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~~CONFIDENTIAL~~

JULIAN IRON CORP.

Estimate of capital & operating
cost for a pelletizing plant to
produce 2,160,000 long tons of
pellets per year. *April 1962*

By: Kilborn

~~CONFIDENTIAL~~



236(145)

KILBORN ENGINEERING LTD.
CONSULTING ENGINEERS

K. M. DEWAR, B.SC., P. ENG., ONT. AND QUE.
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CHIEF MECHANICAL ENG.

PLEASE ADDRESS ALL CORRESPONDENCE
TO THE COMPANY AND NOT INDIVIDUALS

36 PARK LAWN ROAD
TORONTO 18, ONT.
CLIFFORD 9-9607

REF: FILE NO.

Mr. W. H. Roxburgh,
Canadian Javelin Ltd.,
680 - 5th Avenue,
New York, N.Y.

Dear Mr. Roxburgh:

We enclose herewith 3 copies of our Preliminary Estimate of Capital & Operating Costs, dated April , 1962, for a Pelletizing Plant to produce 2,160,000 long tons of iron pellets per year, at your Julian Lake, Labrador property. This estimate is based on using the Allis-Chalmers Co. Ltd. pelletizing process.

For mining and concentrating Capital & Operating Costs, see Kilborn Engineering Ltd. report dated Feb. 6, 1962.

All major equipment costs incorporated in this report have been obtained from the Allis-Chalmers Co. Ltd. and other equipment suppliers.

The Labour costs used have been based on those derived from the collective agreement the Iron Ore Company of Canada have with the United Steel Workers of America.

Cost of the required supplies have been based on laid down prices at Seven Islands with nominal freight allowances from Seven Islands to the mine.

May we express our sincere appreciation of your request to prepare this report, which we trust provides you with all the necessary information you require at this time. However, not having visited the site, we ask you to consider this report as being of a preliminary nature.

Respectfully submitted,

KILBORN ENGINEERING LTD.

KMD/ml.
Encls.

K. M. Dewar, P. Eng.
President.

CANADIAN JAVELIN LTD.

PRELIMINARY ESTIMATE

OF

CAPITAL & OPERATING COST

FOR

A PELLETIZING PLANT

TO PRODUCE

2,160,000 LONG TONS OF PELLETS PER YEAR

(PELLETIZING ONLY)

AT

JULIAN LAKE, LABRADOR

Dated:

PREPARED AND SUBMITTED BY:

Kilborn Engineering Ltd.,
Consulting Engineers,
36 Park Lawn Road,
Toronto 18, Ontario.

CANADIAN JAVELIN LTD.

PRELIMINARY ESTIMATED CAPITAL & OPERATING COST

FOR A

PELLETIZING PLANT TO PRODUCE

2,160,000 LONG TONS OF PELLETS PER YEAR

AT

JULIAN LAKE, LABRADOR

I N D E X

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CANADIAN JAVELIN LTD.

PRELIMINARY ESTIMATE OF CAPITAL & OPERATING COST

FOR

A PELLETTIZING PLANT TO PRODUCE

2,160,000 LONG TONS OF PELLETS PER YEAR

AT

JULIAN LAKE, LABRADOR

GENERAL DATA

1. This report covers Capital & Operating Costs for pelletizing only.
2. The installation is based on using Allis Chalmers Co. Ltd. pelletizing process only,
3. It is assumed that a grind of 70% minus 200 mesh will produce a satisfactory pellet.
4. Equipment to handle and process limestone and/or silica for use in pellet mix is included. (This may not be necessary.)
5. Concentrates to be handled from concentrate plant to pelletizing plant by pipe line.
6. Pelletizing layout is on a two line basis, each line capable of producing 1,080,000 long tons of pellets per year; total capacity 2,160,000 long tons.

CANADIAN JAVELIN LTD.

PRELIMINARY ESTIMATED CAPITAL COST

FOR

A PELLETIZING PLANT TO PRODUCE

2,160,000 LONG TONS OF PELLETS PER YEAR

SUMMARY

1.	<u>PELLETIZING PLANT</u>		
	A. Building	\$ 3,064,000.00	
	B. Equipment	<u>11,660,000.00</u>	\$14,724,000.00
2.	<u>LOADOUT</u>		
	A. Building	596,000.00	
	B. Equipment	<u>220,000.00</u>	816,000.00
3.	<u>SUBSTATION & GENERAL DISTRIBUTION LINES</u>		275,000.00
4.	<u>WATER SUPPLY</u>		100,000.00
5.	<u>CONCENTRATE PUMP & PIPE LINES - CONCENTRATOR TO PELLETIZING PLANT</u>		150,000.00
6.	<u>OIL TANKS & DISTRIBUTING LINES</u>		100,000.00
7.	<u>R. R. TRACKS & SIDINGS INSIDE PLANT AREA</u>		280,000.00
8.	<u>ROADS & YARDS INSIDE PLANT AREA</u>		<u>125,000.00</u>
	TOTAL		\$16,570,000.00
	Overhead, Insurance, Engineering Design, Supervision, etc.		<u>2,480,000.00</u>
	TOTAL FOR PELLETIZING PLANT		<u>\$19,050,000.00</u>
	(See Page 3 for explanation of items below)		
9.	<u>SPRINKLERS</u>		\$ 150,000.00
10.	<u>SUBDIVISION AT WABUSH</u>		\$ 1,500,000.00
	Total of Items 9 and 10		\$ 1,650,000.00
	TOTAL ESTIMATED PLANT & SERVICE EXPENDITURES		<u>\$20,700,000.00</u>

Consideration of the following items is a matter of policy to be established by the client and would have considerable bearing on the overall capital cost of the project:

9. SPRINKLERS

All surface structures covered under Pelletizing Plant are of a fire resistant type of construction and no sprinkler costs were included in the main estimate.

However, general experience shows that the reduction in fire insurance premiums for a sprinklered risk as against a non-sprinklered risk will pay for the cost of the sprinkler installation in from 2 to 5 years.

Estimated cost of Sprinkler installation - \$150,000.00

10. SUBDIVISION AT WABUSH

If the main living accommodation is constructed at Wabush townsite, this will require a subdivision of at least 75 dwellings, which would entail an expenditure of approx. - \$1,500,000.00

Total Estimated Cost of these Items \$1,650,000.00

CANADIAN JAVELIN LTD.

PRELIMINARY ESTIMATED CAPITAL COST

FOR

A PELLETIZING PLANT TO PRODUCE

2,160,000 LONG TONS OF PELLETS PER YEAR

DETAILS

1. PELLETIZING PLANT

A. Building

Excavation & preparing site	\$ 24,000.00
Backfill	28,000.00
Concrete	858,000.00
Structural steel	1,043,100.00
Sidewalls	168,000.00
Roof deck & roofing	154,000.00
Doors & windows	25,000.00
Heating & ventilating	225,000.00
Lighting	110,000.00
Painting & Misc.	150,000.00
Contingencies	<u>278,900.00</u>

Total for 'A' Building \$ 3,064,000.00

B. Equipment

(1) Grinding

2 - 12' x 18' surge tanks	4,000.00
4 - 11' x 16' Ball Mills complete with liners, drive, motors, etc.	840,000.00
8 - Krieb type cyclones	16,000.00
8 - Pumps & pump boxes	20,000.00
1 - 25-ton service crane	32,000.00
Chutes & Launderers	8,000.00
Pipes & piping	16,000.00
Electrical & controls	94,000.00
Installation	307,000.00
Contingencies	<u>133,000.00</u>

Total for Grinding \$ 1,470,000.00

1. PELLETIZING PLANTB. Equipment (Cont'd)(2) Mixing & Pelletizing

4 - 6'9" x 5 disc Taconite disc filters	\$ 105,000.00
8 - Cone shaped bins approx. 22' x 45'	160,000.00
8 - Bentonite bins	58,000.00
8 - Limestone bins	80,000.00
8 - Table feeders	48,000.00
16 - Roll feeders	8,000.00
8 - 24" belts approx. 30'lg.	24,000.00
8 - Weightometers	48,000.00
8 - Mixers	40,000.00
8 - 24" Belts approx. 50'lg.	40,000.00
8 - 9' x 30' balling drums complete	360,000.00
8 - 5' x 14' pellet screens	64,000.00
8 - 24" Belts approx. 60'lg.	36,000.00
8 - 24" Belts approx. 15'lg.	12,000.00
1 - 36" shuttle belt approx. 90' lg.	14,000.00
2 - 30" shuttle belts approx. 40' lg.	12,000.00
2 - Pellet screens	16,000.00
Monorails, hoists, etc.	12,000.00
Chutes & spouts	30,000.00
Electrical & controls	114,000.00
Installation	374,000.00
Contingencies	165,000.00
Total for Mixing & Pelletizing	\$ 1,820,000.00

(3) Drying, Hardening & Cooling

2 - Allis-Chalmers 12'5" x 100' grate type drying & hardening units complete with dust control, fans, brick lining, drives, etc.)
2 - Allis-Chalmers 16'x 120' kilns including drive, burners, etc.)
2 - Allis-Chalmers 40' circular coolers complete with drives, fans, etc.) \$ 4,000,000.00
2 - 30" belts approx. 60'lg.	12,000.00
2 - Elevators approx. 40'high	12,000.00
Stacks & Misc.	430,000.00
Chutes & spouts	75,000.00

1. PELLETIZING PLANTB. Equipment (Cont'd)(3) Drying, Hardening & Cooling (Cont'd)

Pipes & piping	\$ 60,000.00
Monorail, Hoists, etc.	40,000.00
Electrical & controls	463,000.00
Installation	1,300,000.00
Contingencies	<u>640,000.00</u>

Total for Drying, Hardening & Cooling \$ 7,032,000.00

(4) Raw Material Handling

Car thaw	20,000.00
Air lifts	50,000.00
Elevators	34,000.00
Bins & silos	80,000.00
Impact crusher	30,000.00
1 - 7' x 11' Ball Mill	55,000.00
Air selection	9,000.00
Feeders	11,000.00
Conveyors, etc.	18,000.00
Chutes & spouts	8,000.00
Pipes & piping	16,000.00
Dust control	18,000.00
Electrical & controls	35,000.00
Installation	120,000.00
Contingencies	<u>50,000.00</u>

Total for Raw Material Handling \$ 555,000.00

(5) Miscellaneous

3 - 2,200 CFM Vacuum Pumps complete with drive, moisture taps, etc.	60,000.00
3 - 150 H.P. boilers complete	40,000.00
1 - 3000 CFM compressor	60,000.00
Laboratory	25,000.00
Service piping	40,000.00
Plumbing	18,000.00
Vacuum lines	22,000.00
Instrumentation	100,000.00
Sampling & Misc.	40,000.00
Office furnishing	10,000.00
Lockers, etc.	18,000.00
Sumps, sump pumps, drainage, etc.	25,000.00
Painting & Misc. finish	50,000.00
Electrical & controls	50,000.00
Installation	155,000.00
Contingencies	<u>70,000.00</u>

1. PELLETIZING PLANT

B. Equipment (Cont'd)

(5) Miscellaneous

Total for Miscellaneous \$ 783,000.00

Total for 'B' Equipment \$11,660,000.00

TOTAL FOR 'A' & 'B' BUILDING & EQUIPMENT \$14,724,000.00

2. LOADOUT

A. Building

Excavation & preparing site	\$ 6,000.00
Backfill	10,000.00
Concrete	340,000.00
Structural steel	94,000.00
Sidewalls	40,000.00
Roof deck & roofing	16,000.00
Windows & doors	7,000.00
Lighting	3,000.00
Heating	18,000.00
Finishing & Misc.	8,000.00
Contingencies	<u>54,000.00</u>

Total for 'A' Building \$ 596,000.00

B. Equipment

1 - 30" conveyor belt approx. 500' lg.	40,000.00
1 - 30" conveyor belt approx. 190' lg.	16,000.00
2 - 30" shuttle conveyors approx. 80' lg.	30,000.00
Gates & chutes	24,000.00
Dust control	20,000.00
Electrical & controls	13,000.00
Installation	57,000.00
Contingencies	<u>20,000.00</u>

Total for 'B' Equipment \$ 220,000.00

TOTAL FOR 'A' & 'B' BUILDING & EQUIPMENT \$ 816,000.00

3. SUBSTATION & GENERAL DISTRIBUTION LINES 275,000.00

4. <u>WATER SUPPLY</u>	\$ 100,000.00
5. <u>CONCENTRATE PUMP & PIPE LINES - CONCENTRATOR TO PELLETIZING PLANT</u>	150,000.00
6. <u>OIL TANKS & DISTRIBUTION LINES</u>	100,000.00
7. <u>R. R. TRACKS & SIDING INSIDE PLANT AREA</u>	280,000.00
8. <u>ROADS & YARDS INSIDE PLANT AREA</u>	<u>123,000.00</u>
Total	\$16,570,000.00
Overhead, Insurance, Engineering Design, Supervision, etc.	<u>2,480,000.00</u>
TOTAL FOR PELLETIZING	<u><u>\$19,050,000.00</u></u>

CANADIAN JAVELIN LTD.

PRELIMINARY ESTIMATED OPERATING COSTS

FOR

A PELLETIZING PLANT TO PRODUCE

2,160,000 LONG TONS OF PELLETS PER YEAR

SUMMARY

<u>Item</u>	<u>Cost per Long Ton of Pellets</u>
(1) Operating Labour	0.313
(2) Supervision Labour	0.063
(3) Power	0.153
(4) Supplies	
Steel	0.150
Fuel Oil	0.603
Bentonite	0.215
Filter cloth	
& Misc.	<u>0.147</u>
	1.115
(5) Water	0.001
(6) Maintenance	<u>0.064</u>
Total	1.708
Contingencies 10%	<u>.172</u>
TOTAL COST OF PELLETIZING PER LONG TON OF PELLETS	\$1.880

Note:

Cost of Mining & Concentrating	-	\$2.55 per long ton
Cost of Pelletizing	-	<u>1.88</u> per long ton
TOTAL COST PER LONG TON OF PELLETS		\$4.43

CANADIAN JAVELIN LTD.PRELIMINARY ESTIMATED OPERATING COSTSFORA PELLETIZING PLANT TO PRODUCE2,160,000 LONG TONS OF PELLETS PER YEARDETAILS

	No. of Men Per Shift	No. of Men Per Day	Total	Cost Per Ton Of Pellets
1. <u>Operating Labour</u>				
Ball Mill Operator	1	3		
Ball Mill Operator Helper	1	3		
Filter Operator	1	3		
Raw Material Operator	1	3		
Raw Material Operator Helper	1	3		
Pelletizing Mill Operators	2	6		
Pelletizing Mill Operator Helpers & belt attendants	2	6		
Grate Operator	1	3		
Kiln Operator	1	3		
Cooler Operator	1	3		
Sampling & sampling handling	1	3		
Belt attendant	1	3		
Boiler attendant	1	3		
Compressor & vacuum pump operator	1	3		
Loadout man.	1	3		
Loadout helpers	2	6		
Labourers		<u>9</u>	66	
19 swing men are provided for these operators -				
Total number of men required -				85

These men would be paid from \$2.10 to \$3.50 per hour
and averaging \$2.90

66 men @ \$2.90 per hour - $66 \times 2.90 \times 8 = \$1,531.20$

Cost per ton of pellets produced:

Labour 0.248
Fringe Benefit 0.037
Misc. 0.028

\$0.313

2. Supervision

1 - Pelletizer Super. @ \$12,000/year	34.29
1 - Asst. Supt. @ \$10,000/year	28.58
4 - Mill Foremen @ \$8,000/year	91.42
1 - Metallurgical chemist @ \$10,000/year	28.58
4 - Technicians @ \$6,000/year	68.58
4 - Clerks @ \$400./month	54.84
	<u>306.29</u>

Cost per ton of pellets - 0.050

Fringe Benefits & Misc. - 0.013

\$0.063

Note: The general supervisory staff is as covered by Kilborn Engineering Ltd. report dated Feb. 2, 1962, for Mining & Concentrating Plant to produce 3,000,000 Long Tons of Concentrates per year. Some additional clerical & maintenance help may be required.

3. Power

Installed H.P. H.P.H. Per Day

Pelletizing Plant

Grinding Bay	5,000	120,000
Mixing & Pelletizing	2,000	48,000
Drying & Hardening	3,800	91,200
Raw Material Handling	1,140	27,360
Miscellaneous	1,425	34,200

Loadout

120 2,880

Miscellaneous

400 9,600
13,885 333,240

Demand Load 80% - 266,592

Say - 270,000 H.P.H.

Assume Power Cost @ 3.5 mills per H.P.H.

Total Cost per day will be - \$945.00

Cost per Ton of Pellets

\$0.153

4. Supplies

Steel			
Mill liners, balls, etc.	0.150		
Fuel Oil			
Drying, hardening, etc.			
29,000 gallons @ 12¢ - \$3,480.00 per day			
Heating 2,000 gallons			
@ 12¢ - <u>240.00</u>			
	\$3,720.00 -	0.603	
Bentonite		0.215	
Filter cloth & misc.		<u>0.147</u>	\$1.115
			=====

5. Water

10,000 U.S. G.P.M.			\$0.001
			=====

6. Maintenance

4% of building costs = \$140,000.00 =			\$0.064
			=====

ESTIMATED H.P. REQUIREMENTS1. PELLETIZING PLANT(1) Grinding

4 Ball Mills @ 1200 H.P. each	4800	
Pumps & Misc.	<u>200</u>	5,000

(2) Mixing & Pelletizing

Filters	400	
Table feeders	80	
Roll feeders	80	
Mixers	300	
Conveyor belts	240	
Screens	160	
Balling drums	600	
Misc.	<u>140</u>	2,000

(3) Drying, Hardening & Cooling

Grates	600	
Kilns	400	
Cooler	200	
Fans	2000	
Miscellaneous	<u>600</u>	3,800

(4) Raw Material Handling

Ball Mill	800	
Crushers	100	
Elevator	40	
Air lifts	100	
Conveyors	50	
Misc.	<u>50</u>	1,140

(5) Miscellaneous

Oscillating conveyors	75	
Ball mills	150	
Vacuum pumps	200	
Conveyors	600	
Misc. lighting, etc.	<u>400</u>	<u>1,425</u>

TOTAL FOR PELLETIZING PLANT

13,365

2. LOADOUT

Belt conveyors	60	
Shuttle belts	30	
Dust control & Misc.	<u>30</u>	120

3. MISCELLANEOUS

Oil supply	50	
Water supply	100	
Misc. yard lighting, etc.	<u>250</u>	400

TOTAL ESTIMATED H.P.

13,835

Demand Load 80% - 11,108

Install a 10,000 K.W. Substation.

CANADIAN JAVELIN LTD.GENERAL SPECIFICATIONS & DESCRIPTION OF SURFACE PLANT1. PELLETIZING PLANT

This will be a structural steel frame building on reinforced concrete foundations, and floor system, with insulated metal panel walls. Q: deck roof and built-up roofing with necessary doors, lighting, heating, plumbing, etc.

Equipment will consist of regrind mills, surge bins, mixing & pelletizing units, grate furnace layouts, kilns and coolers. The structure is primarily laid out on a 2 line basis.

The above structure also includes raw material handling and preparation equipment, thaw shed, heating plant, change & locker room, washrooms, laboratory and mill office layout.

The above covers the Allis-Chalmers basic pelletizing layout only.

2. LOADOUT

The arrangement, as shown, includes 12 reinforced concrete silos carried on reinforced concrete supporting walls over loadout tracks, and with a structural steel penthouse over structure with insulated metal panel sidewalls, Q. deck insulated built-up roof and with necessary heating, lighting, etc.

The pellets are transported from cooler area of pelletizing building to loadout structure via a 30" belt conveyor of standard type construction carried in a structural steel insulated metal covered conveyor gallery.

Due to the free flowing characteristics of the pellets, loadout from silos is via chutes with cut-off gates.

The total loadout capacity as shown, is approx. 24,000 long tons or $3\frac{1}{2}$ days run. Increased capacity can be obtained by constructing additional silos as found necessary.

Loadout requirements will be about 70 - 90-ton cars per day at full production.

3. SUBSTATION

A 10,000 K.W. substation to include necessary transformers, switching structure, on a reinforced concrete base and with necessary protecting house, etc.

The estimate as submitted covers distribution lines from substation to various control rooms, but does not include the cost of the transmission lines from power source to substation.

4. WATER SUPPLY

This system calls for necessary pumps and pipe lines from Concentrator water tank to pelletizing plant, together with the necessary distribution lines and fire hydrants about plant area.

5. CONCENTRATE PUMP & PIPE LINES FROM CONCENTRATOR TO PELLETTIZING PLANT

The above layout is based on using two separate 10" all steel pipe lines, to carry concentrates in slurry form from Concentrator to Pelletizing Building. A single pipe line with splitter box layout may be incorporated in place of the above if found advisable.

6. OIL TANKS & DISTRIBUTING LINES

The tank farm will consist of 2 - 450,000 gallon tanks together with the necessary pumps, pipe lines, heating lines, etc.

7. R. R. TRACKS

The R.R. tracks and siding to be provided capable of handling approx. 70 R.R. cars per day, together with facilities for unloading at thaw shed and tank farm. Estimate, as submitted, does not include R.R. tracks requirements from Wabush line to plant site.

8. ROADS & YARDS

This item includes general yard area and roadways around plant and covers general grading and crushed rock surfacing only.

Estimate, as submitted, does not include cost of roadway from Wabush to plant site.

Respectfully submitted,

KILBORN ENGINEERING LTD.

K. M. Dewar, P. Eng.
President.

KMD/ml.

CANADIAN JAVELIN LTD.
 FLOW SHEET
 FOR
 PELLETIZING PLANT
 TO PRODUCE

2,160,000 Long Tons of Pellets per year

NOTE:

Mining & Concentrating to follow Flow Sheets, as shown in Kilborn Engineering Ltd. Report, February 2, 1962.

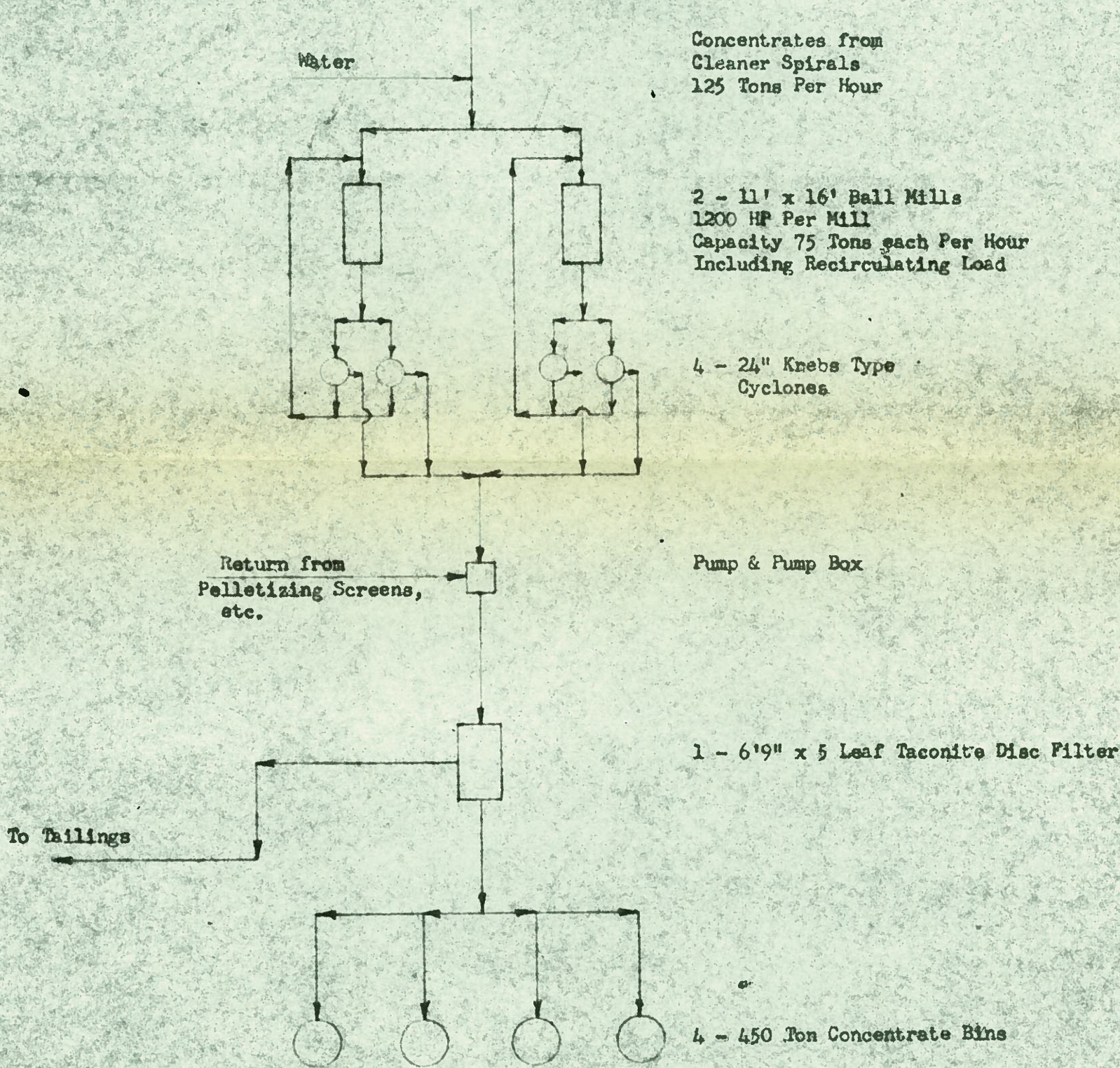
This Flow Sheet picks up after the Cleaner Spirals.

One 1,080,000 Long Ton Per Year Line Only Shown.

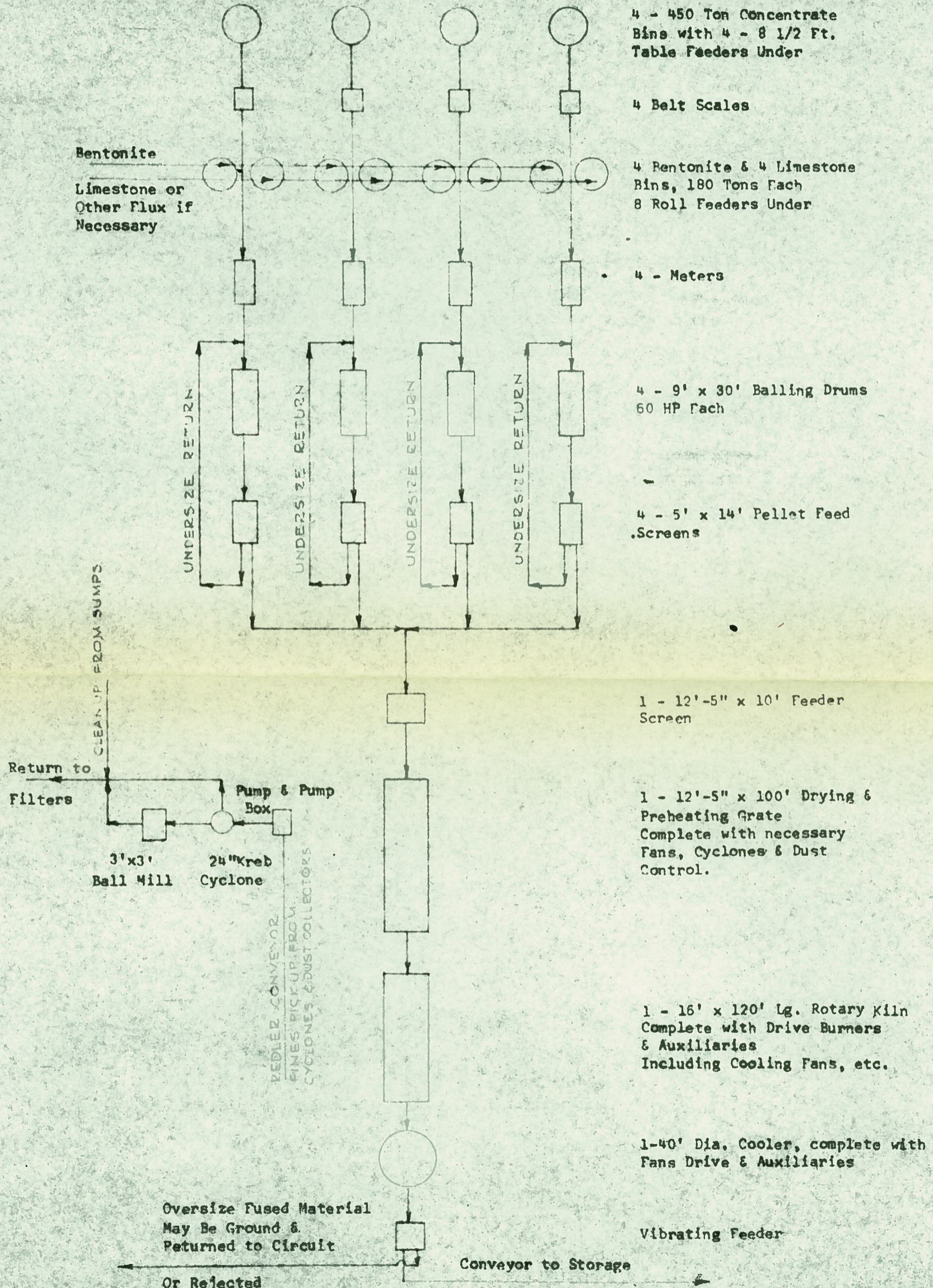
2 Lines Required in Complete Layout.

Balance of Concentrates 840,000 Long Tons Per Year to be handled

at Smelter as shown in Kilborn Engineering Report February 13, 1962.



PELLETIZING IS CARRIED OUT IN LINES
ONE LINE ONLY SHOWN ON THIS FLOW SHEET.



4 - 450 Ton Concentrate
Bins with 4 - 8 1/2 Ft.
Table Feeders Under

4 Belt Scales

Bentonite
Limestone or
Other Flux if
Necessary

4 Bentonite & 4 Limestone
Bins, 180 Tons Each
8 Roll Feeders Under

4 - Meters

4 - 9' x 30' Balling Drums
60 HP Each

4 - 5' x 14' Pellet Feed
Screens

CLEANUP FROM SUMPS

1 - 12'-5" x 10' Feeder
Screen

Return to
Filters

Pump & Pump
Box

3'x3'
Ball Mill

24" Krebs
Cyclone

1 - 12'-5" x 100' Drying &
Preheating Grate
Complete with necessary
Fans, Cyclones & Dust
Control.

PELLET CONVEYOR
FINES PICKUP FROM
CYCLONES & DUST COLLECTORS

1 - 16' x 120' Lg. Rotary Kiln
Complete with Drive Burners
& Auxiliaries
Including Cooling Fans, etc.

1-40' Dia. Cooler, complete with
Fans Drive & Auxiliaries

Oversize Fused Material
May Be Ground &
Returned to Circuit

Vibrating Feeder

Or Rejected

Conveyor to Storage

BENTONITE

14 # Per Ton of Concentrates
 15,120 Ton Per Year = 43 Tons Per Day



R. R. Cars

Airlift to Silo, Capacity
 Approx. 80 Ton/H.

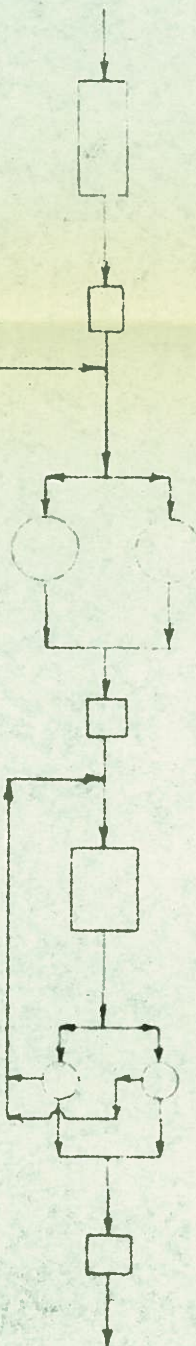
1 - 22' x 45' Silo
 Capacity Approx. 1,000 Tons

Air Lift to Pelletizing
 Bins, Capacity Approx. 10 Ton/H.

Limestone

The Basic Metallurgical Requirement for the Pelletizing of this ore has not been ascertained.

If Limestone should be required in Pellet Mix, Materials will be processed as follows:



R. R. Cars

Thaw Shed
 Winter Only

Car Dump or
 Shake Out

If Limestone
 Delivered by
 Truck

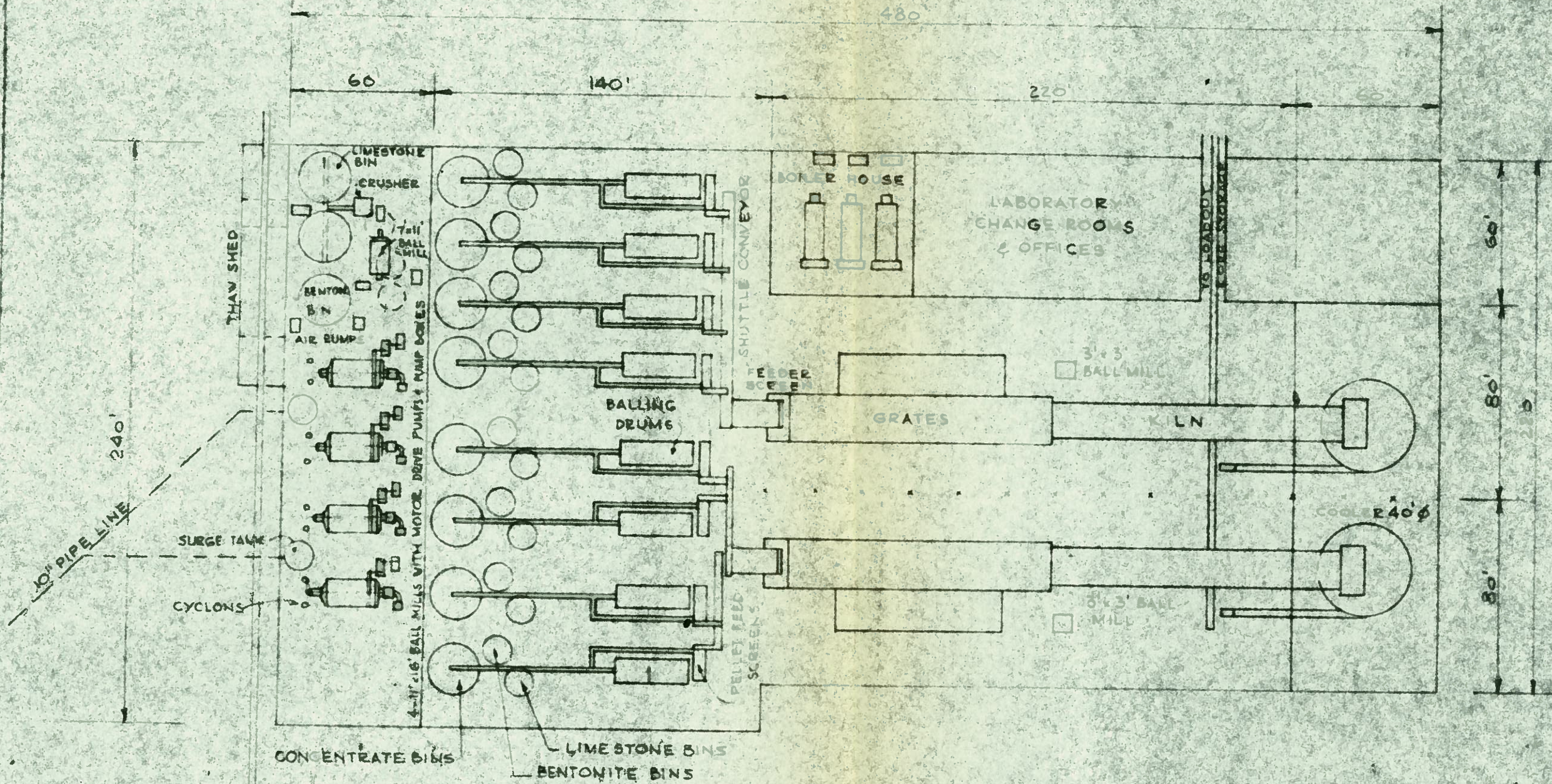
2 - 22' x 45' Silo's
 Capacity Approx. 500 Ton Each

Impact Crusher Capacity
 Approx. 20 Ton/H.
 -10 Mesh Material

1 - 7' x 11' Ball Mill
 250 HP Capacity - 20 Ton/H
 Including Recycle Load.

2 - 10' Air Classifiers
 These may be in series split
 on the -200 Mesh.

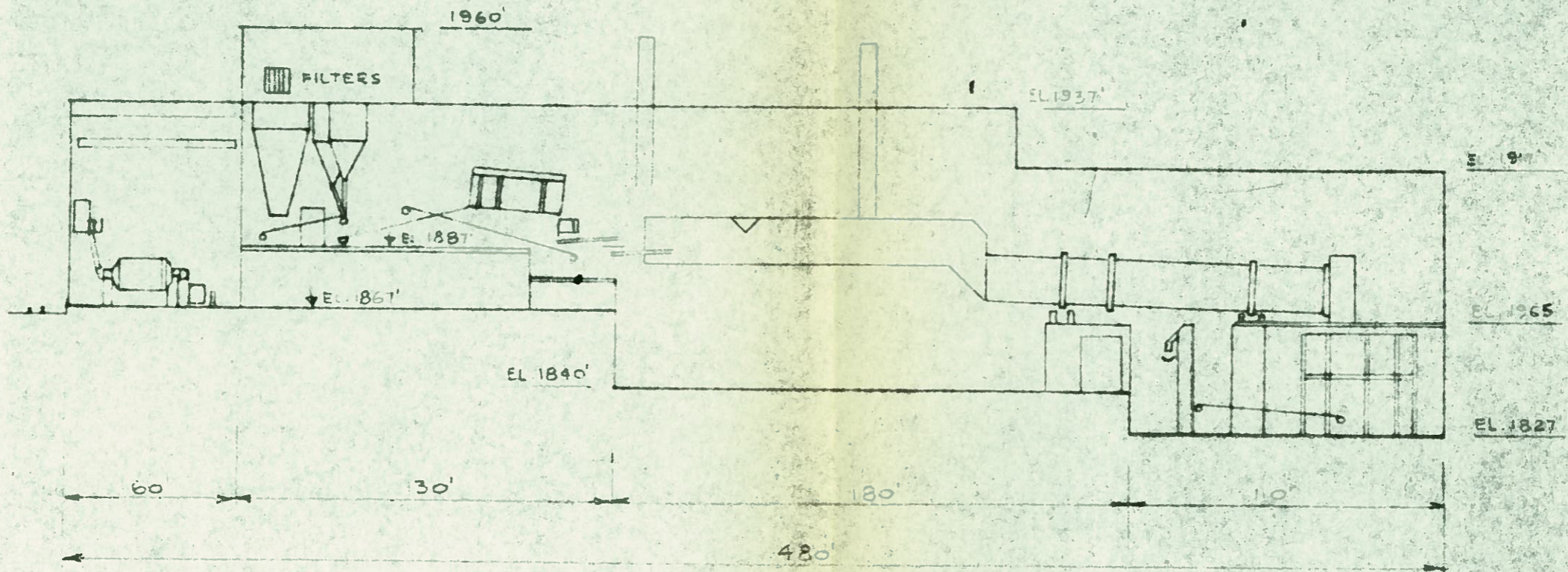
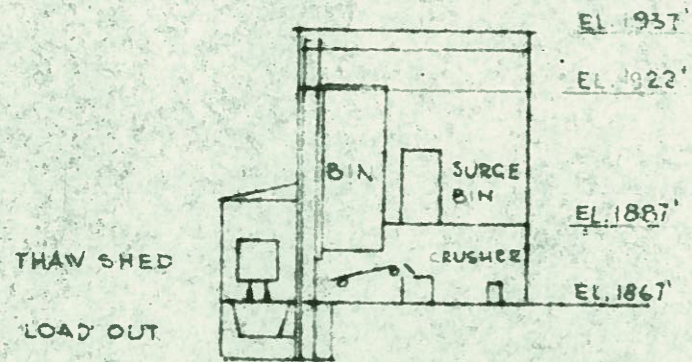
Air Lift to Pelletizing
 Bins, Capacity Approx. 10 Ton/Hr.



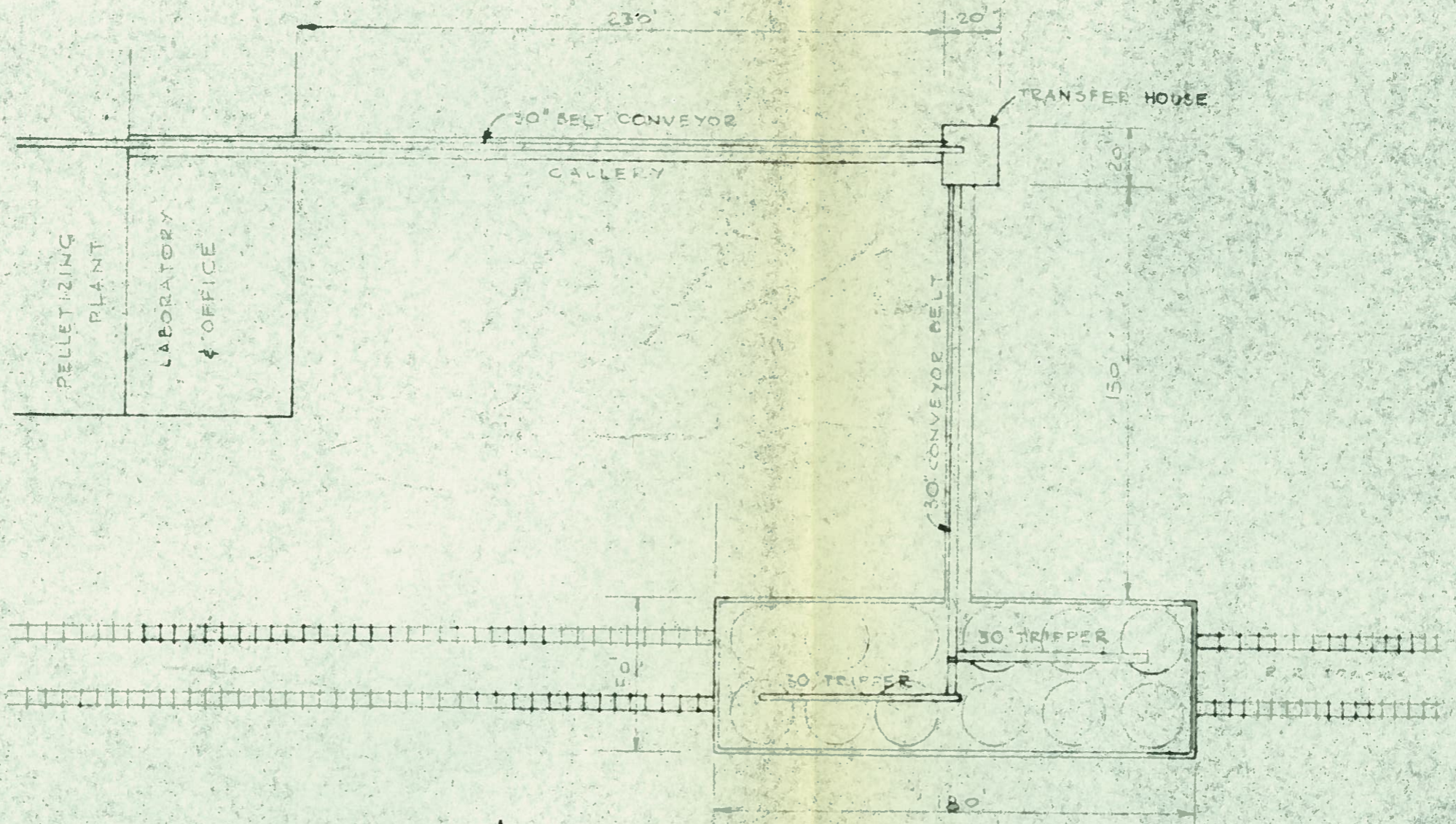
PELLETIZING PLANT

PLAN

SCALE: 1" = 50'



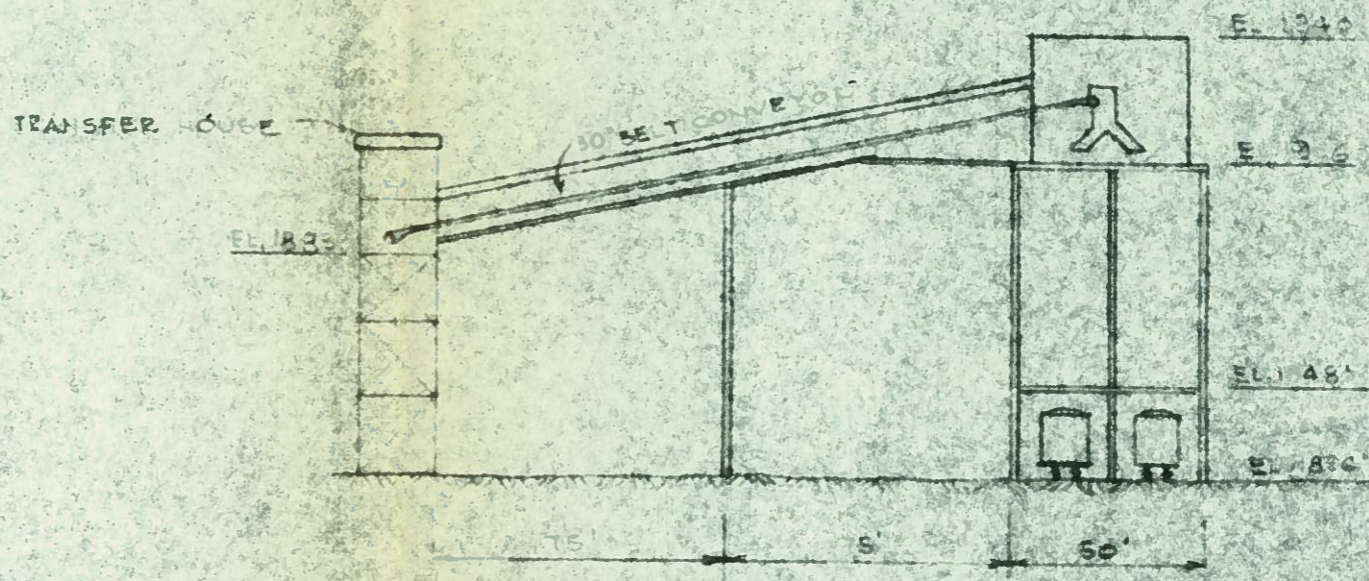
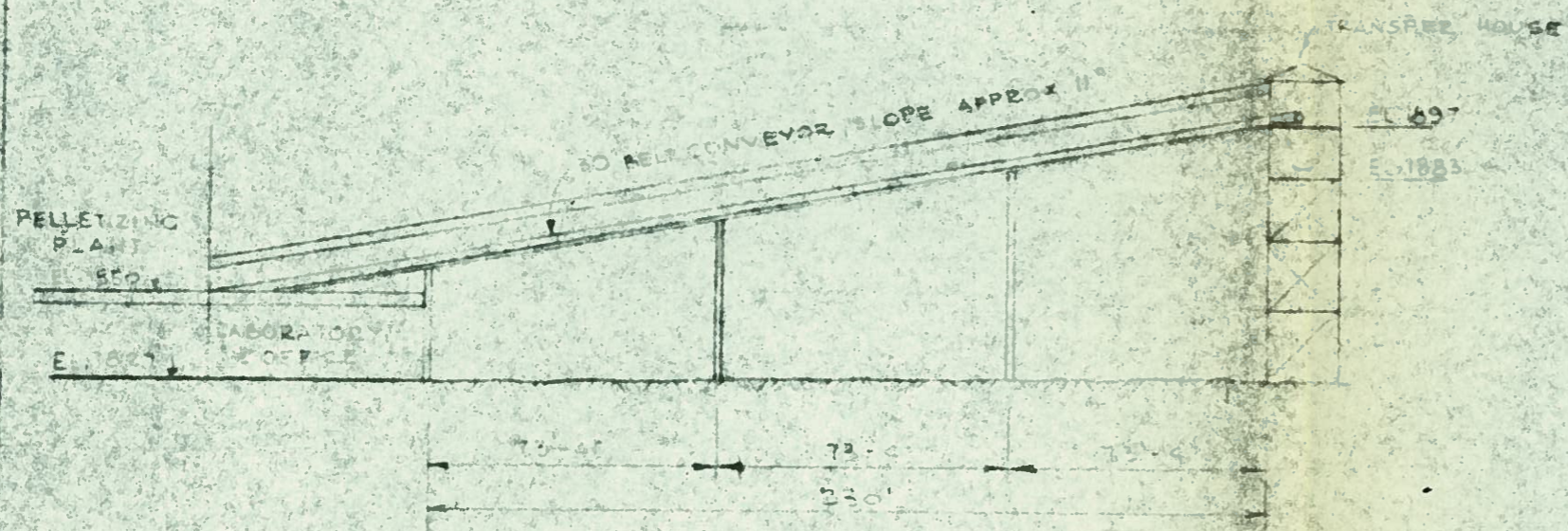
PELLETIZING PLANT
ELEVATION
SCALE 1"=50'



12 LOADOUT BINS
 22' x 58' APPROX 200 LONG TON EACH
 TOTAL 24,000 TONS, 3 1/2 DAYS RUN

LOAD OUT PLAN

SCALE: 1" = 50'



LOADOUT ELEVATIONS
SCALE: 1" = 50'