

# UNIVERSITAS BRAWIJAYA

## LAMPIRAN

1. Data Curah Hujan
2. Perhitungan Intensitas Masing-masing Metode
3. Perhitungan Analisis Perhitungan Uji Z
4. Debit Buangan Domestik
5. Debit Buangan Non Domestik
6. Uji Koefisien Korelasi (r) Penduduk
7. Kapasitas Saluran Data, Peta
8. Gambar Perletakan Sumur Resapan



### Lampiran 1

#### Curah Hujan Stasiun Brawijaya

Tahun	B U L A N (mm)												
	JAN	PEB	MAR	APR	MEI	JUN	JUL	AGS	SEP	OKT	NOP	DES	MAX
2006	52.25	92	46.5	71.1	102.5	0	0	0	0	0.5	14	71.5	102.5
2007	66.6	50	55	71.5	38	9.5	0	0	21	25	56	70	71.5
2008	44	67.5	73.45	43.5	7	22	0	9	43	52.5	53	220	220
2009	47.1	59.5	28	38	67	3	3	4	7.5	14.5	41	83	83
2010	61.5	55.5	61	45.5	31	24.5	28	95	86.5	64	156.5	83	156.5
2011	42	58.5	92	93.5	63.7	5	0	0	11	51.5	58.4	30	93.5
2012	101	111.5	38	57	40	1.5	0	1	0	63	28.5	43.7	111.5
2013	46	46.8	55.5	63	64.5	98	41.5	0	0	119	86.5	55	119
2014	73.5	40.5	0	0	0	0	0	0	0	0	73	38	73.5
2015	27.5	24.7	37	94	111	7	0	0	0	0	56	44	111



## Lampiran 2

### Perhitungan Interpolasi Nilai G

Periode	Cs	G	X	G Interpolasi
1.01	Cs = 0.9	G = -1.66	0.013	-1.647
	Cs = 0.8	G = -1.733		
2	Cs = 0.9	G = -0.148	-0.019	-0.151
	Cs = 0.8	G = -0.132		
5	Cs = 0.9	G = 0.769	-0.002	0.767
	Cs = 0.8	G = 0.78		
10	Cs = 0.9	G = 1.339	0.004	1.340
	Cs = 0.8	G = 1.336		
15	Cs = 0.9	G = 1.565	0.009	1.567
	Cs = 0.8	G = 1.558		
25	Cs = 0.9	G = 2.018	0.030	2.023
	Cs = 0.8	G = 1.993		
50	Cs = 0.9	G = 2.498	0.053	2.506
	Cs = 0.8	G = 2.453		
100	Cs = 0.9	G = 2.957	0.078	2.969
	Cs = 0.8	G = 2.891		
200	Cs = 0.9	G = 3.401	0.105	3.417
	Cs = 0.8	G = 3.312		

### Interpolasi Nilai P<sub>T</sub>

No (m)	P <sub>E</sub>	Probabilitas (p)	G	Koef. Frekuensi G	X	Peluang Teoritis (P <sub>T</sub> )
1	9.091	p = 10	G = 1.340	2.073	-0.440	3.560
		p = 4	G = 2.023			
2	18.182	p = 20	G = 0.767	1.083	4.479	14.479
		p = 10	G = 1.340			
3	27.273	p = 50	G = -0.151	0.287	15.683	35.683
		p = 20	G = 0.767			
4	36.364	p = 50	G = -0.151	0.098	21.865	41.865
		p = 20	G = 0.767			
5	45.455	p = 50	G = -0.151	0.085	22.292	42.292
		p = 20	G = 0.767			
6	54.545	p = 99	G = -1.647	-0.147	-0.143	49.857
		p = 50	G = -0.151			
7	63.636	p = 99	G = -1.647	-0.414	8.607	58.607
		p = 50	G = -0.151			
8	72.727	p = 99	G = -1.647	-0.760	19.947	69.947
		p = 50	G = -0.151			
9	81.818	p = 99	G = -1.647	-1.113	31.520	81.520
		p = 50	G = -0.151			
10	90.909	p = 99	G = -1.647	-1.193	34.146	84.146
		p = 50	G = -0.151			

**Lampiran 3. Perhitungan Tetapan a dan b**

Tr = 5 Tahun

Durasi	Variabel										
	I	I * t	I <sup>2</sup>	I <sup>2</sup> * t	log t	log I	log I.log t	(log t) <sup>2</sup>	t <sup>0,5</sup>	I * t <sup>0,5</sup>	I <sup>2</sup> * t <sup>0,5</sup>
5	198.426	992.131	39372.925	196864.625	0.699	2.298	1.606	0.489	2.236	443.694	88040.537
10	150.403	1504.034	22621.176	226211.760	1.000	2.177	2.177	1.000	3.162	475.617	71534.440
20	110.664	2213.277	12246.487	244929.750	1.301	2.044	2.659	1.693	4.472	494.904	54767.957
40	77.981	3119.244	6081.052	243242.083	1.602	1.892	3.031	2.567	6.325	493.196	38459.950
60	62.048	3722.857	3849.907	230994.441	1.778	1.793	3.188	3.162	7.746	480.619	29821.254
120	40.058	4806.962	1604.645	192557.398	2.079	1.603	3.332	4.323	10.954	438.814	17578.005
180	30.102	5418.373	906.135	163104.248	2.255	1.479	3.335	5.086	13.416	403.862	12157.073
240	24.246	5818.998	587.860	141086.390	2.380	1.385	3.296	5.665	15.492	375.615	9107.087
300	20.346	6103.778	413.957	124187.034	2.477	1.308	3.241	6.136	17.321	352.402	7169.942
360	17.548	6317.271	307.931	110855.323	2.556	1.244	3.181	6.535	18.974	332.949	5842.589
Jumlah	731.822	40016.925	87992.076	1874033.052	18.128	17.222	29.046	36.655	100.098	4291.671	334478.833

Tr = 10 Tahun

Durasi	Variabel										
	I	I * t	I <sup>2</sup>	I <sup>2</sup> * t	log t	log I	log I.log t	(log t) <sup>2</sup>	t <sup>0,5</sup>	I * t <sup>0,5</sup>	I <sup>2</sup> * t <sup>0,5</sup>
5	206.962	1034.809	42833.191	214165.953	0.699	2.316	1.619	0.489	2.236	462.781	95777.926
10	159.900	1599.000	25567.999	255679.989	1.000	2.204	2.204	1.000	3.162	505.648	80853.112
20	119.786	2395.725	14348.744	286974.876	1.301	2.078	2.704	1.693	4.472	535.700	64169.533
40	85.569	3422.774	7322.116	292884.628	1.602	1.932	3.096	2.567	6.325	541.188	46309.126
60	68.472	4108.322	4688.418	281305.109	1.778	1.836	3.264	3.162	7.746	530.382	36316.333
120	44.489	5338.736	1979.312	237517.497	2.079	1.648	3.427	4.323	10.954	487.358	21682.282
180	33.510	6031.780	1122.913	202124.271	2.255	1.525	3.440	5.086	13.416	449.582	15065.454
240	27.023	6485.541	730.247	175259.362	2.380	1.432	3.408	5.665	15.492	418.640	11312.943
300	22.693	6807.934	514.977	154493.225	2.477	1.356	3.359	6.136	17.321	393.056	8919.670
360	19.582	7049.542	383.457	138044.555	2.556	1.292	3.302	6.535	18.974	371.543	7275.587
Jumlah	787.987	44274.163	99491.374	2238449.464	18.128	17.619	29.822	36.655	100.098	4695.879	387681.966

Tr = 25 Tahun

Durasi	Variabel										
	I	I * t	I <sup>2</sup>	I <sup>2</sup> * t	log t	log I	log I log t	(log t) <sup>2</sup>	t <sup>0,5</sup>	I * t <sup>0,5</sup>	I <sup>2</sup> * t <sup>0,5</sup>
5	216.305	1081.526	46787.979	233939.895	0.699	2.335	1.632	0.489	2.236	483.673	104621.102
10	170.969	1709.686	29230.255	292302.547	1.000	2.233	2.233	1.000	3.162	540.650	92434.181
20	131.096	2621.924	17186.216	343724.319	1.301	2.118	2.755	1.693	4.472	586.280	76859.094
40	95.448	3817.930	9110.366	364414.656	1.602	1.980	3.172	2.567	6.325	603.668	57619.016
60	77.012	4620.693	5930.779	355846.714	1.778	1.887	3.355	3.162	7.746	596.529	45939.613
120	50.522	6062.700	2552.523	306302.714	2.079	1.703	3.542	4.323	10.954	553.446	27961.484
180	38.190	6874.257	1458.500	262530.050	2.255	1.582	3.568	5.086	13.416	512.377	19567.835
240	30.855	7405.191	952.029	228486.866	2.380	1.489	3.545	5.665	15.492	478.003	14748.764
300	25.941	7782.201	672.918	201875.503	2.477	1.414	3.503	6.136	17.321	449.306	11655.288
360	22.402	8064.625	501.838	180661.617	2.556	1.350	3.452	6.535	18.974	425.043	9521.703
Jumlah	858.740	50040.732	114383.402	2770084.881	18.128	18.091	30.755	36.655	100.098	5228.975	460928.080

Tr = 50 Tahun

Durasi	Variabel										
	I	I * t	I <sup>2</sup>	I <sup>2</sup> * t	log t	log I	log I log t	(log t) <sup>2</sup>	t <sup>0,5</sup>	I * t <sup>0,5</sup>	I <sup>2</sup> * t <sup>0,5</sup>
5	222.326	1111.629	49428.787	247143.934	0.699	2.347	1.640	0.489	2.236	497.136	110526.127
10	178.527	1785.270	31871.896	318718.960	1.000	2.252	2.252	1.000	3.162	564.552	100787.785
20	139.309	2786.173	19406.907	388138.131	1.301	2.144	2.789	1.693	4.472	623.007	86790.324
40	103.004	4120.144	10609.743	424389.714	1.602	2.013	3.225	2.567	6.325	651.452	67101.906
60	83.695	5021.700	7004.852	420291.140	1.778	1.923	3.419	3.162	7.746	648.299	54259.353
120	55.375	6644.984	3066.376	367965.070	2.079	1.743	3.625	4.323	10.954	606.601	33590.462
180	41.994	7558.838	1763.458	317422.367	2.255	1.623	3.661	5.086	13.416	563.402	23659.266
240	33.985	8156.502	1155.009	277202.182	2.380	1.531	3.645	5.665	15.492	526.500	17893.324
300	28.603	8580.767	818.106	245431.848	2.477	1.456	3.608	6.136	17.321	495.411	14170.014
360	24.718	8898.512	610.984	219954.191	2.556	1.393	3.561	6.535	18.974	468.993	11592.604
Jumlah	911.535	54664.518	125736.117	3226657.536	18.128	18.425	31.424	36.655	100.098	5645.353	520371.165



Tr = 100 Tahun

Durasi	Variabel										
	I	I * t	I <sup>2</sup>	I <sup>2</sup> * t	log t	log I	log I.log t	(log t) <sup>2</sup>	t <sup>0,5</sup>	I * t <sup>0,5</sup>	I <sup>2</sup> * t <sup>0,5</sup>
5	227.610	1138.049	51806.185	259030.927	0.699	2.357	1.648	0.489	2.236	508.951	115842.152
10	185.471	1854.711	34399.514	343995.140	1.000	2.268	2.268	1.000	3.162	586.511	108780.815
20	147.259	2945.171	21685.079	433701.589	1.301	2.168	2.821	1.693	4.472	658.560	96978.623
40	110.674	4426.966	12248.766	489950.634	1.602	2.044	3.275	2.567	6.325	699.965	77467.997
60	90.633	5437.992	8214.378	492862.656	1.778	1.957	3.480	3.162	7.746	702.042	63628.295
120	60.552	7266.192	3666.496	439979.512	2.079	1.782	3.705	4.323	10.954	663.310	40164.451
180	46.094	8296.905	2124.649	382436.857	2.255	1.664	3.752	5.086	13.416	618.415	28505.160
240	37.379	8971.043	1397.215	335331.708	2.380	1.573	3.743	5.665	15.492	579.078	21645.569
300	31.498	9449.534	992.152	297645.636	2.477	1.498	3.711	6.136	17.321	545.569	17184.579
360	27.244	9807.838	742.235	267204.708	2.556	1.435	3.669	6.535	18.974	516.918	14082.925
Jumlah	964.414	59594.400	137276.670	3742139.368	18.128	18.747	32.073	36.655	100.098	6079.319	584280.566



**Lampiran 4. Perhitungan Peak Weight Root Mean Square Error**

Tabel Hasil Perhitungan Peak Weight Root Mean Square Error

Tr	Z			
	Tabolt	Sherman	Ishiguro	Mononobe
5	11.727	14.239	16.746	99.959
10	11.625	15.947	17.482	138.795
25	11.363	17.947	18.139	197.378
50	11.095	19.274	18.416	248.483
100	10.790	19.274	18.502	306.186
$\Sigma$	56.600	86.681	89.286	990.801

**Perhitungan dengan metode Tabolt**

Untuk Tr 5 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean	
	1	2	3	2x3
5	23.178	537.240	1.856	996.957
10	-3.274	10.718	1.528	16.372
20	-12.656	160.163	1.256	201.179
<b>5</b> <b>tahun</b>	-10.415	108.463	1.033	112.019
60	-6.839	46.777	0.924	43.219
120	-1.388	1.926	0.774	1.490
180	0.463	0.214	0.706	0.151
240	1.178	1.388	0.666	0.924
300	1.464	2.144	0.639	1.370
360	1.567	2.454	0.620	1.521
			<b>Jumlah</b>	1375.202
			<b>Z</b>	11.727

Untuk Tr 10 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean	
	1	2	3	2x3
5	23.212	538.776	1.813	976.925
10	-2.696	7.269	1.515	11.010
20	-12.379	153.239	1.260	193.094
<b>10</b> <b>tahun</b>	-10.599	112.336	1.043	117.163
60	-7.110	50.557	0.934	47.244
120	-1.536	2.360	0.782	1.846
180	0.423	0.179	0.713	0.128
240	1.197	1.432	0.671	0.962
300	1.514	2.292	0.644	1.476
360	1.633	2.666	0.624	1.665
			<b>Jumlah</b>	1351.512
			<b>Z</b>	11.625



Untuk Tr 25 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
25 tahun	5	22.985	528.309	1.759	929.526
	10	-2.035	4.141	1.495	6.193
	20	-11.860	140.656	1.263	177.692
	40	-10.652	113.473	1.056	119.799
	60	-7.342	53.904	0.948	51.123
	120	-1.712	2.931	0.794	2.328
	180	0.360	0.130	0.722	0.094
	240	1.202	1.445	0.680	0.982
	300	1.558	2.428	0.651	1.581
	360	1.699	2.887	0.630	1.820
			<b>Jumlah</b>	1291.136	
			<b>Z</b>	11.363	

Untuk Tr 50 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
50 tahun	5	22.670	513.927	1.720	883.704
	10	-1.624	2.637	1.479	3.900
	20	-11.396	129.875	1.264	164.181
	40	-10.573	111.787	1.065	119.053
	60	-7.431	55.223	0.959	52.964
	120	-1.829	3.346	0.804	2.690
	180	0.307	0.094	0.730	0.069
	240	1.194	1.427	0.686	0.979
	300	1.578	2.491	0.657	1.636
	360	1.735	3.012	0.636	1.914
			<b>Jumlah</b>	1231.090	
			<b>Z</b>	11.095	





Untuk Tr 100 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
100 tahun	5	22.273	496.095	1.680	833.461
	10	-1.299	1.688	1.462	2.467
	20	-10.909	119.007	1.263	150.361
	40	-10.408	108.320	1.074	116.312
	60	-7.451	55.513	0.970	53.842
	120	-1.930	3.724	0.814	3.031
	180	0.252	0.064	0.739	0.047
	240	1.178	1.389	0.694	0.963
	300	1.588	2.521	0.663	1.672
	360	1.761	3.102	0.641	1.989
			<b>Jumlah</b>	1164.146	
			<b>Z</b>	10.790	

**Perhitungan dengan metode Sherman**

Untuk Tr 5 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
5 tahun	5	-31.289	979.011	1.856	1816.751
	10	-3.945	15.566	1.528	23.778
	20	6.955	48.371	1.256	60.758
	40	8.298	68.852	1.033	71.109
	60	6.825	46.586	0.924	43.042
	120	2.953	8.723	0.774	6.749
	180	0.698	0.487	0.706	0.344
	240	-0.685	0.470	0.666	0.313
	300	-1.590	2.527	0.639	1.615
	360	-2.209	4.881	0.620	3.025
			<b>Jumlah</b>	2027.483	
			<b>Z</b>	14.239	



Untuk Tr 10 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
10 tahun	5	-35.237	1241.679	1.813	2251.450
	10	-4.536	20.571	1.515	31.157
	20	8.147	66.368	1.260	83.629
	40	9.774	95.537	1.043	99.641
	60	8.041	64.650	0.934	60.413
	120	3.461	11.978	0.782	9.370
	180	0.798	0.636	0.713	0.454
	240	-0.832	0.693	0.671	0.465
	300	-1.897	3.600	0.644	2.319
	360	-2.627	6.901	0.624	4.308
			<b>Jumlah</b>	2543.206	
			<b>Z</b>	15.947	

Untuk Tr 25 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
25 tahun	5	-39.874	1589.960	1.759	2797.430
	10	-5.447	29.673	1.495	44.374
	20	9.609	92.333	1.263	116.644
	40	11.787	138.937	1.056	146.682
	60	9.752	95.097	0.948	90.189
	120	4.205	17.679	0.794	14.040
	180	0.953	0.908	0.722	0.656
	240	-1.041	1.085	0.680	0.737
	300	-2.346	5.505	0.651	3.584
	360	-3.242	10.508	0.630	6.624
			<b>Jumlah</b>	3220.962	
			<b>Z</b>	17.947	



Untuk Tr 50 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
50 tahun	5	-42.942	1844.008	1.720	3170.798
	10	-6.241	38.947	1.479	57.613
	20	10.612	112.611	1.264	142.357
	40	13.362	178.543	1.065	190.149
	60	11.145	124.215	0.959	119.133
	120	4.842	23.440	0.804	18.840
	180	1.095	1.200	0.730	0.876
	240	-1.213	1.471	0.686	1.009
	300	-2.727	7.438	0.657	4.886
	360	-3.769	14.205	0.636	9.028
			<b>Jumlah</b>	3714.690	
			<b>Z</b>	19.274	

Untuk Tr 100 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
100 tahun	5	-45.564	2076.089	1.680	3487.916
	10	-7.113	50.594	1.462	73.946
	20	11.489	132.006	1.263	166.784
	40	14.959	223.762	1.074	240.273
	60	12.619	159.239	0.970	154.444
	120	5.553	30.831	0.814	25.095
	180	1.266	1.603	0.739	1.185
	240	-1.394	1.944	0.694	1.349
	300	-3.148	9.911	0.663	6.574
	360	-4.359	19.000	0.641	12.184
			<b>Jumlah</b>	4169.749	
			<b>Z</b>	20.420	



## Perhitungan dengan metode Ishiguro

Untuk Tr 5 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
<b>5 tahun</b>	5	-36.316	1318.866	1.856	2447.419
	10	0.270	0.073	1.528	0.111
	20	11.219	125.876	1.256	158.111
	40	10.674	113.940	1.033	117.676
	60	8.115	65.852	0.924	60.843
	120	2.825	7.982	0.774	6.175
	180	0.017	0.000	0.706	0.000
	240	-1.648	2.716	0.666	1.808
	300	-2.717	7.384	0.639	4.719
	360	-3.441	11.841	0.620	7.340
			<b>Jumlah</b>	2804.203	
			<b>Z</b>	16.746	

Untuk Tr 10 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
<b>10 tahun</b>	5	-38.152	1455.555	1.813	2639.258
	10	-0.825	0.681	1.515	1.032
	20	11.691	136.682	1.260	172.230
	40	11.688	136.609	1.043	142.478
	60	9.028	81.503	0.934	76.162
	120	3.240	10.498	0.782	8.213
	180	0.106	0.011	0.713	0.008
	240	-1.765	3.115	0.671	2.092
	300	-2.971	8.824	0.644	5.683
	360	-3.788	14.353	0.624	8.960
			<b>Jumlah</b>	3056.114	
			<b>Z</b>	17.482	

Untuk Tr 25 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
25 tahun	5	-39.828	1586.266	1.759	2790.930
	10	-2.493	6.215	1.495	9.295
	20	11.998	143.960	1.263	181.865
	40	12.926	167.082	1.056	176.396
	60	10.227	104.594	0.948	99.196
	120	3.836	14.713	0.794	11.685
	180	0.262	0.069	0.722	0.050
	240	-1.894	3.588	0.680	2.439
	300	-3.292	10.835	0.651	7.054
	360	-4.244	18.009	0.630	11.353
			<b>Jumlah</b>	3290.263	
			<b>Z</b>	18.139	

Untuk Tr 50 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
50 tahun	5	-40.546	1643.983	1.720	2826.852
	10	-3.905	15.251	1.479	22.561
	20	11.979	143.492	1.264	181.395
	40	13.784	190.003	1.065	202.354
	60	11.139	124.079	0.959	119.003
	120	4.336	18.803	0.804	15.112
	180	0.416	0.173	0.730	0.127
	240	-1.972	3.891	0.686	2.671
	300	-3.529	12.456	0.657	8.182
	360	-4.594	21.105	0.636	13.414
			<b>Jumlah</b>	3391.669	
			<b>Z</b>	18.416	



Untuk Tr 100 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
<b>100</b> <b>tahun</b>	5	-40.762	1661.502	1.680	2791.393
	10	-5.413	29.298	1.462	42.822
	20	11.719	137.341	1.263	173.526
	40	14.549	211.685	1.074	227.305
	60	12.044	145.070	0.970	140.702
	120	4.886	23.869	0.814	19.428
	180	0.608	0.370	0.739	0.273
	240	-2.030	4.122	0.694	2.860
	300	-3.761	14.149	0.663	9.385
	360	-4.951	24.514	0.641	15.719
			<b>Jumlah</b>	3423.412	
			<b>Z</b>	18.502	

**Perhitungan dengan metode Mononobe**

Untuk Tr 5 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
<b>5</b> <b>tahun</b>	5	-206.466	42628.263	1.856	79105.249
	10	-104.663	10954.293	1.528	16733.728
	20	-50.018	2501.775	1.256	3142.441
	40	-23.242	540.189	1.033	557.900
	60	-15.200	231.041	0.924	213.465
	120	-8.605	74.045	0.774	57.288
	180	-7.035	49.487	0.706	34.922
	240	-6.410	41.087	0.666	27.350
	300	-6.072	36.874	0.639	23.563
	360	-5.847	34.184	0.620	21.191
			<b>Jumlah</b>	99917.096	
			<b>Z</b>	99.959	



Untuk Tr 10 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
10 tahun	5	-286.116	81862.429	1.813	148435.501
	10	-150.720	22716.416	1.515	34406.520
	20	-75.892	5759.574	1.260	7257.510
	40	-37.700	1421.299	1.043	1482.360
	60	-25.600	655.370	0.934	612.426
	120	-14.772	218.221	0.782	170.714
	180	-11.715	137.249	0.713	97.807
	240	-10.309	106.286	0.671	71.368
	300	-9.479	89.854	0.644	57.865
	360	-8.908	79.353	0.624	49.536
			<b>Jumlah</b>	192641.609	
			<b>Z</b>	138.795	

Untuk Tr 25 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
25 tahun	5	-407.431	165999.882	1.759	292065.844
	10	-221.961	49266.489	1.495	73676.151
	20	-116.434	13556.791	1.263	17126.370
	40	-60.486	3658.531	1.056	3862.479
	60	-41.988	1763.025	0.948	1672.050
	120	-24.443	597.449	0.794	474.474
	180	-19.019	361.718	0.722	261.292
	240	-16.370	267.983	0.680	182.136
	300	-14.757	217.761	0.651	141.771
	360	-13.638	185.990	0.630	117.254
			<b>Jumlah</b>	389579.820	
			<b>Z</b>	197.378	



Untuk Tr 50 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
50 tahun	5	-514.370	264576.398	1.720	454942.836
	10	-285.562	81545.788	1.479	120627.931
	20	-153.049	23424.068	1.264	29611.386
	40	-81.170	6588.623	1.065	7016.891
	60	-56.856	3232.608	0.959	3100.357
	120	-33.167	1100.032	0.804	884.146
	180	-25.576	654.149	0.730	477.755
	240	-21.792	474.904	0.686	325.983
	300	-19.465	378.895	0.657	248.893
	360	-17.848	318.561	0.636	202.472
			<b>Jumlah</b>	617438.649	
			<b>Z</b>	248.483	

Untuk Tr 100 Tahun

Durasi	(Io-Is)	(Io-Is) <sup>2</sup>	(Io+Imean)/2Imean		
	1	2	3	2x3	
100 tahun	5	-636.291	404866.269	1.680	680192.173
	10	-358.752	128703.219	1.462	188109.264
	20	-195.581	38251.807	1.263	48329.677
	40	-105.301	11088.310	1.074	11906.512
	60	-74.187	5503.668	0.970	5337.939
	120	-43.278	1873.024	0.814	1524.509
	180	-33.143	1098.474	0.739	811.743
	240	-28.029	785.652	0.694	545.080
	300	-24.869	618.476	0.663	410.237
	360	-22.672	514.032	0.641	329.621
			<b>Jumlah</b>	937496.755	
			<b>Z</b>	306.186	



Lampiran 5. Tabel Perbandingan Q kapasitas dengan Qrancangan Total Kala Ulang 10 Tahun

No	C.A	Saluran	Lebar		Kemiringan		Tinggi	Luas	Kecepatan	Kapasitas	Rancangan	Limpasan Saluran	Perbandingan Q kap. Dengan Q Rancangan Total Kala Ulang 10 Tahun
			B (cm)	b (cm)	n (cm)	m (cm)							
1	1	JL. Veteran	80	80	-	-	70	0.560	1.893	1.060	0.696	0.364	Mampu
2	1	JL. Univ Brawijaya	90	70	10	5	50	1.257	2.982	3.748	0.696	3.052	Mampu
3	1	Timur Bunderan	30	30	-	-	100	0.300	1.212	0.364	0.696	-0.333	Tidak Mampu
4	1	JL. Gor Pertamina UB	56	30	10	5	40	0.803	2.816	2.261	0.696	1.565	Mampu
5	1	JL. Gor Pertamina UB	60	32	10	5	40	0.803	2.795	2.245	0.696	1.549	Mampu
6	2	JL. Cimacan	50	50	-	-	49	0.245	1.421	0.348	0.917	-0.569	Tidak Mampu
7	2	JL. Terusan Cikampek	30	30	-	-	40	0.120	1.076	0.129	0.917	-0.788	Tidak Mampu
8	2	JL. Cimanggis	35	35	-	-	30	0.105	1.086	0.114	0.917	-0.803	Tidak Mampu
9	2	JL. Cimahi	42	42	-	-	50	0.210	1.318	0.277	0.917	-0.640	Tidak Mampu
10	2	JL. Cipayung	50	50	-	-	70	0.350	1.526	0.534	0.917	-0.383	Tidak Mampu
11	2	JL. Cilitan	42	42	-	-	46	0.193	1.296	0.250	0.917	-0.666	Tidak Mampu
12	2	JL. Cikampek	53	53	-	-	55	0.292	1.496	0.436	0.917	-0.481	Tidak Mampu
13	4	Jl. Bogor	110	110	-	-	110	1.210	2.415	2.922	0.431	2.491	Mampu
14	4	Jl. Veteran	130	130	-	-	150	1.950	2.783	5.426	0.431	4.994	Mampu
15	4	JL. Cianjur	56	56	-	-	63	0.353	1.579	0.557	0.431	0.126	Mampu

**Lampiran 6.**

**ANALISA HARGA SATUAN**

Jenis Pekerjaan : Beton Mutu  $f_c' = 21,7$  Mpa (K250) slump  $(12 \pm 2)$  cm, w/c = 0,56

Satuan Pembayaran :  $m^3$

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A. TENAGA</b>					
1	Pekerja Biasa	Org/hr	1.650	65,000.00	107,250.00
2	Tukang Batu	Org/hr	0.275	75,000.00	20,625.00
3	Kepala Tukang Batu	Org/hr	0.028	80,000.00	2,240.00
4	Mandor	Org/hr	0.083	90,000.00	7,470.00
<b>JUMLAH HARGA TENAGA</b>					<b>137,585.00</b>
<b>B. BAHAN</b>					
1	Portland Cement (PC)	kg	384.0000	1,400.00	537,600.00
2	Pasir Beton (PB)	$m^3$	0.4943	135,000.00	66,728.57
3	KR (maksimum 30 mm)	$m^3$	0.7696	225,000.00	173,166.67
4	Air Bersih	Itr	215.000	75.00	16,125.00
<b>JUMLAH HARGA BAHAN</b>					<b>793,620.24</b>
<b>C. PERALATAN</b>					
<b>JUMLAH HARGA PERALATAN</b>					<b>-</b>
<b>D. JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>					<b>931,205.24</b>



### ANALISA HARGA SATUAN

Jenis Pekerjaan : Galian Tanah Keras Sedalam 1 m

Satuan Pembayaran : m<sup>3</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A.</b>	<b>TENAGA</b>				
1	Pekerja Biasa	Org/hr	1.0000	65,000.00	65,000.00
2	Tukang Batu	Org/hr	-	75,000.00	-
3	Kepala Tukang Batu	Org/hr	-	80,000.00	-
4	Mandor	Org/hr	0.0320	90,000.00	2,880.00
JUMLAH HARGA TENAGA					67,880.00
<b>B.</b>	<b>BAHAN</b>				
JUMLAH HARGA BAHAN					-
<b>C.</b>	<b>PERALATAN</b>				
JUMLAH HARGA PERALATAN					-
<b>D.</b>	<b>JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>				<b>67,880.00</b>

### ANALISA HARGA SATUAN

Jenis Pekerjaan : Pembuangan Tanah Sejauh 30 m

Satuan Pembayaran : m<sup>3</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A.</b>	<b>TENAGA</b>				
1	Pekerja Biasa	Org/hr	0.3300	65,000.00	21,450.00
2	Tukang Batu	Org/hr	-	75,000.00	-
3	Kepala T ukang Batu	Org/hr	-	80,000.00	-
4	Mandor	Org/hr	0.0100	90,000.00	900.00
JUMLAH HARGA TENAGA					22,350.00
<b>B.</b>	<b>BAHAN</b>				
JUMLAH HARGA BAHAN					-
<b>C.</b>	<b>PERALATAN</b>				
JUMLAH HARGA PERALATAN					-
<b>D.</b>	<b>JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>				<b>22,350.00</b>

ANALISA HARGA SATUAN

Jenis Pekerjaan : Cetakan Beton/Begisting Untuk Plat Beton, per m<sup>2</sup>

Satuan Pembayaran : m<sup>2</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A. TENAGA</b>					
1	Pekerja Biasa	Org/hr	0.5200	65,000.00	33,800.00
2	Tukang Kayu	Org/hr	0.0260	75,000.00	1,950.00
3	Kepala Tukang Kayu	Org/hr	0.2600	80,000.00	20,800.00
4	Mandor	Org/hr	0.0260	90,000.00	2,340.00
<b>JUMLAH HARGA TENAGA</b>					<b>58,890.00</b>
<b>B. BAHAN</b>					
1	Balok Kayu Kelas III	m <sup>3</sup>	0.040	4,728,189.84	189,127.59
2	Paku Kayu Segala Ukuran	kg	0.400	27,709.52	11,083.81
3	Triplek 4 mm	1 lbr	0.350	91,644.16	32,075.46
<b>JUMLAH HARGA BAHAN</b>					<b>232,286.86</b>
<b>C. JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B)</b>					<b>291,176.86</b>



### ANALISA HARGA SATUAN

Jenis Pekerjaan : Pasang Pipa PVC Tipe D, Diameter 3”

Satuan Pembayaran : m<sup>1</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)	
<b>A. TENAGA</b>						
1	Pekerja Biasa	L17	Org/hr	0.0810	65,000.00	5,265.00
2	Tukang Batu	L07	Org/hr	0.1350	75,000.00	10,125.00
3	Kepala Tukang Batu	L02	Org/hr	0.0135	80,000.00	1,080.00
4	Mandor	L01	Org/hr	0.0041	90,000.00	369.00
JUMLAH HARGA TENAGA					16,839.00	
<b>B. BAHAN</b>						
1	Pipa PVC tipe D Ø 3"	M350	m <sup>1</sup>	1.2000	44,470.40	53,364.48
2	Perlengkapan			35.00%	44,470.40	15,564.64
JUMLAH HARGA BAHAN					68,929.11	
<b>C. PERALATAN</b>						
JUMLAH HARGA PERALATAN					-	
<b>D. JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>					<b>85,768.11</b>	

### ANALISA HARGA SATUAN

Jenis Pekerjaan : Pasang Pipa PVC Tipe D, Diameter ½”

Satuan Pembayaran : m<sup>1</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN KUANTITAS	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A.</b>	<b>TENAGA</b>				
1	Pekerja Biasa	Org/hr	0.0360	65,000.00	2,340.00
2	Tukang Batu	Org/hr	0.0600	75,000.00	4,500.00
3	Kepala Tukang Batu	Org/hr	0.0060	80,000.00	480.00
4	Mandor	Org/hr	0.0018	90,000.00	162.00
JUMLAH HARGA TENAGA					7,482.00
<b>B.</b>	<b>BAHAN</b>				
1	Pipa PVC tipe D Ø 1/2 "	m <sup>1</sup>	1.2000	5,677.07	6,812.49
2	Perlengkapan		35.00%	5,677.07	1,986.98
JUMLAH HARGA BAHAN					8,799.46
<b>C.</b>	<b>PERALATAN</b>				
JUMLAH HARGA PERALATAN					-
<b>D.</b>	<b>JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>				<b>16,281.46</b>



## ANALISA HARGA SATUAN

Jenis Pekerjaan : Pasang Bak Kontrol Pasangan Batu Bata ukuran (45x45)cm tinggi  
50 cm

NO.	KOMPONEN	SATUAN	PERKIRAAN KUANTITAS	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A.</b>	<b>TENAGA</b>				
1	Pekerja Biasa	Org/hr	1.4200	65,000.00	92,300.00
2	Tukang Batu	Org/hr	0.4730	75,000.00	35,475.00
3	Kepala Tukang Batu	Org/hr	0.0470	80,000.00	3,760.00
4	Mandor	Org/hr	0.0710	90,000.00	6,390.00
JUMLAH HARGA TENAGA					137,925.00
<b>B.</b>	<b>BAHAN</b>				
1	Bata Merah	bh	112.5000	1,351.68	152,064.42
2	Portland Cement (PC)	kg	77.0000	1,400.00	107,800.00
3	Pasir Pasang	m <sup>3</sup>	0.1300	193,290.78	25,127.80
4	Stenslah/batu pecah tangan 2/3	m <sup>3</sup>	0.0200	287,503.14	5,750.06
5	Besi Beton Polos	kg	2.6000	14,463.02	37,603.84
6	Pasir Cor	m <sup>3</sup>	0.0900	135,000.00	12,150.00
JUMLAH HARGA BAHAN					340,496.13
<b>C.</b>	<b>PERALATAN</b>				
JUMLAH HARGA PERALATAN					-
<b>D.</b>	<b>JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>				<b>478,421.13</b>

Satuan Pembayaran : m<sup>1</sup>

ANALISA HARGA SATUAN

Jenis Pekerjaan : Plesteran 1 Pc : 1 Ps, Tebal 15 mm

Satuan Pembayaran : m<sup>2</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A.</b>	<b>TENAGA</b>				
1	Pekerja Biasa	Org/hr	0.3000	65,000.00	19,500.00
2	Tukang Batu	Org/hr	0.1500	75,000.00	11,250.00
3	Kepala Tukang Batu	Org/hr	0.0150	80,000.00	1,200.00
4	Mandor	Org/hr	0.0150	90,000.00	1,350.00
JUMLAH HARGA TENAGA					33,300.00
<b>B.</b>	<b>BAHAN</b>				
1	Portland Cement (PC)	kg	15.5040	1,400.00	21,705.60
2	Pasir Pasang	m <sup>3</sup>	0.0160	193,290.78	3,092.65
JUMLAH HARGA BAHAN					24,798.25
<b>C.</b>	<b>PERALATAN</b>				
JUMLAH HARGA PERALATAN					-
<b>D.</b>	<b>JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>				<b>58,098.25</b>

### ANALISA HARGA SATUAN

Jenis Pekerjaan : Pasang Pondasi Batu Kosong

Satuan Pembayaran : m<sup>3</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)	
<b>A. TENAGA</b>						
1	Pekerja Biasa	L17	Org/hr	0.7800	65,000.00	50,700.00
2	Tukang Batu	L07	Org/hr	0.3900	75,000.00	29,250.00
3	Kepala Tukang Batu	L02	Org/hr	0.0390	80,000.00	3,120.00
4	Mandor	L01	Org/hr	0.0390	90,000.00	3,510.00
JUMLAH HARGA TENAGA					86,580.00	
<b>B. BAHAN</b>						
1	Batu Kali	M012	m <sup>3</sup>	1.2000	189,100.56	226,920.67
2	Pasir Urug	M001	m <sup>3</sup>	0.4320	126,787.94	54,772.39
JUMLAH HARGA BAHAN					281,693.06	
<b>C. PERALATAN</b>						
JUMLAH HARGA PERALATAN					-	
<b>D. JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>					<b>368,273.06</b>	

ANALISA HARGA SATUAN

Jenis Pekerjaan : Pasang Pipa Beton, Diameter 100 cm

Satuan Pembayaran : m<sup>1</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN Kuantitas	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A. TENAGA</b>					
1	Pekerja Biasa	Org/hr	0.3800	65,000.00	24,700.00
2	Tukang Batu	Org/hr	0.1900	75,000.00	14,250.00
3	Kepala Tukang Batu	Org/hr	0.0190	80,000.00	1,520.00
4	Mandor	Org/hr	0.0190	90,000.00	1,710.00
JUMLAH HARGA TENAGA					42,180.00
<b>B. BAHAN</b>					
1	Buis Beton Ø 1.00 m	m <sup>1</sup>	1.100	379,687.97	417,656.77
2	Bata Merah	bh	247.500	1,351.68	
3	Portland Cement (PC)	kg	10.300	1,400.00	14,420.00
4	Pasir Pasang	m <sup>3</sup>	0.061	193,290.78	11,790.74
5	Pasir Urug	m <sup>3</sup>	0.069	126,787.94	8,748.37
JUMLAH HARGA BAHAN					452,615.87
<b>C. PERALATAN</b>					
JUMLAH HARGA PERALATAN					-
<b>D. JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>					<b>494,795.87</b>



## ANALISA HARGA SATUAN

Jenis Pekerjaan : Memasang 1 m<sup>2</sup> Lapisan Ijuk Tebal 10 cm, Untuk Bidang Resapan

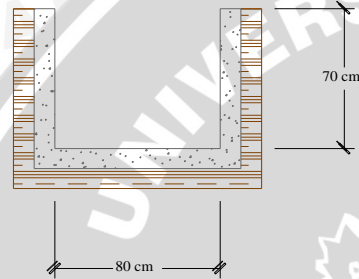
Satuan Pembayaran : m<sup>2</sup>

NO.	KOMPONEN	SATUAN	PERKIRAAN KUANTITAS	HARGA SATUAN (Rp.)	JUMLAH HARGA (Rp.)
<b>A. TENAGA</b>					
1	Pekerja Biasa	Org/hr	0.150	65,000.00	9,750.00
2	Mandor	Org/hr	0.015	90,000.00	1,350.00
JUMLAH HARGA TENAGA					11,100.00
<b>B. BAHAN</b>					
1	Ijuk	kg	6.000	19,800.00	118,800.00
JUMLAH HARGA BAHAN					118,800.00
<b>C. PERALATAN</b>					
JUMLAH HARGA PERALATAN					-
<b>D. JUMLAH HARGA TENAGA, BAHAN DAN PERALATAN (A + B + C)</b>					<b>129,900.00</b>

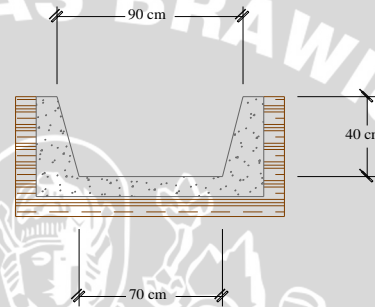




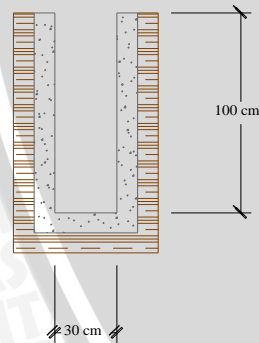
### Lampiran 7. Penampang Saluran



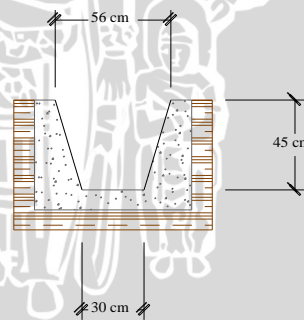
Saluran Jl. Veteran  
Skala 1 : 100



Saluran Jl. Brawijaya  
Skala 1 : 100



Saluran Jl. Timur Bun  
Skala 1 : 100



Saluran Jl. GOR UB 1  
Skala 1 : 100

General Notes

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MALANG

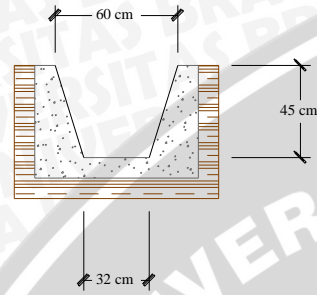
Keterangan :

No.	Revision/Issue	Date

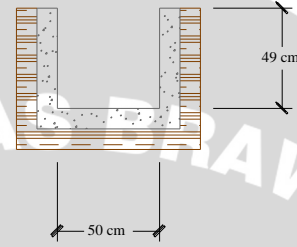
From Name and Address

Project Name

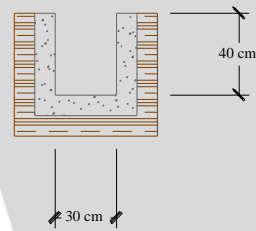
Project	Drawn
Date	
Scale	1 : 100



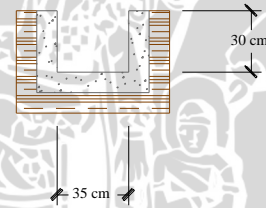
Saluran Jl. GOR UB 2  
Skala 1 : 100



Saluran Jl. Cimacacn  
Skala 1 : 100



Saluran Jl. Ter. Cikampek  
Skala 1 : 100



Saluran Jl. Cimanggis  
Skala 1 : 100

General Notes

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Keterangan :

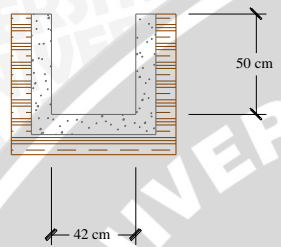
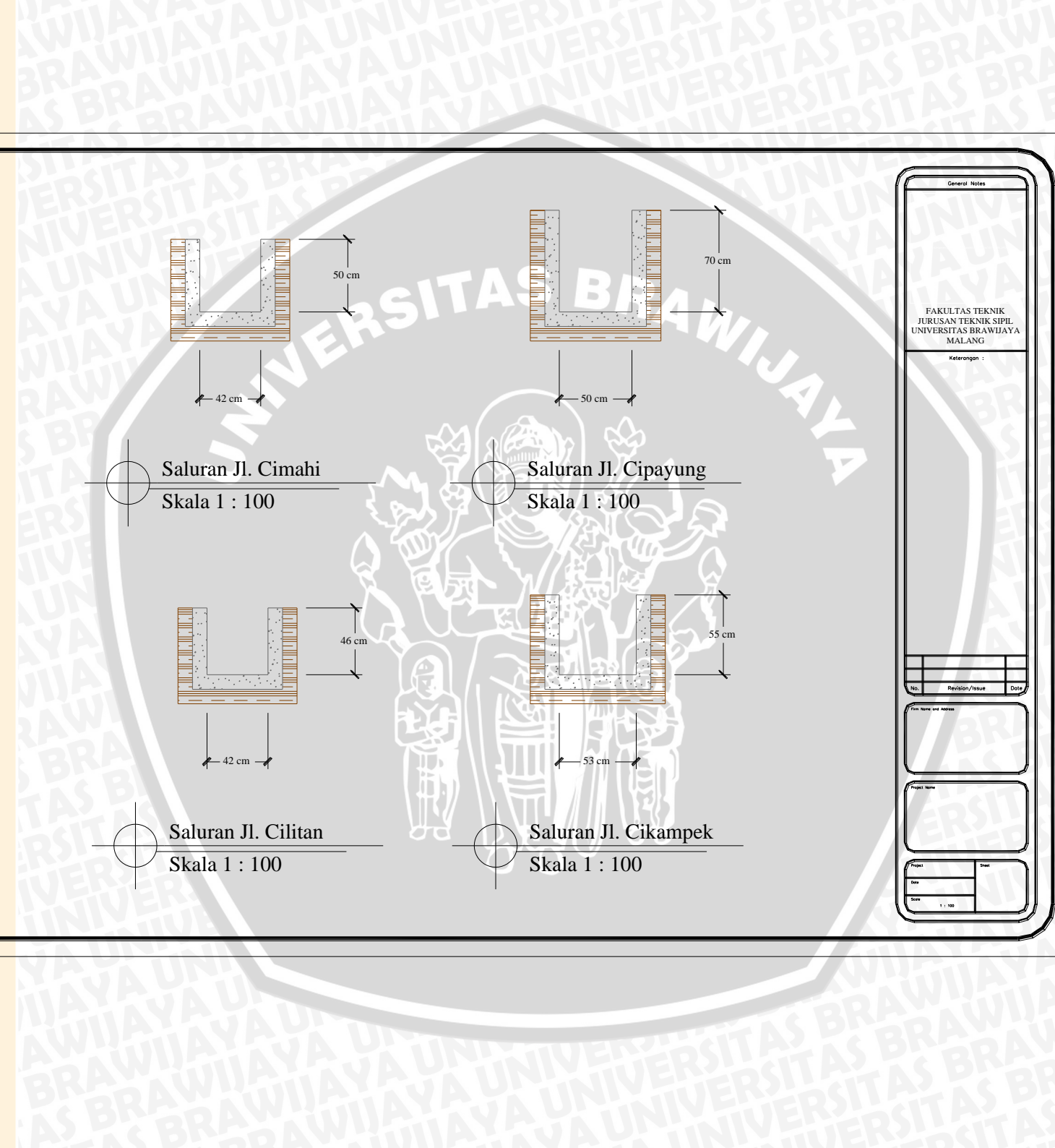
No.	Revision/Issue	Date

Team Name and Address

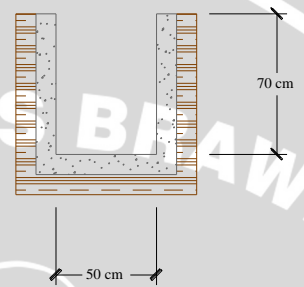
Project Name

Project	Date

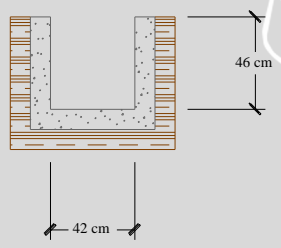
Scale 1 : 100



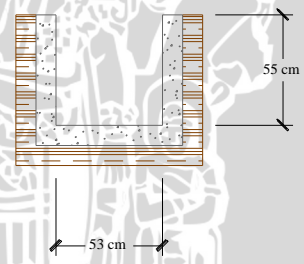
Saluran Jl. Cimahi  
Skala 1 : 100



Saluran Jl. Cipayung  
Skala 1 : 100



Saluran Jl. Cilitan  
Skala 1 : 100



Saluran Jl. Cikampek  
Skala 1 : 100

General Notes

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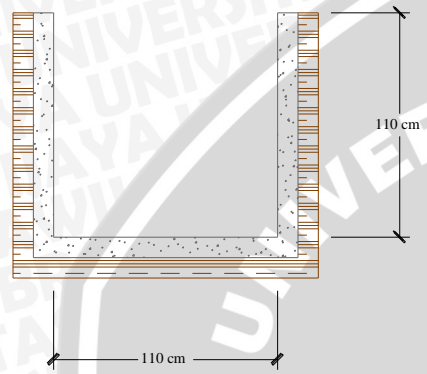
Keterangan :

No.	Revision/Issue	Date

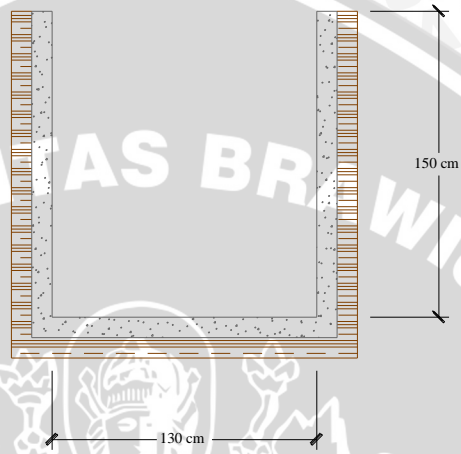
Draw Name and Address

Project Name

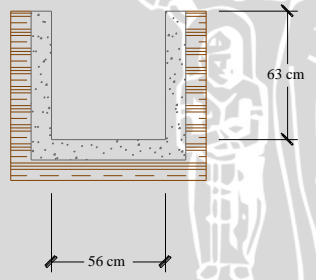
Project	Sheet
Date	
Scale	1 : 100



Saluran Jl. Bogor  
Skala 1 : 100



Saluran Jl. Veteran  
Skala 1 : 100



Saluran Jl. Cianjur  
Skala 1 : 100

General Notes

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JURUSAN TEKNIK SIPIL  
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MALANG

Keterangan :

No.	Revision/Issue	Date

Firm Name and Address

Project Name

Author	Check
Date	
Scale	1 : 100



**Lampiran 8. RENCANA ANGGARAN BIAYA (RAB)**

## DAFTAR HARGA BAHAN BANGUNAN

KOTA MALANG TAHUN 2016

No	KODE	BAHAN BANGUNAN	SATUAN	HARGA
1	M001	Pasir Urug	1 m <sup>3</sup>	126,787.94
2	M002	Pasir Pasang	1 m <sup>3</sup>	193,290.78
3	M003	Pasir Hitam	1 m <sup>3</sup>	199,103.02
4	M004	Pasir Cor	1 m <sup>3</sup>	135,000.00
5	M005	Pasir Silika	1 Kg	13,922.34
6	M006	Tanah Urug	1 m <sup>3</sup>	106,783.02
7	M007	Sirtu	1 m <sup>3</sup>	175,989.23
8	M008	Tanah Urug Taman/Katel	1 m <sup>3</sup>	105,161.00
9	M009	Tanah Liat	1 m <sup>3</sup>	57,640.00
10	M010	Batu Belah Gunung	1 m <sup>3</sup>	157,876.66
11	M011	Batu Belah Kali	1 m <sup>3</sup>	142,010.00
12	M012	Batu Kali	1 m <sup>3</sup>	189,100.56
13	M013	Stenslah/batu pecah tangan 1/2	1 m <sup>3</sup>	295,207.74
14	M014	Stenslah/batu pecah tangan 2/3	1 m <sup>3</sup>	287,503.14
15	M015	Stenslah/batu pecah tangan 3/5	1 m <sup>3</sup>	236,544.66
16	M016	Stenslah/batu pecah tangan 4/6 - 5/7	1 m <sup>3</sup>	205,050.43
17	M017	Batu pecah mesin 1/1	1 m <sup>3</sup>	329,810.84
18	M018	Batu pecah mesin 1/2	1 m <sup>3</sup>	225,000.00
19	M019	Batu pecah mesin 2/3	1 m <sup>3</sup>	225,000.00
20	M020	Batu pecah mesin 3/5	1 m <sup>3</sup>	257,901.26
21	M021	Batu pecah mesin 4/6 - 5/7	1 m <sup>3</sup>	238,166.68
22	M022	Bata Merah	1 bh	1,351.68
23	M022.a	Batu Bata Tahan Api	1 bh	18,653.24
24	M023	Bata Berongga	1 bh	2,365.45
25	M024	Batako	1 bh	5,720.00
26	M025	Rooster	1 bh	13,787.17
27	M026	Batu Granito	1 kg	24,330.31
28	M027	Batu Teraso	1 kg	13,516.84
29	M028	Batu Palimanan	1 m <sup>2</sup>	113,135.93
30	M029	Batu Tempel Hitam	1 m <sup>2</sup>	111,513.91
31	M030	Hollow Blok (HB.20)	1 bh	7,299.09
32	M031	Hollow Blok (HB.15)	1 bh	6,352.91
33	M032	Hollow Blok (HB.10)	1 bh	5,406.74



34	M033	Paving Block Segi Empat Biasa	1 bh	1,400.00
35	M034	Paving Block Segi Empat Warna	1 bh	1,500.00
36	M035	Paving Block Segi Enam Biasa	1 bh	2,973.70
37	M036.a	Paving Block Segi Enam Warna	1 bh	3,108.87
38	M036.b	Paving Block Tiga Berlian Biasa	1 bh	2,027.53
39	M036.c	Paving Block Tiga Berlian Warna	1 bh	2,297.86
40	M037	Portland Cement (PC)	1 kg	1,400.00
41	M037.a	Portland Cement (PC) Tahan Api	1 kg	8,110.10
42	M038	Portland Cement (PC) Putih	1 kg	4,055.05
43	M039	Portland Cement (PC) Warna	1 kg	20,275.26
44	M040	Portland Cement (PC) Grouting	1 kg	20,275.26
45	M041	Kapur	1 m <sup>3</sup>	2,014,955.00
46	M042	Gamping	1 kg	11,489.31
47	M043	Semen Merah	1 m <sup>3</sup>	267,363.05
48	M044	Buis Beton Ø 0.20 m	1 m <sup>1</sup>	52,850.84
49	M045	Buis Beton Ø 0.30 m	1 m <sup>1</sup>	70,693.06
50	M046	Buis Beton Ø 0.40 m	1 m <sup>1</sup>	89,616.63
51	M047	Buis Beton Ø 0.50 m	1 m <sup>1</sup>	111,784.25
52	M048	Buis Beton Ø 0.60 m	1 m <sup>1</sup>	162,202.05
53	M049	Buis Beton Ø 0.80 m	1 m <sup>1</sup>	272,229.11
54	M050	Buis Beton Ø 0.90 m	1 m <sup>1</sup>	296,694.59
55	M051	Buis Beton Ø 1.00 m	1 m <sup>1</sup>	379,687.97
56	M052	Buis Beton U Ø 0.20 m	1 m <sup>1</sup>	47,173.76
57	M053	Buis Beton U Ø 0.30 m	1 m <sup>1</sup>	59,609.25
58	M054	Reng : 2/3, 3/5	1 m <sup>3</sup>	12,441,843.63
59	M055	Usuk : 5/7	1 m <sup>3</sup>	12,338,034.32
60	M056	Balok	1 m <sup>3</sup>	12,338,034.32
61	M057	Papan (2x20) cm	1 m <sup>3</sup>	15,079,654.51
62	M058	Papan (3x20) cm	1 m <sup>3</sup>	15,765,093.36
63	M059	Papan (3x30) cm	1 m <sup>3</sup>	15,765,093.36
64	M060	Reng 2/3, 3/5	1 m <sup>3</sup>	7,092,284.76
65	M061	Usuk 5/7	1 m <sup>3</sup>	7,092,284.76
66	M062	Balok	1 m <sup>3</sup>	7,951,955.64
67	M063	Papan (2x20) cm	1 m <sup>3</sup>	9,456,379.68
68	M064	Papan (3x20) cm	1 m <sup>3</sup>	9,528,018.92
69	M065	Papan (3x30) cm	1 m <sup>3</sup>	10,686,276.75
70	M066	Reng 2/3, 3/5	1 m <sup>3</sup>	8,525,069.56
71	M067	Usuk 5/7	1 m <sup>3</sup>	8,525,069.56
72	M068	Balok	1 m <sup>3</sup>	8,954,905.00
73	M069	Papan (2x20) cm	1 m <sup>3</sup>	9,671,297.40
74	M070	Papan (3x20) cm	1 m <sup>3</sup>	9,671,297.40

75	M071	Papan (3x30) cm	1 m <sup>3</sup>	9,671,297.40
76	M078	Reng 2/3, 3/5	1 m <sup>3</sup>	12,895,063.20
77	M079	Usuk 5/7	1 m <sup>3</sup>	13,253,259.40
78	M080	Balok	1 m <sup>3</sup>	13,611,455.60
79	M081	Papan (2x20) cm	1 m <sup>3</sup>	15,760,632.80
80	M082	Papan (3x20) cm	1 m <sup>3</sup>	16,118,829.00
81	M083	Papan (3x30) cm	1 m <sup>3</sup>	16,477,025.20
82	M084	Balok Kayu Kelas III	1 m <sup>3</sup>	4,728,189.84
83	M085	Papan Kayu kelas III	1 m <sup>3</sup>	8,381,791.08
84	M088	Bambu Ø 10 cm	1 btg	34,062.43
85	M089	Dolken Kayu Ø 8 cm	1 btg	39,469.17
86	M090	List Kayu Profil	1 m <sup>1</sup>	21,356.60
87	M091	List Kayu 2/4	1 m <sup>3</sup>	5,014,746.80
88	M092	Gedeg (2.00 x 3.00) m	1 lbr	65,286.33
89	M093	Bilik Bambu	1 m <sup>2</sup>	135,168.38
90	M094	Reng : 2/3, 3/5	1 m <sup>3</sup>	18,918,301.26
91	M095	Usuk : 5/7	1 m <sup>3</sup>	18,918,301.26
92	M096	Balok	1 m <sup>3</sup>	18,247,730.94
93	M097	Papan (2x20) cm	1 m <sup>3</sup>	20,275,256.60
94	M098	Papan (3x20) cm	1 m <sup>3</sup>	20,275,256.60
95	M099	Papan (3x30) cm	1 m <sup>3</sup>	21,626,940.38
96	M100	Reng 2/3, 3/5	1 m <sup>3</sup>	27,033,675.47
97	M101	Usuk 5/7	1 m <sup>3</sup>	37,847,145.66
98	M102	Balok	1 m <sup>3</sup>	33,792,094.34
99	M103	Papan (2x20) cm	1 m <sup>3</sup>	22,345,360.30
100	M104	Papan (3x20) cm	1 m <sup>3</sup>	22,345,360.30
101	M105	Papan (3x30) cm	1 m <sup>3</sup>	22,345,360.30
102	M106	Reng : 2/3, 3/5	1 m <sup>3</sup>	27,874,557.95
103	M107	Usuk : 5/7	1 m <sup>3</sup>	27,874,557.95
104	M108	Balok	1 m <sup>3</sup>	27,874,557.95
105	M109	Papan (2x20) cm	1 m <sup>3</sup>	27,874,557.95
106	M110	Papan (3x20) cm	1 m <sup>3</sup>	27,874,557.95
107	M111	Papan (3x30) cm	1 m <sup>3</sup>	27,874,557.95
108	M112	Besi Beton Polos	1 kg	14,463.02
109	M113	Besi Beton Ulir	1 kg	22,302.78
110	M114	Besi Strip / Plat Plendes	1 kg	14,192.68
111	M115	Besi Beugel/Kawel	1 kg	27,033.68
112	M116	Baja Profil	1 kg	27,709.52
113	M116.a	Plat Baja	1 kg	23,924.80
	M116.b	Roda Railling	bh	17,000.00
114	M117	Angker Bar / Dynabolt	1 kg	40,550.51



115	M118	Kabel prestressed	1 kg	42,848.38
116	M119	Pintu Besi Baja	1 m <sup>2</sup>	1,061,071.76
117	M120	Pintu Gulung Besi	1 m <sup>2</sup>	2,917,474.26
118	M121	Pintu Lipat	1 m <sup>2</sup>	2,289,887.48
119	M122	Rolling Door	1 m <sup>2</sup>	1,696,227.97
120	M123	Pagar Besi	1 m <sup>2</sup>	1,013,762.83
121	M124	Pintu Pagar besi	1 m <sup>2</sup>	1,016,871.70
122	M124.a	Pagar Model BRC tinggi 1 m	1 m <sup>1</sup>	464,168.21
123	M124.b	Pintu Pagar Model BRC tinggi 1 m	1 m <sup>1</sup>	569,869.88
124	M125	Profil Aluminium Putih	1 m <sup>1</sup>	123,003.22
125	M126	Profil Aluminium Coklat	1 m <sup>1</sup>	147,603.87
126	M127	Sunscream Aluminium	1 m <sup>2</sup>	442,135.76
127	M128	Pintu Fiber KM	1 Unit	1,456,168.93
128	M129	Atap Aluminium	1 m <sup>2</sup>	472,818.98
129	M130	Bubung Atap Aluminium	1 m <sup>2</sup>	144,900.50
130	M131	Aluminium Foil/Sesalation	1 m <sup>2</sup>	141,521.29
131	M132	Baja Ringan	1 Kg	44,200.06
132	M133	Kawat Galvanis 2 mm	1 Kg	61,231.27
133	M134	Kawat Galvanis 3 mm	1 Kg	89,751.80
134	M135	Kawat Beton/Bendrat RRT	1 Kg	24,600.64
135	M136	Kawat Harmonika Gas	1 m <sup>2</sup>	65,015.99
136	M137	Kawat Duri	1 Kg	125,571.42
137	M138	Kawat Nyamuk	1 m <sup>2</sup>	27,033.68
138	M139	Kawat Nyamuk/Kasa Plastik	1 m <sup>2</sup>	28,926.03
139	M140	Paku Kayu Segala Ukuran	1 Kg	27,709.52
140	M141	Paku Seng Segala Ukuran	1 Kg	40,145.01
141	M142	Paku Asbes Segala Ukuran	1 bh	946.18
142	M143	Paku Sumbat Segala Ukuran	1 bh	1,351.68
143	M144	Paku Kait Segala Ukuran	1 bh	770.00
144	M145	Sekrup segala ukuran	1 bh	675.84
145	M146	Baut Segala Ukuran	1 kg	27,709.52
146	M147	Paku Keling	1 bh	4,730.89
147	M148	Paku Beton	1 kg	53,121.17
148	M148.a	Wire Mesh	1 kg	4,200.06
149	M148.b	Sealant	1 tube	40,685.68
150	M148.c	Aluminium Strip	1 m <sup>1</sup>	27,033.68
151	M148.d	Profil Kaca	1 m <sup>1</sup>	27,033.68
152	M148.e	Veneton blinds dan vertical blinds (tirai)	1 m <sup>2</sup>	761,673.81
153	M148.f	Atap Seng Galvalum	1 m <sup>2</sup>	151,794.09
154	M148.g	Bubung Atap Seng Galvalum	1 m <sup>2</sup>	147,603.87
155	M149	Genteng Biasa ex. Malang	1 bh	1,757.19

156	M150	Genteng Press ex. Trenggalek	1 bh	1,892.36
157	M151	Genteng Karang Pilang ex. Malang	1 bh	4,055.05
158	M152	Genteng Karang Pilang ex. Trenggalek	1 bh	4,055.05
159	M153	Genteng Karang Pilang ex. Surabaya	1 bh	5,406.74
160	M154	Genteng Beton Monier	1 bh	5,460.00
161	M155	Genteng Kaca	1 bh	15,290.00
162	M156	Bubung Genteng Biasa ex. Malang	1 bh	2,973.70
163	M157	Bubung Genteng Press ex. Trenggalek	1 bh	4,866.06
164	M158	Bubung Genteng Karang Pilang ex. Malang	1 bh	6,623.25
165	M159	Bubung Genteng Karang Pilang ex. Trenggalek	1 bh	7,299.09
166	M160	Bubung Genteng Karang Pilang ex. Surabaya	1 bh	9,732.12
167	M161	Bubung Genteng Beton Monier	1 bh	11,218.98
168	M162	Genteng Palentong Kecil	1 bh	3,244.04
169	M163	Genteng Kodok Glazuur	1 bh	6,082.58
170	M164	Genteng Palentong Super/Besar	1 bh	6,352.91
171	M165	Bubung Genteng Palentong Kecil	1 bh	5,812.24
172	M166	Bubung Genteng Kodok Glazuur	1 bh	10,407.97
173	M167	Bubung Genteng Palentong Super/Besar	1 bh	11,083.81
174	M168	Genteng Aspal	1 lbr	9,461.79
175	M169	Genteng Metal	1 lbr	141,926.80
176	M170	Atap Sirap	1 bh	4,055.05
177	M171	Bubung Genteng Aspal	1 bh	63,664.31
178	M172	Bubung Genteng Metal	1 bh	141,926.80
179	M173	Bubung Atap Sirap	1 bh	171,799.01
180	M173.a	Plastik Aerator	1 bh	9,732.12
181	M174	Seng plat BJLS 30 L = 0.45 M	1 m <sup>1</sup>	35,800.00
182	M175	Seng plat BJLS 30 L = 0.60 M	1 m <sup>1</sup>	48,930.95
183	M176	Seng plat BJLS 30 L = 0.90 M	1 m <sup>1</sup>	55,824.54
184	M177	Seng plat BJLS 28 (90 x 180) cm	1 lbr	70,017.22
185	M178	Atap Seng Gelombang	1 lbr	116,650.31
186	M179	Bubung Seng Gelombang	1 lbr	116,650.31
187	M180	Roof Light Fibreglass	1 m <sup>2</sup>	85,140.00
188	M181	Atap Polycarbonat	1 m <sup>2</sup>	124,300.00
189	M182	Asbes Gelombang (3.00 x 1.05) m x 4 mm	1 lbr	145,576.34
190	M183	Asbes Gelombang (2.70 x 1.05) m x 4 mm	1 lbr	134,492.54
191	M184	Asbes Gelombang (2.40 x 1.05) m x 4 mm	1 lbr	116,379.97
192	M185	Asbes Gelombang (2.10 x 1.05) m x 4 mm	1 lbr	103,133.47
193	M186	Asbes Gelombang (1.50 x 1.05) m x 4 mm	1 lbr	81,641.70
194	M187	Asbes Gelombang (2.50 x 0.92) m x 5 mm	1 lbr	147,874.20
195	M188	Asbes Gelombang (2.25 x 0.92) m x 5 mm	1 lbr	128,004.45
196	M189	Asbes Gelombang (2.00 x 0.92) m x 5 mm	1 lbr	113,406.27



197	M190	Asbes Gelombang (1.80 x 0.92) m x 5 mm	1 lbr	90,022.14
198	M191	Asbes Gelombang (3.00 x 1.08) m x 6 mm	1 lbr	182,342.14
199	M192	Asbes Gelombang (2.70 x 1.08) m x 6 mm	1 lbr	174,772.71
200	M193	Asbes Gelombang (2.10 x 1.08) m x 6 mm	1 lbr	129,220.97
201	M194	Asbes Gelombang (1.80 x 1.08) m x 6 mm	1 lbr	121,651.54
202	M195	Bubung Stel Gelombang 0.92 m	1 lbr	67,178.68
203	M196	Bubung Stel Gelombang 1.05 m	1 lbr	71,639.24
204	M197	Bubung Stel Gelombang 1.08 m	1 lbr	72,044.75
205	M198	Bubung Paten 0.92 m	1 lbr	60,014.76
206	M199	Bubung Paten 1.05 m	1 lbr	59,474.09
207	M200	Bubung Paten 1.08 m	1 lbr	64,069.81
208	M201	Bubung Stel Rata 0.92 m	1 lbr	72,044.75
209	M202	Bubung Stel Rata 1.05 m	1 lbr	57,311.39
210	M203	Asbes (1,00 x 1,00) m x 6 mm	1 lbr	23,113.79
211	M204	Asbes (1,00 x 1,00) m x 5 mm	1 lbr	24,059.97
212	M205	Asbes (1,00 x 1,00) m x 4 mm	1 lbr	27,033.68
213	M206	Asbes (1,00 x 1,00) m x 3,5 mm	1 lbr	33,792.09
214	M207	Akustik (30 x 30) cm	1 lbr	38,117.48
215	M208	Akustik (30 x 60) cm	1 lbr	42,037.37
216	M209	Akustik (60 x 120) cm	1 lbr	50,688.14
217	M210	Harplek 4 mm	1 m <sup>2</sup>	76,234.96
218	M211	List Gypsum	1 m'	28,790.86
219	M212	Soft Board	1 lbr	101,646.62
220	M213	Gypsum Board 9 mm	1 lbr	108,405.04
221	M214	Triplek 3 mm	1 lbr	73,126.09
222	M215	Triplek 4 mm	1 lbr	91,644.16
223	M216	Multiplek 6 mm	1 lbr	117,335.29
224	M217	Multiplek 9 mm	1 lbr	178,499.42
225	M218	Multiplek 10 mm	1 lbr	203,464.38
226	M219	Multiplek 12 mm	1 lbr	252,146.04
227	M220	Multiplek 18 mm	1 lbr	349,509.36
228	M221	Plywood Lapis Aluminium	1 lbr	118,272.33
229	M222	Plywood (30 x 60) cm x 4 mm	1 lbr	114,893.12
230	M223	Plywood (30 x 60) cm x 6 mm	1 lbr	135,168.38
231	M224	Plywood (60 x 120) cm x 4 mm	1 lbr	135,168.38
232	M225	Plywood (60 x 120) cm x 6 mm	1 lbr	175,718.89
233	M226	Plywood (120 x 240) cm x 4 mm	1 lbr	216,269.40
234	M227	Teakwood (30 x 60) cm x 4 mm	1 lbr	60,825.77
235	M228	Teakwood (60 x 120) cm x 4 mm	1 lbr	87,859.45
236	M229	Teakwood (120 x 240) cm x 4 mm	1 lbr	114,893.12
237	M230	Kloset Jongkok Porselin Kw. A	1 Unit	215,999.07



238	M231	Kloset Duduk Porselin Kw. A	1 Unit	2,157,827.98
239	M232	Kloset Jongkok Lux	1 Unit	675,841.89
240	M233	Kloset Duduk Lux	1 Unit	2,294,212.87
241	M234	Kloset Jongkok Teraso	1 bh	101,376.28
242	M235	Kran Air 1/2 "	1 bh	60,825.77
243	M236	Kran Air 3/4 "	1 bh	67,584.19
244	M237	Bak Mandi Teraso	1 bh	202,752.57
245	M238	Bak Mandi Fibre	1 bh	474,846.51
246	M239	Bak Mandi Plastik	1 bh	298,992.45
247	M240	Bak Mandi Porselin	1 bh	3,021,148.40
248	M241	Kran Bathub Panas dan dingin	1 bh	612,042.41
249	M242	Bak Cuci Firing Teraso	1 bh	397,259.86
250	M243	Bak Cuci Firing Stainless	1 bh	430,646.45
251	M244	Badkip Porselen	1 bh	2,166,613.92
252	M245	Urinoir Porselin	1 bh	1,510,641.79
253	M246	Urinoir Keramik	1 bh	1,553,760.50
254	M247	Wastafel Komplit (Kran + Sipon) Lux	1 Unit	1,898,980.53
255	M248	Wastafel Komplit (Kran + Sipon) Kw. A	1 Unit	627,451.61
256	M249	Tempat Sabun Keramik	1 bh	47,308.93
257	M250	Afor Stainless	1 bh	87,859.45
258	M251	Afor Plastic	1 bh	35,954.79
259	M252	Kaca Wastafel	1 bh	337,920.94
260	M253	Kunci Tanam Antik	1 bh	133,546.36
261	M254	Kunci Tanam	1 bh	158,527.46
262	M255	Kunci Pintu Kamar Mandi	1 bh	127,321.27
263	M256	Kunci Silinder	1 bh	209,705.62
264	M257	Engsel Pintu	1 set	48,525.45
265	M258	Engsel Jendela	1 set	34,950.94
266	M259	Hak Angin	1 set	38,522.99
267	M260	Spring Knip	1 bh	33,792.09
268	M261	Kait Angin	1 bh	20,275.26
269	M262	Grendel Pintu	1 bh	30,818.39
270	M263	Grendel Jendela	1 bh	17,436.72
271	M264	Door Closer	1 bh	244,249.26
272	M265	Slot/Kunci Pintu	1 bh	191,939.10
273	M266	Door Holder	1 bh	174,367.21
274	M267	Door Stop	1 bh	51,769.49
275	M268	Rel Pintu Dorong	1 bh	188,289.55
276	M269	Kunci Lemari	1 bh	16,896.05
277	M270	Kaca Polos tebal 3 mm	1 m <sup>2</sup>	113,590.54
278	M271	Kaca Polos tebal 5 mm	1 m <sup>2</sup>	172,258.19

279	M272	Kaca Polos tebal 8 mm	1 m <sup>2</sup>	332,033.90
280	M273	Kaca Polos tebal 12 mm	1 m <sup>2</sup>	481,064.26
281	M274	Kaca Buram tebal 3 mm	1 m <sup>2</sup>	167,265.20
282	M275	Kaca Buram tebal 5 mm	1 m <sup>2</sup>	252,146.04
283	M276	Kaca Buram tebal 8 mm	1 m <sup>2</sup>	283,853.59
284	M277	Kaca Buram tebal 12 mm	1 m <sup>2</sup>	458,491.14
285	M278	Kaca Cermin tebal 5 mm	1 m <sup>2</sup>	281,826.07
286	M279	Kaca Cermin tebal 6 mm	1 m <sup>2</sup>	360,494.06
287	M280	Kaca Cermin tebal 8 mm	1 m <sup>2</sup>	491,201.88
288	M281	Kaca Rayben tebal 3 mm	1 m <sup>2</sup>	169,761.69
289	M282	Kaca Rayben tebal 5 mm	1 m <sup>2</sup>	248,401.30
290	M283	Kaca Rayben tebal 8 mm	1 m <sup>2</sup>	508,036.82
291	M284	Kaca Rayben tebal 12 mm	1 m <sup>2</sup>	81,136.10
292	M285	Jendela Nako + accessories	1 m <sup>2</sup>	332,033.90
293	M286	Glass Block	1 bh	33,792.09
294	M287	Painting Glass	1 m <sup>2</sup>	755,189.87
295	M288	Kaca "Wireglass" 5 mm	1 m <sup>2</sup>	847,560.21
296	M289	Kaca Patri 5 mm	1 m <sup>2</sup>	1,848,292.39
297	M290	Ubin pc abu-abu 40 x 40 cm	1 bh	3,784.71
298	M291	Ubin pc abu-abu 30 x 30 cm	1 bh	2,838.54
299	M292	Ubin pc abu-abu 20 x 20 cm	1 bh	1,892.36
300	M293	Ubin pc warna 40 x 40 cm	1 bh	4,730.89
301	M294	Ubin pc warna 30 x 30 cm	1 bh	2,973.70
302	M295	Ubin pc warna 20 x 20 cm	1 bh	2,027.53
303	M296	Ubin Terasso 40 x 40 cm	1 bh	5,812.24
304	M297	Ubin Terasso 30 x 30 cm	1 bh	4,190.22
305	M298	Ubin Granito 40 x 40 cm	1 bh	59,879.59
306	M299	Ubin Granito 30 x 30 cm	1 bh	32,034.91
	M299a	Ubin Teralux Kerang 40 x 40 cm	1 bh	57,852.07
	M299b	Ubin Teralux Kerang 30 x 30 cm	1 bh	49,471.63
	M299c	Ubin Teralux Kerang 60 x 60 cm	1 bh	99,213.59
	M299d	Ubin Teralux Marmor 40 x 40 cm	1 bh	74,342.61
307	M300	Plint ubin pc abu-abu 15 x 20 cm	1 bh	4,190.22
308	M301	Plint ubin pc abu-abu 10 x 30 cm	1 bh	4,595.72
309	M302	Plint ubin pc abu-abu 10 x 40 cm	1 bh	5,001.23
310	M303	Plint ubin pc warna 10 x 20 cm	1 bh	2,496.50
311	M304	Plint ubin pc warna 10 x 30 cm	1 bh	3,744.74
312	M305	Plint ubin pc warna 10 x 40 cm	1 bh	5,001.23
313	M306	Plint Ubin Terasso 10 x 30 cm	1 bh	5,812.24
314	M307	Plint Ubin Terasso 10 x 40 cm	1 bh	8,380.44
315	M308	Plint Ubin Granito 10 x 40 cm	1 bh	18,112.56



316	M309	Plint Ubin Granito 10 x 30 cm	1 bh	12,300.32
317	M310	Lantai keramik artistik 10 x 20	1 bh	12,300.32
318	M311	Lantai keramik artistik 10 x 10	1 bh	12,300.32
319	M312	Lantai keramik artistik 5 x 20	1 bh	12,300.32
320	M313	Plint keramik artistik 10 x 20	1 bh	24,600.64
321	M314	Plint keramik artistik 10 x 10	1 bh	24,600.64
322	M315	Plint keramik artistik 5 x 20	1 bh	24,600.64
323	M316	Internal cove 5 x 5 x 20 cm	1 bh	24,360.00
324	M316.a	Bahan Teraso Cor	1 m <sup>3</sup>	294,667.06
325	M317	Keramik Lantai 40 x 40 cm putih	1 bh	18,112.56
326	M318	Keramik Lantai 40 x 40 cm warna/motif	1 bh	21,626.94
327	M319	Keramik Lantai 30 x 30 cm putih	1 bh	6,488.08
328	M320	Keramik Lantai 30 x 30 cm warna/motif	1 bh	8,380.44
329	M321	Keramik Lantai 20 x 20 cm putih	1 bh	2,703.37
330	M322	Keramik Lantai 20 x 20 cm warna/motif	1 bh	2,973.70
331	M323	Keramik Lantai KM 20 x 20 cm	1 bh	2,838.54
332	M324	Plint Keramik Lantai 10 x 20 cm	1 bh	12,300.32
333	M325	Plint Keramik Lantai 10 x 30 cm	1 bh	12,300.32
334	M326	Plint Keramik Lantai 10 x 40 cm	1 bh	22,978.62
335	M327	Keramik Dinding 20 x 25 cm	1 bh	5,812.24
336	M328	Keramik Dinding 20 x 20 cm	1 bh	4,190.22
337	M329	Porselin 15 x 15 cm putih	1 bh	1,351.68
338	M330	Porselin 15 x 15 cm warna	1 bh	1,351.68
339	M331	Porselin 10 x 20 cm warna	1 bh	1,351.68
340	M332	Porselin 20 x 20 cm warna	1 bh	2,838.54
341	M333	Gymflour	1 m <sup>2</sup>	325,755.79
342	M333.a	Parquet	1 m <sup>2</sup>	304,804.69
343	M333.b	Karpet	1 m <sup>2</sup>	135,168.38
344	M333.c	Lantai marmor 100x100 cm	1 m <sup>2</sup>	555,947.54
345	M333.d	Porselin 11 x 11 cm putih	1 m <sup>2</sup>	1,216.52
346	M333.e	Porselin 11 x 11 cm warna	1 m <sup>2</sup>	1,622.02
347	M333.f	Wall Paper	1 m <sup>2</sup>	87,859.45
348	M333.g	Batu Ampyangan Granit	1 kg	8,737.73
349	M334	Pipa PVC tipe AW Ø 1/2"	1 m <sup>1</sup>	13,246.50
350	M335	Pipa PVC tipe AW Ø 3/4"	1 m <sup>1</sup>	19,599.41
351	M336	Pipa PVC tipe AW Ø 1"	1 m <sup>1</sup>	25,681.99
352	M337	Pipa PVC tipe AW Ø 1.5"	1 m <sup>1</sup>	34,467.94
353	M338	Pipa PVC tipe AW Ø 2"	1 m <sup>1</sup>	43,794.55
354	M339	Pipa PVC tipe AW Ø 2.5"	1 m <sup>1</sup>	56,094.88
355	M340	Pipa PVC tipe AW Ø 3 "	1 m <sup>1</sup>	79,208.67
356	M341	Pipa PVC tipe AW Ø 4 "	1 m <sup>1</sup>	123,814.23

357	M342	Pipa PVC tipe AW Ø 6 "	1 m <sup>1</sup>	215,593.56
358	M343	Pipa PVC tipe AW Ø 8 "	1 m <sup>1</sup>	286,827.30
359	M344	Pipa PVC tipe D Ø 1/2 "	1 m <sup>1</sup>	5,677.07
360	M345	Pipa PVC tipe D Ø 3/4 "	1 m <sup>1</sup>	8,650.78
361	M346	Pipa PVC tipe D Ø 1"	1 m <sup>1</sup>	11,218.98
362	M347	Pipa PVC tipe D Ø 1.5 "	1 m <sup>1</sup>	17,301.55
363	M348	Pipa PVC tipe D Ø 2 "	1 m <sup>1</sup>	17,977.39
364	M349	Pipa PVC tipe D Ø 2.5 "	1 m <sup>1</sup>	30,683.22
365	M350	Pipa PVC tipe D Ø 3 "	1 m <sup>1</sup>	44,470.40
366	M351	Pipa PVC tipe D Ø 4 "	1 m <sup>1</sup>	54,337.69
367	M352	Pipa PVC tipe C Ø 1/2 "	1 m <sup>1</sup>	4,325.39
368	M353	Pipa PVC tipe C Ø 3/4 "	1 m <sup>1</sup>	6,488.08
369	M354	Pipa PVC tipe C Ø 1"	1 m <sup>1</sup>	8,515.61
370	M355	Pipa PVC tipe C Ø 1.5 "	1 m <sup>1</sup>	11,354.14
371	M356	Pipa PVC tipe C Ø 2 "	1 m <sup>1</sup>	17,436.72
372	M357	Pipa PVC tipe C Ø 2.5 "	1 m <sup>1</sup>	22,167.61
373	M358	Pipa PVC tipe C Ø 3 "	1 m <sup>1</sup>	26,222.67
374	M359	Pipa PVC tipe C Ø 4 "	1 m <sup>1</sup>	33,386.59
375	M360	Shock PVC Ø 1/2 "	1 bh	5,677.07
376	M361	Shock PVC Ø 3/4 "	1 bh	5,406.74
377	M362	Shock PVC Ø 1 "	1 bh	7,299.09
378	M363	Shock PVC Ø 1.5 "	1 bh	10,137.63
379	M364	Shock PVC Ø 2 "	1 bh	11,234.23
380	M365	Shock PVC Ø 2.5 "	1 bh	16,227.22
381	M366	Shock PVC Ø 3 "	1 bh	17,475.47
382	M367	Shock PVC Ø 4 "	1 bh	21,220.21
383	M368	Knee PVC Ø 1/2 "	1 bh	4,055.05
384	M369	Knee PVC Ø 3/4 "	1 bh	6,217.75
385	M370	Knee PVC Ø 1 "	1 bh	7,028.76
386	M371	Knee PVC Ø 1.5 "	1 bh	10,813.47
387	M372	Knee PVC Ø 2 "	1 bh	14,978.97
388	M373	Knee PVC Ø 2.5 "	1 bh	17,475.47
389	M374	Knee PVC Ø 3 "	1 bh	19,722.31
390	M375	Knee PVC Ø 4 "	1 bh	24,715.30
391	M376	Pipa Galvanis Ø 1/2" tebal 1.8 mm	1 m <sup>1</sup>	58,257.57
392	M377	Pipa Galvanis Ø 3/4" tebal 1.8 mm	1 m <sup>1</sup>	75,288.79
393	M378	Pipa Galvanis Ø 1 ", tebal 2 mm	1 m <sup>1</sup>	102,592.80
394	M379	Pipa Galvanis Ø 1.5 ", tebal 2 mm	1 m <sup>1</sup>	151,523.75
395	M380	Pipa Galvanis Ø 2 ", tebal 2.3 mm	1 m <sup>1</sup>	215,458.39
396	M381	Pipa Galvanis Ø 2.5 ", tebal 2.5 mm	1 m <sup>1</sup>	300,884.81
397	M382	Pipa Galvanis Ø 3" tebal 2.5 mm	1 m <sup>1</sup>	321,295.23



398	M383	Pipa Galvanis Ø 4" tebal 2.8 mm	1 m <sup>1</sup>	437,810.37
399	M384	Shock Galvanis Ø 1/2 "	1 bh	6,758.42
400	M385	Shock Galvanis Ø 3/4 "	1 bh	10,137.63
401	M386	Shock Galvanis Ø 1 "	1 bh	16,896.05
402	M387	Shock Galvanis Ø 1.5 "	1 bh	20,275.26
403	M388	Shock Galvanis Ø 2 "	1 bh	33,792.09
404	M389	Shock Galvanis Ø 2.5 "	1 bh	51,634.32
405	M390	Shock Galvanis Ø 3 "	1 bh	77,451.48
406	M391	Shock Galvanis Ø 4 "	1 bh	219,648.61
407	M392	Knee Galvanis Ø 1/2 "	1 bh	7,569.43
408	M393	Knee Galvanis Ø 3/4 "	1 bh	11,218.98
409	M394	Knee Galvanis Ø 1 "	1 bh	16,896.05
410	M395	Knee Galvanis Ø 1.5 "	1 bh	31,629.40
411	M396	Knee Galvanis Ø 2 "	1 bh	39,469.17
412	M397	Knee Galvanis Ø 2.5 "	1 bh	72,315.08
413	M398	Knee Galvanis Ø 3 "	1 bh	111,784.25
414	M399	Knee Galvanis Ø 4 "	1 bh	147,333.53
415	M400	Pipa Screen PVC tipe AW Ø 6 "	1 m <sup>1</sup>	229,515.90
416	M400.a	Pipa PVC tipe AW Ø 5 "	1 m <sup>1</sup>	215,593.56
417	M400.b	Pipa Screen PVC tipe AW Ø 5 "	1 m <sup>1</sup>	189,100.56
418	M400.c	Pipa PVC moof 6 m S - 12,5 Ø 2"	1 m <sup>1</sup>	43,118.71
419	M400.d	Pipa PVC moof 6 m S - 12,5 Ø 2,5"	1 m <sup>1</sup>	60,149.93
420	M400.e	Pipa PVC moof 6 m S - 12,5 Ø 3"	1 m <sup>1</sup>	89,481.47
421	M400.f	Pipa PVC moof 6 m S - 12,5 Ø 4"	1 m <sup>1</sup>	131,383.66
422	M400.g	Pipa PVC moof 6 m S - 12,5 Ø 6"	1 m <sup>1</sup>	283,718.42
423	M400.h	Pipa PVC moof 6 m S - 12,5 Ø 8"	1 m <sup>1</sup>	459,437.31
424	M401	Kertas Gosok	1 Lbr	6,758.42
425	M402	Plamir Kayu	1 kg	30,412.88
426	M403	Plamir Tembok	1 kg	28,250.19
427	M404	Plamir Besi	1 Kg	75,288.79
428	M405	Dempul Jadi	1 kg	45,146.24
429	M406	Minyak Cat	1 Ltr	27,439.18
430	M407	Spiritus	1 Ltr	20,275.26
431	M408	Sirlak	1 kg	231,813.77
432	M409	Cat meni kayu	1 kg	48,795.78
433	M410	Cat meni besi	1 kg	50,688.14
434	M411	Cat Dasar Kayu	1 kg	66,367.67
435	M412	Cat Dasar Tembok	1 kg	42,578.04
436	M413	Cat Dasar Besi	1 kg	75,288.79
437	M414	Cat Kayu	1 kg	101,241.11
438	M415	Cat Tembok	1 kg	116,650.31



439	M415.a	Cat Tembok Interior	1 kg	121,786.71
440	M415.b	Cat Tembok Eksterior	1 kg	139,764.10
441	M416	Cat Besi	1 kg	102,457.63
442	M417	Cat Genting	1 kg	179,098.10
443	M418	Waterproofing	1 kg	208,970.31
444	M419	Vernis	1 Ltr	81,101.03
445	M420	Politur Jadi	1 Ltr	104,755.49
446	M421	Kuas	1 bh	27,033.68
447	M422	Lem Kayu	1 kg	56,094.88
448	M423	Lem Pipa PVC	1 kg	51,093.65
449	M424	Lem vinyl	1 kg	81,506.53
450	M425	Residu atau Teer	1 Ltr	44,335.23
451	M426	Teak oli	1 Ltr	6,758.42
452	M427	Kalkarium	1 kg	12,300.32
453	M428	Kapur Sirih	1 kg	11,489.31
454	M429	Soda api	1 kg	32,305.24
455	M430	Sabun	1 kg	57,041.06
456	M430.a	Vinyl (30x30)cm	1 bh	101,376.28
457	M430.b	Batu Apung	1 kg	54,743.19
458	M430.c	Alang-Alang	1 ikat	6,758.42
459	M431	Tandon Air PVC V = 0.5 m3	1 bh	985,377.47
460	M432	Tandon Air PVC V = 1.0 m3	1 bh	1,743,536.90
461	M433	Tandon Air Stainless V = 0.5 m3	1 bh	2,725,129.66
462	M434	Tandon Air Stainless V = 1.0 m3	1 bh	4,563,419.59
463	M435	Sumur Pompa Tangan Lengkap	1 Unit	267,903.72
464	M436	Pompa Air	1 Unit	1,074,588.60
465	M437	Kabel NYA 2.5 mm	1 m <sup>1</sup>	7,163.92
466	M438	Kabel NYA 4.0 mm	1 m <sup>1</sup>	11,354.14
467	M438a	Kabel NYYHY 3x4 mm	1 m <sup>1</sup>	18,788.40
468	M438b	Kabel NYYHY 3x1.5 mm	1 m <sup>1</sup>	11,354.14
469	M439	Stop Kontak	1 bh	29,190.00
470	M440	Saklar Broco Tunggal	1 bh	35,595.00
471	M440.a	Saklar Broco Ganda	1 bh	40,740.00
472	M441	Las doof	1 bh	10,809.83
473	M442	Isolator	1 m <sup>1</sup>	12,170.42
474	M443	T dos PVC	1 bh	2,027.53
475	M444	Pipa PVC 5/8"	1 Ljr	9,985.98
476	M445	Fiting Flafond	1 bh	15,003.69
477	M446	Zekering Kast Lokal 1 Group	1 Unit	91,122.08
478	M447	Zekering Kast Lokal 2 Group	1 Unit	133,562.51
479	M448	Zekering Kast Lokal 3 Group	1 Unit	182,244.17

480	M449	Lampu TL Komplit 20 Watt	1 bh	87,377.34
481	M450	Lampu TL Komplit 40 Watt	1 bh	175,718.89
482	M451	Lampu XL (Lilin) 5 Watt	1 bh	42,307.70
483	M452	Lampu XL (Lilin) 8 Watt	1 bh	42,983.54
484	M453	Lampu XL (Lilin) 14 Watt	1 bh	48,525.45
485	M454	Lampu XL (Lilin) 18 Watt	1 bh	52,174.99
486	M455	Lampu XL (Lilin) 23 Watt	1 bh	60,825.77
487	M456	Lampu Pijar 5 - 40 Watt	1 bh	25,141.32
488	M457	Lampu Pijar 50 -100 Watt	1 bh	41,767.03
489	M458	Tambah Daya 2200 Watt	1 Ls	5,014,746.80
490	M459	Pasang Baru PLN	1 Ls	7,163,924.00
491	M460	Pipa Arde	1 m <sup>1</sup>	473,089.32
492	M460.a	Splits Dia 1	1 bh	351,437.78
493	M460.b	Timah	1 kg	592,848.50
494	M460.c	Kawat BC	1 m <sup>1</sup>	61,231.27
495	M460.d	Klemp	1 bh	2,973.70
496	M461	Rumput Lamur	1 m <sup>2</sup>	23,200.00
497	M462	Rumput Manila	1 m <sup>2</sup>	19,800.00
498	M463	Semak Hias	1 m <sup>2</sup>	13,335.00
499	M464	Pohon Pelindung	1 btg	202,965.00
500	M464.a	Gebalan rumput	1 m <sup>2</sup>	16,600.00
501	M465	Tali ijuk	1 kg	19,800.00
502	M466	Ijuk	1 m <sup>3</sup>	160,700.00
503	M467	Waterstop Lebar 150 mm	1 m <sup>1</sup>	57,852.07
504	M468	Waterstop Lebar 200 mm	1 m <sup>1</sup>	104,214.82
505	M469	Waterstop Lebar 230 mm	1 m <sup>1</sup>	121,381.20
506	M470	Rumput Common Bermuda Grass	1 m <sup>2</sup>	19,058.74
507	M471	Pupuk	1 kg	2,700.00
508	M471a	Obat Tanaman	1 ltr	121,989.46
509	M472	Tali Plastik Ø 0.8 cm	1 m <sup>1</sup>	2,500.00
510	M473	Elektroda	1 kg	38,940.00
511	M474	Minyak bekisting	1 ltr	3,919.88
512	M475	Formika (90 x 120) cm	1 lbr	228,569.73
513	M476	Storox 100	1 kg	114,180.00
514	M477	Formtie	1 bh	12,841.00
515	M478	Batacote	1 kg	11,489.31
516	M479	Rapidrant	1 Gln	43,780.00
517	M480	Puzzdith - 100 XR	1 Ltr	87,780.00
518	M481	Seal Tape / TBA	1 bh	2,310.00
519	M482	Bensin Industri	1 ltr	12,503.07
520	M482.a	Bensin Umum	1 ltr	6,893.59



521	M483	Solar Industri	1 ltr	6,000.00
522	M483.a	Solar Umum	1 ltr	10,137.63
523	M484	Minyak Pelumas	1 ltr	67,043.52
524	M485	Grease	1 kg	47,308.93
525	M486	Air Bersih	1 ltr	75.00
526	M487	Kuas 4"	1 bh	14,410.00
527	M488	Lampu Mercury	1 bh	238,400.00
528	M489	Jaring PEDT Mesh 2,5 cm	1 bh	31,600.00
529	M490	Rumput Sintetis (30x30)cm	1 bh	15,800.00
530	M491	Kalsiboard 4.5 mm	1 lbr	114,352.45
531	M492	Kalsiboard 9 mm	1 lbr	205,861.44
532	M493	Eternit 100x100 tbl 3,5 mm	1 lbr	59,474.09
533	M494	Metal furing	1 m'	14,500.00
534	M495	Kawat seng polos	1 Kg	23,750.00
535	M496	Ramset / Dynabolt	1 Bh	5,000.00
536	M497	Lapis aluminum jeruk	1 m2	30,000.00
537	M498	Pipa stainless steel 2"	1 m'	125,000.00
538	M499	Stud Track 7,6	1 m'	25,000.00
539	M500	Gypsum Board 12 mm	1 lbr	85,000.00
540	M501	Usuk Canal C 75. 0.75	1 m1	15,000.00
541	M502	Reng Purlin R 36.055	1 m1	10,000.00
542	M503	Baut	1 bh	100.00
543	M504	Batu sisir	1 m <sup>2</sup>	79,900.00
544	M505	Coating batu alam	1 kg	45,000.00
529	M506	Engsel casement 15 "	bh	32,500.00
530	M507	Tempered kaca	m2	500,000.00