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14,000 TCD - THREE BOILING

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TABLE I

14,000 TCD - THREE BOILING

BASIC DATA

	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)
	-----	-----
Nominal Capacity, Short Tons of Cane per Day	13,500.00	13,500.00
Design Capacity, Short Tons of Cane per Day	14,000.00	14,000.00
Lost Time, %	3.57	3.57
Manufacturing Data		

Short Tons of Cane per Hour	583.33	583.33
Mixed Juice % Cane	101.60	101.60
Imbibition % Cane	30.00	30.00
Bagasse % Cane	28.39	28.39
Cane, % Pol	13.00	13.00
% Brix	15.96	15.96
% Fiber	13.00	13.00
Bagasse, % Pol	1.83	1.83
% Moisture	51.60	51.60
% Fiber	45.78	45.78
Pol Extraction % Pol in Cane	96.00	96.00
Clarifier Underflow % Cane	20.00	20.00
Filtrate Juice % Cane	18.40	18.40
Filter Wash Water % Cane	4.00	4.00
Filter Cake % Cane	5.60	5.60
Pol % Filter Cake	2.00	2.00
Clarified Juice % Cane	100.00	100.00
Sugar Yield, Lbs/Gross Ton Cane	231.74	231.74
Lbs 96/Gross Ton Cane	236.59	236.59
Lbs R.V./Gross Ton Cane	239.88	239.88
Final Molasses, Gallons @ 80 Brix/Gross Ton Cane	7.16	7.16
Boiling House Retention	90.99	90.99
Overall Recovery	87.35	87.35

(9/11/14)

Table I (Contd.)

Basic Data

13,500.00 STCD (Nominal)
14,000.00 STCD (Design)

13,500.00 STCD (Nominal)
14,000.00 STCD (Design)

Manufacturing Data (Contd.)

	Brix	Purity	Brix	Purity
	----	-----	----	-----
Crusher Juice	19.47	84.00	19.47	84.00
Normal Juice	18.88	81.99	18.88	81.99
Absolute Juice	18.34	81.44	18.34	81.44
Mixed Juice	14.97	81.99	14.97	81.99
Limed Juice	15.00	81.84	15.00	81.84
Last Roll Juice	3.00	70.00	3.00	70.00
Clarified Juice	14.90	82.99	14.90	82.99
Filtrate Juice	15.11	80.99	15.11	80.99
Clarifier Underflow (Muds)	15.50	76.29	15.50	76.29
Syrup	62.00	83.00	62.00	83.00
Raw Sugar	99.50	98.50	99.50	98.50
Magma	90.00	86.00	90.00	86.00
A Massecuite	92.50	83.33	92.50	83.33
Top-Off A Massecuite	92.00	80.00	92.00	80.00
B Massecuite	94.00	72.00	94.00	72.00
C Massecuite	95.50	55.00	95.50	55.00
A Molasses (Diluted)	65.00	70.00	65.00	70.00
Top-Off A Molasses	60.00	60.00	60.00	60.00
B Molasses (Diluted)	65.00	52.00	65.00	52.00
Final Molasses	79.50	30.00	79.50	30.00
C Grain	90.00	65.00	90.00	65.00
High Grade Grain	88.00	75.00	88.00	75.00

Operating Conditions

Temperatures, deg. F

First Stage Limed Juice Heaters, In	80.00	80.00
First Stage Limed Juice Heaters, Out	180.00	180.00
Second Stage Limed Juice Heaters, Out	220.00	220.00
Clarified Juice Heaters, In	208.00	208.00
Clarified Juice Heaters, Out	208.00	208.00
Injection Water, In	90.00	90.00
Injection Water, Out	115.00	115.00
Boiler Feed Water Deaerator, In	210.00	210.00
Boiler Feed Water Deaerator, Out	245.00	245.00

Pressures, psig

Live Steam Pressure, Generating	400.00	400.00
Live Steam Temp., Generating, deg. F	650.00	650.00
Live Steam Pressure, Turbines	380.00	380.00
Live Steam Temp., Turbines, deg. F	648.00	648.00
Exhaust Pressure, Out of Turbines	20.00	20.00
Exhaust Pressure, Boiling House	18.40	18.40
Vacuum, In. Hg.	25.06	25.06

Table I (Contd.)

Basic Data

13,500.00 STCD (Nominal)
14,000.00 STCD (Design)

13,500.00 STCD (Nominal)
14,000.00 STCD (Design)

Assumptions

Power Requirements, H.P./Ton Fiber - Hour

	13,500.00 STCD (Nominal)	14,000.00 STCD (Design)
First Knives, Average	12.00	12.00
Maximum	14.00	14.00
Second Knives, Average	12.00	12.00
Maximum	14.00	14.00
Third Knives, Average	0.00	0.00
Maximum	0.00	0.00
Shredder, Average	0.00	0.00
Maximum	0.00	0.00
Mill No. 1, Average	11.00	11.00
Maximum	13.00	13.00
Mill No. 2, Average	11.00	11.00
Maximum	13.00	13.00
Mill No. 3, Average	11.00	11.00
Maximum	13.00	13.00
Mill No. 4, Average	11.00	11.00
Maximum	13.00	13.00
Mill No. 5, Average	11.00	11.00
Maximum	13.00	13.00
Mill No. 6, Average	11.00	11.00
Maximum	13.00	13.00
Mill No. 7, Average	0.00	0.00
Maximum	0.00	0.00
Mill No. 8, Average	0.00	0.00
Maximum	0.00	0.00

Table I (Contd.)

Basic Data	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)
Assumptions (Contd.)		
Boiler Efficiency Burning Bagasse, %	58.00	58.00
Ash % Bagasse (as fired), %	4.00	4.00
Turbine Water Rates	Listed in Table VIII	Listed in Table VIII
Holding Time in Clarifiers, Hours	1.50	1.50
Filters, Drum Speed, Mins/Rev.	3.00	3.00
Filter Cake Density, lbs/Cu.Ft.	35.00	35.00
Filter Cake Thickness, In.	0.25	0.25
Vacuum Pans, Boiling Scheme	Conventional Three Boiling	
Vacuum Pans, Boiling Time, Hours/Strike		
'A' Strike	2.50	2.50
'B' Strike	3.00	3.00
'C' Strike	5.00	5.00
Grain	4.00	4.00
Vacuum Pans, Pan Factor, lbs Exhaust or Vapor / Lb Evaporation		
'A' Strikes	1.15	1.15
'B' Strikes	1.20	1.20
'C' Strikes	1.25	1.25
Grain	1.25	1.25
Heat Transfer Coefficients, Btu/Hr-Sq. Ft.-deg. F		
First Stage Limed Juice Heaters	180.00	180.00
Second Stage Limed Juice Heaters	180.00	180.00
Clarified Juice Heaters	250.00	250.00
Crystallizers, Curing Time, Hours/Strike	36.00	36.00
High Grade Centrifugals		
Working Time % Total Time	90.00	90.00
'A' Strike Cycle Time, Mins./Cycle	3.33	3.33
'B' Strike Cycle Time, Mins./Cycle	60.00	60.00
Low Grade Continuous Centrifugal Capacity, Cu. Ft./Day/Machine	5,000.00	5,000.00

SKETCH 1

14,000 TCD - THREE BOILING

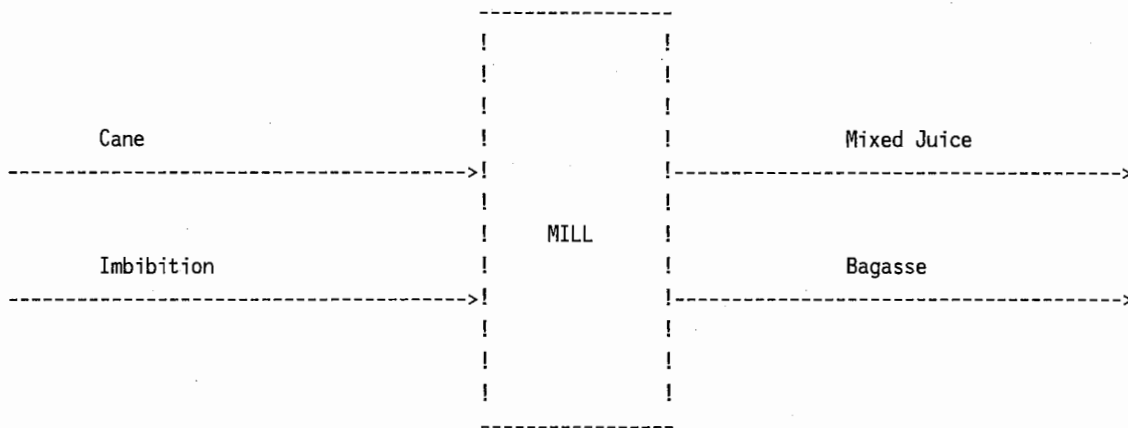
MILL MATERIAL BALANCE

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Cane	lb/hr	%
Po1	151,666	13.00
Brix	186,227	15.96
Fiber	151,666	13.00
Water	828,772	71.03
Total	1,166,666	100.00

Mixed Juice	lb/hr	%
Po1	145,600	12.28
Brix	177,560	14.97
Water	1,007,838	85.02
Total	1,185,399	100.00



Imbibition	lb/hr	% Cane
Water	350,000	30.00

Bagasse	lb/hr	%
Po1	6,066	1.83
Brix	8,666	2.61
Fiber	151,666	45.78
Moisture	170,933	51.60
Total	331,267	100.00

SKETCH 2

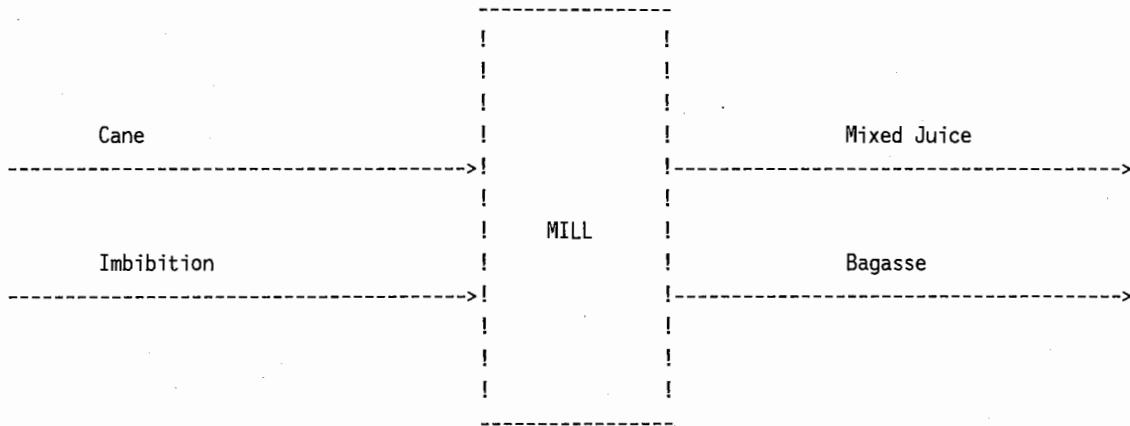
14,000 TCD - THREE BOILING

MILL MATERIAL BALANCE

13,500.00 STCD (Nominal)
14,000.00 STCD (Design)

Cane	lb/hr	%
Po1	151,666	13.00
Brix	186,227	15.96
Fiber	151,666	13.00
Water	828,772	71.03
Total	1,166,666	100.00

Mixed Juice	lb/hr	%
Po1	145,600	12.28
Brix	177,560	14.97
Water	1,007,838	85.02
Total	1,185,399	100.00



Imbibition	lb/hr	% Cane
Water	350,000	30.00

Bagasse	lb/hr	%
Po1	6,066	1.83
Brix	8,666	2.61
Fiber	151,666	45.78
Moisture	170,933	51.60
Total	331,267	100.00

TABLE II-A

14,000 TCD - THREE BOILING

MATERIAL BALANCE

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Stream	Material	Pol	Brix			Material		
	% Cane	lb/hr	lb/hr	Purity	Brix	lb/hr	GPM	Cu. Ft./Hr
-----	-----	-----	-----	-----	-----	-----	-----	-----
Continuous Process								

Cane	100.00	151,666	186,227	---	---	1,166,666	---	---
Imbibition Water	30.00	0	0	0.00	0.00	350,000	700.9	5,622
Bagasse	28.39	6,066	8,666	---	---	331,267	---	---
Refinery Scums, etc.	0.00	0	0	0.00	0.00	0	0.0	0
Mixed Juice	101.60	145,600	177,560	81.99	14.97	1,185,399	2,237.4	17,947
Limed Juice	120.00	171,886	210,014	81.84	15.00	1,400,066	2,642.3	21,195
Clarifier Underflow	20.00	27,593	36,166	76.29	15.50	233,333	439.4	3,525
Filter Wash Water	4.00	0	0	0.00	0.00	46,666	93.4	749
Filtrate Juice	18.40	26,286	32,453	81.00	15.11	214,666	404.9	3,248
Filter Cake	5.60	1,306	3,713	35.18	5.68	65,333	232.7	1,866
Clarified Juice	100.00	144,293	173,847	83.00	14.90	1,166,732	2,202.8	17,670
Evaporation (Evaporators)	75.97	0	0	0.00	0.00	886,333	1,774.9	14,237
Syrup	24.03	144,293	173,847	83.00	62.00	280,399	431.6	3,462

TABLE II-A (Contd.)

14,000 TCD - THREE BOILING

MATERIAL BALANCE

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Stream	Material	Po1	Brix			Material		
	% Cane	lb/hr	lb/hr	Purity	Brix	lb/hr	GPM	Cu.Ft./Hr.
Batch Process								
'A' Strike								
Magma	2.02	18,218	21,183	86.00	90.00	23,537	31.8	255
Refinery Returns	0.00	0	0	0.00	0.00	0	0.0	0
Syrup	23.62	141,793	170,834	83.00	62.00	275,539	424.2	3,402
Total	25.64	160,010	192,018	83.33	64.20	299,076	455.8	3,656
Evaporation	7.84	0	0	0.00	0.00	91,490	183.2	1,470
'A' Masseccuite	17.79	160,010	192,018	83.33	92.50	207,587	277.0	2,222
'A' Sugar	7.74	88,470	89,817	98.50	99.50	90,268	204.6	1,641
'A' Molasses	10.06	71,541	102,201	70.00	87.11	117,318	160.6	1,288
Dil Plus Centrif Wash Water	3.42	0	0	0.00	0.00	39,914	79.9	641
'A' Molasses (Diluted)	13.48	71,541	102,201	70.00	65.00	157,232	238.7	1,915
'B' Strike								
Magma	1.00	9,065	10,541	86.00	90.00	11,712	15.8	127
Syrup	0.42	2,501	3,013	83.00	62.00	4,860	7.5	60
'A' Molasses (Diluted)	11.92	63,250	90,357	70.00	65.00	139,011	211.1	1,693
Total	13.34	74,816	103,911	72.00	66.79	155,583	234.3	1,879
Evaporation	3.86	0	0	0.00	0.00	45,039	90.2	723
'B' Masseccuite	9.48	74,816	103,911	72.00	94.00	110,544	146.5	1,175
'B' Sugar	3.85	44,023	44,693	98.50	99.50	44,917	101.8	817
'B' Molasses	5.63	30,793	59,218	52.00	90.24	65,626	88.5	710
Dil Plus Centrif Wash Water	2.18	0	0	0.00	0.00	25,479	51.0	409
'B' Molasses (Diluted)	7.81	30,793	59,218	52.00	65.00	91,105	138.3	1,110

TABLE II-A (Contd.)

14,000 TCD - THREE BOILING

MATERIAL BALANCE

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Stream	Material	Po1	Brix	Purity	Brix	Material		
	% Cane	lb/hr	lb/hr			lb/hr	GPM	Cu.Ft./Hr.
Batch Process (Cont'd.)								

'C' Strike								

Grain	1.56	10,659	16,399	65.00	90.00	18,221	24.6	197
'B' Molasses (Diluted)	7.21	28,425	54,663	52.00	65.00	84,097	127.7	1,024
Total	8.77	39,084	71,062	55.00	69.45	102,318	152.2	1,221
Evaporation	2.39	0	0	0.00	0.00	27,907	55.9	448
'C' Masseccuite	6.38	39,084	71,062	55.00	95.50	74,410	97.9	785
'C' Sugar	2.76	27,283	31,724	86.00	98.56	32,189	73.0	585
Final Molasses	3.62	11,801	39,338	30.00	93.17	42,221	56.2	450
Dil Plus Centrif Wash Water	0.88	0	0	0.00	0.00	10,320	20.7	166
Magma (Diluted 'C' Sugar)	3.02	27,283	31,724	86.00	90.00	35,249	47.6	382
Final Molasses (Diluted)	4.24	11,801	39,338	30.00	79.50	49,481	70.2	563
Grain								

Syrup	0.00	0	0	83.00	62.00	0	0.0	0
'A' Molasses (Diluted)	1.56	8,291	11,844	70.00	65.00	18,221	27.7	222
'B' Molasses (Diluted)	0.60	2,369	4,555	52.00	65.00	7,008	10.6	85
Total	2.16	10,659	16,399	65.00	65.00	25,229	38.3	307
Evaporation	0.60	0	0	0.00	0.00	7,008	14.0	113
Grain	1.56	10,659	16,399	65.00	90.00	18,221	24.6	197

'A' Masseccuite Crystal Yield = 44.44%

'B' Masseccuite Crystal Yield = 41.67%

'C' Masseccuite Crystal Yield = 35.71%

Crystal Content,DS (15.20 REIN)

TABLE II-B

14,000 TCD - THREE BOILING

MATERIAL BALANCE

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Stream	Material	Po1	Brix			Material		
	% Cane	1b/hr	1b/hr	Purity	Brix	1b/hr	GPM	Cu. Ft./Hr
-----	-----	-----	-----	-----	-----	-----	-----	-----
Continuous Process								

Cane	100.00	151,666	186,227	---	---	1,166,666	---	---
Imbibition Water	30.00	0	0	0.00	0.00	350,000	700.9	5,622
Bagasse	28.39	6,066	8,666	---	---	331,267	---	---
Refinery Scums, etc.	0.00	0	0	0.00	0.00	0	0.0	0
Mixed Juice	101.60	145,600	177,560	81.99	14.97	1,185,399	2,237.4	17,947
Limed Juice	120.00	171,886	210,014	81.84	15.00	1,400,066	2,642.3	21,195
Clarifier Underflow	20.00	27,593	36,166	76.29	15.50	233,333	439.4	3,525
Filter Wash Water	4.00	0	0	0.00	0.00	46,666	93.4	749
Filtrate Juice	18.40	26,286	32,453	81.00	15.11	214,666	404.9	3,248
Filter Cake	5.60	1,306	3,713	35.18	5.68	65,333	232.7	1,866
Clarified Juice	100.00	144,293	173,847	83.00	14.90	1,166,732	2,202.8	17,670
Evaporation (Evaporators)	75.97	0	0	0.00	0.00	886,333	1,774.9	14,237
Syrup	24.03	144,293	173,847	83.00	62.00	280,399	431.6	3,462

TABLE II-B (Contd.)

14,000 TCD - THREE BOILING

MATERIAL BALANCE

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Stream	Material	Pol	Brix	Purity	Brix	Material		
	% Cane	lb/hr	lb/hr			lb/hr	GPM	Cu.Ft./Hr.
Batch Process								
'A' Strike								
Magma	2.02	18,218	21,183	86.00	90.00	23,537	31.8	255
Refinery Returns	0.00	0	0	0.00	0.00	0	0.0	0
Syrup	23.62	141,793	170,834	83.00	62.00	275,539	424.2	3,402
Total	25.64	160,010	192,018	83.33	64.20	299,076	455.8	3,656
Evaporation	7.84	0	0	0.00	0.00	91,490	183.2	1,470
'A' Masecuite	17.79	160,010	192,018	83.33	92.50	207,587	277.0	2,222
'A' Sugar	7.74	88,470	89,817	98.50	99.50	90,268	204.6	1,641
'A' Molasses	10.06	71,541	102,201	70.00	87.11	117,318	160.6	1,288
Dil Plus Centrif Wash Water	3.42	0	0	0.00	0.00	39,914	79.9	641
'A' Molasses (Diluted)	13.48	71,541	102,201	70.00	65.00	157,232	238.7	1,915
'B' Strike								
Magma	1.00	9,065	10,541	86.00	90.00	11,712	15.8	127
Syrup	0.42	2,501	3,013	83.00	62.00	4,860	7.5	60
'A' Molasses (Diluted)	11.92	63,250	90,357	70.00	65.00	139,011	211.1	1,693
Total	13.34	74,816	103,911	72.00	66.79	155,583	234.3	1,879
Evaporation	3.86	0	0	0.00	0.00	45,039	90.2	723
'B' Masecuite	9.48	74,816	103,911	72.00	94.00	110,544	146.5	1,175
'B' Sugar	3.85	44,023	44,693	98.50	99.50	44,917	101.8	817
'B' Molasses	5.63	30,793	59,218	52.00	90.24	65,626	88.5	710
Dil Plus Centrif Wash Water	2.18	0	0	0.00	0.00	25,479	51.0	409
'B' Molasses (Diluted)	7.81	30,793	59,218	52.00	65.00	91,105	138.3	1,110

TABLE II-B (Contd.)

14,000 TCD - THREE BOILING

MATERIAL BALANCE

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Stream	Material	Pol	Brix	Purity	Brix	Material		
	% Cane	lb/hr	lb/hr			lb/hr	GPM	Cu.Ft./Hr.
Batch Process (Cont'd.)								

'C' Strike								

Grain	1.56	10,659	16,399	65.00	90.00	18,221	24.6	197
'B' Molasses (Diluted)	7.21	28,425	54,663	52.00	65.00	84,097	127.7	1,024
Total	8.77	39,084	71,062	55.00	69.45	102,318	152.2	1,221
Evaporation	2.39	0	0	0.00	0.00	27,907	55.9	448
'C' Masseccuite	6.38	39,084	71,062	55.00	95.50	74,410	97.9	785
'C' Sugar	2.76	27,283	31,724	86.00	98.56	32,189	73.0	585
Final Molasses	3.62	11,801	39,338	30.00	93.17	42,221	56.2	450
Dil Plus Centrif Wash Water	0.88	0	0	0.00	0.00	10,320	20.7	166
Magma (Diluted 'C' Sugar)	3.02	27,283	31,724	86.00	90.00	35,249	47.6	382
Final Molasses (Diluted)	4.24	11,801	39,338	30.00	79.50	49,481	70.2	563
Grain								

Syrup	0.00	0	0	83.00	62.00	0	0.0	0
'A' Molasses (Diluted)	1.56	8,291	11,844	70.00	65.00	18,221	27.7	222
'B' Molasses (Diluted)	0.60	2,369	4,555	52.00	65.00	7,008	10.6	85
Total	2.16	10,659	16,399	65.00	65.00	25,229	38.3	307
Evaporation	0.60	0	0	0.00	0.00	7,008	14.0	113
Grain	1.56	10,659	16,399	65.00	90.00	18,221	24.6	197

'A' Masseccuite Crystal Yield = 44.44%

'B' Masseccuite Crystal Yield = 41.67%

'C' Masseccuite Crystal Yield = 35.71%

TABLE III

14,000 TCD - THREE BOILING

TOTAL LIVE STEAM BALANCE

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
Short Tons of Cane Ground per Hour	583.33	583.33
Bagasse Available for boilers at 100.00% of production, Lb/Hr	331,267.21	331,267.21
Moisture % Bagasse, %	51.60	51.60
Ash % Bagasse, %	4.00	4.00
Gross Calorific Value of Bagasse as Burned, 8350 x (1 - (Moisture % Bagasse + Ash % Bagasse)/100), Btu/Lb	3,707.40	3,707.40
Overall Boiler Efficiency Burning Bagasse (based on Gross Heating Value), %	58.00	58.00
Heat Transmitted to Steam, 3,707.40 x 0.5800 , Btu/Lb	2,150.29	2,150.29
Temperature of Deaerated Boiler Feed Water to Boilers, deg. F	245.00	245.00
Total Heat Required to Generate 1 Lb Steam at 400.00 psig, 650.00 deg. F, at given BFW Temperature, 1334.10 - (BFW Temp. - 32), Btu/lb	1,121.10	1,121.10
Lbs. Steam Generated per Lb. Bagasse Burned	1.92	1.92
Potential Steam Available from Bagasse, Lb/Hr	636,033.05	636,033.05
Nominal Capacity of Boilers, Lb/Hr	800,000.00	800,000.00
Number of Boilers Installed	1.00	1.00
Total Live Steam Requirements, Lb/Hr		
At Average Conditions	559,945.51	559,945.51
At Maximum Conditions	634,694.21	634,694.21
Excess Bagasse, Lb/Hr		
At Average Conditions	39,628.92	39,628.92
At Maximum Conditions	697.31	697.31
Lbs Steam Generated per Gallon of Fuel Oil	100.00	100.00
Fuel Oil Required, Gals/Hr		
At Average Conditions	0.00	0.00
At Maximum Conditions	0.00	0.00
Fuel Oil Required, Gals/Ton Cane		
At Average Conditions	0.00	0.00
At Maximum Conditions	0.00	0.00

 Note: To Obtain Supplementary Fuel Consumption in MCF (of natural gas) multiply Fuel Oil Consumption (in gallons) by 0.15

TABLE IV

14,000 TCD - THREE BOILING

TOTAL LIVE STEAM REQUIREMENTS, LB/HR

	13,500.00 STCD (Nominal)		13,500.00 STCD (Nominal)	
	14,000.00 STCD (Design)		14,000.00 STCD (Design)	
	Average	Maximum	Average	Maximum
Cane Preparation				

First Knives	20,761	24,221	20,761	24,221
Second Knives	20,761	24,221	20,761	24,221
Third Knives	0	0	0	0
Shredder	0	0	0	0
Milling Tandem				

Mill No. 1	19,031	22,491	19,031	22,491
Mill No. 2	19,031	22,491	19,031	22,491
Mill No. 3	19,031	22,491	19,031	22,491
Mill No. 4	19,031	22,491	19,031	22,491
Mill No. 5	19,031	22,491	19,031	22,491
Mill No. 6	19,031	22,491	19,031	22,491
Mill No. 7	0	0	0	0
Mill No. 8	0	0	0	0
	-----	-----	-----	-----
Total Cane Preparation and Milling Tandem	155,711	183,393	155,711	183,393
Turbo-Generators				

Turbo-Generator No. 1	109,185	109,185	109,185	109,185
Turbo-Generator No. 2	0	0	0	0
Turbo-Generator No. 3	0	0	0	0
Turbo-Generator No. 4	0	0	0	0
Induced Draft Fans				

Induced Draft Fan No. 1	0	0	0	0
Induced Draft Fan No. 2	0	0	0	0
Induced Draft Fan No. 3	0	0	0	0
Induced Draft Fan No. 4	0	0	0	0
Induced Draft Fan No. 5	0	0	0	0
Induced Draft Fan No. 6	0	0	0	0

TABLE IV (Contd.)

14,000 TCD - THREE BOILING

TOTAL LIVE STEAM REQUIREMENTS, LB/HR

	13,500.00 STCD (Nominal)		13,500.00 STCD (Nominal)	
	14,000.00 STCD (Design)		14,000.00 STCD (Design)	
	Average	Maximum	Average	Maximum
Forced Draft Fans				
Forced Draft Fan No. 1	0	0	0	0
Forced Draft Fan No. 2	0	0	0	0
Forced Draft Fan No. 3	0	0	0	0
Forced Draft Fan No. 4	0	0	0	0
Forced Draft Fan No. 5	0	0	0	0
Forced Draft Fan No. 6	0	0	0	0
Boiler Feed Water Pumps				
Boiler Feed Water Pump No. 1	0	0	0	0
Boiler Feed Water Pump No. 2	0	0	0	0
Boiler Feed Water Pump No. 3	0	0	0	0
Boiler Feed Water Pump No. 4	0	0	0	0
Limed Juice Heater Pumps				
Limed Juice Heater Pump No. 1	0	0	0	0
Limed Juice Heater Pump No. 2	0	0	0	0
Clarified Juice Heater Pumps				
Clarified Juice Heater Pump No. 1	0	0	0	0
Clarified Juice Heater Pump No. 2	0	0	0	0
Injection Water Pumps				
Injection Water Pump No. 1	0	0	0	0
Injection Water Pump No. 2	0	0	0	0
Miscellaneous				
	171,111	171,111	171,111	171,111
	0	0	0	0
Total Live Steam for All Exhaust Producing Turbines	436,008	463,690	436,008	463,690
Miscellaneous (Steam Jet Ejectors, Cleaning, Etc.)	30,000	45,000	30,000	45,000
Live Steam Make-up to Exhaust	93,936	126,003	93,936	126,003
Total Live Steam Requirements	559,945	634,694	559,945	634,694

TABLE V

14,000 TCD - THREE BOILING

EXHAUST AND VAPORS BALANCE, LB/HR

	13,500.00 STCD (Nominal)		13,500.00 STCD (Nominal)	
	14,000.00 STCD (Design)		14,000.00 STCD (Design)	
	Average	Maximum	Average	Maximum
Exhaust				

Exhaust Required for the Pre-Evaporator	0	0	0	0
Exhaust Required for the Evaporator	498,980	498,980	498,980	498,980
Exhaust Required for the High Grade Pans	0	0	0	0
Exhaust Required for the Low Grade Pans	0	0	0	0
Exhaust Required for the Clarified Juice Heater	0	0	0	0
Exhaust Required for the First Stage Limed Juice Heater	0	0	0	0
Exhaust Required for the Second Stage Limed Juice Heater	0	0	0	0
Exhaust Required for the Boiler Feed Water Deaerating Heater	21,605	24,438	21,605	24,438
Exhaust Required for Miscellaneous Uses	30,000	37,500	30,000	37,500
Exhaust Make-up to Vapor (Pre-Evap, First, Second, & Third)	0	50,726	0	50,726
	-----	-----	-----	-----
Total Exhaust Required	550,586	611,645	550,586	611,645
Exhaust Available (Saturated)	456,649	485,642	456,649	485,642
	-----	-----	-----	-----
Excess Exhaust (Minus indicates Live Steam Make-up to Exhaust)	-93,936	-126,003	-93,936	-126,003
Pre-Evaporator Vapor				

Pre-Evap Vapor Required for the High Grade Pans	0	0	0	0
Pre-Evap Vapor Required for the Low Grade Pans	0	0	0	0
Pre-Evap Vapor Required for the Clarified Juice Heater	0	0	0	0
Pre-Evap Vapor Required for the First Stage Limed Juice Heater	0	0	0	0
Pre-Evap Vapor Required for the Second Stage Limed Juice Heater	0	0	0	0
Pre-Evap Vapor Required for the Miscellaneous Uses	0	0	0	0
	-----	-----	-----	-----
Total Pre-Evaporator Vapor Required	0	0	0	0
Total Pre-Evaporator Vapor Available	0	0	0	0
	-----	-----	-----	-----
Exhaust Make-up to Pre-Evaporator Vapor	0	0	0	0

TABLE V (Contd.)

14,000 TCD - THREE BOILING

EXHAUST AND VAPORS BALANCE, LB/HR

	13,500.00 STCD (Nominal)		13,500.00 STCD (Nominal)	
	14,000.00 STCD (Design)		14,000.00 STCD (Design)	
	Average	Maximum	Average	Maximum
First Vapor				
First Vapor Required for the High Grade Pans	159,260	199,075	159,260	199,075
First Vapor Required for the Low Grade Pans	0	0	0	0
First Vapor Required for the Clarified Juice Heater	0	0	0	0
First Vapor Required for the First Stage Limed Juice Heater	0	0	0	0
First Vapor Required for the Second Stage Limed Juice Heater	53,490	53,490	53,490	53,490
First Vapor Required for the Miscellaneous Uses	0	0	0	0
Total First Vapor Required	212,750	252,565	212,750	252,565
Total First Vapor Available	212,750	212,750	212,750	212,750
Exhaust Make-up to First Vapor	0	39,815	0	39,815
Second Vapor				
Second Vapor Required for High Grade Pans	0	0	0	0
Second Vapor Required for Low Grade Pans	43,644	54,555	43,644	54,555
Second Vapor Required for Clarified Juice Heater	0	0	0	0
Second Vapor Required for First Stage Limed Juice Heater	131,802	131,802	131,802	131,802
Second Vapor Required for Second Stage Limed Juice Heater	0	0	0	0
Second Vapor for Miscellaneous Uses	0	0	0	0
Total Second Vapor Required	175,447	186,358	175,447	186,358
Total Second Vapor Available	175,447	175,447	175,447	175,447
Exhaust Make-up to Second Vapor	0	10,911	0	10,911
Third Vapor				
Third Vapor Required for High Grade Pans	0	0	0	0
Third Vapor Required for Low Grade Pans	0	0	0	0
Third Vapor Required for Limed Juice Heater	0	0	0	0
Third Vapor Required for First Stage Limed Juice Heater	0	0	0	0
Third Vapor Required for Second Stage Limed Juice Heater	0	0	0	0
Third Vapor for Miscellaneous Uses	0	0	0	0
Total Third Vapor Required	0	0	0	0
Total Third Vapor Available	0	0	0	0
Exhaust Make-up to Third Vapor	0	0	0	0

TABLE VI

14,000 TCD - THREE BOILING

MILLING TANDEM

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----

Grinding Rate, Short Tons of Cane per 24 Hours	14,000.0000	14,000.0000
Grinding Rate, Short Tons of Cane per Hour	583.3333	583.3333

Mill Operation

Short Tons of Fiber Ground per Hour	75.8333	75.8333
Number of Rolls in Tandem	18.0000	18.0000

Size of Rolls (Number x Diameter x Length), In.	18 x 42.0 x 84.00	18 x 42.0 x 84.00
Size of Rolls (Number x Diameter x Length), In.	0 x 0.0 x 0.00	0 x 0.0 x 0.00
Size of Rolls (Number x Diameter x Length), In.	0 x 0.0 x 0.00	0 x 0.0 x 0.00

Total Roll Surface, Sq. Ft.	1,385.4423	1,385.4423
-----------------------------	------------	------------

*

Short Tons of Fiber/Hr-Ft. of Roll Length	10.8333	10.8333
Short Tons of Fiber/Hr-Sq. Ft. of Total Roll Surface	0.0547	0.0547

* Based on First Mill

TABLE VII

14,000 TCD - THREE BOILING

POWER REQUIREMENTS FOR CANE PREPARATION, MILLING, TURBO-GENERATORS, AND MISCELLANEOUS DRIVES, HP

	13,500.00 STCD (Nominal)		13,500.00 STCD (Nominal)		
	14,000.00 STCD (Design)		14,000.00 STCD (Design)		
	-----		-----		
HP Installed	Horsepower Required		Horsepower Required		
	Average	Maximum	Average	Maximum	
-----	-----	-----	-----	-----	
Cane Preparation					

First Knives	1,500	910	1,061	910	1,061
Second Knives	1,500	910	1,061	910	1,061
Third Knives	0	0	0	0	0
Shredder	0	0	0	0	0
Milling Tandem					

Mill No. 1	1,500	834	985	834	985
Mill No. 2	1,500	834	985	834	985
Mill No. 3	1,500	834	985	834	985
Mill No. 4	1,500	834	985	834	985
Mill No. 5	1,500	834	985	834	985
Mill No. 6	1,500	834	985	834	985
Mill No. 7	0	0	0	0	0
Mill No. 8	0	0	0	0	0
Turbo-Generators					

Turbo-Generator No. 1	7,500 KW	5,000	5,000	5,000	5,000
Turbo-Generator No. 2	0 KW	0	0	0	0
Turbo-Generator No. 3	0 KW	0	0	0	0
Turbo-Generator No. 4	0 KW	0	0	0	0
Induced Draft Fans					

Induced Draft Fan No. 1	0	0	0	0	0
Induced Draft Fan No. 2	0	0	0	0	0
Induced Draft Fan No. 3	0	0	0	0	0
Induced Draft Fan No. 4	0	0	0	0	0
Induced Draft Fan No. 5	0	0	0	0	0
Induced Draft Fan No. 6	0	0	0	0	0

TABLE VII (Contd.)

14,000 TCD - THREE BOILING

POWER REQUIREMENTS FOR CANE PREPARATION, MILLING, TURBO-GENERATORS, AND MISCELLANEOUS DRIVES, HP

	HP Installed	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)		13,500.00 STCD (Nominal) 14,000.00 STCD (Design)	
		Horsepower Required		Horsepower Required	
		Average	Maximum	Average	Maximum
Forced Draft Fans					
Forced Draft Fan No. 1	0	0	0	0	0
Forced Draft Fan No. 2	0	0	0	0	0
Forced Draft Fan No. 3	0	0	0	0	0
Forced Draft Fan No. 4	0	0	0	0	0
Forced Draft Fan No. 5	0	0	0	0	0
Forced Draft Fan No. 6	0	0	0	0	0
Boiler Feed Water Pumps					
Boiler Feed Water Pump No. 1	0	0	0	0	0
Boiler Feed Water Pump No. 2	0	0	0	0	0
Boiler Feed Water Pump No. 3	0	0	0	0	0
Boiler Feed Water Pump No. 4	0	0	0	0	0
Limed Juice Heater Pumps					
Limed Juice Heater Pump No. 1	0	0	0	0	0
Limed Juice Heater Pump No. 2	0	0	0	0	0
Clarified Juice Heater Pumps					
Clarified Juice Heater Pump No. 1	0	0	0	0	0
Clarified Juice Heater Pump No. 2	0	0	0	0	0
Injection Water Pumps					
Injection Water Pump No. 1	0	0	0	0	0
Injection Water Pump No. 2	0	0	0	0	0
Miscellaneous					
	0	7,500	7,500	7,500	7,500
	0	0	0	0	0

TABLE VIII

14,000 TCD - THREE BOILING

STEAM RATES IN STEAM TURBINES INSTALLED

	HP Installed -----	Overall Efficiency, % -----	Actual Steam Rate, Lb Steam/HP-Hr -----
Cane Preparation -----			
First Knives	1,500	50.00	22.81
Second Knives	1,500	50.00	22.81
Third Knives	0	0.00	0.00
Shredder	0	0.00	0.00
Milling Tandem -----			
Mill No. 1	1,500	50.00	22.81
Mill No. 2	1,500	50.00	22.81
Mill No. 3	1,500	50.00	22.81
Mill No. 4	1,500	50.00	22.81
Mill No. 5	1,500	50.00	22.81
Mill No. 6	1,500	50.00	22.81
Mill No. 7	0	0.00	0.00
Mill No. 8	0	0.00	0.00
Turbo-Generators -----			
Turbo-Generator No. 1	7,500 kW	70.00	21.83 Tlb/kWH
Turbo-Generator No. 2	0 kW	0.00	0.00 Tlb/kWH
Turbo-Generator No. 3	0 kW	0.00	0.00 Tlb/kWH
Turbo-Generator No. 4	0 kW	0.00	0.00 Tlb/kWH
Induced Draft Fans -----			
Induced Draft Fan No. 1	0	0.00	0.00
Induced Draft Fan No. 2	0	0.00	0.00
Induced Draft Fan No. 3	0	0.00	0.00
Induced Draft Fan No. 4	0	0.00	0.00
Induced Draft Fan No. 5	0	0.00	0.00
Induced Draft Fan No. 6	0	0.00	0.00
Forced Draft Fans -----			
Forced Draft Fan No. 1	0	0.00	0.00
Forced Draft Fan No. 2	0	0.00	0.00
Forced Draft Fan No. 3	0	0.00	0.00
Forced Draft Fan No. 4	0	0.00	0.00
Forced Draft Fan No. 5	0	0.00	0.00
Forced Draft Fan No. 6	0	0.00	0.00

TABLE VIII (Contd.)

14,000 TCD - THREE BOILING

STEAM RATES IN STEAM TURBINES INSTALLED

	HP Installed	Overall Efficiency, %	Actual Steam Rate, Lb Steam/HP-Hr
	-----	-----	-----
Boiler Feed Water Pumps			

Boiler Feed Water Pump No. 1	0	0.00	0.00
Boiler Feed Water Pump No. 2	0	0.00	0.00
Boiler Feed Water Pump No. 3	0	0.00	0.00
Boiler Feed Water Pump No. 4	0	0.00	0.00
Limed Juice Heater Pumps			

Limed Juice Heater Pump No. 1	0	0.00	0.00
Limed Juice Heater Pump No. 2	0	0.00	0.00
Clarified Juice Heater Pumps			

Clarified Juice Heater Pump No. 1	0	0.00	0.00
Clarified Juice Heater Pump No. 2	0	0.00	0.00
Injection Water Pumps			

Injection Water Pump No. 1	0	0.00	0.00
Injection Water Pump No. 2	0	0.00	0.00
Miscellaneous			

	0	50.00	22.81
	0	0.00	0.00

* Steam Rates Supplied by Turbine Manufacturer

$$\text{Overall Turbine Efficiency, \%} = \frac{100 \times \text{Theoretical Steam Rate}}{\text{Actual Steam Rate}} = \frac{100 \times 2545 / (H_2 - H_1)}{\text{Actual Steam Rate}}$$

H2 = Inlet Steam Enthalpy at 380.00 psig, 648.00 deg. F = 1,334.10 Btu/lb

H1 = Isentropic Exhaust Enthalpy from Mollier Chart at 20.00 psig = 1,111.00 Btu/lb

TABLE IX

14,000 TCD - THREE BOILING

EXHAUST REQUIRED FOR THE BOILER FEED WATER DEAERATING HEATER

	13,500.00 STCD (Nominal)		13,500.00 STCD (Nominal)	
	14,000.00 STCD (Design)		14,000.00 STCD (Design)	
	Average	Maximum	Average	Maximum
	-----	-----	-----	-----
Boiler Feed Water Entering Deaerator, lb/hr	588,451.28	665,611.54	588,451.28	665,611.54
Inlet Water Temperature to Deaerator, deg. F	210.00	210.00	210.00	210.00
Outlet Water Temperature from Deaerator, deg. F	245.00	245.00	245.00	245.00
Exhaust Pressure, psig	18.40	18.40	18.40	18.40
Enthalpy of Exhaust, Btu/lb	1,166.24	1,166.24	1,166.24	1,166.24
Enthalpy of Inlet Water to Deaerator, Btu/lb	178.00	178.00	178.00	178.00
Enthalpy of Water Leaving Deaerator, Btu/lb	213.00	213.00	213.00	213.00
Exhaust Required, lb/hr	21,605.89	24,438.94	21,605.89	24,438.94
Deaerated Water Leaving Deaerator, lb/hr	610,057.17	690,050.49	610,057.17	690,050.49
Allowance for Boiler Blowdown, lb/hr	29,470.81	33,404.95	29,470.81	33,404.95
Boiler Feed Water Required for Desuperheating Exhaust, lb/hr	20,640.84	21,951.32	20,640.84	21,951.32
Boiler Feed Water for Steam Generation, lb/hr	559,945.51	634,694.21	559,945.51	634,694.21

 Note -- Allowance for Boiler Blowdown at Low and High rate are respectively 5.00 and 5.00%

TABLE X

14,000 TCD - THREE BOILING

WATER REQUIREMENT FOR DESUPERHEATING EXHAUST FROM TURBINES

	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)		13,500.00 STCD (Nominal) 14,000.00 STCD (Design)	
	Average	Maximum	Average	Maximum
	-----	-----	-----	-----
Exhaust out of Turbines, lb/Hr	436,008.67	463,690.73	436,008.67	463,690.73
Enthalpy of Turbine Exhaust, Btu/lb	1,211.37	1,211.37	1,211.37	1,211.37
Temperature of Desuperheating Water, deg. F	245.00	245.00	245.00	245.00
Enthalpy of Desuperheating Water, Btu/lb	213.00	213.00	213.00	213.00
Enthalpy of Saturated Exhaust to Boiling House, Btu/lb	1,166.24	1,166.24	1,166.24	1,166.24
Water Required for Desuperheating, lb/Hr	20,640.84	21,951.32	20,640.84	21,951.32
Desuperheated Exhaust, lb/Hr	456,649.51	485,642.05	456,649.51	485,642.05
Saturated Exhaust Available, lb/Hr	456,649.51	485,642.05	456,649.51	485,642.05

TABLE XI

14,000 TCD - THREE BOILING

LIMED JUICE HEATERS

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
Short Tons of Cane per Hour	583.33	583.33
Mixed Juice (including refinery scums etc.), lb/hr	1,185,399.44	1,185,399.44
Filtrates, lb/hr	214,666.66	214,666.66
Limed Juice, lb/hr	1,400,066.11	1,400,066.11
First Stage Limed Juice Heaters		

Juice Temperature to First Stage Limed Juice Heaters, deg. F	80.00	80.00
Juice Temp. out of First Stage Limed Juice Heaters, deg. F	180.00	180.00
Juice Temp. Change Through First Stage Juice Heaters, deg. F	100.00	100.00
Brix of Juice Through Limed Juice Heaters	15.00	15.00
Specific Heat of Juice, Btu/lb-deg. F	0.91	0.91
Heat Transferred, Btu/hr	127,406,016.52	127,406,016.52
Pressure of Exhaust or Vapors, psia	16.49	16.49
Temperature of Exhaust or Vapors, deg. F	217.84	217.84
Logarithmic Mean Temperature Difference, deg. F	77.36	77.36
Overall Heat Transfer Coefficient, Btu/hr-Sq. Ft.-deg. F	180.00	180.00
Total Heating Surface Required, Sq. Ft.	9,149.10	9,149.10
Total Heating Surface Installed, Sq. Ft.	10,000.00	10,000.00
Additional Heating Surface Required, Sq. Ft.	0.00	0.00
Latent Heat of Exhaust or Vapor, Btu/lb	966.64	966.64
Exhaust or Vapor Required for First Stage Heaters, lb/hr	131,802.96	131,802.96
Juice Flow Rate, Cubic Feet/Sec.	5.88	5.88
Recommended Juice Velocity, Ft/Sec	7.00	7.00
Cross-Sectional Area per pass for Recommended Velocity, Sq. Ft.	0.84	0.84
Installed Cross-Sectional Area per Pass, Sq. Ft.	0.00	0.00
Actual Juice Velocity, Ft/Sec	0.00	0.00

TABLE XI (Contd.)

14,000 TCD - THREE BOILING

LIMED JUICE HEATERS

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
Short Tons of Cane per Hour	583.33	583.33
Mixed Juice (including refinery scums etc.), lb/hr	1,185,399.44	1,185,399.44
Filtrates, lb/hr	214,666.66	214,666.66
Limed Juice, lb/hr	1,400,066.11	1,400,066.11
Second Stage Limed Juice Heaters		

Juice Temperature to Second Stage Limed Juice Heaters, deg. F	180.00	180.00
Juice Temp. out of Second Stage Limed Juice Heaters, deg. F	220.00	220.00
Juice Temp. Change Through Second Stage Juice Heaters, deg. F	40.00	40.00
Brix of Juice Through Limed Juice Heaters	15.00	15.00
Specific Heat of Juice, Btu/lb-deg. F	0.91	0.91
Heat Transferred, Btu/hr	50,962,406.61	50,962,406.61
Pressure of Exhaust or Vapors, psia	24.65	24.65
Temperature of Exhaust or Vapors, deg. F	239.28	239.28
Logarithmic Mean Temperature Difference, deg. F	35.61	35.61
Overall Heat Transfer Coefficient, Btu/hr-Sq. Ft.-deg. F	180.00	180.00
Total Heating Surface Required, Sq. Ft.	7,949.56	7,949.56
Total Heating Surface Installed, Sq. Ft.	10,000.00	10,000.00
Additional Heating Surface Required, Sq. Ft.	0.00	0.00
Latent Heat of Exhaust or Vapor, Btu/lb	952.74	952.74
Exhaust or Vapor Required for Second Stage Heaters, lb/hr	53,490.36	53,490.36
Juice Flow Rate, Cubic Feet/Sec.	5.88	5.88
Recommended Juice Velocity, Ft/Sec	7.00	7.00
Cross-Sectional Area per pass for Recommended Velocity, Sq. Ft.	0.84	0.84
Installed Cross-Sectional Area per Pass, Sq. Ft.	0.00	0.00
Actual Juice Velocity, Ft/Sec	0.00	0.00

TABLE XII

14,000 TCD - THREE BOILING

CLARIFIERS AND FILTERS

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
Clarifiers		

Mixed Juice, GPM	2,237.40	2,237.40
Filtrates, GPM	404.94	404.94
	-----	-----
Total Limed Juice to Clarifiers, GPM	2,642.35	2,642.35
Retention Time Required for Clarifiers, Hours	1.50	1.50
Clarifier Volume Required to Obtain Desired Retention Time, Gals	237,811.58	237,811.58
Number of Clarifiers	1.00	1.00
Volumetric Capacity of Clarifiers Installed, Gals	250,000.00	250,000.00
Additional Clarifier Capacity Required, Gals	0.00	0.00
Filters		

Filter Cake % Cane	5.60	5.60
Filter Cake Produced, lb/hr	65,333.33	65,333.33
Capacity of Rotary Vacuum Filters, lb cake/Hr-Sq. Ft. of Surface	25.00	25.00
Filtering Surface Required, Sq. Ft.	2,613.33	2,613.33
Number of Filters Installed	1.00	1.00
Filtering Surface in Filters Installed, Sq. Ft.	3,000.00	3,000.00
Additional Filtering Surface Required, Sq. Ft.	0.00	0.00

Based on following equipment

Initial Rate

Final Rate

Clarifier No. 1 250,000 Gals

Clarifier No. 1

250,000 Gals

Filter No. 1 3000 Sq. Ft.

Filter No. 1 3000 Sq. Ft.

SKETCH 3

14,000 TCD - THREE BOILING

CLARIFICATION SCHEME

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Refinery Scums % Cane = 0.00

Mixed Juice % Cane = 101.60

Liming
Tank

Heaters

Clarifier

Clarified Juice
% Cane= 100.00

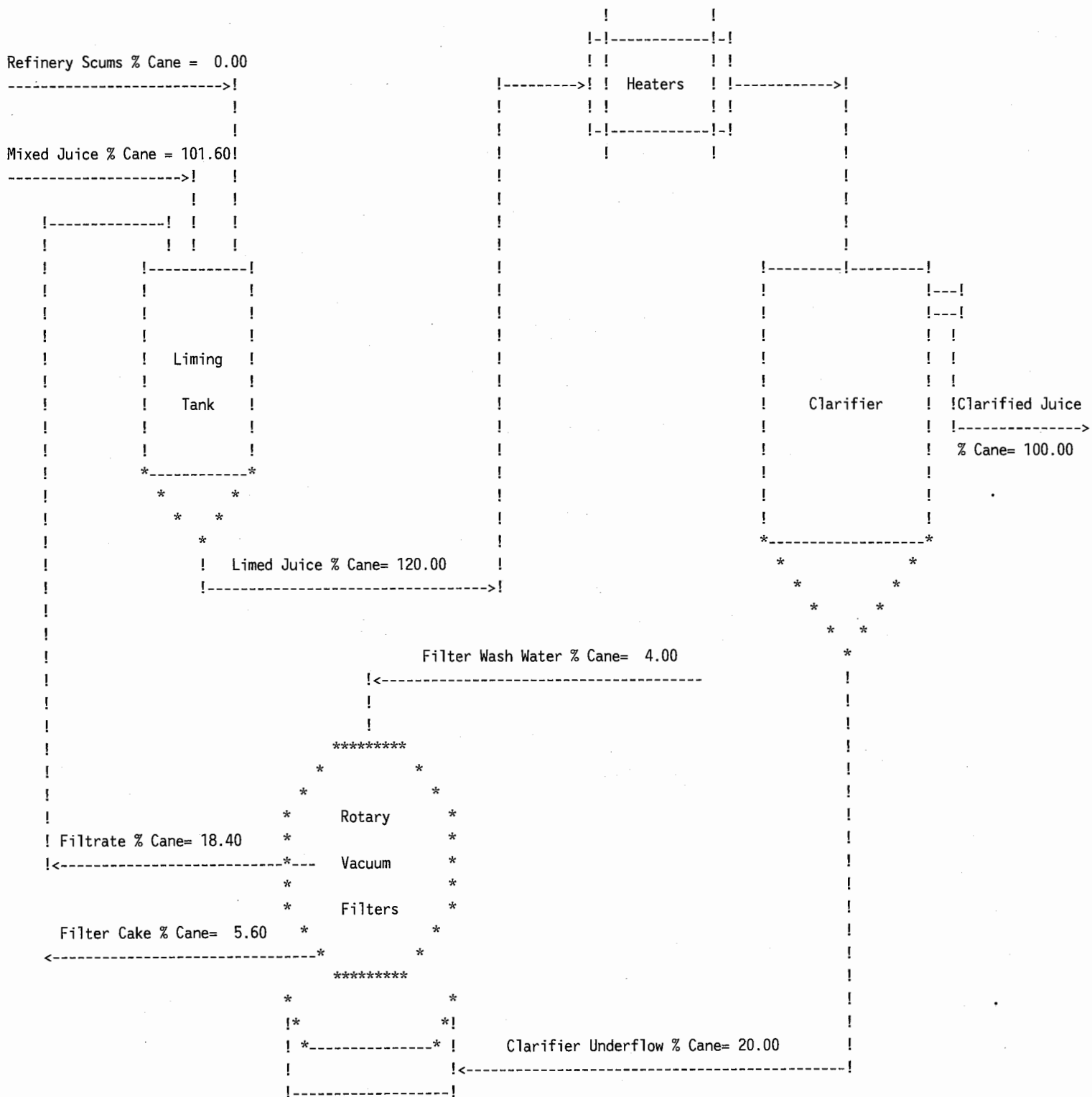
Limed Juice % Cane= 120.00

Filter Wash Water % Cane= 4.00

Filtrate % Cane= 18.40

Filter Cake % Cane= 5.60

Clarifier Underflow % Cane= 20.00



SKETCH 4

14,000 TCD - THREE BOILING

CLARIFICATION SCHEME

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

Refinery Scums % Cane = 0.00

Mixed Juice % Cane = 101.60

Liming

Tank

Limed Juice % Cane= 120.00

Filter Wash Water % Cane= 4.00

Filtrate % Cane= 18.40

Filter Cake % Cane= 5.60

Clarifier Underflow % Cane= 20.00

Clarifier

Clarified Juice % Cane= 100.00

Heaters

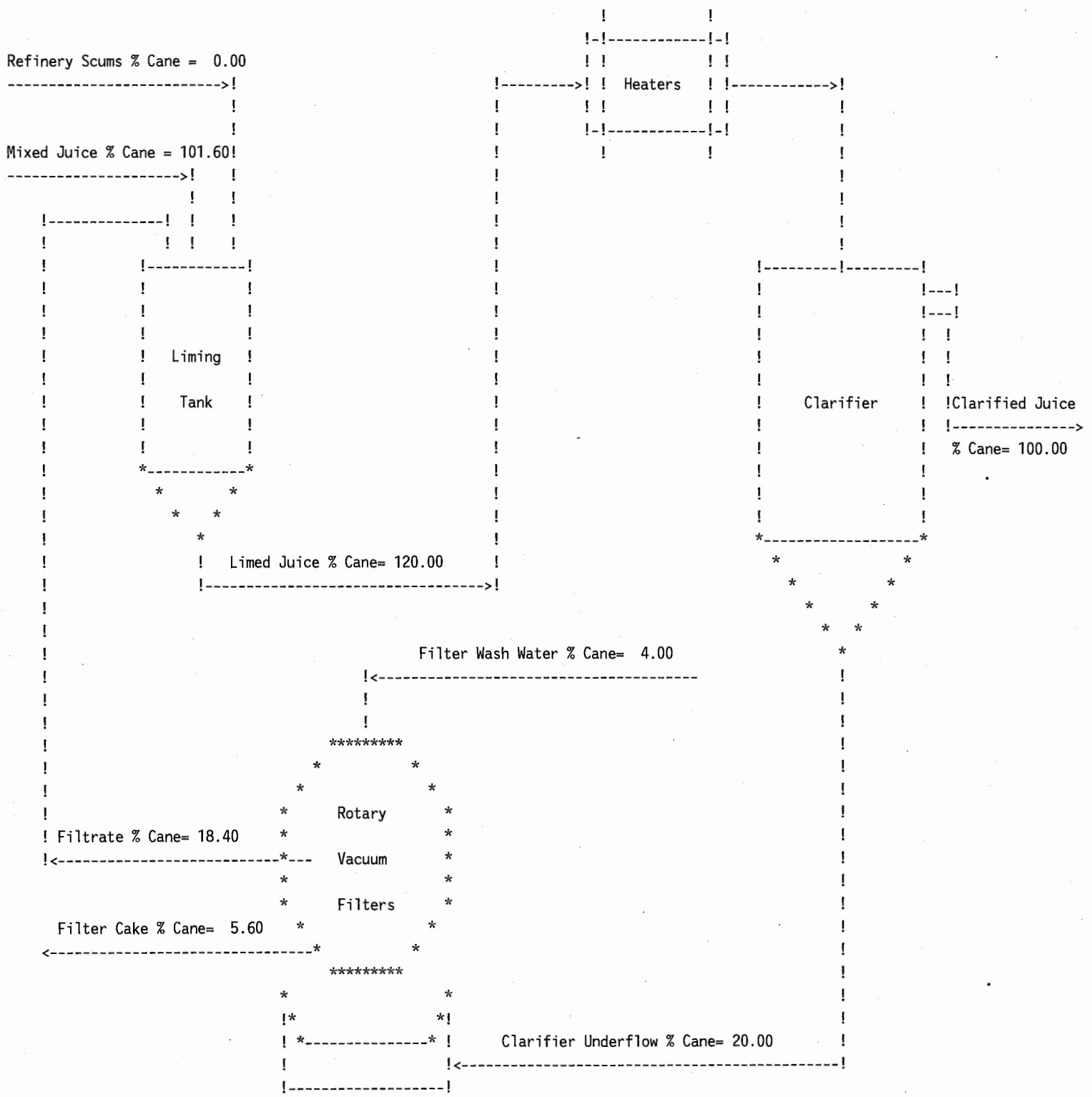


TABLE XIII.

14,000 TCD - THREE BOILING

CLARIFIED JUICE HEATERS

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
Short Tons of Cane per Hour	583.33	583.33
Clarified Juice, lb/hr	1,166,732.78	1,166,732.78
Juice Temperature to Clarified Juice Heaters, deg. F	208.00	208.00
Juice Temperature out of Clarified Juice Heaters, deg. F	208.00	208.00
Juice Temp. Change Through Clarified Juice Heaters, deg. F	0.00	0.00
Brix of Juice Through Clarified Juice Heaters	14.90	14.90
Specific Heat of Juice, Btu/lb-deg. F	0.91	0.91
Heat Transferred, Btu/hr	0.00	0.00
Pressure of Exhaust or Vapors, psia	33.10	33.10
Temperature of Exhaust or Vapors, deg. F	256.00	256.00
Logarithmic Mean Temperature Difference, deg. F	0.00	0.00
Overall Heat Transfer Coefficient, Btu/hr-Sq. Ft.-deg. F	250.00	250.00
Total Heating Surface Required, Sq. Ft.	0.00	0.00
Total Heating Surface Installed, Sq. Ft.	0.00	0.00
Additional Heating Surface Required, Sq. Ft.	0.00	0.00
Latent Heat of Exhaust or Vapor, Btu/lb	941.57	941.57
Exhaust or Vapor Required for Clarified Juice Heaters, lb/hr	0.00	0.00
Juice Flow Rate, Cubic Feet/Sec.	4.90	4.90
Recommended Juice Velocity, Ft/Sec	7.00	7.00
Cross-Sectional Area per pass for Recommended Velocity, Sq. Ft.	0.70	0.70
Installed Cross-Sectional Area per Pass, Sq. Ft.	0.00	0.00
Actual Juice Velocity, Ft/Sec	0.00	0.00

TABLE XIV-A

14,000 TCD - THREE BOILING

EXHAUST REQUIRED FOR THE EVAPORATOR STATION

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

	Exhaust or Vapors, lb/hr	Heat Transferred, Btu/hr	Material lb/hr	o Brix
	-----	-----	-----	-----
Pre-Evaporator				

Entering (0.00)(0.00)	0.00	0.00	1,166,732.78	14.90
Plus (1,166,732.78)(0.91)(208.00 - 208.00)		0.00		

Available for Evaporation		0.00		
Evaporation (0.00)/(0.00)	0.00			
Vapor to High Grade Pans	0.00			
Vapor to Low Grade Pans	0.00			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	0.00			
Vapor to Second Stage Limed Juice Heaters	0.00			
Pre-Evaporator Vapor for Miscellaneous Uses	0.00			
First Effect				

Entering (498,980.46)(941.57)	498,980.46	469,825,040.48	1,166,732.78	14.90
Plus (1,166,732.78)(0.91)(208.00 - 241.66)		-35,740,904.63		

Available for Evaporation		434,084,135.84		
Evaporation (434,084,135.84)/(952.74)	455,616.57			
Vapor to High Grade Pans	159,260.03			
Vapor to Low Grade Pans	0.00			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	0.00			
Vapor to Second Stage Limed Juice Heaters	53,490.36			
First Vapor for Miscellaneous Uses	0.00			
First Vapor to Second Effect	242,866.17			
Second Effect				

Entering (242,866.17)(952.74)	242,866.17	231,388,321.43	711,116.20	24.44
Plus (711,116.20)(0.86)(241.66 - 221.86)		12,109,787.27		

Available for Evaporation		243,498,108.70		
Evaporation (243,498,108.70)/(966.64)	251,901.54			
Vapor to High Grade Pans	0.00			
Vapor to Low Grade Pans	43,644.42			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	131,802.96			
Vapor to Second Stage Limed Juice Heaters	0.00			
Second Vapor for Miscellaneous Uses	0.00			
Second Vapor to Third Effect	76,454.15			

TABLE XIV-A (Contd.)

14,000 TCD - THREE BOILING

EXHAUST REQUIRED FOR THE EVAPORATOR STATION

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

	Exhaust or Vapors, lb/hr	Heat Transferred, Btu/hr	Material lb/hr	o Brix
	-----	-----	-----	----
Third Effect				

Entering (76,454.15)(966.64)	76,454.15	73,903,646.98	459,214.66	37.85
Plus (459,214.66)(0.79)(221.86 - 197.78)		8,734,864.62		

Available for Evaporation		82,638,511.60		
Evaporation (82,638,511.60)/(983.08)	84,060.82			
Vapor to High Grade Pans	0.00			
Vapor to Low Grade Pans	0.00			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	0.00			
Vapor to Second Stage Limed Juice Heaters	0.00			
Third Vapor for Miscellaneous Uses	0.00			
Third Effect Vapor to Fourth Effect	84,060.82			
Fourth Effect				

Entering (84,060.82)(983.08)	84,060.82	82,638,511.60	375,153.84	46.34
Plus (375,153.84)(0.74)(197.78 - 147.98)		13,825,652.22		

Available for Evaporation		96,464,163.83		
Evaporation (96,464,163.83)/(1018.04)	94,754.78			
			280,399.05	61.99
Syrup to Raw Sugar Pans				

TABLE XIV-B

14,000 TCD - THREE BOILING

EXHAUST REQUIRED FOR THE EVAPORATOR STATION

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

	Exhaust or Vapors, lb/hr	Heat Transferred, Btu/hr	Material lb/hr	o Brix
	-----	-----	-----	----
Pre-Evaporator				

Entering (0.00)(0.00)	0.00	0.00	1,166,732.78	14.90
Plus (1,166,732.78)(0.91)(208.00 - 208.00)		0.00		

Available for Evaporation		0.00		
Evaporation (0.00)/(0.00)	0.00			
Vapor to High Grade Pans	0.00			
Vapor to Low Grade Pans	0.00			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	0.00			
Vapor to Second Stage Limed Juice Heaters	0.00			
Pre-Evaporator Vapor for Miscellaneous Uses	0.00			
First Effect				

Entering (498,980.46)(941.57)	498,980.46	469,825,040.48	1,166,732.78	14.90
Plus (1,166,732.78)(0.91)(208.00 - 241.66)		-35,740,904.63		

Available for Evaporation		434,084,135.84		
Evaporation (434,084,135.84)/(952.74)	455,616.57			
Vapor to High Grade Pans	159,260.03			
Vapor to Low Grade Pans	0.00			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	0.00			
Vapor to Second Stage Limed Juice Heaters	53,490.36			
First Vapor for Miscellaneous Uses	0.00			
First Vapor to Second Effect	242,866.17			
Second Effect				

Entering (242,866.17)(952.74)	242,866.17	231,388,321.43	711,116.20	24.44
Plus (711,116.20)(0.86)(241.66 - 221.86)		12,109,787.27		

Available for Evaporation		243,498,108.70		
Evaporation (243,498,108.70)/(966.64)	251,901.54			
Vapor to High Grade Pans	0.00			
Vapor to Low Grade Pans	43,644.42			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	131,802.96			
Vapor to Second Stage Limed Juice Heaters	0.00			
Second Vapor for Miscellaneous Uses	0.00			
Second Vapor to Third Effect	76,454.15			

TABLE XIV-B (Contd.)

14,000 TCD - THREE BOILING

EXHAUST REQUIRED FOR THE EVAPORATOR STATION

13,500.00 STCD (Nominal)

14,000.00 STCD (Design)

	Exhaust or Vapors, lb/hr	Heat Transferred, Btu/hr	Material lb/hr	o Brix
	-----	-----	-----	----
Third Effect				

Entering (76,454.15)(966.64)	76,454.15	73,903,646.98	459,214.66	37.85
Plus (459,214.66)(0.79)(221.86 - 197.78)		8,734,864.62		

Available for Evaporation		82,638,511.60		
Evaporation (82,638,511.60)/(983.08)	84,060.82			
Vapor to High Grade Pans	0.00			
Vapor to Low Grade Pans	0.00			
Vapor to Clarified Juice Heater	0.00			
Vapor to First Stage Limed Juice Heaters	0.00			
Vapor to Second Stage Limed Juice Heaters	0.00			
Third Vapor for Miscellaneous Uses	0.00			
Third Effect Vapor to Fourth Effect	84,060.82			
Fourth Effect				

Entering (84,060.82)(983.08)	84,060.82	82,638,511.60	375,153.84	46.34
Plus (375,153.84)(0.74)(197.78 - 147.98)		13,825,652.22		

Available for Evaporation		96,464,163.83		
Evaporation (96,464,163.83)/(1018.04)	94,754.78			
			280,399.05	61.99
Syrup to Raw Sugar Pans				

TABLE XV

14,000 TCD - THREE BOILING

EVAPORATION RATES AND HEAT TRANSFER COEFFICIENTS AT THE EVAPORATOR STATION

	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)
	-----	-----
Evaporation Rate, lbs/Hr-Sq.Ft. of Heating Surface		

Pre-Evaporator	0.00	0.00
First Effect	6.07	6.07
Second Effect	5.99	5.99
Third Effect	5.09	5.09
Fourth Effect	5.74	5.74
Overall	5.90	5.90
Overall Heat Transfer Coefficient Required, Btu/Hr-Sq.Ft.-deg. F		

Pre-Evaporator	0.00	0.00
First Effect	436.93	436.93
Second Effect	316.24	316.24
Third Effect	223.24	223.24
Fourth Effect	114.81	114.81
Design Overall Heat Transfer Coefficient Expected, Btu/Hr-Sq.Ft.		

Pre-Evaporator	0.00	0.00
First Effect	503.87	503.87
Second Effect	364.69	364.69
Third Effect	257.44	257.44
Fourth Effect	132.40	132.40
Heating Surface Installed, Sq. Ft.		

Pre-Evaporator	0.00	0.00
First Effect	75,000.00	75,000.00
Second Effect	42,000.00	42,000.00
Third Effect	16,500.00	16,500.00
Fourth Effect	16,500.00	16,500.00
	-----	-----
Total	150,000.00	150,000.00

Design Coefficient Used = 18,000

TABLE XVI

14,000 TCD - THREE BOILING

VACUUM PANS EXHAUST OR VAPOR REQUIREMENTS, LB/HR

	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)		13,500.00 STCD (Nominal) 14,000.00 STCD (Design)	
	Average	Maximum*	Average	Maximum*
'A' Pans				
Evaporation	91,489	114,362	91,489	114,362
Exhaust or Vapor (1.15 lbs/lb evaporation)	105,213	131,516	105,213	131,516
'B' Pans				
Evaporation	45,039	56,298	45,039	56,298
Exhaust or Vapor (1.20 lbs/lb evaporation)	54,046	67,558	54,046	67,558
'C' Pans				
Evaporation	27,907	34,884	27,907	34,884
Exhaust or Vapor (1.25 lbs/lb evaporation)	34,884	43,605	34,884	43,605
Grain Pan				
Evaporation	7,008	8,760	7,008	8,760
Exhaust or Vapor (1.25 lbs/lb evaporation)	8,760	10,950	8,760	10,950
Total Evaporation	171,444	214,305	171,444	214,305
Exhaust or Vapor Required for High Grade Pans	159,260	199,075	159,260	199,075
Exhaust or Vapor Required for Low Grade Pans	43,644	54,555	43,644	54,555
Total Exhaust or Vapor Required for All Pans	202,904	253,630	202,904	253,630

* Maximum Evaporation is taken as 1.25 times Average Evaporation

TABLE XVII

14,000 TCD - THREE BOILING

VACUUM PAN REQUIREMENTS

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
'A' Pans		

Cubic Feet of 'A' Masecuite Produced per Day	53,324.35	53,324.35
Pan Cycle Time, Hours	2.50	2.50
Number of Pan Cycles per Day	9.60	9.60
Pan Capacity Required for 'A' Strikes, Cubic Feet	5,554.62	5,554.62
'B' Pans		

Cubic Feet of 'B' Masecuite Produced per Day	28,194.82	28,194.82
Pan Cycle Time, Hours	3.00	3.00
Number of Pan Cycles per Day	8.00	8.00
Pan Capacity Required for 'B' Strikes, Cubic Feet	3,524.35	3,524.35
Developing Magma		

Cubic Feet of Developed Magma Produced per Day	27,173.05	27,173.05
Pan Cycle Time, Hours	2.50	2.50
Number of Pan Cycles per Day	9.60	9.60
Pan Capacity Required for Developing Magma, Cubic Feet	2,830.53	2,830.53
'C' Pans		

Cubic Feet of 'C' Masecuite Produced per Day	18,844.15	18,844.15
Pan Cycle Time, Hours	5.00	5.00
Number of Pan Cycles per Day	4.80	4.80
Pan Capacity Required for 'C' Strikes, Cubic Feet	3,925.87	3,925.87
Developing C Grain		

Cubic Feet of Developed C Grain Produced per Day	6,281.38	6,281.38
Pan Cycle Time, Hours	5.00	5.00
Number of Pan Cycles per Day	4.80	4.80
Pan Capacity Required for Developing C Grain, Cubic Feet	1,308.62	1,308.62
Grain		

Cubic Feet of Grain Masecuite Produced per Day	4,736.37	4,736.37
Pan Cycle Time, Hours	4.00	4.00
Number of Pan Cycles per Day	6.00	6.00
Pan Capacity Required for Grain Strikes, Cubic Feet	789.40	789.40
Total High Grade Pan Capacity Required, Cubic Feet	11,909.50	11,909.50
Total Low Grade Pan Capacity Required, Cubic Feet	6,023.88	6,023.88
Total Pan Capacity Required (High Grade Plus Low Grade), Cu. Ft.	17,933.38	17,933.38
Total Pan Capacity Required, Cubic Feet	17,933.38	17,933.38
Total Pan Capacity Installed, Cubic Feet	18,000.00	18,000.00
Additional Pan Capacity Required, Cubic Feet	0.00	0.00

TABLE XVIII

14,000 TCD - THREE BOILING

CRYSTALLIZERS

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
'C' Massecuite Produced per Hour, Cubic Feet	785.17	785.17
'C' Massecuite Produced per Day, Cubic Feet	18,844.15	18,844.15
Batch Type Crystallizers		

Cooling Time, Hours	36.00	36.00
Total Crystallizer Capacity Required, Cubic Feet	28,266.22	28,266.22
Total Crystallizer Capacity Installed, Cubic Feet	22,000.00	22,000.00
Additional Crystallizer Capacity Required, Cubic Feet	6,266.22	6,266.22
or		
Werkspoor Continuous Crystallizers		

Cooling Section		

Inlet Massecuite Temperature to Crystallizers, deg. F	149.00	149.00
Cooled Massecuite Temperature in Crystallizers, deg. F	104.00	104.00
Massecuite Temperature Change, deg. F	45.00	45.00
Quantity of 'C' Massecuite, lb/hr	74,410.16	74,410.16
Brix of 'C' Massecuite	95.50	95.50
Specific Heat of 'C' Massecuite, Btu/lb-deg. F	0.47	0.47
Heat Transferred, Btu/hr	1,580,823.47	1,580,823.47
Inlet Cooling Water Temperature, deg. F	75.00	75.00
Outlet Cooling Water Temperature, deg. F	100.00	100.00
Cooling Water Temperature Change, deg. F	25.00	25.00
Cooling Section Heat Transfer Coefficient, Btu/hr-Sq.Ft.-deg. F	5.00	5.00
Logarithmic Mean Temperature Difference, deg. F	38.12	38.12
Heating Surface Required for Cooling Section, Sq. Ft.	8,291.80	8,291.80
Cooling Water Required for Cooling Section, GPM	126.46	126.46
Reheating Section		

Cooled Massecuite Temperature, deg. F	104.00	104.00
Reheated Massecuite Temperature, deg. F	122.00	122.00
Massecuite Temperature Change, deg. F	18.00	18.00
Quantity of 'C' Massecuite, lb/hr	74,410.16	74,410.16
Brix of 'C' Massecuite	95.50	95.50
Specific Heat of 'C' Massecuite, Btu/lb-deg. F	0.47	0.47
Heat Transferred, Btu/hr	632,329.38	632,329.38
Inlet Reheating Water Temperature, deg. F	140.00	140.00
Outlet Reheating Water Temperature, deg. F	130.00	130.00
Reheating Water Temperature Change, deg. F	10.00	10.00
Reheating Section Heat Transfer Coefficient, Btu/hr-Sq.Ft.-deg. F	10.00	10.00
Logarithmic Mean Temperature Difference, deg. F	21.75	21.75
Heating Surface Required for Reheating Section, Sq. Ft.	2,906.53	2,906.53
Reheating Water Requirements, GPM	126.46	126.46

TABLE XIX

14,000 TCD - THREE BOILING

CENTRIFUGALS

13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
14,000.00 STCD (Design)	14,000.00 STCD (Design)
-----	-----

High Grade Centrifugals

'A' Centrifugals (Batch, 48 in x 36 in. x 1200 RPM)

'A' Mousseite Produced, Cubic Feet/Hour	2,221.84	2,221.84
Centrifugal Capacity, Cubic Feet/Cycle-Machine	16.83	16.83
Number of Centrifugal Cycles per Hour	18.00	18.00
Centrifugal Working Time % Total Time	90.00	90.00
Centrifugal Capacity, Cubic Feet/Hour-Machine	272.64	272.64
Theoretical Number of Machines Required	8.14	8.14
Number of Machines Installed	11.00	11.00
Additional Number of Machines Required (1 spare)	0.00	0.00

'B' Centrifugals (Cont., 1100 mm. x 30 deg. x 1600 RPM)

'B' Mousseite Produced, Cubic Feet/Hour	1,174.78	1,174.78
Centrifugal Capacity, Cubic Feet/Cycle-Machine	625.00	625.00
Number of Centrifugal Cycles per Hour	1.00	1.00
Centrifugal Working Time % Total Time	90.00	90.00
Centrifugal Capacity, Cubic Feet/Hour-Machine	562.50	562.50
Theoretical Number of Machines Required	2.08	2.08
Number of Machines Installed	4.00	4.00
Additional Number of Machines Required (1 spare)	0.00	0.00

Low Grade Centrifugals

'C' Centrifugals (Cont., 1100 mm. x 30 deg. x 1950 RPM)

'C' Mousseite Produced, Cubic Feet/Hour	785.17	785.17
'C' Mousseite Produced, Cubic Feet/Day	18,844.15	18,844.15
Centrifugal Capacity, Cubic Feet/Day	5,000.00	5,000.00
Theoretical Number of 'C' Machines Required	3.76	3.76
Number of Centrifugals Installed	5.00	5.00
Additional Number of Centrifugals Required (1 spare)	0.00	0.00

TABLE XX

14,000 TCD - THREE BOILING

INJECTION WATER REQUIREMENTS

	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)	13,500.00 STCD (Nominal) 14,000.00 STCD (Design)
	-----	-----
Temperature of Injection Water, deg. F	90.00	90.00
Temperature of Condenser Water, deg. F	115.00	115.00
Enthalpy of Condenser Water, Btu/lb	83.00	83.00
Enthalpy of Injection Water, Btu/lb	58.00	58.00
Heat Gained by Water, Btu/lb	25.00	25.00
Absolute Pressure of Vapors to be Condensed, psia	2.42	2.42
Enthalpy of Vapors to be Condensed, Btu/lb	1,119.04	1,119.04
Enthalpy of Condenser Water, Btu/lb	83.00	83.00
	-----	-----
Heat Lost by Vapors to be Condensed, Btu/lb	1,036.04	1,036.04
Lbs. Injection Water/Lb. of Condensing Vapor	41.44	41.44
Vapors (Average), lb/hr		

Evaporator(s)	94,754.78	94,754.78
Raw Sugar Pans	171,444.30	171,444.30
Rotary Vacuum Filter(s)	16,100.00	16,100.00
Miscellaneous Vapors	0.00	0.00
	-----	-----
Total	282,299.09	282,299.09
Vapors (Maximum), lb/hr		

Evaporator(s)	104,230.26	104,230.26
Raw Sugar Pans	214,305.37	214,305.37
Rotary Vacuum Filter(s)	16,100.00	16,100.00
Miscellaneous Vapors	0.00	0.00
	-----	-----
Total	334,635.64	334,635.64
Injection Water, lb/hr		

Average	11,698,474.33	11,698,474.33
Maximum	13,867,301.16	13,867,301.16
Injection Water, G.P.M.		

Average	23,488.16	23,488.16
Maximum	27,842.72	27,842.72
Installed Injection Water Pump Capacity, GPM	40,000.00	40,000.00
Additional Injection Water Pump Capacity Required, GPM	0.00	0.00

Notes: Evaporator Maximum Evaporation is taken as 1.10 times the Average Evaporation
Pans Maximum Evaporation is taken as 1.25 times the Average evaporation rate at the Initial Rate
Pans Maximum Evaporation is taken as 1.25 times the Average evaporation rate at the Final Rate
Filter Evaporation is taken as 7.50 % of Filtrate at the Initial Rate
Filter Evaporation is taken as 7.50 % of Filtrate at the Final Rate

TABLE XXI

14,000 TCD - THREE BOILING

CONDENSATE BALANCE, LB/HR

	13,500.00 STCD (Nominal)	13,500.00 STCD (Nominal)
	14,000.00 STCD (Design)	14,000.00 STCD (Design)
	-----	-----
Condensate Sources		

Pre-Evaporator	0	0
First Evaporator Effect	498,980	498,980
Second Evaporator Effect	242,866	242,866
Third Evaporator Effect	76,454	76,454
Fourth Evaporator Effect	84,060	84,060
Fifth Evaporator Effect	0	0
Limed Juice Heaters (First Stage)	131,802	131,802
Limed Juice Heaters (Second Stage)	53,490	53,490
Clarified Juice Heaters	0	0
Vacuum Pans	202,904	202,904
	-----	-----
Total	1,290,559	1,290,559
Condensate Usage		

Boiler Feed Water	588,451	588,451
Filter Wash Water	46,666	46,666
Molasses Dilution Plus Centrifugal Wash Water	75,712	75,712
Miscellaneous (10% of Available)	129,055	129,055
	-----	-----
Total	839,886	839,886
Condensate Available	1,290,559	1,290,559
	-----	-----
Excess Condensate (Available for Imbibition), Lb/Hr	450,673	450,673
Excess Condensate (Available for Imbibition), GPM	901	901
Water Required for Imbibition, GPM	700	700

DATA

0010 REM THIS PROGRAM CONTAINS DATA FOR M&E BALANCE FOR GEORGE, RUN ON SEPTEMBER 11, 2014 (ON FILE AS GEORGE2)
0020 REM
0030 COM A(26,20),B(20,20),A1\$64,A2\$64,B\$(9)64,C\$(6)64,D\$(6)64,E\$(6)64
0040 REM
0050 REM FACTORY TITLE = A1\$: A1\$="14,000 TCD - THREE BOILING"
0060 REM COMPANY NAME: A2\$="(9/11/14)"
0070 REM
0080 REM "INITIAL REFERS TO PRESENT GRINDING RATE AND OPERATING CONDITIONS, AND "FINAL" REFERS TO SOME OTHER DESIRED GRINDING RATE
OR
0090 REM OPERATING CONDITIONS
0100 REM
0110 REM INITIAL NOMINAL GRINDING RATE, SHORT TONS CANE PER DAY: A(1,1)=13500
0120 REM FINAL NOMINAL GRINDING RATE, SHORT TONS CANE PER DAY: A(2,1)=13500
0130 REM
0140 REM INITIAL DESIGN GRINDING RATE, SHORT TONS CANE PER DAY: A(1,2)=14000
0150 REM FINAL DESIGN GRINDING RATE, SHORT TONS CANE PER DAY: A(2,2)=14000
0160 REM
0170 REM INITIAL POL % CANE: A(1,3)=13
0180 REM FINAL POL % CANE: A(2,3)=13
0190 REM
0200 REM INITIAL FIBER % CANE: A(1,4)=13
0210 REM FINAL FIBER % CANE: A(2,4)=13
0220 REM
0230 REM INITIAL POL EXTRACTION: A(1,5)=96
0240 REM FINAL POL EXTRACTION: A(2,5)=96
0250 REM
0260 REM INITIAL IMBIBITION % CANE: A(1,6)=30
0270 REM FINAL IMBIBITION % CANE: A(2,6)=30
0280 REM
0290 REM INITIAL MIXED JUICE PURITY: A(1,7)=82
0300 REM FINAL MIXED JUICE PURITY: A(2,7)=82
0310 REM
0320 REM INITIAL MOISTURE % BAGASSE: A(1,8)=51.6
0330 REM FINAL MOISTURE % BAGASSE: A(2,8)=51.6
0340 REM
0350 REM INITIAL LAST ROLL JUICE PURITY: A(1,9)=70
0360 REM FINAL LAST ROLL JUICE PURITY: A(2,9)=70
0370 REM
0380 REM INITIAL LAST ROLL JUICE BRIX: A(3,20)=3
0390 REM FINAL LAST ROLL JUICE BRIX: A(4,20)=3
0400 REM
0410 REM INITIAL FILTER WASH WATER % CANE: A(3,1)=4
0420 REM FINAL FILTER WASH WATER % CANE: A(4,1)=4
0430 REM
0440 REM INITIAL POL % FILTER CAKE: A(3,2)=2
0450 REM FINAL POL % FILTER CAKE: A(4,2)=2
0460 REM
0470 REM INITIAL CLARIFIER UNDERFLOW % CANE: A(3,3)=20
0480 REM FINAL CLARIFIER UNDERFLOW % CANE: A(4,3)=20
0490 REM
0500 REM INITIAL CLARIFIED JUICE PURITY: A(3,4)=83
0510 REM FINAL CLARIFIED JUICE PURITY: A(4,4)=83
0520 REM
0530 REM INITIAL FILTRATE PURITY (OPTIONAL): A(3,5)=81
0540 REM FINAL FILTRATE PURITY (OPTIONAL): A(4,5)=81

0550 REM
0560 REM INITIAL SYRUP BRIX: A(3,6)=62
0570 REM FINAL SYRUP BRIX: A(4,6)=62
0580 REM
0590 REM INITIAL SYRUP BRIX (DILUTED) FROM SYRUP CLARIFIER TO PANS: A(3,17)=62
0600 REM FINAL SYRUP BRIX (DILUTED) FROM SYRUP CLARIFIER TO PANS: A(4,17)=62
0610 REM
0620 REM INITIAL FILTER CAKE % CANE: A(3,7)=5.6
0630 REM FINAL FILTER CAKE % CANE: A(4,7)=5.6
0640 REM
0650 REM INITIAL A&B SUGAR PURITY: A(5,1)=98.5
0660 REM FINAL A&B SUGAR PURITY: A(6,1)=98.5
0670 REM
0680 REM INITIAL MAGMA PURITY: A(5,2)=86
0690 REM FINAL MAGMA PURITY: A(6,2)=86
0700 REM
0710 REM INITIAL B MASSECUITE PURITY: A(5,3)=72
0720 REM FINAL B MASSECUITE PURITY: A(6,3)=72
0730 REM
0740 REM INITIAL C MASSECUITE PURITY: A(5,4)=55
0750 REM FINAL C MASSECUITE PURITY: A(6,4)=55
0760 REM
0770 REM INITIAL GRAIN STRIKE PURITY: A(5,5)=65
0780 REM FINAL GRAIN STRIKE PURITY: A(6,5)=65
0790 REM
0800 REM INITIAL A MOLLASSES RUN-OFF PURITY: A(5,6)=70
0810 REM FINAL A MOLLASSES RUN-OFF PURITY: A(6,6)=70
0820 REM
0830 REM INITIAL B MOLLASSES RUN-OFF PURITY: A(5,7)=52
0840 REM FINAL B MOLLASSES RUN-OFF PURITY: A(6,7)=52
0850 REM
0860 REM INITIAL FINAL MOLLASSES PURITY: A(5,8)=30
0870 REM FINAL FINAL MOLLASSES PURITY: A(6,8)=30
0880 REM
0890 REM INITIAL A&B SUGAR MOISTURE: A(5,11)=.5
0900 REM FINAL A&B SUGAR MOISTURE: A(6,11)=.5
0910 REM
0920 REM INITIAL C MAGMA BRIX (DILUTED): A(5,12)=90
0930 REM FINAL C MAGMA BRIX (DILUTED): A(6,12)=90
0940 REM
0950 REM INITIAL C EXCESS MAGMA BRIX (MELTED): A(9,17)=65
0960 REM FINAL C EXCESS MAGMA BRIX (MELTED): A(10,17)=65
0970 REM
0980 REM INITIAL A MASSECUITE BRIX: A(5,13)=92.5
0990 REM FINAL A MASSECUITE BRIX: A(6,13)=92.5
1000 REM
1010 REM INITIAL B MASSECUITE BRIX: A(5,14)=94
1020 REM FINAL B MASSECUITE BRIX: A(6,14)=94
1030 REM
1040 REM INITIAL C MASSECUITE BRIX: A(5,15)=95.5
1050 REM FINAL C MASSECUITE BRIX: A(6,15)=95.5
1060 REM
1070 REM INITIAL GRAIN MASSECUITE BRIX: A(5,16)=90
1080 REM FINAL GRAIN MASSECUITE BRIX: A(6,16)=90

1090 REM
1100 REM INITIAL A RUN-OFF MOLASSES BRIX (DILUTED): A(5,17)=65
1110 REM FINAL A RUN-OFF MOLASSES BRIX (DILUTED): A(6,17)=65
1120 REM
1130 REM INITIAL B RUN-OFF MOLASSES BRIX (DILUTED): A(5,18)=65
1140 REM FINAL B RUN-OFF MOLASSES BRIX (DILUTED): A(6,18)=65
1150 REM
1160 REM INITIAL FINAL MOLASSES BRIX (DILUTED): A(5,19)=79.5
1170 REM FINAL FINAL MOLASSES BRIX (DILUTED): A(6,19)=79.5
1180 REM
1190 REM
1200 REM THE FOLLOWING DATA IS REQUIRED IF A AND B WASH SEPARATION IS PRACTICED
1210 REM
1220 REM INITIAL AVERAGE A MOLASSES PURITY (RUN-OFF PLUS WASH): A(19,5)=0
1230 REM FINAL AVERAGE A MOLASSES PURITY (RUN-OFF PLUS WASH): A(20,5)=0
1240 REM
1250 REM INITIAL AVERAGE B MOLASSES PURITY (RUN-OFF PLUS WASH): A(19,6)=0
1260 REM FINAL AVERAGE B MOLASSES PURITY (RUN-OFF PLUS WASH): A(20,6)=0
1270 REM
1280 REM INITIAL A WASH PURITY: A(19,7)=0
1290 REM FINAL A WASH PURITY: A(20,7)=0
1300 REM
1310 REM INITIAL B WASH PURITY: A(19,8)=0
1320 REM FINAL B WASH PURITY: A(20,8)=0
1330 REM
1340 REM INITIAL A WASH BRIX (DILUTED): A(19,9)=0
1350 REM FINAL A WASH BRIX (DILUTED): A(20,9)=0
1360 REM
1370 REM INITIAL B WASH BRIX (DILUTED): A(19,10)=0
1380 REM FINAL B WASH BRIX (DILUTED): A(20,10)=0
1390 REM
1400 REM
1410 REM REFINERY RETURNS
1420 REM
1430 REM INITIAL REFINERY SCUMS POL RETURNS, LB/HR: A(19,14)=0
1440 REM FINAL REFINERY SCUMS POL RETURNS, LB/HR: A(20,14)=0
1450 REM
1460 REM INITIAL REFINERY SCUMS BRIX RETURNS, LB/HR: A(19,15)=0
1470 REM FINAL REFINERY SCUMS BRIX RETURNS, LB/HR: A(20,15)=0
1480 REM
1490 REM INITIAL REFINERY SCUMS MATERIAL RETURNS, LB/HR: A(19,16)=0
1500 REM FINAL REFINERY SCUMS MATERIAL RETURNS, LB/HR: A(20,16)=0
1510 REM
1520 REM INITIAL REFINERY POL RETURNS, LB/HR: A(19,11)=0
1530 REM FINAL REFINERY POL RETURNS, LB/HR: A(20,11)=0
1540 REM
1550 REM INITIAL REFINERY BRIX RETURNS, LB/HR: A(19,12)=0
1560 REM FINAL REFINERY BRIX RETURNS, LB/HR: A(20,12)=0
1570 REM
1580 REM INITIAL REFINERY MATERIAL RETURNS, LB/HR: A(19,13)=0
1590 REM FINAL REFINERY MATERIAL RETURNS, LB/HR: A(20,13)=0
1600 REM
1610 REM CODE FOR BOILING SCHEME USED: A(1,17)=0
1620 REM

1630 REM CONVENTIONAL THREE BOILING = 0
 1640 REM DOUBLE EINWURF = 1
 1650 REM TWO BOILING = 2
 1660 REM FOUR BOILING = 3
 1670 REM THREE BOILING + C MELT TO B STRIKES = 4
 1680 REM THREE BOILING + C MELT TO A STRIKES = 5
 1690 REM THREE BOILING + C MELT TO A & B STRIKES = 6
 1700 REM DOUBLE EINWURF + C MELT TO B STRIKES = 7
 1710 REM DOUBLE EINWURF + C MELT TO A STRIKES = 8
 1720 REM DOUBLE EINWURF + C MELT TO A & B STRIKES = 9
 1730 REM TWO BOILING WITH DOUBLE PURGING OF C'S = 10
 1740 REM FOUR BOIL B MAGMA + C MELT TO A2 STRIKE = 11
 1750 REM FOUR BOIL B MAGMA + C MELT TO A1 STRIKE = 12
 1760 REM FOUR BOIL B MAGMA + C MELT TO A1 & A2 = 13
 1770 REM FOUR BOIL D.E. WITH EXCESS C MELT TO A2 = 14
 1780 REM FOUR BOIL D.E. WITH EXCESS C MELT TO A1 = 15
 1790 REM FOUR BOIL D.E. WITH EXCESS C MELT TO A1&A2 = 16
 1800 REM FOUR BOIL D.E. WITH EXCESS B MELT TO A1 = 17
 1810 REM THREE BOIL D.E. + C DOUBLE PURGED & MELTED = 18
 1820 REM FOUR BOIL B MAGMA + DOUBLE PURGED A & C'S = 19
 1830 REM THREE BOIL B MAGMA + DOUBLE PURGED A & C'S = 20
 1840 REM THREE BOIL DOUBLE MAGMA WITH MELTING OF B'S = 21
 1850 REM TOPPED 3 BOIL DM WITH MELT C's & EXCESS B'S = 22
 1860 REM 3 BOIL DOUBLE MAGMA WITH A MOLASSES TO A'S = 23
 1870 REM CONVENTIONAL 3 BOIL WITH A MOLASSES TO A'S = 24
 1880 REM THREE BOIL + C DOUBLE PURGE + A MOL TO A'S = 25

1890 REM
 1900 REM THE FOLLOWING DATA IS REQUIRED IF THE DOUBLE EINWURF BOILING SYSTEM IS USED

1910 REM
 1920 REM INITIAL "B" SUGAR PURITY: A(5,20)=92
 1930 REM FINAL "B" SUGAR PURITY: A(6,20)=92
 1940 REM
 1950 REM INITIAL "B" SUGAR MOISTURE: A(5,9)=1
 1960 REM FINAL "B" SUGAR MOISTURE: A(6,9)=1
 1970 REM
 1980 REM INITIAL "B" MAGMA BRIX: A(1,15)=91
 1990 REM FINAL "B" MAGMA BRIX: A(2,15)=91
 2000 REM
 2010 REM INITIAL MELTED EXCESS "B" SUGAR BRIX: A(9,18)=65
 2020 REM FINAL MELTED EXCESS "B" SUGAR BRIX: A(10,18)=65
 2030 REM
 2040 REM INITIAL "C" SUGAR MOISTURE: A(5,10)=2
 2050 REM FINAL "C" SUGAR MOISTURE: A(6,10)=2
 2060 REM
 2070 REM INITIAL "A" MASSECUITE CRYSTAL YIELD (BOILING SCHEME 1 ONLY): A(1,16)=55.3
 2080 REM FINAL "A" MASSECUITE CRYSTAL YIELD (BOILING SCHEME 1 ONLY): A(2,16)=55.3

2090 REM
 2100 REM FOLLOWING DATA NEEDED IF TWO BOILING SYSTEM SELECTED

2110 REM
 2120 REM INITIAL "A" STRIKE PURITY: A(25,13)=0
 2130 REM FINAL "A" STRIKE PURITY: A(26,13)=0

2140 REM
 2150 REM FOLLOWING DATA NEEDED IF FOUR BOILING SYSTEM SELECTED (SCHEMES 3, 11, 12, 13, 14, 15, 16, 17, 19 AND 22)
 2160 REM

2170 REM INITIAL TOP-OFF "A" STRIKE PURITY: A(25,14)=80
 2180 REM FINAL TOP-OFF "A" STRIKE PURITY: A(26,14)=80
 2190 REM
 2200 REM INITIAL TOP-OFF "A" STRIKE BRX: A(25,15)=92
 2210 REM FINAL TOP-OFF "A" STRIKE BRX: A(26,15)=92
 2220 REM
 2230 REM INITIAL TOP-OFF "A" MOLASSES PURITY: A(25,16)=60
 2240 REM FINAL TOP-OFF "A" MOLASSES PURITY: A(26,16)=60
 2250 REM
 2260 REM INITIAL TOP-OFF "A" MOLASSES BRX (DILUTED): A(25,17)=60
 2270 REM FINAL TOP-OFF "A" MOLASSES BRX (DILUTED): A(26,17)=60
 2280 REM
 2290 REM FOLLOWING DATA REQUIRED FOR BOILING SCHEMES 4, 5, 6, 7, 8, 9, 11, 12, 13, 19, 20 AND 22
 2300 REM
 2310 REM INITIAL HIGH GRADE GRAIN PURITY: A(25,18)=75
 2320 REM FINAL HIGH GRADE GRAIN PURITY: A(26,18)=75
 2330 REM
 2340 REM INITIAL HIGH GRADE GRAIN BRX: A(25,19)=88
 2350 REM FINAL HIGH GRADE GRAIN BRX: A(26,19)=88
 2360 REM
 2370 REM FOLLOWING A STRIKE PURITY NEEDED - IF AND ONLY IF - A STRIKES ARE TOPPED OFF FOR BOILING SCHEMES 4, 5, 6 AND 23
 2380 REM
 2390 REM INITIAL A MASSECUTE PURITY: A(25,20)=87.25
 2400 REM FINAL A MASSECUTE PURITY: A(26,20)=87.25
 2410 REM
 2420 REM FOLLOWING DATA REQUIRED FOR DOUBLE PURGING OF C SUGAR (BOILING SCHEME 18, 19 AND 20)
 2430 REM
 2440 REM INITIAL DOUBLE PURGED C SUGAR PURITY: A(9,12)=90
 2450 REM FINAL DOUBLE PURGED C SUGAR PURITY: A(10,12)=90
 2460 REM
 2470 REM INITIAL DOUBLE PURGED C WASH PURITY: A(9,13)=62
 2480 REM FINAL DOUBLE PURGED C WASH PURITY: A(10,13)=62
 2490 REM
 2500 REM INITIAL DOUBLE PURGED C WASH BRX: A(9,14)=65
 2510 REM FINAL DOUBLE PURGED C WASH BRX: A(10,14)=65
 2520 REM
 2530 REM INITIAL DOUBLE PURGED C SUGAR MELTED BRX: A(9,15)=65
 2540 REM FINAL DOUBLE PURGED C SUGAR MELTED BRX: A(10,15)=65
 2550 REM
 2560 REM FOLLOWING DATA REQUIRED FOR DOUBLE PURGING OF C SUGAR (BOILING SCHEME 18, 19, 20)
 2570 REM
 2580 REM INITIAL PURITY OF PLANTATION WHITE SUGAR: A(11,16)=99.54
 2590 REM FINAL PURITY OF PLANTATION WHITE SUGAR: A(12,16)=99.54
 2600 REM
 2610 REM INITIAL MOISTURE % PLANTATION WHITE SUGAR: A(11,17)=.04
 2620 REM FINAL MOISTURE % PLANTATION WHITE SUGAR: A(12,17)=.04
 2630 REM
 2640 REM INITIAL A1 + A2 AFFINATION (DOUBLE PURGE) MAGMA BRX: A(11,18)=86
 2650 REM FINAL A1 + A2 AFFINATION (DOUBLE PURGE) MAGMA BRX: A(12,18)=86
 2660 REM
 2670 REM INITIAL A1 + A2 AFFINATION (DOUBLE PURGE) RUN-OFF PURITY: A(11,19)=85
 2680 REM FINAL A1 + A2 AFFINATION (DOUBLE PURGE) RUN-OFF PURITY: A(12,19)=85
 2690 REM
 2700 REM INITIAL C AFFINATION (DOUBLE PURGE) MAGMA BRX: A(9,16)=85

2710 REM FINAL C AFFINATION (DOUBLE PURGE) MAGMA BRIX: A(10,16)=85
2720 REM
2730 REM INITIAL C REBOILED AFFINATION (DOUBLE PURGE) RUN-OFF BRIX (DILUTED): A(11,20)=65
2740 REM FINAL C REBOILED AFFINATION (DOUBLE PURGE) RUN-OFF BRIX (DILUTED): A(12,20)=65
2750 REM
2760 REM
2770 REM
2780 REM LIVE STEAM PRESSURE AT TURBINES (PSIG): A(15,10)=380
2790 REM
2800 REM LIVE STEAM TEMPERATURE AT TURBINES, DEG. F: A(15,11)=648
2810 REM
2820 REM LIVE STEAM ENTHALPY, BTU/LB: A(15,9)=1334.1
2830 REM
2840 REM ISENTROPIC EXHAUST ENTHALPY, BTU/LB: A(15,8)=1111
2850 REM
2860 REM EXHAUST PRESSURE OUT OF TURBINES (PSIG): A(15,12)=20
2870 REM
2880 REM INSTALLED HORSE POWER ON FIRST KNIVES: A(21,1)=1500
2890 REM INSTALLED HORSE POWER ON SECOND KNIVES: A(21,2)=1500
2900 REM INSTALLED HORSE POWER ON THIRD KNIVES: A(21,3)=0
2910 REM
2920 REM INSTALLED HORSE POWER ON SHREDDER: A(21,4)=0
2930 REM
2940 REM INITIAL NUMBER OF MILLS: B(17,13)=6
2950 REM FINAL NUMBER OF MILLS: B(18,13)=6
2960 REM
2970 REM INSTALLED HORSE POWER MILL NO. 1: A(21,5)=1500
2980 REM INSTALLED HORSE POWER MILL NO. 2: A(21,6)=1500
2990 REM INSTALLED HORSE POWER MILL NO. 3: A(21,7)=1500
3000 REM INSTALLED HORSE POWER MILL NO. 4: A(21,8)=1500
3010 REM INSTALLED HORSE POWER MILL NO. 5: A(21,9)=1500
3020 REM INSTALLED HORSE POWER MILL NO. 6: A(21,10)=1500
3030 REM INSTALLED HORSE POWER MILL NO. 7: A(21,11)=0
3040 REM INSTALLED HORSE POWER MILL NO. 8: A(21,12)=0
3050 REM
3060 REM FIRST KNIVES AVERAGE HP/TON FIBER-HOUR: A(25,1)=12
3070 REM FIRST KNIVES MAXIMUM HP/TON FIBER-HOUR: A(26,1)=14
3080 REM SECOND KNIVES AVERAGE HP/TON FIBER-HOUR: A(25,2)=12
3090 REM SECOND KNIVES MAXIMUM HP/TON FIBER-HOUR: A(26,2)=14
3100 REM THIRD KNIVES AVERAGE HP/TON FIBER-HOUR: A(25,3)=0
3110 REM THIRD KNIVES MAXIMUM HP/TON FIBER-HOUR: A(26,3)=0
3120 REM
3130 REM SHREDDER AVERAGE HP/TON FIBER-HOUR: A(25,4)=0
3140 REM SHREDDER MAXIMUM HP/TON FIBER-HOUR: A(26,4)=0
3150 REM
3160 REM MILL NO. 1 AVERAGE HP/TON FIBER-HOUR: A(25,5)=11
3170 REM MILL NO. 1 MAXIMUM HP/TON FIBER-HOUR: A(26,5)=13
3180 REM MILL NO. 2 AVERAGE HP/TON FIBER-HOUR: A(25,6)=11
3190 REM MILL NO. 2 MAXIMUM HP/TON FIBER-HOUR: A(26,6)=13
3200 REM MILL NO. 3 AVERAGE HP/TON FIBER-HOUR: A(25,7)=11
3210 REM MILL NO. 3 MAXIMUM HP/TON FIBER-HOUR: A(26,7)=13
3220 REM MILL NO. 4 AVERAGE HP/TON FIBER-HOUR: A(25,8)=11
3230 REM MILL NO. 4 MAXIMUM HP/TON FIBER-HOUR: A(26,8)=13
3240 REM MILL NO. 5 AVERAGE HP/TON FIBER-HOUR: A(25,9)=11

3250 REM MILL NO. 5 MAXIMUM HP/TON FIBER-HOUR: A(26,9)=13
3260 REM MILL NO. 6 AVERAGE HP/TON FIBER-HOUR: A(25,10)=11
3270 REM MILL NO. 6 MAXIMUM HP/TON FIBER-HOUR: A(26,10)=13
3280 REM MILL NO. 7 AVERAGE HP/TON FIBER-HOUR: A(25,11)=0
3290 REM MILL NO. 7 MAXIMUM HP/TON FIBER-HOUR: A(26,11)=0
3300 REM MILL NO. 8 AVERAGE HP/TON FIBER-HOUR: A(25,12)=0
3310 REM MILL NO. 8 MAXIMUM HP/TON FIBER-HOUR: A(26,12)=0
3320 REM
3330 REM
3340 REM EFFICIENCIES CAN BE USED INSTEAD OF WATER RATES ON LINES DESIGNATED "WATER RATES"; IF SO NUMBER AT END OF THIS LINE SHOULD BE 1: A(17,20)=1
3350 REM
3360 REM WATER RATES (LB/HP-HR), FIRST KNIVES: A(22,1)=50
3370 REM WATER RATES (LB/HP-HR), SECOND KNIVES: A(22,2)=50
3380 REM WATER RATES (LB/HP-HR), THIRD KNIVES: A(22,3)=0
3390 REM
3400 REM WATER RATES (LB/HP-HR), SHREDDER: A(22,4)=0
3410 REM
3420 REM WATER RATES (LB/HP-HR), MILL NO. 1: A(22,5)=50
3430 REM WATER RATES (LB/HP-HR), MILL NO. 2: A(22,6)=50
3440 REM WATER RATES (LB/HP-HR), MILL NO. 3: A(22,7)=50
3450 REM WATER RATES (LB/HP-HR), MILL NO. 4: A(22,8)=50
3460 REM WATER RATES (LB/HP-HR), MILL NO. 5: A(22,9)=50
3470 REM WATER RATES (LB/HP-HR), MILL NO. 6: A(22,10)=50
3480 REM WATER RATES (LB/HP-HR), MILL NO. 7: A(22,11)=0
3490 REM WATER RATES (LB/HP-HR), MILL NO. 8: A(22,12)=0
3500 REM
3510 REM INSTALLED KILO WATT TURBO-GENERATOR NO. 1: A(21,13)=7500
3520 REM INSTALLED KILO WATT TURBO-GENERATOR NO. 2: A(21,14)=0
3530 REM INSTALLED KILO WATT TURBO-GENERATOR NO. 3: A(21,15)=0
3540 REM INSTALLED KILO WATT TURBO-GENERATOR NO. 4: A(21,16)=0
3550 REM
3560 REM INITIAL AVERAGE KW REQUIRED FOR T-G NO. 1: B(17,5)=5000
3570 REM INITIAL MAXIMUM KW REQUIRED FOR T-G NO. 1: B(18,5)=5000
3580 REM INITIAL AVERAGE KW REQUIRED FOR T-G NO. 2: B(17,6)=0
3590 REM INITIAL MAXIMUM KW REQUIRED FOR T-G NO. 2: B(18,6)=0
3600 REM INITIAL AVERAGE KW REQUIRED FOR T-G NO. 3: B(17,7)=0
3610 REM INITIAL MAXIMUM KW REQUIRED FOR T-G NO. 3: B(18,7)=0
3620 REM INITIAL AVERAGE KW REQUIRED FOR T-G NO. 4: B(17,8)=0
3630 REM INITIAL MAXIMUM KW REQUIRED FOR T-G NO. 4: B(18,8)=0
3640 REM
3650 REM FINAL AVERAGE KW REQUIRED FOR T-G NO. 1: B(17,9)=5000
3660 REM FINAL MAXIMUM KW REQUIRED FOR T-G NO. 1: B(18,9)=5000
3670 REM FINAL AVERAGE KW REQUIRED FOR T-G NO. 2: B(17,10)=0
3680 REM FINAL MAXIMUM KW REQUIRED FOR T-G NO. 2: B(18,10)=0
3690 REM FINAL AVERAGE KW REQUIRED FOR T-G NO. 3: B(17,11)=0
3700 REM FINAL MAXIMUM KW REQUIRED FOR T-G NO. 3: B(18,11)=0
3710 REM FINAL AVERAGE KW REQUIRED FOR T-G NO. 4: B(17,12)=0
3720 REM FINAL MAXIMUM KW REQUIRED FOR T-G NO. 4: B(18,12)=0
3730 REM
3740 REM WATER RATES (LB/KW-HR), TURBO-GENERATOR NO. 1: A(22,13)=70
3750 REM WATER RATES (LB/KW-HR), TURBO-GENERATOR NO. 2: A(22,14)=0
3760 REM WATER RATES (LB/KW-HR), TURBO-GENERATOR NO. 3: A(22,15)=0
3770 REM WATER RATES (LB/KW-HR), TURBO-GENERATOR NO. 4: A(22,16)=0

3780 REM
3790 REM INSTALLED HORSE POWER INDUCED DRAFT FAN NO. 1: A(21,17)=0
3800 REM INSTALLED HORSE POWER INDUCED DRAFT FAN NO. 2: A(21,18)=0
3810 REM INSTALLED HORSE POWER INDUCED DRAFT FAN NO. 3: A(21,19)=0
3820 REM INSTALLED HORSE POWER INDUCED DRAFT FAN NO. 4: A(21,20)=0
3830 REM INSTALLED HORSE POWER INDUCED DRAFT FAN NO. 5: A(23,1)=0
3840 REM INSTALLED HORSE POWER INDUCED DRAFT FAN NO. 6: A(23,2)=0
3850 REM
3860 REM INSTALLED HORSE POWER FORCED DRAFT FAN NO. 1: A(23,3)=0
3870 REM INSTALLED HORSE POWER FORCED DRAFT FAN NO. 2: A(23,4)=0
3880 REM INSTALLED HORSE POWER FORCED DRAFT FAN NO. 3: A(23,5)=0
3890 REM INSTALLED HORSE POWER FORCED DRAFT FAN NO. 4: A(23,6)=0
3900 REM INSTALLED HORSE POWER FORCED DRAFT FAN NO. 5: A(23,7)=0
3910 REM INSTALLED HORSE POWER FORCED DRAFT FAN NO. 6: A(23,8)=0
3920 REM
3930 REM INSTALLED HORSE POWER BOILER FEED WATER PUMP NO. 1: A(23,9)=0
3940 REM INSTALLED HORSE POWER BOILER FEED WATER PUMP NO. 2: A(23,10)=0
3950 REM INSTALLED HORSE POWER BOILER FEED WATER PUMP NO. 3: A(23,11)=0
3960 REM INSTALLED HORSE POWER BOILER FEED WATER PUMP NO. 4: A(23,12)=0
3970 REM
3980 REM INITIAL HP REQUIRED FOR I.D. FAN NO. 1: B(15,1)=0
3990 REM FINAL HP REQUIRED FOR I.D. FAN NO. 1: B(16,1)=0
4000 REM INITIAL HP REQUIRED FOR I.D. FAN NO. 2: B(15,2)=0
4010 REM FINAL HP REQUIRED FOR I.D. FAN NO. 2: B(16,2)=0
4020 REM INITIAL HP REQUIRED FOR I.D. FAN NO. 3: B(15,3)=0
4030 REM FINAL HP REQUIRED FOR I.D. FAN NO. 3: B(16,3)=0
4040 REM INITIAL HP REQUIRED FOR I.D. FAN NO. 4: B(15,4)=0
4050 REM FINAL HP REQUIRED FOR I.D. FAN NO. 4: B(16,4)=0
4060 REM INITIAL HP REQUIRED FOR I.D. FAN NO. 5: B(15,5)=0
4070 REM FINAL HP REQUIRED FOR I.D. FAN NO. 5: B(16,5)=0
4080 REM INITIAL HP REQUIRED FOR I.D. FAN NO. 6: B(15,6)=0
4090 REM FINAL HP REQUIRED FOR I.D. FAN NO. 6: B(16,6)=0
4100 REM
4110 REM INITIAL HP REQUIRED FOR F.D. FAN NO. 1: B(15,7)=0
4120 REM FINAL HP REQUIRED FOR F.D. FAN NO. 1: B(16,7)=0
4130 REM INITIAL HP REQUIRED FOR F.D. FAN NO. 2: B(15,8)=0
4140 REM FINAL HP REQUIRED FOR F.D. FAN NO. 2: B(16,8)=0
4150 REM INITIAL HP REQUIRED FOR F.D. FAN NO. 3: B(15,9)=0
4160 REM FINAL HP REQUIRED FOR F.D. FAN NO. 3: B(16,9)=0
4170 REM INITIAL HP REQUIRED FOR F.D. FAN NO. 4: B(15,10)=0
4180 REM FINAL HP REQUIRED FOR F.D. FAN NO. 4: B(16,10)=0
4190 REM INITIAL HP REQUIRED FOR F.D. FAN NO. 5: B(15,11)=0
4200 REM FINAL HP REQUIRED FOR F.D. FAN NO. 5: B(16,11)=0
4210 REM INITIAL HP REQUIRED FOR F.D. FAN NO. 6: B(15,12)=0
4220 REM FINAL HP REQUIRED FOR F.D. FAN NO. 6: B(16,12)=0
4230 REM
4240 REM INITIAL HP REQUIRED FOR BFW PUMP NO. 1: B(15,13)=0
4250 REM FINAL HP REQUIRED FOR BFW PUMP NO. 1: B(16,13)=0
4260 REM INITIAL HP REQUIRED FOR BFW PUMP NO. 2: B(15,14)=0
4270 REM FINAL HP REQUIRED FOR BFW PUMP NO. 2: B(16,14)=0
4280 REM INITIAL HP REQUIRED FOR BFW PUMP NO. 3: B(15,15)=0
4290 REM FINAL HP REQUIRED FOR BFW PUMP NO. 3: B(16,15)=0
4300 REM INITIAL HP REQUIRED FOR BFW PUMP NO. 4: B(15,16)=0
4310 REM FINAL HP REQUIRED FOR BFW PUMP NO. 4: B(16,16)=0

4320 REM
4330 REM WATER RATES (LB/HP-HR), INDUCED DRAFT FAN NO.1: A(22,17)=0
4340 REM WATER RATES (LB/HP-HR), INDUCED DRAFT FAN NO.2: A(22,18)=0
4350 REM WATER RATES (LB/HP-HR), INDUCED DRAFT FAN NO.3: A(22,19)=0
4360 REM WATER RATES (LB/HP-HR), INDUCED DRAFT FAN NO.4: A(22,20)=0
4370 REM WATER RATES (LB/HP-HR), INDUCED DRAFT FAN NO.5: A(24,1)=0
4380 REM WATER RATES (LB/HP-HR), INDUCED DRAFT FAN NO.6: A(24,2)=0
4390 REM
4400 REM WATER RATES (LB/HP-HR), FORCED DRAFT FAN NO.1: A(24,3)=0
4410 REM WATER RATES (LB/HP-HR), FORCED DRAFT FAN NO.2: A(24,4)=0
4420 REM WATER RATES (LB/HP-HR), FORCED DRAFT FAN NO.3: A(24,5)=0
4430 REM WATER RATES (LB/HP-HR), FORCED DRAFT FAN NO.4: A(24,6)=0
4440 REM WATER RATES (LB/HP-HR), FORCED DRAFT FAN NO.5: A(24,7)=0
4450 REM WATER RATES (LB/HP-HR), FORCED DRAFT FAN NO.6: A(24,8)=0
4460 REM
4470 REM WATER RATES (LB/HP-HR), BFW PUMP NO.1: A(24,9)=0
4480 REM WATER RATES (LB/HP-HR), BFW PUMP NO.2: A(24,10)=0
4490 REM WATER RATES (LB/HP-HR), BFW PUMP NO.3: A(24,11)=0
4500 REM WATER RATES (LB/HP-HR), BFW PUMP NO.4: A(24,12)=0
4510 REM
4520 REM INSTALLED HORSE POWER LIMED JUICE HEATER PUMP NO. 1: A(23,13)=0
4530 REM INSTALLED HORSE POWER LIMED JUICE HEATER PUMP NO. 2: A(23,14)=0
4540 REM
4550 REM INSTALLED HORSE POWER CLARIFIED JUICE HEATER PUMP NO. 1: A(23,15)=0
4560 REM INSTALLED HORSE POWER CLARIFIED JUICE HEATER PUMP NO. 2: A(23,16)=0
4570 REM
4580 REM INSTALLED HORSE POWER INJECTION WATER PUMP NO. 1: A(23,17)=0
4590 REM INSTALLED HORSE POWER INJECTION WATER PUMP NO. 2: A(23,18)=0
4600 REM
4610 REM INSTALLED HORSE POWER MISCELLANEOUS DRIVE NO. 1: A(23,19)=0
4620 REM INSTALLED HORSE POWER MISCELLANEOUS DRIVE NO. 2: A(23,20)=0
4630 REM
4640 REM INITIAL HP REQUIRED FOR LIMED JUICE HEATERS NO. 1: B(15,17)=0
4650 REM FINAL HP REQUIRED FOR LIMED JUICE HEATERS NO. 1: B(16,17)=0
4660 REM INITIAL HP REQUIRED FOR LIMED JUICE HEATERS NO. 2: B(15,18)=0
4670 REM FINAL HP REQUIRED FOR LIMED JUICE HEATERS NO. 2: B(16,18)=0
4680 REM
4690 REM INITIAL HP REQUIRED FOR CLARIFIED JUICE HEATER NO. 1: B(15,19)=0
4700 REM FINAL HP REQUIRED FOR CLARIFIED JUICE HEATER NO. 1: B(16,19)=0
4710 REM INITIAL HP REQUIRED FOR CLARIFIED JUICE HEATER NO. 2: B(15,20)=0
4720 REM FINAL HP REQUIRED FOR CLARIFIED JUICE HEATER NO. 2: B(16,20)=0
4730 REM
4740 REM INITIAL HP REQUIRED FOR INJECTION WATER PUMP NO. 1: B(17,1)=0
4750 REM FINAL HP REQUIRED FOR INJECTION WATER PUMP NO. 1: B(18,1)=0
4760 REM INITIAL HP REQUIRED FOR INJECTION WATER PUMP NO. 2: B(17,2)=0
4770 REM FINAL HP REQUIRED FOR INJECTION WATER PUMP NO. 2: B(18,2)=0
4780 REM
4790 REM INITIAL HP REQUIRED FOR MISCELLANEOUS DRIVE NO. 1: B(17,3)=7500
4800 REM FINAL HP REQUIRED FOR MISCELLANEOUS DRIVE NO. 1: B(18,3)=7500
4810 REM INITIAL HP REQUIRED FOR MISCELLANEOUS DRIVE NO. 2: B(17,4)=0
4820 REM FINAL HP REQUIRED FOR MISCELLANEOUS DRIVE NO. 2: B(18,4)=0
4830 REM
4840 REM WATER RATES (LB/HP-HR), LIMED JUICE HEATER NO. 1: A(24,13)=0
4850 REM WATER RATES (LB/HP-HR), LIMED JUICE HEATER NO. 2: A(24,14)=0

4860 REM
 4870 REM WATER RATES (LB/HP-HR), CLARIFIED JUICE HEATER NO. 1: A(24,15)=0
 4880 REM WATER RATES (LB/HP-HR), CLARIFIED JUICE HEATER NO. 2: A(24,16)=0
 4890 REM
 4900 REM WATER RATES (LB/HP-HR), INJECTION WATER PUMP NO. 1: A(24,17)=0
 4910 REM WATER RATES (LB/HP-HR), INJECTION WATER PUMP NO. 2: A(24,18)=0
 4920 REM
 4930 REM WATER RATES (LB/HP-HR), MISCELLANEOUS DRIVE NO. 1: A(24,19)=50
 4940 REM WATER RATES (LB/HP-HR), MISCELLANEOUS DRIVE NO. 2: A(24,20)=0
 4950 REM
 4960 REM
 4970 REM
 4980 REM ALL DIAMETERS AND LENGTHS OF MILL ROLLS IN INCHES
 4990 REM
 5000 REM INITIAL NUMBER OF ROLLS IN FIRST GROUP WITH SAME D&L: A(3,8)=18
 5010 REM INITIAL DIAMETER OF ROLLS IN FIRST GROUP WITH SAME D&L: A(3,9)=42
 5020 REM INITIAL LENGTH OF ROLLS IN FIRST GROUP WITH SAME D&L: A(3,10)=84
 5030 REM
 5040 REM INITIAL NUMBER OF ROLLS IN SECOND GROUP WITH SAME D&L: A(3,11)=0
 5050 REM INITIAL DIAMETER OF ROLLS IN SECOND GROUP WITH SAME D&L: A(3,12)=0
 5060 REM INITIAL LENGTH OF ROLLS IN SECOND GROUP WITH SAME D&L: A(3,13)=0
 5070 REM
 5080 REM INITIAL NUMBER OF ROLLS IN THIRD GROUP WITH SAME D&L: A(3,14)=0
 5090 REM INITIAL DIAMETER OF ROLLS IN THIRD GROUP WITH SAME D&L: A(3,15)=0
 5100 REM INITIAL LENGTH OF ROLLS IN THIRD GROUP WITH SAME D&L: A(3,16)=0
 5110 REM
 5120 REM FINAL NUMBER OF ROLLS IN FIRST GROUP WITH SAME D&L: A(4,8)=18
 5130 REM FINAL DIAMETER OF ROLLS IN FIRST GROUP WITH SAME D&L: A(4,9)=42
 5140 REM FINAL LENGTH OF ROLLS IN FIRST GROUP WITH SAME D&L: A(4,10)=84
 5150 REM
 5160 REM FINAL NUMBER OF ROLLS IN SECOND GROUP WITH SAME D&L: A(4,11)=0
 5170 REM FINAL DIAMETER OF ROLLS IN SECOND GROUP WITH SAME D&L: A(4,12)=0
 5180 REM FINAL LENGTH OF ROLLS IN SECOND GROUP WITH SAME D&L: A(4,13)=0
 5190 REM
 5200 REM FINAL NUMBER OF ROLLS IN THIRD GROUP WITH SAME D&L: A(4,14)=0
 5210 REM FINAL DIAMETER OF ROLLS IN THIRD GROUP WITH SAME D&L: A(4,15)=0
 5220 REM FINAL LENGTH OF ROLLS IN THIRD GROUP WITH SAME D&L: A(4,16)=0
 5230 REM
 5240 REM
 5250 REM ALL STEAM FLOWS IN LB/HR
 5260 REM
 5270 REM INITIAL AVERAGE MISCELLANEOUS EXHAUST REQUIRED: A(7,19)=30000
 5280 REM FINAL AVERAGE MISCELLANEOUS EXHAUST REQUIRED: A(8,19)=30000
 5290 REM
 5300 REM INITIAL MAXIMUM MISCELLANEOUS EXHAUST REQUIRED: A(7,20)=30000*1.25
 5310 REM FINAL MAXIMUM MISCELLANEOUS EXHAUST REQUIRED: A(8,20)=30000*1.25
 5320 REM
 5330 REM INITIAL AVERAGE MISCELLANEOUS LIVE STEAM REQUIRED, LB/HR: A(1,10)=30000
 5340 REM FINAL AVERAGE MISCELLANEOUS LIVE STEAM REQUIRED, LB/HR: A(2,10)=30000
 5350 REM
 5360 REM INITIAL MAXIMUM MISCELLANEOUS LIVE STEAM REQUIRED, LB/HR: A(1,11)=30000*1.5
 5370 REM FINAL MAXIMUM MISCELLANEOUS LIVE STEAM REQUIRED, LB/HR: A(2,11)=30000*1.5
 5380 REM
 5390 REM INITIAL BOILER EFFICIENCY BURNING BAGASSE: A(1,18)=58

5400 REM FINAL BOILER EFFICIENCY BURNING BAGASSE: A(2,18)=58
5410 REM
5420 REM INITIAL ASH % BAGASSE (AS FIRED): A(1,19)=4
5430 REM FINAL ASH % BAGASSE (AS FIRED): A(2,19)=4
5440 REM
5450 REM BOILER STEAM PRESSURE (GENERATING), PSIG: A(15,6)=400
5460 REM
5470 REM BOILER STEAM TEMPERATURE (GENERATING), DEG. F: A(15,7)=650
5480 REM
5490 REM INITIAL NOMINAL INSTALLED BOILER CAPACITY, LBS/HR: A(1,20)=800000
5500 REM FINAL NOMINAL INSTALLED BOILER CAPACITY, LBS/HR: A(2,20)=800000
5510 REM
5520 REM INITIAL NUMBER OF BOILERS INSTALLED: A(11,14)=1
5530 REM FINAL NUMBER OF BOILERS INSTALLED: A(12,14)=1
5540 REM
5550 REM LBS. STEAM GENERATED PER GALLON OF FUEL OIL BURNED: A(11,15)=100
5560 REM
5570 REM INITIAL % BOILER BLOWDOWN: A(15,20)=5
5580 REM FINAL % BOILER BLOWDOWN: A(16,20)=5
5590 REM
5600 REM % OF BAGASSE USED FOR FILTERS AND OPERATION DURING LOST TIME PERIODS: A(3,18)=0
5610 REM
5620 REM
5630 REM TEMPERATURES IN DEG. F
5640 REM
5650 REM INITIAL TEMPERATURE OF BOILER FEED WATER TO DEAERATOR: A(19,1)=210
5660 REM FINAL TEMPERATURE OF BOILER FEED WATER TO DEAERATOR: A(20,1)=210
5670 REM
5680 REM INITIAL TEMPERATURE OF WATER OUT OF BOILER FEED WATER DEAERATOR: A(19,2)=245
5690 REM FINAL TEMPERATURE OF WATER OUT OF BOILER FEED WATER DEAERATOR: A(20,2)=245
5700 REM
5710 REM
5720 REM HEATER HEATING SURFACE INSTALLED, SQ. FT.
5730 REM
5740 REM INITIAL FIRST STAGE JUICE HEATING SURFACE: A(17,6)=10000
5750 REM FINAL FIRST STAGE JUICE HEATING SURFACE: A(18,6)=10000
5760 REM
5770 REM INITIAL SECOND STAGE JUICE HEATING SURFACE: A(17,7)=10000
5780 REM FINAL SECOND STAGE JUICE HEATING SURFACE: A(18,7)=10000
5790 REM
5800 REM INITIAL CLARIFIED STAGE JUICE HEATING SURFACE: A(17,8)=0
5810 REM FINAL CLARIFIED STAGE JUICE HEATING SURFACE: A(18,8)=0
5820 REM
5830 REM
5840 REM HEATER JUICE FLOW CROSS-SECTIONAL AREA, SQ. FT.
5850 REM
5860 REM INITIAL FIRST STAGE LIMED JUICE HEATER C.S.A.: A(17,9)=0
5870 REM FINAL FIRST STAGE LIMED JUICE HEATER C.S.A.: A(18,9)=0
5880 REM
5890 REM INITIAL SECOND STAGE LIMED JUICE HEATER C.S.A.: A(17,10)=0
5900 REM FINAL SECOND STAGE LIMED JUICE HEATER C.S.A.: A(18,10)=0
5910 REM
5920 REM INITIAL CLARIFIED JUICE HEATER C.S.A.: A(17,11)=0
5930 REM FINAL CLARIFIED JUICE HEATER C.S.A.: A(18,11)=0

5940 REM
5950 REM
5960 REM JUICE HEATER HEAT TRANSFER COEFFICIENTS, BTU/HR.-SQ.FT.-DEG. F
5970 REM
5980 REM INITIAL FIRST STAGE LIMED JUICE HEATER H.T.C.: A(17,12)=180
5990 REM FINAL FIRST STAGE LIMED JUICE HEATER H.T.C.: A(18,12)=180
6000 REM
6010 REM INITIAL SECOND STAGE LIMED JUICE HEATER H.T.C.: A(17,13)=180
6020 REM FINAL SECOND STAGE LIMED JUICE HEATER H.T.C.: A(18,13)=180
6030 REM
6040 REM INITIAL CLARIFIED JUICE HEATER, H.T.C.: A(17,14)=250
6050 REM FINAL CLARIFIED JUICE HEATER, H.T.C.: A(18,14)=250
6060 REM
6070 REM
6080 REM RECOMMENDED JUICE VELOCITY THROUGH JUICE HEATERS, FT./SEC.
6090 REM
6100 REM INITIAL FIRST STAGE LIMED JUICE HEATER RECOMMENDED VELOCITY: A(17,15)=7
6110 REM FINAL FIRST STAGE LIMED JUICE HEATER RECOMMENDED VELOCITY: A(18,15)=7
6120 REM
6130 REM INITIAL SECOND STAGE LIMED JUICE HEATER RECOMMENDED VELOCITY: A(17,16)=7
6140 REM FINAL SECOND STAGE LIMED JUICE HEATER RECOMMENDED VELOCITY: A(18,16)=7
6150 REM
6160 REM INITIAL CLARIFIED JUICE HEATER RECOMMENDED VELOCITY: A(17,17)=7
6170 REM FINAL CLARIFIED JUICE HEATER RECOMMENDED VELOCITY: A(18,17)=7
6180 REM
6190 REM
6200 REM JUICE TEMPERATURES, DEG. F
6210 REM
6220 REM INITIAL JUICE TEMPERATURE TO FIRST STAGE LIMED JUICE HEATER: A(15,1)=80
6230 REM FINAL JUICE TEMPERATURE TO FIRST STAGE LIMED JUICE HEATER: A(16,1)=80
6240 REM
6250 REM INITIAL JUICE TEMPERATURE OUT OF FIRST STAGE LIMED JUICE HEATER: A(15,2)=180
6260 REM FINAL JUICE TEMPERATURE OUT OF FIRST STAGE LIMED JUICE HEATER: A(16,2)=180
6270 REM
6280 REM INITIAL JUICE TEMPERATURE TO SECOND STAGE LIMED JUICE HEATER: A(15,13)=180
6290 REM FINAL JUICE TEMPERATURE TO SECOND STAGE LIMED JUICE HEATER: A(16,13)=180
6300 REM
6310 REM INITIAL JUICE TEMPERATURE OUT OF SECOND STAGE LIMED JUICE HEATER: A(15,3)=220
6320 REM FINAL JUICE TEMPERATURE OUT OF SECOND STAGE LIMED JUICE HEATER: A(16,3)=220
6330 REM
6340 REM INITIAL JUICE TEMPERATURE TO CLARIFIED JUICE HEATER: A(15,4)=208
6350 REM FINAL JUICE TEMPERATURE TO CLARIFIED JUICE HEATER: A(16,4)=208
6360 REM
6370 REM INITIAL JUICE TEMPERATURE OUT OF CLARIFIED JUICE HEATER: A(15,5)=208
6380 REM FINAL JUICE TEMPERATURE OUT OF CLARIFIED JUICE HEATER: A(16,5)=208
6390 REM
6400 REM
6410 REM INITIAL CLARIFIER RETENTION TIME DESIRED, HOURS: A(7,11)=1.5
6420 REM FINAL CLARIFIER RETENTION TIME DESIRED, HOURS: A(8,11)=1.5
6430 REM
6440 REM INITIAL NUMBER OF CLARIFIERS INSTALLED: A(7,12)=1
6450 REM FINAL NUMBER OF CLARIFIERS INSTALLED: A(8,12)=1
6460 REM
6470 REM INITIAL TOTAL VOLUMETRIC CAPACITY OF CLARIFIERS INSTALLED, GALLONS: A(7,13)=250000

6480 REM FINAL TOTAL VOLUMETRIC CAPACITY OF CLARIFIERS INSTALLED, GALLONS: A(8,13)=250000
6490 REM
6500 REM INITIAL CLARIFIER DESCRIPTIONS = B\$(1-6) "Maker, Diameter (Ft.), Capacity (Gals.)"
6510 REM
6520 B\$(1)=" 250,000 Gals"
6530 B\$(2)=" "
6540 B\$(3)=" "
6550 B\$(4)=" "
6560 B\$(5)=" "
6570 B\$(6)=" "
6580 REM
6590 REM
6600 REM FINAL CLARIFIER DESCRIPTIONS = C\$(1-6) "Maker, Diameter (Ft.), Capacity (Gals.)"
6610 REM
6620 C\$(1)=" 250,000 Gals"
6630 C\$(2)=" "
6640 C\$(3)=" "
6650 C\$(4)=" "
6660 C\$(5)=" "
6670 C\$(6)=" "
6680 REM
6690 REM INITIAL FILTER SPEED, MINUTES PER REVOLUTION: A(7,14)=3
6700 REM FINAL FILTER SPEED, MINUTES PER REVOLUTION: A(8,14)=3
6710 REM
6720 REM INITIAL FILTER CAKE THICKNESS, INCHES: A(7,15)=.25
6730 REM FINAL FILTER CAKE THICKNESS, INCHES: A(8,15)=.25
6740 REM
6750 REM INITIAL NUMBER OF FILTERS: A(7,16)=1
6760 REM FINAL NUMBER OF FILTERS: A(8,16)=1
6770 REM
6780 REM INITIAL TOTAL FILTERING SURFACE, SQ. FT.: A(7,17)=3000
6790 REM FINAL TOTAL FILTERING SURFACE, SQ. FT.: A(8,17)=3000
6800 REM
6810 REM INITIAL EVAPORATION (FLASH) % FILTRATE (USE 7.5%): A(7,18)=7.5
6820 REM FINAL EVAPORATION (FLASH) % FILTRATE (USE 7.5%): A(8,18)=7.5
6830 REM
6840 REM
6850 REM MUD FILTER DESCRIPTION
6860 REM
6870 REM INITIAL DESCRIPTION OF MUD FILTERS = D\$(1-6) "Maker, Diameter (Ft.) x Face (Ft.)"
6880 REM
6890 D\$(1)="3000 Sq. Ft. "
6900 D\$(2)=" "
6910 D\$(3)=" "
6920 D\$(4)=" "
6930 D\$(5)=" "
6940 D\$(6)=" "
6950 REM
6960 REM FINAL DESCRIPTION OF MUD FILTERS = E\$(1-6) "Maker, Diameter (Ft.) x Face (Ft.)"
6970 REM
6980 E\$(1)="3000 Sq. Ft. "
6990 E\$(2)=" "
7000 E\$(3)=" "
7010 E\$(4)=" "

7560 REM
7570 A(13,4)=0
7580 A(14,4)=0
7590 REM
7600 A(13,5)=0
7610 A(14,5)=0
7620 REM
7630 REM
7640 REM FIRST EFFECT BLEEDS
7650 A(13,6)=1
7660 A(14,6)=1
7670 REM
7680 A(13,7)=0
7690 A(14,7)=0
7700 REM
7710 A(13,8)=0
7720 A(14,8)=0
7730 REM
7740 A(13,9)=0
7750 A(14,9)=0
7760 REM
7770 A(13,10)=1
7780 A(14,10)=1
7790 REM
7800 REM
7810 REM SECOND EFFECT BLEEDS
7820 A(13,11)=0
7830 A(14,11)=0
7840 REM
7850 A(13,12)=1
7860 A(14,12)=1
7870 REM
7880 A(13,13)=0
7890 A(14,13)=0
7900 REM
7910 A(13,14)=1
7920 A(14,14)=1
7930 REM
7940 A(13,15)=0
7950 A(14,15)=0
7960 REM
7970 REM
7980 REM THIRD EFFECT BLEEDS
7990 A(13,16)=0
8000 A(14,16)=0
8010 REM
8020 A(13,17)=0
8030 A(14,17)=0
8040 REM
8050 A(13,18)=0
8060 A(14,18)=0
8070 REM
8080 A(13,19)=0
8090 A(14,19)=0

8100 REM
8110 A(13,20)=0
8120 A(14,20)=0
8130 REM
8140 REM
8150 REM MISCELLANEOUS VAPOR BLEEDS FROM EVAPORATOR EFFECTS, LB/HR.
8160 REM
8170 REM INITIAL MISCELLANEOUS VAPOR BLEEDS FROM PRE-EVAPORATOR: A(17,18)=0
8180 REM FINAL MISCELLANEOUS VAPOR BLEEDS FROM PRE-EVAPORATOR: A(18,18)=0
8190 REM
8200 REM INITIAL MISCELLANEOUS VAPOR BLEEDS FROM FIRST EFFECT: A(17,19)=0
8210 REM FINAL MISCELLANEOUS VAPOR BLEEDS FROM FIRST EFFECT: A(18,19)=0
8220 REM
8230 REM INITIAL MISCELLANEOUS VAPOR BLEEDS FROM SECOND EFFECT: A(19,19)=0
8240 REM FINAL MISCELLANEOUS VAPOR BLEEDS FROM SECOND EFFECT: A(20,19)=0
8250 REM
8260 REM INITIAL MISCELLANEOUS VAPOR BLEEDS FROM THIRD EFFECT: A(19,20)=0
8270 REM FINAL MISCELLANEOUS VAPOR BLEEDS FROM THIRD EFFECT: A(20,20)=0
8280 REM
8290 REM
8300 REM INITIAL AVERAGE MISCELLANEOUS VAPOR TO BE CONDENSED (REFINERY PANS, ETC): A(19,17)=0
8310 REM FINAL AVERAGE MISCELLANEOUS VAPOR TO BE CONDENSED (REFINERY PANS, ETC): A(20,17)=0
8320 REM
8330 REM INITIAL MAXIMUM MISCELLANEOUS VAPOR TO BE CONDENSED (REFINERY PANS, ETC): A(19,18)=0
8340 REM FINAL MAXIMUM MISCELLANEOUS VAPOR TO BE CONDENSED (REFINERY PANS, ETC): A(20,18)=0
8350 REM
8360 REM
8370 REM PAN FACTORS ARE LBS STEAM (OR VAPOR) REQUIRED PER LB OF EVAPORATION IN PANS
8380 REM
8390 REM PAN FACTOR FOR A MASSECUITE: A(7,1)=1.15
8400 REM
8410 REM PAN FACTOR FOR B MASSECUITE: A(7,2)=1.20
8420 REM
8430 REM PAN FACTOR FOR HIGH GRADE GRAIN STRIKE: A(9,20)=1.20
8440 REM
8450 REM PAN FACTOR FOR C MASSECUITE: A(7,3)=1.25
8460 REM
8470 REM PAN FACTOR FOR GRAIN MASSECUITE: A(7,4)=1.25
8480 REM
8490 REM
8500 REM FOR MAXIMUM/AVERAGE EVAPORATION USE 1.75 FOR 3 PANS; 1.5 FOR 4 PANS; 1.35 FOR 5 PANS; AND 1.25 FOR 6 OR MORE PANS
8510 REM
8520 REM INITIAL MAXIMUM/AVERAGE PAN EVAPORATION: A(7,5)=1.25
8530 REM FINAL MAXIMUM/AVERAGE PAN EVAPORATION: A(8,5)=1.25
8540 REM
8550 REM
8560 REM ALL STRIKE BOILING TIMES IN HOURS
8570 REM
8580 REM INITIAL BOILING TIME FOR A STRIKE: A(7,6)=2.5
8590 REM FINAL BOILING TIME FOR A STRIKE: A(8,6)=2.5
8600 REM
8610 REM INITIAL BOILING TIME FOR B STRIKE: A(7,7)=3
8620 REM FINAL BOILING TIME FOR B STRIKE: A(8,7)=3
8630 REM

8640 REM INITIAL BOILING TIME FOR HIGH GRADE GRAIN STRIKE: A(9,19)=4
8650 REM FINAL BOILING TIME FOR HIGH GRADE GRAIN STRIKE: A(10,19)=4
8660 REM
8670 REM INITIAL BOILING TIME FOR C STRIKE: A(7,8)=5
8680 REM FINAL BOILING TIME FOR C STRIKE: A(8,8)=5
8690 REM
8700 REM INITIAL BOILING TIME FOR GRAIN STRIKE: A(7,9)=4
8710 REM FINAL BOILING TIME FOR GRAIN STRIKE: A(8,9)=4
8720 REM
8730 REM INITIAL TOTAL INSTALLED PAN CAPACITY (CU. FT.): A(7,10)=18000
8740 REM FINAL TOTAL INSTALLED PAN CAPACITY (CU. FT.): A(8,10)=18000
8750 REM
8760 REM INITIAL COOLING TIME REQUIRED FOR BATCH CRYSTALLIZERS, HOURS: A(9,1)=36
8770 REM FINAL COOLING TIME REQUIRED FOR BATCH CRYSTALLIZERS, HOURS: A(10,1)=36
8780 REM
8790 REM INITIAL INLET MASSECUITE TEMPERATURE TO CRYSTALLIZERS, DEG. F.: A(9,2)=149
8800 REM FINAL INLET MASSECUITE TEMPERATURE TO CRYSTALLIZERS, DEG. F.: A(10,2)=149
8810 REM
8820 REM INITIAL OUTLET MASSECUITE TEMPERATURE FROM CRYSTALLIZER, DEG. F.: A(9,3)=104
8830 REM FINAL OUTLET MASSECUITE TEMPERATURE FROM CRYSTALLIZER, DEG. F.: A(10,3)=104
8840 REM
8850 REM INITIAL REHEATED MASSECUITE TEMPERATURE (IN CRYSTALLIZERS), DEG. F.: A(9,4)=122
8860 REM FINAL REHEATED MASSECUITE TEMPERATURE (IN CRYSTALLIZERS), DEG. F.: A(10,4)=122
8870 REM
8880 REM INITIAL INLET CRYSTALLIZER COOLING WATER TEMPERATURE, DEG. F.: A(9,5)=75
8890 REM FINAL INLET CRYSTALLIZER COOLING WATER TEMPERATURE, DEG. F.: A(10,5)=75
8900 REM
8910 REM INITIAL OUTLET CRYSTALLIZER COOLING WATER TEMPERATURE, DEG. F.: A(9,6)=100
8920 REM FINAL OUTLET CRYSTALLIZER COOLING WATER TEMPERATURE, DEG. F.: A(10,6)=100
8930 REM
8940 REM INITIAL CRYSTALLIZER INLET REHEATING WATER TEMPERATURE, DEG. F.: A(9,7)=140
8950 REM FINAL CRYSTALLIZER INLET REHEATING WATER TEMPERATURE, DEG. F.: A(10,7)=140
8960 REM
8970 REM INITIAL CRYSTALLIZER OUTLET REHEATING WATER TEMPERATURE, DEG. F.: A(9,8)=130
8980 REM FINAL CRYSTALLIZER OUTLET REHEATING WATER TEMPERATURE, DEG. F.: A(10,8)=130
8990 REM
9000 REM INITIAL HEAT TRANSFER COEFFICIENT FOR CRYSTALLIZER COOLING SECTION, BTU/HR. -SQ. FT. -DEG. F.: A(9,9)=5
9010 REM FINAL HEAT TRANSFER COEFFICIENT FOR CRYSTALLIZER COOLING SECTION, BTU/HR. -SQ. FT. -DEG. F.: A(10,9)=5
9020 REM
9030 REM INITIAL HEAT TRANSFER COEFFICIENT FOR CRYSTALLIZER REHEATING SECTION, BTU/HR.-SQ. FT. -DEG. F.: A(9,10)=10
9040 REM FINAL HEAT TRANSFER COEFFICIENT FOR CRYSTALLIZER REHEATING SECTION, BTU/HR.-SQ. FT. -DEG. F.: A(10,10)=10
9050 REM
9060 REM INITIAL BATCH CRYSTALLIZER TOTAL VOLUME, CU. FT.: A(9,11)=22000
9070 REM FINAL BATCH CRYSTALLIZER TOTAL VOLUME, CU. FT.: A(10,11)=22000
9080 REM
9090 REM A MASSECUITE CENTRIFUGALS
9100 REM
9110 REM INITIAL NUMBER OF A CENTRIFUGALS INSTALLED: A(11,1)=11
9120 REM FINAL NUMBER OF A CENTRIFUGALS INSTALLED: A(12,1)=11
9130 REM
9140 REM INITIAL A CENTRIFUGAL CAPACITY, CU. FT./CHARGE: A(11,2)=18.7*.9
9150 REM FINAL A CENTRIFUGAL CAPACITY, CU. FT./CHARGE: A(12,2)=18.7*.9
9160 REM
9170 REM INITIAL A CENTRIFUGAL CYCLES/HOUR: A(11,3)=18

9180 REM FINAL A CENTRIFUGAL CYCLES/HOUR: A(12,3)=18
9190 REM
9200 REM INITIAL HIGH GRADE CENTRIFUGAL WORKING TIME % TOTAL TIME: A(11,4)=90
9210 REM FINAL HIGH GRADE CENTRIFUGAL WORKING TIME % TOTAL TIME: A(12,4)=90
9220 REM
9230 REM B MASSECUITE CENTRIFUGALS
9240 REM
9250 REM INITIAL NUMBER OF B MACHINES INSTALLED: A(11,5)=4
9260 REM FINAL NUMBER OF B MACHINES INSTALLED: A(12,5)=4
9270 REM
9280 REM INITIAL B CENTRIFUGAL CAPACITY, CU. FT./CHARGE: A(11,6)=625
9290 REM FINAL B CENTRIFUGAL CAPACITY, CU. FT./CHARGE: A(12,6)=625
9300 REM
9310 REM INITIAL B CENTRIFUGAL CYCLES PER HOUR: A(11,7)=1
9320 REM FINAL B CENTRIFUGAL CYCLES PER HOUR: A(12,7)=1
9330 REM
9340 REM C MASSECUITE CENTRIFUGALS
9350 REM
9360 REM INITIAL NUMBER OF C CENTRIFUGALS: A(11,8)=5
9370 REM FINAL NUMBER OF C CENTRIFUGALS: A(12,8)=5
9380 REM
9390 REM INITIAL C CENTRIFUGAL CAPACITY, CU. FT./DAY: A(11,9)=5000
9400 REM FINAL C CENTRIFUGAL CAPACITY, CU. FT./DAY: A(12,9)=5000
9410 REM
9420 REM DESCRIPTION OF CENTRIFUGALS = B\$(7-9) "Maker, Type, Diameter (Ft.) x Height (Ft.) x RPM"
9430 REM
9440 B\$(7)="Batch, 48 in x 36 in. x 1200 RPM"
9450 B\$(8)="Cont., 1100 mm. x 30 deg. x 1600 RPM"
9460 B\$(9)="Cont., 1100 mm. x 30 deg. x 1950 RPM"
9470 REM
9480 REM INITIAL CAPACITY OF INJECTION WATER PUMPS, GPM: A(11,10)=40000
9490 REM FINAL CAPACITY OF INJECTION WATER PUMPS, GPM: A(12,10)=40000
9500 REM
9510 SELECT DISK/D14
9520 LOAD T "MILBAL1" 10,9999