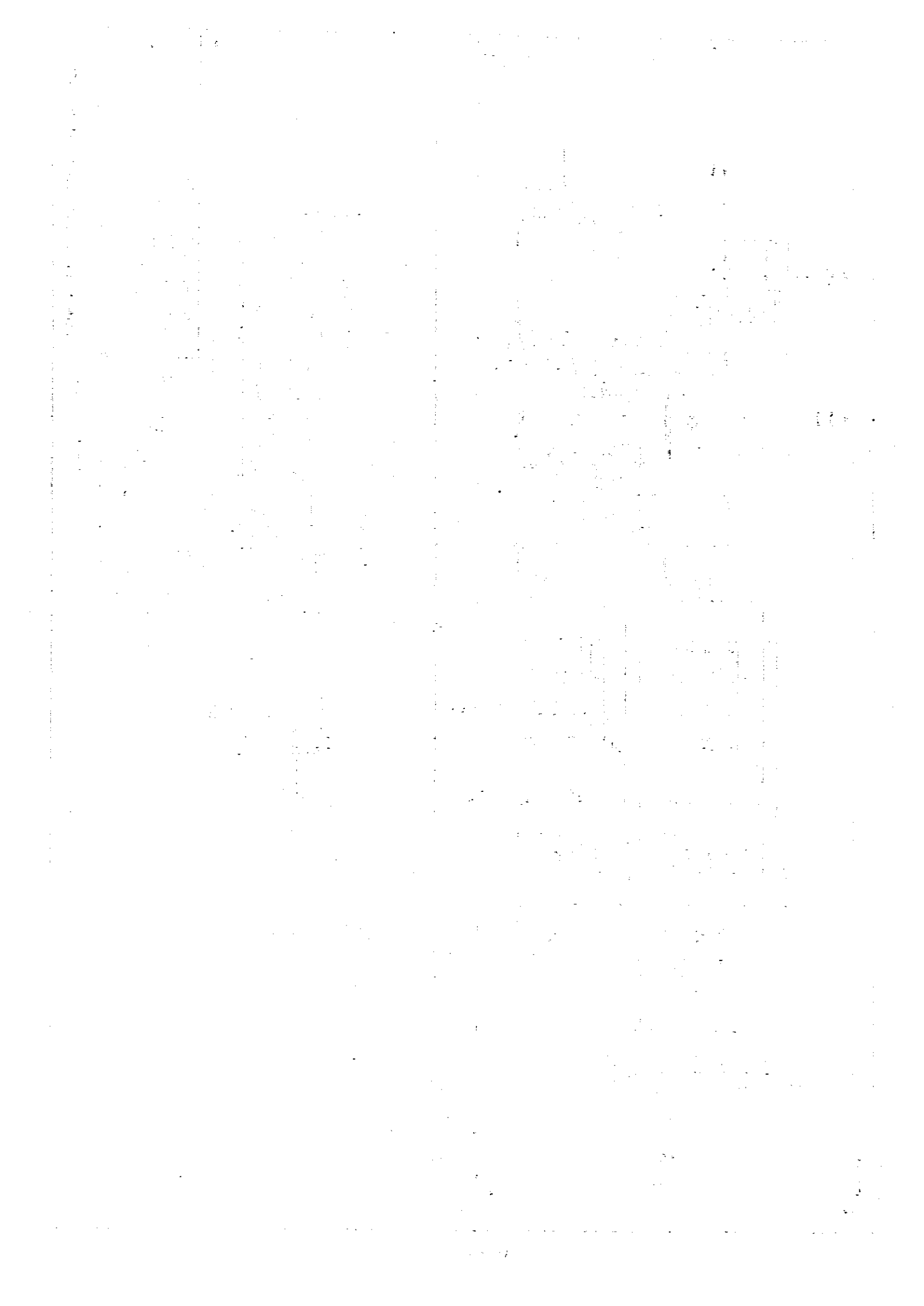
100  
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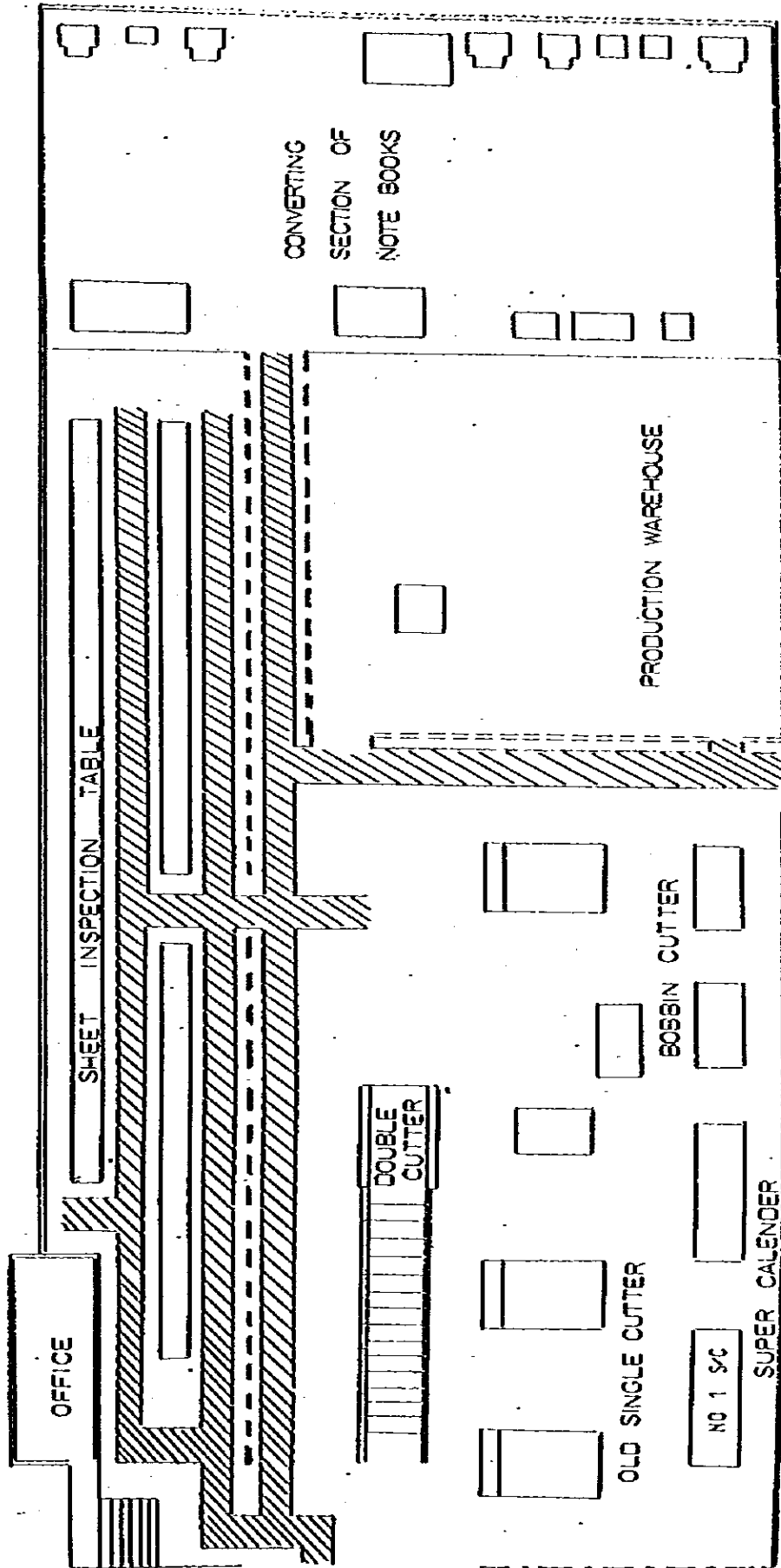


For PADALARANG EXP. T-6000  
 UNIT PM 3  
**FLOW DIAGRAM**  
**AFTER MODIFICATION**  
 Scale 1:100 SEP 84 DWG. No. APX 7-5  
 Drawn Checked Appr.

VACUUM DRAINAGE SYSTEM





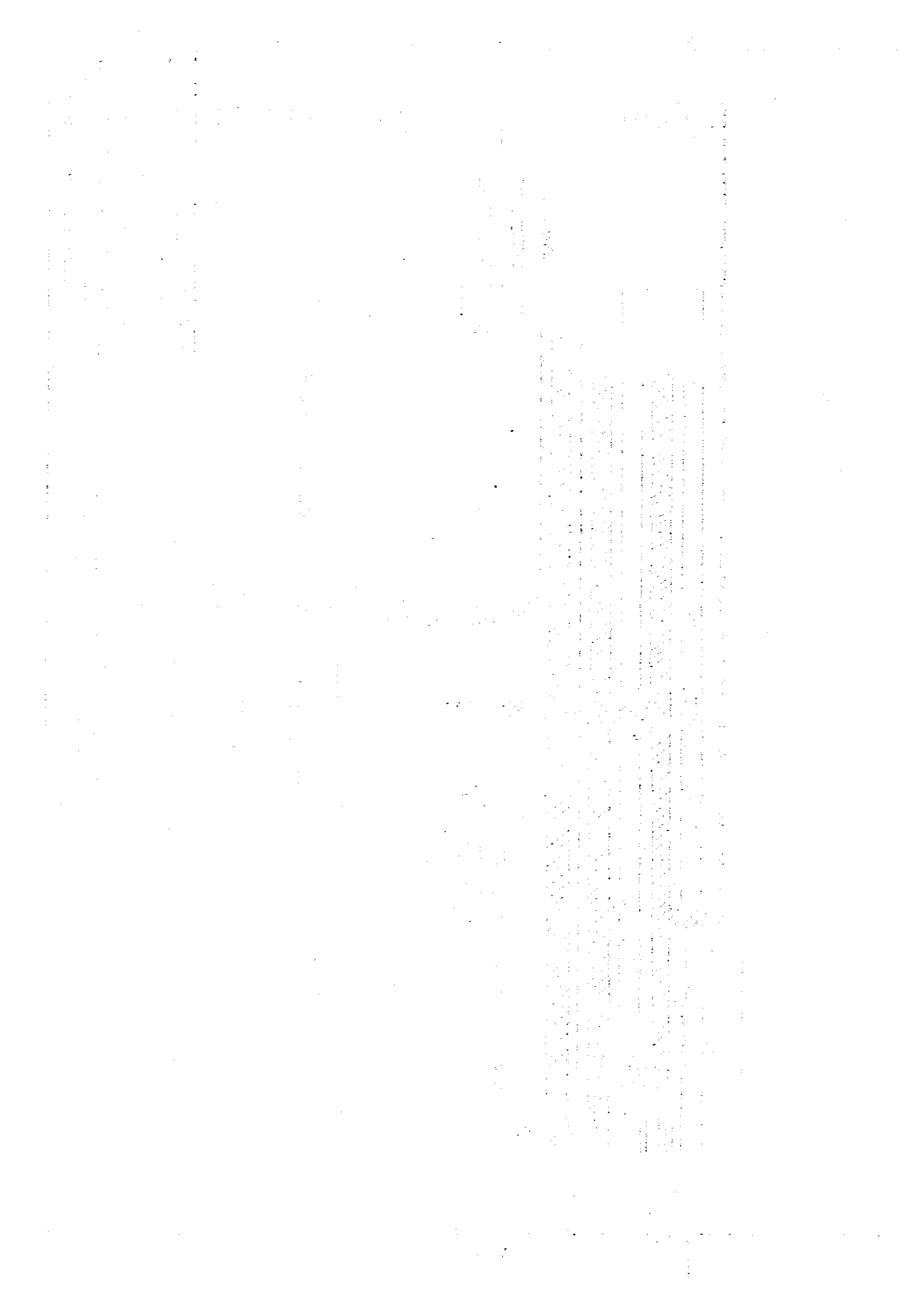


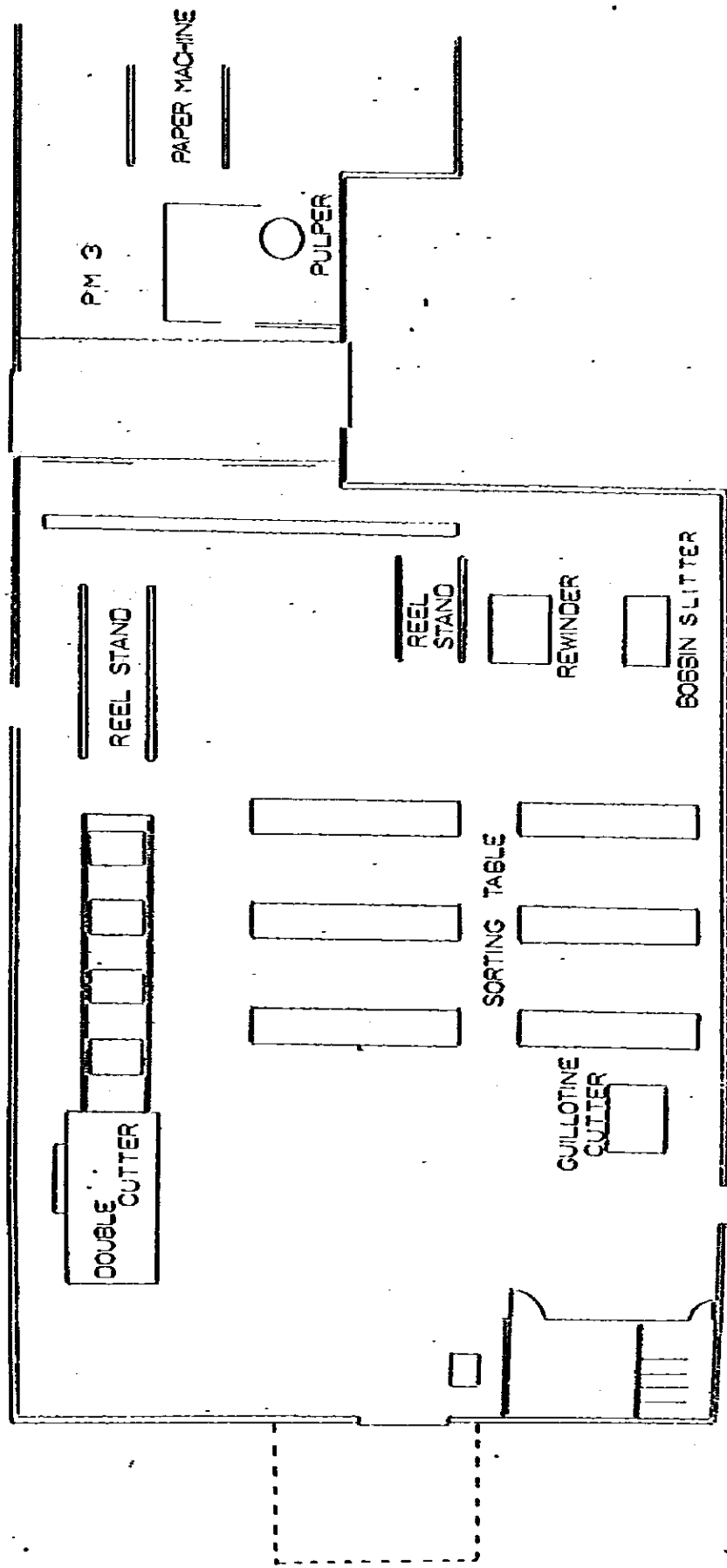
For PADALARANG EXP. \_\_\_\_\_  
 UNIT: ENJINING PLANT \_\_\_\_\_  
 IMPROVING LAYOUT \_\_\_\_\_  
 Scale \_\_\_\_\_ Date \_\_\_\_\_  
 Appr. \_\_\_\_\_  
 7-6  
 JAPAN INTERNATIONAL COOPERATION AGENCY

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 PADALABANG EXP.  
 UNIT # PM 3 FINISHING PLANT  
 IMPROVING LAYOUT

Date	Drawn	Checked	Appr.

Scale: \_\_\_\_\_  
 Corp. No. A P X 7-7

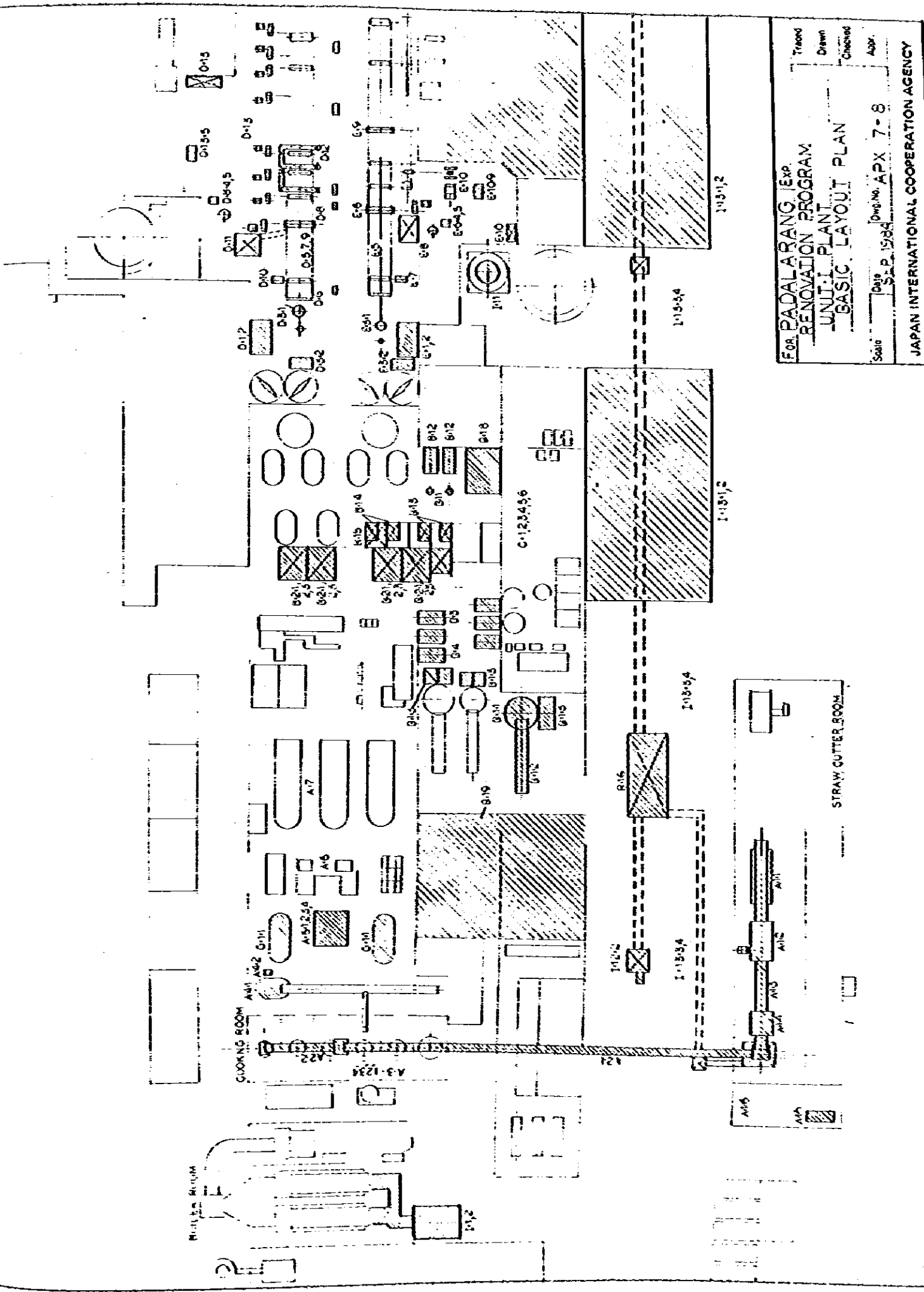
JAPAN INTERNATIONAL COOPERATION AGENCY

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. This section also outlines the various methods and tools used to collect and analyze data, ensuring that the information is reliable and up-to-date.

2. The second part of the document focuses on the implementation of these practices across different departments and projects. It provides detailed instructions on how to set up systems for data collection and analysis, including the selection of appropriate software and the training of staff. This section also addresses common challenges and offers solutions to ensure a smooth transition to the new system.

3. The third part of the document discusses the ongoing monitoring and evaluation of the implemented practices. It highlights the need for regular reviews to assess the effectiveness of the systems and to make necessary adjustments. This section also includes a discussion on the importance of communication and collaboration between different teams to ensure that everyone is working towards the same goals.

4. The final part of the document provides a summary of the key findings and recommendations. It reiterates the importance of maintaining accurate records and implementing robust systems for data collection and analysis. The document concludes with a call to action, encouraging all stakeholders to take the necessary steps to ensure the success of the project.

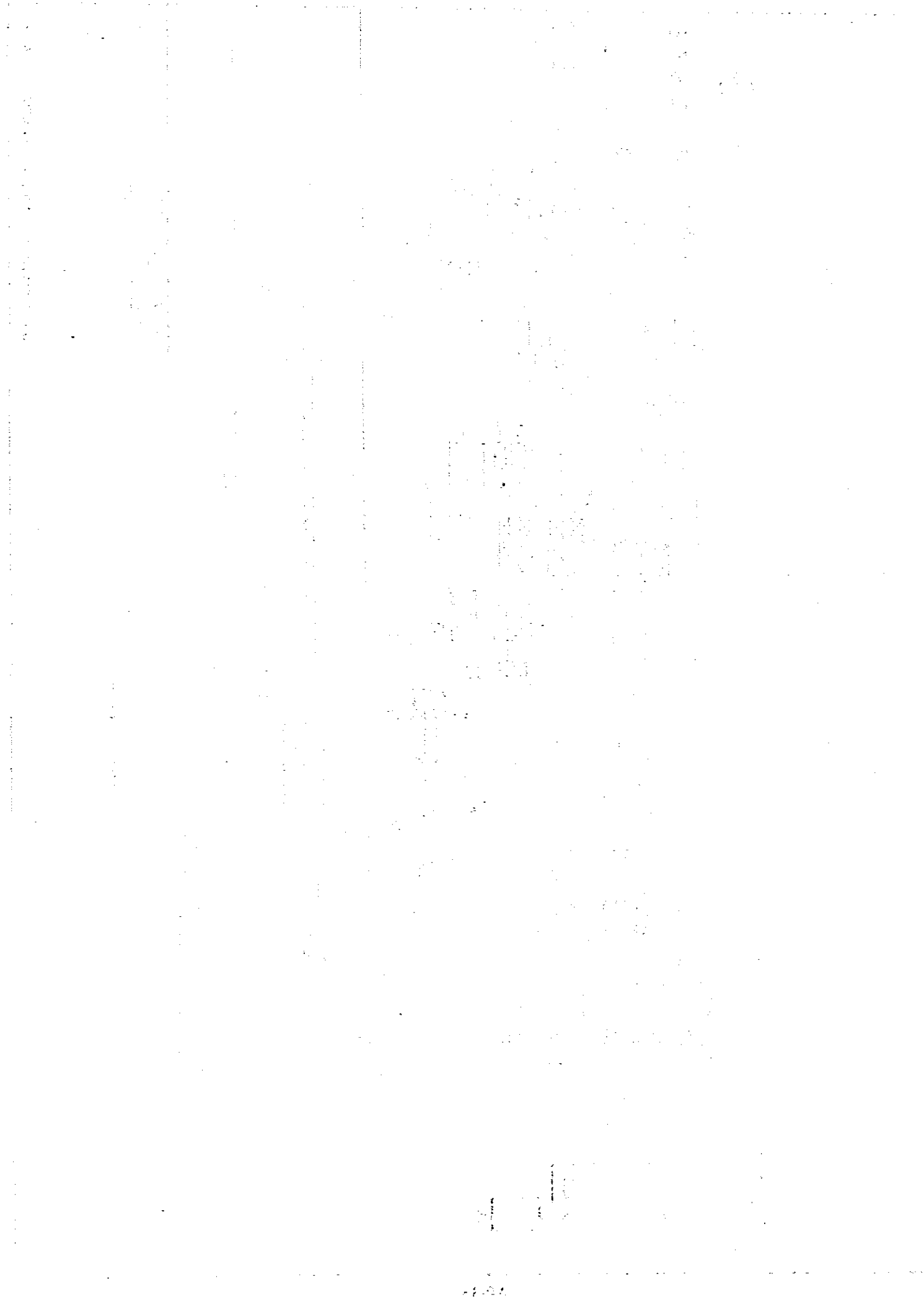


For: **PADALARANG, I. Exp.**  
**RENOVATION PROGRAM**  
**UNIT 1 PLANT**  
**BASIC LAYOUT PLAN**

Scale: \_\_\_\_\_ Date: \_\_\_\_\_ Draw. No. APX 7-8  
 S. P. 1984 App.

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**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 PPM, 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

JICA