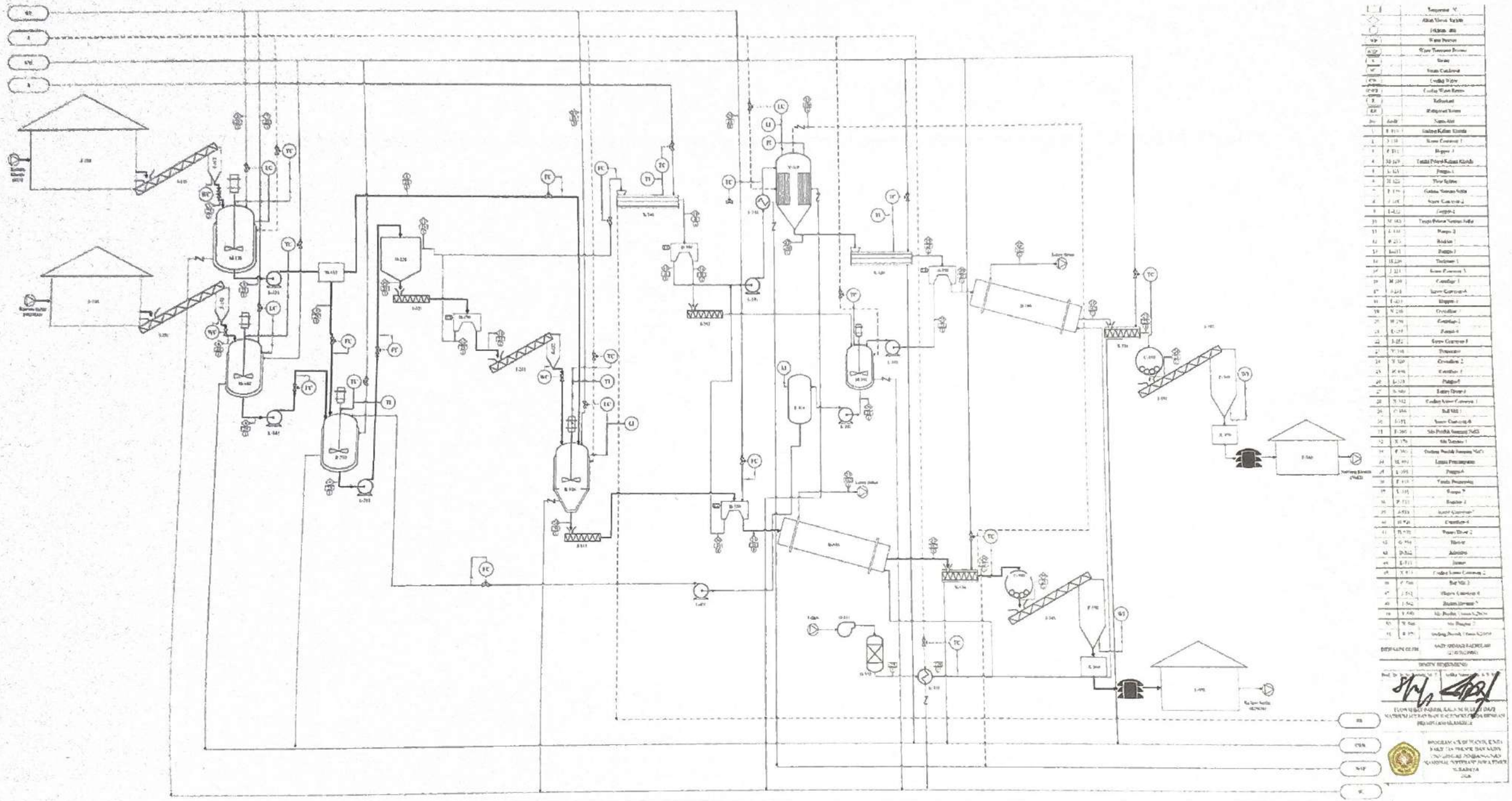
PRA RENCANA PABRIK KALIUM SULFAT DARI NATRIUM SULFAT DAN KALIUM KLORIDA DENGAN PROSES PRESIPITASI GLASERITE

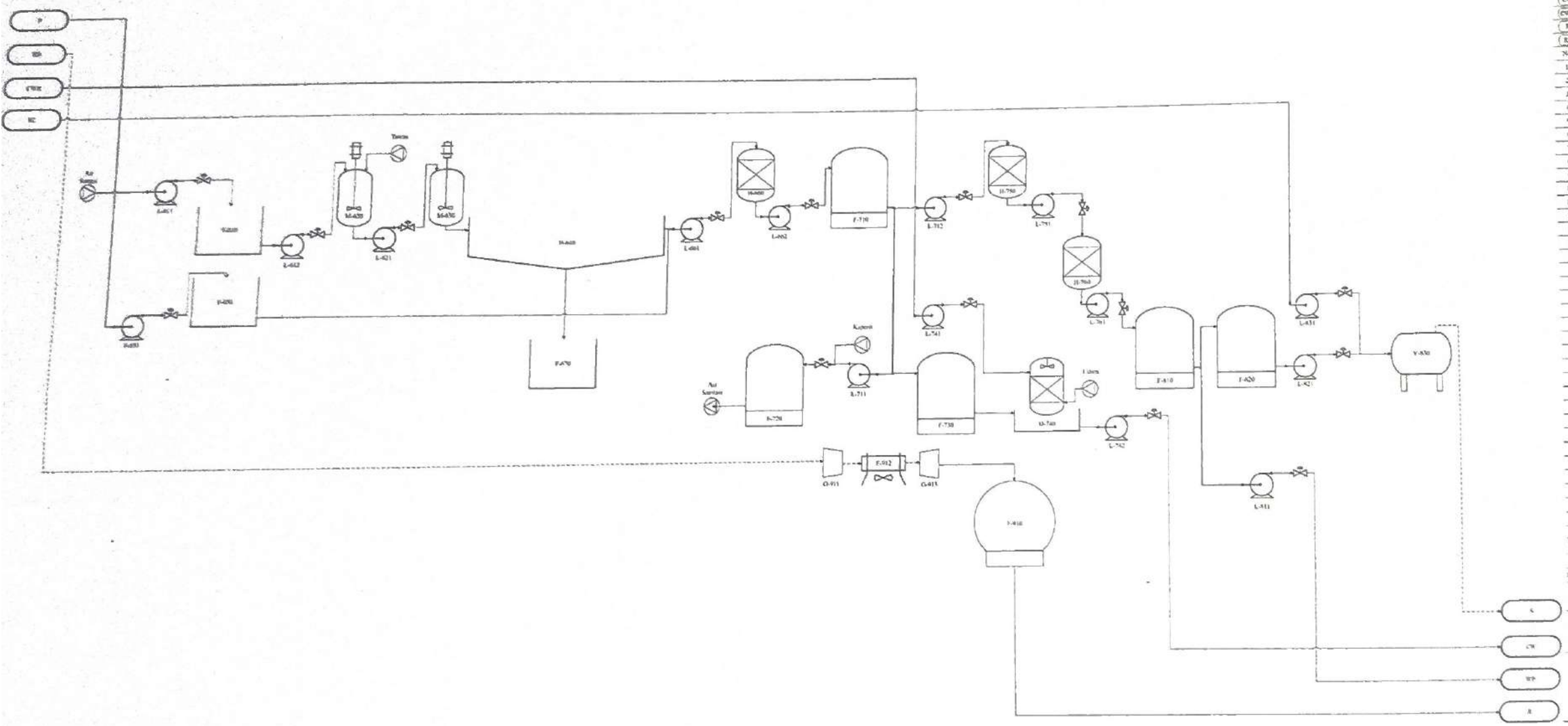


ALIRAN MASSA (kg/jam)

KOMPONEN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
KCl	6448.3113		6448.3113	6446.2463	1612.9781				1744.0794	249.2674	1494.8369	199.3940	49.8485	1694.2109	1660.3481	33.8846	1720.7669	
Na_2SO_4						6143.3020		6143.3020	2241.5223	320.3639	1921.1914	256.2647	64.0662	1319.7254	1293.3109	26.3945	1354.1938	
$KNaSO_4(l)$									7502.1351	7502.8847			7502.1351				356.3514	
$Na_2SO_4.10H_2O$														1337.3100		1337.3100		
NaCl (aq)									4590.7427	7909.0403	6791.7822	659.3684	169.7921	6430.8956	6322.3116	108.5190	6664.4190	
NaCl (s)																		
K_2SO_4																		
H_2O (g)																		25549.0517
H_2O (l)	199.4324	32716.5482	32916.0806	6606.0920	9228.0776	34.0739	34.0739	19.7134.2839	27.113.1003	3003.3487	23206.1595	3106.3486	778.5912	28913.9088	28306.6107	518.2981	4847.2308	
TOTAL	6647.7437	32716.5482	39364.3919	14052.3077	10841.0556	6143.3759	6143.3759	19.7134.2839	37973.3267	44320.8709	32784.8619	13405.9503	8101.1987	38892.4193	38097.1186	33672.4194	28824.5363	51912.0779

KOMPONEN	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
KCl	1720.7669	34.4153	34.4153		34.4153	34.4153	1686.3516	1720.7669		61.6607		60.4206	1.1800	1.1800		1.1800	1.1800
Na_2SO_4	1354.1938	27.0839	27.0839		27.0839	27.0839	1327.1099	2211.2351		64.0662		60.8629	3.2033	3.2033		3.2033	3.2033
$KNaSO_4(l)$	356.3514	7.1270	7.1270		7.1270	7.1270	349.2244	349.2244		378.1063		356.3514	18.7548	18.7548		18.7548	18.7548
$Na_2SO_4.10H_2O$																	
NaCl (aq)	1744.5184	34.8904					1709.6280	1918.2470		1432.7408		1392.1914	70.6370				
NaCl (s)	4919.9167	4919.9167	4984.8070		4984.8070	4984.8070								70.6370		70.6370	70.6370
K_2SO_4										5472.4061			5472.4061	5472.4061		5472.4061	5472.4061
H_2O (g)				91.9162													
H_2O (l)	4847.2308	96.9446	5.0285		5.0285	5.0285	5.0200	5748.1817	883.6139	1889.2217	378.6203	4999.7018	261.1423	7.9760	285.5664	7.9760	7.9760
TOTAL	11912.9779	5139.1519	5020.4617	91.9162	5026.4617	5026.4617	5077.3428	11847.3264	883.6139	13277.1108	378.6203	6819.1002	7831.4240	5578.7970	285.5664	5578.7970	5578.7970

FLOWSHEET UTILITAS PABRIK KALIUM SULFAT DARI NATRIUM SULFAT DAN KALIUM KLORIDA DENGAN PROSES PRESIPITASI GLASERITE



WP		Water Proses
P		Proses Air
S		Steam
SC		Steam Condensat
CW		Cooling Water
CWR		Cooling Water Return
R		Refrigerant
RR		Refrigerant Return
No.	Kode	Nama Alat
1	B-611	Bak Penampung Air Sungai
2	L-611	Pompa Air Sungai
3	L-612	Pompa Kaporitasi
4	M-620	Tangki Koagulasi
5	L-621	Pompa Flokulasi
6	M-630	Tangki Flokulasi
7	M-640	Clarifier
8	E-650	Bak Steam Condensat
9	L-651	Pompa Steam Condensat
10	M-660	Sand Filter
11	L-661	Pompa Sand Filter
12	L-662	Pompa Air Bersih
13	E-710	Tangki Penampung Air Bersih
14	L-711	Pompa Air Sanitasi
15	L-712	Pompa Kation Exchanger
16	E-720	Tangki Penampung Air Sanitasi
17	E-730	Tangki Penampung Air Pendingin
18	D-740	Cooling Tower
19	L-741	Pompa Cooling Tower
20	L-742	Pompa Air Pendingin
21	H-750	Kation Exchanger
22	L-751	Pompa Anion Exchanger
23	H-760	Anion Exchanger
24	L-761	Pompa Penampungan Air Proses
25	E-770	Tangki Penampung Air Proses
26	L-771	Pompa Air Proses
27	E-820	Tangki Penampung Air Boiler
28	L-821	Pompa Boiler
29	V-830	Boiler
30	L-831	Pompa Steam
31	E-910	Penampungan Refrigerant
32	G-911	Kompressor
33	E-912	Cooling Fan
34	G-913	Expander

DIDESAIN OLEH: SAID AHMAD FADHLAH (2101011000)

DOSEN PENBIMBING

Prof. Dr. Ir. Sri Rahayu, M.T. | Ir. Nika Yunanto, S.T., M.T.

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2020