

# WRIGHT ENGINEERS LIMITED



Phone: 684-9371 • Cable "WRIGHTENG" • Telex: 04-54367

1444 Alberni Street, Vancouver, British Columbia, Canada, V6G 2Z4

Project No. 1338-100  
November 27, 1984.

Archer, Cathro & Associates (1981) Ltd.  
1016-510 Hastings Street  
Vancouver, B.C.  
V6B 1L8

Attention: Mr. Alan R. Archer

Dear Sirs:

In accordance with your request of Tuesday, November 13, 1984, we are pleased to submit herewith our Evaluation of the Mount Nansen Mine Facilities located near Carmacks, Yukon Territory.

We trust this evaluation suits your requirements.

Yours very truly,

**WRIGHT ENGINEERS LIMITED**

F.A.R. Willis, P.Eng.  
Vice President - Operations

FARW/AK/sd

MN  
R 199

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**EVALUATION OF THE  
MOUNT NANSEN MINE  
SURFACE PLANT, WATER SYSTEM AND MILL FACILITIES  
CARMACKS, YUKON TERRITORY**



**WRIGHT ENGINEERS LIMITED**  
**VANCOUVER** **CANADA**

**PROJECT NO. 1338-100**

**NOVEMBER, 1984**

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**SECTION 1**  
**TERMS OF REFERENCE**



## SECTION 1

### TERMS OF REFERENCE

Wright Engineers Limited were requested by Mr. Alan R. Archer, Director of Archer, Cathro and Associates, to visit the plant facilities of Mount Nansen Mine near Carmacks, Yukon Territory and evaluate the as is worth of the Surface Plant, the Water System and the Mill components.

The original facilities were built in 1967 and 1968 and were brought to production in 1968 which resulted in nine months operation only. A second attempt at operating was made in 1976 which lasted less than three months. Since this last date the plant was closed permanently.

Assumptions used to arrive at an evaluation are noted in Section 3.



**SECTION 2**  
**SUMMARY OF EVALUATION**



**SECTION 2**  
**SUMMARY OF THE EVALUATION**

Certain assumptions were made in evaluating the plant facilities as noted in Section 3.

The main points were that the worth of all the components is established in place not considering relocation; that the facilities will be upgraded in the near future (within one year); and that surveillance will be initiated as soon as possible to prevent further scavenging and equipment stripping.

It is Wright Engineers Limited's opinion that the present, as is worth of the facilities as outlined in Section 3, is \$3,122,850.00.

Within the constraints of time and very limited available information, it is impossible to produce this estimate within an accuracy of less than plus or minus 30%, at 85% confidence.





**SECTION 3**  
**EVALUATION**



**SECTION 3**  
**EVALUATION**

**ASSUMPTIONS MADE FOR THE EVALUATION**

- (a) The equipment and the plant have been evaluated as to today's worth in place at Mount Nansen, Yukon Territory.
- (b) The evaluation is based on a brief visual inspection by professional engineers, experts in this type of work.
- (c) The evaluations of the areas contained herein are approximations rather than detailed calculations. They have been based on experience and published data for similar mining operations.
- (d) The Recreation Building is not included.
- (e) Underground mine surface trestle, mine equipment repair building and rolling stock were not considered as part of the evaluation.
- (f) Plant roads, service roads and yard areas were not considered as part of the evaluation.
- (g) Tailings ponds and reclaim were not included.
- (h) The estimated values are in 1984 Canadian dollars.
- (i) The lighting installation is part of the building values.

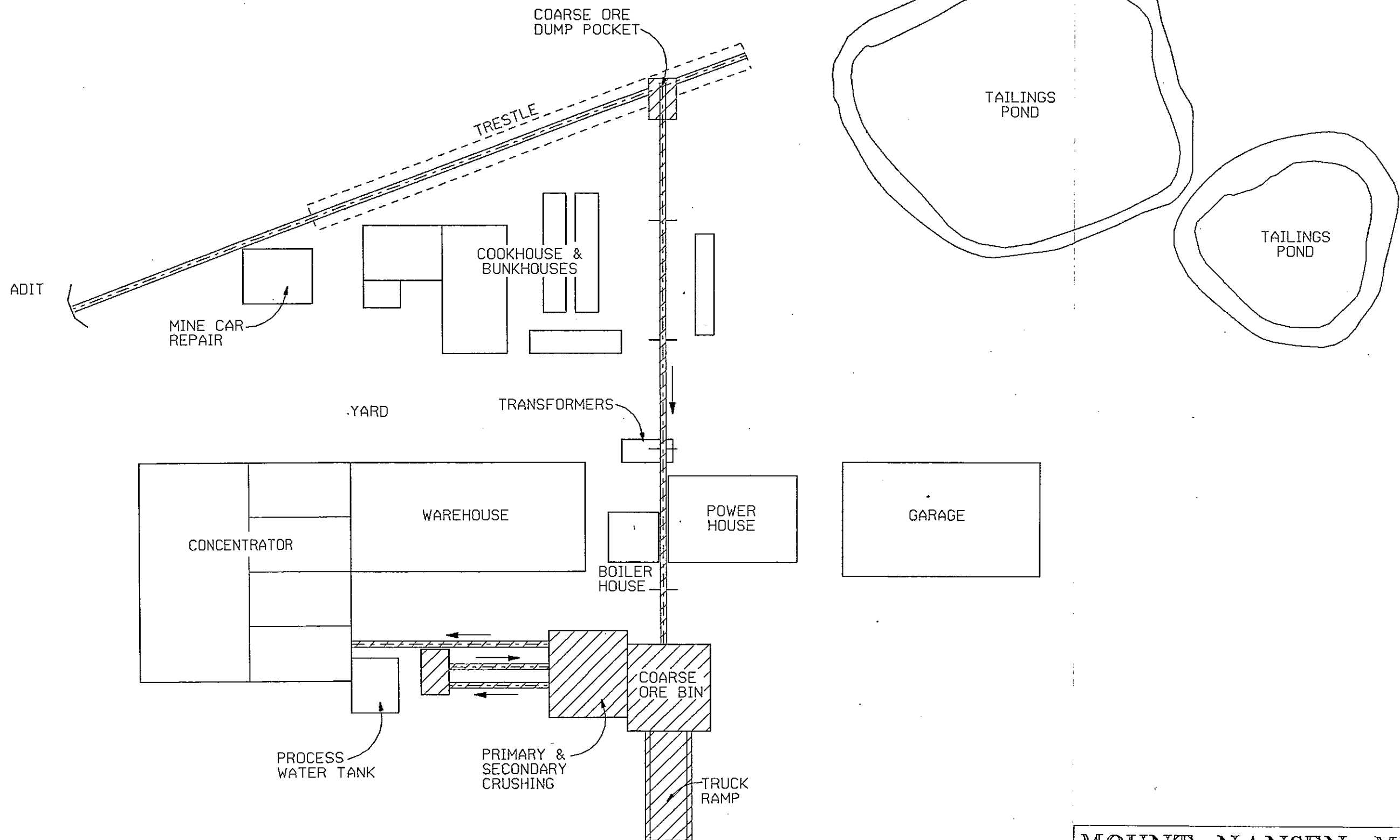


**SECTION 3 - EVALUATION**

**SITE LAYOUT**

**MILL**





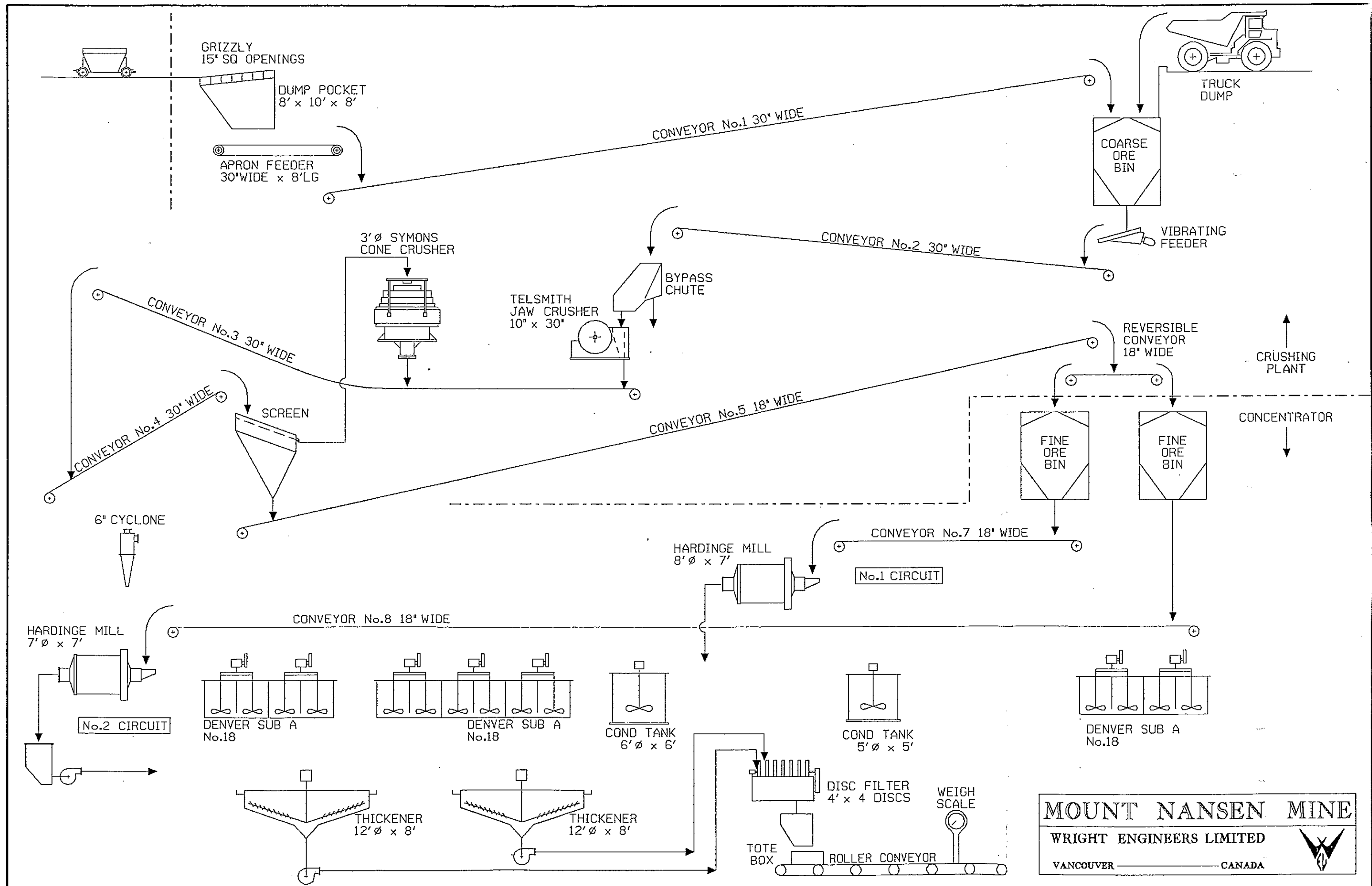
MOUNT NANSEN MINE  
WRIGHT ENGINEERS LIMITED  
VANCOUVER ————— CANADA

**SECTION 3 - EVALUATION**  
**SINGLE-LINE DIAGRAM**  
**OF THE ASSUMED PROCESS**



SECTION 3 - EVALUATION  
SINGLE-LINE DIAGRAM  
OF THE ASSUMED PROCESS





**MOUNT NANSEN MINE**  
 WRIGHT ENGINEERS LIMITED  
 VANCOUVER — CANADA

### SECTION 3 - DETAILS OF EVALUATION

#### AREA 1.1 OFFICE

Item	Description	Estimated Value	Comments
1.1.	Concrete foundations	30,000	Heating plant included.
1.1.1	Insulated building frame and partitions	38,400	Part of insulation, side paneling, floor decking missing (stripped).
1.1.3	Roofing	2,400	Roofing past guarantee period.
1.1.4	Finishes	10,000	Interior needs finishing and fixtures, windows and doors missing, exterior stairs to be repaired.
1.1.5	Services	10,000	Heating and lighting needs overhaul and replacement.





**SECTION 3 - DETAILS OF EVALUATION**

**AREA 1.2 COOKHOUSE**

<b>Item</b>	<b>Description</b>	<b>Estimated Value</b>	<b>Comments</b>
1.2.1	Concrete foundations	-	The whole bulding is stripped.
1.2.2	Insulated bulding, shell and partitions	24,000	Finishes and fixtures very minimal.
1.2.3	Roofing	1,800	Services have to be overhauled.
1.2.4	Finishes	3,600	This bulding is in the office complex area (up on the hill).
1.2.5	Services	9,000	



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 1.3 BUNKHOUSE

Item	Description	Estimated Value	Comments
1.3.1	Building in the office complex area (Recreation Building)	24,000	This building is being dismantled. (As is value estimated only).
1.3.2	Bunkhouse complex in the mill yard area	-	The mill yard are complex has negative value if any. (Cost of disposal).



**SECTION 3 - DETAILS OF EVALUATION**

**AREA 1.4 ASSAY OFFICE**

<b>Item</b>	<b>Description</b>	<b>Estimated Value</b>	<b>Comments</b>
1.4.1	Concrete	9,000	This building is badly stripped. All services and finishes missing.
1.4.2	Building	9,000	
1.4.3	Finishes and services	-	
1.4.4	Equipment and supplies	-	No value.



SECTION 3 - DETAILS OF EVALUATION

AREA 2.1 TANKHOUSE AND TANK

Item	Description	Estimated Value	Comments
2.1.1	Concrete	13,800	Unfinished building, usable tank.
2.1.2	Building	14,900	
2.1.3	Tank	42,900	Wood stave tank in usable condition.
2.1.4	Roofing	1,000	
2.1.5	Finishes	-	



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 2.2 PIPELINE

Item	Description	Estimated Value	Comments
2.2.1	Structural content	-	
2.2.2	Pipeline, 4", Schedule 40, Victaulic joints from pumphouse to storage tank and feed to plant. (Approx. 3 km).	25,000	Only random pieces of pipe were inspected. Some were corroded, some missing. Salvage only.
2.2.3	Electrical transmission line	3,000	Salvage only



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 2.3 PUMPHOUSE AND PUMPS

Item	Description	Estimated Value	Comments
2.3.1	Concrete	11,000	Unfinished bulding
2.3.2	Building	10,000	
2.3.3	Roofing	750	
2.3.4	Pumps (2) Lane size 8, type URHC and RT angle drive, no motor, and dismantled  Lane size 8, type DRHC, no motor, dismantled.	3,000	No switchgear or wiring. No motors. Would need extension work to rehabilitate, scrap value.



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 3.1 CRUSHING PLANT

Item	Description	Estimated Value	Comments
3.1.1	Coarse ore dump pocket building	29,000	Needs much repair.
3.1.2	Coarse ore conveyor (gallery, supports and tables)	221,000	Minimum repair needed.
3.1.3	Coarse ore bin (building and platforms)	99,000	Building and bin do not need much repair. Truck ramp to be reinforced.
3.1.4	Crushing building (building and platforms)	247,000	Needs reasonable amount of repair. Includes overhead crane components.
3.1.5	Fine ore conveyors (galleries, supports, tower, tables, etc.)	60,000	Minimum repair required
3.1.6	Apron feeder, 30" wide x 8'-0" centres gear driven.	4,000	Partially dismantled. Second hand unit badly worn with rubber conveyor belt installed to cover worn pans. No motor.
3.1.7	30' wide conveyor, approximately 200' x 50' rise (#1 conveyor)	32,000	Generally fair condition, drive stripped, no motor.
3.1.8	Vibrating feeder, 42" x 48"	12,000	Appears good.
3.1.9	36" conveyor, 40' x 10' rise, (#2 conveyor), including chutework	12,000	All components apart from the belt are in good condition. Belt needs replacing.



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 3.1 CRUSHING PLANT - (Cont'd.)

Item	Description	Value	Comments
3.1.10	Jaw crusher, 10 x 30, Telsmith	37,000	Probably new in 1967, appears in good shape including motor. There is a new eccentric drive shaft on the floor by the crusher.
3.1.11	30" conveyor, 60' x 15 rise (#3 conveyor)	18,000	Skirted for approximately 30' of length, good condition.
3.1.12	Dust control fan and ducting	-	Poor condition. Will need replacing.
3.1.13	30" conveyor, 50' x 15' rise (#4 conveyor)	16,000	Good condition
3.1.14	4 x 10 Dillon screen, 2 deck top 1" opening, bottom 3/8" opening.	8,000	Appears to be in good shape.
3.1.15	18" conveyor, 120' x 32' rise (#5 conveyor)	15,000	Good condition.
3.1.16	18" conveyor, 23' centres, horizontal, reversible (#6 conveyor)	5,000	Good condition.
3.1.17	3' Symons cone crusher	53,000	Appears to be in good condition.
3.1.18	Heaters for crushing plant, hot water type with fan.	4,500	
3.1.19	Electrical switchgear and wiring for crushing plant	38,000	
3.1.20	Piping in crushing plant	26,000	Water, air, hot water and return.



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 3.2 CONCENTRATOR

Item	Description	Estimated Value	Comments
3.2.1	Building concrete	90,000	Reasonable condition.
3.2.2	Interior concrete	48,000	Usable, includes all equipment foundations.
3.2.3	Building shell	360,000	Minimum repair required.
3.2.4	Interior steel	157,000	Platforms, stairs, etc.
3.2.5	Fine ore bins (2)	30,000	Two bins (crib type) in good condition.
3.2.6	Tankage	36,000	Two thickeners, one water, one conditioner, wood stave tanks (all usable).
3.2.7	Cladding	35,000	Minimum repair required.
3.2.8	New building addition	200,000	Concrete and building shell.
3.2.9	18" conveyor, 35' x 10 rise, (#7 conveyor), (#1 circuit)	7,000	Chutes included.
3.2.10	8 x 7 Hardinge ball mill (#1 circuit)	41,000	Not in operable condition. No liners. Old type riveted construction. Direct drive by wound rotor motor approx. 250 hp.
3.2.11	18" conveyor, 35' x 20 rise, (#8 conveyor), (#2 circuit)	7,000	Chutes included.



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 3.2 CONCENTRATOR - (Cont'd.)

Item	Description	Estimated Value	Comments
3.2.12	7 x 7 Hardinge ball mill (#2 circuit)	62,000	In operating condition with discharge trommel, indirect drive through gear-box and high speed motor, approx. 200 hp.
3.2.13	10" cyclone, (#2 circuit)	2,000	Appears in good condition.
3.2.14	1 bank Denver Sub A #18 flotation cells - 4 cells (#1 circuit)	12,000	All cells appear to be in good condition.
3.2.15	1 bank Denver Sub A #18 flotation cells - 10 cells arranged 4 cells - 6 cells (#2 circuit)	26,000	
3.2.16	Conditioner tank agitator, 5 x 5 (#1 circuit)	2,000	
3.2.17	Conditioner tank agitator, 6 x 6 (#2 circuit)	2,300	
3.2.18	(2) thickener tank agitators, 12'-0" dia. x 8	11,000	
3.2.19	4'-0" dia. x 4 disc filter, c/w vacuum receiver, vacuum pump and discharge hopper	6,000	Disc filter needs extensive work (rotary valve missing). Scrap value only. Original vacuum pump appears to be worn out but a replacement in apparently reasonable condition is on basement floor. No motors.
3.2.20	Roller conveyor and Toledo weigh scale	3,000	Scale needs attention.



SECTION 3 - DETAILS OF EVALUATION

AREA 3.2 CONCENTRATOR - (Cont'd.)

Item	Description	Estimated Value	Comments
3.2.21	Piping in concentrator	32,000	Process, water, heating and return air.
3.2.22	Electrical switchgear and wiring	77,000	MCC obsolete. Spares may be a problem.
3.2.23	Heaters in concentrator	6,500	
3.2.24	Process pumps, approx. 4 - 3 x 3 SRL Denver 2 - 1½ x 1½ SRL Denver 2 - Sump 2 x 2	5,000	Some motors missing.
3.2.25	Reagent equipment feeders, etc.	1,000	



### SECTION 3 - DETAILS OF EVALUATION

#### AREA 3.3 POWERHOUSE AND COMPRESSORS

Item	Description	Estimated Value	Comments
3.3.1	Concrete foundations	36,000	Includes interior concrete
3.3.2	Building	60,000	All structural work included.
3.3.3	Cladding	15,000	
3.3.4	(3) Diesel generators Tamper syn. gen. 250 kW, 440 volt, Model B6413G - 2 MVDAEM, 312 KVA Engine - Waukesha, F190, 5 DSIU/7x8/1-4 governed at 1200 rpm	90,000	All three have cylinder heads off. M. Phillips says local residents who worked at the mine say that these heads require constant attention. Exhaust complete with waste heat boilers for heating.
3.3.5	Caterpillar D342C/6 cyl., 8-3/4" x 8", 245 hp generator set	27,000	
3.3.6	Compressor Ingersol Rand, XVHE 2, 360 rpm, 19½ x 12 x 10, 100 psi.	40,000	With integral motor.
3.3.7	Compressor Ingersol Rand, XVHE 2, 500 rpm, 15 x 9 x 8, 100 psi.	35,000	Belt drive including motor.
3.3.8	Compressor Ingersol Rand, XVHV 2, 375 rpm, 17 x 10½ x 10, 100 psi.	35,000	Belt drive including motor.



**SECTION 3 - DETAILS OF EVALUATION**

**AREA 3.3 POWERHOUSE AND COMPRESSORS - (Cont'd.)**

Item	Description	Value	Comments
3.3.9	Hotwater heater, Volcano, G60-201, 15 psi	14,000	Good condition.
3.3.10	Electrical switchgear and wiring, including substatin and distribution system.	74,000	
3.3.11	Piping in compressor house including air receiver.	23,000	



SECTION 3 - DETAILS OF EVALUATION

AREA 3.4 WAREHOUSE

Item	Description	Estimated Value	Comments
3.4.1	Concrete	18,000	Floor needs replacement.
3.4.2	Building shell	60,000	Usable condition, doors needed.
3.4.3	Cladding	15,000	Minimum repair required.
3.4.4	Contents of warehouse	2,000	Some bins and shelving. One casing for fresh water pumping. Most of the contents can only be considered scrap.
3.4.4	Heaters and piping	3,500	



**SECTION 3 - DETAILS OF EVALUATION**

**AREA 3.5 GARAGE**

<b>Item</b>	<b>Description</b>	<b>Estimated Value</b>	<b>Comments</b>
3.5.1	Concrete	18,000	Floor needs repair.
3.5.2	Building	45,000	Includes overhead crane components.
3.5.3	Cladding	15,000	Doors need repair.
3.5.4	Overhead crane	1,000	Only crane beam left (someone has removed the crane mechanism).
3.5.5	Heaters and piping	2,500	

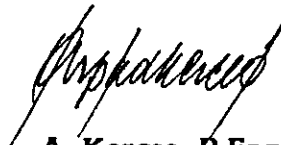


SUBMITTED BY

WRIGHT ENGINEERS LIMITED



K. Morton, P.Eng.



A. Kercso, P.Eng.

VANCOUVER, B.C.  
NOVEMBER 27, 1984.

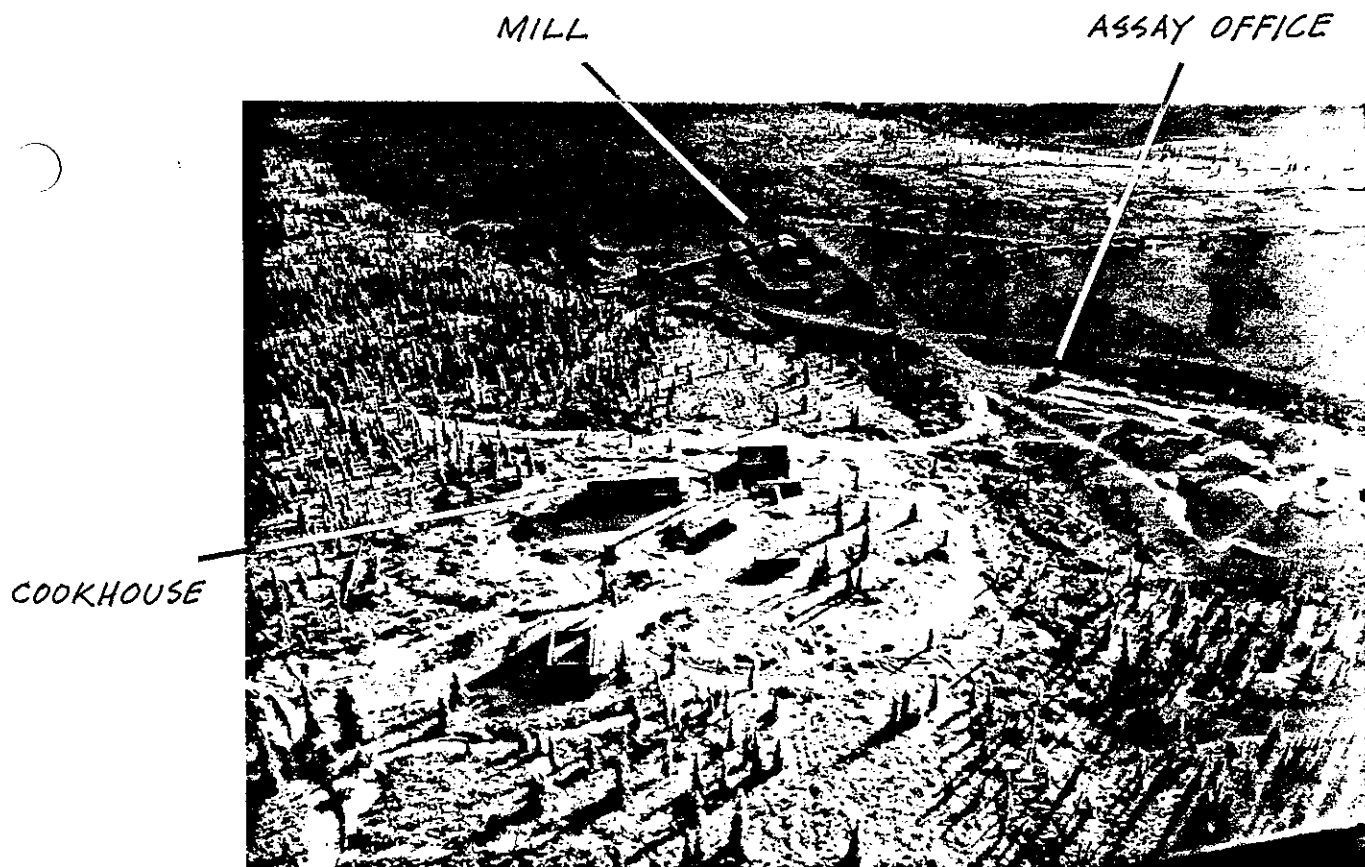




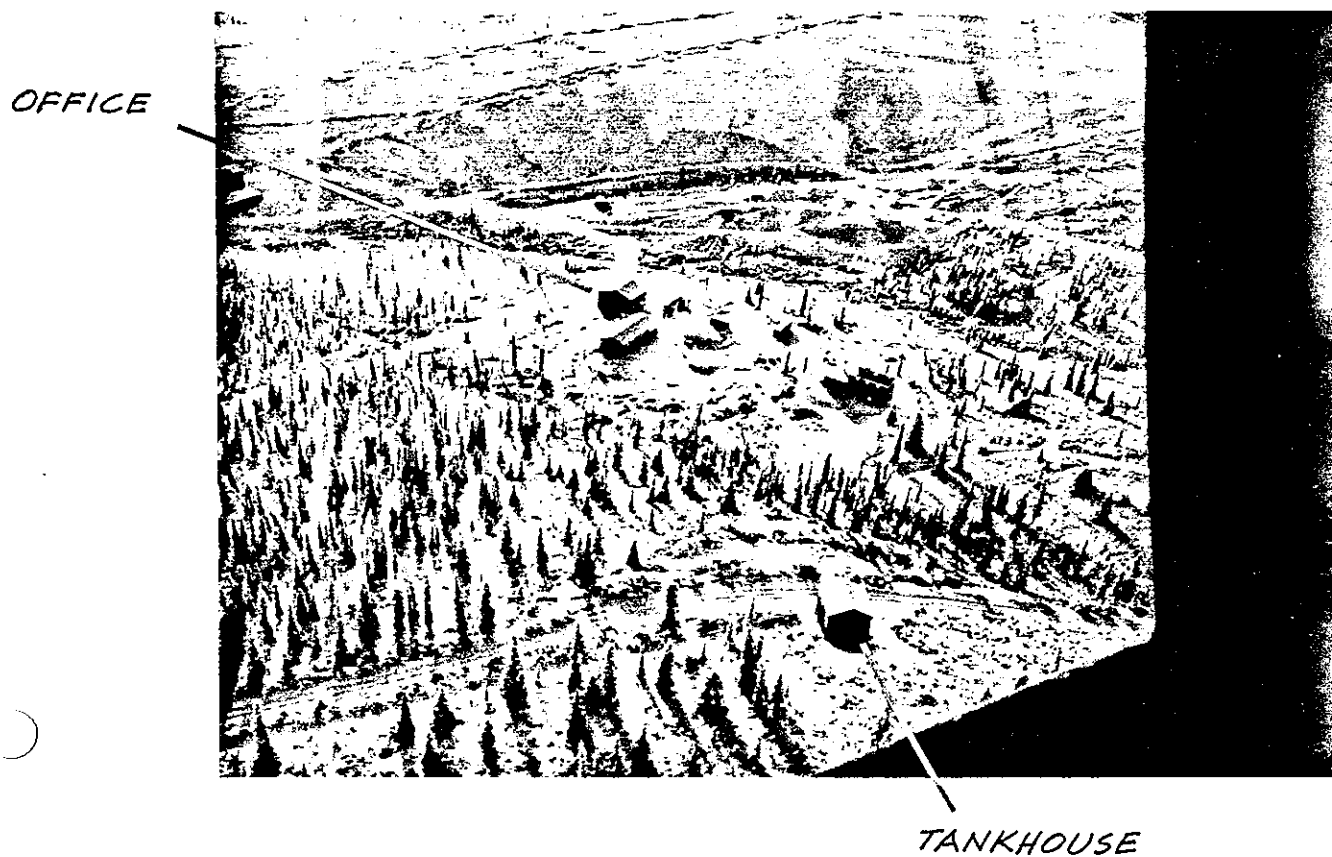
**SECTION 4**

**PHOTOGRAPHS OF THE EXISTING FACILITIES**





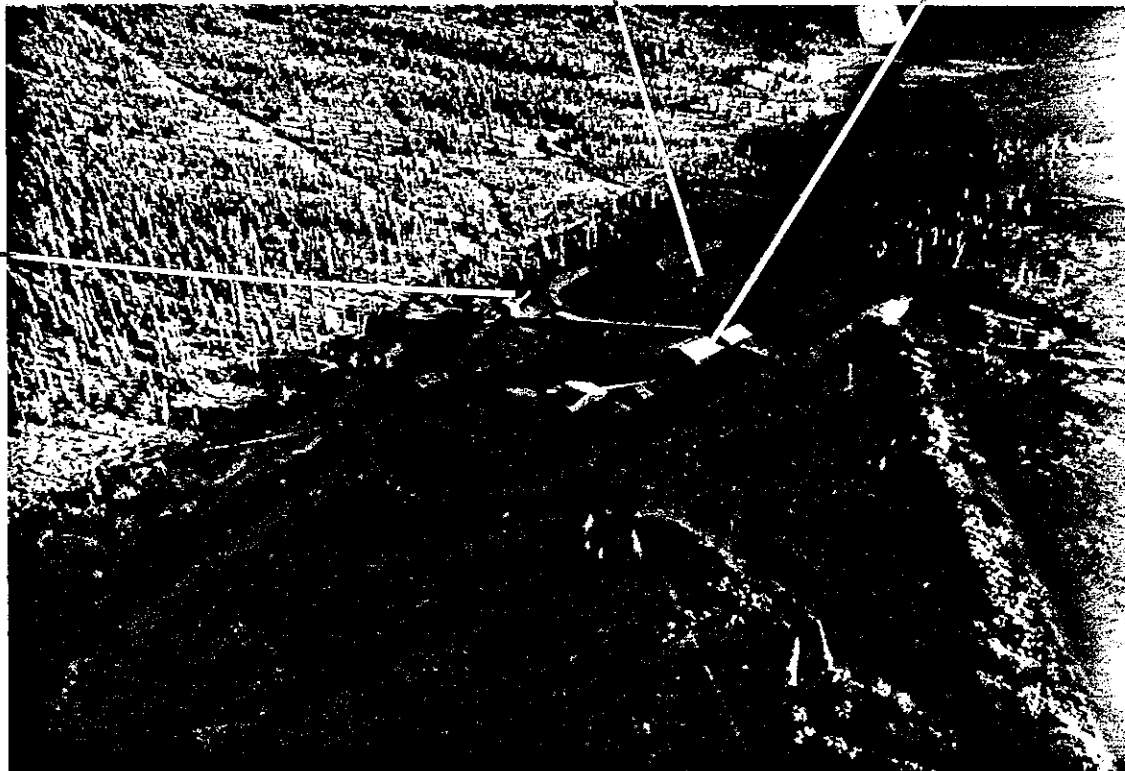
AERIAL VIEWS OF THE SURFACE PLANT



TAILINGS PONDS

CRUSHING

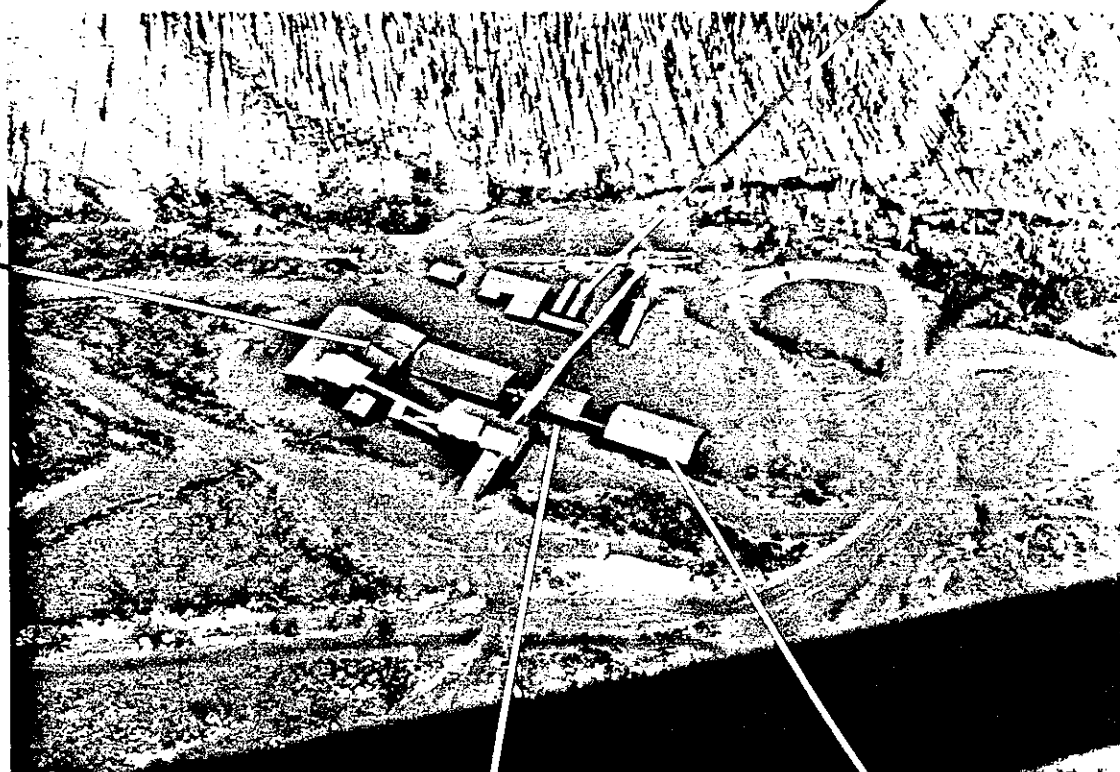
TRESTLE



AERIAL VIEWS OF THE MILL

BUNKHOUSES

CONCENTRATOR



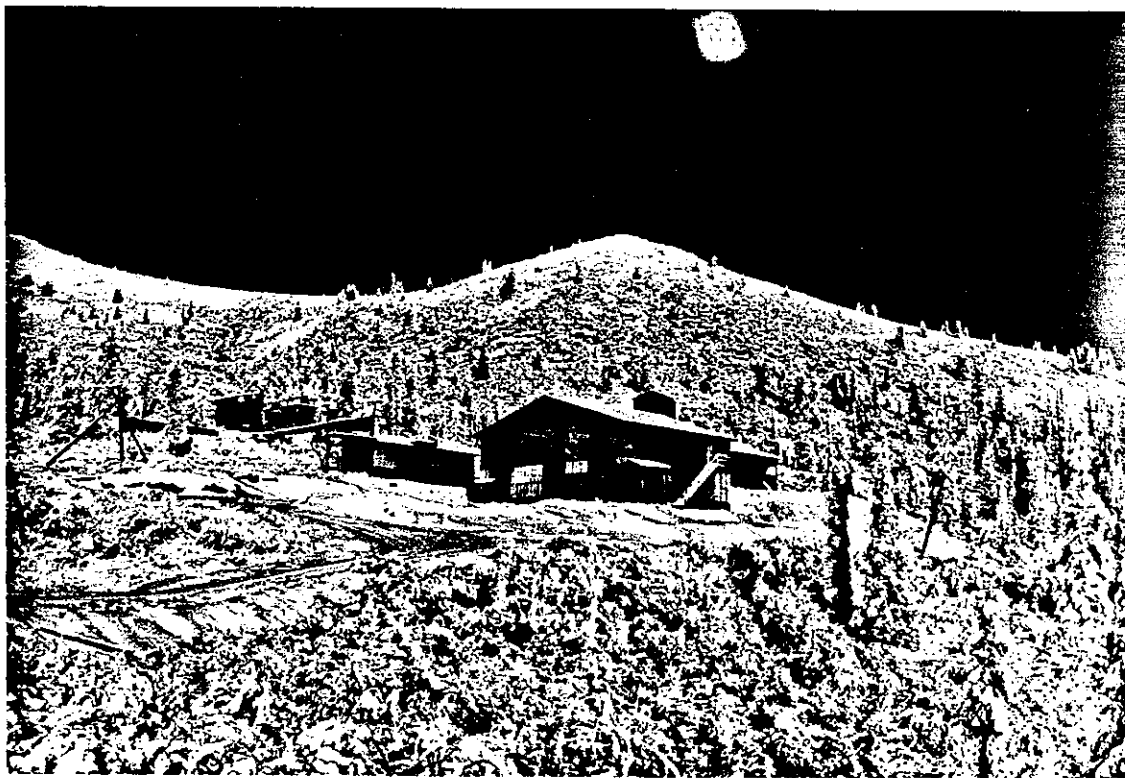
POWERHOUSE

GARAGE

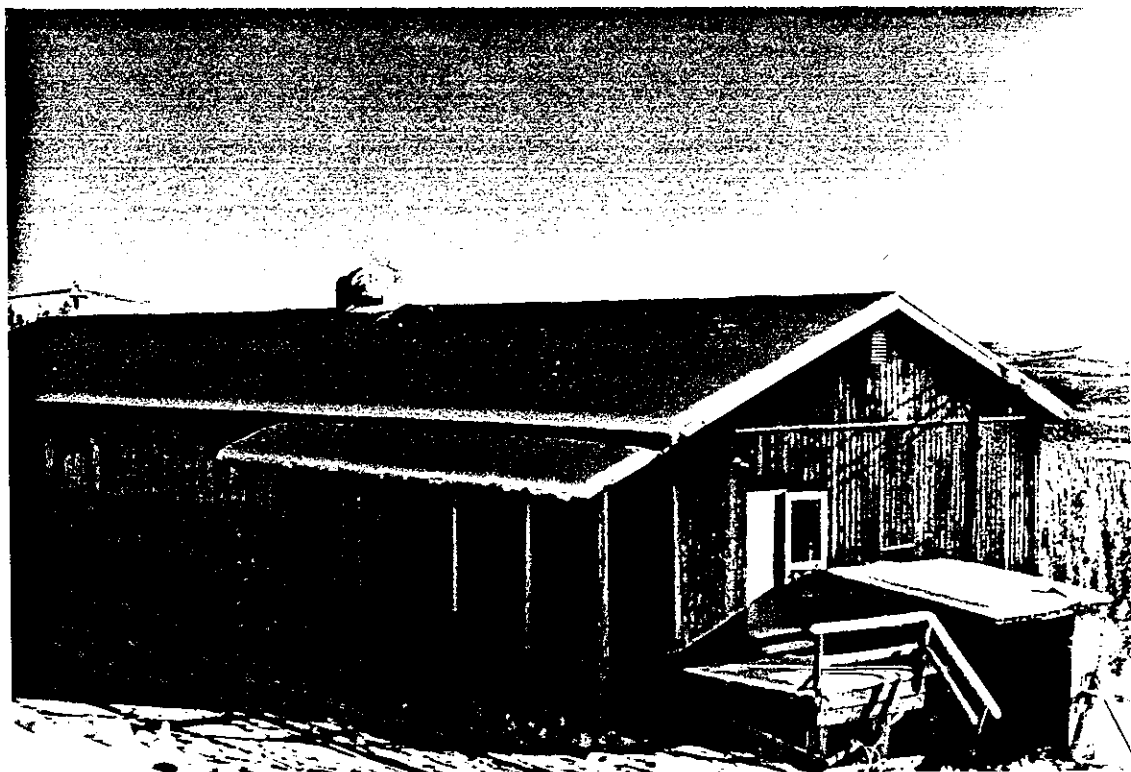


GENERAL VIEWS  
OFFICE & COOKHOUSE AREA

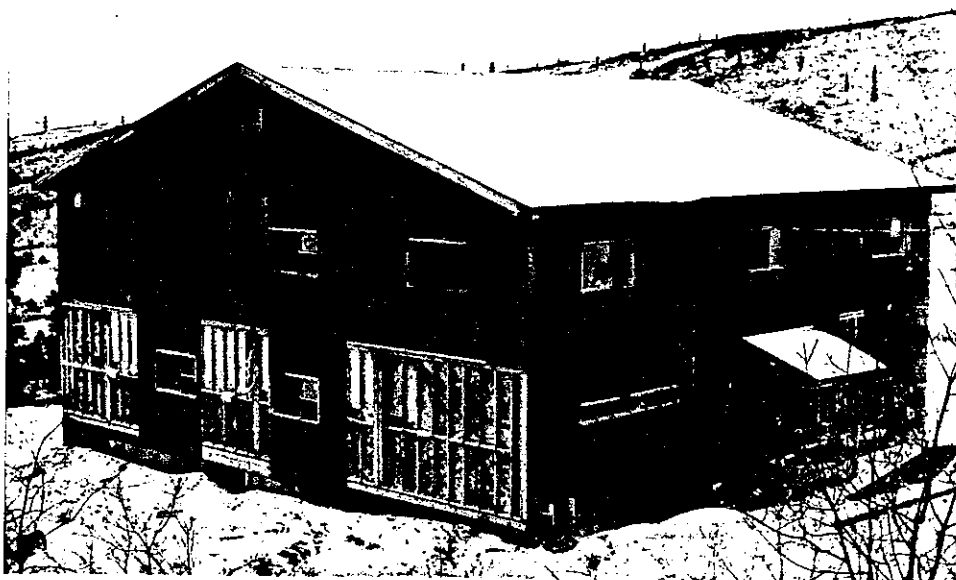




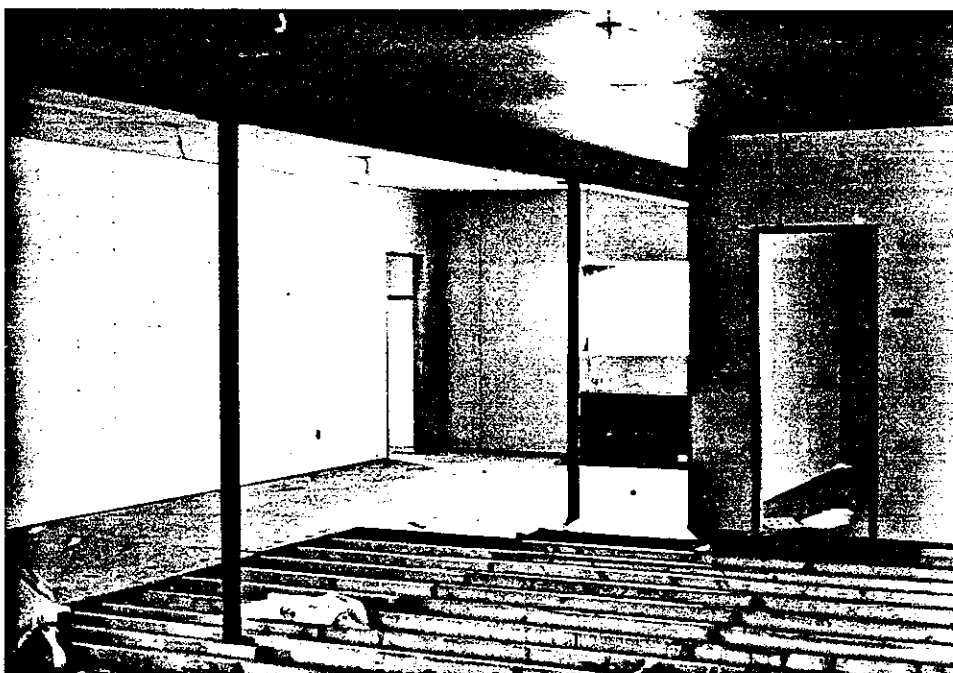
*OFFICE BUILDING*

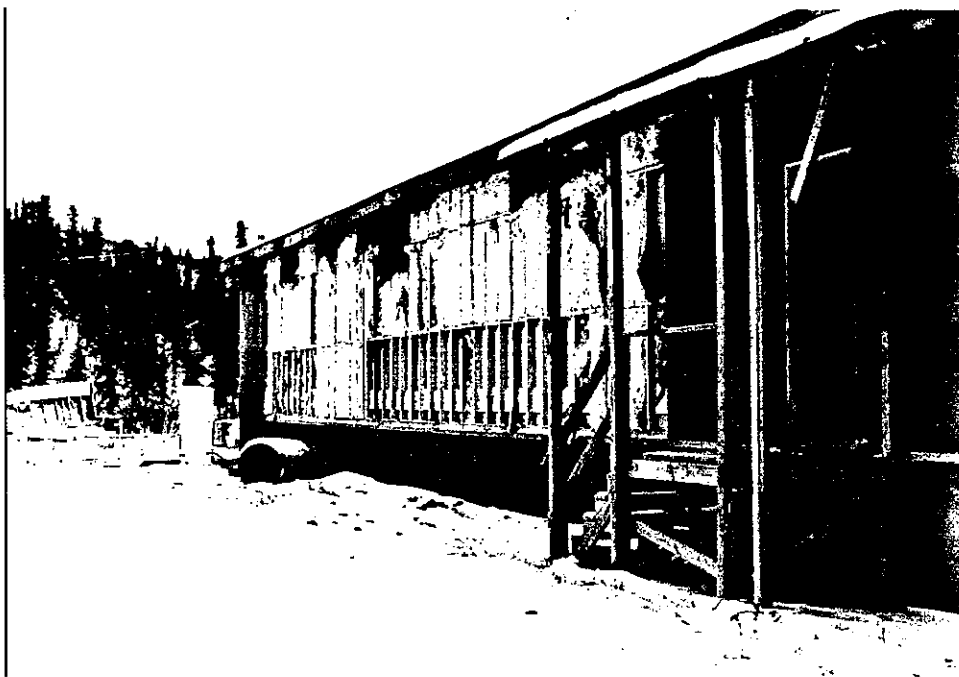


*COOKHOUSE*



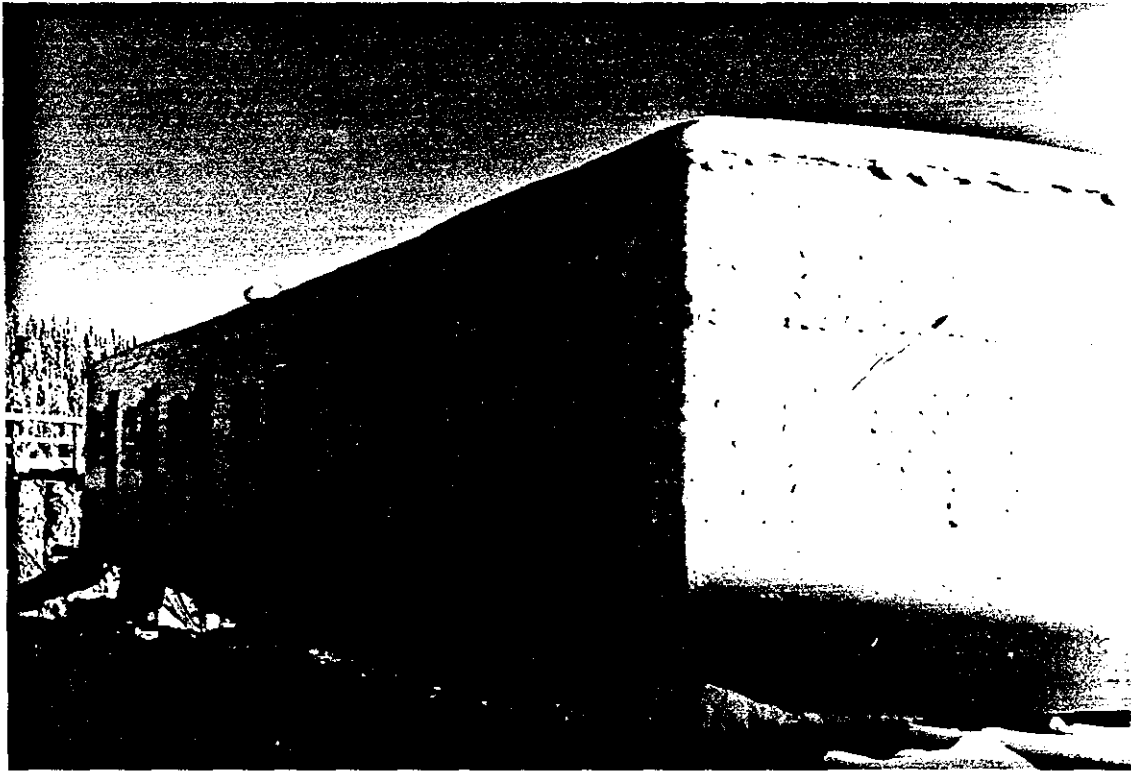
*OFFICE BUILDING*





COOKHOUSE

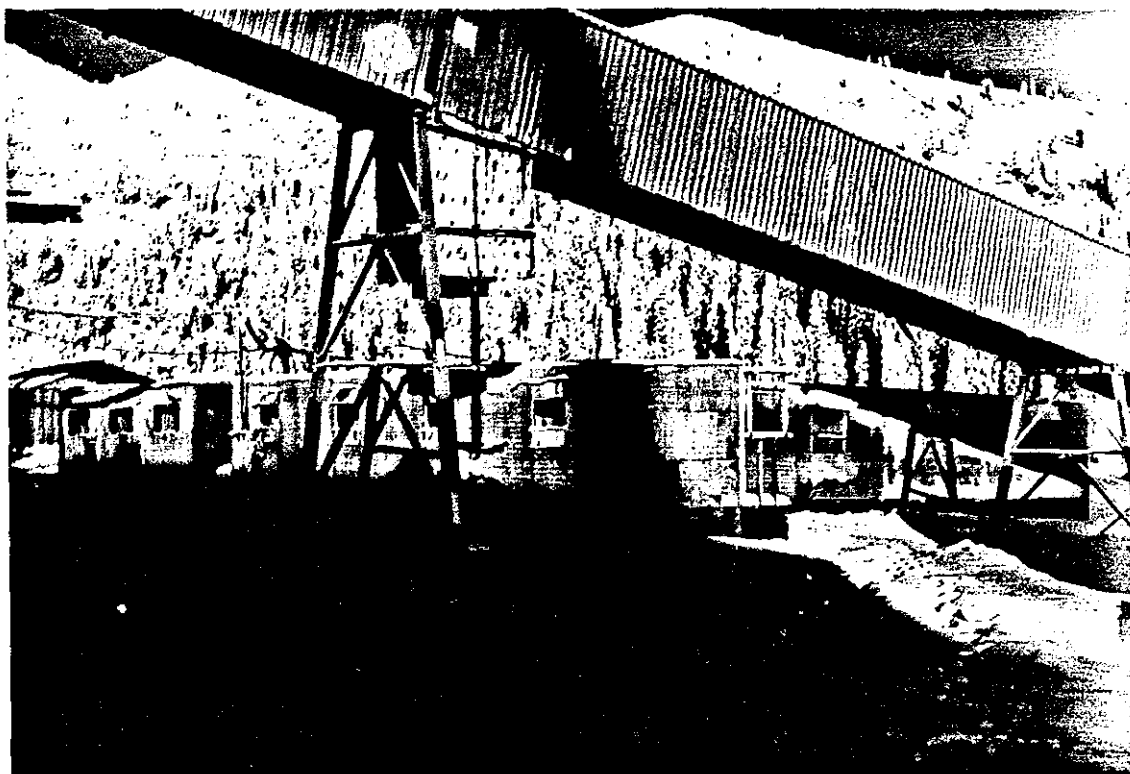




*BUNKHOUSE UNIT*







*BUNKHOUSE UNITS*



ASSAY OFFICE

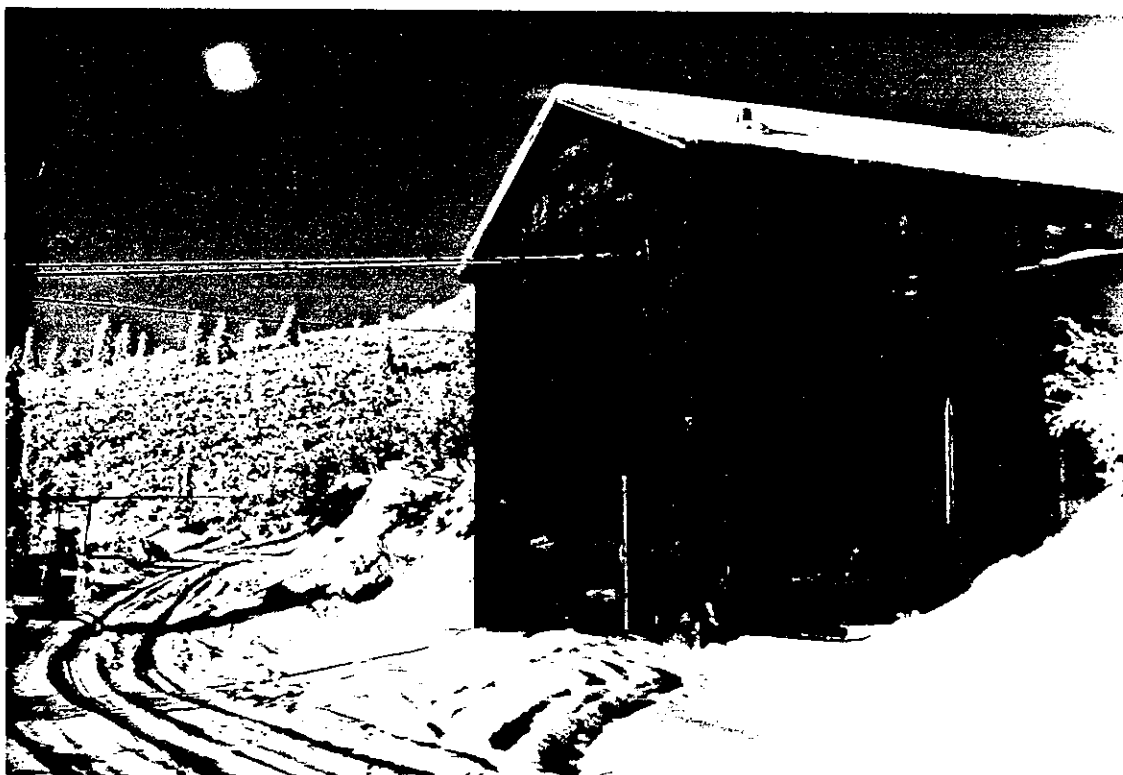
MINE  
EQUIPMENT REPAIR



COOKHOUSE AT MILL



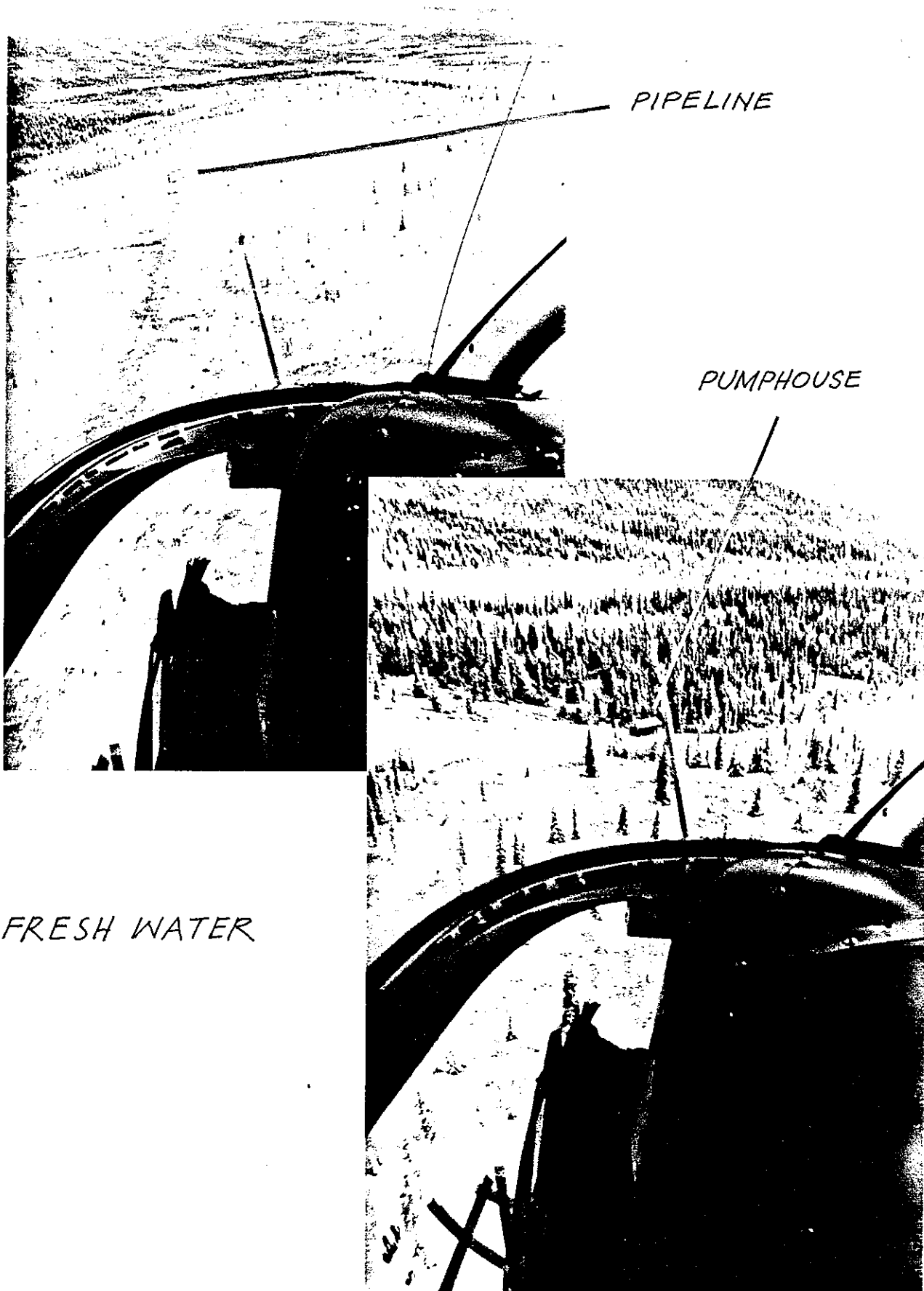
ASSAY OFFICE



*TANKHOUSE*



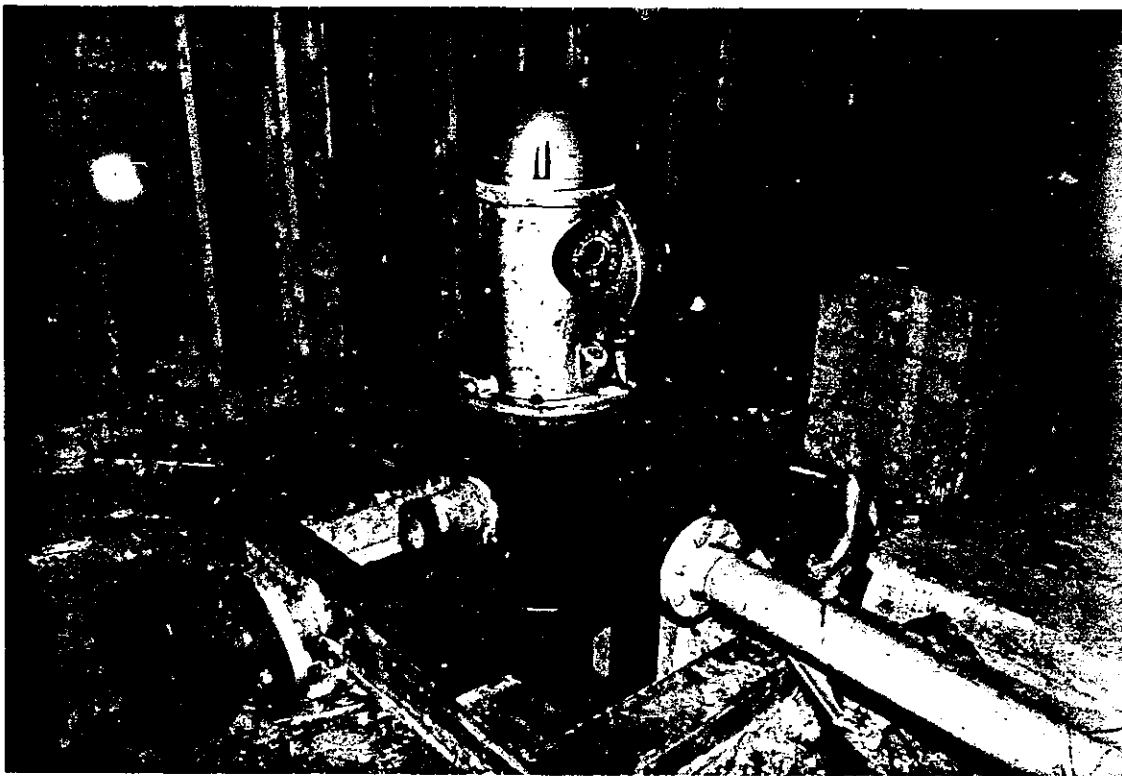
*FRESH WATER PIPELINE*



PIPELINE

PUMPHOUSE

FRESH WATER

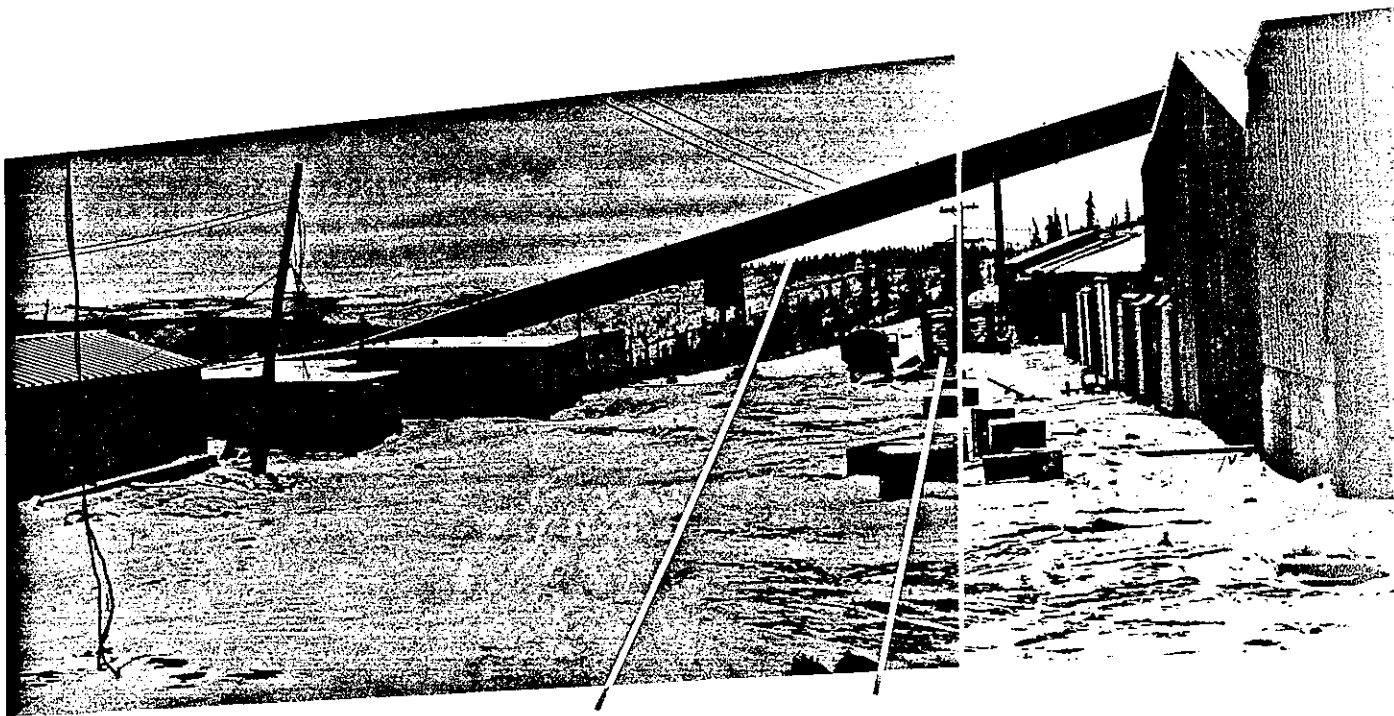


*FRESH WATER PUMPHOUSE  
PUMPS*



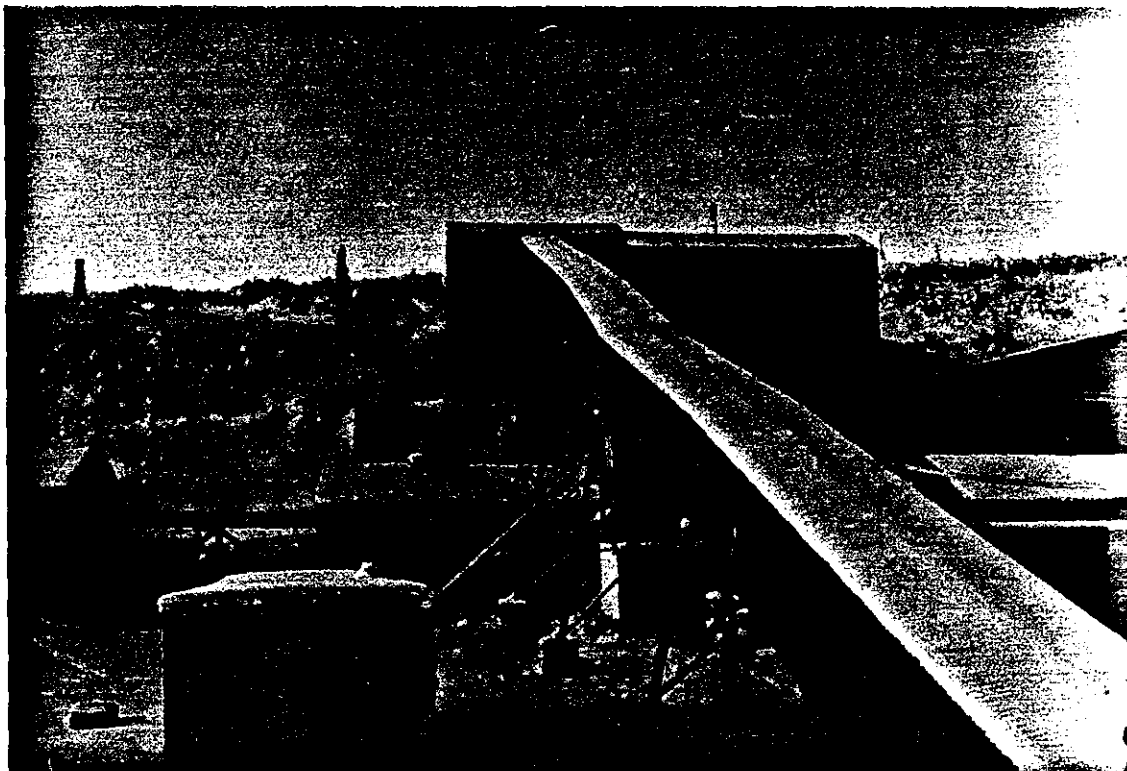


GENERAL VIEW OF MILL



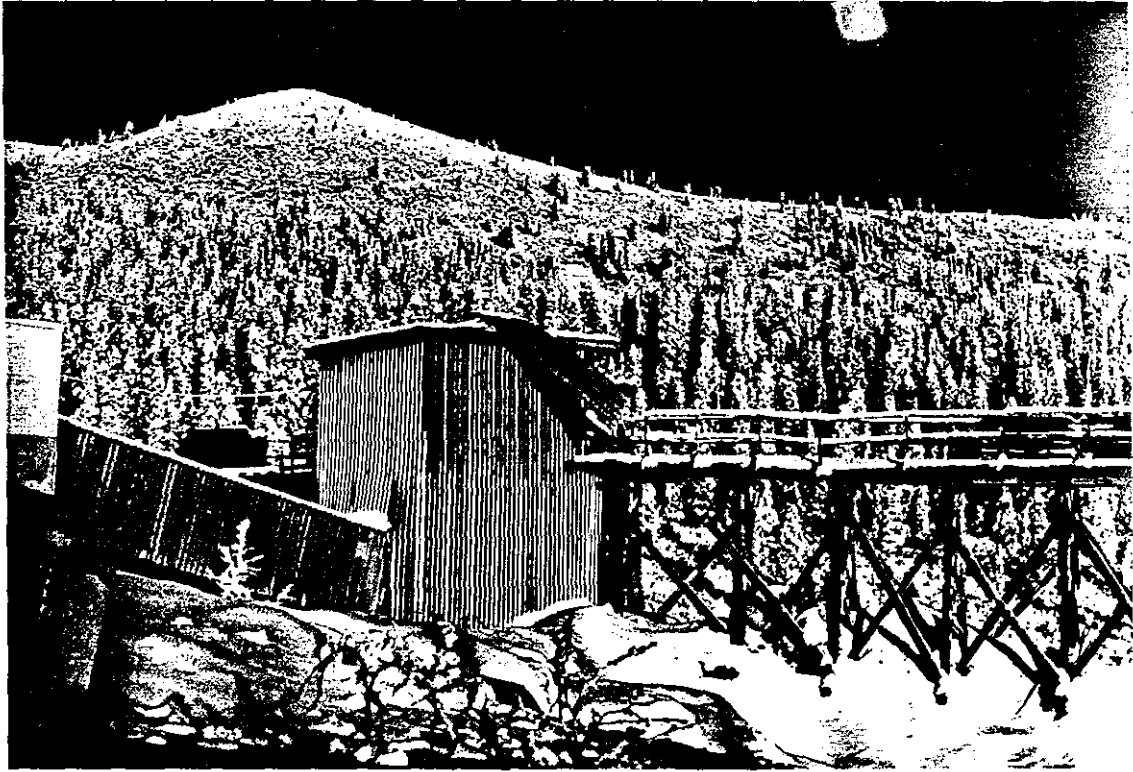
CONVEYOR #1

SUBSTATION



CONVEYOR #1



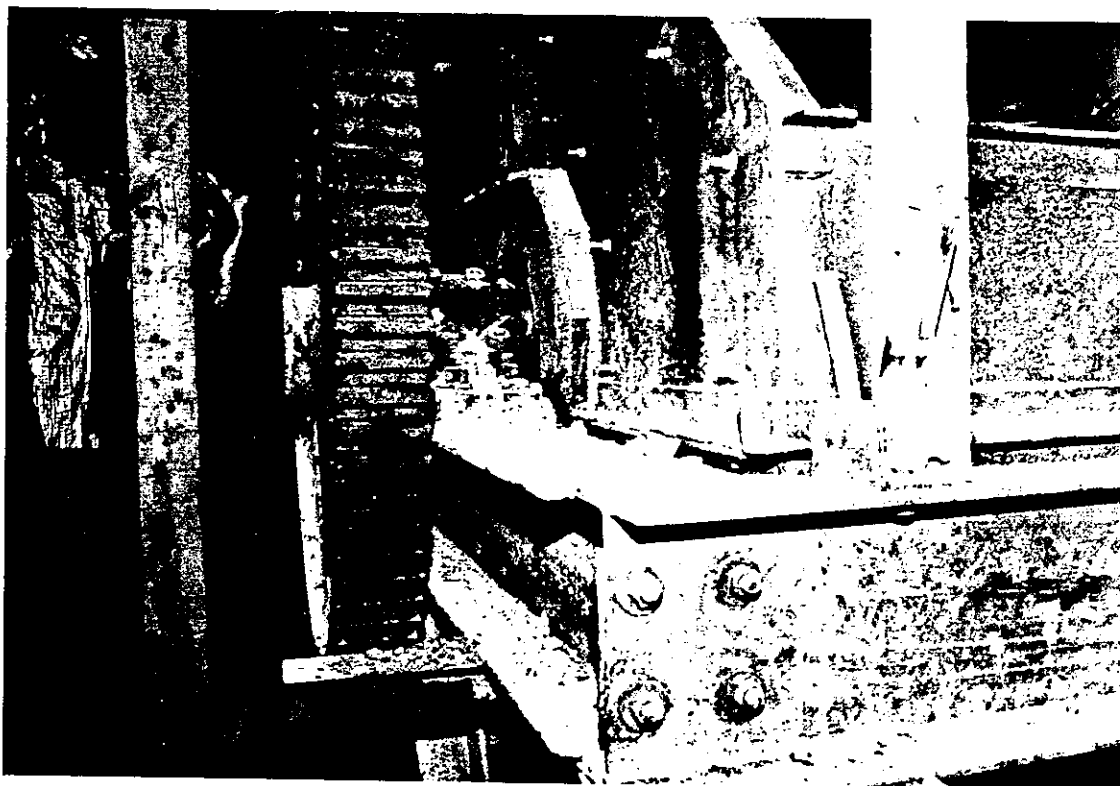


*TAIL END OF CONV. #1*

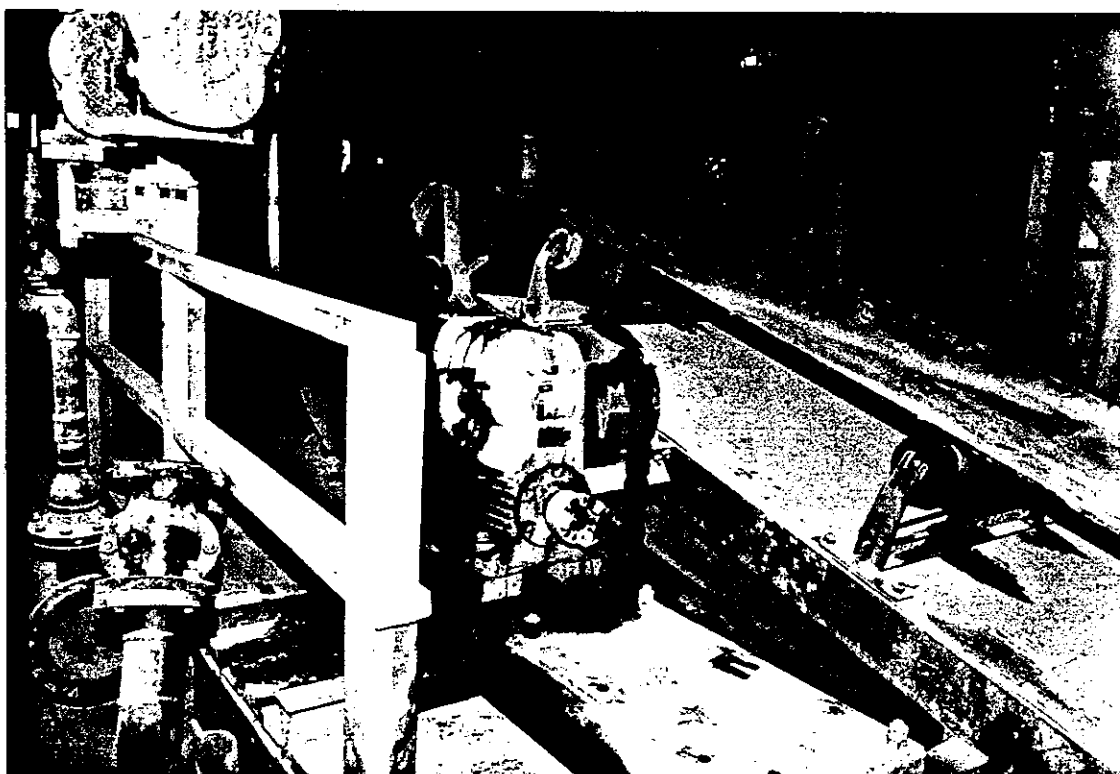


*DUMP POCKET*

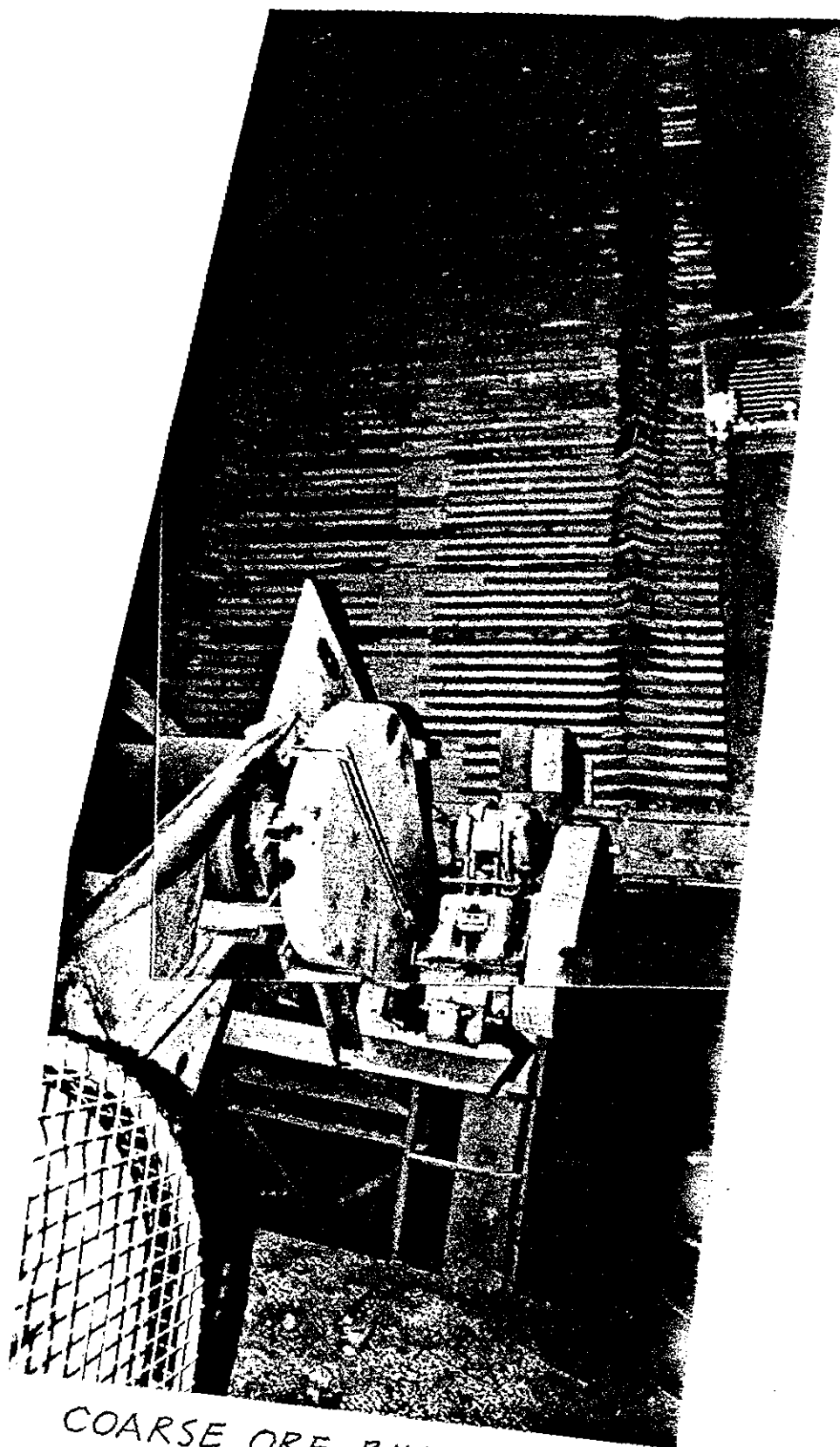




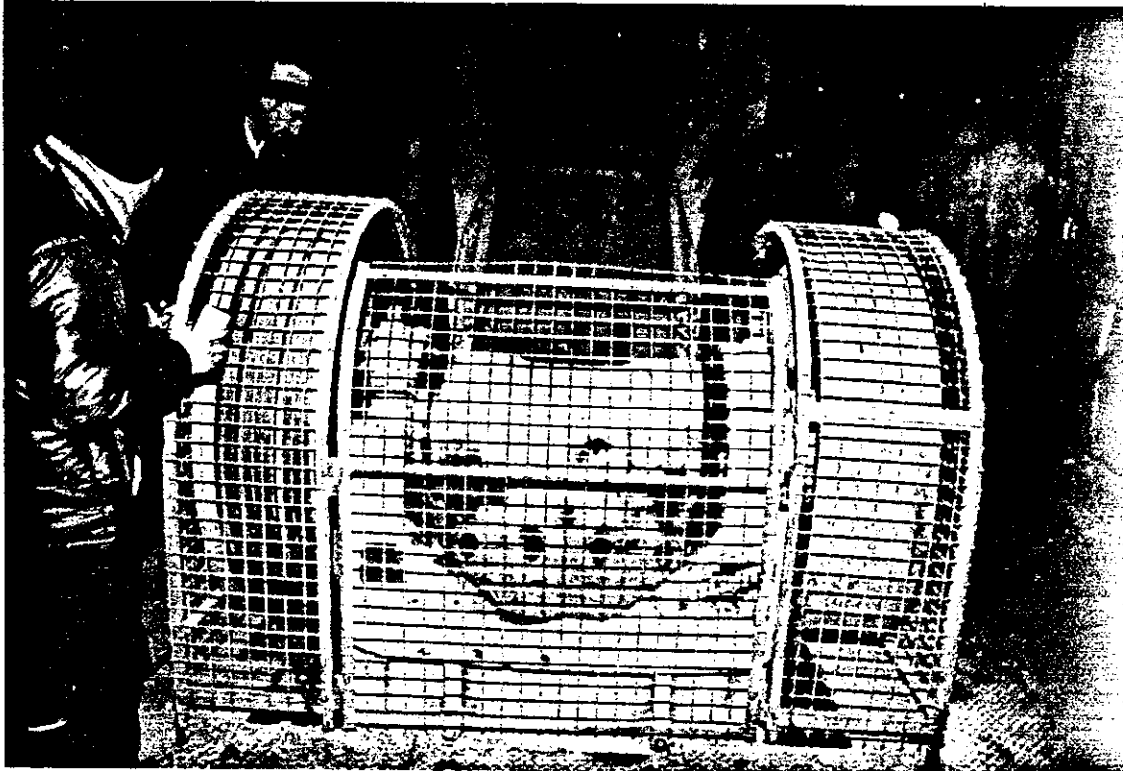
*APRON FEEDER UNDER DUMP POCKET*



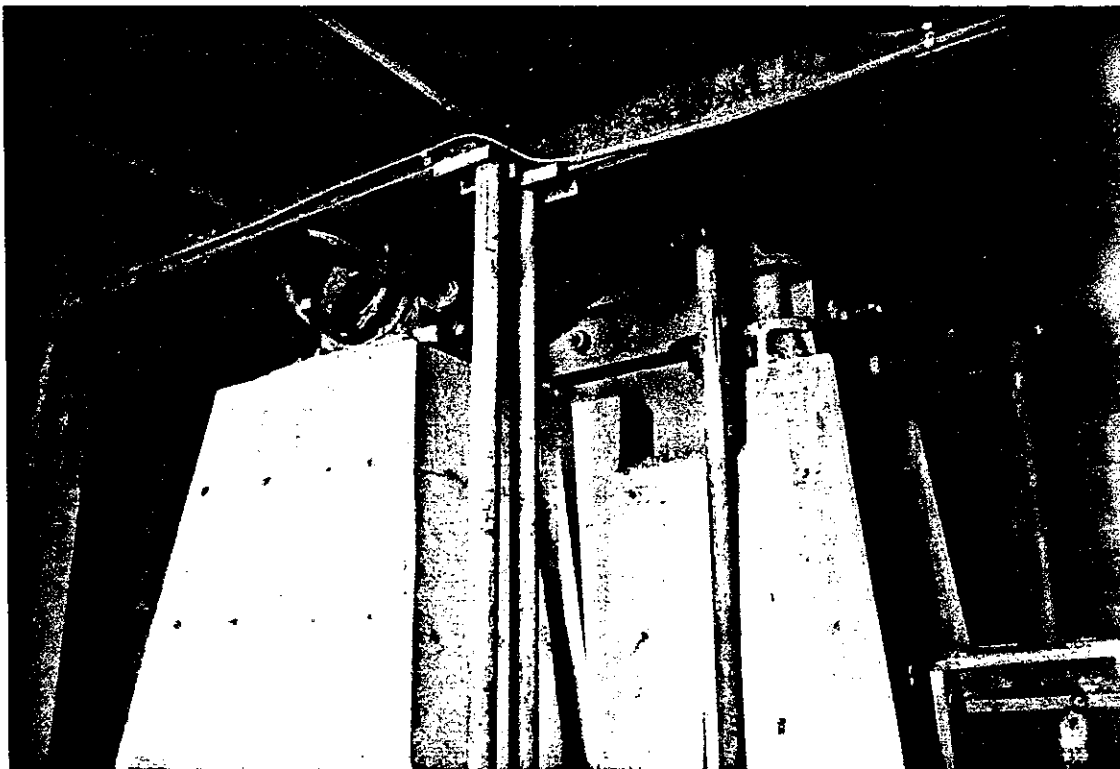
*HEAD END CONV. #1*



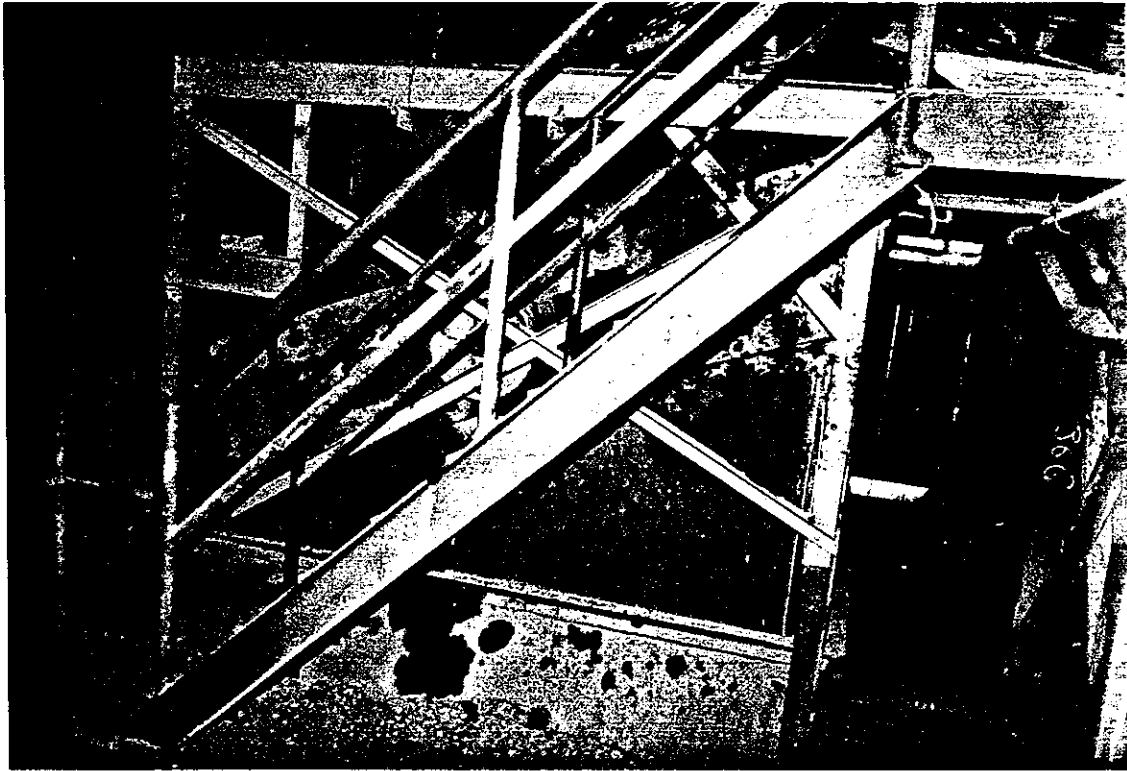
COARSE ORE BIN AND  
HEAD END OF CONV. #2



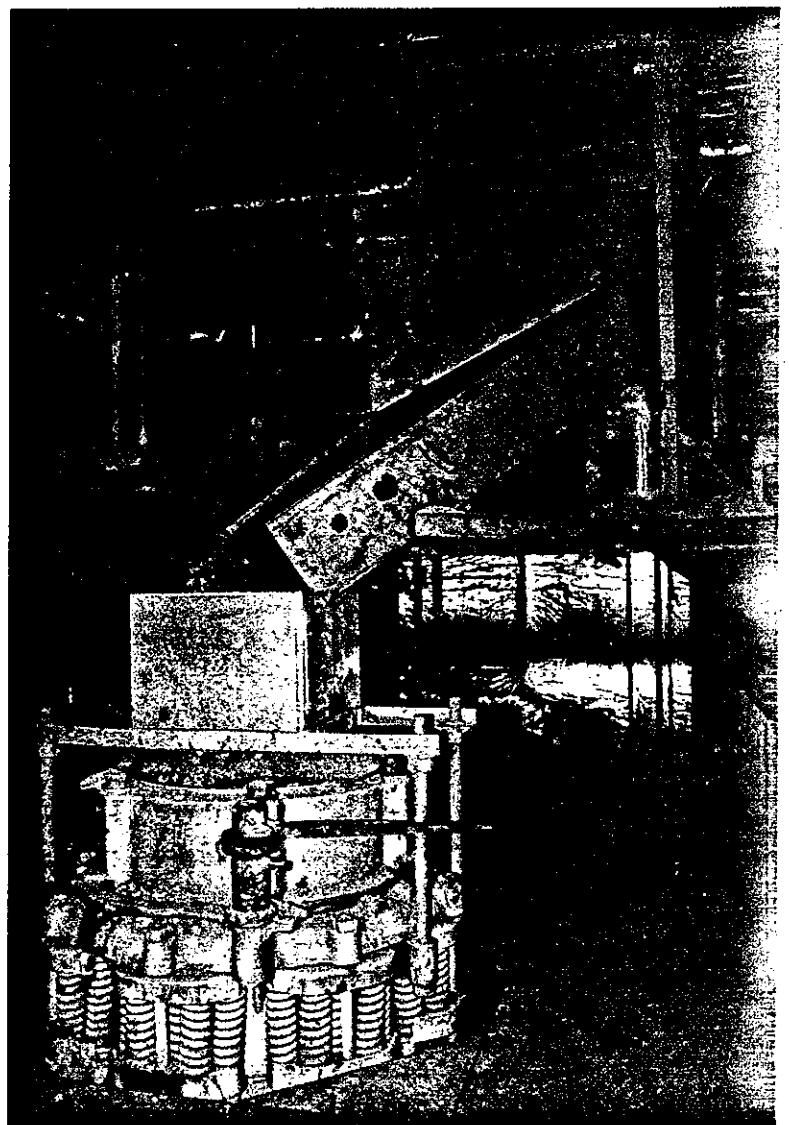
10x30 JAW CRUSHER



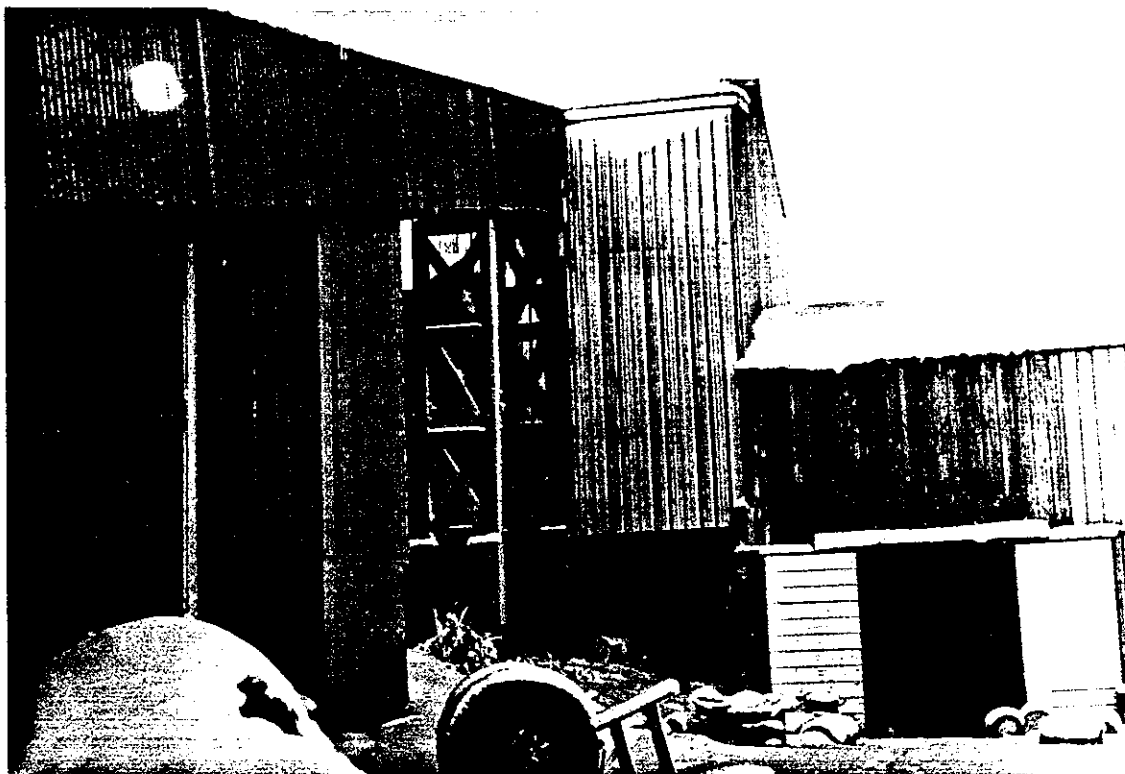
JAW CRUSHER FOUNDATION



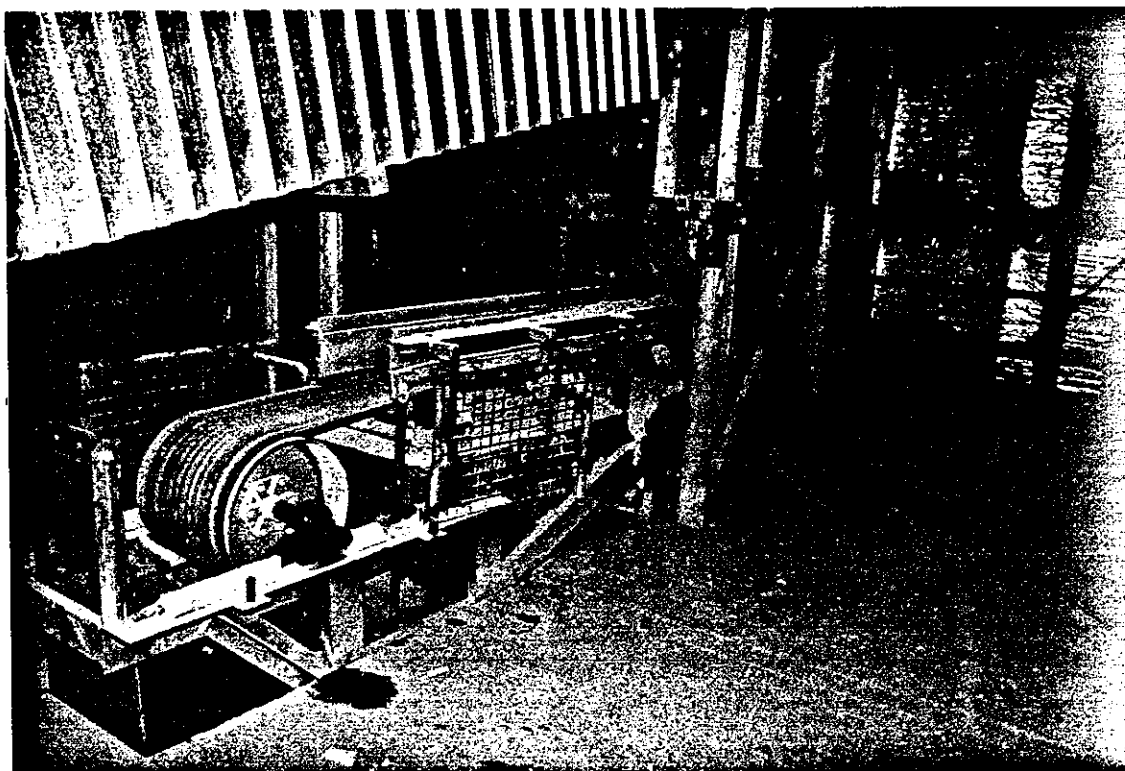
4x8 DILLON SCREEN



3'-0" SYMONS  
CONE CRUSHER



CONVEYOR #5 AND  
FINE ORE BUILDING

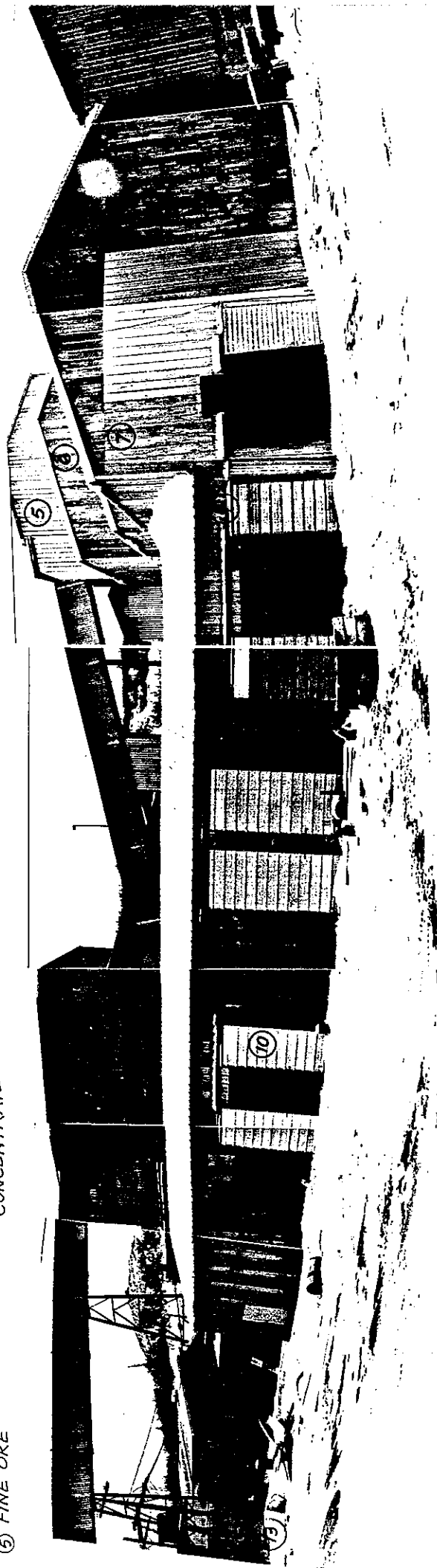


CONVEYOR #6

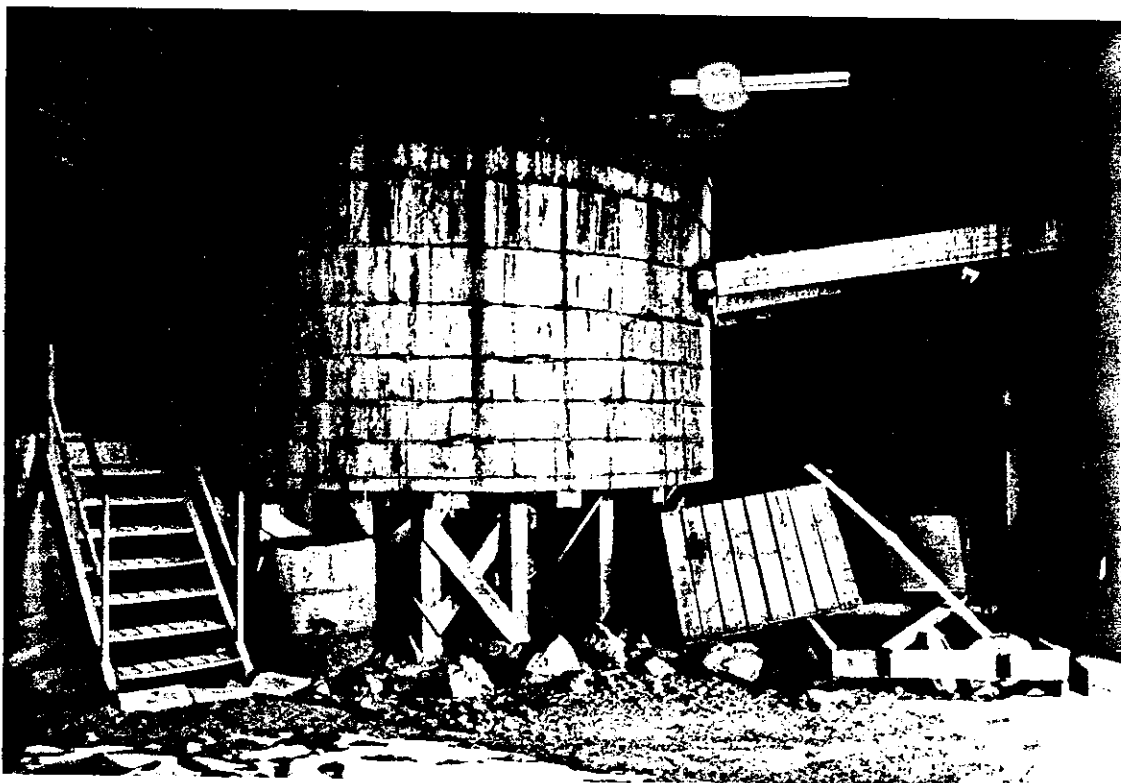
- ① CONVEYOR #1
- ② COARSE ORE
- ③ CRUSHING
- ④ CONVEYOR #5
- ⑤ FINE ORE

- ⑥ GRINDING
- ⑦ FLOTATION, FILTER, THICKEN-
- ⑧ MILL ADDITION
- ⑨ WAREHOUSE & CONCENTRATE

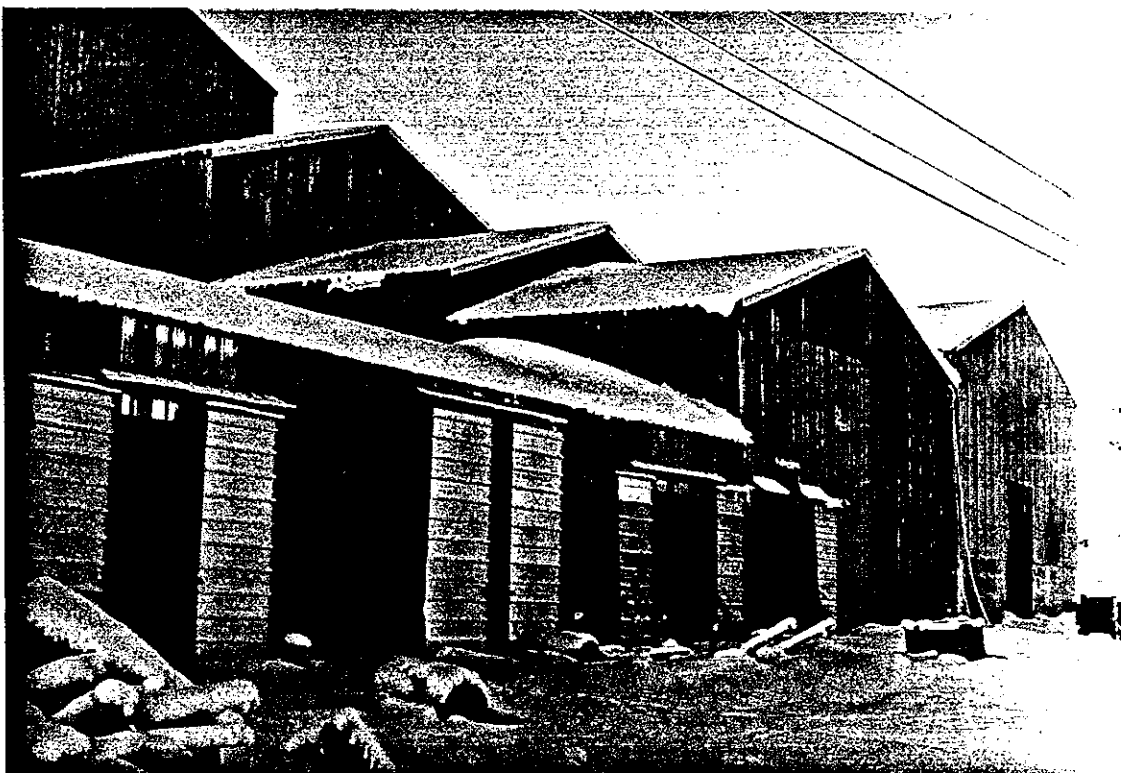
- ⑩ WAREHOUSE
- ⑪ BOILERHOUSE
- ⑫ POWERHOUSE
- ⑬ SUBSTATION



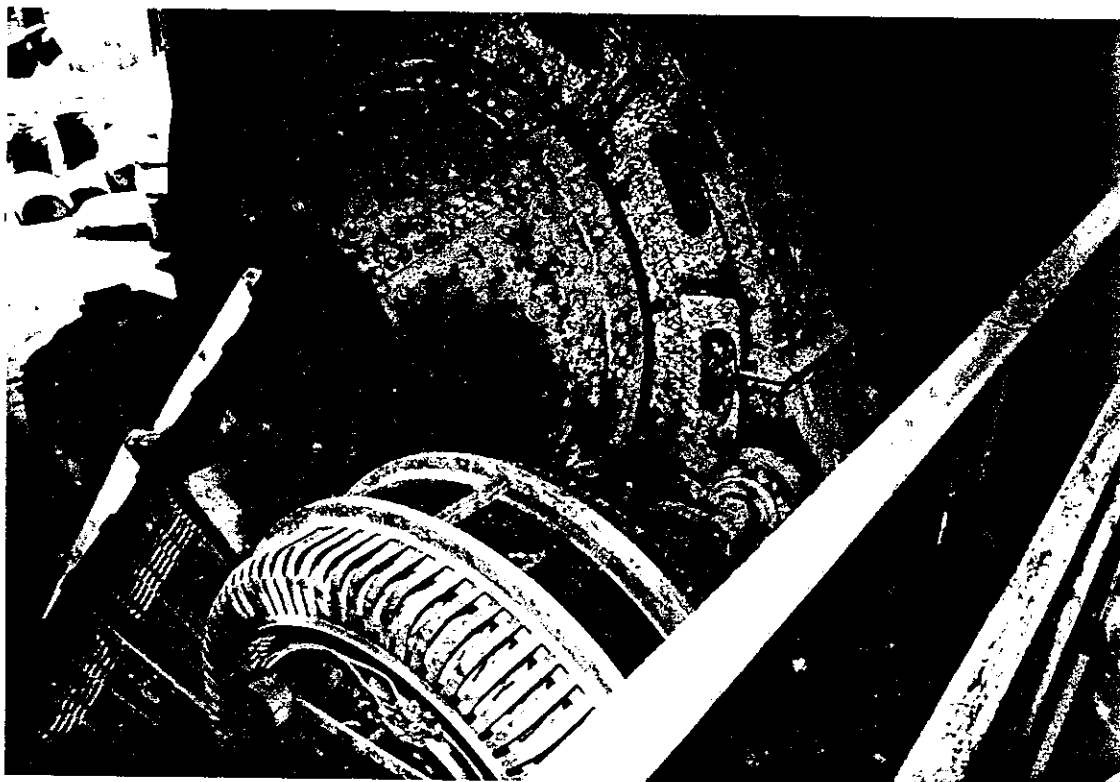
MILL BUILDINGS



*PROCESS WATER TANK*

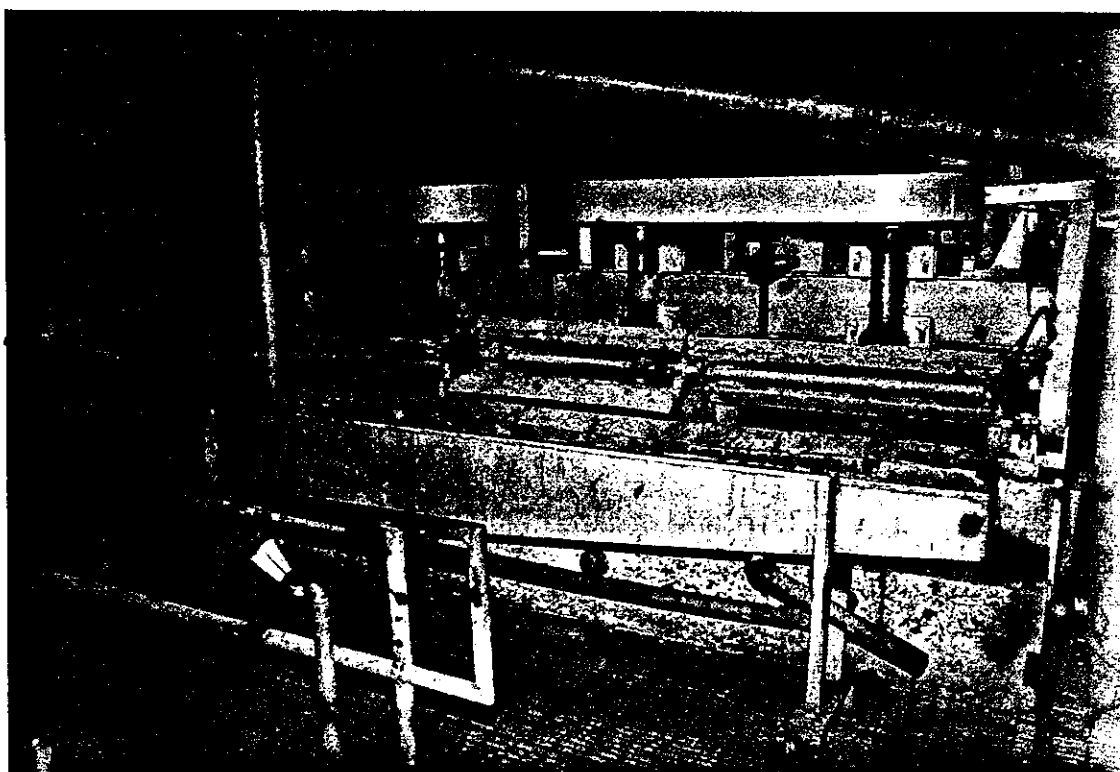


*CONCENTRATOR*



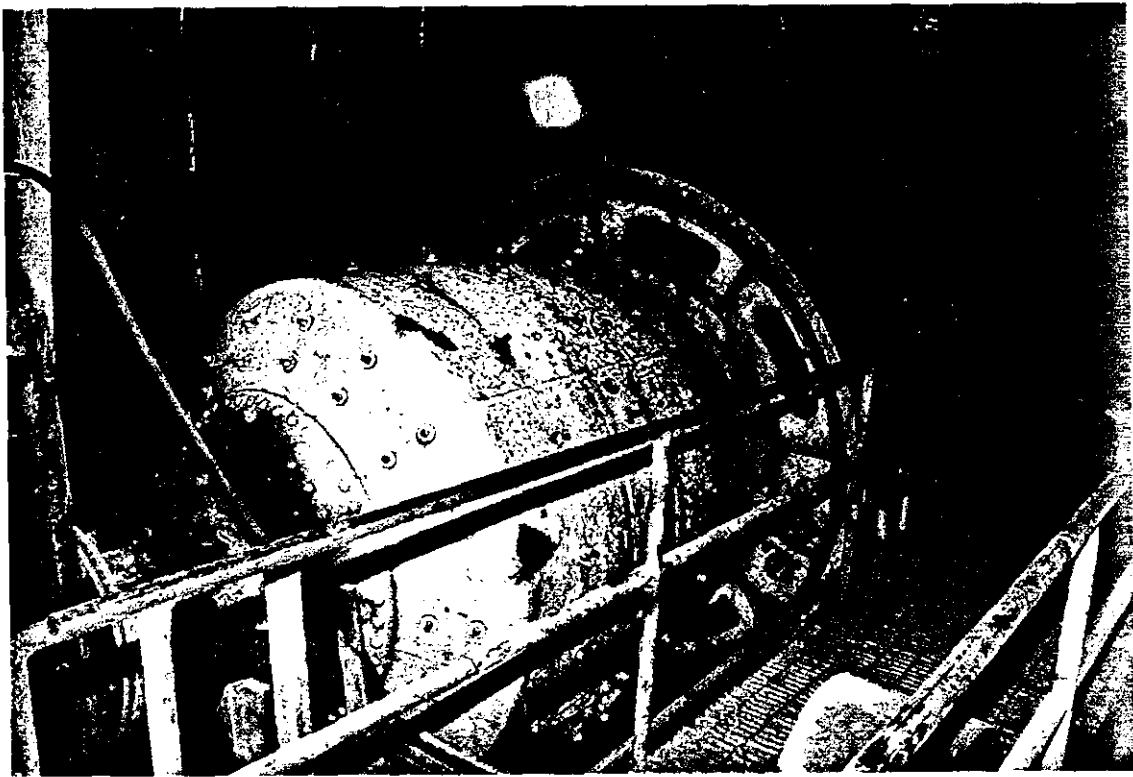
8'x7' HARDINGE BALL MILL

NO. 1 CIRCUIT

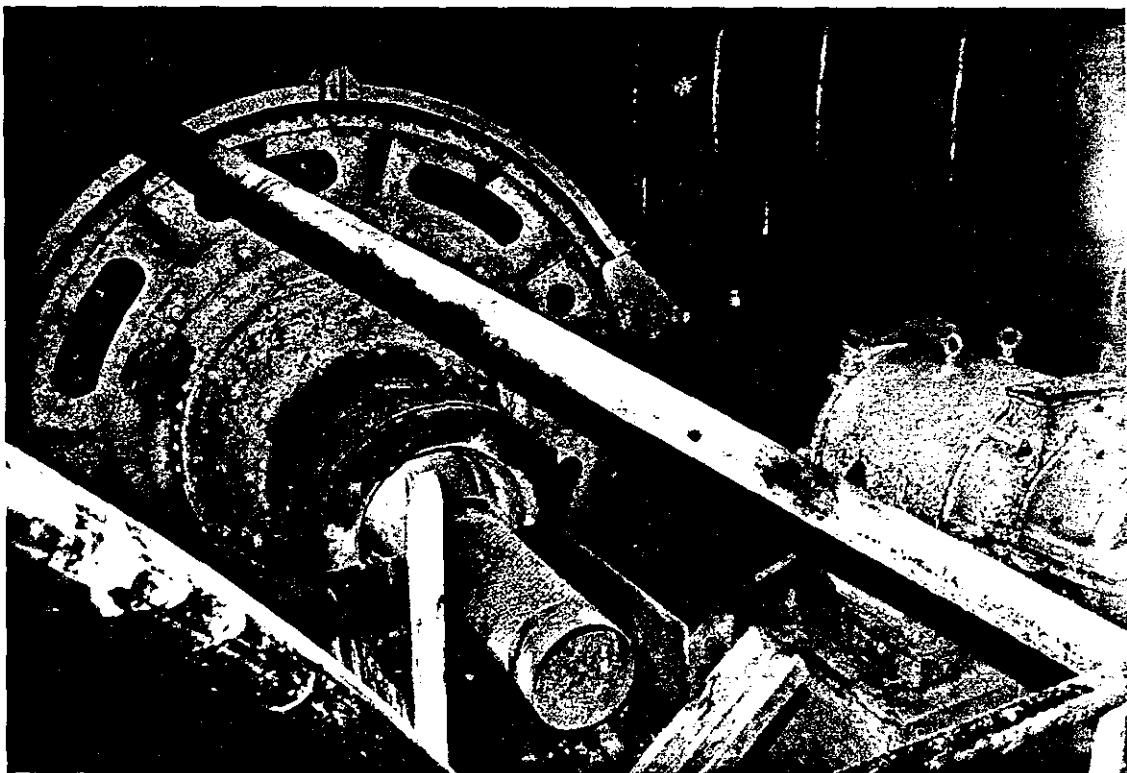


DENVER SUB A NO. 18 CELLS



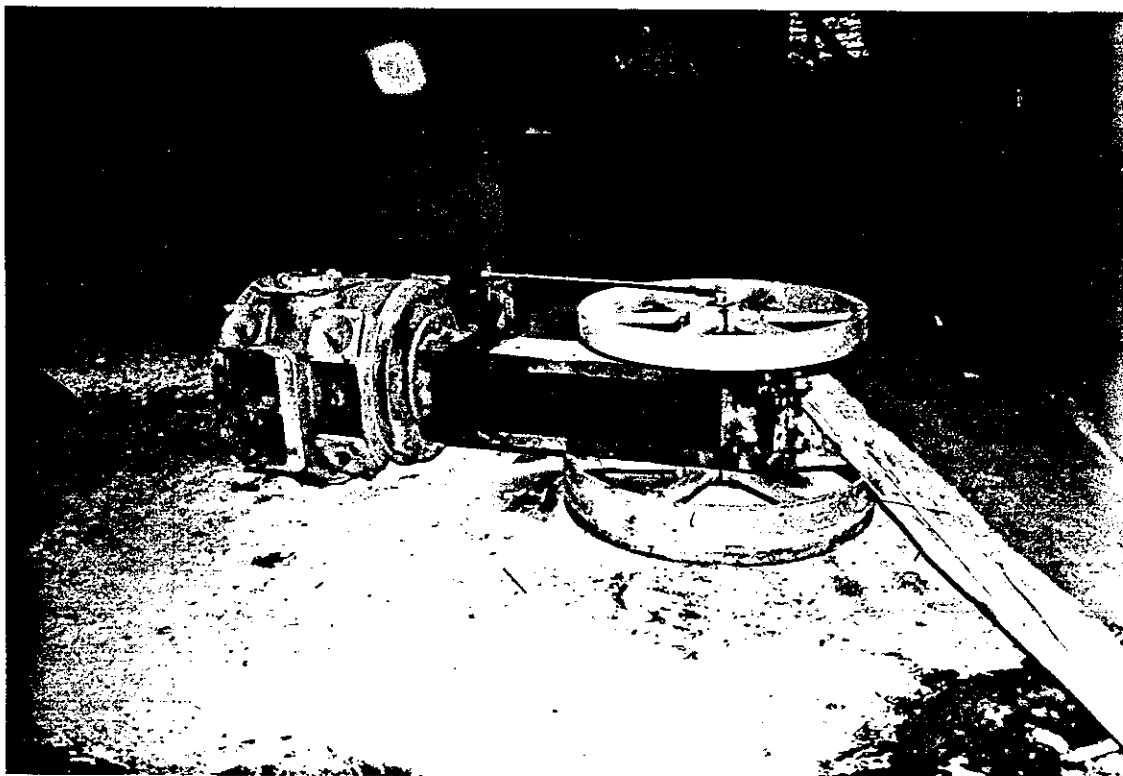


NO. 2 CIRCUIT  
7'x7' HARDINGE BALL MILL





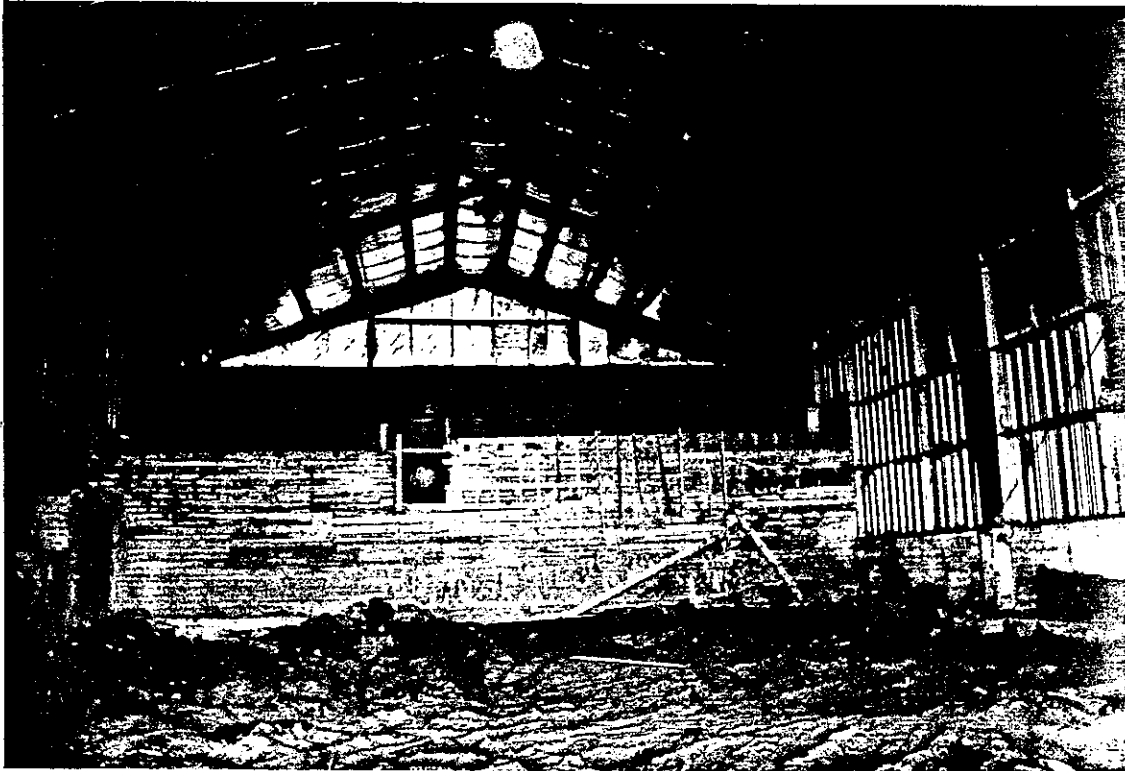
NO. 2 CIRCUIT  
DENVER SUBA NO. 18 CELLS



VACUUM PUMP



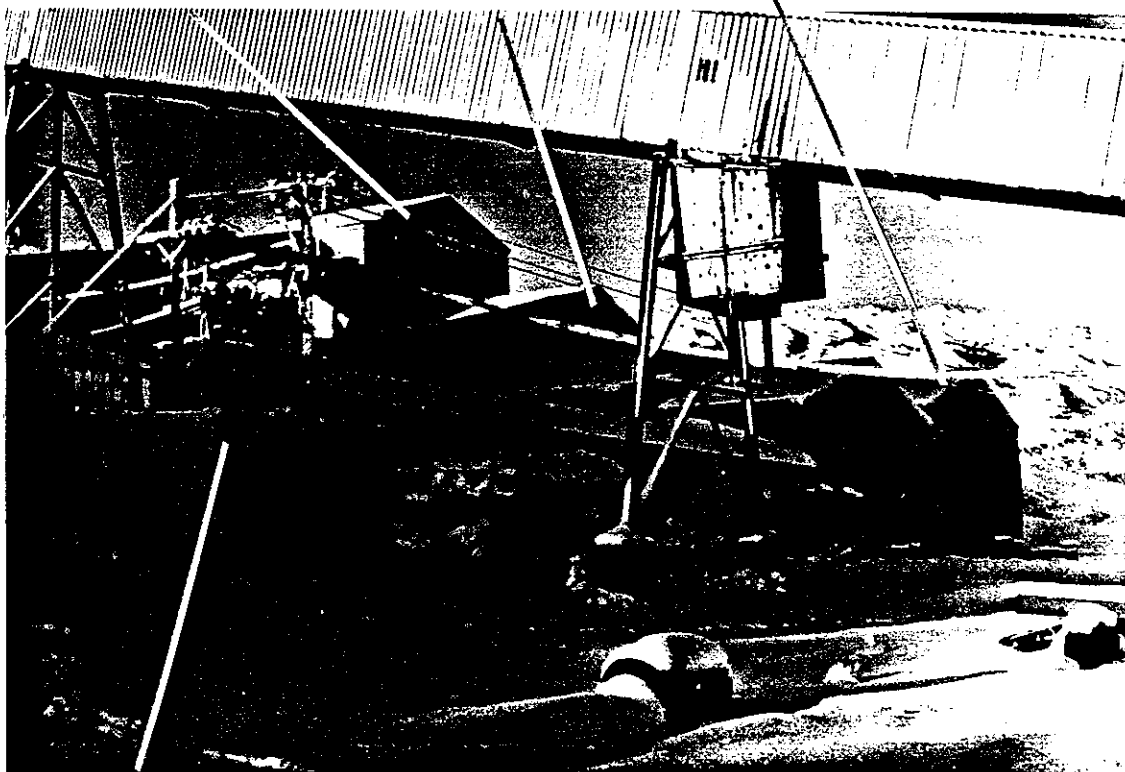
SWITCHGEAR



CONCENTRATOR ADDITION  
(INTERIOR)

FINE ORE

CONCENTRATOR



SUBSTATION

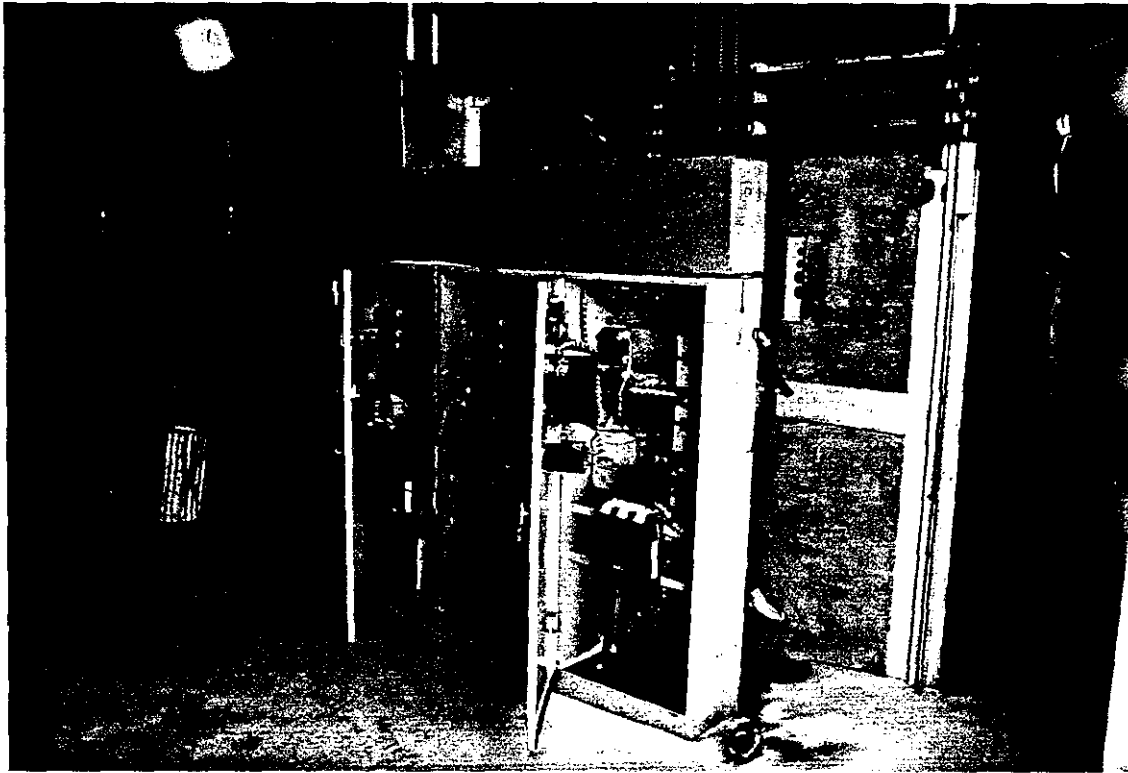
GENERAL VIEW



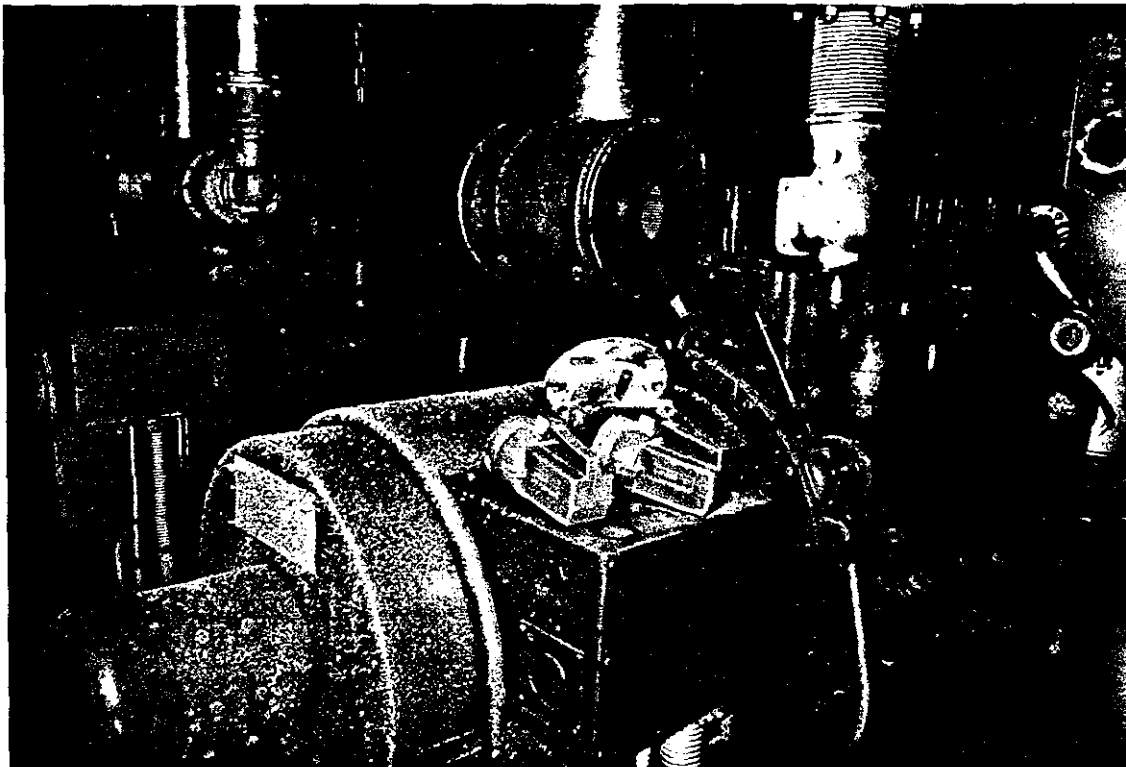
POWERHOUSE AND SUBSTATION



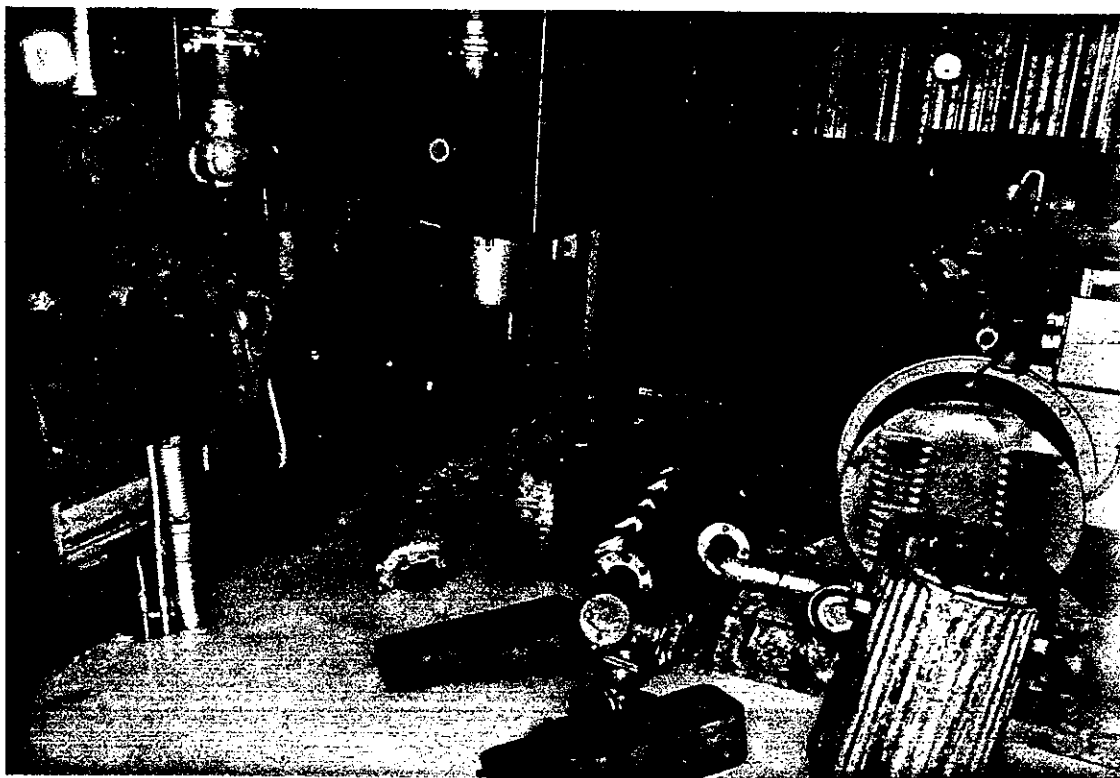
POWERHOUSE AND BOILER BLDG.



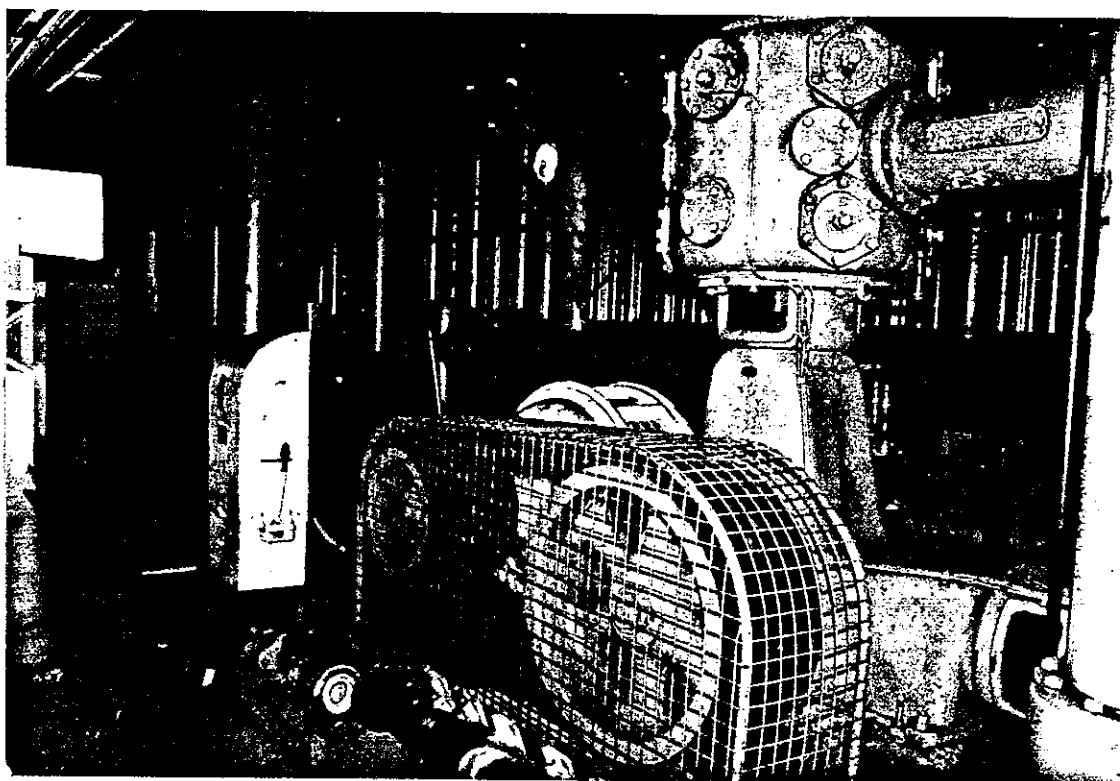
*GENERATOR SWITCHGEAR*



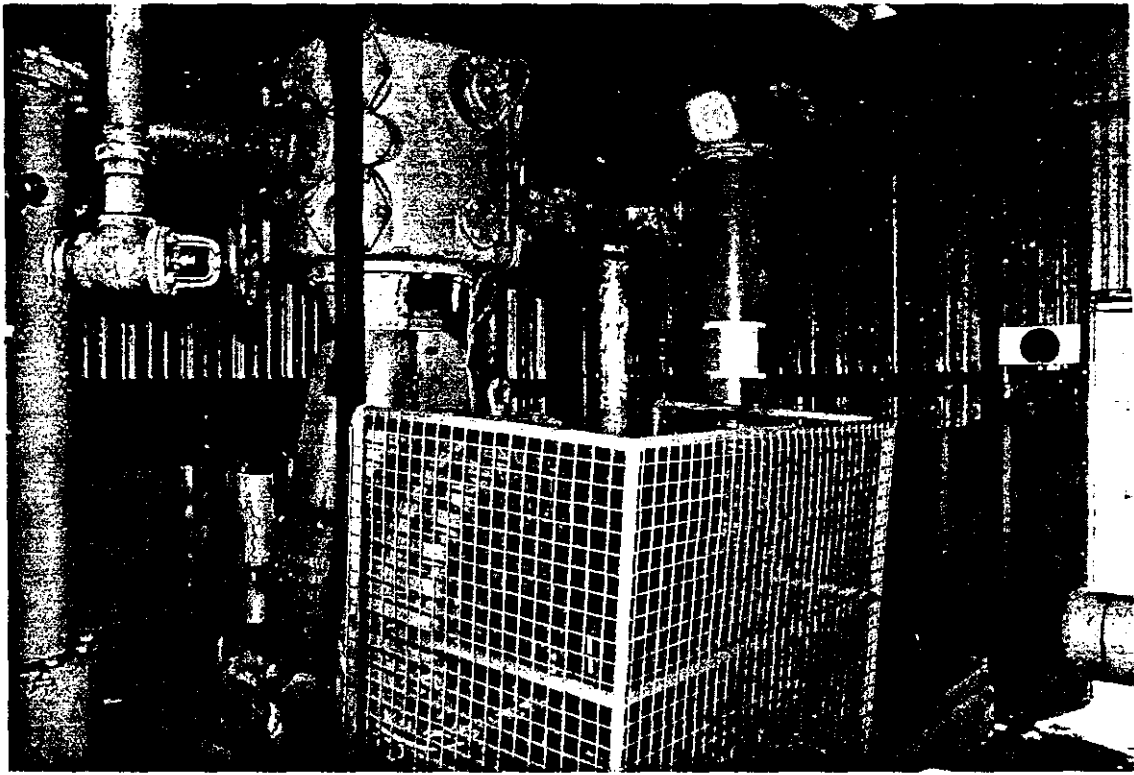
*GENERATORS*



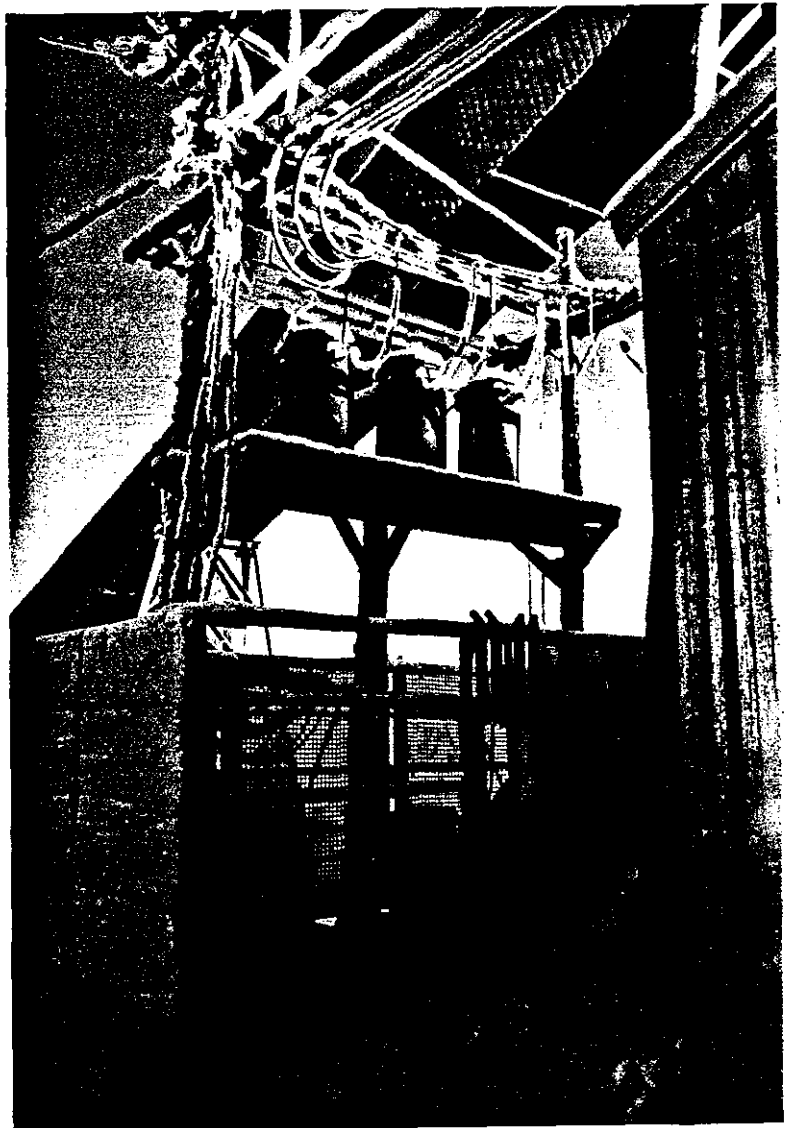
*GENERATORS*



*COMPRESSOR*

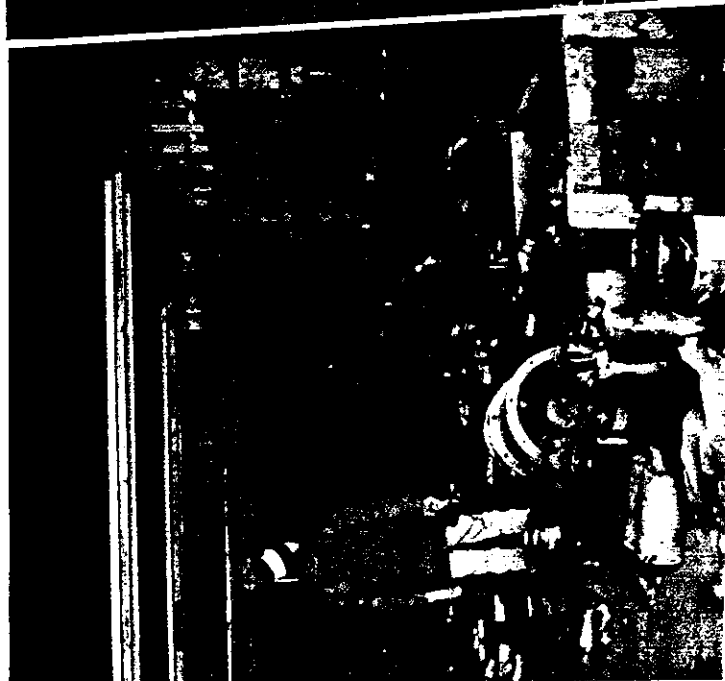


*COMPRESSOR*



*SUBSTATION*





WAREHOUSE  
(INTERIOR)



GARAGE

