

BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

Penelitian tentang Optimasi Biaya Pelaksanaan pada Proyek pembangunan Gedung Utama Tahap I, Universitas Sanata Dharma, Yogyakarta, dan dengan menggunakan data historis proyek sejenis yang masih dalam lingkup pembangunan Gedung Universitas Sanata Dharma, diperoleh kesimpulan sebagai berikut :

- Proyek pembangunan Gedung Utama Tahap I, Universitas Sanata Dharma, Yogyakarta dapat dipercepat waktu pelaksanaannya.
- Percepatan waktu pelaksanaan proyek tersebut, maksimal adalah 54 hari, atau dengan kata lain proyek dapat diselesaikan pada hari kerja ke 191 (pada kondisi normal proyek selesai pada hari kerja ke 245).
- Biaya akhir proyek paling minimum terjadi apabila proyek dipercepat durasinya sebanyak 45 hari, atau proyek secara keseluruhan terselesaikan dalam waktu 200 hari.
- Biaya akhir proyek bila durasi total proyek 200 hari adalah **Rp 4.716.225.699,-**
- Percepatan durasi proyek sampai hari ke 200, memberikan penghematan maksimum dari selisih antara tambahan biaya dengan biaya operasional, yaitu sebesar **Rp 2.211.258 ,-**

5.2. Saran

Beberapa saran yang perlu diperhatikan apabila penelitian ini akan dipergunakan atau dikembangkan di kemudian hari yaitu:

- Dalam pemilihan data historis, sebaiknya data historis tersebut berasal dari satu sumber yang sama (satu kontraktor saja sebagai sumber data, baik data proyek maupun data historis), sehingga perhitungan dapat lebih tepat.
- Data proyek penelitian dan data historis yang dipilih, sebaiknya dalam kurun waktu yang sama (tahun pelaksanaan yang sama), sehingga perbedaan biaya satuan pekerjaan yang digunakan dalam perhitungan tingkat kenaikan harga, tidak terlalu besar.
- Interval percepatan durasi setiap hari perlu dianalisa agar dapat diperoleh hasil biaya akhir proyek yang paling minimum.
- *Software Quantitative Systems – Linear Programing*, dalam proses *input* adalah secara manual. Oleh sebab itu, perlu adanya suatu Sistem Informasi Manajemen yang berdasarkan pemrograman komputer, untuk mempermudah proses *input* tersebut. Suatu proyek konstruksi dengan jenis kegiatan dan hubungan antar kegiatan yang cukup banyak, maka sistem informasi tersebut sangat diharapkan.

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Lampiran 1

**Data proyek pembangunan Gedung Utama Tahap I,
Universitas Sanata Dharma Yogyakarta,
Tahun 2000, PT. Kwinto Viratus**

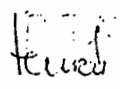
REKAPITULASI

PROYEK : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA di PAINGAN
PEKERJAAN : PEMBANGUNAN GEDUNG UTAMA TAHAP I, KAMPUS PAINGAN
UNIVERSITAS SANATA DHARMA
LOKASI : DESA PAINGAN KAB. SLEMAN DIY.

| | | | |
|-------|--------------------------------|-----|----------------|
| I. | PEKERJAAN PERSIAPAN | Rp. | 61,060,000 |
| II. | PEKERJAAN TANAH DAN PASIR | Rp. | 77,992,630 |
| III. | PEKERJAAN BETON | | |
| | a. Basement | Rp. | 533,241,106 |
| | b. Ground floor & stage | Rp. | 517,944,346 |
| | c. Lantai 1 (satu) | Rp. | 650,739,348 |
| | d. Lantai 2 (dua) | Rp. | 482,716,467 |
| | e. Lantai 3 (tiga) | Rp. | 493,244,133 |
| | f. Lantai 4 (empat) | Rp. | 586,937,325 |
| | g. Lantai Atap | Rp. | 197,337,231 |
| IV. | PEKERJAAN PASANGAN & PLESTERAN | | |
| | a. Basement | Rp. | 36,752,200 |
| | b. Ground floor & teras | Rp. | 78,725,260 |
| | c. Lantai 1 (satu) | Rp. | 34,857,650 |
| | d. Lantai 2 (dua) | Rp. | 31,652,500 |
| | e. Lantai 3 (tiga) | Rp. | 35,693,170 |
| | f. Lantai 4 (empat) | Rp. | 50,915,820 |
| | g. Lantai Atap | Rp. | 11,547,200 |
| V. | PEKERJAAN RANGKA ATAP | Rp. | 373,404,500 |
| VI. | PEKERJAAN PENUTUP ATAP | Rp. | 133,599,250 |
| VII. | PEKERJAAN SALURAN AIR HUJAN | Rp. | 45,432,000 |
| VIII. | PEKERJAAN CAT | Rp. | 28,784,750 |
| IX. | PEKERJAAN PENANGKAL PETIR | Rp. | 50,000,000 |
| X. | PEKERJAAN LAIN-LAIN | Rp. | 113,341,700 |
| | JUMLAH | Rp. | 4,625,918,586 |
| | JASA & RESIKO 4 % | Rp. | 185,036,743.44 |
| | JUMLAH | Rp. | 4,810,955,329 |
| | PPN 10 % | Rp. | 481,095,533 |
| | TOTAL | Rp. | 5,292,050,862 |
| | DIBULATKAN | Rp. | 5,292,000,000 |

Terbilang : Lima milyar dua ratus sembilan puluh dua juta rupiah.

Jakarta, 11 Oktober 2000
PT. KWINTO VIRATUS


Ir. Henry Karnadi
Direktur

ENCANA ANGGARAN BIAYA

OYEK : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA di PAINGAN

KERJAAN : PEMBANGUNAN GEDUNG UTAMA TAHAP I, KAMPUS PAINGAN UNIVERSITAS SANATA DHARMA

KASIH : DESA PAINGAN KAB. SLEMAN DIY.

Hal. : 1

| JENIS PEKERJAAN | VOLUME | SAT. | HARGA SATUAN Rp. | JUMLAH HARGA Rp. | TOTAL HARGA Rp. |
|--|----------|------|---------------------|---------------------|--------------------|
| PEKERJAAN PERSIAPAN | | | | | |
| 1 Pembersihan lapangan | 1.00 | ls | 1,000,000 | 1,000,000 | |
| 2 Papan nama Proyek | 1.00 | bh | 300,000 | 300,000 | |
| 3 Jalan masuk (sudah ada) | -- | ls | -- | -- | |
| 4 Pagar pengaman | 312.00 | m' | 27,500 | 8,580,000 | |
| 5 Direksi keet dan ruang rapat | 40.00 | m2 | 185,000 | 7,400,000 | |
| 6 Asuransi & administrasi | 1.00 | ls | 20,000,000 | 20,000,000 | |
| 7 Air dan listrik kerja | 1.00 | ls | 3,500,000 | 3,500,000 | |
| 8 Uitzet & bouwplank | 258.00 | m' | 10,000 | 2,580,000 | |
| 9 Biaya keamanan proyek | 1.00 | ls | 7,500,000 | 7,500,000 | |
| 10 Mobilisasi dan demobilisasi | 1.00 | ls | 10,000,000 | 10,000,000 | |
| 11 Test sand cone | 4.00 | ttk | 50,000 | 200,000 | |
| | | | SUB TOTAL = Rp. | | 61,060,000 |
| PEKERJAAN TANAH DAN PASIR | | | | | |
| Galian tanah basement | 3,303.70 | m3 | 9,000 | 29,733,300 | |
| Galian tanah sloof struktur | 66.60 | m3 | 9,000 | 599,400 | |
| Galian tanah pondasi : | | | | | |
| - Pondasi umpak & stall batu kali | 416.90 | m3 | 9,000 | 3,752,100 | |
| - Pondasi Voet plat & ruang lift | 1,402.40 | m3 | 9,000 | 12,621,600 | |
| Urug tanah kembali (galian pondasi)+pemadatan | 1,641.00 | m3 | 6,000 | 9,846,000 | |
| Urug pasir : | | | | | |
| - Bawah pondasi beton t= 10 cm. | 68.80 | m3 | 41,400 | 2,848,320 | |
| - Bawah sloof beton struktur t=10 cm. | 11.60 | m3 | 41,400 | 480,240 | |
| - Bawah pondasi batu kali t=10 cm. | 43.95 | m3 | 41,400 | 1,819,530 | |
| - Bawah pas.batu merah tidur (stage) t=10 cm | 45.10 | m3 | 41,400 | 1,867,140 | |
| Buangan sisa galian | 3,550.00 | m3 | 3,500 | 12,425,000 | |
| Perataan dan pemadatan | 1.00 | ls | 2,000,000 | 2,000,000 | |
| | | | SUB TOTAL = Rp. | | 77,992,630 |
| PEKERJAAN BETON | | | | | |
| a. Basement | | | | | |
| Beton lantai kerja 1Pc:3Psr:5Krl | 56.28 | m3 | 188,200 | 10,591,896 | |
| Beton Voet plat | 277.66 | m3 | 569,750 | 158,196,785 | |
| Beton pondasi plat ruang luncur lift | 5.92 | m3 | 569,750 | 3,372,920 | |
| Beton sloof struktur | 150.70 | m3 | 775,400 | 116,852,780 | |
| Beton kolom struktur | 94.90 | m3 | 1,197,850 | 113,675,965 | |
| Beton tangga utama (dari basement ke lantai Ground floor). | 10.16 | m3 | 1,069,500 | 10,866,120 | |
| Beton kolom & Balok R. lift. | -- | m3 | -- | -- | |
| Beton dinding ruang lift tebal= 25cm, t=1,00m. | 3.75 | m3 | 840,000 | 3,150,000 | |
| Beton dinding penahan tanah. | 86.40 | m3 | 1,294,100 | 111,810,240 | |
| Beton sloof praktis, 1Pc:2Psr:3Split | 0.20 | m3 | 1,145,000 | 229,000 | |
| Beton kolom praktis, 1Pc:2Psr:3Split | 0.70 | m3 | 1,358,000 | 950,600 | |
| Beton ring/latei praktis, 1Pc:2Psr:3Split | 0.60 | m3 | 1,358,000 | 814,800 | |
| Besi stek lantai P10-20cm, 45 cm | 910.00 | kg | 3,000 | 2,730,000 | |
| | | | SUB TOTAL = Rp. | | 533,241,106 |

ENCANA ANGGARAN BIAYA

LOKASI : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA di PAINGAN

PEKERJAAN : PEMBANGUNAN GEDUNG UTAMA TAHAP I, KAMPUS PAINGAN UNIVERSITAS SANATA DHARMA

LOKASI : DESA PAINGAN KAB. SLEMAN DIY.

Hal. : 2

| No. | JENIS PEKERJAAN | VOLUME | SAT. | HARGA SATUAN Rp. | JUMLAH HARGA Rp. | TOTAL HARGA Rp. |
|---|--|--------|------|------------------|------------------|-----------------|
| <u>b. Ground floor & stage</u> | | | | | | |
| 1 | Beton voet plat teras belakang | 4.50 | m3 | 640,600 | 2,882,700 | |
| 2 | Beton kolom struktur | 97.90 | m3 | 1,197,850 | 117,269,515 | |
| 3 | Beton balok struktur | 198.55 | m3 | 1,189,900 | 236,254,645 | |
| 4 | Beton lisplang | -- | m3 | -- | -- | |
| 5 | Beton plat lantai ground floor | 129.24 | m3 | 816,000 | 105,459,840 | |
| 6 | Beton tangga utama (dari ground floor ke lt.1) | 11.08 | m3 | 1,279,000 | 14,171,320 | |
| 7 | Beton tangga darurat (dari ground floor ke lt.1) | 5.68 | m3 | 1,226,450 | 6,966,236 | |
| 8 | Beton balok & kolom ruang lift | 1.54 | m3 | 1,358,000 | 2,091,320 | |
| 9 | Beton sirip vertikal pipih | 4.60 | m3 | 1,141,100 | 5,249,060 | |
| 0 | Beton sirip jendela | 2.85 | m3 | 1,507,600 | 4,296,660 | |
| 1 | Beton pembungkus pipa talang, 1Pc:2Psr:3Split | 13.48 | m3 | 695,000 | 9,368,600 | |
| 2 | Beton sloof praktis, 1Pc:2Psr:3Split | 1.97 | m3 | 1,145,000 | 2,255,650 | |
| 3 | Beton kolom praktis, 1Pc:2Psr:3Split | 6.70 | m3 | 1,358,000 | 9,098,600 | |
| 4 | Beton ring/latei praktis, 1Pc:2Psr:3Split | 1.90 | m3 | 1,358,000 | 2,580,200 | |
| SUB TOTAL = Rp. | | | | | | 517,944,346 |
| <u>c. Lantai 1 (satu)</u> | | | | | | |
| 1 | Beton kolom struktur | 112.80 | m3 | 1,197,850 | 135,117,480 | |
| 2 | Beton balok struktur | 269.24 | m3 | 1,189,900 | 320,368,676 | |
| 3 | Beton plat lantai 1 | 117.87 | m3 | 816,000 | 96,181,920 | |
| 4 | Beton lisplang | 5.68 | m3 | 1,457,000 | 8,275,760 | |
| 5 | Beton plat atap teras depan & belakang | 38.68 | m3 | 832,850 | 32,214,638 | |
| 6 | Beton tangga utama (dari lt.1 ke lt.2) | 10.35 | m3 | 1,279,000 | 13,237,650 | |
| 7 | Beton tangga darurat (dari lt.1 ke lt.2) | 5.22 | m3 | 1,226,450 | 6,402,069 | |
| 8 | Beton tangga lengkung (dari lt.1 ke lt.2) | 6.34 | m3 | 1,715,350 | 10,875,319 | |
| 9 | Beton balok & kolom ruang lift | 1.42 | m3 | 1,358,000 | 1,928,360 | |
| 0 | Beton sirip vertikal pipih | 4.46 | m3 | 1,141,100 | 5,089,306 | |
| 1 | Beton sirip jendela | 3.00 | m3 | 1,507,600 | 4,522,800 | |
| 2 | Beton pembungkus pipa talang, 1Pc:2Psr:3Split | 7.97 | m3 | 695,000 | 5,539,150 | |
| 3 | Beton kolom praktis, 1Pc:2Psr:3Split | 5.96 | m3 | 1,358,000 | 8,093,680 | |
| 4 | Beton ring/latei praktis, 1Pc:2Psr:3Split | 2.13 | m3 | 1,358,000 | 2,892,540 | |
| SUB TOTAL = Rp. | | | | | | 650,739,348 |
| <u>d. Lantai 2 (dua)</u> | | | | | | |
| 1 | Beton kolom struktur | 88.12 | m3 | 1,197,850 | 105,554,542 | |
| 2 | Beton balok struktur | 194.50 | m3 | 1,189,900 | 231,435,550 | |
| 3 | Beton plat lantai 2 | 120.40 | m3 | 816,000 | 98,246,400 | |
| 4 | Beton lisplang | -- | m3 | -- | -- | |
| 5 | Beton tangga utama (dari lt.2 ke lt.3) | 10.35 | m3 | 1,279,000 | 13,237,650 | |
| 6 | Beton tangga darurat (dari lt.2 ke lt.3) | 5.22 | m3 | 1,226,450 | 6,402,069 | |
| 7 | Beton balok & kolom ruang lift | 1.42 | m3 | 1,358,000 | 1,928,360 | |
| 8 | Beton sirip vertikal pipih | 4.06 | m3 | 1,141,100 | 4,632,866 | |
| 9 | Beton sirip jendela | 3.00 | m3 | 1,507,600 | 4,522,800 | |
| 0 | Beton pembungkus pipa talang, 1Pc:2Psr:3Split | 7.97 | m3 | 695,000 | 5,539,150 | |
| 1 | Beton kolom praktis, 1Pc:2Psr:3Split | 5.96 | m3 | 1,358,000 | 8,093,680 | |
| 2 | Beton ring/latei praktis, 1Pc:2Psr:3Split | 2.30 | m3 | 1,358,000 | 3,123,400 | |
| SUB TOTAL = Rp. | | | | | | 488,716,467 |

ENCANA ANGGARAN BIAYA

LOKASI : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA di PAINGAN
 PEKERJAAN : PEMBANGUNAN GEDUNG UTAMA TAHAP I, KAMPUS PAINGAN UNIVERSITAS SANATA DHARMA
 KAWASAN : DESA PAINGAN KAB. SLEMAN DIY.

Hal. : 3

| JENIS PEKERJAAN | VOLUME | SAT. | HARGA SATUAN Rp. | JUMLAH HARGA Rp. | TOTAL HARGA Rp. |
|--|--------|------|------------------|------------------|-----------------|
| e. Lantai 3 (tiga) | | | | | |
| 1 Beton kolom struktur | 97.90 | m3 | 1,197,850 | 117,269,515 | |
| 2 Beton balok struktur | 185.72 | m3 | 1,189,900 | 220,988,228 | |
| 3 Beton plat lantai 3 | 127.37 | m3 | 816,000 | 103,933,920 | |
| 4 Beton lisplang | -- | m3 | -- | -- | |
| 5 Beton tangga utama (dari lt.3 ke lt.4) | 11.08 | m3 | 1,279,000 | 14,171,320 | |
| 6 Beton tangga darurat (dari lt.3 ke lt.4) | 5.68 | m3 | 1,226,450 | 6,966,236 | |
| 7 Beton balok & kolom ruang lift | 1.54 | m3 | 1,358,000 | 2,091,320 | |
| 8 Beton sirip vertikal pipih | 4.64 | m3 | 1,141,100 | 5,294,704 | |
| 9 Beton sirip jendela | 3.00 | m3 | 1,507,600 | 4,522,800 | |
| 10 Beton pembungkus pipa talang, 1Pc:2Psr:3Split | 8.85 | m3 | 695,000 | 6,150,750 | |
| 11 Beton kolom praktis, 1Pc:2Psr:3Split | 6.47 | m3 | 1,358,000 | 8,786,260 | |
| 12 Beton ring/latei praktis, 1Pc:2Psr:3Split | 2.26 | m3 | 1,358,000 | 3,069,080 | |
| SUB TOTAL = Rp. | | | | | 493,244,133 |
| f. Lantai 4 (empat) | | | | | |
| Beton kolom struktur | 105.6 | m3 | 1,197,850 | 126,492,960 | |
| Beton balok struktur | 220.11 | m3 | 1,189,900 | 261,908,889 | |
| Beton plat lantai 4 | 141.16 | m3 | 816,000 | 115,186,560 | |
| Beton balok & kolom ruang lift | 1.88 | m3 | 1,358,000 | 2,553,040 | |
| Beton sirip vertikal pipih 10/80 | 39.26 | m3 | 1,141,100 | 44,799,586 | |
| Beton sirip vertikal pipih 30/120 | 11.98 | m3 | 975,000 | 11,680,500 | |
| Beton sirip jendela | -- | m3 | -- | -- | |
| Beton pembungkus pipa talang, 1Pc:2Psr:3Split | 13.63 | m3 | 695,000 | 9,472,850 | |
| Beton kolom praktis, 1Pc:2Psr:3Split | 3.65 | m3 | 1,358,000 | 4,956,700 | |
| Beton ring/latei praktis, 1Pc:2Psr:3Split | 7.28 | m3 | 1,358,000 | 9,886,240 | |
| SUB TOTAL = Rp. | | | | | 586,937,325 |
| g. Lantai Atap | | | | | |
| Beton kolom struktur | 18.05 | m3 | 1,032,200 | 18,631,210 | |
| Beton balok struktur | 60.48 | m3 | 1,207,000 | 72,999,360 | |
| Beton balok ring struktur | 40.24 | m3 | 1,134,100 | 45,636,184 | |
| Beton plat lantai atap & atap lift | 50.67 | m3 | 851,000 | 43,120,170 | |
| Beton lisplang - atap | 6.56 | m3 | 1,415,350 | 9,284,696 | |
| Beton kolom & balok atap ruang lift | 5.23 | m3 | 1,465,700 | 7,665,611 | |
| SUB TOTAL = Rp. | | | | | 197,337,231 |
| PEKERJAAN PASANGAN & PLESTERAN | | | | | |
| a. Basement | | | | | |
| Pasang pondasi stal batu kali 1Pc:5Psr | 28.30 | m3 | 134,800 | 3,814,840 | |
| Pasang pondasi batu kali (umpak) 1Pc:4Psr | 11.60 | m3 | 134,800 | 1,563,680 | |
| Pas.bt.kali turap jalan masuk basement 1Pc:5Psr | 39.50 | m3 | 134,800 | 5,324,600 | |
| Pasang batu merah biasa 1Pc:4Psr | 101.70 | m2 | 21,000 | 2,135,700 | |
| Pasang batu merah trasraam 1Pc:2Psr | 6.50 | m2 | 24,000 | 156,000 | |
| Plesteran dinding biasa 1Pc:4Psr | 203.40 | m2 | 8,300 | 1,688,220 | |
| Plesteran trasraam 1Pc:2Psr | 13.00 | m2 | 10,200 | 132,600 | 67 |

ENCANA ANGGARAN BIAYA

ROYEK : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA di PAINGAN
 PEKERJAAN : PEMBANGUNAN GEDUNG UTAMA TAHAP I, KAMPUS PAINGAN UNIVERSITAS SANATA DHARMA
 KASASI : DESA PAINGAN KAB. SLEMAN DIY.

Hal. : 4

| o. | JENIS PEKERJAAN | VOLUME | SAT. | HARGA SATUAN Rp. | JUMLAH HARGA Rp. | TOTAL HARGA Rp. |
|---|---|----------|------|------------------|------------------|-----------------|
| 8 | Plesteran beton 1Pc:3Psr | 2,947.00 | m2 | 6,500 | 19,155,500 | |
| 9 | Plesteran sudut/sponengan 1Pc:3Psr | 1,998.80 | m' | 1,200 | 2,398,560 | |
| 10 | Siar dalam (turap jalan masuk basement) 1Pc:2Psr. | 45.00 | m2 | 8,500 | 382,500 | |
| SUB TOTAL = Rp. | | | | | | 36,752,200 |
| <u>b. Ground floor & teras</u> | | | | | | |
| 1 | Pasang pondasi staa batu kali 1Pc:5Psr | 217.00 | m3 | 134,800 | 29,251,600 | |
| 2 | Pasang rollag stage 1Pc:3Psr, t= 10cm | 22.80 | m3 | 220,000 | 5,016,000 | |
| 3 | Pas.batu merah alas lt.terras 1Pc:4Psr, t= 5cm | 22.60 | m3 | 240,000 | 5,424,000 | |
| 4 | Pasang batu merah biasa 1Pc:4Psr | 749.10 | m2 | 21,000 | 15,731,100 | |
| 5 | Pasang batu merah trasraam 1Pc:2Psr | 85.50 | m2 | 24,000 | 2,052,000 | |
| 6 | Plesteran dinding biasa 1Pc:4Psr | 1,139.40 | m2 | 8,300 | 9,457,020 | |
| 7 | Plesteran trasraam 1Pc:2Psr | 53.40 | m2 | 10,200 | 544,680 | |
| | Plesteran beton 1Pc:3Psr | 1,015.00 | m2 | 6,500 | 6,597,500 | |
| | Plesteran sudut/sponengan 1Pc:3Psr | 1,782.30 | m' | 1,200 | 2,138,760 | |
| | Plester batu merah tidak diaci 1Pc:4Psr | 326.40 | m2 | 6,500 | 2,121,600 | |
| | Siar dalam (pas.batu kali trap tangga) 1Pc:2Psr | 46.00 | m2 | 8,500 | 391,000 | |
| SUB TOTAL = Rp. | | | | | | 78,725,260 |
| <u>c. Lantai 1 (satu)</u> | | | | | | |
| | Pasang batu merah biasa 1Pc:4Psr | 622.10 | m2 | 21,000 | 13,064,100 | |
| | Pasang batu merah trasraam 1Pc:2Psr | 77.60 | m2 | 24,000 | 1,862,400 | |
| | Plesteran dinding biasa 1Pc:4Psr | 917.40 | m2 | 8,300 | 7,614,420 | |
| | Plesteran trasraam 1Pc:2Psr | 37.60 | m2 | 10,200 | 383,520 | |
| | Plesteran beton 1Pc:3Psr | 1,182.90 | m2 | 6,500 | 7,638,850 | |
| | Plesteran sudut/sponengan 1Pc:3Psr | 1,942.30 | m' | 1,200 | 2,330,760 | |
| | Plest. batu merah tidak diaci 1Pc:4Psr | 294.40 | m2 | 6,500 | 1,913,600 | |
| SUB TOTAL = Rp. | | | | | | 34,857,650 |
| <u>d. Lantai 2 (dua)</u> | | | | | | |
| | Pasang batu merah biasa 1Pc:4Psr | 599.30 | m2 | 21,000 | 12,585,300 | |
| | Pasang batu merah trasraam 1Pc:2Psr | 78.90 | m2 | 24,000 | 1,893,600 | |
| | Plesteran dinding biasa 1Pc:4Psr | 871.80 | m2 | 8,300 | 7,235,940 | |
| | Plesteran trasraam 1Pc:2Psr | 40.20 | m2 | 10,200 | 410,040 | |
| | Plesteran beton 1Pc:3Psr | 871.00 | m2 | 6,500 | 5,661,500 | |
| | Plesteran sudut/sponengan 1Pc:3Psr | 1,627.10 | m' | 1,200 | 1,952,520 | |
| | Plest. batu merah tidak diaci 1Pc:4Psr | 294.40 | m2 | 6,500 | 1,913,600 | |
| SUB TOTAL = Rp. | | | | | | 31,652,500 |
| <u>e. Lantai 3 (tiga)</u> | | | | | | |
| | Pasang batu merah biasa 1Pc:4Psr | 693.00 | m2 | 21,000 | 14,553,000 | |
| | Pasang batu merah trasraam 1Pc:2Psr | 78.90 | m2 | 24,000 | 1,893,600 | |
| | Plesteran dinding biasa 1Pc:4Psr | 1,017.70 | m2 | 8,300 | 8,446,910 | |
| | Plesteran trasraam 1Pc:2Psr | 40.20 | m2 | 10,200 | 410,040 | |
| | Plesteran beton 1Pc:3Psr | 945.50 | m2 | 6,500 | 6,145,750 | |
| | Plesteran sudut/sponengan 1Pc:3Psr | 1,717.10 | m' | 1,200 | 2,060,520 | |
| | Plest. batu merah tidak diaci 1Pc:4Psr | 335.90 | m2 | 6,500 | 2,183,350 | |
| SUB TOTAL = Rp. | | | | | | 35,683,170 |

RENCANA ANGGARAN BIAYA

LOKASI : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA di PAINGAN
 PROYEK : PEMBANGUNAN GEDUNG UTAMA TAHAP I, KAMPUS PAINGAN UNIVERSITAS SANATA DHARMA
 DESA : DESA PAINGAN KAB. SLEMAN DIY.

Hal. : 5

| JENIS PEKERJAAN | VOLUME | SAT. | HARGA SATUAN Rp. | JUMLAH HARGA Rp. | TOTAL HARGA Rp. |
|---|-----------|------|------------------|------------------|-----------------|
| f. Lantai 4 (empat) | | | | | |
| Pasang batu merah biasa 1Pc:4Psr | 1,022.80 | m2 | 21,000 | 21,478,800 | |
| Pasang batu merah trasraam 1Pc:2Psr | 64.50 | m2 | 24,000 | 1,548,000 | |
| Plesteran dinding biasa 1Pc:4Psr | 2,013.20 | m2 | 8,300 | 16,709,560 | |
| Plesteran trasraam 1Pc:2Psr | 11.40 | m2 | 10,200 | 116,280 | |
| Plesteran beton 1Pc:3Psr | 1,239.40 | m2 | 6,500 | 8,056,100 | |
| Plesteran sudut/sponengan 1Pc:3Psr | 2,505.90 | m' | 1,200 | 3,007,080 | |
| SUB TOTAL = Rp. | | | | | 50,915,820 |
| g. Lantai Atap | | | | | |
| Pasang batu merah biasa 1Pc:4Psr | 204.70 | m2 | 21,000 | 4,298,700 | |
| Pasang batu merah trasraam 1Pc:2Psr | 31.70 | m2 | 24,000 | 760,800 | |
| Plesteran dinding biasa 1Pc:4Psr | 409.40 | m2 | 8,300 | 3,398,020 | |
| Plesteran trasraam 1Pc:2Psr | 63.40 | m2 | 10,200 | 646,680 | |
| Plesteran beton 1Pc:3Psr | 242.00 | m2 | 6,500 | 1,573,000 | |
| Plesteran sudut/sponengan 1Pc:3Psr | 725.00 | m' | 1,200 | 870,000 | |
| SUB TOTAL = Rp. | | | | | 11,547,200 |
| PEKERJAAN RANGKA ATAP | | | | | |
| Kuda-kuda baja besi siku + ikatan angin | 38,170.00 | kg | 4,950 | 188,941,500 | |
| Baut kuda-kuda | 12,632.00 | bh | 2,250 | 28,422,000 | |
| Plat simpul & kopel kuda-kuda t= 10 mm | 12,890.00 | kg | 4,950 | 63,805,500 | |
| Plat tumpuan (sendi-rol) t=12 mm, t=8 mm | 2,970.00 | kg | 4,950 | 14,701,500 | |
| Angkur tumpuan kuda-kuda dia. 5/8" | 291.00 | bh | 15,000 | 4,365,000 | |
| Bordring, Nok, Jurai 2 CNP 150.50.20.3,2 | 10,480.00 | kg | 4,600 | 48,208,000 | |
| Ikatan angin horisontal besi beton P16 mm | 1,050.00 | kg | 4,600 | 4,830,000 | |
| Magrod besi beton | 1,160.00 | kg | 4,600 | 5,336,000 | |
| Vater mur dia. 5/8" | 24.00 | bh | 25,000 | 600,000 | |
| Angkur untuk konsol dia. 1/2" | 544.00 | bh | 10,000 | 5,440,000 | |
| Plat GIP dia. 4" | 780.00 | kg | 7,500 | 5,850,000 | |
| Budukan kaso plat strip | 2,324.00 | bh | 1,250 | 2,905,000 | |
| SUB TOTAL = Rp. | | | | | 373,404,500 |
| PEKERJAAN PENUTUP ATAP | | | | | |
| Plat 5/7 bangkirai dan reng jati 3/4 | 1,993.00 | m2 | 43,500 | 86,695,500 | |
| Plat rafter 2/20 kayu jati | 163.00 | m' | 27,700 | 4,515,100 | |
| Plat listplank kayu jati 2 x 2, 5/20 | 336.00 | m' | 85,000 | 28,560,000 | |
| Pemasangan atap genteng keramik (upah) | 1,993.00 | m2 | 3,750 | 7,473,750 | |
| Pemasangan kerpus keramik (spesi & upah) | 163.00 | m' | 16,300 | 2,656,900 | |
| Penguatan listplank kayu bangkirai 5/7 | 1.72 | m3 | 2,150,000 | 3,698,000 | |
| SUB TOTAL = Rp. | | | | | 133,599,250 |

ENCANA ANGGARAN BIAYA

LOKASI : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA di PAINGAN

PEKERJAAN : PEMBANGUNAN GEDUNG UTAMA TAHAP I, KAMPUS PAINGAN UNIVERSITAS SANATA DHARMA

LOKASI : DESA PAINGAN KAB. SLEMAN DIY.

Hal. : 6

| No. | JENIS PEKERJAAN | VOLUME | SAT. | HARGA SATUAN Rp. | JUMLAH HARGA Rp. | TOTAL HARGA Rp. |
|------------------------------------|--|-----------|------|---------------------|---------------------|--------------------|
| PEKERJAAN SALURAN AIR HUJAN | | | | | | |
| 1 | Papan talang kiel kayu bangkirai | 40.00 | m' | 56,000 | 2,240,000 | |
| 2 | Talang kiel seng BJLS 50 | 40.00 | m' | 40,000 | 1,600,000 | |
| 3 | Saluran air hujan | | | | | |
| | - Pipa PVC 3" Wavin AW | 940.00 | m' | 19,500 | 18,330,000 | |
| | - Pipa GIP 3" Medium B | 330.00 | m' | 40,000 | 13,200,000 | |
| | - Assesoris | 1.00 | ls | 2,750,000 | 2,750,000 | |
| 4 | Strainer / Roof drain besi cor dia.3" | 50.00 | bh | 65,000 | 3,250,000 | |
| 5 | Bak kontrol saluran air hujan | 19.00 | unit | 95,000 | 1,805,000 | |
| 6 | Saluran air hujan tertutup dalam tanah (buis beton dia. 40 cm). | 61.00 | m' | 37,000 | 2,257,000 | |
| | | | | | SUB TOTAL = Rp. | 45,432,000 |
| PEKERJAAN CAT | | | | | | |
| | Cat meni kayu papan talang (Patna) | 67.20 | m2 | 2,500 | 168,000 | |
| | Cat meni kayu lisplang (Patna) | 252.00 | m2 | 2,500 | 630,000 | |
| | Cat kayu untuk lisplang (ICI Super gloss) | 168.00 | m2 | 22,500 | 3,780,000 | |
| | Cat Zinchromate seng talang (Nippon Paint) | 64.00 | m2 | 4,500 | 288,000 | |
| | Cat Zinchromate rangka baja (Nippon Paint) | 67,500.00 | kg | 350 | 23,625,000 | |
| | Cat meni kayu perkuatan lisplang | 117.50 | m2 | 2,500 | 293,750 | |
| | | | | | SUB TOTAL = Rp. | 28,784,750 |
| PEKERJAAN PENANGKAL PETIR | | | | | | |
| | Elektrostatic system E.F. lengkap dengan ardenya. | 1.00 | unit | 50,000,000 | 50,000,000 | |
| | | | | | SUB TOTAL = Rp. | 50,000,000 |
| PEKERJAAN LAIN-LAIN | | | | | | |
| | Waterproofing Sika type 107 Seal (3kg/m2) | | | | | |
| | - Plat & luifel beton lantai atap (+ Plesteran 1:3) | 616.40 | m2 | 58,500 | 36,059,400 | |
| | - Plat atap teras (+ plesteran 1:3) | 467.90 | m2 | 58,500 | 27,372,150 | |
| | - Plat atap ruang lift (+ plesteran 1:3) | 25.90 | m2 | 58,500 | 1,515,150 | |
| | - Sisi luar dinding beton basement (+ plesteran 1:3). | 670.00 | m2 | 58,500 | 39,195,000 | |
| | Tangga besi (dari lt.4 ke R.Mesin lift) | 1.00 | unit | 4,000,000 | 4,000,000 | |
| | Tangga besi (dari R.Mesin lift ke plat atap) | 1.00 | unit | 1,500,000 | 1,500,000 | |
| | Cross ventilation (roster + kasa) | 10.00 | unit | 120,000 | 1,200,000 | |
| | Pembersihan kembali | 1.00 | ls | 2,500,000 | 2,500,000 | |
| | | | | | SUB TOTAL = Rp. | 113,341,700 |

Data Proyek Pembangunan Gedung Utama Tahap I, Universitas Sanata Dharma, Yogyakarta

| Jenis Pekerjaan | Nilai (Rp) | Volume | Durasi (hari) |
|--|-------------|-------------|---------------|
| I. PEKERJAAN PERSIAPAN | | | |
| Pagar, Keet, Papan Nama, Pembersihan Mobilisasi, Security, dan Air Kerja | 37,480,000 | 1.00 ls | 24 |
| | 23,580,000 | 1.00 ls | 245 |
| II. PEKERJAAN TANAH & PASIR | | | |
| Galian + Buang Galian | 59,131,400 | 8,740.00 m3 | 15 |
| Pasir Urug | 7,015,230 | 169.00 m3 | 24 |
| Urug Kembali | 11,846,000 | 1,641.00 m3 | 39 |
| III. PEKERJAAN BETON | | | |
| a. Basement | | | |
| Lantai Kerja | 10,591,896 | 56.28 m3 | 18 |
| Voet Plat + Sloof | 278,422,485 | 434.28 m3 | 29 |
| Dinding + Kolom + D.R. Lift + Besi Stek | 231,366,205 | 185.05 m3 | 30 |
| Tangga | 10,866,120 | 10.16 m3 | 6 |
| Beton Praktis | 1,994,400 | 1.50 m3 | 20 |
| b. Ground Floor & Stage | | | |
| Voet Plat Stage | 2,882,700 | 4.50 m3 | 9 |
| Balok & Plat Struktur | 343,805,805 | 329.33 m3 | 27 |
| Kolom + Kolom Pipih | 126,815,235 | 105.35 m3 | 36 |
| Tangga | 21,137,556 | 16.67 m3 | 18 |
| Pertebalan Kolom + Beton Praktis | 23,303,050 | 24.05 m3 | 24 |
| c. Lantai 1 | | | |
| Balok & Plat Struktur + Lisplank | 457,040,994 | 431.47 m3 | 30 |
| Kolom + Kolom Pipih | 146,657,946 | 121.68 m3 | 35 |
| Tangga | 30,515,038 | 21.91 m3 | 51 |
| Pertebalan Kolom + Beton Praktis | 16,525,370 | 16.06 m3 | 23 |
| d. Lantai 2 | | | |
| Balok & Plat Struktur + Lisplank | 329,681,950 | 314.90 m3 | 39 |
| Kolom + Kolom Pipih + Sirip Jendela | 116,638,568 | 96.60 m3 | 35 |
| Tangga | 19,639,719 | 15.57 m3 | 23 |
| Pertebalan Kolom + Beton Praktis | 16756230 | 16.23 m3 | 21 |
| e. Lantai 3 | | | |
| Balok & Plat Struktur | 324,922,148 | 313.09 m3 | 38 |
| Kolom + Kolom Pipih + Sirip Jendela | 129,178,339 | 107.08 m3 | 35 |
| Tangga | 21,137,556 | 16.76 m3 | 23 |
| Pertebalan Kolom + Beton Praktis | 18,006,090 | 17.58 m3 | 24 |
| f. Lantai 4 | | | |
| Balok & Plat Struktur | 377,095,449 | 361.27 m3 | 39 |
| Kolom + Kolom Pipih + Sirip Jendela | 185,526,086 | 158.72 m3 | 42 |
| Pertebalan Kolom + Beton Praktis | 24,315,790 | 24.56 m3 | 20 |
| g. Lantai Atap | | | |
| Balok & Plat Struktur | 171,040,410 | 157.95 m3 | 31 |
| Kolom + Kolom Pipih | 26,296,821 | 23.28 m3 | 15 |
| IV. PEKERJAAN PLESTERAN & PASANGAN | | | |
| a. Basement | | | |
| Pasangan Batu Kali (Tahap 1) | 3,814,840 | 28.30 m3 | 9 |
| Pasangan Batu Kali (Tahap 2) | 5,324,600 | 39.50 m3 | 17 |
| Pasangan Batu Kali (Tahap 3) | 1,563,680 | 11.60 m3 | 9 |
| Pasangan Bata Merah | 2,291,700 | 108.20 m2 | 6 |
| Plesteran Bata Merah | 1,820,820 | 216.40 m2 | 27 |
| Plesteran Beton | 21,554,060 | 3,316.01 m2 | 30 |
| Siar Dalam Turap | 382,500 | 45.00 m2 | 12 |
| b. Ground Floor & Stage | | | |
| Pasangan Batu Kali Ground Floor (Tahap 1) | 14,625,800 | 108.50 m3 | 27 |
| Pasangan Batu Kali Ground Floor (Tahap 2) | 14,625,800 | 108.50 m3 | 27 |

| | | | |
|--------------------------------------|----------------------|--------------|----|
| Roflag dan Penutup Teras | 10,440,000 | 45.40 m3 | 18 |
| Pasangan Bata Merah | 17,783,100 | 843.60 m2 | 18 |
| Plesteran Bata Merah | 12,123,300 | 1,519.20 m2 | 24 |
| Plesteran Beton | 8,736,260 | 1,344.04 m2 | 29 |
| Siar Dalam Ps. Batu Kali | 391,000 | 46.00 m2 | 6 |
| c. Lantai 1 | | | |
| Pasangan Bata Merah | 14,926,500 | 699.70 m2 | 18 |
| Plesteran Bata Merah | 9,911,540 | 1,249.40 m2 | 30 |
| Plesteran Beton | 10,019,610 | 1,541.48 m2 | 30 |
| d. Lantai 2 | | | |
| Pasangan Bata Merah | 14,478,900 | 678.20 m2 | 24 |
| Plesteran Bata Merah | 9,559,580 | 1,249.40 m2 | 21 |
| Plesteran Beton | 7,614,020 | 1,171.39 m2 | 30 |
| e. Lantai 3 | | | |
| Pasangan Bata Merah | 16,446,600 | 771.90 m2 | 20 |
| Plesteran Bata Merah | 11,040,300 | 1,393.80 m2 | 30 |
| Plesteran Beton | 8,206,270 | 1,262.50 m2 | 29 |
| f. Lantai 4 | | | |
| Pasangan Bata Merah | 23,026,800 | 1,087.30 m2 | 24 |
| Plesteran Bata Merah | 16,825,840 | 2,024.60 m2 | 27 |
| Plesteran Beton | 11,063,180 | 1,702.03 m2 | 30 |
| g. Lantai Atap | | | |
| Pasangan Bata Merah | 5,059,500 | 236.40 m2 | 15 |
| Plesteran Bata Merah | 4,044,700 | 472.80 m2 | 26 |
| Plesteran Beton | 2,443,000 | 375.85 m2 | 26 |
| V. PEKERJAAN RANGKA ATAP | 373,404,500 | 38,170.00 kg | 27 |
| VI. PEKERJAAN PENUTUP ATAP | 133,599,250 | 1,993.00 m2 | 44 |
| VII. PEKERJAAN SAL. AIR HUJAN | 45,432,000 | 1,270.00 m' | 66 |
| VIII. PEKERJAAN CAT | 28,784,750 | 668.70 m2 | 47 |
| IX. PEKERJAAN PENANGKAL PETIR | 50,000,000 | 1.00 unit | 41 |
| X. PEKERJAAN LAIN-LAIN | | | |
| Waterprofing (Tahap 1) | 39,195,000 | 670.00 m2 | 23 |
| Waterprofing (Tahap 2) | 27,372,150 | 467.90 m2 | 14 |
| Waterprofing (Tahap 3) | 37,574,550 | 642.30 m2 | 12 |
| Tangga Besi | 5,500,000 | 2.00 unit | 18 |
| Cross Ventilation | 1,200,000 | 10.00 unit | 8 |
| Pembersihan Kembali | 2,500,000 | 1.00 ls | 18 |
| Grand Total : | 4,625,918,586 | | |



P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

BENCANA ANGGARAN BIAYA - SELASAR PENGHUBUNG

halaman : 03

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|-----------|--|-----------------------|------------------------|------------------------|-----------------------|
| B. | <u>LANTAI. 2 (DUA) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 7,09 m ² | 6.306,00 | 44.709,54 | |
| 2. | Plesteran beton 1:3 | 134,45 m ² | 6.907,00 | 928.646,15 | |
| 3. | Plesteran dinding 1:4 | 119,79 m ² | 5.553,00 | 665.193,87 | |
| 4. | Plesteran sudut 1:3 | 567,36 m' | 1.144,75 | 649.485,36 | |
| 5. | Acian plat lantai | 45,17 m ² | 4.000,00 | 180.680,00 | |
| | | | | | 2.468.714,92 |
| C. | <u>LANTAI. 3 (TIGA) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 7,09 m ² | 6.306,00 | 44.709,54 | |
| 2. | Plesteran beton 1:3 | 134,45 m ² | 6.907,00 | 928.646,15 | |
| 3. | Plesteran dinding 1:4 | 119,79 m ² | 5.553,00 | 665.193,87 | |
| 4. | Plesteran sudut 1:3 | 567,36 m' | 1.144,75 | 649.485,36 | |
| 5. | Acian plat lantai | 45,17 m ² | 4.000,00 | 180.680,00 | |
| | | | | | 2.468.714,92 |
| D. | <u>LANTAI. 4 (EMPAT) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 7,09 m ² | 6.306,00 | 44.709,54 | |
| 2. | Plesteran beton 1:3 | 113,74 m ² | 6.907,00 | 785.602,18 | |
| 3. | Plesteran dinding 1:4 | 119,79 m ² | 5.553,00 | 665.193,87 | |
| 4. | Plesteran sudut 1:3 | 504,36 m' | 1.144,75 | 577.366,11 | |
| 5. | Acian plat lantai | 45,17 m ² | 4.000,00 | 180.680,00 | |
| | | | | | 2.253.551,70 |
| E. | <u>PEKERJAAN RANGKA VARIASI :</u> | | | | |
| 1. | Rangka variasi dari pipa GIP | 3206 kg | 7.000,00 | 22.442.000,00 | |
| 2. | Angkur baut tumpuan ø 19mm (4bh per tumpuan) | 48 kg | 7.500,00 | 360.000,00 | |
| 3. | Plat tumpuan t=12mm | 0,72 m ² | 400.000,00 | 288.000,00 | |
| 4. | Meni Zinchromate | 92,46 m ² | 2.000,00 | 184.920,00 | |
| | | | | | 23.274.920,00 |
| F. | <u>PEKERJAAN TALANG :</u> | | | | |
| 1. | Talang vertikal PVC ø 4" | 142 m' | 40.145,00 | 5.700.590,00 | |
| 2. | Knee FVC 4" | 32 bh | 85.000,00 | 2.720.000,00 | |
| 3. | Tee PVC 4" | 0 bh | 85.000,00 | 0,00 | |
| 4. | Saringan talang (roof drain) | 8 bh | 60.000,00 | 480.000,00 | |
| 5. | Cor beton pelapis talang vertikal | 6,79 m ³ | 298.585,00 | 2.027.392,15 | |
| | | | | | 10.927.982,15 |

P.T. SEKAWAN TRIASA



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Lampiran 2

**Data proyek pembangunan Gedung Kuliah Unit 3, Unit 4
dan Selasar Penghubung, Universitas Sanata Dharma,
Yogyakarta, Tahun 1998, PT. Sekawan Triasa**

P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 SURABAYA (60293)

INSYENIR, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

REKAPITULASI TOTAL

PROYEK : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
LOKASI : DESA PAINGAN KAB. SLEMAN - DIY

| NO. | URAIAN PEKERJAAN | TOTAL HARGA (Rp.) |
|-----|-------------------------------------|------------------------|
| A. | PEKERJAAN PERSIAPAN | 21.210.000,00 |
| B. | PEKERJAAN GEDUNG KULIAH UNIT 3 | 1.578.769.851,12 |
| C. | PEKERJAAN GEDUNG KULIAH UNIT 4 | 2.583.378.940,83 |
| D. | PEKERJAAN GEDUNG SELASAR PENGHUBUNG | 172.666.823,07 |
| | JUMLAH NOMINAL | 4.356.025.615,02 |
| | JASA & RESIKO 7 1/2 % | 326.701.921,13 |
| | JUMLAH | 4.682.727.536,15 |
| | PPN 10 % | 468.272.753,62 |
| | JUMLAH TOTAL | 5.151.000.289,77 |
| | DIBULATKAN | 5.151.000.000,00 |

Terbilang

LIMA MILYAR SERATUS LIMA PULUH SATU JUTA RUPIAH

Semarang, 07 September 1998

PT. SEKAWAN TRIASA
beringin 1/25/98

P.T. SEKAWAN TRIASA

Ir. ANDRIANUS ANGGAPUTRA
Direktur Utama.



P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA

P R O Y E K : PENGENBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
A. SUB PEKERJAAN : P E R S I A P A N
L O K A S I : DESA PAINGAN KAB. SLEMAN - DIY

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|-----|------------------------------|---------------------|-------------------------|-------------------------|------------------------|
| 1. | Pembersihan lapangan | 2000 m ² | 250,00 | 500.000,00 | |
| 2. | Pagar pengaman proyek | 200 m' | 12.500,00 | 2.500.000,00 | |
| 3. | Direksi keet dan ruang rapat | 90 m ² | 50.000,00 | 4.500.000,00 | |
| 4. | Asuransi dan Administrasi | 1 ls | 10.000.000,00 | 10.000.000,00 | |
| 5. | Air & listrik kerja | 1 ls | 1.500.000,00 | 1.500.000,00 | |
| 6. | Uitzet dan bouwplank : | | | | |
| a. | Gedung Kuliah Unit 3 | 155 m' | 5.000,00 | 775.000,00 | |
| b. | Gedung Kuliah Unit 4 | 211 m' | 5.000,00 | 1.055.000,00 | |
| c. | Bangunan selasar penghubung | 76 m' | 5.000,00 | 380.000,00 | |

TOTAL - PEKERJAAN PERSIAPAN



PERPUSTAKAAN
PROGRAM MAGISTER TEKNIK
UNIVERSITAS ATMA JAYA
YOGYAKARTA

21.216.000,00



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PEKERJAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

REKAPITULASI

P R O Y E K : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
B. SUB PEKERJAAN : GEDUNG KULIAH UNIT 3 - LUAS LANTAI = 2.298 M²
L O K A S I : DESA PAINGAN KAB. SLEMAN - DIY

| NO. | URAIAN PEKERJAAN | JUMLAH HARGA (Rp.) |
|-------|---|-------------------------|
| I. | PEKERJAAN TANAH & PASIR | 30.306.995,00 |
| II. | PEKERJAAN BETON BERTULANG : | |
| | A. LANTAI. 1 (SATU) | 370.103.271,60 |
| | B. LANTAI. 2 (DUA) | 244.165.736,72 |
| | C. LANTAI. 3 (TIGA) | 244.165.736,72 |
| | D. LANTAI. 4 (EMPAT) | 209.015.178,89 |
| | | 1.067.449.923,93 |
| III. | PEKERJAAN PASANGAN BATU : | |
| | A. LANTAI. 1 (SATU) | 10.226.222,88 |
| | B. LANTAI. 2 (DUA) | 5.187.334,01 |
| | C. LANTAI. 3 (TIGA) | 5.252.964,56 |
| | D. LANTAI. 4 (EMPAT) | 5.894.706,79 |
| | | 26.561.228,24 |
| IV. | PEKERJAAN PLESTERAN : | |
| | A. LANTAI. 1 (SATU) | 12.052.674,29 |
| | B. LANTAI. 2 (DUA) | 11.929.382,20 |
| | C. LANTAI. 3 (TIGA) | 12.011.916,48 |
| | D. LANTAI. 4 (EMPAT) | 10.386.647,93 |
| | | 46.380.620,90 |
| V. | PEKERJAAN ATAP DAN PENUTUP ATAP | 307.699.237,55 |
| VI. | PEKERJAAN TALANG DAN SENG | 49.163.745,50 |
| VII. | PEKERJAAN CAT-CATAN | 27.370.100,00 |
| VIII. | PEKERJAAN PENANGKAL PETIR | 20.461.000,00 |
| IX. | PEKERJAAN LAIN-LAIN | 3.377.000,00 |
| B. | SUB JUMLAH PEKERJAAN GEDUNG KULIAH UNIT 3 | 1.578.769.851,12 |

P.T. SEKAWAN TRIASA

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KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

KELOMPOK USAHA : PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA

P R O Y E K : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
SUB PEKERJAAN : GEDUNG KULIAH UNIT 3 - LUAS LANTAI = 2.298 M²
L O K A S I : DESA PAINGAN KAB. SLEMAN - DIY
halaman : 01 5

| URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|--|--|------------------------|------------------------|-----------------------|
| PEKERJAAN TANAH & PASIR : | | | | |
| Galian tanah muka tanah rencana | 548,43 m ³ | 5.500,00 | 3.016.365,00 | |
| Galian tanah pondasi continous | 2154,04 m ³ | 5.500,00 | 11.847.220,00 | |
| Galian tanah pondasi staaI | 280,36 m ³ | 5.500,00 | 1.541.980,00 | |
| Galian tanah sloof (S) | 78,59 m ³ | 5.500,00 | 432.245,00 | |
| Urugan tanah kembali (sisa galian pondasi) | 2153,31 m ³ | 4.000,00 | 8.613.240,00 | |
| Urugan tanah bawah lantai | -----> TIDAK ADA URUGAN TANAH BAWAH LANTAI | | | |
| Urugan pasir : | | | | |
| a. Bawah lantai kerja t=10cm | 43,77 m ³ | 20.250,00 | 886.342,50 | |
| b. Bawah pondasi staaI t=10cm | 16,65 m ³ | 20.250,00 | 337.162,50 | |
| Perataan tanah sisa galian | 908,11 m ³ | 4.000,00 | 3.632.440,00 | |
| | | | | 30.306.995,00 |
| PEKERJAAN BETON BERTULANG : | | | | |
| LANTAI, 1 (SATU) : | | | | |
| Lantai kerja 1Pc:3Psr:5Kr1 | 30,04 m ³ | 127.396,00 | 3.826.975,84 | |
| Beton voet plat Continous | 113,69 m ³ | 540.906,25 | 61.495.631,56 | |
| Beton balok pondasi continous | 25,85 m ³ | 2.298.700,00 | 59.421.395,00 | |
| Beton sloof struktur (S) | 15,45 m ³ | 1.333.712,50 | 20.605.858,13 | |
| Beton sloof praktis | 5,45 m ³ | 1.218.967,00 | 6.643.370,15 | |
| Kolom struktur | 81,68 m ³ | 2.233.637,50 | 182.443.511,00 | |
| Beton Konsol (KB1 + KB2) | 4,25 m ³ | 1.966.635,25 | 8.358.199,81 | |
| Plat topi-topi (tutup genteng) | 12,71 m ³ | 928.852,25 | 11.805.712,10 | |
| Beton tangga (dari It1 ke It2) | 4,92 m ³ | 1.238.646,75 | 6.094.142,01 | |
| Balok bordes | 0,29 m ³ | 2.353.018,75 | 682.375,44 | |
| Plat balustrade | 2,83 m ³ | 1.240.750,00 | 3.511.322,50 | |
| Kolom praktis 1Pc:2Psr:3Splt | 1,02 m ³ | 1.360.735,00 | 1.387.949,70 | |
| Balok latei 1Pc:2Psr:3Splt | 2,33 m ³ | 1.250.597,50 | 2.913.892,18 | |
| Ring balok praktis 1Pc:2Psr:3Splt | 0,73 m ³ | 1.250.597,50 | 912.936,18 | |
| | | | | 370.103.271,60 |

P.T. SEKAWAN TRIASA



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AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

B. RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 3

halaman : 02

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|--------------------------------------|--------------------------------------|--|-------------------------|-------------------------|------------------------|
| B. <u>LANTAI. 2 (DUA) :</u> | | | | | |
| 1. | Kolom struktur | 42,35 m ³ | 2.122.712,50 | 89.896.874,38 | |
| 2. | Balok lantai lt.2 | 32,62 m ³ | 2.037.287,50 | 66.456.318,25 | |
| 3. | Plat lantai lt.2 | 65,43 m ³ | 782.002,25 | 51.166.407,22 | |
| 4. | Plat topi-topi (tutup genteng) | 12,71 m ³ | 928.852,25 | 11.805.712,10 | |
| 5. | Beton tangga (dari lt2 ke lt3) | 4,08 m ³ | 1.238.646,75 | 5.053.678,74 | |
| 6. | Balok bordes | 0,29 m ³ | 2.353.018,75 | 682.375,44 | |
| 7. | Plat balustrade | 2,83 m ³ | 1.240.750,00 | 3.511.322,50 | |
| 8. | Beton Konsol tritis (KB1 + KB2) | 4,25 m ³ | 1.966.635,25 | 8.358.199,81 | |
| 9. | Kolom KP 1Pc:2Psr:3Spl | -----> TIDAK ADA KOLOM KP, DI LANTAI 2 | | | |
| 10. | Kolom praktis 1Pc:2Psr:3Spl | 1,08 m ³ | 1.360.735,00 | 1.469.593,80 | |
| 11. | Balok latei 1Pc:2Psr:3Spl | 2,44 m ³ | 1.250.597,50 | 3.051.457,90 | |
| 12. | Ring balk praktis 1Pc:2Psr:3Spl | 2,17 m ³ | 1.250.597,50 | 2.713.796,58 | |
| | | | | | 244.165.736,72 |
| C. <u>LANTAI. 3 (TIGA) :</u> | | | | | |
| 1. | Kolom struktur | 42,35 m ³ | 2.122.712,50 | 89.896.874,38 | |
| 2. | Balok lantai lt.3 | 32,62 m ³ | 2.037.287,50 | 66.456.318,25 | |
| 3. | Plat lantai lt.3 | 65,43 m ³ | 782.002,25 | 51.166.407,22 | |
| 4. | Plat topi-topi (tutup genteng) | 12,71 m ³ | 928.852,25 | 11.805.712,10 | |
| 5. | Beton tangga (dari lt3 ke lt4) | 4,08 m ³ | 1.238.646,75 | 5.053.678,74 | |
| 6. | Balok bordes | 0,29 m ³ | 2.353.018,75 | 682.375,44 | |
| 7. | Plat balustrade | 2,83 m ³ | 1.240.750,00 | 3.511.322,50 | |
| 8. | Beton Konsol tritis (KB1 + KB2) | 4,25 m ³ | 1.966.635,25 | 8.358.199,81 | |
| 9. | Kolom KP 1Pc:2Psr:3Spl | -----> TIDAK ADA KOLOM KP, DI LANTAI 3 | | | |
| 10. | Kolom praktis KP 15x15 1Pc:2Psr:3Spl | 1,08 m ³ | 1.360.735,00 | 1.469.593,80 | |
| 11. | Balok latei 1Pc:2Psr:3Spl | 2,44 m ³ | 1.250.597,50 | 3.051.457,90 | |
| 12. | Ring balk praktis 1Pc:2Psr:3Spl | 2,17 m ³ | 1.250.597,50 | 2.713.796,58 | |
| | | | | | 244.165.736,72 |
| D. <u>LANTAI. 4 (EMPAT) :</u> | | | | | |
| 1. | Kolom struktur | 26,02 m ³ | 1.641.775,00 | 42.718.985,50 | |
| 2. | Balok lantai lt.4 | 32,62 m ³ | 2.037.287,50 | 66.456.318,25 | |
| 3. | Plat lantai lt.4 | 65,43 m ³ | 782.002,25 | 51.166.407,22 | |
| 4. | Beton Konsol tritis (KB1 + KB2) | 4,25 m ³ | 1.966.635,25 | 8.358.199,81 | |
| 5. | Ringbalk struktur | 6,75 m ³ | 1.254.175,00 | 8.465.681,25 | |
| 6. | Balok atap | 2,51 m ³ | 1.584.606,25 | 3.977.361,69 | |
| 7. | Listplank atap | 0,7 m ³ | 1.206.757,00 | 844.729,90 | |
| 8. | Plat atap | 7,33 m ³ | 891.693,75 | 6.536.115,19 | |
| 9. | Kolom KP | 0,64 m ³ | 1.360.735,00 | 870.870,40 | |
| 10. | Kolom praktis 15x15 1Pc:2Psr:3Spl | 1,36 m ³ | 1.360.735,00 | 1.850.599,60 | |
| 11. | Balok latei 15x15 1Pc:2Psr:3Spl | 2,47 m ³ | 1.250.597,50 | 3.088.975,83 | |
| 12. | Ringbalk BR 15x20 | 1,75 m ³ | 1.158.816,25 | 2.027.928,44 | |
| 13. | Ring balk praktis 1Pc:2Psr:3Spl | 4,78 m ³ | 1.250.597,50 | 5.977.856,05 | |
| 14. | Balok Roof tank | 1,87 m ³ | 1.592.800,00 | 2.978.536,00 | |
| 15. | Plat Roof tank | 4,06 m ³ | 910.496,00 | 3.696.613,76 | |
| | | | | | 209.015.178,89 |



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KSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

B. RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 3.

halaman : 03

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUNJAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|-----|----------------------------------|--|------------------------|------------------------|-----------------------|
| II. | <u>PEKERJAAN PASANGAN BATU :</u> | | | | |
| A. | <u>LANTAI. 1 (SATU) :</u> | | | | |
| 1. | Pas. pondasi staaI batu kali 1:5 | 77 m ³ | 76.805,00 | 5.913.985,00 | |
| 2. | Pas. batu kali (umpak) sloof (S) | -----> DI GAMBAR, RKS & BERITA ACARA TIDAK ADA | | | |
| 3. | Pas. batu merah 1:2 (1/2 batu) | 16,27 m ³ | 123.104,00 | 2.002.902,08 | |
| 4. | Pas. batu merah 1:4 (1/2 batu) | 22,6 m ³ | 102.183,00 | 2.309.335,80 | |
| | | | | | 10.226.222,88 |
| B. | <u>LANTAI. 2 (DUA) :</u> | | | | |
| 1. | Pas. batu merah 1:2 (1/2 batu) | 15,85 m ³ | 123.104,00 | 1.951.198,40 | |
| 2. | Pas. batu merah 1:4 (1/2 batu) | 31,67 m ³ | 102.183,00 | 3.236.135,61 | |
| | | | | | 5.187.334,01 |
| C. | <u>LANTAI. 3 (TIGA) :</u> | | | | |
| 1. | Pas. batu merah 1:2 (1/2 batu) | 15,91 m ³ | 123.104,00 | 1.958.584,64 | |
| 2. | Pas. batu merah 1:4 (1/2 batu) | 32,24 m ³ | 102.183,00 | 3.294.379,92 | |
| | | | | | 5.252.964,56 |
| D. | <u>LANTAI. 4 (EMPAT) :</u> | | | | |
| 1. | Pas. batu merah 1:2 (1/2 batu) | 16,4 m ³ | 123.104,00 | 2.018.905,60 | |
| 2. | Pas. batu merah 1:4 (1/2 batu) | 37,93 m ³ | 102.183,00 | 3.875.801,19 | |
| | | | | | 5.894.706,79 |
| I. | <u>PEKERJAAN PLESTERAN :</u> | | | | |
| A. | <u>LANTAI. 1 (SATU) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 133,14 m ² | 6.306,00 | 839.580,84 | |
| 2. | Plesteran beton 1:3 | 605,3 m ² | 6.907,00 | 4.180.807,10 | |
| 3. | Plesteran dinding 1:4 | 533,67 m ² | 5.553,00 | 2.963.469,51 | |
| 4. | Plesteran sudut 1:3 | 2040,23 m ¹ | 1.144,75 | 2.335.553,29 | |
| 5. | Acian plat lantai selasar | 246,69 m ² | 4.000,00 | 986.760,00 | |
| a. | Beraben pondasi | 296,62 m ² | 2.516,70 | 746.503,55 | |
| | | | | | 12.052.674,29 |
| B. | <u>LANTAI. 2 (DUA) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 127,52 m ² | 6.306,00 | 804.141,12 | |
| 2. | Plesteran beton 1:3 | 605,3 m ² | 6.907,00 | 4.180.807,10 | |
| 3. | Plesteran dinding 1:4 | 623,26 m ² | 5.553,00 | 3.460.962,78 | |
| 4. | Plesteran sudut 1:3 | 2181,01 m ¹ | 1.144,75 | 2.496.711,20 | |
| 5. | Acian plat lantai selasar | 246,69 m ² | 4.000,00 | 986.760,00 | |
| | | | | | 11.929.382,20 |



P. T. SEKAWAN TRIASA

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AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

B. RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 3

halaman : 04

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|---|---|-----------------------|-------------------------|-------------------------|------------------------|
| C. LANTAI 3 (TIGA) : | | | | | |
| 1. | Plesteran dinding 1:2 | 128,32 m ² | 6.306,00 | 809.185,92 | |
| 2. | Plesteran beton 1:3 | 605,3 m ² | 6.907,00 | 4.180.807,10 | |
| 3. | Plesteran dinding 1:4 | 634,18 m ² | 5.553,00 | 3.521.601,54 | |
| 4. | Plesteran sudut 1:3 | 2195,73 m' | 1.144,75 | 2.513.561,92 | |
| 5. | Acian plat lantai selasar | 246,69 m ² | 4.000,00 | 986.760,00 | |
| | | | | | 12.011.916,48 |
| D. LANTAI 4 (EMPAT) : | | | | | |
| 1. | Plesteran dinding 1:2 | 134,22 m ² | 6.306,00 | 846.391,32 | |
| 2. | Plesteran beton 1:3 | 409,86 m ² | 6.907,00 | 2.830.903,02 | |
| 3. | Plesteran dinding 1:4 | 771,69 m ² | 5.553,00 | 4.285.194,57 | |
| 4. | Plesteran sudut 1:3 | 1865,14 m' | 1.144,75 | 2.135.119,02 | |
| 5. | Acian plat atap tangga | 72,26 m ² | 4.000,00 | 289.040,00 | |
| | | | | | 10.386.647,93 |
| V. PEKERJAAN ATAP DAN PENUTUP ATAP : | | | | | |
| 1. | Kuda-kuda baja besi siku (termasuk baut) | 7868,39 kg | 5.795,00 | 45.597.320,05 | |
| 2. | Gording CNP 150.65.20.3,2 | 11125,3 kg | 5.127,50 | 57.044.975,75 | |
| 3. | Jurai 2 CNP 150.65.20.3,2 | 1946,6 kg | 5.127,50 | 9.981.191,50 | |
| 4. | Sagrot besi beton ϕ 12 mm | 1227,32 kg | 3.968,75 | 4.870.926,25 | |
| 5. | Plat simpul kuda-kuda tebal 12 mm | 4258,75 kg | 4.612,50 | 19.643.484,38 | |
| 6. | Angkur baut tumpuan kuda-kuda ϕ 19 mm | 162,99 kg | 7.500,00 | 1.222.425,00 | |
| 7. | Usuk bangkirai reng jati 3/4 | 648,4 m ² | 45.310,00 | 29.379.004,00 | |
| 8. | Usuk bangkirai reng jati 3/4 diserut-pada tritis lt.1 s/d 4 | 1365,9 m ² | 47.310,00 | 64.620.729,00 | |
| 9. | Papan ruitter jati 2/20 | 143,85 m' | 31.665,00 | 4.555.010,25 | |
| 0. | Papan listplank jati 2,5/20 x 2 | 531,2 m' | 92.092,50 | 40.919.536,00 | |
| 1. | Papan listplank jati 2,5/30 | 110,2 m' | 64.875,00 | 7.149.225,00 | |
| 2. | Pemasangan atap genteng keramik (upah) | 2014,3 m ² | 5.000,00 | 10.071.500,00 | |
| 3. | Pemasangan kerpus (spesi + upah) | 143,85 m' | 14.816,20 | 2.131.310,37 | |
| 4. | Cross ventilation | 10 unit | 200.000,00 | 2.000.000,00 | |
| a. | Span skrup ϕ 1/2" | 22 bh | 13.500,00 | 297.000,00 | |
| b. | Noer trek batang ϕ 12 mm | 318 bh | 350,00 | 215.600,00 | |
| | | | | | 307.699.237,55 |
| 1. PEKERJAAN TALANG DAN SENG : | | | | | |
| 1. | Papan talang datar & klinker bangkirai | 122,3 m' | 81.510,00 | 9.968.673,00 | |
| 2. | Talang datar & klinker seng BJLS 50 | 122,3 m' | 35.000,00 | 4.280.500,00 | |
| 3. | Krool talang seng BJLS 50 | 110,2 m' | 15.000,00 | 1.653.000,00 | |
| 4. | Klem talang besi strip plat 1" | 208 bh | 2.500,00 | 520.000,00 | |
| 5. | Talang vertikal PVC ϕ 4" | 447,2 m' | 40.145,00 | 17.952.844,00 | |
| 6. | Knee PVC ϕ 4" | 52 bh | 85.000,00 | 4.420.000,00 | |
| 7. | Tee PVC ϕ 4" | 26 bh | 85.000,00 | 2.210.000,00 | |
| 8. | Saringan talang (Roof drain) | 26 bh | 60.000,00 | 1.560.000,00 | |
| 9. | Cor beton pelapis talang vertikal 1:2:3 | 22,1 m ³ | 298.585,00 | 6.598.728,50 | |
| | | | | | 49.163.745,50 |

AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

B. RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 3
 halaman : 05

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|--|---|-----------------------|-------------------------|-------------------------|------------------------|
| VII. PEKERJAAN CAT-CATAN : | | | | | |
| 1. | Cat meni kayu patna (listplank + ppn.talang) | 1 ls | 1.500.000,00 | 1.500.000,00 | |
| 2. | Cat listplank kayu ICI super gloss | 310,67 m ² | 15.000,00 | 4.660.050,00 | |
| 3. | Cat meni besi | 1 ls | 3.500.000,00 | 3.500.000,00 | |
| 4. | Cat mowilex usuk dan reng tritisan | 997,11 m ² | 10.000,00 | 9.971.100,00 | |
| 4a. | Cat besi (Gording C) atap tritisan | 888,01 m ² | 7.500,00 | 6.660.075,00 | |
| 4b. | Cat genteng pada spesi muwungan | 143,85 m ² | 7.500,00 | 1.078.875,00 | |
| | | | | | 27.370.100,00 |
| II. PEKERJAAN PENANGKAL PETIR : | | | | | |
| 1. | Spit tembaga & pipa ø 1" | 4 unit | 75.000,00 | 300.000,00 | |
| 2. | Kawat BC 50 mm | 342 m' | 34.000,00 | 11.628.000,00 | |
| 3. | Arde pentanahan | 8 bh | 400.000,00 | 3.200.000,00 | |
| 4. | Bak kontrol | 8 bh | 50.000,00 | 400.000,00 | |
| 5. | Ring BC 50 mm | 127 m' | 34.000,00 | 4.318.000,00 | |
| 5a. | Lampu Navigasi & Photo Cell 6 A | 1 unit | 390.000,00 | 390.000,00 | |
| 5b. | Instalasi lampu navigasi (kabel 3x2,5 mm ²) | 50 m' | 4.500,00 | 225.000,00 | |
| | | | | | 20.461.000,00 |
| I. PEKERJAAN LAIN-LAIN : | | | | | |
| 1. | Waterproofing pada spesi muwungan genteng | 143,85 m ² | 20.000,00 | 2.877.000,00 | |
| 2. | Pembersihan kembali | 1 ls | 500.000,00 | 500.000,00 | |
| | | | | | 3.377.000,00 |

P.T. SEKAWAN TRIASA



REKAPITULASI

P R O Y E K : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
C. SUB PEKERJAAN : GEDUNG KULIAH UNIT 4 - LUAS LANTAI = 3.954 M²
L O K A S I : DESA PAINGAN KAB. SLEMAN - DIY

| NO. | URAIAN PEKERJAAN | JUMLAH HARGA (Rp.) |
|-------|---|-------------------------|
| I. | PEKERJAAN TANAH & PASIR | 34.126.305,00 |
| II. | PEKERJAAN BETON BERTULANG : | |
| | A. LANTAI. 1 (SATU) | 590.551.177,19 |
| | B. LANTAI. 2 (DUA) | 431.141.133,03 |
| | C. LANTAI. 3 (TIGA) | 431.141.133,03 |
| | D. LANTAI. 4 (EMPAT) | 361.469.703,00 |
| | | 1.814.303.146,25 |
| III. | PEKERJAAN PASANGAN BATU : | |
| | A. LANTAI. 1 (SATU) | 13.928.538,76 |
| | B. LANTAI. 2 (DUA) | 7.953.828,29 |
| | C. LANTAI. 3 (TIGA) | 7.920.299,57 |
| | D. LANTAI. 4 (EMPAT) | 8.813.356,86 |
| | | 38.616.023,48 |
| IV. | PEKERJAAN PLESTERAN : | |
| | A. LANTAI. 1 (SATU) | 18.046.934,81 |
| | B. LANTAI. 2 (DUA) | 18.853.719,50 |
| | C. LANTAI. 3 (TIGA) | 18.955.896,25 |
| | D. LANTAI. 4 (EMPAT) | 16.280.933,57 |
| | | 72.137.484,13 |
| V. | PEKERJAAN ATAP DAN PENUTUP ATAP | 473.022.803,97 |
| VI. | PEKERJAAN TALANG DAN SENG | 76.210.603,00 |
| VII. | PEKERJAAN CAT-CATAN | 40.400.575,00 |
| VIII. | PEKERJAAN PENANGKAL PETIR | 30.333.000,00 |
| IX. | PEKERJAAN LAIN-LAIN | 4.229.000,00 |
| C. | SUB JUNLAH PEKERJAAN GEDUNG KULIAH UNIT 4 | 2.583.378.940,83 |

PT. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
 KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA

P R O Y E K : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
C. SUB PEKERJAAN : GEDUNG KULIAH UNIT 4 - LUAS LANTAI = 3.954 M²
L O K A S I : DESA PAINGAN KAB. SLEMAN - DIY
 halaman : 01

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) | |
|---|--|--|------------------------|------------------------|-----------------------|--|
| 1. PEKERJAAN TANAH & PASIR : | | | | | | |
| 1. | Galian tanah muka tanah rencana | 165,52 m ³ | 5.500,00 | 910.360,00 | | |
| 2. | Galian tanah pondasi continuous | 2894,11 m ³ | 5.500,00 | 15.917.605,00 | | |
| 3. | Galian tanah pondasi staal | 273,74 m ³ | 5.500,00 | 1.505.570,00 | | |
| 4. | Galian tanah sloof (S) | 123,55 m ³ | 5.500,00 | 679.525,00 | | |
| 5. | Urugan tanah kembali (sisa galian pondasi) | 2754,84 m ³ | 4.000,00 | 11.019.360,00 | | |
| 6. | Urugan tanah bawah lantai | -----> TIDAK ADA URUGAN TANAH BAWAH LANTAI | | | | |
| 7. | Urugan pasir : | | | | | |
| | a. Bawah lantai kerja t=10cm | 71,81 m ³ | 20.250,00 | 1.454.152,50 | | |
| | b. Bawah pondasi staal t=10cm | 24,37 m ³ | 20.250,00 | 493.492,50 | | |
| | Perataan tanah sisa galian | 536,56 m ³ | 4.000,00 | 2.146.240,00 | | |
| | | | | | 34.126.305,00 | |
| PEKERJAAN BETON BERTULANG : | | | | | | |
| LANTAI. 1 (SATU) : | | | | | | |
| | Lantai kerja 1Pc:3Psr:5Krl | 49,28 m ³ | 127.396,00 | 6.278.074,88 | | |
| | Beton voet plat Continuous | 173,79 m ³ | 540.906,25 | 94.004.097,19 | | |
| | Beton balok pondasi continuous | 40,61 m ³ | 2.298.700,00 | 93.350.207,00 | | |
| | Beton sloof struktur (S) | 27,52 m ³ | 1.333.712,50 | 36.703.768,00 | | |
| | Beton sloof praktis | 8,04 m ³ | 1.218.967,00 | 9.800.494,68 | | |
| | Kolom struktur | 127,98 m ³ | 2.289.493,75 | 293.009.410,13 | | |
| | Beton Konsol (KB1 + KB2) | 6,34 m ³ | 1.966.635,25 | 12.468.467,49 | | |
| | Plat topi-topi (tutup genteng) | 18,63 m ³ | 928.852,25 | 17.304.517,42 | | |
| | Beton tangga (dari lt1 ke lt2) | 9,84 m ³ | 1.238.646,75 | 12.188.284,02 | | |
| | Balok bordes | 0,58 m ³ | 2.353.018,75 | 1.364.750,88 | | |
| | Plat balustrade | 5,66 m ³ | 1.240.750,00 | 7.022.645,00 | | |
| | Kolom praktis 1Pc:2Psr:3Spit | 1,05 m ³ | 1.360.735,00 | 1.428.771,75 | | |
| | Balok latei 1Pc:2Psr:3Spit | 3,74 m ³ | 1.250.597,50 | 4.677.234,65 | | |
| | Ring balk praktis 1Pc:2Psr:3Spit | 0,76 m ³ | 1.250.597,50 | 950.454,10 | | |
| | | | | | 590.551.177,19 | |

P.T. SEKAWAN TRIASA

AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

C. RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 4
 halaman : 02

| NO. | URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|-------------------------------|--------------------------------------|--|-------------------------|-------------------------|------------------------|
| B. LANTAI. 2 (DUA) : | | | | | |
| 1. | Kolom struktur | 71,11 m ³ | 2.178.306,25 | 154.899.357,44 | |
| 2. | Balok lantai lt.2 | 64,19 m ³ | 2.019.193,75 | 129.612.046,81 | |
| 3. | Plat lantai lt.2 | 113,7 m ³ | 782.002,25 | 88.913.655,83 | |
| 4. | Plat topi-topi (tutup genteng) | 18,63 m ³ | 928.852,25 | 17.304.517,42 | |
| 5. | Beton tangga (dari lt2 ke lt3) | 8,16 m ³ | 1.238.646,75 | 10.107.357,48 | |
| 6. | Balok bordes | 0,58 m ³ | 2.353.018,75 | 1.364.750,88 | |
| 7. | Plat balustrade | 5,66 m ³ | 1.240.750,00 | 7.022.645,00 | |
| 8. | Beton Konsol tritis (KB1 + KB2) | 6,34 m ³ | 1.966.635,25 | 12.468.467,49 | |
| 9. | Kolom KP 1Pc:2Psr:3Spl | -----> TIDAK ADA KOLOM KP, DI LANTAI 2 | | | |
| 10. | Kolom praktis 1Pc:2Psr:3Spl | 1,42 m ³ | 1.360.735,00 | 1.932.243,70 | |
| 11. | Balok latei 1Pc:2Psr:3Spl | 3,74 m ³ | 1.250.597,50 | 4.677.234,65 | |
| 12. | Ring balk praktis 1Pc:2Psr:3Spl | 2,27 m ³ | 1.250.597,50 | 2.838.856,33 | |
| | | | | | 431.141.133,03 |
| C. LANTAI. 3 (TIGA) : | | | | | |
| 1. | Kolom struktur | 71,11 m ³ | 2.178.306,25 | 154.899.357,44 | |
| 2. | Balok lantai lt.3 | 64,19 m ³ | 2.019.193,75 | 129.612.046,81 | |
| 3. | Plat lantai lt.3 | 113,7 m ³ | 782.002,25 | 88.913.655,83 | |
| 4. | Plat topi-topi (tutup genteng) | 18,63 m ³ | 928.852,25 | 17.304.517,42 | |
| 5. | Beton tangga (dari lt3 ke lt4) | 8,16 m ³ | 1.238.646,75 | 10.107.357,48 | |
| 6. | Balok bordes | 0,58 m ³ | 2.353.018,75 | 1.364.750,88 | |
| 7. | Plat balustrade | 5,66 m ³ | 1.240.750,00 | 7.022.645,00 | |
| 8. | Beton Konsol tritis (KB1 + KB2) | 6,34 m ³ | 1.966.635,25 | 12.468.467,49 | |
| 9. | Kolom KP 1Pc:2Psr:3Spl | -----> TIDAK ADA KOLOM KP, DI LANTAI 2 | | | |
| 10. | Kolom praktis KP 15x15 1Pc:2Psr:3Spl | 1,42 m ³ | 1.360.735,00 | 1.932.243,70 | |
| 11. | Balok latei 1Pc:2Psr:3Spl | 3,74 m ³ | 1.250.597,50 | 4.677.234,65 | |
| 12. | Ring balk praktis 1Pc:2Psr:3Spl | 2,27 m ³ | 1.250.597,50 | 2.838.856,33 | |
| | | | | | 431.141.133,03 |
| D. LANTAI. 4 (EMPAT) : | | | | | |
| 1. | Kolom struktur | 39,86 m ³ | 1.660.393,75 | 66.183.294,88 | |
| 2. | Balok lantai lt.4 | 64,3 m ³ | 2.019.193,75 | 129.834.158,13 | |
| 3. | Plat lantai lt.4 | 113,7 m ³ | 782.002,25 | 88.913.655,83 | |
| 4. | Beton Konsol tritis (KB1 + KB2) | 6,34 m ³ | 1.966.635,25 | 12.468.467,49 | |
| 5. | Ringbalk struktur | 9,76 m ³ | 1.456.881,25 | 14.219.161,00 | |
| 6. | Balok atap | 4,29 m ³ | 1.787.050,00 | 7.666.444,50 | |
| 7. | Listplank atap | 1,42 m ³ | 1.206.757,00 | 1.713.594,94 | |
| 8. | Plat atap | 14,27 m ³ | 891.693,75 | 12.724.469,81 | |
| 9. | Kolom KP | 1,28 m ³ | 1.360.735,00 | 1.741.740,80 | |
| 10. | Kolom praktis 15x15 1Pc:2Psr:3Spl | 1,27 m ³ | 1.360.735,00 | 1.728.133,45 | |
| 11. | Balok latei 15x15 1Pc:2Psr:3Spl | 3,68 m ³ | 1.250.597,50 | 4.602.198,80 | |
| 12. | Ringbalk BR 15x20 | 3,21 m ³ | 1.158.816,25 | 3.719.800,16 | |
| 13. | Ring balk praktis 1Pc:2Psr:3Spl | 7,42 m ³ | 1.250.597,50 | 9.279.433,45 | |
| 14. | Balok Roof tank | 1,87 m ³ | 1.592.800,00 | 2.978.536,00 | |
| 15. | Plat Roof tank | 4,06 m ³ | 910.496,00 | 3.696.613,76 | |
| | | | | | 361.469.703,00 |

P. T. SEKAWAN TRIASA

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ANAAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 4

halaman : 03

| URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|----------------------------------|--|-------------------------|-------------------------|------------------------|
| PEKERJAAN PASANGAN BATU : | | | | |
| LANTAI. 1 (SATU) : | | | | |
| Pas. pondasi staal batu kali 1:5 | 98,25 m ³ | 76.805,00 | 7.546.091,25 | |
| Pas. batu kali (umpak) sloof (S) | -----> DI GAMBAR, RKS & BERITA ACARA TIDAK ADA | | | |
| Pas. batu merah 1:2 (1/2 batu) | 20,03 m ³ | 123.104,00 | 2.465.773,12 | |
| Pas. batu merah 1:4 (1/2 batu) | 38,33 m ³ | 102.183,00 | 3.916.674,39 | |
| | | | | 13.928.538,76 |
| LANTAI. 2 (DUA) : | | | | |
| Pas. batu merah 1:2 (1/2 batu) | 19,63 m ³ | 123.104,00 | 2.416.531,52 | |
| Pas. batu merah 1:4 (1/2 batu) | 54,19 m ³ | 102.183,00 | 5.537.296,77 | |
| | | | | 7.953.828,29 |
| LANTAI. 3 (TIGA) : | | | | |
| Pas. batu merah 1:2 (1/2 batu) | 18,76 m ³ | 123.104,00 | 2.309.431,04 | |
| Pas. batu merah 1:4 (1/2 batu) | 54,91 m ³ | 102.183,00 | 5.610.868,53 | |
| | | | | 7.920.299,57 |
| LANTAI. 4 (EMPAT) : | | | | |
| Pas. batu merah 1:2 (1/2 batu) | 19,98 m ³ | 123.104,00 | 2.459.617,92 | |
| Pas. batu merah 1:4 (1/2 batu) | 62,18 m ³ | 102.183,00 | 6.353.738,94 | |
| | | | | 8.813.356,86 |
| PEKERJAAN PLESTERAN : | | | | |
| LANTAI. 1 (SATU) : | | | | |
| Plesteran dinding 1:2 | 191,47 m ² | 6.306,00 | 1.207.469,82 | |
| Plesteran beton 1:3 | 948,72 m ² | 6.907,00 | 6.552.809,04 | |
| Plesteran dinding 1:4 | 736,71 m ² | 5.553,00 | 4.093.950,53 | |
| Acian plat lantai selasar | 419,77 m ² | 4.000,00 | 1.679.080,00 | |
| Plesteran sudut 1:3 | 3109,75 m ¹ | 1.144,75 | 3.559.886,31 | |
| Perabon pondasi | 390,18 m ² | 2.516,70 | 956.799,01 | |
| | | | | 18.046.934,81 |
| LANTAI. 2 (DUA) : | | | | |
| Plesteran dinding 1:2 | 184,39 m ² | 6.306,00 | 1.162.763,34 | |
| Plesteran beton 1:3 | 948,72 m ² | 6.907,00 | 6.552.809,04 | |
| Plesteran dinding 1:4 | 1022,41 m ² | 5.553,00 | 5.677.442,73 | |
| Acian plat lantai selasar | 419,77 m ² | 4.000,00 | 1.679.080,00 | |
| Plesteran sudut 1:3 | 3303,45 m ¹ | 1.144,75 | 3.781.624,39 | |
| | | | | 18.853.719,50 |

P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
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SANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 4

halaman : 04

| URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|---|------------------------|------------------------|------------------------|-----------------------|
| LANTAI, 3 (TIGA) : | | | | |
| Plesteran dinding 1:2 | 192,74 m ² | 6.306,00 | 1.215.418,44 | 18.955.896,25 |
| Plesteran beton 1:3 | 948,72 m ² | 6.907,00 | 6.552.809,04 | |
| Plesteran dinding 1:4 | 1032,87 m ² | 5.553,00 | 5.735.527,11 | |
| Acian plat lantai selasar | 419,77 m ² | 4.000,00 | 1.679.080,00 | |
| Plesteran sudut 1:3 | 3295,97 m' | 1.144,75 | 3.773.061,66 | |
| LANTAI, 4 (EMPAT) : | | | | |
| Plesteran dinding 1:2 | 194 m ² | 6.306,00 | 1.223.364,00 | 16.280.933,57 |
| Plesteran beton 1:3 | 635,37 m ² | 6.907,00 | 4.388.500,59 | |
| Plesteran dinding 1:4 | 1244,85 m ² | 5.553,00 | 6.912.652,05 | |
| Plesteran sudut 1:3 | 2786,3 m' | 1.144,75 | 3.189.616,93 | |
| Acian plat atap tangga | 141,7 m ² | 4.000,00 | 566.800,00 | |
| PEKERJAAN ATAP DAN PENUTUP ATAP : | | | | |
| Kuda-kuda baja besi siku (termasuk baut) | 13087,38 kg | 5.795,00 | 75.841.367,10 | 473.022.803,97 |
| Gording CNP 150.65.20.3,2 | 16744,76 kg | 5.127,50 | 85.858.756,90 | |
| Jurai 2 CNP 150.65.20.3,2 | 2385,18 kg | 5.127,50 | 12.230.010,45 | |
| Sagrot besi beton ø 12 mm | 1968,88 kg | 3.968,75 | 7.813.992,50 | |
| Plat simpul kuda-kuda tebal 12 mm | 6819,75 kg | 4.612,50 | 31.456.096,88 | |
| Angkur baut tumpuan kuda-kuda ø 19 mm | 244,18 kg | 7.500,00 | 1.831.350,00 | |
| Usuk bangkirai reng jati 3/4 | 1090,4 m ² | 45.310,00 | 49.406.024,00 | |
| Usuk bangkirai reng jati 3/4 diserut-pada tritis lt.1 s/d 4 | 2048,24 m ² | 47.310,00 | 96.902.234,40 | |
| Papan ruitter jati 2/20 | 186,45 m' | 31.665,00 | 5.903.939,25 | |
| Papan listplank jati 2,5/20 x 2 | 783,4 m' | 92.092,50 | 72.145.264,50 | |
| Papan listplank jati 2,5/30 | 164,9 m' | 64.875,00 | 10.697.887,50 | |
| Pemasangan atap genteng keramik (upah) | 3138,64 m ² | 5.000,00 | 15.693.200,00 | |
| Pemasangan kerpas (epesi + upah) | 186,45 m' | 14.816,20 | 2.762.480,49 | |
| Cross ventilation | 18 unit | 200.000,00 | 3.600.000,00 | |
| Span skrup ø 1/2" | 40 bh | 13.500,00 | 540.000,00 | |
| Moer trek stang ø 12 mm | 972 bh | 350,00 | 340.200,00 | |
| PEKERJAAN TALANG DAN SENG : | | | | |
| Papan talang datar & killkipper bangkirai | 192,3 m' | 81.510,00 | 15.674.373,00 | 76.210.603,00 |
| Talang datar & killkipper seng BJLS 50 | 192,3 m' | 35.000,00 | 6.730.500,00 | |
| Krool talang seng BJLS 50 | 164,9 m' | 15.000,00 | 2.473.500,00 | |
| Klem talang besi strip plat 1" | 320 bh | 2.500,00 | 800.000,00 | |
| Talang vertikal PVC ø 4" | 692 m' | 40.145,00 | 27.780.340,00 | |
| Knee PVC ø 4" | 80 bh | 85.000,00 | 6.800.000,00 | |
| Tee PVC ø 4" | 40 bh | 85.000,00 | 3.400.000,00 | |
| Saringan talang (Roof drain) | 40 bh | 60.000,00 | 2.400.000,00 | |
| Cor beton pelapis talang vertikal 1:2:3 | 34 m ³ | 298.585,00 | 10.151.890,00 | |

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
 KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

ANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA - GEDUNG KULIAH UNIT 4

halaman : 05

| URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|---|------------------------|-------------------------|-------------------------|------------------------|
| PEKERJAAN CAT-CATAN : | | | | |
| 1. Cat meni kayu patna (listplank + ppn.talang) | 1 ls | 2.000.000,00 | 2.000.000,00 | |
| 1. Cat listplank kayu ICI super gloos | 459,72 m ² | 15.000,00 | 6.895.800,00 | |
| 1. Cat meni besi | 1 ls | 5.250.000,00 | 5.250.000,00 | |
| 1. Cat mowilex usuk dan reng tritisan | 1495,22 m ² | 10.000,00 | 14.952.200,00 | |
| 1. Cat besi (Gording C) atap tritisan | 1320,56 m ² | 7.500,00 | 9.904.200,00 | |
| 1. Cat genteng pada spesi miringan | 186,45 m ² | 7.500,00 | 1.398.375,00 | |
| | | | | 40.400.575,00 |
| I. PEKERJAAN PENANGKAL PETIR : | | | | |
| 1. Spit tembaga & pipa ø 1" | 6 unit | 75.000,00 | 450.000,00 | |
| 2. Kawat BC 50 mm | 507 m' | 34.000,00 | 17.238.000,00 | |
| 3. Arde pentanahan | 12 bh | 400.000,00 | 4.800.000,00 | |
| 4. Bak kontrol | 12 bh | 50.000,00 | 600.000,00 | |
| 5. Ring BC 50 mm | 195 m' | 34.000,00 | 6.630.000,00 | |
| 10. Lampu Navigasi & Photo Cell 6 A | 1 unit | 390.000,00 | 390.000,00 | |
| 10. Instalasi lampu navigasi (kabel 3x2,5 mm ²) | 50 m' | 4.500,00 | 225.000,00 | |
| | | | | 30.333.000,00 |
| II. PEKERJAAN LAIN-LAIN : | | | | |
| 1. Waterproofing pada spesi miringan genteng | 136,45 m ² | 20.000,00 | 3.729.000,00 | |
| 2. Pembersihan kembali | 1 ls | 500.000,00 | 500.000,00 | |
| | | | | 4.229.000,00 |

P.T. SEKAWAN TRIASA

P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

ANAAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

REKAPITULASI

P R O Y E K : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
D. SUB PEKERJAAN : SELASAR PENGHUBUNG - LUAS LANTAI = 87,16 M²
L O K A S I : DESA PAINGAN KAB. SLEMAN - DIY

| NO. | URAIAN PEKERJAAN | JUMLAH HARGA (Rp.) |
|------|---|-------------------------|
| I. | PEKERJAAN TANAH & PASIR | 3.375.202,50 |
| II. | PEKERJAAN BETON BERTULANG : | |
| | A. LANTAI. 1 (SATU) | 31.106.698,25 |
| | B. LANTAI. 2 (DUA) | 25.792.315,26 |
| | C. LANTAI. 3 (TIGA) | 25.792.315,26 |
| | D. LANTAI. 4 (EMPAT) | 38.486.811,73 |
| | | 121.178.140,50 |
| III. | PEKERJAAN PASANGAN BATU : | |
| | A. LANTAI. 1 (SATU) | 2.105.085,15 |
| | B. LANTAI. 2 (DUA) | 774.379,69 |
| | C. LANTAI. 3 (TIGA) | 774.379,69 |
| | D. LANTAI. 4 (EMPAT) | 774.379,69 |
| | | 4.428.224,22 |
| IV. | PEKERJAAN PLESTERAN : | |
| | A. LANTAI. 1 (SATU) | 2.291.372,16 |
| | B. LANTAI. 2 (DUA) | 2.468.714,92 |
| | C. LANTAI. 3 (TIGA) | 2.468.714,92 |
| | D. LANTAI. 4 (EMPAT) | 2.253.551,70 |
| | | 9.482.353,70 |
| V. | PEKERJAAN RANGKA VARIASI | 23.274.920,00 |
| VI. | PEKERJAAN TALANG | 10.927.982,15 |
| D. | SUB JUMLAH PEKERJAAN SELASAR PENGHUBUNG | 172.666.823,07 |

PT. SEKAWAN TRIASA

P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
 KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

AAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA

P R O Y E K : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
 PEKERJAAN : PEMBANGUNAN GEDUNG KULIAH UNIT 3,4 DAN SELASAR PENGHUBUNG - TAHAP I
 SUB PEKERJAAN : SELASAR PENGHUBUNG - LUAS LANTAI = 87,16 M²
 L O K A S I : DESA PAINGAN KAB. SLEMAN - DIY
 halaman : 01

| URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|--|---|-------------------------|-------------------------|------------------------|
| PEKERJAAN TANAH & PASIR : | | | | |
| Galian tanah muka tanah rencana | 19 m ³ | 5.500,00 | 104.500,00 | |
| Galian tanah pondasi continous | 260,05 m ³ | 5.500,00 | 1.430.275,00 | |
| Galian tanah pondasi staal | 47,8 m ³ | 5.500,00 | 262.900,00 | |
| Galian tanah sloof (S) | 7,14 m ³ | 5.500,00 | 39.270,00 | |
| Urugan tanah kembali (sisa galian pondasi) | 280,82 m ³ | 4.000,00 | 1.123.280,00 | |
| Urugan tanah bawah lantai | ----> TIDAK ADA URUGAN TANAH BAWAH LANTAI | | | |
| Urugan pasir : | | | | |
| a. Bawah lantai kerja t=10cm | 6,09 m ³ | 20.250,00 | 123.322,50 | |
| b. Bawah pondasi staal t=10cm | 3,9 m ³ | 20.250,00 | 78.975,00 | |
| Perataan tanah sisa galian | 53,17 m ³ | 4.000,00 | 212.680,00 | |
| | | | | 3.375.202,50 |
| PEKERJAAN BETON BERTULANG : | | | | |
| LANTAI. 1 (SATU) : | | | | |
| Lantai kerja 1Pc:3Psr:5Kr1 | 4,23 m ³ | 127.396,00 | 538.885,08 | |
| Beton voet plat Continuous | 9,58 m ³ | 522.287,50 | 5.003.514,25 | |
| Beton balok pondasi continous | 1,67 m ³ | 3.610.918,75 | 6.030.234,31 | |
| Beton sloof struktur (S) | 0,84 m ³ | 1.881.193,75 | 1.580.202,75 | |
| Beton sloof praktis | 0,89 m ³ | 1.218.967,00 | 1.084.880,63 | |
| Kolom struktur | 10,27 m ³ | 1.604.800,00 | 16.481.296,00 | |
| Ring balk praktis 1Pc:2Psr:3Spl | 0,31 m ³ | 1.250.597,50 | 387.685,23 | |
| | | | | 31.106.698,25 |
| LANTAI. 2 (DUA) : | | | | |
| Kolom struktur | 6,12 m ³ | 1.716.775,00 | 10.506.663,00 | |
| Balok lantai lt.2 | 2,55 m ³ | 2.371.637,50 | 6.047.675,63 | |
| Plat lantai lt.2 | 4,67 m ³ | 1.149.127,25 | 5.366.424,26 | |
| Plat luifel lt.2 | 2,17 m ³ | 1.215.209,75 | 2.637.005,16 | |
| Listplank lt.2 | 0,46 m ³ | 1.297.266,25 | 596.742,48 | |
| Ring balk praktis 1Pc:2Psr:3Spl | 0,51 m ³ | 1.250.597,50 | 637.804,73 | |
| | | | | 25.792.315,26 |
| LANTAI. 3 (TIGA) : | | | | |
| Kolom struktur | 6,12 m ³ | 1.716.775,00 | 10.506.663,00 | |
| Balok lantai lt.3 | 2,55 m ³ | 2.371.637,50 | 6.047.675,63 | |
| Plat lantai lt.3 | 4,67 m ³ | 1.149.127,25 | 5.366.424,26 | |
| Plat luifel lt.3 | 2,17 m ³ | 1.215.209,75 | 2.637.005,16 | |
| Listplank lt.3 | 0,46 m ³ | 1.297.266,25 | 596.742,48 | |
| Ring balk praktis 1Pc:2Psr:3Spl | 0,51 m ³ | 1.250.597,50 | 637.804,73 | |
| | | | | 25.792.315,26 |

P. T. SEKAWAN TRINDAN

KANTOR PUSAT : JL. BERINGIN I No. 25 TELP. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
KANTOR PERWAKILAN : JL. RAYA RUNGKUT No.18 TELP. 8412859 - 8417182 Fax. (031) 8417182 SURABAYA (60293)

AN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

ENCANA ANGGARAN BIAYA - SELASAR PENGHUBUNG

alaman : 02

| URAIAN PEKERJAAN | VOLUME | HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) | TOTAL HARGA (Rp.) |
|----------------------------------|-----------------------|------------------------|------------------------|-----------------------|
| ANTAI. 4 (EMPAT) : | | | | |
| kolom struktur | 4,18 m ³ | 1.731.407,50 | 7.237.283,35 | |
| Balok lantai lt.4 | 2,55 m ³ | 2.371.637,50 | 6.047.675,63 | |
| Plat lantai lt.4 | 4,67 m ³ | 1.149.127,25 | 5.366.424,26 | |
| Plat luifel lt.4 | 2,17 m ³ | 1.215.209,75 | 2.637.005,16 | |
| Listplank lt.4 | 0,46 m ³ | 1.297.266,25 | 596.742,48 | |
| Balok atap | 2,53 m ³ | 1.868.447,50 | 4.727.172,18 | |
| Listplank atap | 5,96 m ³ | 511.618,75 | 3.049.247,75 | |
| Plat atap | 6,95 m ³ | 1.178.051,25 | 8.187.456,19 | |
| Ring balk praktis 1Pc:2Psr:3Splt | 0,51 m ³ | 1.250.597,50 | 637.804,73 | |
| | | | | 38.486.811,73 |
| PEKERJAAN PASANGAN BATU : | | | | |
| LANTAI. 1 (SATU) : | | | | |
| Pas. pondasi staal batu kali 1:5 | 19,96 m ³ | 76.805,00 | 1.533.027,80 | |
| Pas. batu merah 1:2 (1/2 batu) | 0,92 m ³ | 123.104,00 | 113.255,68 | |
| Pas. batu merah 1:4 (1/2 batu) | 4,49 m ³ | 102.183,00 | 458.801,67 | |
| | | | | 2.105.085,15 |
| LANTAI. 2 (DUA) : | | | | |
| Pas. batu merah 1:2 (1/2 batu) | 0,92 m ³ | 123.104,00 | 113.255,68 | |
| Pas. batu merah 1:4 (1/2 batu) | 6,47 m ³ | 102.183,00 | 661.124,01 | |
| | | | | 774.379,69 |
| LANTAI. 3 (TIGA) : | | | | |
| Pas. batu merah 1:2 (1/2 batu) | 0,92 m ³ | 123.104,00 | 113.255,68 | |
| Pas. batu merah 1:4 (1/2 batu) | 6,47 m ³ | 102.183,00 | 661.124,01 | |
| | | | | 774.379,69 |
| LANTAI. 4 (EMPAT) : | | | | |
| Pas. batu merah 1:2 (1/2 batu) | 0,92 m ³ | 123.104,00 | 113.255,68 | |
| Pas. batu merah 1:4 (1/2 batu) | 6,47 m ³ | 102.183,00 | 661.124,01 | |
| | | | | 774.379,69 |
| PEKERJAAN PLESTERAN : | | | | |
| LANTAI. 1 (SATU) : | | | | |
| Plesteran dinding 1:2 | 7,09 m ² | 6.306,00 | 44.709,54 | |
| Plesteran beton 1:3 | 134,45 m ² | 6.907,00 | 928.646,15 | |
| Plesteran dinding 1:4 | 84,32 m ² | 5.553,00 | 468.228,96 | |
| Plesteran sudut 1:3 | 496,76 m ² | 1.144,75 | 568.666,01 | |
| Acian plat lantai | 45,17 m ² | 4.000,00 | 180.680,00 | |
| Beraben pondasi | 39,91 m ² | 2.516,70 | 100.441,50 | |
| | | | | 2.291.372,16 |



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Lampiran 3

**Data proyek pembangunan Gedung Laboratorium Unit 3,
Universitas Sanata Dharma, Yogyakarta, Tahun 1996,
PT. Pembangunan Perumahan**

REKAPITULASI PERINCIAN ANGGARAN BIAYA

PEKERJAAN : PEMBANGUNAN GEDUNG LABORATORIUM UNIT 3
 UNIVERSITAS SANATA DHARMA
 LOKASI : PAINGAN, YOGYAKARTA

| NO. | URAIAN PEKERJAAN | JUMLAH HARGA |
|-------|--|----------------------|
| | | Rp. |
| I. | PEKERJAAN PERSIAPAN | Rp. 42,756,860.00 |
| II. | PEKERJAAN TANAH DAN PASIR | Rp. 5,584,151.60 |
| III. | PEKERJAAN BETON | |
| | a. Lantai 1 (satu) | Rp. 166,649,824.48 |
| | b. Lantai 2 (dua) | Rp. 150,183,130.71 |
| | c. Lantai 3 (tiga) | Rp. 150,338,201.18 |
| | d. Lantai 4 (empat) | Rp. 143,637,359.70 |
| | | Rp. 610,808,516.07 |
| IV. | PEKERJAAN PASANGAN BATU | |
| | a. Lantai 1 (satu) | Rp. 12,994,137.00 |
| | b. Lantai 2 (dua) | Rp. 13,027,462.56 |
| | c. Lantai 3 (tiga) | Rp. 11,688,044.64 |
| | d. Lantai 4 (empat) | Rp. 10,405,692.06 |
| | | Rp. 48,115,336.26 |
| V. | PEKERJAAN PLESTERAN | |
| | a. Lantai 1 (satu) | Rp. 12,294,361.50 |
| | b. Lantai 2 (dua) | Rp. 19,214,890.48 |
| | c. Lantai 3 (tiga) | Rp. 18,015,923.10 |
| | d. Lantai 4 (empat) | Rp. 17,124,422.30 |
| | | Rp. 66,649,597.38 |
| VI. | PEKERJAAN LANTAI | |
| | a. Lantai 1 (satu) | 17,167,941.47 |
| | b. Lantai 2 (dua) | 19,211,063.52 |
| | c. Lantai 3 (tiga) | 20,520,427.44 |
| | d. Lantai 4 (empat) | 12,847,368.00 |
| | | Rp. 69,746,800.43 |
| VII. | PEKERJAAN KOZYN & PARTISI ALUMINIUM | |
| | a. Lantai 1 (satu) | Rp. 60,469,256.00 |
| | b. Lantai 2 (dua) | Rp. 55,524,162.00 |
| | c. Lantai 3 (tiga) | Rp. 65,031,638.00 |
| | d. Lantai 4 (empat) | Rp. 58,128,890.00 |
| | | Rp. 239,153,946.00 |
| VIII. | PEKERJAAN ATAP & PENUTUP ATAP | Rp. 177,137,468.00 |
| IX. | PEKERJAAN PLAFOND | Rp. 46,928,576.00 |
| X. | PEKERJAAN TALANG DAN SENG | 20,078,626.00 |
| XI. | PEKERJAAN CAT | 63,569,100.00 |
| XII. | PEKERJAAN INSTALASI AIR BERSIH & AIR KOTOR | |
| | a. Instalasi Air Bersih | 12,331,500.00 |
| | b. Instalasi Air Kotor | 32,897,472.00 |
| | | Rp. 45,228,972.00 |
| XIII. | PEKERJAAN INSTALASI LISTRIK | |
| | a. Lantai 1 (satu) | 24,739,800.00 |
| | b. Lantai 2 (dua) | 18,191,700.00 |
| | c. Lantai 3 (tiga) | 22,191,500.00 |
| | d. Lantai 4 (empat) | 18,320,400.00 |
| | | Rp. 83,443,400.00 |
| XIV. | PEKERJAAN PENANGKAL PETIR | Rp. 10,516,200.00 |
| XV. | INSTALASI HYDRANT DALAM GEDUNG | Rp. 9,015,300.00 |
| XVI. | PEKERJAAN LAIN-LAIN | Rp. 18,705,378.00 |
| | JUMLAH NOMINAL | Rp. 1,557,438,227.74 |
| | JASA & RESIKO | Rp. 155,743,822.77 |
| | JUMLAH | Rp. 1,713,182,050.51 |
| | PAJAK 10 % | Rp. 171,318,205.05 |
| | JUMLAH TOTAL | Rp. 1,884,500,255.56 |
| | DIBULATKAN | Rp. 1,884,500,000.00 |

TERBILANG : SATU MILYAR DELAPAN RATUS DELAPAN PULUH EMPAT JUTA LIMA RATUS RIBU RUPIAH.

Semarang, 26 Nopember 1996
 PT. PEMBANGUNAN PERUMAHAN
 (PERSERO) CABANG V

PP
 Ir. Sugeng Sunardi
 Kepala Cabang
 CABANG

PERINCIAN ANGGARAN BIAYA

PEKERJAAN : PEMBANGUNAN GEDUNG LABORATORIUM UNIT 3
UNIVERSITAS SANATA DHARMA
LOKASI : PAINGAN, YOGYAKARTA

Kontraktor : PT. PEMBANGUNAN PERUMAHAN (PERSERO) CABANG V

| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|--|------------------------------------|-------------------------|----------------------|----------------------|
| I. PEKERJAAN PERSIAPAN | | | | |
| 1 | Pembersihan lapangan | 3,920.00 m ² | 350.00 | 1,372,000.00 |
| 2 | Penyempurnaan uitzet & bouwplank | 220.00 ls | 4,663.00 | 1,025,860.00 |
| 3 | Pagar pengaman | 223.00 m ¹ | 17,500.00 | 3,902,500.00 |
| 4 | Direksi keet / brak kerja / gudang | 90.00 m ² | 125,000.00 | 11,250,000.00 |
| 5 | Pengupasan beton tiang pancang | 474.00 ls | 15,000.00 | 7,110,000.00 |
| 6 | Asuransi | 1.00 ls | 4,750,000.00 | 4,750,000.00 |
| 7 | Air & listrik kerja | 1.00 ls | 6,346,500.00 | 6,346,500.00 |
| 8 | Beaya-beaya administrasi | 1.00 ls | 7,000,000.00 | 7,000,000.00 |
| Jumlah I | | | | 42,756,860.00 |
| II. PEKERJAAN TANAH & PASIR | | | | |
| 1 | Galian tanah poer | 129.60 m ³ | 4,500.00 | 583,200.00 |
| 2 | Galian tanah pondasi steel & sloof | 362.80 m ³ | 4,500.00 | 1,632,600.00 |
| 3 | Urug kembali | 164.60 m ³ | 2,250.00 | 370,350.00 |
| 4 | Urug tanah bawah lantai | 304.00 m ³ | 4,300.00 | 1,307,200.00 |
| 5 | Urug pasir : | | | |
| | a. Bawah lantai kerja | 29.44 m ³ | 11,260.00 | 331,494.40 |
| | b. Bawah pondasi | 16.32 m ³ | 11,260.00 | 183,763.20 |
| | c. Bawah keramik lantai 1 | 26.10 m ³ | 11,260.00 | 293,886.00 |
| | d. Bawah keramik lantai 2 | 26.10 m ³ | 11,260.00 | 293,886.00 |
| | e. Bawah keramik lantai 3 | 26.1 m ³ | 11,260.00 | 293,886.00 |
| | f. Bawah keramik lantai 4 | 26.1 m ³ | 11,260.00 | 293,886.00 |
| Jumlah II | | | | 5,584,151.60 |
| III. PEKERJAAN BETON BERTULANG | | | | |
| A. Lantai 1 (satu) | | | | |
| 1 | Lantai kerja 1 : 3 : 5 | 12.02 m ³ | 77,541.00 | 932,042.82 |
| 2 | Beton poer | 143.00 m ³ | 314,585.00 | 44,985,655.00 |
| 3 | Beton sloof struktur | 106.56 m ³ | 511,133.00 | 54,466,332.48 |
| 4 | Beton sloof praktis | 11.90 m ³ | 339,479.00 | 4,039,800.10 |
| 5 | Kolom struktur | 96.65 m ³ | 499,236.00 | 48,251,159.40 |
| 6 | Beton konsol | 4.38 m ³ | 558,864.00 | 2,447,824.32 |
| 7 | Beton tangga (dari lt.1 ke lt.2) | 3.71 m ³ | 476,175.00 | 1,766,609.25 |



| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|----------------------------|------------------------------------|----------------------|----------------------|----------------------|
| 8 | Beton luifel | 3.68 m ³ | 558,864.00 | 2,056,619.52 |
| 9 | Plat luifel | 11.30 m ³ | 477,776.00 | 5,398,868.80 |
| 10 | Listplank luifel | 0.91 m ³ | 684,629.00 | 624,381.65 |
| 11 | Kolom praktis | 1.70 m ³ | 360,629.00 | 613,069.30 |
| 12 | Balok latei | 1.90 m ³ | 360,629.00 | 685,195.10 |
| 13 | Ringbalk praktis | 1.06 m ³ | 360,629.00 | 382,266.74 |
| Jumlah a | | | | 166,649,824.48 |
| B. Lantai 2 (dua) | | | | |
| 1 | Kolom struktur | 78.26 m ³ | 499,236.00 | 39,070,209.36 |
| 2 | Balok lantai lt. 2 | 93.37 m ³ | 533,901.00 | 49,850,336.37 |
| 3 | Plat lantai lt. 2 | 89.08 m ³ | 536,166.00 | 47,761,667.28 |
| 4 | Beton tangga (dari lt. 2 ke lt. 3) | 3.71 m ³ | 476,175.00 | 1,766,609.25 |
| 5 | Beton konsol | 4.38 m ³ | 558,864.00 | 2,447,824.32 |
| 6 | Balok luifel | 3.17 m ³ | 558,864.00 | 1,771,598.88 |
| 7 | Plat luifel | 11.30 m ³ | 477,776.00 | 5,398,868.80 |
| 8 | Listplank luifel | 0.91 m ³ | 684,629.00 | 623,012.39 |
| 9 | Kolom praktis | 1.32 m ³ | 360,629.00 | 476,030.28 |
| 10 | Balok latei | 1.90 m ³ | 360,629.00 | 685,195.10 |
| 11 | Ringbalk praktis | 0.92 m ³ | 360,629.00 | 331,778.68 |
| Jumlah b | | | | 150,183,130.71 |
| C. Lantai 3 (tiga) | | | | |
| 1 | Kolom struktur | 78.26 m ³ | 499,236.00 | 39,070,209.36 |
| 2 | Balok lantai lt. 3 | 93.37 m ³ | 533,901.00 | 49,850,336.37 |
| 3 | Plat lantai lt. 3 | 89.08 m ³ | 536,166.00 | 47,761,667.28 |
| 4 | Beton tangga (dari lt. 3 ke lt. 4) | 3.71 m ³ | 476,175.00 | 1,766,609.25 |
| 5 | Beton konsol | 4.38 m ³ | 558,864.00 | 2,447,824.32 |
| 6 | Balok luifel | 3.17 m ³ | 558,864.00 | 1,771,598.88 |
| 7 | Plat luifel | 11.30 m ³ | 477,776.00 | 5,398,868.80 |
| 8 | Listplank luifel | 0.91 m ³ | 684,629.00 | 623,012.39 |
| 9 | Kolom praktis | 1.75 m ³ | 360,629.00 | 631,100.75 |
| 10 | Balok latei | 1.90 m ³ | 360,629.00 | 685,195.10 |
| 11 | Ringbalk praktis | 0.92 m ³ | 360,629.00 | 331,778.68 |
| Jumlah c | | | | 150,338,201.18 |
| D. Lantai 4 (empat) | | | | |
| 1 | Kolom struktur | 50.71 m ³ | 499,236.00 | 25,316,257.56 |
| 2 | Balok lantai lt. 4 | 93.37 m ³ | 533,901.00 | 49,850,336.37 |
| 3 | Plat lantai lt. 4 | 89.08 m ³ | 536,166.00 | 47,761,667.28 |
| 4 | Beton konsol | 4.38 m ³ | 558,864.00 | 2,447,824.32 |
| 5 | Balok luifel | 13.74 m ³ | 558,864.00 | 7,678,791.36 |
| 6 | Plat luifel | 6.64 m ³ | 477,776.00 | 3,172,432.64 |
| 7 | Listplank luifel | 0.91 m ³ | 684,629.00 | 623,012.39 |
| 8 | Kolom praktis | 1.92 m ³ | 360,629.00 | 692,407.68 |
| 9 | Balok latei | 1.90 m ³ | 360,629.00 | 685,195.10 |
| 10 | Ringbalk praktis | 15.00 m ³ | 360,629.00 | 5,409,435.00 |
| Jumlah d | | | | 143,637,359.70 |



| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|------------------------------------|------------------------------|-------------------------|----------------------|----------------------|
| IV. PEKERJAAN PASANGAN BATU | | | | |
| a. Lantai 1 (satu) | | | | |
| 1 | Pas. Pondasi batu kali 1 : 5 | 56.32 m ³ | 49,917.00 | 2,811,325.44 |
| 2 | Pas. Batu merah 1 : 2 | 3.98 m ³ | 92,694.00 | 368,922.12 |
| 3 | Pas. Batu merah 1 : 4 | 125.04 m ³ | 78,486.00 | 9,813,889.44 |
| Jumlah a | | | | 12,994,137.00 |
| b. Lantai 2 (dua) | | | | |
| 1 | Pas. Batu merah 1 : 2 | 3.45 m ³ | 92,694.00 | 319,794.30 |
| 2 | Pas. Batu merah 1 : 4 | 161.91 m ³ | 78,486.00 | 12,707,668.26 |
| Jumlah b | | | | 13,027,462.56 |
| c. Lantai 3 (tiga) | | | | |
| 1 | Pas. Batu merah 1 : 2 | 3.75 m ³ | 92,694.00 | 347,602.50 |
| 2 | Pas. Batu merah 1 : 4 | 144.49 m ³ | 78,486.00 | 11,340,442.14 |
| Jumlah c | | | | 11,688,044.64 |
| d. Lantai 4 (empat) | | | | |
| 1 | Pas. Batu merah 1 : 2 | 3.15 m ³ | 92,694.00 | 291,986.10 |
| 2 | Pas. Batu merah 1 : 4 | 128.86 m ³ | 78,486.00 | 10,113,705.96 |
| Jumlah d | | | | 10,405,692.06 |
| V. PEKERJAAN PLESTERAN | | | | |
| a. Lantai 1 (satu) | | | | |
| 1 | Plesteran dinding 1 : 2 | 1,985.00 m ² | 4,238.00 | 8,412,430.00 |
| 2 | Plesteran beton 1 : 3 | 421.70 m ² | 3,770.00 | 1,589,809.00 |
| 3 | Plesteran dinding 1 : 4 | 168.05 m ² | 3,482.00 | 585,150.10 |
| 4 | Plesteran sudut 1 : 3 | 2,532.60 m' | 674.00 | 1,706,972.40 |
| Jumlah a | | | | 12,294,361.50 |
| b. Lantai 2 (dua) | | | | |
| 1 | Plesteran dinding 1 : 2 | 1,985.00 m ² | 4,238.00 | 8,412,430.00 |
| 2 | Plesteran beton 1 : 3 | 421.70 m ² | 3,770.00 | 1,589,809.00 |
| 3 | Plesteran dinding 1 : 4 | 2,158.74 m ² | 3,482.00 | 7,516,732.68 |
| 4 | Plesteran sudut 1 : 3 | 2,516.20 m' | 674.00 | 1,695,918.80 |
| Jumlah b | | | | 19,214,890.48 |
| c. Lantai 3 (tiga) | | | | |
| 1 | Plesteran dinding 1 : 2 | 1985.00 m ² | 4,238.00 | 8,412,430.00 |
| 2 | Plesteran beton 1 : 3 | 421.70 m ² | 3,770.00 | 1,589,809.00 |
| 3 | Plesteran dinding 1 : 4 | 1,926.25 m ² | 3,482.00 | 6,707,202.50 |
| 4 | Plesteran sudut 1 : 3 | 1,938.40 m' | 674.00 | 1,306,481.60 |
| Jumlah c | | | | 18,015,923.10 |



| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|-----------------------------|---|-------------------------|----------------------|----------------------|
| d. Lantai 4 (empat) | | | | |
| 1 | Plesteran dinding 1 : 2 | 1,985.00 m ² | 4,238.00 | 8,412,430.00 |
| 2 | Plesteran beton 1 : 3 | 421.70 m ² | 3,770.00 | 1,589,809.00 |
| 3 | Plesteran dinding 1 : 4 | 1,710.20 m ² | 3,482.00 | 5,954,916.40 |
| 4 | Plesteran sudut 1 : 3 | 1,731.85 m' | 674.00 | 1,167,266.90 |
| Jumlah d | | | | 17,124,422.30 |
| VI. PEKERJAAN LANTAI | | | | |
| a. Lantai 1 (satu) | | | | |
| 1 | Tegel abu-abu 20/20 | 332 m ² | 12,198.00 | 4,049,736.00 |
| 2 | Keramik lantai 30/30 | 448 m ² | 20,786.00 | 9,312,128.00 |
| 3 | Ongkos pasang lantai keramik tahan asam | 2.25 m ² | 7,456.00 | 16,776.00 |
| 4 | Keramik dinding 20/25 | 43.95 m ² | 23,521.00 | 1,033,747.95 |
| 5 | Tegel abu-abu plint abu-abu 10/20 | 252 m' | 2,841.00 | 715,932.00 |
| 6 | Keramik plint 10/30 | 128 m' | 5,037.00 | 644,736.00 |
| 7 | Keramik tangga 30/30 | 26.52 m ² | 21,286.00 | 564,504.72 |
| 8 | Step nose tangga | 44.80 m' | 15,291.00 | 685,036.80 |
| 9 | Ampyangan dengan batu hitam | 24.00 m ² | 6,056.00 | 145,344.00 |
| Jumlah a | | | | 17,167,941.47 |
| b. Lantai 2 (dua) | | | | |
| 1 | Tegel abu-abu 20/20 | 274 m ² | 12,198.00 | 3,342,252.00 |
| 2 | Keramik lantai 30/30 | 624 m ² | 20,786.00 | 12,970,464.00 |
| 3 | Ongkos pasang lantai keramik tahan asam | 8.25 m ² | 7,456.00 | 61,512.00 |
| 4 | Tegel abu-abu plint abu-abu 10/20 | 137 m' | 2,841.00 | 389,217.00 |
| 5 | Keramik plint 10/30 | 209 m' | 5,037.00 | 1,052,733.00 |
| 6 | Keramik tangga 30/30 | 26.52 m ² | 21,286.00 | 564,504.72 |
| 7 | Step nose tangga | 44.80 m' | 15,291.00 | 685,036.80 |
| 8 | Ampyangan dengan batu hitam | 24.00 m ² | 6,056.00 | 145,344.00 |
| Jumlah b | | | | 19,211,063.52 |
| c. Lantai 3 (tiga) | | | | |
| 1 | Tegel abu-abu 20/20 | 170.8 m ² | 12,198.00 | 2,083,418.40 |
| 2 | Keramik lantai 30/30 | 722 m ² | 20,786.00 | 15,007,492.00 |
| 3 | Ongkos pasang lantai keramik tahan asam | 4.25 m ² | 7,456.00 | 31,688.00 |
| 4 | Keramik dinding 20/25 | 63.96 m ² | 5,037.00 | 322,166.52 |
| 5 | Tegel plint abu-abu 10/20 | 81 m' | 2,841.00 | 230,121.00 |
| 6 | Keramik plint 10/30 | 288 m' | 5,037.00 | 1,450,656.00 |
| 7 | Keramik tangga 30/30 | 26.52 m ² | 21,286.00 | 564,504.72 |
| 8 | Step nose tangga | 44.80 m' | 15,291.00 | 685,036.80 |
| 9 | Ampyangan dengan batu hitam | 24.00 m ² | 6,056.00 | 145,344.00 |
| Jumlah c | | | | 20,520,427.44 |



| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|--|--|-----------------------|----------------------|----------------------|
| | d. Lantai 4 (empat) | | | |
| 1 | Tegel abu-abu 20/20 | 240 m ² | 12,198.00 | 2,927,520.00 |
| 2 | Keramik lantai 30/30 | 367 m ² | 20,786.00 | 7,628,462.00 |
| 3 | Ongkos pasang lantai keramik tahan asam | 196.75 m ² | 7,456.00 | 1,466,968.00 |
| 4 | Tegel plint abu-abu 10/20 | 44 m' | 2,841.00 | 125,004.00 |
| 5 | Keramik plint 10/30 | 110 m' | 5,037.00 | 554,070.00 |
| 6 | Ampyangan dengan batu hitam | 24.00 m ² | 6,056.00 | 145,344.00 |
| | Jumlah d | | | 12,847,368.00 |
| VII. PEKERJAAN KUSEN DAN PARTISI ALUMINIUM | | | | |
| | a. Lantai 1 (satu) | | | |
| 1 | Kusen aluminium type P1 | 1.00 unit | 508,108.00 | 508,108.00 |
| 2 | Kusen aluminium type P2 | 2.00 unit | 508,108.00 | 1,016,216.00 |
| 3 | Kusen aluminium type P2' | 1.00 unit | 508,108.00 | 508,108.00 |
| 4 | Kusen aluminium type PS (Pintu shaft) | 1.00 unit | 90,000.00 | 90,000.00 |
| 5 | Kusen aluminium type PJ1 | 1.00 unit | 1,500,265.00 | 1,500,265.00 |
| 6 | Kusen aluminium type PJ2 | 5.00 unit | 1,514,461.00 | 7,572,305.00 |
| 7 | Kusen aluminium type PJ3 | 1.00 unit | 935,955.00 | 935,955.00 |
| 8 | Kusen aluminium type J1 | 11.00 unit | 1,249,780.00 | 13,747,580.00 |
| 9 | Kusen aluminium type J2 | 2.00 unit | 520,690.00 | 1,041,380.00 |
| 10 | Kusen aluminium type J3 | 2.00 unit | 1,249,354.00 | 2,498,708.00 |
| 11 | Kusen aluminium type J4 | 1.00 unit | 1,256,404.00 | 1,256,404.00 |
| 12 | Kusen aluminium type J5 | 1.00 unit | 630,722.00 | 630,722.00 |
| 13 | Kusen aluminium type BV1 | 5.00 unit | 600,158.00 | 3,000,790.00 |
| 14 | Kusen aluminium type BV2 | 1.00 unit | 507,378.00 | 507,378.00 |
| 15 | Partisi aluminium type PT1 | 1.00 unit | 956,708.00 | 956,708.00 |
| 16 | Partisi aluminium type PT2 | 9.00 unit | 714,585.00 | 6,431,265.00 |
| 17 | Partisi aluminium type PT3 | 1.00 unit | 759,183.00 | 759,183.00 |
| 18 | Partisi aluminium type PT4 | 1.00 unit | 970,581.00 | 970,581.00 |
| 19 | Partisi aluminium type PT5 | 2.00 unit | 962,800.00 | 1,925,600.00 |
| 20 | Partisi aluminium type PT6 | 1.00 unit | 511,700.00 | 511,700.00 |
| 21 | Partisi aluminium type PT7 | 1.00 unit | 962,800.00 | 962,800.00 |
| 22 | Partisi aluminium type PT8 | 1.00 unit | 743,000.00 | 743,000.00 |
| 23 | Partisi aluminium type PT9 | 1.00 unit | 962,800.00 | 962,800.00 |
| 24 | Partisi aluminium type PT10 | 1.00 unit | 689,800.00 | 689,800.00 |
| 25 | Partisi aluminium type PT11 | 1.00 unit | 1,073,700.00 | 1,073,700.00 |
| 26 | Partisi aluminium type PT12 | 1.00 unit | 1,960,700.00 | 1,960,700.00 |
| 27 | Partisi aluminium type PT13 | 2.00 unit | 724,000.00 | 1,448,000.00 |
| 28 | Partisi aluminium type PT14 | 1.00 unit | 583,600.00 | 583,600.00 |
| 29 | Partisi aluminium type PT15 | 1.00 unit | 582,200.00 | 582,200.00 |
| 30 | Partisi aluminium type PT16 | 1.00 unit | 803,400.00 | 803,400.00 |
| 31 | Partisi aluminium type PT17 | 1.00 unit | 749,100.00 | 749,100.00 |
| 32 | Partisi aluminium type PT18 | 1.00 unit | 803,400.00 | 803,400.00 |
| 33 | Partisi aluminium type PT19 | 1.00 unit | 962,800.00 | 962,800.00 |
| 34 | Partisi aluminium type PT20 | 1.00 unit | 582,200.00 | 582,200.00 |
| 35 | Railing tangga (beton dengan pipa GIP dia 2,5 ") | 28.4 m' | 42,000.00 | 1,192,800.00 |
| | Jumlah a | | | 60,469,256.00 |



| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|-----|--|------------|----------------------|----------------------|
| | b. Lantai 2 (dua) | | | |
| 1 | Kusen aluminium type P2 | 1.00 unit | 508,108.00 | 508,108.00 |
| 2 | Kusen aluminium type P2' | 2.00 unit | 508,108.00 | 1,016,216.00 |
| 3 | Kusen aluminium type PS (Pintu shaft) | 1.00 unit | 90,000.00 | 90,000.00 |
| 4 | Kusen aluminium type PJ2 | 3.00 unit | 1,514,461.00 | 4,543,383.00 |
| 5 | Kusen aluminium type J1 | 10.00 unit | 1,249,780.00 | 12,497,800.00 |
| 6 | Kusen aluminium type J2 | 1.00 unit | 520,690.00 | 520,690.00 |
| 7 | Kusen aluminium type J3 | 2.00 unit | 1,249,354.00 | 2,498,708.00 |
| 8 | Kusen aluminium type J4 | 1.00 unit | 1,256,404.00 | 1,256,404.00 |
| 9 | Kusen aluminium type J5 | 2.00 unit | 630,722.00 | 1,261,444.00 |
| 10 | Kusen aluminium type BV1 | 7.00 unit | 600,158.00 | 4,201,106.00 |
| 11 | Kusen aluminium type BV2 | 1.00 unit | 507,378.00 | 507,378.00 |
| 12 | Partisi aluminium type PT1 | 1.00 unit | 956,708.00 | 956,708.00 |
| 13 | Partisi aluminium type PT2 | 3.00 unit | 714,585.00 | 2,143,755.00 |
| 14 | Partisi aluminium type PT4 | 2.00 unit | 970,581.00 | 1,941,162.00 |
| 15 | Partisi aluminium type PT5 | 1.00 unit | 962,800.00 | 962,800.00 |
| 16 | Partisi aluminium type PT6 | 1.00 unit | 511,700.00 | 511,700.00 |
| 17 | Partisi aluminium type PT12 | 1.00 unit | 1,960,700.00 | 1,960,700.00 |
| 18 | Partisi aluminium type PT13 | 1.00 unit | 724,000.00 | 724,000.00 |
| 19 | Partisi aluminium type PT15 | 3.00 unit | 582,200.00 | 1,746,600.00 |
| 20 | Partisi aluminium type PT17 | 2.00 unit | 749,100.00 | 1,498,200.00 |
| 21 | Partisi aluminium type PT20 | 1.00 unit | 582,200.00 | 582,200.00 |
| 22 | Partisi aluminium type PT21 | 1.00 unit | 1,077,200.00 | 1,077,200.00 |
| 23 | Partisi aluminium type PT22 | 1.00 unit | 1,301,800.00 | 1,301,800.00 |
| 24 | Partisi aluminium type PT23 | 2.00 unit | 748,400.00 | 1,496,800.00 |
| 25 | Partisi aluminium type PT24 | 1.00 unit | 962,800.00 | 962,800.00 |
| 26 | Partisi aluminium type PT25 | 1.00 unit | 327,000.00 | 327,000.00 |
| 27 | Partisi aluminium type PT26 | 1.00 unit | 737,400.00 | 737,400.00 |
| 28 | Partisi aluminium type PT27 | 1.00 unit | 362,800.00 | 362,800.00 |
| 29 | Partisi aluminium type PT28 | 1.00 unit | 1,823,500.00 | 1,823,500.00 |
| 30 | Partisi aluminium type PT29 | 1.00 unit | 245,400.00 | 245,400.00 |
| 31 | Partisi aluminium type PT30 | 1.00 unit | 845,200.00 | 845,200.00 |
| 32 | Railing tangga (beton dengan pipa GIP dia 2,5") | 28.40 m' | 42,000.00 | 1,192,800.00 |
| 33 | Railing selasar (pas. bata dengan pipa GIP dia 2,5") | 76.00 m' | 42,400.00 | 3,222,400.00 |
| | Jumlah b | | | 55,524,162.00 |



| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|----------------------------|--|------------|----------------------|----------------------|
| c. Lantai 3 (tiga) | | | | |
| 1 | Kusen aluminium type P1' | 1.00 unit | 508,108.00 | 508,108.00 |
| 2 | Kusen aluminium type P2 | 1.00 unit | 508,108.00 | 508,108.00 |
| 3 | Kusen aluminium type P2' | 6.00 unit | 508,108.00 | 3,048,648.00 |
| 4 | Kusen aluminium type PS (Pintu shaft) | 1.00 unit | 90,000.00 | 90,000.00 |
| 5 | Kusen aluminium type PJ2 | 3.00 unit | 1,514,461.00 | 4,543,383.00 |
| 6 | Kusen aluminium type J1 | 10.00 unit | 1,249,780.00 | 12,497,800.00 |
| 7 | Kusen aluminium type J2 | 1.00 unit | 520,690.00 | 520,690.00 |
| 8 | Kusen aluminium type J3 | 1.00 unit | 1,249,354.00 | 1,249,354.00 |
| 9 | Kusen aluminium type J4 | 1.00 unit | 1,256,404.00 | 1,256,404.00 |
| 10 | Kusen aluminium type J5 | 2.00 unit | 630,722.00 | 1,261,444.00 |
| 11 | Kusen aluminium type J6 | 4.00 unit | 630,722.00 | 2,522,888.00 |
| 12 | Kusen aluminium type BV1 | 7.00 unit | 600,158.00 | 4,201,106.00 |
| 13 | Kusen aluminium type BV2 | 1.00 unit | 507,378.00 | 507,378.00 |
| 14 | Partisi aluminium type PT2 | 9.00 unit | 714,585.00 | 6,431,265.00 |
| 15 | Partisi aluminium type PT4 | 2.00 unit | 970,581.00 | 1,941,162.00 |
| 16 | Partisi aluminium type PT10 | 1.00 unit | 689,800.00 | 689,800.00 |
| 17 | Partisi aluminium type PT13 | 2.00 unit | 724,000.00 | 1,448,000.00 |
| 18 | Partisi aluminium type PT15 | 3.00 unit | 962,800.00 | 2,888,400.00 |
| 19 | Partisi aluminium type PT16 | 1.00 unit | 511,700.00 | 511,700.00 |
| 20 | Partisi aluminium type PT17 | 4.00 unit | 962,800.00 | 3,851,200.00 |
| 21 | Partisi aluminium type PT20 | 1.00 unit | 582,200.00 | 582,200.00 |
| 22 | Partisi aluminium type PT25 | 2.00 unit | 327,000.00 | 654,000.00 |
| 23 | Partisi aluminium type PT31 | 1.00 unit | 693,800.00 | 693,800.00 |
| 24 | Partisi aluminium type PT32 | 1.00 unit | 1,071,900.00 | 1,071,900.00 |
| 25 | Partisi aluminium type PT33 | 2.00 unit | 1,147,300.00 | 2,294,600.00 |
| 26 | Partisi aluminium type PT34 | 2.00 unit | 1,869,400.00 | 3,738,800.00 |
| 27 | Partisi aluminium type PT35 | 1.00 unit | 1,104,300.00 | 1,104,300.00 |
| 28 | Railing tangga (beton dengan pipa GIP dia 2,5") | 28.40 m' | 42,000.00 | 1,192,800.00 |
| 29 | Railing selasar (pas. bata dengan pipa GIP dia 2,5") | 76.00 m' | 42,400.00 | 3,222,400.00 |
| Jumlah c | | | | 65,031,638.00 |
| d. Lantai 4 (empat) | | | | |
| 1 | Kusen aluminium type P2' | 3.00 unit | 508,108.00 | 1,524,324.00 |
| 2 | Kusen aluminium type PS (Pirtu shaft) | 1.00 unit | 90,000.00 | 90,000.00 |
| 3 | Kusen aluminium type PJ2 | 3.00 unit | 1,514,461.00 | 4,543,383.00 |
| 4 | Kusen aluminium type J1 | 10.00 unit | 1,249,780.00 | 12,497,800.00 |
| 5 | Kusen aluminium type J2 | 1.00 unit | 520,690.00 | 520,690.00 |
| 6 | Kusen aluminium type J3 | 2.00 unit | 1,249,354.00 | 2,498,708.00 |
| 7 | Kusen aluminium type J5 | 4.00 unit | 630,722.00 | 2,522,888.00 |
| 8 | Kusen aluminium type BV1 | 7.00 unit | 600,158.00 | 4,201,106.00 |
| 9 | Kusen aluminium type BV3 | 1.00 unit | 412,800.00 | 412,800.00 |
| 10 | Partisi aluminium type PT2 | 9.00 unit | 714,585.00 | 6,431,265.00 |
| 11 | Partisi aluminium type PT3 | 1.00 unit | 759,183.00 | 759,183.00 |
| 12 | Partisi aluminium type PT4 | 3.00 unit | 970,581.00 | 2,911,743.00 |
| 13 | Partisi aluminium type PT6 | 5.00 unit | 511,700.00 | 2,558,500.00 |
| 14 | Partisi aluminium type PT7 | 2.00 unit | 962,800.00 | 1,925,600.00 |
| 15 | Partisi aluminium type PT9 | 2.00 unit | 962,800.00 | 1,925,600.00 |
| 16 | Partisi aluminium type PT13 | 1.00 unit | 724,000.00 | 724,000.00 |
| 17 | Partisi aluminium type PT15 | 2.00 unit | 582,200.00 | 1,164,400.00 |
| 18 | Partisi aluminium type PT17 | 2.00 unit | 749,100.00 | 1,498,200.00 |
| 19 | Partisi aluminium type PT22 | 2.00 unit | 1,301,800.00 | 2,603,600.00 |
| 20 | Partisi aluminium type PT36 | 1.00 unit | 1,598,300.00 | 1,598,300.00 |
| 21 | Partisi aluminium type PT37 | 1.00 unit | 801,600.00 | 801,600.00 |
| 22 | Railing tangga (beton dengan pipa GIP dia 2,5") | 28.40 m' | 42,000.00 | 1,192,800.00 |
| 23 | Railing selasar (pas. bata dengan pipa GIP dia 2,5") | 76.00 m' | 42,400.00 | 3,222,400.00 |
| Jumlah d | | | | 58,128,890.00 |



| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|--|---|-------------------------|----------------------|----------------------|
| VIII. PEKERJAAN ATAP DAN PENUTUP ATAP | | | | |
| 1 | Kuda-kuda baja besi siku | 12,680.00 kg | 2,180.00 | 27,642,400.00 |
| 2 | Gording CNP 150.65.20.3,2 | 1,578.50 kg | 2,180.00 | 3,441,130.00 |
| 3 | Jurai CNP 150.65.20.3,2 | 13,498.00 kg | 2,180.00 | 29,425,640.00 |
| 4 | Angin-angin besi beton diameter 12 mm | 255.00 kg | 2,180.00 | 555,900.00 |
| 5 | Sagrot besi beton diameter 12 mm | 470.00 kg | 2,180.00 | 1,024,600.00 |
| 6 | Plat simpul kuda-kuda tebal 12 mm & 8 mm | 4,574.00 kg | 2,180.00 | 9,971,320.00 |
| 7 | Angkur baut tumpuan kuda-kuda diameter 19 mm | 900.00 kg | 2,180.00 | 1,962,000.00 |
| 8 | Baut HTB 1/2" | 4,578.00 bh | 750.00 | 3,433,500.00 |
| 9 | Baut HTB 5/8" | 230.00 bh | 1,000.00 | 230,000.00 |
| 10 | Catwalk multiplek 18 mm dg penggantung CNP | 132.80 m' | 50,000.00 | 6,640,000.00 |
| 11 | Usuk bangkirai reng jati 3/4 | 1,401.00 m ² | 13,826.00 | 19,370,226.00 |
| 12 | Usuk bangkirai reng jati 3/4 diserut pd tritis lt.1 s/d 4 | 1,460.00 m ² | 16,326.00 | 23,835,960.00 |
| 13 | Papan ruter jati 2/15 | 118.00 m' | 11,855.00 | 1,398,890.00 |
| 14 | Papan listplank jati 2/30 | 210.00 m' | 21,710.00 | 4,559,100.00 |
| 15 | Papan listplank jati 2 x 2/30 | 832.00 m' | 43,420.00 | 36,125,440.00 |
| 16 | Ongkos pasang genteng keramik berglazuur | 2,601.00 m ² | 2,000.00 | 5,202,000.00 |
| 17 | Ongkos pasang kerpus keramik berglazuur | 118.00 m' | 9,224.00 | 1,088,432.00 |
| 18 | Cross ventilation | 15.00 unit | 82,062.00 | 1,230,930.00 |
| Jumlah VIII | | | | 177,137,468.00 |
| IX. PEKERJAAN PLAFOND | | | | |
| 1 | Plafond asbes plat 60/120 4 mm rk. kamper lt. 1 | 48.00 m ² | 17,512.00 | 840,576.00 |
| 2 | Plepet propil tepi 3/4 (kamper) lt. 1 | 48.00 m' | 3,500.00 | 168,000.00 |
| 3 | Plafond dinogips 60/120 lt. 1 | 624.00 m ² | 17,500.00 | 10,920,000.00 |
| 4 | Plafond dinogips 60/120 lt. 2 | 656.00 m ² | 17,500.00 | 11,480,000.00 |
| 5 | Plafond dinogips 60/120 lt. 3 | 672.00 m ² | 17,500.00 | 11,760,000.00 |
| 6 | Plafond dinogips 60/120 lt. 4 | 672.00 m ² | 17,500.00 | 11,760,000.00 |
| Jumlah IX | | | | 46,928,576.00 |
| X. PEKERJAAN TALANG DAN SENG | | | | |
| 1 | Papan talang datar & killkipper bangkirai | 49.00 m ³ | 5,674.00 | 278,026.00 |
| 2 | Talang datar & killkipper seng BJLS 50 | 208.00 m' | 7,500.00 | 1,560,000.00 |
| 3 | Krool talang seng BJLS 50 | 208.00 m' | 2,500.00 | 520,000.00 |
| 4 | Kiem talang besi striplat 1" | 159.00 bh | 3,500.00 | 556,500.00 |
| 5 | Talang vertikal PVC 4" | 490.00 m' | 12,500.00 | 6,125,000.00 |
| 6 | Keni PVC 4" | 432.00 bh | 4,750.00 | 2,052,000.00 |
| 7 | Tee PVC 4" | 216.00 bh | 15,600.00 | 3,369,600.00 |
| 8 | Saringan talang (Roofdrain) | 216.00 bh | 25,000.00 | 5,400,000.00 |
| 9 | Cor beton pelapis talang vertikal dg difinishnya | 29.00 bh | 7,500.00 | 217,500.00 |
| Jumlah X | | | | 20,078,626.00 |

| No | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|------|--|-------------------------|----------------------|----------------------|
| XI. | PEKERJAAN CAT | | | |
| 1 | Cat meni kayu patna | 1.00 ls | 950,000.00 | 950,000.00 |
| 2 | Cat tembok luar ICI weather shield | 2,950.70 m ² | 5,000.00 | 14,753,500.00 |
| 3 | Cat dinding dalam ICI Catylac | 4,425.60 m ² | 3,000.00 | 13,276,800.00 |
| 4 | Cat plafond asbes plat ICI Catylac | 48.00 m ² | 3,000.00 | 144,000.00 |
| 5 | Cat plepet profil tepi ICI Super Gloss | 48.00 m' | 1,250.00 | 60,000.00 |
| 6 | Cat plat beton (texture ICI Catylac) | 1,636.80 m ² | 7,500.00 | 12,276,000.00 |
| 7 | Cat listplank kayu ICI Super Gloss | 1,132.80 m ² | 9,000.00 | 10,195,200.00 |
| 8 | Cat meni besi | 1.00 ls | 3,500,000.00 | 3,500,000.00 |
| 9 | Cat mowllax usuk & reng tritisan | 1,460.00 m ² | 4,500.00 | 6,570,000.00 |
| 10 | Cat DUCO | 67.04 m ² | 27,500.00 | 1,843,600.00 |
| | | Jumlah XII | | 63,569,100.00 |
| XII. | PEK. INSTALASI AIR BERSIH & AIR KOTOR | | | |
| | A. INSTALASI AIR BERSIH | | | |
| 1 | Pipa GiP dia 1/2" medium A | 219.00 m' | 5,300.00 | 1,160,700.00 |
| 2 | Pipa GiP dia 3/4" medium A | 236.00 m' | 6,900.00 | 1,628,400.00 |
| 3 | Pipa GiP dia 1" medium A | 214.00 m' | 10,000.00 | 2,140,000.00 |
| 4 | Pipa GiP dia 1,5" medium A | 48.00 m' | 14,600.00 | 700,800.00 |
| 5 | Kran air dia 1/2" merk SAN EI | 55.00 bh | 44,000.00 | 2,420,000.00 |
| 6 | Stopkran merk KITZ dia 1" | 8.00 bh | 25,200.00 | 201,600.00 |
| 7 | Accessories & test | 1.00 ls | 4,080,000.00 | 4,080,000.00 |
| | | Jumlah a | | 12,331,500.00 |
| | B. INSTALASI AIR KOTOR | | | |
| 1 | Pipa PVC dia 4" | 256.00 m' | 16,800.00 | 4,300,800.00 |
| 2 | Pipa PVC dia 1,5" | 284.00 m' | 5,900.00 | 1,675,600.00 |
| 3 | Pipa PVC dia 6" dibawah tanah | 6.00 m' | 20,400.00 | 122,400.00 |
| 4 | Clean out dia 4" | 44.00 bh | 29,800.00 | 1,311,200.00 |
| 5 | Accessories PVC dan test | 1.00 ls | 4,590,000.00 | 4,590,000.00 |
| 6 | Rumah pompa | 1.00 unit | 408,000.00 | 408,000.00 |
| 7 | Septick tank kapasitas 50 orang | 1.00 bh | 2,448,000.00 | 2,448,000.00 |
| 8 | Sumur peresapan air kotor | 1.00 bh | 969,000.00 | 969,000.00 |
| 9 | Sumur peresapan air hujan | 4.00 bh | 969,000.00 | 3,876,000.00 |
| 10 | Buis beton setengah diameter 25 cm | 154.00 m' | 40,226.00 | 6,194,804.00 |
| 11 | Buis beton diameter 25 cm | 20.00 m' | 10,246.00 | 204,920.00 |
| 12 | Bak kontrol terbuka | 30.00 bh | 184,022.00 | 5,520,660.00 |
| 13 | Bak kontrol tertutup | 4.00 bh | 194,022.00 | 776,088.00 |
| 14 | Sumur air bersih | 1.00 bh | 500,000.00 | 500,000.00 |
| | | Jumlah b | | 32,897,472.00 |

| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|--|----------------------------------|-----------|----------------------|----------------------|
| XIII. PEKERJAAN INSTALASI LISTRIK | | | | |
| a. Lantai 1 (satu) | | | | |
| 1 | Instalasi titik lampu | 59.00 ttk | 55,000.00 | 3,245,000.00 |
| 2 | Stop kontak biasa | 31.00 bh | 66,300.00 | 2,055,300.00 |
| 3 | Stop kontak 1 phase : 2000 w | 6.00 bh | 92,800.00 | 556,800.00 |
| 4 | Stop kontak 1 phase : 3000 w | 2.00 bh | 92,800.00 | 185,600.00 |
| 5 | Stop kontak 1 phase : 4000 w | 5.00 bh | 92,800.00 | 464,000.00 |
| 6 | Stop kontak 1 phase : 5000 w | 2.00 bh | 235,000.00 | 470,000.00 |
| 7 | Stop kontak AC | 2.00 bh | 156,700.00 | 313,400.00 |
| 8 | Pasang lampu 2 x TLD 36 W | 38.00 bh | 9,900.00 | 376,200.00 |
| 9 | Pasang lampu 1 x TLD 36 W | 21.00 bh | 6,600.00 | 138,600.00 |
| 10 | Panel induk | 1.00 bh | 7,095,300.00 | 7,095,300.00 |
| 11 | Panel lampu | 1.00 unit | 1,561,500.00 | 1,561,500.00 |
| 12 | Panel daya | 1.00 unit | 1,403,300.00 | 1,403,300.00 |
| 13 | Kabel tray | 156.00 m' | 40,800.00 | 6,364,800.00 |
| 14 | Alat bantu | 1.00 ls | 510,000.00 | 510,000.00 |
| Jumlah a | | | | 24,739,800.00 |
| b. Lantai 2 (dua) | | | | |
| 1 | Instalasi titik lampu | 56.00 ttk | 55,000.00 | 3,080,000.00 |
| 2 | Stop kontak biasa | 28.00 bh | 66,300.00 | 1,856,400.00 |
| 3 | Stop kontak 1 phase : 2000 w | 8.00 bh | 92,800.00 | 742,400.00 |
| 4 | Stop kontak 1 phase : 3000 w | 8.00 bh | 92,800.00 | 742,400.00 |
| 5 | Stop kontak 3 phase : 3000 w | 2.00 bh | 247,800.00 | 495,600.00 |
| 6 | Stop kontak AC | 4.00 bh | 156,700.00 | 626,800.00 |
| 7 | Pasang lampu 2 x TLD 36 W | 39.00 bh | 9,900.00 | 386,100.00 |
| 8 | Pasang lampu 1 x TLD 36 W | 17.00 bh | 6,600.00 | 112,200.00 |
| 9 | Panel lampu | 1.00 bh | 1,792,200.00 | 1,792,200.00 |
| 10 | Panel daya | 1.00 unit | 1,482,800.00 | 1,482,800.00 |
| 11 | Kabel tray | 156.00 m' | 40,800.00 | 6,364,800.00 |
| 12 | Alat bantu | 1.00 ls | 510,000.00 | 510,000.00 |
| Jumlah b | | | | 18,191,700.00 |
| c. Lantai 3 (tiga) | | | | |
| 1 | Instalasi titik lampu | 61.00 ttk | 55,000.00 | 3,355,000.00 |
| 2 | Stop kontak biasa | 19.00 bh | 66,300.00 | 1,259,700.00 |
| 3 | Stop kontak 1 phase : 2000 w | 6.00 bh | 92,800.00 | 556,800.00 |
| 4 | Stop kontak 1 phase : 3000 w | 18.00 bh | 92,800.00 | 1,670,400.00 |
| 5 | Stop kontak pada meja 2 x 1000 w | 24.00 bh | 146,900.00 | 3,525,600.00 |
| 6 | Pasang lampu 2 x TLD 36 W | 38.00 bh | 9,900.00 | 376,200.00 |
| 7 | Pasang lampu 1 x TLD 36 W | 23.00 bh | 6,600.00 | 151,800.00 |
| 8 | Panel lampu | 1.00 bh | 2,093,700.00 | 2,093,700.00 |
| 9 | Panel daya | 1.00 unit | 2,327,500.00 | 2,327,500.00 |
| 10 | Kabel tray | 156.00 m' | 40,800.00 | 6,364,800.00 |
| 11 | Alat bantu | 1.00 ls | 510,000.00 | 510,000.00 |
| Jumlah c | | | | 22,191,500.00 |

| No. | MACAM PEKERJAAN | VOLUME | HARGA SATUAN (Rp) | JUMLAH HARGA (Rp) |
|-----|---|-----------------------|----------------------|----------------------|
| | d. Lantai 4 (empat) | | | |
| 1 | Instalasi titik lampu | 56.00 ttk | 55,000.00 | 3,080,000.00 |
| 2 | Stop kontak biasa | 17.00 bh | 66,300.00 | 1,127,100.00 |
| 3 | Stop kontak 1 phase : 2000 w | 3.00 bh | 92,800.00 | 278,400.00 |
| 4 | Stop kontak 1 phase : 4000 w | 4.00 bh | 92,800.00 | 371,200.00 |
| 5 | Stop kontak 1 phase : 5000 w | 6.00 bh | 92,800.00 | 556,800.00 |
| 6 | Stop kontak pada meja 2 x 1000 w | 9.00 bh | 144,900.00 | 1,304,100.00 |
| 7 | Stop kontak AC | 3.00 bh | 156,700.00 | 470,100.00 |
| 8 | Pasang lampu 2 x TLD 36 W | 38.00 bh | 9,900.00 | 376,200.00 |
| 9 | Pasang lampu 1 x TLD 36 W | 18.00 bh | 6,600.00 | 118,800.00 |
| 10 | Panel lampu | 1.00 bh | 2,299,000.00 | 2,299,000.00 |
| 11 | Panel daya | 1.00 unit | 1,627,100.00 | 1,627,100.00 |
| 12 | Kabel tray | 152.00 m' | 40,800.00 | 6,201,600.00 |
| 13 | Alat bantu | 1.00 ls | 510,000.00 | 510,000.00 |
| | Jumlah d | | | 18,320,400.00 |
| XIV | PEKERJAAN PENANGKAL PETIR | | | |
| 1 | Spit tembaga & pipa 1" | 4.00 unit | 56,100.00 | 224,400.00 |
| 2 | Kawat BC 50 mm | 612.00 m' | 6,600.00 | 4,039,200.00 |
| 3 | Arde pertanahan | 8.00 bh | 204,000.00 | 1,632,000.00 |
| 4 | Bak kontrol | 8.00 bh | 61,200.00 | 489,600.00 |
| 5 | Ring BC 50 mm | 1,530.00 m' | 1,200.00 | 1,836,000.00 |
| 6 | Perijinan | 1.00 lot | 765,000.00 | 765,000.00 |
| 7 | Alat bantu | 1.00 lot | 1,530,000.00 | 1,530,000.00 |
| | Jumlah XIII | | | 10,516,200.00 |
| XV. | INSTALASI HYDRANT DALAM GEDUNG | | | |
| 1 | Pipa GIP medium A dia 4" | 30.00 m' | 47,700.00 | 1,431,000.00 |
| 2 | Pipa GIP medium A dia 2,5" | 73.00 m' | 25,900.00 | 1,890,700.00 |
| 3 | Box hydrant lengkap dg fire hydrantnya | 4.00 unit | 887,400.00 | 3,549,600.00 |
| 4 | Accesories pipa hydrant dan test | 1.00 ls | 1,428,000.00 | 1,428,000.00 |
| 5 | GAte value 2,5" | 4.00 bh | 179,000.00 | 716,000.00 |
| | Jumlah XIII | | | 9,015,300.00 |
| XVI | PEKERJAAN LAIN-LAIN | | | |
| 1 | Rabat kerikil | 308.00 m ² | 4,225.00 | 1,301,300.00 |
| 2 | Saluran air hujan terbuka buis beton 1/2 dia 25 | 128.00 m' | 40,226.00 | 5,148,928.00 |
| 3 | Sal. air hujan tertutup | 26.00 m' | 10,246.00 | 266,396.00 |
| 4 | Bak kontrol terbuka | 22.00 bh | 184,022.00 | 4,048,484.00 |
| 5 | Peresapan air hujan memanjang | 4.00 unit | 1,500,000.00 | 6,000,000.00 |
| 6 | Water proofing (atap plat beton) | 55.31 m ² | 17,000.00 | 940,270.00 |
| 7 | Pembersihan kembali | 1.00 ls | 1,000,000.00 | 1,000,000.00 |
| | Jumlah XIII | | | 18,705,378.00 |



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Lampiran 4

**Data proyek pembangunan Gedung Laboratorium Unit 2,
Universitas Sanata Dharma, Yogyakarta, Tahun 1996,
PT. Sekawan Triasa**

LAKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM
DAFTAR REKAPITULASI

PROYEK : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
 PEKERJAAN : PEMBANGUNAN GEDUNG LABORATORIUM UNIT 2
 LOKASI : DESA PAINGAN KAB. SLEMAN D.I YOGYAKARTA

halaman : 1

| NO. | URAIAN PEKERJAAN | JUMLAH HARGA (Rp.) |
|-------|---------------------------------------|-------------------------|
| I. | PEKERJAAN PERSIAPAN | 10.673.750,00 |
| II. | PEKERJAAN TANAH & PASIR | 6.263.307,50 |
| III. | PEKERJAAN BETON BERTULANG : | |
| | A. LANTAI. 1 (SATU) | 170.842.021,56 |
| | B. LANTAI. 2 (DUA) | 177.202.806,20 |
| | C. LANTAI. 3 (TIGA) | 176.504.593,11 |
| | D. LANTAI. 4 (EMPAT) | 162.367.185,91 |
| | | 686.916.607,78 |
| IV. | PEKERJAAN PASANGAN BATU : | |
| | A. LANTAI. 1 (SATU) | 8.409.445,15 |
| | B. LANTAI. 2 (DUA) | 4.920.174,79 |
| | C. LANTAI. 3 (TIGA) | 4.314.723,34 |
| | D. LANTAI. 4 (EMPAT) | 5.210.256,17 |
| | | 22.854.599,45 |
| V. | PEKERJAAN PLESTERAN : | |
| | A. LANTAI. 1 (SATU) | 9.697.614,25 |
| | B. LANTAI. 2 (DUA) | 9.848.414,03 |
| | C. LANTAI. 3 (TIGA) | 9.462.066,46 |
| | D. LANTAI. 4 (EMPAT) | 8.552.373,86 |
| | | 37.560.468,60 |
| VI. | PEKERJAAN LANTAI : | |
| | A. LANTAI. 1 (SATU) | 22.634.478,05 |
| | B. LANTAI. 2 (DUA) | 22.641.825,26 |
| | C. LANTAI. 3 (TIGA) | 22.546.006,79 |
| | D. LANTAI. 4 (EMPAT) | 23.158.715,73 |
| | | 90.981.025,83 |
| VII. | PEKERJAAN KOSEN & PARTISI ALUMINIUM : | |
| | A. LANTAI. 1 (SATU) | 51.661.501,07 |
| | B. LANTAI. 2 (DUA) | 51.687.062,85 |
| | C. LANTAI. 3 (TIGA) | 62.111.710,85 |
| | D. LANTAI. 4 (EMPAT) | 62.911.511,78 |
| | | 228.371.786,55 |
| VIII. | PEKERJAAN ATAP & PENUTUP ATAP | 189.127.165,46 |
| IX. | PEKERJAAN PLAFOND | 51.429.718,20 |
| X. | PEKERJAAN TALANG DAN SENG | 26.373.162,80 |
| XI. | PEKERJAAN CAT | 47.674.790,00 |
| XII. | PEKERJAAN SANITAIR | 12.704.000,00 |

P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 Telp. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
KANTOR PERWAKILAN : JL. RAYA RUNGKUT No. 18 Telp. 812859 - 817182 Fax. (031) 817182 SURABAYA (60293)

AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

DAFTAR REKAPITULASI

halaman : 2

| NO. | URAIAN PEKERJAAN | JUMLAH HARGA (Rp.) |
|-------|---|-------------------------|
| XIII. | PEKERJAAN INST. AIR BERSIH, AIR KOTOR & TINJA : | |
| | A. INSTALASI AIR BERSIH | 5.670.200,00 |
| | B. INSTALASI AIR KOTOR | 7.484.176,02 |
| | C. INSTALASI AIR TINJA (KOTORAN) | 9.344.693,13 |
| | | 22.499.069,15 |
| XIV. | PEKERJAAN INSTALASI LISTRIK : | |
| | A. LANTAI. 1 (SATU) | 16.673.500,00 |
| | B. LANTAI. 2 (DUA) | 14.780.250,00 |
| | C. LANTAI. 3 (TIGA) | 13.040.500,00 |
| | D. LANTAI. 4 (EMPAT) | 18.442.000,00 |
| | | 62.936.250,00 |
| XV. | PEKERJAAN PENANGKAL PETIR | 6.332.000,00 |
| XVI. | PEKERJAAN HYDRANT DALAM GEDUNG | 6.277.500,00 |
| XVII. | PEKERJAAN LAIN - LAIN | 20.336.669,22 |
| | JUMLAH NOMINAL | 1.529.311.870,54 |
| | JASA & RESIKO 7 % | 107.051.830,94 |
| | J U M L A H | 1.636.363.701,48 |
| | PAJAK (PPN) 10 % | 163.636.370,15 |
| | JUMLAH TOTAL | 1.800.000.071,63 |
| | D I B U L A T K A N | 1.800.000.000,00 |

Terbilang :

SATU MILYAR DELAPAN RATUS JUTA RUPIAH

Semarang, 23 Oktober 1996

PT. SEKAWAN TRIASA

beringin 1/20 000

PT. SEKAWAN TRIASA

Ir. ANDRIANUS ANGGAPUTRA
Direktur Utama.-

P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 Telp. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
 KANTOR PERWAKILAN : JL. RAYA RUNGKUT No. 18 Telp. 812859-817182 Fax. (031) 817182 SURABAYA (60293)

KEKSAANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM
RENCANA ANGGARAN RIAYA (RAR)

PROYEK : PENGEMBANGAN KAMPUS UNIVERSITAS SAMATA DHARMA YOGYAKARTA
 PEKERJAAN : PEMBANGUNAN GEDUNG LABORATORIUM UNIT 2
 LOKASI : DESA PAINGAN KAB. SLEMAN D.I YOGYAKARTA

Halaman : 01

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUMLAH HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) |
|------|---|-----------------------|---------------------------------|----------------------------------|---------------------------|
| I. | <u>PEKERJAAN PERSIAPAN :</u> | | | | |
| 1. | Pembersihan lapangan | 1295 m ² | 250,00 | 323.750,00 | |
| 2. | Penyempurnaan uitzet & bowplank | 1 ls | 200.000,00 | 200.000,00 | |
| 3. | Pagar pengaman | 85 m' | 10.000,00 | 850.000,00 | |
| 4. | Direksi keet/brak kerja/gudang | 90 m ² | 50.000,00 | 4.500.000,00 | |
| 5. | Pengupasan beton tiang pancang | 1 ls | 1.000.000,00 | 1.000.000,00 | |
| 6. | Asuransi | 1 ls | 3.000.000,00 | 3.000.000,00 | |
| 7. | Air & listrik kerja | 1 ls | 500.000,00 | 500.000,00 | |
| 8. | Biaya-biaya administrasi | 1 ls | 300.000,00 | 300.000,00 | |
| | | | | | 10.673.750,00 |
| II. | <u>PEKERJAAN TANAH & PASIR :</u> | | | | |
| 1. | Galian tanah poer | 170,08 m ³ | 5.000,00 | 850.400,00 | |
| 2. | Galian tanah pondasi steel & sloof | 241,15 m ³ | 5.000,00 | 1.205.750,00 | |
| 3. | Urugan kembali | 187,62 m ³ | 2.000,00 | 375.240,00 | |
| 4. | Urugan tanah bawah lantai (Dengan tanah galian) | 429,5 m ³ | 2.000,00 | 859.000,00 | |
| 5. | Urugan pasir : | | | | |
| a. | Bawah lantai kerja | 0 m ³ | | | |
| b. | Bawah pondasi | 2,64 m ³ | 12.750,00 | 33.660,00 | |
| c. | Bawah keramik lt.1 | 94,14 m ³ | 12.750,00 | 1.200.285,00 | |
| d. | Bawah keramik lt.2 | 45,84 m ³ | 12.750,00 | 584.460,00 | |
| e. | Bawah keramik lt.3 | 45,84 m ³ | 12.750,00 | 584.460,00 | |
| f. | Bawah keramik lt.4 | 44,71 m ³ | 12.750,00 | 570.052,50 | |
| | | | | | 6.263.307,50 |
| III. | <u>PEKERJAAN BETON BERTULANG :</u> | | | | |
| A. | <u>LANTAI. 1 (SATU) :</u> | | | | |
| 1. | Lantai kerja 1:2:3 | 34,39 m ³ | 138.020,00 | 4.746.507,80 | |
| 2. | Beton poer | 89,46 m ³ | 327.538,24 | 29.301.570,95 | |
| 3. | Beton sloof struktur | 81,51 m ³ | 578.955,00 | 47.190.622,05 | |
| 4. | Beton sloof praktis | 7,09 m ³ | 416.715,00 | 2.954.509,35 | |
| 5. | Kolon struktur | 78,34 m ³ | 903.289,90 | 70.763.730,77 | |
| 6. | Beton konsol | 7,59 m ³ | 875.545,54 | 6.645.390,65 | |
| 7. | Beton tangga (dari lt.1 ke lt.2) | 5,18 m ³ | 528.698,20 | 2.738.656,68 | |
| 8. | Balok luivel | 0,6 m ³ | 965.822,08 | 579.493,25 | |
| 9. | Plat luivel | 3,72 m ³ | 469.320,07 | 1.745.870,66 | |
| 10. | Listplank luivel | 4,82 m ³ | 492.834,15 | 2.375.460,60 | |
| 11. | Kolon praktis | 1,97 m ³ | 416.715,00 | 820.928,55 | |
| 12. | Balok latei | 2,13 m ³ | 416.715,00 | 887.602,95 | |
| 13. | Ring balk praktis | 0,22 m ³ | 416.715,00 | 91.677,30 | |
| | | | | | 170.842.021,56 |

P. T. SEKAWAN I RIMSA

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PEKERJAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Malabar : 02

| No. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUMLAH HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) |
|-------------------------------|---|----------------------|--------------------------|---------------------------|--------------------|
| B. LANTAI. 2 (DUA) : | | | | | |
| 1. | Kolon struktur | 58,94 m ³ | 925.151,90 | 54.528.452,99 | |
| 2. | Balok lantai lt.2 | 54,11 m ³ | 876.714,37 | 47.439.014,56 | |
| 3. | Plat lantai lt.2 | 112,2 m ³ | 520.463,14 | 58.395.964,31 | |
| 4. | Beton tangga (dari lt.2 ke lt.3) | 4,24 m ³ | 603.254,30 | 2.557.798,23 | |
| 5. | Beton konsol | 7,59 m ³ | 974.995,54 | 7.400.216,15 | |
| 6. | Balok luivel | 0,6 m ³ | 965.822,08 | 579.493,25 | |
| 7. | Plat luivel | 3,72 m ³ | 500.015,14 | 1.860.056,32 | |
| 8. | Listplank luivel | 4,82 m ³ | 554.102,00 | 2.670.771,64 | |
| 9. | Kolon praktis | 1,97 m ³ | 416.715,00 | 820.928,55 | |
| 10. | Balok latei | 2,06 m ³ | 416.715,00 | 858.432,90 | |
| 11. | Ring balk praktis | 0,22 m ³ | 416.715,00 | 91.677,30 | |
| | | | | | 177.202.806,20 |
| C. LANTAI. 3 (TIGA) : | | | | | |
| 1. | Kolon struktur | 58,94 m ³ | 916.345,90 | 54.009.427,35 | |
| 2. | Balok lantai lt.3 | 54,11 m ³ | 876.714,37 | 47.439.014,56 | |
| 3. | Plat lantai lt.3 | 112,2 m ³ | 520.463,14 | 58.395.964,31 | |
| 4. | Beton tangga (dari lt.3 ke lt.4) | 4,24 m ³ | 603.254,30 | 2.557.798,23 | |
| 5. | Beton konsol | 7,59 m ³ | 974.995,54 | 7.400.216,15 | |
| 6. | Balok luivel | 0,6 m ³ | 965.822,08 | 579.493,25 | |
| 7. | Plat luivel | 3,72 m ³ | 500.015,14 | 1.860.056,32 | |
| 8. | Listplank luivel | 4,82 m ³ | 554.102,00 | 2.670.771,64 | |
| 9. | Kolon praktis | 1,47 m ³ | 416.715,00 | 612.571,05 | |
| 10. | Balok latei | 2,13 m ³ | 416.715,00 | 887.602,95 | |
| 11. | Ring balk praktis | 0,22 m ³ | 416.715,00 | 91.677,30 | |
| | | | | | 176.504.593,11 |
| D. LANTAI. 4 (EMPAT) : | | | | | |
| 1. | Kolon struktur | 32,14 m ³ | 879.540,45 | 28.268.430,06 | |
| 2. | Balok lantai lt.4 | 54,11 m ³ | 876.714,37 | 47.439.014,56 | |
| 3. | Plat lantai lt.4 | 112,2 m ³ | 520.463,14 | 58.395.964,31 | |
| 4. | Beton konsol | 7,59 m ³ | 974.995,54 | 7.400.216,15 | |
| 5. | Ring balk struktur | 7,97 m ³ | 847.223,86 | 6.752.374,16 | |
| 6. | Balok atap | 2,13 m ³ | 1.045.930,49 | 2.227.831,94 | |
| 7. | Plat atap | 13,06 m ³ | 507.123,10 | 6.623.027,69 | |
| 8. | Listplank beton atap | 1,48 m ³ | 495.654,00 | 733.567,92 | |
| 9. | Kolon praktis | 2,13 m ³ | 416.715,00 | 887.602,95 | |
| 10. | Balok latei | 2,13 m ³ | 416.715,00 | 887.602,95 | |
| 11. | Ring balk praktis | 0,22 m ³ | 416.715,00 | 91.677,30 | |
| 12. | Plat & balok penyangga water tank (atas KH) | 3,96 m ³ | 671.686,09 | 2.659.876,92 | |
| | | | | | 162.367.186,91 |



P. T. SEKAWAN TRIASA

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AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman : 03

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUNLAH HARGA SATUAN (Rp.) | JUNLAH HARGA (Rp.) |
|-----|---|------------------------|---------------------------------|----------------------------------|---------------------------|
| IV. | <u>PEKERJAAN PASANGAN BATU :</u> | | | | |
| A. | <u>LANTAI. 1 (SATU) :</u> | | | | |
| 1. | Pas. pondasi batu kali 1:5 | 43,68 m ³ | 55.052,50 | 2.404.693,20 | |
| 2. | Pas. batu kali unpak bawah sloof struktur | 4,84 m ³ | 55.052,50 | 266.454,10 | |
| 3. | Pas. batu merah 1:2 | 25,97 m ³ | 100.889,00 | 2.620.087,33 | |
| 4. | Pas. batu merah 1:4 | 37,64 m ³ | 82.843,00 | 3.118.210,52 | |
| | | | | | 8.409.445,15 |
| B. | <u>LANTAI. 2 (DUA) :</u> | | | | |
| 1. | Pas. batu merah 1:2 | 14,33 m ³ | 100.889,00 | 1.445.739,37 | |
| 2. | Pas. batu merah 1:4 | 41,94 m ³ | 82.843,00 | 3.474.435,42 | |
| | | | | | 4.920.174,79 |
| C. | <u>LANTAI. 3 (TIGA) :</u> | | | | |
| 1. | Pas. batu merah 1:2 | 13,97 m ³ | 100.889,00 | 1.409.419,33 | |
| 2. | Pas. batu merah 1:4 | 35,07 m ³ | 82.843,00 | 2.905.304,01 | |
| | | | | | 4.314.723,34 |
| D. | <u>LANTAI. 4 (EMPAT) :</u> | | | | |
| 1. | Pas. batu merah 1:2 | 13,97 m ³ | 100.889,00 | 1.409.419,33 | |
| 2. | Pas. batu merah 1:4 | 45,88 m ³ | 82.843,00 | 3.800.836,84 | |
| | | | | | 5.210.256,17 |
| V. | <u>PEKERJAAN PLESTERAN :</u> | | | | |
| A. | <u>LANTAI. 1 (SATU) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 217,12 m ² | 5.051,00 | 1.096.673,12 | |
| 2. | Plesteran beton 1:3 | 688,37 m ² | 5.492,00 | 3.780.528,04 | |
| 3. | Plesteran dinding 1:4 | 578,98 m ² | 4.163,00 | 2.410.293,74 | |
| 4. | Plesteran sudut 1:3 | 2588,14 m ² | 902,65 | 2.336.184,57 | |
| 4a. | Beraben pondasi | 31,68 m ² | 2.333,80 | 73.934,78 | |
| | | | | | 9.697.614,25 |
| B. | <u>LANTAI. 2 (DUA) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 220,36 m ² | 5.051,00 | 1.113.038,36 | |
| 2. | Plesteran beton 1:3 | 688,37 m ² | 5.492,00 | 3.780.528,04 | |
| 3. | Plesteran dinding 1:4 | 645,26 m ² | 4.163,00 | 2.686.217,38 | |
| 4. | Plesteran sudut 1:3 | 2513,3 m ² | 902,65 | 2.268.630,25 | |
| | | | | | 9.848.414,03 |
| C. | <u>LANTAI. 3 (TIGA) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 214,72 m ² | 5.051,00 | 1.084.550,72 | |
| 2. | Plesteran beton 1:3 | 688,37 m ² | 5.492,00 | 3.780.528,04 | |
| 3. | Plesteran dinding 1:4 | 539,48 m ² | 4.163,00 | 2.245.855,24 | |
| 4. | Plesteran sudut 1:3 | 2604,7 m ² | 902,65 | 2.351.132,46 | |
| | | | | | 9.462.066,46 |

P. T. SEKAWAN I RINDAN

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KSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman : 04.

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUNJAH HARGA SATUAN (Rp.) | JUNJAH HARGA (Rp.) |
|-----|------------------------------|-----------------------|---------------------------------|----------------------------------|---------------------------|
| D. | <u>LANTAI. 4 (EMPAT) :</u> | | | | |
| 1. | Plesteran dinding 1:2 | 214,72 m ² | 5.051,00 | 1.084.550,72 | |
| 2. | Plesteran beton 1:3 | 472,95 m ² | 5.492,00 | 2.597.441,40 | |
| 3. | Plesteran dinding 1:4 | 705,76 m ² | 4.163,00 | 2.938.078,88 | |
| 4. | Plesteran sudut 1:3 | 2140,7 m' | 902,65 | 1.932.302,86 | |
| | | | | | 8.552.373,86 |
| VI. | <u>PEKERJAAN LANTAI :</u> | | | | |
| A. | <u>LANTAI. 1 (SATU) :</u> | | | | |
| 1. | Tegel abu-abu 20/20 | 620,48 m ² | 15.141,65 | 9.395.090,99 | |
| 2. | Keranik lantai 30/30 | 230,52 m ² | 21.890,55 | 5.046.209,59 | |
| 3. | Keranik lantai ka/wc 20/20 | 46,92 m ² | 22.730,55 | 1.066.517,41 | |
| 4. | Keranik dinding ka/wc 20/25 | 143,64 m ² | 27.490,55 | 3.948.742,60 | |
| 5. | Tegel plint abu-abu 10/20 | 142,4 m' | 5.383,06 | 766.547,74 | |
| 6. | Keranik plint 10/30 | 102,7 m' | 6.748,06 | 693.025,76 | |
| 7. | Keranik tangga 30/30 | 28,47 m ² | 22.890,55 | 651.693,96 | |
| 8. | Step nose tangga 8/20 | 40,8 m' | 15.000,00 | 612.000,00 | |
| 9. | Apanyangan dengan batu hitan | 12,99 m ² | 35.000,00 | 454.650,00 | |
| | | | | | 22.634.478,05 |
| B. | <u>LANTAI. 2 (DUA) :</u> | | | | |
| 1. | Tegel abu-abu 20/20 | 620,48 m ² | 15.141,65 | 9.395.090,99 | |
| 2. | Keranik lantai 30/30 | 206,52 m ² | 21.890,55 | 4.520.836,39 | |
| 3. | Keranik lantai ka/wc 20/20 | 46,92 m ² | 22.730,55 | 1.066.517,41 | |
| 4. | Keranik dinding ka/wc 20/25 | 143,64 m ² | 27.490,55 | 3.948.742,60 | |
| 5. | Tegel plint abu-abu 10/20 | 150,6 m' | 5.383,06 | 810.688,84 | |
| 6. | Keranik plint 10/30 | 177,8 m' | 6.748,06 | 1.199.805,07 | |
| 7. | Keranik tangga 30/30 | 28,47 m ² | 22.890,55 | 651.693,96 | |
| 8. | Step nose tangga 8/20 | 40,8 m' | 15.000,00 | 612.000,00 | |
| 9. | Apanyangan dengan batu hitan | 12,47 m ² | 35.000,00 | 436.450,00 | |
| | | | | | 22.641.825,26 |
| C. | <u>LANTAI. 3 (TIGA) :</u> | | | | |
| 1. | Tegel abu-abu 20/20 | 620,48 m ² | 15.141,65 | 9.395.090,99 | |
| 2. | Keranik lantai 30/30 | 206,52 m ² | 21.890,55 | 4.520.836,39 | |
| 3. | Keranik lantai ka/wc 20/20 | 46,92 m ² | 22.730,55 | 1.066.517,41 | |
| 4. | Keranik dinding ka/wc 20/25 | 143,64 m ² | 27.490,55 | 3.948.742,60 | |
| 5. | Tegel plint abu-abu 10/20 | 132,8 m' | 5.383,06 | 714.870,37 | |
| 6. | Keranik plint 10/30 | 177,8 m' | 6.748,06 | 1.199.805,07 | |
| 7. | Keranik tangga 30/30 | 28,47 m ² | 22.890,55 | 651.693,96 | |
| 8. | Step nose tangga 8/20 | 40,8 m' | 15.000,00 | 612.000,00 | |
| 9. | Apanyangan dengan batu hitan | 12,47 m ² | 35.000,00 | 436.450,00 | |
| | | | | | 22.546.006,75 |

P. T. SEKAWAN TRIASA

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PELAKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman : 05

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUNJAH HARGA SATUAN (Rp.) | JUNJAH HARGA (Rp.) |
|------|---|-----------------------|---------------------------------|----------------------------------|---------------------------|
| D. | <u>LANTAI, 4 (EMPAT) :</u> | | | | |
| 1. | Tegel abu-abu 20/20 | 624 m ² | 15.141,65 | 9.448.389,60 | |
| 2. | Keramik lantai 30/30 | 208,76 m ² | 21.890,55 | 4.569.871,22 | |
| 3. | Keramik lantai kn/wc 20/20 | 46,92 m ² | 22.730,55 | 1.066.517,41 | |
| 4. | Keramik dinding kn/wc 20/25 | 143,64 m ² | 27.490,55 | 3.948.742,60 | |
| 5. | Tegel plint abu-abu 10/20 | 91,2 m ² | 5.383,06 | 490.935,07 | |
| 6. | Keramik plint 10/30 | 139,7 m ² | 22.890,55 | 3.197.809,83 | |
| 7. | Ampyangan dengan batu hitan | 12,47 m ² | 35.000,00 | 436.450,00 | |
| | | | | | 23.158.715,73 |
| VII. | <u>PEKERJAAN KOZYN & PARTISI ALLUMINIUM :</u> | | | | |
| A. | <u>LANTAI, 1 (SATU) :</u> | | | | |
| 1. | Kozyn alluminium type P.1 | 1 unit | 360.034,00 | 360.034,00 | |
| 2. | Kozyn alluminium type P.1' | 1 unit | 360.034,00 | 360.034,00 | |
| 3. | Kozyn alluminium type P.2 | 6 unit | 308.744,00 | 1.852.464,00 | |
| 4. | Kozyn alluminium type P.5 | 1 unit | 129.364,00 | 129.364,00 | |
| 5. | Kozyn alluminium type PJ.1 | 7 unit | 1.599.304,00 | 11.195.128,00 | |
| 6. | Kozyn alluminium type J.1 | 12 unit | 1.178.134,00 | 14.137.608,00 | |
| 7. | Kozyn alluminium type JK | 1 unit | 986.154,00 | 986.154,00 | |
| 8. | Kozyn alluminium type BV.1 | 4 unit | 590.414,00 | 2.361.656,00 | |
| 9. | Kozyn alluminium type BV.2 | 2 unit | 590.414,00 | 1.180.828,00 | |
| 10. | Kozyn alluminium type BV.3 | 1 unit | 131.204,00 | 131.204,00 | |
| 11. | Kozyn alluminium type BV.4 | 1 unit | 452.794,00 | 452.794,00 | |
| 12. | Kozyn alluminium type BV.5 | 2 unit | 477.774,00 | 955.548,00 | |
| 13. | Kozyn alluminium type BVK | 1 unit | 434.614,00 | 434.614,00 | |
| 14. | Partisi alluminium type PT.1 | 3 unit | 883.064,00 | 2.649.192,00 | |
| 15. | Partisi alluminium type PT.1' | 0 unit | -----> DIGABRIR TIDAK ADA | | |
| 16. | Partisi alluminium type PT.2 | 1 unit | 948.749,00 | 948.749,00 | |
| 17. | Partisi alluminium type PT.3 | 1 unit | 2.667.899,00 | 2.667.899,00 | |
| 18. | Partisi alluminium type PT.4 | 1 unit | 812.609,00 | 812.609,00 | |
| 19. | Partisi alluminium type PT.5 | 1 unit | 1.699.649,00 | 1.699.649,00 | |
| 20. | Partisi alluminium type PT.6 | 1 unit | 814.734,00 | 814.734,00 | |
| 21. | Partisi alluminium type PT.7 | 1 unit | 564.809,00 | 564.809,00 | |
| 22. | Partisi alluminium type PT.8 | 1 unit | 1.663.179,00 | 1.663.179,00 | |
| 23. | Partisi alluminium type PT.9 | 2 unit | 1.638.049,00 | 3.276.098,00 | |
| 24. | Railing tangga (beton dgn pipa GIP ϕ 2,5") | 29 m' | 69.901,83 | 2.027.153,07 | |
| | | | | | 51.661.501,07 |

P. T. SEKAWAN TRIASA

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KONSALSIAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman 1 06

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA SATUAN (Rp.) | JUMLAH HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) |
|-----------------------------|---|------------|--------------------|---------------------------|--------------------|
| B. LANTAI 2 (BUA) : | | | | | |
| 1. | Kozyn allununium type P.1 | 1 unit | 360.034,00 | 360.034,00 | |
| 2. | Kozyn allununium type P.1' | 1 unit | 360.034,00 | 360.034,00 | |
| 3. | Kozyn allununium type P.2 | 6 unit | 308.744,00 | 1.852.464,00 | |
| 4. | Kozyn allununium type P.S | 1 unit | 129.364,00 | 129.364,00 | |
| 5. | Kozyn allununium type PJ.1 | 5 unit | 1.599.304,00 | 7.996.520,00 | |
| 6. | Kozyn allununium type J.1 | 11 unit | 1.178.134,00 | 12.959.474,00 | |
| 7. | Kozyn allununium type BV.1 | 7 unit | 590.414,00 | 4.132.898,00 | |
| 8. | Kozyn allununium type BV.2 | 2 unit | 590.414,00 | 1.180.828,00 | |
| 9. | Kozyn allununium type BV.3 | 1 unit | 131.204,00 | 131.204,00 | |
| 10. | Kozyn allununium type BV.4 | 1 unit | 452.794,00 | 452.794,00 | |
| 11. | Kozyn allununium type BV.5 | 2 unit | 477.774,00 | 955.548,00 | |
| 12. | Kozyn allununium type BVK | 1 unit | 434.614,00 | 434.614,00 | |
| 13. | Partisi allununium type PT.1 | 1 unit | 883.064,00 | 883.064,00 | |
| 14. | Partisi allununium type PT.3 | 1 unit | 2.667.899,00 | 2.667.899,00 | |
| 15. | Partisi allununium type PT.9 | 1 unit | 1.638.049,00 | 1.638.049,00 | |
| 16. | Partisi allununium type PT.10 | 1 unit | 1.902.079,00 | 1.902.079,00 | |
| 17. | Partisi allununium type PT.11 | 1 unit | 707.554,00 | 707.554,00 | |
| 18. | Partisi allununium type PT.12 | 1 unit | 845.214,00 | 845.214,00 | |
| 19. | Partisi allununium type PT.13 | 1 unit | 1.984.899,00 | 1.984.899,00 | |
| 20. | Partisi allununium type PT.14 | 1 unit | 1.853.134,00 | 1.853.134,00 | |
| 21. | Partisi allununium type PT.15 | 1 unit | 1.960.224,00 | 1.960.224,00 | |
| 22. | Railling tangga (beton dgn pipa GIP ϕ 2,5") | 29 m' | 69.901,83 | 2.027.153,07 | |
| 23. | Railling selasar (pas. bata dgn pipa GIP ϕ 2,5") | 74 m' | 57.729,97 | 4.272.017,78 | |
| | | | | | 51.687.062,85 |
| C. LANTAI 3 (TIGA) : | | | | | |
| 1. | Kozyn allununium type P.1 | 1 unit | 360.034,00 | 360.034,00 | |
| 2. | Kozyn allununium type P.1' | 1 unit | 360.034,00 | 360.034,00 | |
| 3. | Kozyn allununium type P.2 | 6 unit | 308.744,00 | 1.852.464,00 | |
| 4. | Kozyn allununium type P.S | 1 unit | 129.364,00 | 129.364,00 | |
| 5. | Kozyn allununium type PJ.1 | 8 unit | 1.599.304,00 | 12.794.432,00 | |
| 6. | Kozyn allununium type J.1 | 12 unit | 1.178.134,00 | 14.137.608,00 | |
| 7. | Kozyn allununium type BV.1 | 4 unit | 590.414,00 | 2.361.656,00 | |
| 8. | Kozyn allununium type BV.2 | 2 unit | 590.414,00 | 1.180.828,00 | |
| 9. | Kozyn allununium type BV.3 | 1 unit | 131.204,00 | 131.204,00 | |
| 10. | Kozyn allununium type BV.4 | 1 unit | 452.794,00 | 452.794,00 | |
| 11. | Kozyn allununium type BV.5 | 2 unit | 477.774,00 | 955.548,00 | |
| 12. | Kozyn allununium type BVK | 1 unit | 434.614,00 | 434.614,00 | |
| 13. | Partisi allununium type PT.16 | 1 unit | 1.817.254,00 | 1.817.254,00 | |
| 14. | Partisi allununium type PT.17 | 2 unit | 695.379,00 | 1.390.758,00 | |
| 15. | Partisi allununium type PT.18 | 2 unit | 2.851.469,00 | 5.702.938,00 | |
| 16. | Partisi allununium type PT.19 | 4 unit | 908.079,00 | 3.632.316,00 | |
| 17. | Partisi allununium type PT.20 | 2 unit | 528.819,00 | 1.057.638,00 | |
| 18. | Partisi allununium type PT.21 | 2 unit | 574.644,00 | 1.149.288,00 | |
| 19. | Partisi allununium type PT.22 | 2 unit | 2.955.884,00 | 5.911.768,00 | |
| 20. | Railling tangga (beton dgn pipa GIP ϕ 2,5") | 29 m' | 69.901,83 | 2.027.153,07 | |
| 21. | Railling selasar (pas. bata dgn pipa GIP ϕ 2,5") | 74 m' | 57.729,97 | 4.272.017,78 | |
| | | | | | 62.111.710,85 |



P. T. SEKAWAN TRIASA

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AKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman 1 07

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUNJAH HARGA SATUAN (Rp.) | JUNJAH HARGA (Rp.) |
|------|---|------------------------|-------------------------------------|-----------------------------------|----------------------------|
| 9. | <u>LANTAI. 4 (EMPAT) :</u> | | | | |
| 1. | Kozyn alluminium type P.1 | 1 unit | 360.034,00 | 360.034,00 | |
| 2. | Kozyn alluminium type P.1' | 1 unit | 360.034,00 | 360.034,00 | |
| 3. | Kozyn alluminium type P.2 | 6 unit | 308.744,00 | 1.852.464,00 | |
| 4. | Kozyn alluminium type P.S | 1 unit | 129.364,00 | 129.364,00 | |
| 5. | Kozyn alluminium type P.J.1 | 8 unit | 1.599.304,00 | 12.794.432,00 | |
| 6. | Kozyn alluminium type J.1 | 12 unit | 1.178.134,00 | 14.137.608,00 | |
| 7. | Kozyn alluminium type BV.1 | 4 unit | 590.414,00 | 2.361.656,00 | |
| 8. | Kozyn alluminium type BV.2 | 2 unit | 590.414,00 | 1.180.828,00 | |
| 9. | Kozyn alluminium type BV.3 | 1 unit | 131.204,00 | 131.204,00 | |
| 10. | Kozyn alluminium type BV.4 | 1 unit | 432.794,00 | 432.794,00 | |
| 11. | Kozyn alluminium type BV.5 | 2 unit | 477.774,00 | 955.548,00 | |
| 12. | Kozyn alluminium type BVX | 1 unit | 434.614,00 | 434.614,00 | |
| 13. | Partisi alluminium type PT.17 | 2 unit | 695.379,00 | 1.390.758,00 | |
| 14. | Partisi alluminium type PT.19 | 4 unit | 908.079,00 | 3.632.316,00 | |
| 15. | Partisi alluminium type PT.20 | 2 unit | 528.819,00 | 1.057.638,00 | |
| 16. | Partisi alluminium type PT.21 | 2 unit | 574.644,00 | 1.149.288,00 | |
| 17. | Partisi alluminium type PT.24 | 2 unit | 3.024.759,00 | 6.049.518,00 | |
| 18. | Partisi alluminium type PT.25 | 2 unit | 3.102.824,00 | 6.205.648,00 | |
| 19. | Partisi alluminium type PT.26 | 1 unit | 1.825.374,00 | 1.825.374,00 | |
| 20. | Partisi alluminium type PT.27 | 1 unit | 2.178.374,00 | 2.178.374,00 | |
| 21. | Railling tangga (beton dgn pipa GIP ϕ 2,5") | 0 m' | TANGGA DARI LT.4 KE ATAP, TIDAK ADA | | |
| 22. | Railling selasar (pas. bola dgn pipa GIP ϕ 2,5") | 74 m' | 57.729,97 | 4.272.017,78 | |
| | | | | | 62.911.511,78 |
| X. | <u>PEKERJAAN ATAP DAN PENUTUP ATAP :</u> | | | | |
| 1. | Kuda-kuda baja besi siku | 12841 kg | 1.786,00 | 22.934.026,00 | |
| 2. | Gording CNP 150.65.20.3,2 | 13252 kg | 1.683,00 | 22.303.116,00 | |
| 3. | Jurai 2 CNP 150.65.20.3,2 | 1061 kg | 1.683,00 | 1.785.663,00 | |
| 4. | Angin-angin besi beton ϕ 12 mm | 216 kg | 1.487,30 | 321.236,80 | |
| 5. | Sagrot besi beton ϕ 12 mm | 1234 kg | 1.487,30 | 1.835.328,20 | |
| 6. | Plat simpul kuda-kuda tebal 12 mm | 5512 kg | 1.580,00 | 8.708.960,00 | |
| 7. | Angkur baut tuapuan kuda-kuda ϕ 19 mm | 158 kg | 1.500,00 | 237.000,00 | |
| 8. | Catwalk multiplex 9 mm dgn penggantung CNP | 114 m' | 82.435,00 | 9.397.590,00 | |
| 9. | Usuk bangkirai reng jati 3/4 | 1010,8 m ² | 22.525,50 | 22.768.775,40 | |
| 10. | Usuk bangkirai reng jati 3/4 diserut pd.tritis lt.1s/d4 | 1707,05 m ² | 24.525,50 | 41.866.254,78 | |
| 11. | Papan ruitir jati 2/15 | 176,8 m' | 12.918,50 | 2.283.990,80 | |
| 12. | Papan listplank jati 2,5/30 | 140 m' | 33.337,50 | 4.667.250,00 | |
| 13. | Papan listplank jati 2x2,5/30 | 622,68 m' | 66.869,00 | 41.637.988,92 | |
| 14. | Pemasangan atap genteng keramik berglazuur | 1883,85 m ² | 1.500,00 | 2.825.775,00 | |
| 15. | Pemasangan kerpus keramik berglazuur | 176,8 m' | 8.864,20 | 1.567.190,56 | |
| 16. | Cross ventilation | 12 unit | 50.000,00 | 600.000,00 | |
| 16a. | Span skrup ϕ 12 mm | 50 bh | 4.500,00 | 225.000,00 | |
| 16b. | Baut HTB | 4216 bh | 750,00 | 3.162.000,00 | |
| | | | | | 189.127.165,46 |

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PEKERJAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman 08

| No. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUMLAH HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) |
|---------------------------------------|---|------------------------|--------------------------------|---------------------------------|--------------------------|
| II. PEKERJAAN PLAFOND : | | | | | |
| 1. | Plafond asbes plat 60/120 mm rk.kamper lt.1 | 47,36 m ² | 23.092,50 | 1.093.660,80 | |
| 2. | Plepet profil tepi 3/4 (kamper) lt. 1 | 164 m' | 2.800,00 | 459.200,00 | |
| 3. | Plafond dinogips 60/120 lt.1 | 572,16 m ² | 17.500,00 | 10.012.800,00 | |
| 4. | Plafond asbes plat 60/120 mm rk.kamper lt.2 | 47,36 m ² | 23.092,50 | 1.093.660,80 | |
| 5. | Plepet profil tepi 3/4 (kamper) lt. 2 | 164 m' | 2.800,00 | 459.200,00 | |
| 6. | Plafond dinogips 60/120 lt.2 | 572,16 m ² | 17.500,00 | 10.012.800,00 | |
| 7. | Plafond asbes plat 60/120 mm rk.kamper lt.3 | 47,36 m ² | 23.092,50 | 1.093.660,80 | |
| 8. | Plepet profil tepi 3/4 (kamper) lt. 3 | 164 m' | 2.800,00 | 459.200,00 | |
| 9. | Plafond dinogips 60/120 lt.3 | 572,16 m ² | 17.500,00 | 10.012.800,00 | |
| 10. | Plafond asbes plat 60/120 mm rk.kamper lt.4 | 47,36 m ² | 23.092,50 | 1.093.660,80 | |
| 11. | Plepet profil tepi 3/4 (kamper) lt. 4 | 164 m' | 2.800,00 | 459.200,00 | |
| 12. | Plafond dinogips 60/120 lt.4 | 779,05 m ² | 17.500,00 | 13.633.375,00 | |
| 12a. | Plafond beton exposed | 618,6 m ² | 2.500,00 | 1.546.500,00 | |
| | | | | | 51.429.718,20 |
| X. PEKERJAAN TALANG DAN SENG : | | | | | |
| 1. | Papan talang datar & killkipper bangkirai | 157,52 m' | 40.507,78 | 6.380.785,51 | |
| 2. | Talang datar & killkipper seng bjls 50 (120 cm) | 157,52 m' | 15.000,00 | 2.362.800,00 | |
| 3. | Krool talang seng bjls 50 | 157,52 m' | 12.000,00 | 1.890.240,00 | |
| 4. | Klem talang besi strip plat 1" | 544 bh | 1.200,00 | 652.800,00 | |
| 5. | Talang vertikal PVC ϕ 4" | 624 m' | 14.500,00 | 9.048.000,00 | |
| 6. | Keni PVC ϕ 4" | 64 bh | 9.500,00 | 608.000,00 | |
| 7. | Tee PVC ϕ 4" | 32 bh | 11.500,00 | 368.000,00 | |
| 8. | Saringan talang (Roof drain) | 32 bh | 16.000,00 | 512.000,00 | |
| 9. | Cor beton pelapis talang vertikal 1:2:3 | 10,12 m ³ | 283.649,93 | 2.870.537,29 | |
| 9a. | Flashing seng (lebar 30 cm) | 140 m' | 12.000,00 | 1.680.000,00 | |
| | | | | | 26.373.162,80 |
| XI. PEKERJAAN C A T : | | | | | |
| 1. | Cat meni kayu patna | 1 ls | 250.000,00 | 250.000,00 | |
| 2. | Cat tembok luar ICI wether shield | 2816,24 m ² | 5.500,00 | 15.489.320,00 | |
| 3. | Cat dinding dalam ICI Catylac | 2491,66 m ² | 3.000,00 | 7.474.980,00 | |
| 4. | Cat plafond asbes plat ICI Catylac | 189,44 m ² | 3.000,00 | 568.320,00 | |
| 5. | Cat plepet profil tepi ICI Catylac | 656 m' | 750,00 | 492.000,00 | |
| 6. | Cat plat beton (texture ICI Catylac) | 826,38 m ² | 6.000,00 | 4.958.280,00 | |
| 7. | Cat listplank kayu ICI super gloos | 446,74 m ² | 8.000,00 | 3.573.920,00 | |
| 8. | Cat seni besi | 1980,71 m ² | 1.500,00 | 2.983.065,00 | |
| 9. | Cat nowilex usuk dan reng (ritisan) | 1246,15 m ² | 5.500,00 | 6.853.825,00 | |
| 10. | Cat DUCO | 61,13 m ² | 10.000,00 | 611.300,00 | |
| 10a. | Cat dinding dalam partisi ICI Catylac | 1243,66 m ² | 3.000,00 | 3.730.980,00 | |
| 10b. | Cat konsol beton (texture ICI Catylac) | 98,4 m ² | 7.000,00 | 688.800,00 | |
| | | | | | 47.674.790,00 |



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PELAKSANAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman : 09

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUMLAH HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) |
|--------------|---|------------|-------------------------------------|-----------------------------------|----------------------------|
| XII. | <u>PEKERJAAN SANITAIR :</u> | | | | |
| 1. | Kloset duduk KIA type granaja duo blok warna standard | 8 bh | 467.000,00 | 3.736.000,00 | |
| 2. | Kloset jongkok KIA type Rapi C warna standard | 12 bh | 61.000,00 | 732.000,00 | |
| 3. | Wastafel KIA type studio 50 warna standard | 16 bh | 205.500,00 | 3.288.000,00 | |
| 4. | Urinoir KIA type Miniwasbrook warna standard | 16 bh | 235.000,00 | 3.760.000,00 | |
| 5. | Sekat urinoir keramik type 1182 KI | 12 bh | 99.000,00 | 1.188.000,00 | |
| | | | | | 12.704.000,00 |
| XIII. | <u>PEKERJAAN INST. AIR BERSIH, AIR KOTOR & TINJA :</u> | | | | |
| A. | <u>INSTALASI AIR BERSIH :</u> | | | | |
| 1. | Pipa GIP ϕ 1/2" medium A | 70 m' | 4.350,00 | 304.500,00 | |
| 2. | Pipa GIP ϕ 3/4" medium A | 192 m' | 5.100,00 | 979.200,00 | |
| 3. | Pipa GIP ϕ 1" medium A | 15 m' | 7.500,00 | 112.500,00 | |
| 4. | Pipa GIP ϕ 1 1/2" medium A | 117 m' | 10.000,00 | 1.170.000,00 | |
| 5. | Kran air ϕ 1/2" merk SAN EI | 24 bh | 18.500,00 | 444.000,00 | |
| 6. | Stopkran merk KITZ ϕ 1 1/2" | 4 bh | 60.000,00 | 240.000,00 | |
| 7. | Acesories & test | 1 ls | 400.000,00 | 400.000,00 | |
| 8. | Rak water tank stinless-steel kapasitas 2 m ³ | 4 unit | 505.000,00 | 2.020.000,00 | |
| | | | | | 5.670.200,00 |
| B. | <u>INSTALASI AIR KOTOR :</u> | | | | |
| 1. | Pipa PVC ϕ 4" | 183 m' | 14.500,00 | 2.653.500,00 | |
| 2. | Pipa PVC ϕ 1 1/4" | 0 m' | 0,00 | 0,00 | |
| 3. | Pipa PVC ϕ 6" dibawah tanah | 34 m' | 32.000,00 | 1.088.000,00 | |
| 4. | Floor drain merk SAN EI | 36 bh | 27.500,00 | 990.000,00 | |
| 5. | Bak kontrol tertutup | 9 bh | 34.541,78 | 310.876,02 | |
| 6. | Sumur peresapan air kotor (pas.bata merah) | 0 unit | SUDAH MASUK BI PERESAPAN SEPTICTANK | | |
| 7. | Pipa PVC ϕ 1" | 30 m' | 2.800,00 | 84.000,00 | |
| 8. | Clean out ϕ 4" | 16 bh | 57.300,00 | 916.800,00 | |
| 9. | Acesories PVC dan test | 1 ls | 1.100.000,00 | 1.100.000,00 | |
| 9a. | Pipa PVC ϕ 1 1/2" | 38 m' | 4.000,00 | 152.000,00 | |
| 9b. | Pipa PVC ϕ 2" | 36 m' | 5.250,00 | 189.000,00 | |
| | | | | | 7.484.176,02 |
| C. | <u>INSTALASI TINJA (KOTORAN) :</u> | | | | |
| 1. | Pipa PVC ϕ 4" | 87 m' | 14.500,00 | 1.261.500,00 | |
| 2. | Pipa PVC ϕ 6" dibawah tanah | 28 m' | 32.000,00 | 896.000,00 | |
| 3. | Rak kontrol tertutup | 1 bh | 34.541,78 | 34.541,78 | |
| 4. | Septictank (pas.bata merah) | 1 unit | 1.139.695,15 | 1.139.695,15 | |
| 5. | Sumur peresapan (pas.bata merah) | 1 unit | 3.386.156,20 | 3.386.156,20 | |
| 6. | Pipa PVC ϕ 1" | 30 m' | 1.800,00 | 54.000,00 | |
| 7. | Clean out ϕ 4" | 36 bh | 54.800,00 | 1.972.800,00 | |
| 8. | Acesories PVC dan test | 1 ls | 600.000,00 | 600.000,00 | |
| | | | | | 9.344.693,11 |



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PEKERJAAN, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman : 10

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA SATUAN (Rp.) | JUMLAH HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) |
|-------------|---|------------|--------------------|---------------------------|----------------------|
| XIV. | <u>PEKERJAAN INSTALASI LISTRIK :</u> | | | | |
| A. | <u>LANTAI. 1 (SATU) :</u> | | | | |
| 1. | Instalasi titik lampu | 64 ttk | 30.000,00 | 1.920.000,00 | |
| 2. | Instalasi stop kontak dinding dgn pemasangannya | 20 bh | 30.000,00 | 600.000,00 | |
| 3. | Pasang terminal power 600 w.1 phase (pd lantai) | 30 bh | 10.000,00 | 300.000,00 | |
| 4. | Pasang lampu TBCS 300 - 2 x TLD 36 w/33 - M1 | 45 bh | 5.000,00 | 225.000,00 | |
| 5. | Pasang lampu TCS 05B - P 1 x TLD 36 w/33 | 8 bh | 5.000,00 | 40.000,00 | |
| 6. | Pasang lampu TL 18 bulat dgn armatur baret | 11 bh | 3.000,00 | 33.000,00 | |
| 7. | Panel Induk | 1 bh | 4.000.000,00 | 4.000.000,00 | |
| 8. | Panel lampu | 1 unit | 450.000,00 | 450.000,00 | |
| 9. | Panel daya PD.1 | 1 unit | 1.100.000,00 | 1.100.000,00 | |
| 10. | Panel daya PD.1.1 | 1 unit | 450.000,00 | 450.000,00 | |
| 11. | Panel daya PD.1.2 | 1 unit | 450.000,00 | 450.000,00 | |
| 12. | Panel daya PD.1.3 | 1 unit | 450.000,00 | 450.000,00 | |
| 13. | Kabel tray | 155 m' | 27.000,00 | 4.185.000,00 | |
| 13a. | Instalasi stop kontak lantai | 30 bh | 30.000,00 | 900.000,00 | |
| 13b. | Kabel feeder : | | | | |
| | - NYY 4x10 MDP ke PL | 8 m' | 8.750,00 | 70.000,00 | |
| | - NYY 4x16 MDP ke PD.1 | 6 m' | 13.500,00 | 81.000,00 | |
| | - NYY 4x10 PD.1 ke PD.1.1 | 48 m' | 8.750,00 | 420.000,00 | |
| | - NYY 4x10 PD.1 ke PD.1.2 | 52 m' | 13.500,00 | 702.000,00 | |
| | - NYY 4x10 PD.1 ke PD.1.3 | 34 m' | 8.750,00 | 297.500,00 | |
| | | | | | 16.673.500,00 |
| D. | <u>LANTAI. 2 (DUA) :</u> | | | | |
| 1. | Instalasi titik lampu | 67 ttk | 30.000,00 | 2.010.000,00 | |
| 2. | Instalasi stop kontak dinding dgn pemasangannya | 11 bh | 30.000,00 | 330.000,00 | |
| 3. | Pasang terminal power 600 w.1 phase (pd lantai) | 48 bh | 10.000,00 | 480.000,00 | |
| 4. | Pasang lampu TBCS 300 - 2 x TLD 36 w/33 - M1 | 46 bh | 5.000,00 | 230.000,00 | |
| 5. | Pasang lampu TCS 05B - P 1 x TLD 36 w/33 | 9 bh | 5.000,00 | 45.000,00 | |
| 6. | Pasang lampu TL 18 bulat dgn armatur baret | 11 bh | 3.000,00 | 33.000,00 | |
| 7. | Pas. lampu down light 40 w | 1 bh | 5.000,00 | 5.000,00 | |
| 8. | Panel lampu | 1 unit | 450.000,00 | 450.000,00 | |
| 9. | Panel daya PD.2 | 1 unit | 1.500.000,00 | 1.500.000,00 | |
| 10. | Panel daya PD.2.1 | 1 unit | 450.000,00 | 450.000,00 | |
| 11. | Panel daya PD.2.2 | 1 unit | 550.000,00 | 550.000,00 | |
| 12. | Panel daya PD.2.3 | 1 unit | 450.000,00 | 450.000,00 | |
| 13. | Panel daya PD.2.4 | 1 unit | 450.000,00 | 450.000,00 | |
| 14. | Panel daya PD.2.5 | 1 unit | 450.000,00 | 450.000,00 | |
| 15. | Kabel tray | 155 m' | 27.000,00 | 4.185.000,00 | |
| 15a. | Instalasi stop kontak lantai | 48 bh | 30.000,00 | 1.440.000,00 | |
| 15b. | Kabel feeder : | | | | |
| | - NYY 4x10 MDP ke PL | 8 m' | 8.750,00 | 70.000,00 | |
| | - NYY 4x25 MDP ke PD.2 | 8 m' | 19.500,00 | 156.000,00 | |
| | - NYY 4x10 PD.2 ke PD.2.1 | 50 m' | 8.750,00 | 437.500,00 | |
| | - NYY 4x10 PD.2 ke PD.2.2 | 32 m' | 8.750,00 | 280.000,00 | |
| | - NYY 4x10 PD.2 ke PD.2.3 | 44 m' | 8.750,00 | 385.000,00 | |
| | - NYY 4x10 PD.2 ke PD.2.4 | 29 m' | 8.750,00 | 253.750,00 | |
| | - NYY 4x10 PD.2 ke PD.2.5 | 16 m' | 8.750,00 | 140.000,00 | |
| | | | | | 14.780.250,00 |



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RENCANA ANGGARAN BIAYA (RAB)

Halaman : 11

| NO. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUMLAH HARGA SATUAN (Rp.) | JUMLAH HARGA (Rp.) |
|-------------------------------|---|------------|--------------------------|---------------------------|--------------------|
| C. LANTAI. 3 (TIGA) : | | | | | |
| 1. | Instalasi titik lampu | 70 titik | 30.000,00 | 2.100.000,00 | |
| 2. | Instalasi stop kontak dinding dgn pemasangannya | 14 bh | 30.000,00 | 420.000,00 | |
| 3. | Pasang terminal power 600 w.1 phase (pd lantai) | 50 bh | 10.000,00 | 500.000,00 | |
| 4. | Pasang lampu TRCS 300 - 2 x TLD 36 w/33 - M1 | 46 bh | 5.000,00 | 230.000,00 | |
| 5. | Pasang lampu TCS 058 - P 1 x TLD 36 w/33 | 9 bh | 5.000,00 | 45.000,00 | |
| 6. | Pasang lampu TL 18 bulat dgn armatur barel | 11 bh | 3.000,00 | 33.000,00 | |
| 7. | Pas. lampu down light 40 w | 4 bh | 5.000,00 | 20.000,00 | |
| 8. | Panel lampu | 1 unit | 450.000,00 | 450.000,00 | |
| 9. | Panel daya PD.3 | 1 unit | 950.000,00 | 950.000,00 | |
| 10. | Panel daya PD.3.1 | 1 unit | 600.000,00 | 600.000,00 | |
| 11. | Panel daya PD.3.2 | 1 unit | 550.000,00 | 550.000,00 | |
| 12. | Kabel tray | 155 m' | 27.000,00 | 4.185.000,00 | |
| 12a. | Instalasi stop kontak lantai | 50 bh | 30.000,00 | 1.500.000,00 | |
| 12b. | Kabel feeder : | | | | |
| | - NYY 4x10 MDP ke PL | 14 m' | 8.750,00 | 122.500,00 | |
| | - NYY 4x25 MDP ke PD.3 | 20 m' | 19.500,00 | 390.000,00 | |
| | - NYY 4x16 PD.3 ke PD.3.1 | 46 m' | 13.500,00 | 621.000,00 | |
| | - NYY 4x16 PD.3 ke PD.3.2 | 24 m' | 13.500,00 | 324.000,00 | |
| | | | | | 13.040.500,00 |
| D. LANTAI. 4 (EMPAT) : | | | | | |
| 1. | Instalasi titik lampu | 70 titik | 30.000,00 | 2.100.000,00 | |
| 2. | Instalasi stop kontak dinding dgn pemasangannya | 13 bh | 30.000,00 | 390.000,00 | |
| 3. | Pasang terminal power 600 w.1 phase (pd lantai) | 49 bh | 10.000,00 | 490.000,00 | |
| 4. | Pasang terminal power 3000 w.3 phase - & 600 w 1 phase (2 terminal) | 12 bh | 25.000,00 | 300.000,00 | |
| 5. | Pasang lampu TRCS 300 - 2 x TLD 36 w/33 - M1 | 46 bh | 5.000,00 | 230.000,00 | |
| 6. | Pasang lampu TCS 058 - P 1 x TLD 36 w/33 | 9 bh | 5.000,00 | 45.000,00 | |
| 7. | Pasang lampu TL 18 bulat dgn armatur barel | 11 bh | 3.000,00 | 33.000,00 | |
| 8. | Pas. lampu down light 40 w | 4 bh | 5.000,00 | 20.000,00 | |
| 9. | Panel lampu | 1 unit | 450.000,00 | 450.000,00 | |
| 10. | Panel daya PD.4 | 1 unit | 1.500.000,00 | 1.500.000,00 | |
| 11. | Panel daya PD.4.1 | 1 unit | 1.150.000,00 | 1.150.000,00 | |
| 12. | Panel daya PD.4.2 | 1 unit | 500.000,00 | 500.000,00 | |
| 13. | Panel daya PD.4.3 | 1 unit | 550.000,00 | 550.000,00 | |
| 14. | Kabel tray | 230 m' | 27.000,00 | 6.210.000,00 | |
| 14a. | Instalasi stop kontak lantai | 49 bh | 30.000,00 | 1.470.000,00 | |
| 14b. | Instalasi stop kontak lantai 600 Watt | 12 bh | 60.000,00 | 720.000,00 | |
| 14c. | Kabel feeder : | | | | |
| | - NYY 4x10 MDP ke PL | 20 m' | 8.750,00 | 175.000,00 | |
| | - NYY 4x70 MDP ke PD.4 | 24 m' | 44.000,00 | 1.056.000,00 | |
| | - NYY 4x25 PD.4 ke PD.4.1 | 10 m' | 19.500,00 | 195.000,00 | |
| | - NYY 4x10 PD.4 ke PD.4.2 | 24 m' | 8.750,00 | 210.000,00 | |
| | - NYY 4x16 PD.4 ke PD.4.3 | 48 m' | 13.500,00 | 648.000,00 | |
| | | | | | 18.442.000,00 |

P. T. SEKAWAN TRIASA

P. T. SEKAWAN TRIASA

KANTOR PUSAT : JL. BERINGIN I No. 25 Telp. 552866 - 552867 Fax. (024) 552873 SEMARANG (50131)
 KANTOR PERWAKILAN : JL. RAYA RUNGKUT No. 18 Telp. 812859 - 817182 Fax. (031) 817182 SURABAYA (60293)

KONSULTANSI, PERENCANAAN BANGUNAN GEDUNG, BAJA, JEMBATAN, JALAN, AIR, DAN PERDAGANGAN UMUM

RENCANA ANGGARAN BIAYA (RAB)

Halaman : 12

| No. | URAIAN PEKERJAAN | VOLUME SAT | HARGA HARGA SATUAN (Rp.) | JUNJAH HARGA SATUAN (Rp.) | JUNJAH HARGA (Rp.) |
|--------------|--|-----------------------|--------------------------|---------------------------|--------------------|
| XV. | <u>PEKERJAAN PENANGKAL PETIR :</u> | | | | |
| 1. | Spit tembaga & pipa ϕ 1" | 4 unit | 45.000,00 | 180.000,00 | |
| 2. | Kawat BC 50 mm | 448 m' | 7.750,00 | 3.472.000,00 | |
| 3. | Arde pentanahan | 8 bh | 200.000,00 | 1.600.000,00 | |
| 4. | Bak kontrol | 8 bh | 25.000,00 | 200.000,00 | |
| 5. | Ring BC 50 mm | 176 m' | 5.000,00 | 880.000,00 | |
| | | | | | 6.332.000,00 |
| XVI. | <u>INSTALASI HYDRANT DALAM GEDUNG :</u> | | | | |
| 1. | Pipa GIP medium A ϕ 4" | 23 m' | 32.500,00 | 747.500,00 | |
| 2. | Pipa GIP medium A ϕ 2 1/2" | 8 m' | 17.000,00 | 136.000,00 | |
| 3. | Bok hydrant lengkap dengan fire hydrantnya | 4 unit | 1.200.000,00 | 4.800.000,00 | |
| 4. | Acesories pipa hydrant dan test | 1 ls | 450.000,00 | 450.000,00 | |
| 4a. | Stop kran ϕ 2 1/2" KITAZAWA | 4 bh | 36.000,00 | 144.000,00 | |
| | | | | | 6.277.500,00 |
| XVII. | <u>PEKERJAAN LAIN-LAIN :</u> | | | | |
| 1. | Rabat kerikil | 297 m ² | 2.750,00 | 816.750,00 | |
| 2. | Saluran air hujan terbuka buis beton U 25 | 106,9 m' | 28.958,49 | 3.095.662,58 | |
| 3. | Saluran air hujan tertutup | 28,4 m' | 17.046,93 | 484.132,81 | |
| 4. | Bak kontrol terbuka | 21 bh | 31.102,63 | 653.155,23 | |
| 5. | Peresapan air hujan memanjang | 3 unit | 3.386.156,20 | 10.158.468,60 | |
| 6. | Water profiling (atap plat beton & 1l KH/WC) | 394,28 m ² | 12.500,00 | 4.928.500,00 | |
| 7. | Pembersihan kembali | 1 ls | 200.000,00 | 200.000,00 | |
| | | | | | 20.336.669,22 |



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Lampiran 5

**Data proyek pembangunan Gedung Laboratorium Unit 2,
Universitas Sanata Dharma, Yogyakarta, Tahun 1996,
Firma Budhi Karya**

DAFTAR REKAPITULASI

PROYEK : PEMBANGUNAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
 PEKERJAAN : PEMBANGUNAN GEDUNG LABORATORIUM UNIT 2
 LOKASI : DESA PAINGAN KAB.SLEMAN D.I YOGYAKARTA

| URAIAN PEKERJAAN | JUMLAH HARGA (Rp.) |
|--|--------------------------|
| I. PEKERJAAN PERSIAPAN | 22.850.000,00 |
| I. PEKERJAAN TANAH DAN PASIR | 8.944.000,00 |
| I. PEKERJAAN BETON BERTULANG : | |
| a. Lantai 1 (satu) | = Rp. 143.077.945,00 |
| b. Lantai 2 (dua) | = Rp. 154.798.733,00 |
| c. Lantai 3 (tiga) | = Rp. 154.591.379,00 |
| d. Lantai 4 (empat) | = Rp. 142.474.536,00 |
| | ----- |
| | 594.942.593,00 |
| V. PEKERJAAN PASANGAN BATU : | |
| a. Lantai 1 (satu) | = Rp. 8.623.697,00 |
| b. Lantai 2 (dua) | = Rp. 4.755.610,00 |
| c. Lantai 3 (tiga) | = Rp. 4.154.456,00 |
| d. Lantai 4 (empat) | = Rp. 5.010.134,00 |
| | ----- |
| | 22.543.897,00 |
| V. PEKERJAAN PLESTERAN : | |
| a. Lantai 1 (satu) | = Rp. 12.421.425,00 |
| b. Lantai 2 (dua) | = Rp. 11.821.410,00 |
| c. Lantai 3 (tiga) | = Rp. 11.412.390,00 |
| d. Lantai 4 (empat) | = Rp. 9.883.950,00 |
| | ----- |
| | 45.539.175,00 |
| VI. PEKERJAAN LANTAI | |
| a. Lantai 1 (satu) | = Rp. 24.030.650,00 |
| b. Lantai 2 (dua) | = Rp. 22.412.870,00 |
| c. Lantai 3 (tiga) | = Rp. 22.307.470,00 |
| d. Lantai 4 (empat) | = Rp. 20.733.830,00 |
| | ----- |
| | 89.484.820,00 |
| VI. PEKERJAAN KOZYIN & PARTISI ALUMINIUM : | |
| a. Lantai 1 (satu) | = Rp. 65.265.710,00 |
| b. Lantai 2 (dua) | = Rp. 65.868.400,00 |
| c. Lantai 3 (tiga) | = Rp. 78.333.800,00 |
| d. Lantai 4 (empat) | = Rp. 80.379.800,00 |
| | ----- |
| | 289.847.710,00 |
| VI. PEKERJAAN ATAP DAN PENUTUP ATAP | 163.210.500,00 |
| X. PEKERJAAN PLAFOND | 56.168.320,00 |
| X. PEKERJAAN TALANG DAN SENG | 26.097.200,00 |
| VI. PEKERJAAN CAT | 52.929.300,00 |
| VI. PEKERJAAN SANITAIR | 15.286.650,00 |

| URAIAN PEKERJAAN | JUMLAH HARGA (Rp.) |
|--|--------------------------|
| II. PEK. INST. AIR BERSIH, AIR KOTOR & TINJA : | |
| A. INSTALASI AIR BERSIH | Rp. 6.144.500,00 |
| B. INSTALASI AIR KOTOR | Rp. 7.974.500,00 |
| C. INSTALASI TINJA (KOTORAN) | Rp. 2.775.000,00 |
| | 16.894.000,00 |
| IV. PEKERJAAN INSTALASI LISTRIK : | |
| a. Lantai 1 (satu) | Rp. 19.865.000,00 |
| b. Lantai 2 (dua) | Rp. 20.969.000,00 |
| c. Lantai 3 (tiga) | Rp. 15.150.000,00 |
| d. Lantai 4 (empat) | Rp. 19.377.500,00 |
| | 75.361.500,00 |
| XV. PEKERJAAN PENANGKAL PETIR | 9.624.000,00 |
| VI. INSTALASI HYDRANT DALAM GEDUNG | 9.227.000,00 |
| II. PEKERJAAN LAIN-LAIN | 13.157.500,00 |
| JUMLAH NOMINAL | Rp. 1.512.108.165,00 |
| JASA & RESIKO 5 % | Rp. 75.605.408,25 |
| JUMLAH | Rp. 1.587.713.573,25 |
| PAJAK 10 % | Rp. 158.771.357,33 |
| JUMLAH | Rp. 1.746.484.930,58 |
| DIBULATKAN | Rp. 1.746.484.000,00 |

Terbilang : Satu milyar tujuh ratus empat puluh enam juta empat ratus delapan puluh empat ribu rupiah.

Yogyakarta, 23 Oktober 1996
Penawar,
FIRMA "BUDHI KARYA" YOGYAKARTA



Firma "BUDHI KARYA"

YOGYAKARTA.

EDDY HANDOJO

Direktur

RENCANA ANGGARAN BIAYA (R.A.B.)

PROYEK : PENGEMBANGAN KAMPUS UNIVERSITAS SANATA DHARMA YOGYAKARTA
 PEKERJAAN : PEMBANGUNAN GEDUNG LABORATORIUM UNIT 2
 LOKASI : DESA PAINGAN KAB.SLEMAN D.I YOGYAKARTA

| JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|---|--------|-----|---------------------|---------------------|
| PEKERJAAN PERSIAPAN : | | | | |
| Pembersihan lapangan | 1200 | m2 | 500,00 | 600.000,00 |
| Penyempurnaan uitzet & bouwplank | 1 | Ls | 500.000,00 | 500.000,00 |
| Pagar pengaman | 150 | m | 15.000,00 | 2.250.000,00 |
| Direksi keet/brak kerja/gudang | 150 | m2 | 25.000,00 | 3.750.000,00 |
| Pengupasan beton tiang pancang | 1 | Ls | 2.500.000,00 | 2.500.000,00 |
| Asuransi | 1 | Ls | 10.000.000,00 | 10.000.000,00 |
| Air dan listrik kerja | 1 | Ls | 2.000.000,00 | 2.000.000,00 |
| Beaya-beaya administrasi | 1 | Ls | 1.000.000,00 | 1.000.000,00 |
| Papan nama Proyek | 1 | Ls | 250.000,00 | 250.000,00 |
| | | | Jumlah I. | 22.850.000,00 |
| PEKERJAAN TANAH DAN PASIR : | | | | |
| Galian tanah poer | 164 | m3 | 5.000,00 | 820.000,00 |
| Galian tanah pondasi staal & sloof | 242 | m3 | 4.000,00 | 968.000,00 |
| Urug kembali | 200 | m3 | 4.000,00 | 800.000,00 |
| Urug tanah bawah lantai | 344 | m3 | 10.000,00 | 3.440.000,00 |
| Urug pasir | | | | |
| a. Bawah lantai kerja | 18,3 | m3 | 12.000,00 | 219.600,00 |
| b. Bawah pondasi | 13,4 | m3 | 12.000,00 | 160.800,00 |
| c. Bawah keramik lt.1 | 85,9 | m3 | 12.000,00 | 1.030.800,00 |
| d. Bawah keramik lt.2 | 41,8 | m3 | 12.000,00 | 501.600,00 |
| e. Bawah keramik lt.3 | 41,8 | m3 | 12.000,00 | 501.600,00 |
| f. Bawah keramik lt.4 | 41,8 | m3 | 12.000,00 | 501.600,00 |
| | | | Jumlah II | 8.944.000,00 |
| III. PEKERJAAN BETON BERTULANG : | | | | |
| a. LANTAI 1 (Satu) | | | | |
| Lantai kerja 1:3:5 | 16,46 | m3 | 93.000,00 | 1.530.780,00 |
| Beton Poer | 89,54 | m3 | 285.600,00 | 25.572.624,00 |
| Beton sloof struktur | 88 | m3 | 502.400,00 | 44.211.200,00 |
| Beton sloof praktis | 7,56 | m3 | 425.000,00 | 3.213.000,00 |
| Kolom struktur | 77,67 | m3 | 694.700,00 | 53.957.349,00 |
| Beton konsol | 6,6 | m3 | 835.900,00 | 5.516.940,00 |
| Beton tangga (dari Lt.1 ke Lt.2) | 5,7 | m3 | 545.600,00 | 3.109.920,00 |
| Balok luivel | 5,28 | m3 | 631.000,00 | 3.331.680,00 |
| Plat luivel | 0,5 | m3 | 385.900,00 | 192.950,00 |
| Lisplank luivel | 0,58 | m3 | 392.300,00 | 227.534,00 |
| Kolom praktis | 1,24 | m3 | 418.600,00 | 519.064,00 |
| Balok latei | 2,98 | m3 | 467.800,00 | 1.394.044,00 |
| Ringbalk praktis | 0,7 | m3 | 429.800,00 | 300.860,00 |
| | | | Jumlah III.a. | 143.077.945,00 |

| JENIS PEKERJAAN | | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|------------------------------|--|--------|-----|---------------------|---------------------|
| b. LANTAI 2 (dua) | | | | | |
| | Kolom struktur | 58,95 | m3 | 694.700,00 | 40.952.565,00 |
| | Balok lantai Lt.2 | 74,54 | m3 | 706.900,00 | 52.692.326,00 |
| | Plat lantai Lt.2 | 94,4 | m3 | 403.700,00 | 38.109.280,00 |
| | Beton tangga (dari Lt.2 ke Lt.3) | 4,68 | m3 | 545.600,00 | 2.553.408,00 |
| | Beton konsol | 6,6 | m3 | 835.900,00 | 5.516.940,00 |
| | Balok luivel | 5,28 | m3 | 631.000,00 | 3.331.680,00 |
| | Plat luivel | 0,5 | m3 | 385.900,00 | 192.950,00 |
| | Lisplank luivel | 0,58 | m3 | 392.300,00 | 227.534,00 |
| | Kolom praktis | 1,25 | m3 | 418.600,00 | 523.250,00 |
| | Balok latei | 2,98 | m3 | 467.800,00 | 1.394.044,00 |
| | Ringbalk praktis | 0,8 | m3 | 429.800,00 | 343.840,00 |
| 2 | Beton plat lantai 2 KM/WC | 5,76 | m3 | 405.200,00 | 2.333.952,00 |
| 3 | Beton plat tutup genteng | 16,68 | m3 | 397.300,00 | 6.626.964,00 |
| | | | | Jumlah III.b. | 154.798.733,00 |
| c. LANTAI 3 (tiga) | | | | | |
| 1 | Kolom struktur | 58,95 | m3 | 694.700,00 | 40.952.565,00 |
| 2 | Balok lantai Lt.3 | 74,54 | m3 | 706.900,00 | 52.692.326,00 |
| 3 | Plat lantai Lt.3 | 94,4 | m3 | 403.700,00 | 38.109.280,00 |
| 4 | Beton tangga (dari Lt.3 ke Lt.4) | 4,68 | m3 | 545.600,00 | 2.553.408,00 |
| 5 | Beton konsol | 6,6 | m3 | 835.900,00 | 5.516.940,00 |
| 6 | Balok luivel | 5,28 | m3 | 631.000,00 | 3.331.680,00 |
| 7 | Plat luivel | 0,5 | m3 | 385.900,00 | 192.950,00 |
| 8 | Lisplank luivel | 0,58 | m3 | 392.300,00 | 227.534,00 |
| 9 | Kolom praktis | 0,96 | m3 | 418.600,00 | 401.856,00 |
| 0 | Balok latei | 2,98 | m3 | 467.800,00 | 1.394.044,00 |
| 1 | Ringbalk praktis | 0,6 | m3 | 429.800,00 | 257.880,00 |
| 2 | Beton plat lantai 3 KM/WC | 5,76 | m3 | 405.200,00 | 2.333.952,00 |
| 3 | Beton plat tutup genteng | 16,68 | m3 | 397.300,00 | 6.626.964,00 |
| | | | | Jumlah III.c. | 154.591.379,00 |
| d. LANTAI 4 (empat) | | | | | |
| 1 | Kolom struktur | 31,74 | m3 | 610.900,00 | 19.389.966,00 |
| 2 | Balok lantai Lt.4 | 74,54 | m3 | 706.900,00 | 52.692.326,00 |
| 3 | Plat lantai Lt.4 | 94,4 | m3 | 403.700,00 | 38.109.280,00 |
| 4 | Beton konsol | 6,6 | m3 | 835.900,00 | 5.516.940,00 |
| 5 | Ringbalk struktur | 8,7 | m3 | 577.900,00 | 5.027.730,00 |
| 6 | Balok atap | 3,56 | m3 | 669.700,00 | 2.384.132,00 |
| 7 | Plat atap | 10,16 | m3 | 424.600,00 | 4.313.936,00 |
| 8 | Lisplank beton atap | 1,5 | m3 | 392.300,00 | 588.450,00 |
| 9 | Kolom praktis | 1,62 | m3 | 418.600,00 | 678.132,00 |
| 10 | Balok latei | 4,4 | m3 | 467.800,00 | 2.058.320,00 |
| 11 | Ringbalk praktis | 0,6 | m3 | 429.800,00 | 257.880,00 |
| 12 | Plat dan balok penyangga water tank (atas KM) | 4,32 | m3 | 577.900,00 | 2.496.528,00 |
| 13 | Beton lt.4 KM/WC | 5,76 | m3 | 405.200,00 | 2.333.952,00 |
| 14 | Beton plat tutup genteng | 16,68 | m3 | 397.300,00 | 6.626.964,00 |
| | | | | Jumlah III.d. | 142.474.536,00 |

| JENIS PEKERJAAN | | VOLUME | SAT | Rp. | Rp. |
|----------------------------------|---|--------|-----|--------------|---------------|
| V PEKERJAAN PASANGAN BATU | | | | | |
| a. LANTAI 1 (satu) | | | | | |
| 1 | Pasangan pondasi batu kali 1:5 | 49,17 | m3 | 58.100,00 | 2.856.777,00 |
| 2 | Pas.bt.kali umpak bawah sloof struktur | 4,8 | m3 | 58.100,00 | 278.880,00 |
| 3 | Pasangan batu merah 1:2 | 23,9 | m3 | 106.600,00 | 2.547.740,00 |
| 4 | Pasangan batu merah 1:4 | 33 | m3 | 89.100,00 | 2.940.300,00 |
| | | | | Jumlah IV.a. | 8.623.697,00 |
| b. LANTAI 2 (dua) | | | | | |
| 1 | Pasangan batu merah 1:2 | 12,85 | m3 | 106.600,00 | 1.369.810,00 |
| 2 | Pasangan batu merah 1:4 | 38 | m3 | 89.100,00 | 3.385.800,00 |
| | | | | Jumlah IV.b. | 4.755.610,00 |
| c. LANTAI 3 (tiga) | | | | | |
| 1 | Pasangan batu merah 1:2 | 12,56 | m3 | 106.600,00 | 1.338.896,00 |
| 2 | Pasangan batu merah 1:4 | 31,6 | m3 | 89.100,00 | 2.815.560,00 |
| | | | | Jumlah IV.c. | 4.154.456,00 |
| d. LANTAI 4 (empat) | | | | | |
| 1 | Pasangan batu merah 1:2 | 12,68 | m3 | 106.600,00 | 1.351.688,00 |
| 2 | Pasangan batu merah 1:4 | 41,06 | m3 | 89.100,00 | 3.658.446,00 |
| | | | | Jumlah IV.d. | 5.010.134,00 |
| V PEKERJAAN PLESTERAN. | | | | | |
| a. LANTAI 1 (satu) | | | | | |
| 1 | Plesteran dinding 1:2 | 142,5 | m2 | 4.650,00 | 662.625,00 |
| 2 | Plesteran beton 1:3 | 996 | m2 | 4.800,00 | 4.780.800,00 |
| 3 | Plesteran dinding 1:4 | 550 | m2 | 3.870,00 | 2.128.500,00 |
| 4 | Plesteran sudut 1:3 | 2768 | m | 1.500,00 | 4.152.000,00 |
| 5 | Plesteran permukaan atas plat liuvel dan plat tutup genteng | 150 | m2 | 4.650,00 | 697.500,00 |
| | | | | Jumlah V.a. | 12.421.425,00 |
| b. LANTAI 2 (dua) | | | | | |
| 1 | Plesteran dinding 1:2 | 80 | m2 | 4.650,00 | 372.000,00 |
| 2 | Plesteran beton 1:3 | 944 | m2 | 4.800,00 | 4.531.200,00 |
| 3 | Plesteran dinding 1:4 | 633 | m2 | 3.870,00 | 2.449.710,00 |
| 4 | Plesteran sudut 1:3 | 2514 | m | 1.500,00 | 3.771.000,00 |
| 5 | Plesteran permukaan atas plat liuvel dan plat tutup genteng | 150 | m2 | 4.650,00 | 697.500,00 |
| | | | | Jumlah V.b. | 11.821.410,00 |

| | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|-----------------------|---|--------|----------------|---------------------|---------------------|
| c. LANTAI 3 (tiga) | | | | | |
| 1 | Plesteran dinding 1:2 | 78 | m ² | 4.650,00 | 362.700,00 |
| 2 | Plesteran beton 1:3 | 934 | m ² | 4.800,00 | 4.483.200,00 |
| 3 | Plesteran dinding 1:4 | 527 | m ² | 3.870,00 | 2.039.490,00 |
| 4 | Plesteran sudut 1:3 | 2553 | m' | 1.500,00 | 3.829.500,00 |
| 5 | Plesteran permukaan atas plat liuvel dan plat tutup genteng | 150 | m ² | 4.650,00 | 697.500,00 |
| Jumlah V.c. | | | | | 11.412.390,00 |
| d. LANTAI 4 (empat) | | | | | |
| 1 | Plesteran dinding 1:2 | 79,8 | m ² | 4.650,00 | 371.070,00 |
| 2 | Plesteran beton 1:3 | 736 | m ² | 4.800,00 | 3.532.800,00 |
| 3 | Plesteran dinding 1:4 | 684 | m ² | 3.870,00 | 2.647.080,00 |
| 4 | Plesteran sudut 1:3 | 1850 | m' | 1.500,00 | 2.775.000,00 |
| 5 | Plesteran permukaan atas plat liuvel dan plat tutup genteng | 120 | m ² | 4.650,00 | 558.000,00 |
| Jumlah V.d. | | | | | 9.883.950,00 |
| VI | PEKERJAAN LANTAI : | | | | |
| a. LANTAI 1 (satu) | | | | | |
| 1 | Tegel abu-abu 20/20 | 576 | m ² | 14.580,00 | 8.398.080,00 |
| 2 | Keramik lantai 30/30 | 215 | m ² | 26.850,00 | 5.772.750,00 |
| 3 | Keramik lantai KM/WC 20/20 | 48 | m ² | 24.000,00 | 1.152.000,00 |
| 4 | Keramik dinding KM/WC 20/25 | 143 | m ² | 25.150,00 | 3.596.450,00 |
| 5 | Tegel plint abu-abu 10/20 | 139 | m' | 5.270,00 | 732.530,00 |
| 6 | Keramik plint 10/30 | 76 | m' | 6.290,00 | 478.040,00 |
| 7 | Keramik tangga 30/30 | 28 | m ² | 27.850,00 | 779.800,00 |
| 8 | Step nose tangga 3/20 | 46 | m' | 15.000,00 | 690.000,00 |
| 9 | Ampyangan dengan batu hitam (lantai) | 18 | m ² | 50.000,00 | 900.000,00 |
| 10 | Ampyangan dengan batu hitam (plint) | 12,6 | m' | 10.000,00 | 126.000,00 |
| 11 | Werk floor pas.batu bata 1:4 | 281 | m ² | 5.000,00 | 1.405.000,00 |
| Jumlah VI.a | | | | | 24.030.650,00 |
| b. LANTAI 2 (dua) | | | | | |
| 1 | Tegel abu-abu 20/20 | 576 | m ² | 14.580,00 | 8.398.080,00 |
| 2 | Keramik lantai 30/30 | 193 | m ² | 26.850,00 | 5.182.050,00 |
| 3 | Keramik lantai KM/WC 20/20 | 48 | m ² | 24.000,00 | 1.152.000,00 |
| 4 | Keramik dinding KM/WC 20/25 | 143 | m ² | 25.150,00 | 3.596.450,00 |
| 5 | Tegel plint abu-abu 10/20 | 150 | m' | 5.270,00 | 790.500,00 |
| 6 | Keramik plint 10/30 | 131 | m' | 6.290,00 | 823.990,00 |
| 7 | Keramik tangga 30/30 | 28 | m ² | 27.850,00 | 779.800,00 |
| 8 | Step nose tangga 3/20 | 46 | m' | 15.000,00 | 690.000,00 |
| 9 | Ampyangan dengan batu hitam (lantai) | 16,5 | m ² | 50.000,00 | 825.000,00 |
| 10 | Ampyangan dengan batu hitam (plint) | 17,5 | m' | 10.000,00 | 175.000,00 |
| Jumlah VI.b. | | | | | 22.412.870,00 |

| D | | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|--|---|-----------------|----------------|-----|---------------------|---------------------|
| c. LANTAI 3 (tiga) | | | | | | |
| 1 | Tegel abu-abu 20/20 | 576 | m ² | | 14.580,00 | 8.398.080,00 |
| 2 | Keramik lantai 30/30 | 193 | m ² | | 26.850,00 | 5.182.050,00 |
| 3 | Keramik lantai KM/WC 20/20 | 48 | m ² | | 24.000,00 | 1.152.000,00 |
| 4 | Keramik dinding KM/WC 20/25 | 143 | m ² | | 25.150,00 | 3.596.450,00 |
| 5 | Tegel plint abu-abu 10/20 | 130 | m ¹ | | 5.270,00 | 685.100,00 |
| 6 | Keramik plint 10/30 | 131 | m ¹ | | 6.290,00 | 823.990,00 |
| 7 | Keramik tangga 30/30 | 28 | m ² | | 27.850,00 | 779.800,00 |
| 8 | Step nose tangga 3/20 | 46 | m ¹ | | 15.000,00 | 690.000,00 |
| 9 | Ampyangan dengan batu hitam (lantai) | 16,5 | m ² | | 50.000,00 | 825.000,00 |
| 0 | Ampyangan dengan batu hitam (plint) | 17,5 | m ² | | 10.000,00 | 175.000,00 |
| Jumlah VI.c. | | | | | | 22.307.470,00 |
| d. LANTAI 4 (empat) | | | | | | |
| 1 | Tegel abu-abu 20/20 | 576 | m ² | | 14.580,00 | 8.398.080,00 |
| 2 | Keramik lantai 30/30 | 193 | m ² | | 26.850,00 | 5.182.050,00 |
| 3 | Keramik lantai KM/WC 20/20 | 48 | m ² | | 24.000,00 | 1.152.000,00 |
| 4 | Keramik dinding KM/WC 20/25 | 143 | m ² | | 25.150,00 | 3.596.450,00 |
| 5 | Tegel plint abu-abu 10/20 | 108 | m ¹ | | 5.270,00 | 569.160,00 |
| 6 | Keramik plint 10/30 | 121 | m ¹ | | 6.290,00 | 761.090,00 |
| 7 | Ampyangan dengan batu hitam (lantai) | 18 | m ² | | 50.000,00 | 900.000,00 |
| 8 | Ampyangan dengan batu hitam (plint) | 17,5 | m ² | | 10.000,00 | 175.000,00 |
| Jumlah VI.d. | | | | | | 20.733.830,00 |
| VII PEKERJAAN KOZYIN & PARTISI ALUMINIUM | | | | | | |
| a. LANTAI 1 (satu) | | | | | | |
| 1 | Kozyin almn.type P1 | 1 | Unt | | 551.780,00 | 551.780,00 |
| 2 | Kozyin almn.type P1 | 1 | Unt | | 551.780,00 | 551.780,00 |
| 3 | Kozyin almn.type P2 | 6 | Unt | | 456.100,00 | 2.736.600,00 |
| 4 | Kozyin almn.type PS | 1 | Unt | | 255.500,00 | 255.500,00 |
| 5 | Kozyin almn.type PJ 1 | 7 | Unt | | 1.714.650,00 | 12.002.550,00 |
| 6 | Kozyin almn.type J1 | 12 | Unt | | 1.629.300,00 | 19.551.600,00 |
| 7 | Kozyin almn.type JK | 1 | Unt | | 1.199.840,00 | 1.199.840,00 |
| 8 | Kozyin almn.type BV 1 | 4 | Unt | | 647.500,00 | 2.590.000,00 |
| 9 | Kozyin almn.type BV 2 | 2 | Unt | | 626.350,00 | 1.252.700,00 |
| 10 | Kozyin almn.type BV 3 | 1 | Unt | | 149.370,00 | 149.370,00 |
| 11 | Kozyin almn.type BV 4 | 1 | Unt | | 502.400,00 | 502.400,00 |
| 12 | Kozyin almn.type BV 5 | 2 | Unt | | 523.060,00 | 1.046.120,00 |
| 13 | Kozyin almn.type BV K | 1 | Unt | | 502.900,00 | 502.900,00 |
| 14 | Partisi almn.type PT 1 | 2 | Unt | | 1.261.050,00 | 2.522.100,00 |
| 15 | Partisi almn.type PT 1 | 1 | Unt | | 1.261.050,00 | 1.261.050,00 |
| 16 | Partisi almn.type PT 2 | 1 | Unt | | 1.246.950,00 | 1.246.950,00 |
| 17 | Partisi almn.type PT 3 | 1 | Unt | | 3.326.700,00 | 3.326.700,00 |
| 18 | Partisi almn.type PT 4 | 1 | Unt | | 1.075.170,00 | 1.075.170,00 |
| 19 | Partisi almn.type PT 5 | 1 | Unt | | 2.259.000,00 | 2.259.000,00 |
| 20 | Partisi almn.type PT 6 | 1 | Unt | | 1.210.750,00 | 1.210.750,00 |
| 21 | Partisi almn.type PT 7 | 1 | Unt | | 823.300,00 | 823.300,00 |
| 22 | Partisi almn.type PT 8 | 1 | Unt | | 2.259.550,00 | 2.259.550,00 |
| 23 | Partisi almn.type PT 9 | 2 | Unt | | 2.144.000,00 | 4.288.000,00 |
| 24 | Railing tangga(btn.dng.pipa GIP o.2,5") | 28 | m ¹ | | 75.000,00 | 2.100.000,00 |
| Jumlah VII.a. | | | | | | 65.265.710,00 |

| 0 | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|----|--|--------|-----|---------------------|---------------------|
| | b. LANTAI 2 (dua) | | | | |
| 1 | Kozyin almn.type P1 | 1 | Unt | 551.780,00 | 551.780,00 |
| 2 | Kozyin almn.type P1 | 1 | Unt | 551.780,00 | 551.780,00 |
| 3 | Kozyin almn.type P2 | 6 | Unt | 456.100,00 | 2.736.600,00 |
| 4 | Kozyin almn.type PS | 1 | Unt | 255.500,00 | 255.500,00 |
| 5 | Kozyin almn.type PJ 1 | 5 | Unt | 1.714.650,00 | 8.573.250,00 |
| 6 | Kozyin almn.type J1 | 11 | Unt | 1.629.300,00 | 17.922.300,00 |
| 7 | Kozyin almn.type BV 1 | 7 | Unt | 647.500,00 | 4.532.500,00 |
| 8 | Kozyin almn.type BV 2 | 2 | Unt | 626.350,00 | 1.252.700,00 |
| 9 | Kozyin almn.type BV 3 | 1 | Unt | 149.370,00 | 149.370,00 |
| 10 | Kozyin almn.type BV 4 | 1 | Unt | 502.400,00 | 502.400,00 |
| 11 | Kozyin almn.type BV 5 | 2 | Unt | 523.060,00 | 1.046.120,00 |
| 12 | Kozyin almn.type BV K | 1 | Unt | 502.900,00 | 502.900,00 |
| 13 | Partisi almn.type PT 1 | 1 | Unt | 1.261.050,00 | 1.261.050,00 |
| 14 | Partisi almn.type PT 3 | 1 | Unt | 3.326.700,00 | 3.326.700,00 |
| 15 | Partisi almn.type PT 9 | 1 | Unt | 2.144.000,00 | 2.144.000,00 |
| 16 | Partisi almn.type PT 10 | 1 | Unt | 2.893.500,00 | 2.893.500,00 |
| 17 | Partisi almn.type PT 11 | 1 | Unt | 950.000,00 | 950.000,00 |
| 18 | Partisi almn.type PT 12 | 1 | Unt | 1.365.650,00 | 1.365.650,00 |
| 19 | Partisi almn.type PT 13 | 1 | Unt | 3.179.200,00 | 3.179.200,00 |
| 20 | Partisi almn.type PT 14 | 1 | Unt | 2.575.550,00 | 2.575.550,00 |
| 21 | Partisi almn.type PT 15 | 1 | Unt | 2.575.550,00 | 2.575.550,00 |
| 22 | Railing tangga(btn.dng.pipa GIP o.2,5") | 28 | m | 75.000,00 | 2.100.000,00 |
| 23 | Railing selasar (pas.bata dng.pipa GIP o.2,5") | 82 | m | 60.000,00 | 4.920.000,00 |
| | | | | Jumlah VII.b. | 65.868.400,00 |
| | c. LANTAI 3 (tiga) | | | | |
| 1 | Kozyin almn.type P1 | 1 | Unt | 551.780,00 | 551.780,00 |
| 2 | Kozyin almn.type P1 | 1 | Unt | 551.780,00 | 551.780,00 |
| 3 | Kozyin almn.type P2 | 6 | Unt | 456.100,00 | 2.736.600,00 |
| 4 | Kozyin almn.type PS | 1 | Unt | 255.500,00 | 255.500,00 |
| 5 | Kozyin almn.type PJ 1 | 8 | Unt | 1.714.650,00 | 13.717.200,00 |
| 6 | Kozyin almn.type J1 | 12 | Unt | 1.629.300,00 | 19.551.600,00 |
| 7 | Kozyin almn.type BV 1 | 4 | Unt | 647.500,00 | 2.590.000,00 |
| 8 | Kozyin almn.type BV 2 | 2 | Unt | 626.350,00 | 1.252.700,00 |
| 9 | Kozyin almn.type BV 3 | 1 | Unt | 149.370,00 | 149.370,00 |
| 10 | Kozyin almn.type BV 4 | 1 | Unt | 502.400,00 | 502.400,00 |
| 11 | Kozyin almn.type BV 5 | 2 | Unt | 523.060,00 | 1.046.120,00 |
| 12 | Kozyin almn.type BV K | 1 | Unt | 502.900,00 | 502.900,00 |
| 13 | Partisi almn.type PT 16 | 1 | Unt | 2.373.900,00 | 2.373.900,00 |
| 14 | Partisi almn.type PT 17 | 2 | Unt | 893.950,00 | 1.787.900,00 |
| 15 | Partisi almn.type PT 18 | 2 | Unt | 3.633.200,00 | 7.266.400,00 |
| 16 | Partisi almn.type PT 19 | 4 | Unt | 1.231.450,00 | 4.925.800,00 |
| 17 | Partisi almn.type PT 20 | 2 | Unt | 783.975,00 | 1.567.950,00 |
| 18 | Partisi almn.type PT 21 | 2 | Unt | 1.408.850,00 | 2.817.700,00 |
| 19 | Partisi almn.type PT 22 | 2 | Unt | 3.583.100,00 | 7.166.200,00 |
| 20 | Railing tangga(btn.dng.pipa GIP o.2,5") | 28 | m | 75.000,00 | 2.100.000,00 |
| 21 | Railing selasar (pas.bata dgn. pipa GIP o.2,5") | 82 | m | 60.000,00 | 4.920.000,00 |
| | | | | Jumlah VII.c. | 78.333.800,00 |

| NO | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|---------------------------------------|--|--------|----------------|---------------------|---------------------|
| d. LANTAI 4 (empat) | | | | | |
| 1 | Kozyin almn.type P1 | 1 | Unt | 551.780,00 | 551.780,00 |
| 2 | Kozyin almn.type P1 | 1 | Unt | 551.780,00 | 551.780,00 |
| 3 | Kozyin almn.type P2 | 6 | Unt | 456.100,00 | 2.736.600,00 |
| 4 | Kozyin almn.type PS | 1 | Unt | 255.500,00 | 255.500,00 |
| 5 | Kozyin almn.type PJ 1 | 8 | Unt | 1.714.650,00 | 13.717.200,00 |
| 6 | Kozyin almn.type J1 | 12 | Unt | 1.629.300,00 | 19.551.600,00 |
| 7 | Kozyin almn.type BV 1 | 4 | Unt | 647.500,00 | 2.590.000,00 |
| 8 | Kozyin almn.type BV 2 | 2 | Unt | 626.350,00 | 1.252.700,00 |
| 9 | Kozyin almn.type BV 3 | 1 | Unt | 149.370,00 | 149.370,00 |
| 10 | Kozyin almn.type BV 4 | 1 | Unt | 502.400,00 | 502.400,00 |
| 11 | Kozyin almn.type BV 5 | 2 | Unt | 523.060,00 | 1.046.120,00 |
| 12 | Kozyin almn.type BV K | 1 | Unt | 502.900,00 | 502.900,00 |
| 13 | Partisi almn.type PT 17 | 2 | Unt | 893.950,00 | 1.787.900,00 |
| 14 | Partisi almn.type PT 19 | 4 | Unt | 1.231.450,00 | 4.925.800,00 |
| 15 | Partisi almn.type PT 20 | 2 | Unt | 783.975,00 | 1.567.950,00 |
| 16 | Partisi almn.type PT 21 | 2 | Unt | 1.408.850,00 | 2.817.700,00 |
| 17 | Partisi almn.type PT 24 | 2 | Unt | 3.916.150,00 | 7.832.300,00 |
| 18 | Partisi almn.type PT 25 | 2 | Unt | 3.839.500,00 | 7.679.000,00 |
| 19 | Partisi almn.type PT 26 | 1 | Unt | 2.309.000,00 | 2.309.000,00 |
| 20 | Partisi almn.type PT 27 | 1 | Unt | 2.982.200,00 | 2.982.200,00 |
| 21 | Railing tangga(btn.dng.pipa GIP o.2,5") | 2 | m | 75.000,00 | 150.000,00 |
| 22 | Railing selasar (pas.bata dng.pipa GIP o.2,5") | 82 | m | 60.000,00 | 4.920.000,00 |
| | | | | Jumlah VII.d. | 80.379.800,00 |
| VIII PEKERJAAN ATAP & KERANGKA ATAP : | | | | | |
| 1 | Kuda-kuda baja besi siku | 11600 | kg | 2.000,00 | 23.200.000,00 |
| 2 | Gording CNP 150.65.20.3,20 | 13200 | kg | 2.250,00 | 29.700.000,00 |
| 3 | Jurai-jurai CNP 150.65.20.3,20 | 1960 | kg | 2.250,00 | 4.410.000,00 |
| 4 | Angin-angin besi beton diameter 12 mm | 300 | kg | 2.000,00 | 600.000,00 |
| 5 | Sagrot besi beton diameter 12 mm | 1246 | kg | 2.000,00 | 2.492.000,00 |
| 6 | Plat simpul kuda-kuda tebal 12 mm | 3000 | kg | 2.000,00 | 6.000.000,00 |
| 7 | Angkur baut tumpuan kuda2 diameter 19mm | 200 | kg | 2.000,00 | 400.000,00 |
| 8 | Catwalk multiplex 9 mm dgn.penggantung CNP | 114 | m | 45.000,00 | 5.130.000,00 |
| 9 | Usuk bangkirai reng jati 3/4 | 1007 | m ² | 16.500,00 | 16.615.500,00 |
| 10 | Usuk bangkirai reng jati diserut pada tritis lantai 1 s/d lt.4 | 1530 | m ² | 17.500,00 | 26.775.000,00 |
| 11 | Papan ruitter jati 2/15 | 163 | m | 9.000,00 | 1.467.000,00 |
| 12 | Papan lisplank jati 2/30 | 138 | m | 25.000,00 | 3.450.000,00 |
| 13 | Papan lisplank jati 2 x 2/30 | 648 | m | 45.000,00 | 29.160.000,00 |
| 14 | Pemasangan atap genteng keramik ber-glazur | 2537 | m ² | 1.500,00 | 3.805.500,00 |
| 15 | Pemasangan kerpis keramik berglazur | 163 | m | 3.500,00 | 570.500,00 |
| 16 | Cross ventilation | 12 | unt | 200.000,00 | 2.400.000,00 |
| 17 | Plat simpul kuda-kuda tebal 8 mm | 210 | kg | 2.000,00 | 420.000,00 |
| 18 | Plat koppel tebal 12 mm & 8 mm | 700 | kg | 2.000,00 | 1.400.000,00 |
| 19 | Plat tumpuan kuda-kuda tebal 12 mm | 240 | kg | 2.000,00 | 480.000,00 |
| 20 | Span drat o 12 mm | 50 | bh | 15.000,00 | 750.000,00 |
| 21 | Dudukan gording & sambungan gording plat tebal 8 mm | 1100 | kg | 2.000,00 | 2.200.000,00 |
| 22 | Mur baut o 5/8 non full drat | 2200 | bh | 750,00 | 1.650.000,00 |
| 23 | Mur baut 0 1/2" non full drat | 270 | bh | 500,00 | 135.000,00 |
| | | | | Jumlah VIII. | 169.210.500,00 |

| NO | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|--------------------------------------|---|--------|----------------|---------------------|---------------------|
| IX PEKERJAAN PLAFOND : | | | | | |
| 1 | Plafond asbes plat 60/120 4 mm rangka kamper Lt.1 | 48 | m ² | 17.960,00 | 862.080,00 |
| 2 | Plepet propil tepi 3/4 (kamper) lt.1 | 56 | m' | 5.000,00 | 280.000,00 |
| 3 | Plafond Dinogips 60/120 lt.1. | 576 | m ² | 20.000,00 | 11.520.000,00 |
| 4 | Plafond asbes plat 60/120 4 mm rangka kamper Lt.2 | 48 | m ² | 17.960,00 | 862.080,00 |
| 5 | Plepet propil tepi 3/4 (kamper) lt.2 | 56 | m' | 5.000,00 | 280.000,00 |
| 6 | Plafond Dinogips 60/120 lt.2 | 576 | m ² | 20.000,00 | 11.520.000,00 |
| 7 | Plafond asbes plat 60/120 4 mm rangka kamper Lt.3 | 48 | m ² | 17.960,00 | 862.080,00 |
| 8 | Plepet propil tepi 3/4 (kamper) lt.3 | 56 | m' | 5.000,00 | 280.000,00 |
| 9 | Plafond Dinogips 60/120 lt.3. | 576 | m ² | 20.000,00 | 11.520.000,00 |
| 10 | Plafond asbes plat 60/120 4 mm rangka kamper Lt.4 | 48 | m ² | 17.960,00 | 862.080,00 |
| 11 | Plepet propil tepi 3/4 (kamper) lt.4 | 56 | m' | 5.000,00 | 280.000,00 |
| 12 | Plafond Dinogips 60/120 lt.4 | 780 | m ² | 20.000,00 | 15.600.000,00 |
| 13 | Gantungan plafond lantai 4 CNP 125.50.20.2,3 | 96 | m' | 15.000,00 | 1.440.000,00 |
| | | | | Jumlah IX. | 56.168.320,00 |
| X PEKERJAAN TALANG DAN SENG : | | | | | |
| 1 | Papan talang datar & killkiper bangki-rai | 161 | m ³ | 30.000,00 | 4.830.000,00 |
| 2 | Talang datar & killkiper seng BJLS 50. | 161 | m' | 14.000,00 | 2.254.000,00 |
| 3 | Krool talang seng BJLS 50 | 146 | m' | 3.500,00 | 511.000,00 |
| 4 | Klem talang besi striplat 1" | 340 | bh | 2.000,00 | 680.000,00 |
| 5 | Talang vertikal PVC 4" | 680 | m' | 12.500,00 | 8.500.000,00 |
| 6 | Keni PVC 4" | 68 | bh | 10.000,00 | 680.000,00 |
| 7 | Tee PVC 4" | 34 | bh | 12.500,00 | 425.000,00 |
| 8 | Saringan talang (Roof drain) | 34 | bh | 15.000,00 | 510.000,00 |
| 9 | Cor beton pelapis talang vertikal 1:2:3 | 20 | m ³ | 333.400,00 | 6.668.000,00 |
| 10 | Saringan vent | 34 | bh | 15.000,00 | 510.000,00 |
| 11 | Wind feer seng tutup genteng lt.4 | 126 | m' | 4.200,00 | 529.200,00 |
| | | | | Jumlah X. | 26.097.200,00 |

| NO | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|--|---|--------|-----|---------------------|---------------------|
| XI PEKERJAAN CAT-CATAN : | | | | | |
| 1 | Cat meni kayu Patna | 162 | m2 | 2.000,00 | 324.000,00 |
| 2 | Cat tembok luar ICI weather shield | 3000 | m2 | 3.500,00 | 10.500.000,00 |
| 3 | Cat dinding dalam ICI Catylac | 5000 | m2 | 2.400,00 | 12.000.000,00 |
| 4 | Cat plafond asbes plat ICI Catylac | 192 | m2 | 2.400,00 | 460.800,00 |
| 5 | Cat plepet propil tepi ICI Catylac | 224 | m2 | 500,00 | 112.000,00 |
| 6 | Cat plat beton (texture ICI Catylac) | 1458 | m2 | 5.000,00 | 7.290.000,00 |
| 7 | Cat lisplank kayu ICI super gloos | 871 | m2 | 7.500,00 | 6.532.500,00 |
| 8 | Cat meni besi (Zinkcromate) | 2200 | m2 | 2.000,00 | 4.400.000,00 |
| 9 | Cat mowilex usuk & reng tritisan | 1300 | m2 | 7.500,00 | 9.750.000,00 |
| 10 | Cat DUCO | 78 | m2 | 20.000,00 | 1.560.000,00 |
| | | | | Jumlah XI. | 52.929.300,00 |
| XII PEKERJAAN SANITAIR : | | | | | |
| 1 | Klosed duduk KIA type Granada, Duo Block warna standard | 8 | bh | 410.000,00 | 3.280.000,00 |
| 2 | Klosed jongkok KIA type Rapi C warna standard | 12 | bh | 60.000,00 | 720.000,00 |
| 3 | Wastafel KIA lengkap type Stodio 50 warna standard | 22 | bh | 155.000,00 | 3.410.000,00 |
| 4 | Urinoir KIA Miniwashbrook warna standard dengan kran KITZ | 16 | bh | 400.000,00 | 6.400.000,00 |
| 5 | Sekat urinoir KIA type 1182 K1 | 12 | bh | 100.000,00 | 1.200.000,00 |
| 6 | Tegel keramik dinding wastafel R, kelas | 11 | m2 | 25.150,00 | 276.650,00 |
| | | | | Jumlah XII. | 15.286.650,00 |
| XIII PEK. INST. AIR BERSIH, AIR KOTOR & TINJA | | | | | |
| A. INST. AIR BERSIH | | | | | |
| 1 | Pipa GIP o 1/2" medium A | 30 | m' | 3.500,00 | 105.000,00 |
| 2 | Pipa GIP o 3/4" medium A | 214 | m' | 4.500,00 | 963.000,00 |
| 3 | Pipa GIP o 1" medium A | 18 | m' | 6.000,00 | 108.000,00 |
| 4 | Pipa GIP o 1,5" medium A | 107 | m' | 8.000,00 | 856.000,00 |
| 5 | Kran air o 1/2" merk SAN EI | 31 | bh | 27.500,00 | 852.500,00 |
| 6 | Stop kran merk KITZ o 1,5" | 4 | bh | 55.000,00 | 220.000,00 |
| 7 | Acesories & test | 1 | Ls | 100.000,00 | 100.000,00 |
| 8 | Bak water tank stainless-steel kapasitas 2 m3 | 4 | unt | 700.000,00 | 2.800.000,00 |
| 9 | Stop kran kurasan o 3/4" | 4 | bh | 35.000,00 | 140.000,00 |
| | | | | Jumlah XIII.A | 6.144.500,00 |

| NO | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|---------------------------------------|---|--------|-----|---------------------|---------------------|
| B. INSTALASI AIR KOTOR | | | | | |
| 1 | Pipa PVC diameter 4" | 121 | m' | 12.500,00 | 1.512.500,00 |
| 2 | Pipa PVC diameter 1,25" | 22 | m' | 3.500,00 | 77.000,00 |
| 3 | Pipa PVC o 6" dibawah tanah | 91 | m' | 40.000,00 | 3.640.000,00 |
| 4 | Floor drain merk SAN EI | 42 | bh | 20.000,00 | 840.000,00 |
| 5 | Bak kontrol tertutup | 9 | bh | 35.000,00 | 315.000,00 |
| 6 | Sumur peresapan air kotor(pas.bt.merah) | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| 7 | Pipa PVC diameter 1" | 30 | m' | 3.000,00 | 90.000,00 |
| 8 | Clean out diameter 4" | 15 | bh | 30.000,00 | 450.000,00 |
| 9 | Acesories PVC dan test | 1 | Ls | 50.000,00 | 50.000,00 |
| Jumlah XIII.B | | | | | 7.974.500,00 |
| C. INSTALASI TINJA (KOTORAN) | | | | | |
| 1 | Pipa PVC diameter 4" | 66 | m' | 12.500,00 | 825.000,00 |
| 2 | Pipa PVC o 6" di bawah tanah | 18 | m' | 40.000,00 | 720.000,00 |
| 3 | Bak kontrol tertutup | 1 | bh | 35.000,00 | 35.000,00 |
| 4 | Septicktank (pas.bt.merah) | 1 | unt | 875.000,00 | 875.000,00 |
| 5 | Sumur peresapan (pas.bt.merah) (telah terhitung di No.XIII.B.6) | - | unt | 0,00 | 0,00 |
| 6 | Pipa PVC diameter 1" | 30 | m' | 3.000,00 | 90.000,00 |
| 7 | Clean out diameter 4" | 6 | bh | 30.000,00 | 180.000,00 |
| 8 | Acesories PVC dan test | 1 | Ls | 50.000,00 | 50.000,00 |
| Jumlah XIII.C | | | | | 2.775.000,00 |
| PEKERJAAN INSTALASI LISTRIK | | | | | |
| a. LANTAI 1 (satu) | | | | | |
| | Instalasi titik lampu | 65 | ttk | 22.500,00 | 1.462.500,00 |
| | Instalasi stop kontak dinding dengan pemasangannya | 21 | bh | 22.500,00 | 472.500,00 |
| | Pasang terminal power 600 w 1 phase (pada lantai) | 30 | bh | 65.000,00 | 1.950.000,00 |
| | Pasang lampu TBCS 300 - 2xTLD 36w/33-M1 | 45 | bh | 6.000,00 | 270.000,00 |
| | Pasang lampu TCS 058-P1xTLD 36w/33 | 9 | bh | 6.000,00 | 54.000,00 |
| | Pasang lampu TL 18 bulat dgn. armateur baret | 11 | bh | 6.000,00 | 66.000,00 |
| | Panel Induk | 1 | unt | 7.500.000,00 | 7.500.000,00 |
| | Panel lampu | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| | Panel Daya PD.1 | 1 | unt | 1.500.000,00 | 1.500.000,00 |
| | Panel Daya PD.1.1. | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| | Panel Daya PD.1.2. | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| | Panel Daya PD.1.3. | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| | Kabel try | 148 | m' | 17.500,00 | 2.590.000,00 |
| Jumlah XIV.a | | | | | 19.865.000,00 |

| NO | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|----------------------|---|--------|-----|---------------------|---------------------|
| b. LANTAI 2 (dua) | | | | | |
| 1 | Instalasi titik lampu | 69 | ttk | 22.500,00 | 1.552.500,00 |
| 2 | Instalasi stop kontak dinding dengan pemasangannya | 13 | bh | 22.500,00 | 292.500,00 |
| 3 | Pasang terminal power 600 w 1 phase (pada lantai) | 48 | bh | 65.000,00 | 3.120.000,00 |
| 4 | Pasang lampu TBCS 300 - 2xTLD 36w/33-M1 | 46 | bh | 6.000,00 | 276.000,00 |
| 5 | Pasang lampu TCS 058-P1xTLD 36w/33 | 9 | bh | 6.000,00 | 54.000,00 |
| 6 | Pasang lampu TL 18 bulat dgn. armateur baret | 13 | bh | 6.000,00 | 78.000,00 |
| 7 | Pasang lampu Down Light 40 w. | 1 | bh | 6.000,00 | 6.000,00 |
| 8 | Panel lampu | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| 9 | Panel Daya PD.2 | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 10 | Panel Daya PD.2.1. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 11 | Panel Daya PD.2.2. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 12 | Panel Daya PD.2.3. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 13 | Panel Daya PD.2.4. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 14 | Panel Daya PD.2.5. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 15 | Kabel try | 148 | m | 17.500,00 | 2.590.000,00 |
| | | | | Jumlah XIV.b | 20.969.000,00 |
| c. LANTAI 3 (tiga) | | | | | |
| 1 | Instalasi titik lampu | 70 | ttk | 22.500,00 | 1.575.000,00 |
| 2 | Instalasi stop kontak dinding dengan pemasangannya | 14 | bh | 22.500,00 | 315.000,00 |
| 3 | Pasang terminal power 600 w 1 phase (pada lantai) | 50 | bh | 65.000,00 | 3.250.000,00 |
| 4 | Pasang lampu TBCS 300 - 2xTLD 36w/33-M1 | 46 | bh | 6.000,00 | 276.000,00 |
| 5 | Pasang lampu TCS 058-P1xTLD 36w/33 | 9 | bh | 6.000,00 | 54.000,00 |
| 6 | Pasang lampu TL 18 bulat dgn. armateur baret | 11 | bh | 6.000,00 | 66.000,00 |
| 7 | Pasang lampu Down Light 40 w. | 4 | bh | 6.000,00 | 24.000,00 |
| 8 | Panel lampu | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| 9 | Panel Daya PD.3 | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 10 | Panel Daya PD.3.1. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 11 | Panel Daya PD.3.2. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 12 | Kabel try | 148 | m | 17.500,00 | 2.590.000,00 |
| | | | | Jumlah XIV.c | 15.150.000,00 |

| 0 | JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|----|---|--------|-----|---------------------|---------------------|
| | d. LANTAI 4 (empat) | | | | |
| 1 | Instalasi titik lampu | 70 | ttk | 22.500,00 | 1.575.000,00 |
| 2 | Instalasi stop kontak dinding dengan pemasangannya | 13 | bh | 22.500,00 | 292.500,00 |
| 3 | Pasang terminal power 600 w 1 phase (pada lantai) | 37 | bh | 65.000,00 | 2.405.000,00 |
| 4 | Pasang terminal power 3000 w 3 phase - & 600 w 1 phase (2 terminal) | 12 | bh | 150.000,00 | 1.800.000,00 |
| 5 | Pasang lampu TBCS 300 - 2xTLD 36w/33-M1 | 46 | bh | 6.000,00 | 276.000,00 |
| 6 | Pasang lampu TCS 058-P1xTLD 36w/33 | 9 | bh | 6.000,00 | 54.000,00 |
| 7 | Pasang lampu TL 18 bulat dgn. armateur baret | 11 | bh | 6.000,00 | 66.000,00 |
| 8 | Pasang lampu Down Light 40 w. | 4 | bh | 6.000,00 | 24.000,00 |
| 9 | Panel lampu | 1 | unt | 1.000.000,00 | 1.000.000,00 |
| 10 | Panel Daya PD.4 | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 11 | Panel Daya PD.4.1. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 12 | Panel Daya PD.4.2. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 13 | Panel Daya PD.4.3. | 1 | unt | 2.000.000,00 | 2.000.000,00 |
| 14 | Kabel try | 222 | m | 17.500,00 | 3.885.000,00 |
| | | | | Jumlah XIV.d | 19.377.500,00 |
| | PENANGKAL PETIR : | | | | |
| | Spit tembaga & Pipa 1". | 4 | unt | 30.000,00 | 120.000,00 |
| | Kawat BC 50 mm | 458 | m | 6.500,00 | 2.977.000,00 |
| | Arde pentanahan | 8 | bh | 300.000,00 | 2.400.000,00 |
| | Bak kontrol | 8 | bh | 75.000,00 | 600.000,00 |
| | Ring BC 50 mm | 158 | m | 6.500,00 | 1.027.000,00 |
| | Klem penyangga | 1 | ls | 2.500.000,00 | 2.500.000,00 |
| | | | | Jumlah XV. | 9.624.000,00 |
| | I. INSTALASI HYDRANT DALAM GEDUNG | | | | |
| | Pipa GIP medium A diameter 4" | 19 | m | 100.000,00 | 1.900.000,00 |
| | Pipa GIP medium A diameter 2,5" | 4 | m | 40.000,00 | 160.000,00 |
| | Box Hydrant lengkap dgn.fire hydrantnya | 4 | unt | 1.750.000,00 | 7.000.000,00 |
| | Acesories pipa hydrant dan test | 1 | Ls | 167.000,00 | 167.000,00 |
| | | | | Jumlah XVI. | 9.227.000,00 |

| JENIS PEKERJAAN | VOLUME | SAT | HARGA SATUAN Rp. | JUMLAH HARGA Rp. |
|---|--------|----------------|---------------------|---------------------|
| PEKERJAAN LAIN-LAIN : | | | | |
| Rabat kerikil | 310 | m ² | 3.000,00 | 930.000,00 |
| Saluran air hujan terbuka buis beton 1/2 diameter 25 | 125 | m' | 17.500,00 | 2.187.500,00 |
| Saluran air hujan tertutup | 30 | m' | 20.000,00 | 600.000,00 |
| Bak kontrol terbuka | 21 | bh | 15.000,00 | 315.000,00 |
| Peresapan air hujan memanjang | 3 | unt | 1.000.000,00 | 3.000.000,00 |
| Waterproofing (atap plat beton & lantai KM/WC) | 330 | m ² | 12.500,00 | 4.125.000,00 |
| Pembersihan kembali | 1 | ls | 2.000.000,00 | 2.000.000,00 |
| | | | Jumlah XVII. | 13.157.500,00 |

Yogyakarta, 23 Oktober 1996
 Penawar,
 FIRMA "BUDHI KARYA" YOGYAKARTA



Firma **"BUDHI KARYA"**
 KONTRAKTOR - INDUSTRI - PERDAGANGAN
 YOGYAKARTA

EDDY HANDOJO

Direktur



serviens in lumine veritatis

Lampiran 6

**Perhitungan Simulasi Volume Pekerjaan per Hari dan
Simulasi Biaya per Satuan Volume atau Luasan**

Pekerjaan : PAGAR, PAPAN NAMA, PEMBERSIHAN, KEET

| Tahun | Biaya | Biaya tahun 2000 | Unit | Durasi | Unit / hari | Biaya Satuan |
|-------|------------|------------------|---------|--------|-------------|--------------|
| 1998 | 7,500,000 | 16,200,000 | 1.00 ls | 30 | 0.0333 ls | 16,200,000 |
| 1996 | 5,673,750 | 11,063,813 | 1.00 ls | 36 | 0.0278 ls | 11,063,813 |
| 1996 | 16,524,500 | 32,222,775 | 1.00 ls | 24 | 0.0417 ls | 32,222,775 |
| 1996 | 6,800,000 | 12,870,000 | 1.00 ls | 20 | 0.0500 ls | 12,870,000 |

Simulasi Volume Pekerjaan per hari

| Data | Unit / hari | Prob | Bilangan Random | |
|--------------|----------------|------------|-----------------|----|
| 1 | 0.0333 ls | 22 | 0 | 21 |
| 2 | 0.0278 ls | 18 | 22 | 39 |
| 3 | 0.0417 ls | 27 | 40 | 65 |
| 4 | 0.0500 ls | 33 | 67 | 99 |
| Total | 0.15 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|-------------------|------------|-----------------|----|
| 1 | 11,063,813 | 15 | 0 | 14 |
| 2 | 12,870,000 | 18 | 15 | 32 |
| 3 | 16,200,000 | 22 | 33 | 54 |
| 4 | 32,222,775 | 45 | 55 | 99 |
| Total | 72,356,588 | 100 | | |

| | Bilangan Random | Unit / hari | Hari | Unit / hari Kumulatif | Hari Kumulatif |
|----|-----------------|-------------|------|-----------------------|----------------|
| 1 | 97 | 0.0500 ls | 1 | 0.0500 ls | 1 |
| 2 | 37 | 0.0278 ls | 1 | 0.0778 ls | 2 |
| 3 | 20 | 0.0333 ls | 1 | 0.1111 ls | 3 |
| 4 | 40 | 0.0278 ls | 1 | 0.1389 ls | 4 |
| 5 | 57 | 0.0417 ls | 1 | 0.1806 ls | 5 |
| 6 | 10 | 0.0333 ls | 1 | 0.2139 ls | 6 |
| 7 | 73 | 0.0500 ls | 1 | 0.2639 ls | 7 |
| 8 | 97 | 0.0500 ls | 1 | 0.3139 ls | 8 |
| 9 | 73 | 0.0500 ls | 1 | 0.3639 ls | 9 |
| 10 | 85 | 0.0500 ls | 1 | 0.4139 ls | 10 |
| 11 | 68 | 0.0500 ls | 1 | 0.4639 ls | 11 |
| 12 | 7 | 0.0333 ls | 1 | 0.4972 ls | 12 |
| 13 | 69 | 0.0500 ls | 1 | 0.5472 ls | 13 |
| 14 | 16 | 0.0333 ls | 1 | 0.5806 ls | 14 |
| 15 | 9 | 0.0333 ls | 1 | 0.6139 ls | 15 |
| 16 | 46 | 0.0417 ls | 1 | 0.6556 ls | 16 |
| 17 | 65 | 0.0417 ls | 1 | 0.6972 ls | 17 |
| 18 | 45 | 0.0417 ls | 1 | 0.7389 ls | 18 |
| 19 | 63 | 0.0417 ls | 1 | 0.7806 ls | 19 |
| 20 | 87 | 0.0500 ls | 1 | 0.8306 ls | 20 |
| 21 | 11 | 0.0333 ls | 1 | 0.8639 ls | 21 |
| 22 | 92 | 0.0500 ls | 1 | 0.9139 ls | 22 |
| 23 | 86 | 0.0500 ls | 1 | 0.9639 ls | 23 |
| 24 | 2 | 0.0333 ls | 1 | 0.9972 ls | 24 |
| 25 | 53 | 0.0417 ls | 1 | 1.0389 ls | 25 |

| | Bilangan Random | Biaya Satuan | Unit | Biaya sat Kumulatif | Unit Kumulatif |
|----|-----------------|--------------|------|---------------------|----------------|
| 1 | 97 | 32,222,775 | 1 | 32,222,775 | 1 |
| 2 | 37 | 16,200,000 | 1 | 48,422,775 | 2 |
| 3 | 20 | 12,870,000 | 1 | 61,292,775 | 3 |
| 4 | 40 | 16,200,000 | 1 | 77,492,775 | 4 |
| 5 | 57 | 32,222,775 | 1 | 109,715,550 | 5 |
| 6 | 10 | 11,063,813 | 1 | 120,779,363 | 6 |
| 7 | 73 | 32,222,775 | 1 | 153,002,138 | 7 |
| 8 | 97 | 32,222,775 | 1 | 185,224,913 | 8 |
| 9 | 73 | 32,222,775 | 1 | 217,447,688 | 9 |
| 10 | 85 | 32,222,775 | 1 | 249,670,463 | 10 |
| 11 | 68 | 32,222,775 | 1 | 281,893,238 | 11 |
| 12 | 7 | 11,063,813 | 1 | 292,957,051 | 12 |
| 13 | 69 | 32,222,775 | 1 | 325,179,825 | 13 |
| 14 | 16 | 12,870,000 | 1 | 338,049,825 | 14 |
| 15 | 9 | 11,063,813 | 1 | 349,113,638 | 15 |
| 16 | 46 | 16,200,000 | 1 | 365,313,638 | 16 |
| 17 | 65 | 32,222,775 | 1 | 397,536,413 | 17 |
| 18 | 45 | 16,200,000 | 1 | 413,736,413 | 18 |
| 19 | 63 | 32,222,775 | 1 | 445,959,188 | 19 |
| 20 | 87 | 32,222,775 | 1 | 478,181,963 | 20 |
| 21 | 11 | 11,063,813 | 1 | 489,245,775 | 21 |
| 22 | 92 | 32,222,775 | 1 | 521,468,550 | 22 |
| 23 | 86 | 32,222,775 | 1 | 553,691,325 | 23 |
| 24 | 2 | 11,063,813 | 1 | 564,755,138 | 24 |
| 25 | 53 | 16,200,000 | 1 | 580,955,138 | 25 |

Unit per hari = 0.0416 ls
 Proyek baru Durasi 24
 1.0000 ls

Biaya per unit = 23,238,206
 Proyek baru Biaya
 1.0000 ls 23,238,206

Pekerjaan : MOBILISASI dan AIR KERJA

| Tahun | Biaya | Biaya tahun 2000 | Unit | Duraei | Unit / hari | Biaya Satuan |
|-------|-----------|------------------|---------|--------|-------------|--------------|
| 1998 | 1,500,000 | 3,495,000 | 1.00 ls | 156 | 0.0064 ls | 3,495,000 |
| 1996 | 500,000 | 1,550,000 | 1.00 ls | 204 | 0.0049 ls | 1,550,000 |
| 1996 | 1,750,000 | 5,425,000 | 1.00 ls | 192 | 0.0052 ls | 5,425,000 |
| 1996 | 2,000,000 | 6,200,000 | 1.00 ls | 240 | 0.0042 ls | 6,200,000 |

Simulasi Volume Pekerjaan per hari

| Data | Unit / hari | Prob | Bilangan Random | |
|-------|-------------|------|-----------------|----|
| 1 | 0.0042 ls | 20 | 0 | 19 |
| 2 | 0.0049 ls | 24 | 20 | 43 |
| 3 | 0.0052 ls | 25 | 44 | 68 |
| 4 | 0.0064 ls | 31 | 69 | 99 |
| Total | 0.02 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|-------|--------------|------|-----------------|----|
| 1 | 1,550,000 | 9 | 0 | 8 |
| 2 | 3,495,000 | 21 | 9 | 29 |
| 3 | 5,425,000 | 33 | 30 | 62 |
| 4 | 6,200,000 | 37 | 63 | 99 |
| Total | 16,670,000 | 100 | | |

| | Bilangan Random | Unit / hari | Hari | Unit / hari Kumulatif | Hari Kumulatif |
|----|-----------------|-------------|------|-----------------------|----------------|
| 1 | 100 | 0.0064 ls | 1 | 0.0064 ls | 1 |
| 2 | 31 | 0.0049 ls | 1 | 0.0113 ls | 2 |
| 3 | 8 | 0.0042 ls | 1 | 0.0155 ls | 3 |
| 4 | 21 | 0.0049 ls | 1 | 0.0204 ls | 4 |
| 5 | 46 | 0.0052 ls | 1 | 0.0256 ls | 5 |
| 6 | 65 | 0.0052 ls | 1 | 0.0308 ls | 6 |
| 7 | 69 | 0.0064 ls | 1 | 0.0372 ls | 7 |
| 8 | 87 | 0.0064 ls | 1 | 0.0436 ls | 8 |
| 9 | 15 | 0.0042 ls | 1 | 0.0478 ls | 9 |
| 10 | 34 | 0.0049 ls | 1 | 0.0527 ls | 10 |
| 11 | 91 | 0.0064 ls | 1 | 0.0591 ls | 11 |
| 12 | 27 | 0.0049 ls | 1 | 0.0640 ls | 12 |
| 13 | 87 | 0.0064 ls | 1 | 0.0704 ls | 13 |
| 14 | 29 | 0.0049 ls | 1 | 0.0753 ls | 14 |
| 15 | 2 | 0.0042 ls | 1 | 0.0795 ls | 15 |
| 16 | 64 | 0.0052 ls | 1 | 0.0847 ls | 16 |
| 17 | 28 | 0.0049 ls | 1 | 0.0896 ls | 17 |
| 18 | 4 | 0.0042 ls | 1 | 0.0938 ls | 18 |
| 19 | 74 | 0.0064 ls | 1 | 0.1002 ls | 19 |
| 20 | 29 | 0.0049 ls | 1 | 0.1051 ls | 20 |
| 21 | 55 | 0.0052 ls | 1 | 0.1103 ls | 21 |
| 22 | 19 | 0.0042 ls | 1 | 0.1144 ls | 22 |
| 23 | 44 | 0.0052 ls | 1 | 0.1197 ls | 23 |
| 24 | 51 | 0.0052 ls | 1 | 0.1249 ls | 24 |
| 25 | 41 | 0.0049 ls | 1 | 0.1298 ls | 25 |

| | Bilangan Random | Biaya Satuan | Unit | Biaya sat Kumulatif | Unit Kumulatif |
|----|-----------------|--------------|------|---------------------|----------------|
| 1 | 100 | 6,200,000 | 1 | 6,200,000 | 1 |
| 2 | 31 | 5,425,000 | 1 | 11,625,000 | 2 |
| 3 | 8 | 1,550,000 | 1 | 13,175,000 | 3 |
| 4 | 21 | 3,495,000 | 1 | 16,670,000 | 4 |
| 5 | 46 | 5,425,000 | 1 | 22,095,000 | 5 |
| 6 | 65 | 6,200,000 | 1 | 28,295,000 | 6 |
| 7 | 69 | 6,200,000 | 1 | 34,495,000 | 7 |
| 8 | 87 | 6,200,000 | 1 | 40,695,000 | 8 |
| 9 | 15 | 3,495,000 | 1 | 44,190,000 | 9 |
| 10 | 34 | 5,425,000 | 1 | 49,615,000 | 10 |
| 11 | 91 | 6,200,000 | 1 | 55,815,000 | 11 |
| 12 | 27 | 3,495,000 | 1 | 59,310,000 | 12 |
| 13 | 87 | 6,200,000 | 1 | 65,510,000 | 13 |
| 14 | 29 | 3,495,000 | 1 | 69,005,000 | 14 |
| 15 | 2 | 1,550,000 | 1 | 70,555,000 | 15 |
| 16 | 64 | 6,200,000 | 1 | 76,755,000 | 16 |
| 17 | 28 | 3,495,000 | 1 | 80,250,000 | 17 |
| 18 | 4 | 1,550,000 | 1 | 81,800,000 | 18 |
| 19 | 74 | 6,200,000 | 1 | 88,000,000 | 19 |
| 20 | 29 | 3,495,000 | 1 | 91,495,000 | 20 |
| 21 | 55 | 5,425,000 | 1 | 96,920,000 | 21 |
| 22 | 19 | 3,495,000 | 1 | 100,415,000 | 22 |
| 23 | 44 | 5,425,000 | 1 | 105,840,000 | 23 |
| 24 | 51 | 5,425,000 | 1 | 111,265,000 | 24 |
| 25 | 41 | 5,425,000 | 1 | 116,690,000 | 25 |

Unit per hari = 0.0052 ls
 Proyek baru Durasi 193
 1.00 ls

Biaya per unit = 4.667.600
 Proyek baru Biaya 4.667.600
 1.00 ls

Pekerjaan : GALIAN

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|------------|------------------|-------------|--------|------------|--------------|
| 1998 | 16.837.810 | 27.553.392 | 3.061.42 m3 | 21 | 145.78 m3 | 9.000 |
| 1998 | 19.013.060 | 31.112.971 | 3.456.92 m3 | 28 | 123.46 m3 | 9.000 |
| 1998 | 1.836.945 | 3.005.977 | 333.99 m3 | 7 | 47.71 m3 | 9.000 |
| 1996 | 2.215.800 | 4.431.600 | 492.40 m3 | 7 | 70.34 m3 | 9.000 |
| 1996 | 2.056.150 | 4.112.300 | 411.23 m3 | 7 | 58.75 m3 | 10.000 |
| 1996 | 1.788.000 | 3.576.000 | 406.00 m3 | 7 | 58.00 m3 | 8.808 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Vol / hari | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 47.71 m3 | 9 | 0 | 8 |
| 2 | 58.00 m3 | 12 | 9 | 20 |
| 3 | 58.75 m3 | 12 | 21 | 32 |
| 4 | 70.34 m3 | 14 | 33 | 46 |
| 5 | 123.46 m3 | 24 | 47 | 70 |
| 6 | 145.78 m3 | 29 | 71 | 99 |
| Total | 504.04 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|---------------|------------|-----------------|----|
| 1 | 8.808 | 16 | 0 | 15 |
| 2 | 9.000 | 16 | 16 | 31 |
| 3 | 9.000 | 16 | 32 | 48 |
| 4 | 9.000 | 16 | 49 | 64 |
| 5 | 9.000 | 16 | 65 | 81 |
| 6 | 10.000 | 18 | 82 | 99 |
| Total | 54.808 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 87 | 145.78 m3 | 1 | 145.78 m3 | 1 |
| 2 | 1 | 47.71 m3 | 1 | 193.49 m3 | 2 |
| 3 | 5 | 47.71 m3 | 1 | 241.20 m3 | 3 |
| 4 | 68 | 123.46 m3 | 1 | 364.66 m3 | 4 |
| 5 | 89 | 145.78 m3 | 1 | 510.44 m3 | 5 |
| 6 | 29 | 58.75 m3 | 1 | 569.19 m3 | 6 |
| 7 | 36 | 70.34 m3 | 1 | 639.53 m3 | 7 |
| 8 | 84 | 145.78 m3 | 1 | 785.31 m3 | 8 |
| 9 | 53 | 123.46 m3 | 1 | 908.77 m3 | 9 |
| 10 | 16 | 58.00 m3 | 1 | 966.77 m3 | 10 |
| 11 | 86 | 145.78 m3 | 1 | 1.112.55 m3 | 11 |
| 12 | 40 | 70.34 m3 | 1 | 1.182.89 m3 | 12 |
| 13 | 45 | 70.34 m3 | 1 | 1.253.23 m3 | 13 |
| 14 | 98 | 145.78 m3 | 1 | 1.399.01 m3 | 14 |
| 15 | 93 | 145.78 m3 | 1 | 1.544.79 m3 | 15 |
| 16 | 33 | 70.34 m3 | 1 | 1.615.13 m3 | 16 |
| 17 | 88 | 145.78 m3 | 1 | 1.760.91 m3 | 17 |
| 18 | 6 | 47.71 m3 | 1 | 1.808.62 m3 | 18 |
| 19 | 61 | 123.46 m3 | 1 | 1.932.08 m3 | 19 |
| 20 | 46 | 70.34 m3 | 1 | 2.002.42 m3 | 20 |
| 21 | 25 | 58.75 m3 | 1 | 2.061.17 m3 | 21 |
| 22 | 4 | 47.71 m3 | 1 | 2.108.88 m3 | 22 |
| 23 | 41 | 70.34 m3 | 1 | 2.179.22 m3 | 23 |
| 24 | 72 | 145.78 m3 | 1 | 2.325.00 m3 | 24 |
| 25 | 47 | 123.46 m3 | 1 | 2.448.46 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 87 | 10.000 | 1 | 10.000 | 1 |
| 2 | 1 | 8.808 | 1 | 18.808 | 2 |
| 3 | 5 | 8.808 | 1 | 27.616 | 3 |
| 4 | 68 | 10.000 | 1 | 37.616 | 4 |
| 5 | 89 | 10.000 | 1 | 47.616 | 5 |
| 6 | 29 | 10.000 | 1 | 57.616 | 6 |
| 7 | 36 | 10.000 | 1 | 67.616 | 7 |
| 8 | 84 | 10.000 | 1 | 77.616 | 8 |
| 9 | 53 | 10.000 | 1 | 87.616 | 9 |
| 10 | 16 | 8.808 | 1 | 96.424 | 10 |
| 11 | 86 | 10.000 | 1 | 106.424 | 11 |
| 12 | 40 | 10.000 | 1 | 116.424 | 12 |
| 13 | 45 | 10.000 | 1 | 126.424 | 13 |
| 14 | 98 | 10.000 | 1 | 136.424 | 14 |
| 15 | 93 | 10.000 | 1 | 146.424 | 15 |
| 16 | 33 | 10.000 | 1 | 156.424 | 16 |
| 17 | 88 | 10.000 | 1 | 166.424 | 17 |
| 18 | 6 | 8.808 | 1 | 175.232 | 18 |
| 19 | 61 | 10.000 | 1 | 185.232 | 19 |
| 20 | 46 | 10.000 | 1 | 195.232 | 20 |
| 21 | 25 | 10.000 | 1 | 205.232 | 21 |
| 22 | 4 | 8.808 | 1 | 214.039 | 22 |
| 23 | 41 | 10.000 | 1 | 224.039 | 23 |
| 24 | 72 | 10.000 | 1 | 234.039 | 24 |
| 25 | 47 | 10.000 | 1 | 244.039 | 25 |

Volume per hari = 97.94 m3
 Proyek baru Durasi 89

Biaya per m3 = 9.762
 Proyek baru Biaya 8,740.00 m3 85,316,177

Pekerjaan : PASIR URUG

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|-----------|------------------|-----------|--------|------------|--------------|
| 1998 | 1.223,505 | 2,501,334 | 60.42 m3 | 14 | 4.32 m3 | 41,399 |
| 1998 | 1,947,645 | 3,981,765 | 96.18 m3 | 14 | 6.87 m3 | 41,399 |
| 1998 | 202,298 | 413,578 | 9.99 m3 | 7 | 1.43 m3 | 41,399 |
| 1996 | 1,690,802 | 5,490,203 | 150.16 m3 | 7 | 21.45 m3 | 36,562 |
| 1996 | 2,972,918 | 9,653,362 | 233.17 m3 | 7 | 33.31 m3 | 41,401 |
| 1996 | 2,916,000 | 9,468,544 | 243.00 m3 | 7 | 34.71 m3 | 38,965 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Vol / hari | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 1.43 m3 | 1 | 0 | 0 |
| 2 | 4.32 m3 | 4 | 1 | 5 |
| 3 | 6.87 m3 | 7 | 6 | 11 |
| 4 | 21.45 m3 | 21 | 12 | 32 |
| 5 | 33.31 m3 | 33 | 33 | 65 |
| 6 | 34.71 m3 | 34 | 66 | 99 |
| Total | 102.09 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|----------------|------------|-----------------|----|
| 1 | 36,562 | 15 | 0 | 14 |
| 2 | 38,965 | 16 | 15 | 30 |
| 3 | 41,399 | 17 | 31 | 47 |
| 4 | 41,399 | 17 | 48 | 65 |
| 5 | 41,399 | 17 | 66 | 82 |
| 6 | 41,401 | 17 | 83 | 99 |
| Total | 241,125 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 75 | 34.71 m3 | 1 | 34.71 m3 | 1 |
| 2 | 26 | 21.45 m3 | 1 | 56.16 m3 | 2 |
| 3 | 68 | 34.71 m3 | 1 | 90.87 m3 | 3 |
| 4 | 67 | 34.71 m3 | 1 | 125.58 m3 | 4 |
| 5 | 43 | 33.31 m3 | 1 | 158.89 m3 | 5 |
| 6 | 97 | 34.71 m3 | 1 | 193.60 m3 | 6 |
| 7 | 14 | 21.45 m3 | 1 | 215.05 m3 | 7 |
| 8 | 86 | 34.71 m3 | 1 | 249.76 m3 | 8 |
| 9 | 86 | 34.71 m3 | 1 | 284.47 m3 | 9 |
| 10 | 90 | 34.71 m3 | 1 | 319.18 m3 | 10 |
| 11 | 4 | 4.32 m3 | 1 | 323.50 m3 | 11 |
| 12 | 87 | 34.71 m3 | 1 | 358.21 m3 | 12 |
| 13 | 92 | 34.71 m3 | 1 | 392.92 m3 | 13 |
| 14 | 11 | 6.87 m3 | 1 | 399.79 m3 | 14 |
| 15 | 99 | 34.71 m3 | 1 | 434.50 m3 | 15 |
| 16 | 84 | 34.71 m3 | 1 | 469.21 m3 | 16 |
| 17 | 66 | 33.31 m3 | 1 | 502.52 m3 | 17 |
| 18 | 4 | 4.32 m3 | 1 | 506.84 m3 | 18 |
| 19 | 88 | 34.71 m3 | 1 | 541.55 m3 | 19 |
| 20 | 1 | 1.43 m3 | 1 | 542.98 m3 | 20 |
| 21 | 25 | 21.45 m3 | 1 | 564.43 m3 | 21 |
| 22 | 24 | 21.45 m3 | 1 | 585.88 m3 | 22 |
| 23 | 56 | 33.31 m3 | 1 | 619.19 m3 | 23 |
| 24 | 36 | 33.31 m3 | 1 | 652.50 m3 | 24 |
| 25 | 44 | 33.31 m3 | 1 | 685.81 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 75 | 41,401 | 1 | 41,401 | 1 |
| 2 | 26 | 41,401 | 1 | 82,801 | 2 |
| 3 | 68 | 41,401 | 1 | 124,202 | 3 |
| 4 | 67 | 41,401 | 1 | 165,602 | 4 |
| 5 | 43 | 41,401 | 1 | 207,003 | 5 |
| 6 | 97 | 41,401 | 1 | 248,403 | 6 |
| 7 | 14 | 36,562 | 1 | 284,965 | 7 |
| 8 | 86 | 41,401 | 1 | 326,366 | 8 |
| 9 | 86 | 41,401 | 1 | 367,767 | 9 |
| 10 | 90 | 41,401 | 1 | 409,167 | 10 |
| 11 | 4 | 36,562 | 1 | 445,729 | 11 |
| 12 | 87 | 41,401 | 1 | 487,130 | 12 |
| 13 | 92 | 41,401 | 1 | 528,531 | 13 |
| 14 | 11 | 36,562 | 1 | 565,093 | 14 |
| 15 | 99 | 41,401 | 1 | 606,493 | 15 |
| 16 | 84 | 41,401 | 1 | 647,894 | 16 |
| 17 | 66 | 41,401 | 1 | 689,295 | 17 |
| 18 | 4 | 36,562 | 1 | 725,857 | 18 |
| 19 | 88 | 41,401 | 1 | 767,257 | 19 |
| 20 | 1 | 36,562 | 1 | 803,820 | 20 |
| 21 | 25 | 41,401 | 1 | 845,220 | 21 |
| 22 | 24 | 41,401 | 1 | 886,621 | 22 |
| 23 | 56 | 41,401 | 1 | 928,021 | 23 |
| 24 | 36 | 41,401 | 1 | 969,422 | 24 |
| 25 | 44 | 41,401 | 1 | 1,010,822 | 25 |

Volume per hari = 27.43 m3
 Proyek baru Durasi 6
 169.00 m3

Biaya per m3 = 40,433
 Proyek baru Biaya
 169.00 m3 6,833,160

Pekerjaan : URUG KEMBALI

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|------------|------------------|-------------|--------|------------|--------------|
| 1998 | 12,245,680 | 18,368,520 | 3,061.42 m3 | 14 | 218.67 m3 | 6,000 |
| 1998 | 13,165,600 | 19,748,400 | 3,291.40 m3 | 14 | 235.10 m3 | 6,000 |
| 1998 | 1,335,960 | 2,003,940 | 333.99 m3 | 7 | 47.71 m3 | 6,000 |
| 1998 | 1,877,550 | 3,590,796 | 488.60 m3 | 7 | 66.94 m3 | 7,663 |
| 1996 | 1,234,240 | 2,641,891 | 617.12 m3 | 7 | 88.16 m3 | 4,281 |
| 1996 | 800,000 | 1,712,400 | 200.00 m3 | 7 | 28.57 m3 | 8,562 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Vol / hari | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 28.57 m3 | 4 | 0 | 3 |
| 2 | 47.71 m3 | 7 | 4 | 10 |
| 3 | 66.94 m3 | 10 | 11 | 20 |
| 4 | 88.16 m3 | 13 | 21 | 33 |
| 5 | 218.67 m3 | 32 | 34 | 65 |
| 6 | 235.10 m3 | 34 | 66 | 99 |
| Total | 685.16 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|---------------|------------|-----------------|----|
| 1 | 4,281 | 11 | 0 | 10 |
| 2 | 6,000 | 16 | 11 | 26 |
| 3 | 6,000 | 16 | 27 | 41 |
| 4 | 6,000 | 16 | 42 | 57 |
| 5 | 7,663 | 20 | 58 | 77 |
| 6 | 8,562 | 22 | 78 | 99 |
| Total | 38,506 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 70 | 235.10 m3 | 1 | 235.10 m3 | 1 |
| 2 | 79 | 235.10 m3 | 1 | 470.20 m3 | 2 |
| 3 | 74 | 235.10 m3 | 1 | 705.30 m3 | 3 |
| 4 | 58 | 218.67 m3 | 1 | 923.97 m3 | 4 |
| 5 | 68 | 235.10 m3 | 1 | 1,159.07 m3 | 5 |
| 6 | 88 | 235.10 m3 | 1 | 1,394.17 m3 | 6 |
| 7 | 54 | 218.67 m3 | 1 | 1,612.85 m3 | 7 |
| 8 | 18 | 66.94 m3 | 1 | 1,679.79 m3 | 8 |
| 9 | 30 | 88.16 m3 | 1 | 1,767.95 m3 | 9 |
| 10 | 27 | 88.16 m3 | 1 | 1,856.11 m3 | 10 |
| 11 | 2 | 28.57 m3 | 1 | 1,884.68 m3 | 11 |
| 12 | 43 | 218.67 m3 | 1 | 2,103.35 m3 | 12 |
| 13 | 6 | 47.71 m3 | 1 | 2,151.07 m3 | 13 |
| 14 | 73 | 235.10 m3 | 1 | 2,386.17 m3 | 14 |
| 15 | 67 | 235.10 m3 | 1 | 2,621.27 m3 | 15 |
| 16 | 24 | 88.16 m3 | 1 | 2,709.43 m3 | 16 |
| 17 | 98 | 235.10 m3 | 1 | 2,944.53 m3 | 17 |
| 18 | 20 | 66.94 m3 | 1 | 3,011.47 m3 | 18 |
| 19 | 32 | 88.16 m3 | 1 | 3,099.63 m3 | 19 |
| 20 | 65 | 218.67 m3 | 1 | 3,318.30 m3 | 20 |
| 21 | 10 | 47.71 m3 | 1 | 3,366.01 m3 | 21 |
| 22 | 44 | 218.67 m3 | 1 | 3,584.69 m3 | 22 |
| 23 | 78 | 235.10 m3 | 1 | 3,819.79 m3 | 23 |
| 24 | 84 | 235.10 m3 | 1 | 4,054.89 m3 | 24 |
| 25 | 79 | 235.10 m3 | 1 | 4,289.99 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 70 | 8,562 | 1 | 8,562 | 1 |
| 2 | 79 | 8,562 | 1 | 17,124 | 2 |
| 3 | 74 | 8,562 | 1 | 25,686 | 3 |
| 4 | 58 | 8,562 | 1 | 34,248 | 4 |
| 5 | 68 | 8,562 | 1 | 42,810 | 5 |
| 6 | 88 | 8,562 | 1 | 51,372 | 6 |
| 7 | 54 | 8,562 | 1 | 59,934 | 7 |
| 8 | 18 | 6,000 | 1 | 65,934 | 8 |
| 9 | 30 | 8,562 | 1 | 74,496 | 9 |
| 10 | 27 | 8,562 | 1 | 83,058 | 10 |
| 11 | 2 | 4,281 | 1 | 87,339 | 11 |
| 12 | 43 | 8,562 | 1 | 95,901 | 12 |
| 13 | 6 | 4,281 | 1 | 100,182 | 13 |
| 14 | 73 | 8,562 | 1 | 108,744 | 14 |
| 15 | 67 | 8,562 | 1 | 117,306 | 15 |
| 16 | 24 | 8,562 | 1 | 125,868 | 16 |
| 17 | 98 | 8,562 | 1 | 134,430 | 17 |
| 18 | 20 | 7,663 | 1 | 142,093 | 18 |
| 19 | 32 | 8,562 | 1 | 150,655 | 19 |
| 20 | 65 | 8,562 | 1 | 159,217 | 20 |
| 21 | 10 | 4,281 | 1 | 163,498 | 21 |
| 22 | 44 | 8,562 | 1 | 172,060 | 22 |
| 23 | 78 | 8,562 | 1 | 180,622 | 23 |
| 24 | 84 | 8,562 | 1 | 189,184 | 24 |
| 25 | 79 | 8,562 | 1 | 197,746 | 25 |

| | |
|--------------------------|------------------|
| Volume per hari = | 171.60 m3 |
| Proyek baru | Durasi |
| 1,641.00 m3 | 10 |

| | |
|-----------------------|--------------|
| Biaya per m3 = | 7,910 |
| Proyek baru | Biaya |
| 1,641.00 m3 | 12,980,035 |

Pekerjaan : LANTAI KERJA

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|-----------|------------------|----------|--------|------------|--------------|
| 1998 | 3,826,976 | 5,653,592 | 30.04 m3 | 7 | 4.29 m3 | 188,202 |
| 1998 | 6,278,075 | 9,274,600 | 49.28 m3 | 7 | 7.04 m3 | 188,202 |
| 1996 | 538,885 | 796,095 | 4.23 m3 | 7 | 0.60 m3 | 188,202 |
| 1996 | 932,043 | 1,950,300 | 12.02 m3 | 7 | 1.72 m3 | 162,255 |
| 1996 | 4,746,508 | 9,932,068 | 34.39 m3 | 7 | 4.91 m3 | 288,807 |
| 1996 | 1,530,780 | 3,203,157 | 16.46 m3 | 7 | 2.35 m3 | 194,603 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Vol / hari | Prob | Bilangan Random | |
|---------------|-----------------|------------|-----------------|----|
| 1 | 0.60 m3 | 3 | 0 | 2 |
| 2 | 1.72 m3 | 8 | 3 | 10 |
| 3 | 2.35 m3 | 11 | 11 | 21 |
| 4 | 4.29 m3 | 21 | 22 | 42 |
| 5 | 4.91 m3 | 23 | 43 | 65 |
| 6 | 7.04 m3 | 34 | 66 | 99 |
| Total | 20.92 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 162,255 | 13 | 0 | 12 |
| 2 | 188,202 | 16 | 13 | 28 |
| 3 | 188,202 | 16 | 29 | 44 |
| 4 | 188,202 | 16 | 45 | 59 |
| 5 | 194,603 | 16 | 60 | 75 |
| 6 | 288,807 | 24 | 76 | 99 |
| Total | 1,210,270 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 23 | 4.29 m3 | 1 | 4.29 m3 | 1 |
| 2 | 25 | 4.29 m3 | 1 | 8.58 m3 | 2 |
| 3 | 61 | 4.91 m3 | 1 | 13.50 m3 | 3 |
| 4 | 75 | 7.04 m3 | 1 | 20.54 m3 | 4 |
| 5 | 87 | 7.04 m3 | 1 | 27.58 m3 | 5 |
| 6 | 25 | 4.29 m3 | 1 | 31.87 m3 | 6 |
| 7 | 57 | 4.91 m3 | 1 | 36.78 m3 | 7 |
| 8 | 62 | 4.91 m3 | 1 | 41.69 m3 | 8 |
| 9 | 91 | 7.04 m3 | 1 | 48.73 m3 | 9 |
| 10 | 2 | 0.60 m3 | 1 | 49.34 m3 | 10 |
| 11 | 86 | 7.04 m3 | 1 | 56.38 m3 | 11 |
| 12 | 85 | 7.04 m3 | 1 | 63.42 m3 | 12 |
| 13 | 5 | 1.72 m3 | 1 | 65.13 m3 | 13 |
| 14 | 26 | 4.29 m3 | 1 | 69.43 m3 | 14 |
| 15 | 46 | 4.91 m3 | 1 | 74.34 m3 | 15 |
| 16 | 85 | 7.04 m3 | 1 | 81.38 m3 | 16 |
| 17 | 53 | 4.91 m3 | 1 | 86.29 m3 | 17 |
| 18 | 83 | 7.04 m3 | 1 | 93.33 m3 | 18 |
| 19 | 67 | 7.04 m3 | 1 | 100.37 m3 | 19 |
| 20 | 39 | 4.29 m3 | 1 | 104.66 m3 | 20 |
| 21 | 36 | 4.29 m3 | 1 | 108.95 m3 | 21 |
| 22 | 5 | 1.72 m3 | 1 | 110.67 m3 | 22 |
| 23 | 5 | 1.72 m3 | 1 | 112.39 m3 | 23 |
| 24 | 64 | 4.91 m3 | 1 | 117.30 m3 | 24 |
| 25 | 15 | 2.35 m3 | 1 | 119.65 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 23 | 194,603 | 1 | 194,603 | 1 |
| 2 | 25 | 288,807 | 1 | 483,409 | 2 |
| 3 | 61 | 288,807 | 1 | 772,216 | 3 |
| 4 | 75 | 288,807 | 1 | 1,061,023 | 4 |
| 5 | 87 | 288,807 | 1 | 1,349,830 | 5 |
| 6 | 25 | 288,807 | 1 | 1,638,637 | 6 |
| 7 | 57 | 288,807 | 1 | 1,927,444 | 7 |
| 8 | 62 | 288,807 | 1 | 2,216,251 | 8 |
| 9 | 91 | 288,807 | 1 | 2,505,057 | 9 |
| 10 | 2 | 162,255 | 1 | 2,667,312 | 10 |
| 11 | 86 | 288,807 | 1 | 2,956,119 | 11 |
| 12 | 85 | 288,807 | 1 | 3,244,926 | 12 |
| 13 | 5 | 162,255 | 1 | 3,407,180 | 13 |
| 14 | 26 | 288,807 | 1 | 3,695,987 | 14 |
| 15 | 46 | 288,807 | 1 | 3,984,794 | 15 |
| 16 | 85 | 288,807 | 1 | 4,273,601 | 16 |
| 17 | 53 | 288,807 | 1 | 4,562,408 | 17 |
| 18 | 83 | 288,807 | 1 | 4,851,215 | 18 |
| 19 | 67 | 288,807 | 1 | 5,140,021 | 19 |
| 20 | 39 | 288,807 | 1 | 5,428,828 | 20 |
| 21 | 36 | 288,807 | 1 | 5,717,635 | 21 |
| 22 | 5 | 162,255 | 1 | 5,879,890 | 22 |
| 23 | 5 | 162,255 | 1 | 6,042,144 | 23 |
| 24 | 64 | 288,807 | 1 | 6,330,951 | 24 |
| 25 | 15 | 162,255 | 1 | 6,493,206 | 25 |

Volume per hari = 4.79 m3
 Proyek baru Durasi 56.28 m3 12

Biaya per m3 = 259,728
 Proyek baru Biaya 56.28 m3 14,617,505

Pekerjaan : Voet Plat & Sloof

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Voi / hari | Biaya Satuan |
|-------|-------------|------------------|-----------|--------|------------|--------------|
| 1998 | 141,522,885 | 149,066,055 | 154.99 m3 | 14 | 11.07 m3 | 961,779 |
| 1998 | 224,058,072 | 236,000,367 | 241.92 m3 | 21 | 11.52 m3 | 975,531 |
| 1998 | 12,613,951 | 13,286,275 | 12.09 m3 | 7 | 1.73 m3 | 1,098,947 |
| 1996 | 99,461,987 | 183,836,998 | 249.56 m3 | 21 | 11.88 m3 | 736,644 |
| 1996 | 76,492,193 | 141,395,819 | 170.97 m3 | 14 | 12.21 m3 | 827,021 |
| 1996 | 69,783,824 | 128,995,399 | 177.54 m3 | 14 | 12.68 m3 | 726,571 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Voi / hari | Prob | Bilangan Random | |
|---------------|-----------------|------------|-----------------|----|
| 1 | 1.73 m3 | 3 | 0 | 2 |
| 2 | 11.07 m3 | 18 | 3 | 20 |
| 3 | 11.52 m3 | 19 | 21 | 39 |
| 4 | 11.88 m3 | 19 | 40 | 58 |
| 5 | 12.21 m3 | 20 | 59 | 78 |
| 6 | 12.68 m3 | 21 | 79 | 99 |
| Total | 61.10 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 726,571 | 14 | 0 | 13 |
| 2 | 736,644 | 14 | 14 | 26 |
| 3 | 827,021 | 16 | 27 | 42 |
| 4 | 961,779 | 18 | 43 | 60 |
| 5 | 975,531 | 18 | 61 | 78 |
| 6 | 1,098,947 | 21 | 79 | 99 |
| Total | 5,326,493 | 100 | | |

| | Bilangan Random | Voi / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 23 | 11.52 m3 | 1 | 11.52 m3 | 1 |
| 2 | 49 | 11.88 m3 | 1 | 23.40 m3 | 2 |
| 3 | 86 | 12.68 m3 | 1 | 36.09 m3 | 3 |
| 4 | 2 | 1.73 m3 | 1 | 37.81 m3 | 4 |
| 5 | 39 | 11.52 m3 | 1 | 49.33 m3 | 5 |
| 6 | 74 | 12.21 m3 | 1 | 61.54 m3 | 6 |
| 7 | 21 | 11.52 m3 | 1 | 73.06 m3 | 7 |
| 8 | 11 | 11.07 m3 | 1 | 84.14 m3 | 8 |
| 9 | 22 | 11.52 m3 | 1 | 95.66 m3 | 9 |
| 10 | 30 | 11.52 m3 | 1 | 107.18 m3 | 10 |
| 11 | 17 | 11.07 m3 | 1 | 118.25 m3 | 11 |
| 12 | 71 | 12.21 m3 | 1 | 130.46 m3 | 12 |
| 13 | 86 | 12.68 m3 | 1 | 143.14 m3 | 13 |
| 14 | 62 | 12.21 m3 | 1 | 155.35 m3 | 14 |
| 15 | 8 | 11.07 m3 | 1 | 166.42 m3 | 15 |
| 16 | 7 | 11.07 m3 | 1 | 177.49 m3 | 16 |
| 17 | 15 | 11.07 m3 | 1 | 188.56 m3 | 17 |
| 18 | 23 | 11.52 m3 | 1 | 200.08 m3 | 18 |
| 19 | 17 | 11.07 m3 | 1 | 211.15 m3 | 19 |
| 20 | 5 | 11.07 m3 | 1 | 222.23 m3 | 20 |
| 21 | 71 | 12.21 m3 | 1 | 234.44 m3 | 21 |
| 22 | 72 | 12.21 m3 | 1 | 246.65 m3 | 22 |
| 23 | 45 | 11.88 m3 | 1 | 258.53 m3 | 23 |
| 24 | 89 | 12.68 m3 | 1 | 271.21 m3 | 24 |
| 25 | 56 | 11.88 m3 | 1 | 283.10 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 23 | 1,098,947 | 1 | 1,098,947 | 1 |
| 2 | 49 | 1,098,947 | 1 | 2,197,895 | 2 |
| 3 | 86 | 1,098,947 | 1 | 3,296,842 | 3 |
| 4 | 2 | 726,571 | 1 | 4,023,413 | 4 |
| 5 | 39 | 1,098,947 | 1 | 5,122,361 | 5 |
| 6 | 74 | 1,098,947 | 1 | 6,221,308 | 6 |
| 7 | 21 | 1,098,947 | 1 | 7,320,256 | 7 |
| 8 | 11 | 726,571 | 1 | 8,046,826 | 8 |
| 9 | 22 | 1,098,947 | 1 | 9,145,774 | 9 |
| 10 | 30 | 1,098,947 | 1 | 10,244,721 | 10 |
| 11 | 17 | 827,021 | 1 | 11,071,743 | 11 |
| 12 | 71 | 1,098,947 | 1 | 12,170,690 | 12 |
| 13 | 86 | 1,098,947 | 1 | 13,269,637 | 13 |
| 14 | 62 | 1,098,947 | 1 | 14,368,585 | 14 |
| 15 | 8 | 726,571 | 1 | 15,095,156 | 15 |
| 16 | 7 | 726,571 | 1 | 15,821,727 | 16 |
| 17 | 15 | 736,644 | 1 | 16,558,371 | 17 |
| 18 | 23 | 1,098,947 | 1 | 17,657,319 | 18 |
| 19 | 17 | 827,021 | 1 | 18,484,340 | 19 |
| 20 | 5 | 726,571 | 1 | 19,210,911 | 20 |
| 21 | 71 | 1,098,947 | 1 | 20,309,858 | 21 |
| 22 | 72 | 1,098,947 | 1 | 21,408,806 | 22 |
| 23 | 45 | 1,098,947 | 1 | 22,507,753 | 23 |
| 24 | 89 | 1,098,947 | 1 | 23,606,701 | 24 |
| 25 | 56 | 1,098,947 | 1 | 24,705,648 | 25 |

| | |
|-------------------|----------|
| Volume per hari = | 11.32 m3 |
| Proyek baru | Durasi |
| 434.28 m3 | 38 |
| 4.50 m3 | 0 |

| | |
|----------------|-------------|
| Biaya per m3 = | 988,226 |
| Proyek baru | Biaya |
| 434.28 m3 | 429,166,753 |
| 4.50 m3 | 4,447,017 |

Pekerjaan : BALOK & PLAT STRUKTUR

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|-------------|------------------|-----------|--------|------------|--------------|
| 1998 | 137,786,637 | 151,923,546 | 115.01 m3 | 14 | 8.22 m3 | 1,320,959 |
| 1998 | 117,822,725 | 129,690,817 | 98.05 m3 | 7 | 14.01 m3 | 1,322,701 |
| 1998 | 248,298,688 | 273,774,133 | 202.86 m3 | 21 | 9.66 m3 | 1,349,572 |
| 1998 | 218,747,814 | 241,191,340 | 178.00 m3 | 14 | 12.71 m3 | 1,355,008 |
| 1996 | 97,612,004 | 166,477,273 | 182.45 m3 | 14 | 13.03 m3 | 912,454 |
| 1996 | 105,834,979 | 180,501,557 | 166.31 m3 | 14 | 11.88 m3 | 1,085,332 |
| 1996 | 90,801,606 | 154,862,139 | 168.94 m3 | 14 | 12.07 m3 | 916,669 |

Simulasi Volume Pekerjaan per hari

| Data | Vol / hari | Prob | Bilangan Random | |
|--------------|-----------------|------------|-----------------|----|
| 1 | 8.22 m3 | 10 | 0 | 9 |
| 2 | 9.66 m3 | 12 | 10 | 21 |
| 3 | 11.88 m3 | 15 | 22 | 35 |
| 4 | 12.07 m3 | 15 | 36 | 50 |
| 5 | 12.71 m3 | 16 | 51 | 66 |
| 6 | 13.03 m3 | 16 | 67 | 82 |
| 7 | 14.01 m3 | 17 | 83 | 99 |
| Total | 81.58 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|------------------|------------|-----------------|----|
| 1 | 912,454 | 11 | 0 | 10 |
| 2 | 916,669 | 11 | 11 | 21 |
| 3 | 1,085,332 | 13 | 22 | 34 |
| 4 | 1,320,959 | 16 | 35 | 50 |
| 5 | 1,322,701 | 16 | 51 | 66 |
| 6 | 1,349,572 | 16 | 67 | 83 |
| 7 | 1,355,008 | 16 | 84 | 99 |
| Total | 8,262,695 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 52 | 12.71 m3 | 1 | 12.71 m3 | 1 |
| 2 | 99 | 14.01 m3 | 1 | 26.72 m3 | 2 |
| 3 | 62 | 12.71 m3 | 1 | 39.44 m3 | 3 |
| 4 | 92 | 14.01 m3 | 1 | 53.44 m3 | 4 |
| 5 | 46 | 12.07 m3 | 1 | 65.51 m3 | 5 |
| 6 | 85 | 14.01 m3 | 1 | 79.52 m3 | 6 |
| 7 | 34 | 11.88 m3 | 1 | 91.40 m3 | 7 |
| 8 | 61 | 12.71 m3 | 1 | 104.11 m3 | 8 |
| 9 | 99 | 14.01 m3 | 1 | 118.12 m3 | 9 |
| 10 | 88 | 14.01 m3 | 1 | 132.13 m3 | 10 |
| 11 | 97 | 14.01 m3 | 1 | 146.13 m3 | 11 |
| 12 | 12 | 9.66 m3 | 1 | 155.79 m3 | 12 |
| 13 | 58 | 12.71 m3 | 1 | 168.51 m3 | 13 |
| 14 | 76 | 13.03 m3 | 1 | 181.54 m3 | 14 |
| 15 | 67 | 13.03 m3 | 1 | 194.57 m3 | 15 |
| 16 | 89 | 14.01 m3 | 1 | 208.58 m3 | 16 |
| 17 | 99 | 14.01 m3 | 1 | 222.59 m3 | 17 |
| 18 | 94 | 14.01 m3 | 1 | 236.59 m3 | 18 |
| 19 | 16 | 9.66 m3 | 1 | 246.25 m3 | 19 |
| 20 | 9 | 8.22 m3 | 1 | 254.47 m3 | 20 |
| 21 | 48 | 12.07 m3 | 1 | 266.53 m3 | 21 |
| 22 | 86 | 14.01 m3 | 1 | 280.54 m3 | 22 |
| 23 | 22 | 9.66 m3 | 1 | 290.20 m3 | 23 |
| 24 | 55 | 12.71 m3 | 1 | 302.92 m3 | 24 |
| 25 | 16 | 9.66 m3 | 1 | 312.58 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 52 | 1,322,701 | 1 | 1,322,701 | 1 |
| 2 | 99 | 1,355,008 | 1 | 2,677,708 | 2 |
| 3 | 62 | 1,322,701 | 1 | 4,000,409 | 3 |
| 4 | 92 | 1,355,008 | 1 | 5,355,417 | 4 |
| 5 | 46 | 1,320,959 | 1 | 6,676,376 | 5 |
| 6 | 85 | 1,355,008 | 1 | 8,031,384 | 6 |
| 7 | 34 | 1,085,332 | 1 | 9,116,716 | 7 |
| 8 | 61 | 1,322,701 | 1 | 10,439,416 | 8 |
| 9 | 99 | 1,355,008 | 1 | 11,794,424 | 9 |
| 10 | 88 | 1,355,008 | 1 | 13,149,432 | 10 |
| 11 | 97 | 1,355,008 | 1 | 14,504,439 | 11 |
| 12 | 12 | 916,669 | 1 | 15,421,109 | 12 |
| 13 | 58 | 1,322,701 | 1 | 16,743,809 | 13 |
| 14 | 76 | 1,349,572 | 1 | 18,093,381 | 14 |
| 15 | 67 | 1,322,701 | 1 | 19,416,082 | 15 |
| 16 | 89 | 1,355,008 | 1 | 20,771,089 | 16 |
| 17 | 99 | 1,355,008 | 1 | 22,126,097 | 17 |
| 18 | 94 | 1,355,008 | 1 | 23,481,105 | 18 |
| 19 | 16 | 916,669 | 1 | 24,397,774 | 19 |
| 20 | 9 | 912,454 | 1 | 25,310,228 | 20 |
| 21 | 48 | 1,320,959 | 1 | 26,631,187 | 21 |
| 22 | 86 | 1,355,008 | 1 | 27,986,195 | 22 |
| 23 | 22 | 916,669 | 1 | 28,902,865 | 23 |
| 24 | 55 | 1,322,701 | 1 | 30,225,566 | 24 |
| 25 | 16 | 916,669 | 1 | 31,142,235 | 25 |

| Volume per hari = 12.50 m3 | |
|----------------------------|----------------|
| Proyek baru | Durasi |
| Ground Fl. | 329.33 m3 / 26 |
| Lt 1 | 431.47 m3 / 35 |
| Lt 2 | 314.90 m3 / 25 |
| Lt 3 | 313.09 m3 / 25 |
| Lt 4 | 361.27 m3 / 29 |
| Lt Atap | 157.95 m3 / 13 |

| Biaya per m3 = 1,245,689 | |
|--------------------------|-------------------------|
| Proyek baru | Biaya |
| Ground Fl. | 329.33 m3 / 410,242,890 |
| Lt 1 | 431.47 m3 / 537,477,605 |
| Lt 2 | 314.90 m3 / 392,267,592 |
| Lt 3 | 313.09 m3 / 390,012,894 |
| Lt 4 | 361.27 m3 / 450,030,209 |
| Lt Atap | 157.95 m3 / 196,756,641 |

Pekerjaan : KOLOM

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|-------------|------------------|-----------|--------|------------|--------------|
| 1998 | 182,443,511 | 111,308,786 | 81.68 m3 | 14 | 5.83 m3 | 1,362,742 |
| 1998 | 91,366,468 | 55,742,682 | 43.43 m3 | 7 | 6.20 m3 | 1,283,506 |
| 1998 | 293,009,410 | 178,765,041 | 127.98 m3 | 21 | 6.09 m3 | 1,396,820 |
| 1998 | 168,831,601 | 95,682,960 | 72.53 m3 | 14 | 5.18 m3 | 1,319,219 |
| 1998 | 66,183,295 | 40,378,428 | 39.86 m3 | 7 | 5.69 m3 | 1,013,006 |
| 1996 | 70,763,731 | 93,585,034 | 78.34 m3 | 14 | 5.60 m3 | 1,194,601 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Vol / hari | Prob | Bilangan Random | |
|---------------|-----------------|------------|-----------------|----|
| 1 | 5.18 m3 | 15 | 0 | 14 |
| 2 | 5.60 m3 | 16 | 15 | 30 |
| 3 | 5.69 m3 | 16 | 31 | 47 |
| 4 | 5.83 m3 | 17 | 48 | 63 |
| 5 | 6.09 m3 | 18 | 64 | 81 |
| 6 | 6.20 m3 | 18 | 82 | 99 |
| Total | 34.60 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 1,013,006 | 13 | 0 | 12 |
| 2 | 1,194,601 | 16 | 13 | 28 |
| 3 | 1,283,506 | 17 | 29 | 45 |
| 4 | 1,319,219 | 17 | 46 | 63 |
| 5 | 1,362,742 | 18 | 64 | 81 |
| 6 | 1,396,820 | 18 | 82 | 99 |
| Total | 7,568,895 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 47 | 5.69 m3 | 1 | 5.69 m3 | 1 |
| 2 | 4 | 5.18 m3 | 1 | 10.88 m3 | 2 |
| 3 | 0 | 5.18 m3 | 1 | 16.06 m3 | 3 |
| 4 | 28 | 5.60 m3 | 1 | 21.65 m3 | 4 |
| 5 | 56 | 5.83 m3 | 1 | 27.49 m3 | 5 |
| 6 | 98 | 6.20 m3 | 1 | 33.69 m3 | 6 |
| 7 | 68 | 6.09 m3 | 1 | 39.78 m3 | 7 |
| 8 | 2 | 5.18 m3 | 1 | 44.97 m3 | 8 |
| 9 | 55 | 5.83 m3 | 1 | 50.80 m3 | 9 |
| 10 | 90 | 6.20 m3 | 1 | 57.00 m3 | 10 |
| 11 | 7 | 5.18 m3 | 1 | 62.18 m3 | 11 |
| 12 | 16 | 5.60 m3 | 1 | 67.78 m3 | 12 |
| 13 | 0 | 5.18 m3 | 1 | 72.96 m3 | 13 |
| 14 | 12 | 5.18 m3 | 1 | 78.14 m3 | 14 |
| 15 | 63 | 5.83 m3 | 1 | 83.98 m3 | 15 |
| 16 | 95 | 6.20 m3 | 1 | 90.18 m3 | 16 |
| 17 | 67 | 6.09 m3 | 1 | 96.27 m3 | 17 |
| 18 | 34 | 5.69 m3 | 1 | 101.97 m3 | 18 |
| 19 | 23 | 5.60 m3 | 1 | 107.56 m3 | 19 |
| 20 | 6 | 5.18 m3 | 1 | 112.75 m3 | 20 |
| 21 | 71 | 6.09 m3 | 1 | 118.84 m3 | 21 |
| 22 | 16 | 5.60 m3 | 1 | 124.44 m3 | 22 |
| 23 | 81 | 6.09 m3 | 1 | 130.53 m3 | 23 |
| 24 | 91 | 6.20 m3 | 1 | 136.73 m3 | 24 |
| 25 | 79 | 6.09 m3 | 1 | 142.83 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 47 | 1,396,820 | 1 | 1,396,820 | 1 |
| 2 | 4 | 1,013,006 | 1 | 2,409,826 | 2 |
| 3 | 0 | 1,013,006 | 1 | 3,422,833 | 3 |
| 4 | 28 | 1,396,820 | 1 | 4,819,653 | 4 |
| 5 | 56 | 1,396,820 | 1 | 6,216,473 | 5 |
| 6 | 98 | 1,396,820 | 1 | 7,613,293 | 6 |
| 7 | 68 | 1,396,820 | 1 | 9,010,113 | 7 |
| 8 | 2 | 1,013,006 | 1 | 10,023,119 | 8 |
| 9 | 55 | 1,396,820 | 1 | 11,419,940 | 9 |
| 10 | 90 | 1,396,820 | 1 | 12,816,760 | 10 |
| 11 | 7 | 1,013,006 | 1 | 13,829,766 | 11 |
| 12 | 16 | 1,013,006 | 1 | 14,842,772 | 12 |
| 13 | 0 | 1,013,006 | 1 | 15,855,778 | 13 |
| 14 | 12 | 1,013,006 | 1 | 16,868,785 | 14 |
| 15 | 63 | 1,396,820 | 1 | 18,265,605 | 15 |
| 16 | 95 | 1,396,820 | 1 | 19,662,425 | 16 |
| 17 | 67 | 1,396,820 | 1 | 21,059,245 | 17 |
| 18 | 34 | 1,396,820 | 1 | 22,456,065 | 18 |
| 19 | 23 | 1,396,820 | 1 | 23,852,885 | 19 |
| 20 | 6 | 1,013,006 | 1 | 24,865,891 | 20 |
| 21 | 71 | 1,396,820 | 1 | 26,262,712 | 21 |
| 22 | 16 | 1,194,601 | 1 | 27,457,312 | 22 |
| 23 | 81 | 1,396,820 | 1 | 28,854,133 | 23 |
| 24 | 91 | 1,396,820 | 1 | 30,250,953 | 24 |
| 25 | 79 | 1,396,820 | 1 | 31,647,773 | 25 |

| Volume per hari = 5.71 m3 | | |
|---------------------------|-----------|----|
| Proyek baru | Durasi | |
| Ground Fl. | 105.35 m3 | 18 |
| Lt. 1 | 121.68 m3 | 21 |
| Lt. 2 | 96.60 m3 | 17 |
| Lt. 3 | 107.08 m3 | 19 |
| Lt. 4 | 158.72 m3 | 28 |
| Lt. Atap | 23.28 m3 | 4 |

| Biaya per m3 = 1,265,911 | | |
|--------------------------|-----------|-------------|
| Proyek baru | Biaya | |
| Ground Fl. | 105.35 m3 | 133,363,715 |
| Lt 1 | 121.68 m3 | 154,036,040 |
| Lt 2 | 96.60 m3 | 122,286,995 |
| Lt 3 | 107.08 m3 | 135,553,741 |
| Lt 4 | 158.72 m3 | 200,925,381 |
| Lt. Atap | 23.28 m3 | 29,470,406 |

Pekerjaan : PERTEBALAN KOLOM dan BETON PRAKTIS

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|------------|------------------|----------|--------|------------|--------------|
| 1998 | 11,858,148 | 10,909,496 | 9.53 m3 | 14 | 0.68 m3 | 1,144,753 |
| 1998 | 16,856,955 | 15,508,399 | 13.59 m3 | 21 | 0.65 m3 | 1,141,163 |
| 1998 | 5,756,254 | 5,295,754 | 4.61 m3 | 14 | 0.33 m3 | 1,148,754 |
| 1996 | 7,516,091 | 6,914,804 | 6.01 m3 | 14 | 0.43 m3 | 1,150,550 |
| 1996 | 12,945,360 | 11,909,731 | 10.36 m3 | 21 | 0.49 m3 | 1,149,588 |
| 1996 | 19,329,566 | 17,783,201 | 15.58 m3 | 26 | 0.60 m3 | 1,141,412 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Vol / hari | Prob | Bilangan Random | |
|---------------|----------------|------------|-----------------|----|
| 1 | 0.33 m3 | 10 | 0 | 9 |
| 2 | 0.43 m3 | 14 | 10 | 23 |
| 3 | 0.49 m3 | 16 | 24 | 38 |
| 4 | 0.60 m3 | 19 | 39 | 57 |
| 5 | 0.65 m3 | 20 | 58 | 78 |
| 6 | 0.68 m3 | 21 | 79 | 99 |
| Total | 3.18 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 1,141,163 | 17 | 0 | 16 |
| 2 | 1,141,412 | 17 | 17 | 32 |
| 3 | 1,144,753 | 17 | 33 | 49 |
| 4 | 1,148,754 | 17 | 50 | 66 |
| 5 | 1,149,588 | 17 | 67 | 82 |
| 6 | 1,150,550 | 17 | 83 | 99 |
| Total | 6,876,219 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 64 | 0.65 m3 | 1 | 0.65 m3 | 1 |
| 2 | 91 | 0.68 m3 | 1 | 1.33 m3 | 2 |
| 3 | 40 | 0.60 m3 | 1 | 1.93 m3 | 3 |
| 4 | 34 | 0.49 m3 | 1 | 2.42 m3 | 4 |
| 5 | 59 | 0.65 m3 | 1 | 3.07 m3 | 5 |
| 6 | 38 | 0.49 m3 | 1 | 3.56 m3 | 6 |
| 7 | 63 | 0.65 m3 | 1 | 4.21 m3 | 7 |
| 8 | 99 | 0.68 m3 | 1 | 4.89 m3 | 8 |
| 9 | 3 | 0.33 m3 | 1 | 5.22 m3 | 9 |
| 10 | 15 | 0.43 m3 | 1 | 5.65 m3 | 10 |
| 11 | 77 | 0.65 m3 | 1 | 6.29 m3 | 11 |
| 12 | 79 | 0.68 m3 | 1 | 6.98 m3 | 12 |
| 13 | 28 | 0.49 m3 | 1 | 7.47 m3 | 13 |
| 14 | 100 | 0.68 m3 | 1 | 8.15 m3 | 14 |
| 15 | 9 | 0.33 m3 | 1 | 8.48 m3 | 15 |
| 16 | 81 | 0.68 m3 | 1 | 9.16 m3 | 16 |
| 17 | 72 | 0.65 m3 | 1 | 9.81 m3 | 17 |
| 18 | 2 | 0.33 m3 | 1 | 10.14 m3 | 18 |
| 19 | 2 | 0.33 m3 | 1 | 10.46 m3 | 19 |
| 20 | 77 | 0.65 m3 | 1 | 11.11 m3 | 20 |
| 21 | 65 | 0.65 m3 | 1 | 11.76 m3 | 21 |
| 22 | 71 | 0.65 m3 | 1 | 12.41 m3 | 22 |
| 23 | 55 | 0.60 m3 | 1 | 13.01 m3 | 23 |
| 24 | 85 | 0.68 m3 | 1 | 13.69 m3 | 24 |
| 25 | 38 | 0.49 m3 | 1 | 14.18 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 64 | 1,150,550 | 1 | 1,150,550 | 1 |
| 2 | 91 | 1,150,550 | 1 | 2,301,099 | 2 |
| 3 | 40 | 1,150,550 | 1 | 3,451,649 | 3 |
| 4 | 34 | 1,150,550 | 1 | 4,602,199 | 4 |
| 5 | 59 | 1,150,550 | 1 | 5,752,749 | 5 |
| 6 | 38 | 1,150,550 | 1 | 6,903,298 | 6 |
| 7 | 63 | 1,150,550 | 1 | 8,053,848 | 7 |
| 8 | 99 | 1,150,550 | 1 | 9,204,398 | 8 |
| 9 | 3 | 1,141,163 | 1 | 10,345,560 | 9 |
| 10 | 15 | 1,141,163 | 1 | 11,486,723 | 10 |
| 11 | 77 | 1,150,550 | 1 | 12,637,272 | 11 |
| 12 | 79 | 1,150,550 | 1 | 13,787,822 | 12 |
| 13 | 28 | 1,150,550 | 1 | 14,938,372 | 13 |
| 14 | 100 | 1,150,550 | 1 | 16,088,921 | 14 |
| 15 | 9 | 1,141,163 | 1 | 17,230,084 | 15 |
| 16 | 81 | 1,150,550 | 1 | 18,380,634 | 16 |
| 17 | 72 | 1,150,550 | 1 | 19,531,183 | 17 |
| 18 | 2 | 1,141,163 | 1 | 20,672,346 | 18 |
| 19 | 2 | 1,141,163 | 1 | 21,813,508 | 19 |
| 20 | 77 | 1,150,550 | 1 | 22,964,058 | 20 |
| 21 | 65 | 1,150,550 | 1 | 24,114,608 | 21 |
| 22 | 71 | 1,150,550 | 1 | 25,265,158 | 22 |
| 23 | 55 | 1,150,550 | 1 | 26,415,707 | 23 |
| 24 | 85 | 1,150,550 | 1 | 27,566,257 | 24 |
| 25 | 38 | 1,150,550 | 1 | 28,716,807 | 25 |

| Volume per hari = | | 0.57 m3 |
|--------------------------|----------|----------------|
| Proyek baru | | Durasi |
| Basement | 1.50 m3 | 3 |
| Ground Floor | 24.05 m3 | 42 |

| Biaya per m3 = | | 1,148,672 |
|-----------------------|----------|------------------|
| Proyek baru | | Biaya |
| Basement | 1.50 m3 | 1,723,008 |
| Ground Floor | 24.05 m3 | 27,625,568 |

Pekerjaan : TANGGA

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-----------|-------------------|-------------------|-----------------|----------|----------------|------------------|
| 98 | 10,287,840 | 10,623,224 | 8.04 m3 | 7 | 1.15 m3 | 1,321,296 |
| 98 | 9,247,377 | 9,548,841 | 7.20 m3 | 7 | 1.03 m3 | 1,326,228 |
| 98 | 20,575,060 | 21,246,447 | 16.08 m3 | 7 | 2.30 m3 | 1,321,296 |
| 98 | 18,494,753 | 19,097,682 | 14.40 m3 | 7 | 2.06 m3 | 1,326,228 |
| 96 | 1,766,609 | 4,226,435 | 3.71 m3 | 7 | 0.53 m3 | 1,139,201 |
| 96 | 2,738,657 | 6,551,963 | 5.18 m3 | 7 | 0.74 m3 | 1,264,858 |
| 96 | 2,557,798 | 6,119,276 | 4.24 m3 | 7 | 0.61 m3 | 1,443,225 |
| 96 | 3,109,920 | 7,440,173 | 5.70 m3 | 7 | 0.81 m3 | 1,305,293 |
| 96 | 2,553,408 | 6,108,773 | 4.68 m3 | 7 | 0.67 m3 | 1,305,293 |

Simulasi Volume Pekerjaan per hari

| Data | Vol / hari | Prob | Bilangan Random | |
|--------------|----------------|------------|-----------------|----|
| 1 | 0.53 m3 | 5 | 0 | 4 |
| 2 | 0.61 m3 | 6 | 5 | 11 |
| 3 | 0.67 m3 | 7 | 12 | 17 |
| 4 | 0.74 m3 | 7 | 18 | 25 |
| 5 | 0.81 m3 | 8 | 26 | 33 |
| 6 | 1.03 m3 | 10 | 34 | 43 |
| 7 | 1.15 m3 | 12 | 44 | 55 |
| 8 | 2.06 m3 | 21 | 56 | 76 |
| 9 | 2.30 m3 | 23 | 77 | 99 |
| Total | 9.90 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|-------------------|------------|-----------------|----|
| 1 | 1,139,201 | 10 | 0 | 9 |
| 2 | 1,264,858 | 11 | 10 | 19 |
| 3 | 1,305,293 | 11 | 20 | 31 |
| 4 | 1,305,293 | 11 | 32 | 42 |
| 5 | 1,321,296 | 11 | 43 | 53 |
| 6 | 1,321,296 | 11 | 54 | 64 |
| 7 | 1,326,228 | 11 | 65 | 75 |
| 8 | 1,326,228 | 11 | 76 | 87 |
| 9 | 1,443,225 | 12 | 88 | 99 |
| Total | 11,752,920 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 54 | 1.15 m3 | 1 | 1.15 m3 | 1 |
| 2 | 32 | 0.81 m3 | 1 | 1.96 m3 | 2 |
| 3 | 53 | 1.15 m3 | 1 | 3.11 m3 | 3 |
| 4 | 71 | 2.06 m3 | 1 | 5.17 m3 | 4 |
| 5 | 71 | 2.06 m3 | 1 | 7.23 m3 | 5 |
| 6 | 100 | 2.30 m3 | 1 | 9.53 m3 | 6 |
| 7 | 25 | 0.74 m3 | 1 | 10.27 m3 | 7 |
| 8 | 44 | 1.03 m3 | 1 | 11.30 m3 | 8 |
| 9 | 57 | 2.06 m3 | 1 | 13.36 m3 | 9 |
| 10 | 64 | 2.06 m3 | 1 | 15.42 m3 | 10 |
| 11 | 93 | 2.30 m3 | 1 | 17.72 m3 | 11 |
| 12 | 71 | 2.06 m3 | 1 | 19.78 m3 | 12 |
| 13 | 81 | 2.30 m3 | 1 | 22.08 m3 | 13 |
| 14 | 98 | 2.30 m3 | 1 | 24.38 m3 | 14 |
| 15 | 47 | 1.15 m3 | 1 | 25.53 m3 | 15 |
| 16 | 35 | 1.03 m3 | 1 | 26.56 m3 | 16 |
| 17 | 31 | 0.81 m3 | 1 | 27.37 m3 | 17 |
| 18 | 64 | 2.06 m3 | 1 | 29.43 m3 | 18 |
| 19 | 74 | 2.06 m3 | 1 | 31.49 m3 | 19 |
| 20 | 29 | 0.81 m3 | 1 | 32.30 m3 | 20 |
| 21 | 62 | 2.06 m3 | 1 | 34.36 m3 | 21 |
| 22 | 54 | 1.15 m3 | 1 | 35.51 m3 | 22 |
| 23 | 68 | 2.06 m3 | 1 | 37.57 m3 | 23 |
| 24 | 97 | 2.30 m3 | 1 | 39.87 m3 | 24 |
| 25 | 76 | 2.06 m3 | 1 | 41.93 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 54 | 1,326,228 | 1 | 1,326,228 | 1 |
| 2 | 32 | 1,321,296 | 1 | 2,647,524 | 2 |
| 3 | 53 | 1,326,228 | 1 | 3,973,752 | 3 |
| 4 | 71 | 1,326,228 | 1 | 5,299,980 | 4 |
| 5 | 71 | 1,326,228 | 1 | 6,626,208 | 5 |
| 6 | 100 | 1,443,225 | 1 | 8,069,434 | 6 |
| 7 | 25 | 1,305,293 | 1 | 9,374,727 | 7 |
| 8 | 44 | 1,321,296 | 1 | 10,696,024 | 8 |
| 9 | 57 | 1,326,228 | 1 | 12,022,252 | 9 |
| 10 | 64 | 1,326,228 | 1 | 13,348,480 | 10 |
| 11 | 93 | 1,443,225 | 1 | 14,791,705 | 11 |
| 12 | 71 | 1,326,228 | 1 | 16,117,933 | 12 |
| 13 | 81 | 1,443,225 | 1 | 17,561,158 | 13 |
| 14 | 98 | 1,443,225 | 1 | 19,004,384 | 14 |
| 15 | 47 | 1,326,228 | 1 | 20,330,612 | 15 |
| 16 | 35 | 1,321,296 | 1 | 21,651,908 | 16 |
| 17 | 31 | 1,321,296 | 1 | 22,973,205 | 17 |
| 18 | 64 | 1,326,228 | 1 | 24,299,433 | 18 |
| 19 | 74 | 1,326,228 | 1 | 25,625,661 | 19 |
| 20 | 29 | 1,321,296 | 1 | 26,946,957 | 20 |
| 21 | 62 | 1,326,228 | 1 | 28,273,185 | 21 |
| 22 | 54 | 1,326,228 | 1 | 29,599,413 | 22 |
| 23 | 68 | 1,326,228 | 1 | 30,925,641 | 23 |
| 24 | 97 | 1,443,225 | 1 | 32,368,867 | 24 |
| 25 | 76 | 1,326,228 | 1 | 33,695,095 | 25 |

| Volume per hari = 1.68 m3 | | |
|---------------------------|----------|----|
| Proyek baru | Durasi | |
| Basement | 10.16 m3 | 6 |
| Ground Fl. | 16.67 m3 | 10 |
| Lt. 1 | 21.91 m3 | 13 |
| Lt. 2 | 15.57 m3 | 9 |
| Lt. 3 | 16.76 m3 | 10 |

| Biaya per m3 = 1,347,804 | | |
|--------------------------|----------|------------|
| Proyek baru | Biaya | |
| Basement | 10.16 m3 | 13,693,686 |
| Ground Fl. | 16.67 m3 | 22,467,889 |
| Lt. 1 | 21.91 m3 | 29,530,381 |
| Lt. 2 | 15.57 m3 | 20,985,305 |
| Lt. 3 | 16.76 m3 | 22,589,191 |

Pekerjaan : PASANGAN BATU KALI

| Tahun | Blaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|-----------|------------------|----------|--------|------------|--------------|
| 1998 | 5,913,985 | 10,379,635 | 77.00 m3 | 14 | 5.50 m3 | 134.800 |
| 1998 | 7,546,091 | 13,244,144 | 98.25 m3 | 14 | 7.02 m3 | 134,800 |
| 1998 | 1,533,028 | 2,690,617 | 19.96 m3 | 7 | 2.85 m3 | 134.800 |
| 1996 | 2,811,325 | 6,999,356 | 56.32 m3 | 7 | 8.05 m3 | 124,278 |
| 1996 | 2,404,693 | 5,986,964 | 43.68 m3 | 7 | 6.24 m3 | 137,064 |
| 1996 | 3,135,657 | 7,806,845 | 53.97 m3 | 7 | 7.71 m3 | 144,652 |

Simulasi Volume Pekerjaan per hari

| Data H/storls | Vol / hari | Prob | Bilangan Random | |
|---------------|-----------------|------------|-----------------|----|
| 1 | 2.85 m3 | 8 | 0 | 7 |
| 2 | 5.50 m3 | 15 | 8 | 21 |
| 3 | 6.24 m3 | 17 | 22 | 38 |
| 4 | 7.02 m3 | 19 | 39 | 57 |
| 5 | 7.71 m3 | 21 | 58 | 77 |
| 6 | 8.05 m3 | 22 | 78 | 99 |
| Total | 37.37 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data H/storls | Biaya Satuan | Prob | Bilangan Random | |
|---------------|----------------|------------|-----------------|----|
| 1 | 124.278 | 15 | 0 | 14 |
| 2 | 134.800 | 17 | 15 | 31 |
| 3 | 134.800 | 17 | 32 | 48 |
| 4 | 134.800 | 17 | 49 | 64 |
| 5 | 137,064 | 17 | 65 | 81 |
| 6 | 144.652 | 18 | 82 | 99 |
| Total | 810,395 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 53 | 7.02 m3 | 1 | 7.02 m3 | 1 |
| 2 | 75 | 7.71 m3 | 1 | 14.73 m3 | 2 |
| 3 | 38 | 6.24 m3 | 1 | 20.97 m3 | 3 |
| 4 | 43 | 7.02 m3 | 1 | 27.99 m3 | 4 |
| 5 | 2 | 2.85 m3 | 1 | 30.84 m3 | 5 |
| 6 | 81 | 8.05 m3 | 1 | 38.88 m3 | 6 |
| 7 | 51 | 7.02 m3 | 1 | 45.90 m3 | 7 |
| 8 | 37 | 6.24 m3 | 1 | 52.14 m3 | 8 |
| 9 | 30 | 6.24 m3 | 1 | 58.38 m3 | 9 |
| 10 | 12 | 5.50 m3 | 1 | 63.88 m3 | 10 |
| 11 | 0 | 2.85 m3 | 1 | 66.73 m3 | 11 |
| 12 | 42 | 7.02 m3 | 1 | 73.75 m3 | 12 |
| 13 | 61 | 7.71 m3 | 1 | 81.46 m3 | 13 |
| 14 | 73 | 7.71 m3 | 1 | 89.17 m3 | 14 |
| 15 | 29 | 6.24 m3 | 1 | 95.41 m3 | 15 |
| 16 | 79 | 8.05 m3 | 1 | 103.46 m3 | 16 |
| 17 | 15 | 5.50 m3 | 1 | 108.96 m3 | 17 |
| 18 | 33 | 6.24 m3 | 1 | 115.20 m3 | 18 |
| 19 | 19 | 5.50 m3 | 1 | 120.70 m3 | 19 |
| 20 | 39 | 6.24 m3 | 1 | 126.94 m3 | 20 |
| 21 | 42 | 7.02 m3 | 1 | 133.95 m3 | 21 |
| 22 | 84 | 8.05 m3 | 1 | 142.00 m3 | 22 |
| 23 | 13 | 5.50 m3 | 1 | 147.50 m3 | 23 |
| 24 | 90 | 8.05 m3 | 1 | 155.55 m3 | 24 |
| 25 | 9 | 5.50 m3 | 1 | 161.05 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 53 | 144.652 | 1 | 144,652 | 1 |
| 2 | 75 | 144,652 | 1 | 289,303 | 2 |
| 3 | 38 | 144,652 | 1 | 433,955 | 3 |
| 4 | 43 | 144,652 | 1 | 578,606 | 4 |
| 5 | 2 | 124.278 | 1 | 702,885 | 5 |
| 6 | 81 | 144.652 | 1 | 847,536 | 6 |
| 7 | 51 | 144,652 | 1 | 992,188 | 7 |
| 8 | 37 | 144,652 | 1 | 1,136,839 | 8 |
| 9 | 30 | 144,652 | 1 | 1,281,491 | 9 |
| 10 | 12 | 124,278 | 1 | 1,405,769 | 10 |
| 11 | 0 | 124,278 | 1 | 1,530,048 | 11 |
| 12 | 42 | 144,652 | 1 | 1,674,699 | 12 |
| 13 | 61 | 144,652 | 1 | 1,819,351 | 13 |
| 14 | 73 | 144,652 | 1 | 1,964,002 | 14 |
| 15 | 29 | 144.652 | 1 | 2,108,654 | 15 |
| 16 | 79 | 144,652 | 1 | 2,253,305 | 16 |
| 17 | 15 | 124,278 | 1 | 2,377,584 | 17 |
| 18 | 33 | 144,652 | 1 | 2,522,235 | 18 |
| 19 | 19 | 144,652 | 1 | 2,666,887 | 19 |
| 20 | 39 | 144,652 | 1 | 2,811,538 | 20 |
| 21 | 42 | 144,652 | 1 | 2,956,190 | 21 |
| 22 | 84 | 144,652 | 1 | 3,100,842 | 22 |
| 23 | 13 | 124,278 | 1 | 3,225,120 | 23 |
| 24 | 90 | 144,652 | 1 | 3,369,772 | 24 |
| 25 | 9 | 124,278 | 1 | 3,494,050 | 25 |

| Volume per hari = | | 6.44 m3 |
|----------------------|----------|---------|
| Proyek baru | Durasi | |
| Basement (Tahap 1) | 28.30 m3 | 4 |
| Basement (Tahap 2) | 39.50 m3 | 6 |
| Basement (Tahap 3) | 11.60 m3 | 2 |

| Biaya per m3 = | | 139,762 |
|----------------------|----------|-----------|
| Proyek baru | Biaya | |
| Basement (Tahap 1) | 28.30 m3 | 3,955,264 |
| Basement (Tahap 2) | 39.50 m3 | 5,520,599 |
| Basement (Tahap 3) | 11.60 m3 | 1,621,239 |

Pekerjaan : PLESTERAN BATA MERAH

| Tahun | Biaya | Biaya tahun 2000 | Luasan | Durasi | Luasan / hari | Biaya Satuan |
|-------|-----------|------------------|------------|--------|---------------|--------------|
| 1998 | 3,803,050 | 5,917,926 | 666.81 m2 | 21 | 31.75 m2 | 8,875 |
| 1998 | 4,265,104 | 6,636,928 | 732.82 m2 | 21 | 34.90 m2 | 9,057 |
| 1998 | 4,330,787 | 6,739,138 | 762.50 m2 | 21 | 36.31 m2 | 8,838 |
| 1998 | 5,131,586 | 7,985,261 | 905.91 m2 | 21 | 43.14 m2 | 8,815 |
| 1998 | 5,298,360 | 8,244,778 | 928.18 m2 | 21 | 44.20 m2 | 8,883 |
| 1998 | 6,840,206 | 10,644,045 | 1206.80 m2 | 21 | 57.47 m2 | 8,820 |
| 1998 | 6,950,946 | 10,816,367 | 1225.61 m2 | 21 | 58.36 m2 | 8,825 |
| 1998 | 8,136,016 | 12,660,454 | 1438.85 m2 | 21 | 68.52 m2 | 8,799 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Luasan / hari | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 31.75 m2 | 8 | 0 | 7 |
| 2 | 34.90 m2 | 9 | 8 | 17 |
| 3 | 36.31 m2 | 10 | 18 | 26 |
| 4 | 43.14 m2 | 12 | 27 | 38 |
| 5 | 44.20 m2 | 12 | 39 | 50 |
| 6 | 57.47 m2 | 15 | 51 | 65 |
| 7 | 58.36 m2 | 16 | 66 | 81 |
| 8 | 68.52 m2 | 18 | 82 | 99 |
| Total | 374.65 m2 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|---------------|------------|-----------------|----|
| 1 | 8,799 | 12 | 0 | 11 |
| 2 | 8,815 | 12 | 12 | 24 |
| 3 | 8,820 | 12 | 25 | 36 |
| 4 | 8,825 | 12 | 37 | 49 |
| 5 | 8,838 | 12 | 50 | 61 |
| 6 | 8,875 | 13 | 62 | 74 |
| 7 | 8,883 | 13 | 75 | 86 |
| 8 | 9,057 | 13 | 87 | 99 |
| Total | 70,912 | 100 | | |

| | Bilangan Random | Luasan / hari | Hari | Luasan / hari Kumulatif | Hari Kumulatif |
|----|-----------------|---------------|------|-------------------------|----------------|
| 1 | 82 | 68.52 m2 | 1 | 68.52 m2 | 1 |
| 2 | 35 | 43.14 m2 | 1 | 111.66 m2 | 2 |
| 3 | 13 | 34.90 m2 | 1 | 146.56 m2 | 3 |
| 4 | 92 | 68.52 m2 | 1 | 215.08 m2 | 4 |
| 5 | 39 | 43.14 m2 | 1 | 258.22 m2 | 5 |
| 6 | 53 | 57.47 m2 | 1 | 315.69 m2 | 6 |
| 7 | 81 | 58.36 m2 | 1 | 374.05 m2 | 7 |
| 8 | 21 | 36.31 m2 | 1 | 410.36 m2 | 8 |
| 9 | 92 | 68.52 m2 | 1 | 478.88 m2 | 9 |
| 10 | 45 | 44.20 m2 | 1 | 523.08 m2 | 10 |
| 11 | 96 | 68.52 m2 | 1 | 591.60 m2 | 11 |
| 12 | 36 | 43.14 m2 | 1 | 634.74 m2 | 12 |
| 13 | 6 | 31.75 m2 | 1 | 666.49 m2 | 13 |
| 14 | 50 | 44.20 m2 | 1 | 710.69 m2 | 14 |
| 15 | 88 | 68.52 m2 | 1 | 779.21 m2 | 15 |
| 16 | 72 | 58.36 m2 | 1 | 837.57 m2 | 16 |
| 17 | 93 | 68.52 m2 | 1 | 906.09 m2 | 17 |
| 18 | 13 | 34.90 m2 | 1 | 940.99 m2 | 18 |
| 19 | 70 | 58.36 m2 | 1 | 999.35 m2 | 19 |
| 20 | 79 | 58.36 m2 | 1 | 1057.71 m2 | 20 |
| 21 | 66 | 58.36 m2 | 1 | 1116.07 m2 | 21 |
| 22 | 80 | 58.36 m2 | 1 | 1174.43 m2 | 22 |
| 23 | 58 | 57.47 m2 | 1 | 1231.90 m2 | 23 |
| 24 | 38 | 43.14 m2 | 1 | 1275.04 m2 | 24 |
| 25 | 82 | 68.52 m2 | 1 | 1343.56 m2 | 25 |

| | Bilangan Random | Biaya Satuan | Luasan | Biaya sat Kumulatif | Luasan Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 82 | 8,883 | 1 | 8,883 | 1 |
| 2 | 35 | 8,820 | 1 | 17,703 | 2 |
| 3 | 13 | 8,815 | 1 | 26,517 | 3 |
| 4 | 92 | 9,057 | 1 | 35,574 | 4 |
| 5 | 39 | 8,825 | 1 | 44,399 | 5 |
| 6 | 53 | 8,838 | 1 | 53,238 | 6 |
| 7 | 81 | 8,883 | 1 | 62,120 | 7 |
| 8 | 21 | 8,815 | 1 | 70,935 | 8 |
| 9 | 92 | 9,057 | 1 | 79,992 | 9 |
| 10 | 45 | 8,825 | 1 | 88,817 | 10 |
| 11 | 96 | 9,057 | 1 | 97,874 | 11 |
| 12 | 36 | 8,820 | 1 | 106,694 | 12 |
| 13 | 6 | 8,799 | 1 | 115,493 | 13 |
| 14 | 50 | 8,838 | 1 | 124,331 | 14 |
| 15 | 88 | 9,057 | 1 | 133,388 | 15 |
| 16 | 72 | 8,875 | 1 | 142,263 | 16 |
| 17 | 93 | 9,057 | 1 | 151,319 | 17 |
| 18 | 13 | 8,815 | 1 | 160,134 | 18 |
| 19 | 70 | 8,875 | 1 | 169,009 | 19 |
| 20 | 79 | 8,883 | 1 | 177,892 | 20 |
| 21 | 66 | 8,875 | 1 | 186,767 | 21 |
| 22 | 80 | 8,883 | 1 | 195,649 | 22 |
| 23 | 58 | 8,838 | 1 | 204,488 | 23 |
| 24 | 38 | 8,825 | 1 | 213,313 | 24 |
| 25 | 82 | 8,883 | 1 | 222,196 | 25 |

Luasan per hari = 53.74 m2

| Proyek baru | Durasi | |
|-------------|------------|----|
| Basement | 216.40 m2 | 4 |
| Ground Fl. | 1519.20 m2 | 28 |
| Lt. 1 | 1249.40 m2 | 23 |
| Lt. 2 | 1249.40 m2 | 23 |
| Lt. 3 | 1393.80 m2 | 26 |
| Lt. 4 | 2024.60 m2 | 38 |
| Lt. Atap | 472.80 m2 | 9 |

Biaya per m2 = 8.888

| Proyek baru | Biaya | |
|-------------|------------|------------|
| Basement | 216.40 m2 | 1,923,325 |
| Ground Fl. | 1519.20 m2 | 13,502,384 |
| Lt. 1 | 1249.40 m2 | 11,104,449 |
| Lt. 2 | 1249.40 m2 | 11,104,449 |
| Lt. 3 | 1393.80 m2 | 12,387,851 |
| Lt. 4 | 2024.60 m2 | 17,994,291 |
| Lt. Atap | 472.80 m2 | 4,202,164 |

Pekerjaan : PLESTERAN BETON

| Tahun | Biaya | Biaya tahun 2000 | Luasan | Durasi | Luasan / hari | Biaya Satuan |
|-------|-----------|------------------|-----------|--------|---------------|--------------|
| 1998 | 4.180,807 | 3.934,557 | 605.30 m2 | 14 | 43.24 | 6.500 |
| 1998 | 2.830,903 | 2.664,163 | 409.86 m2 | 7 | 58.55 | 6.500 |
| 1998 | 6.562,809 | 6.166,849 | 948.72 m2 | 14 | 67.77 | 6.500 |
| 1998 | 4.388.501 | 4.130.018 | 635.37 m2 | 14 | 45.38 | 6.500 |
| 1996 | 1.589.809 | 2.258.483 | 421.70 m2 | 7 | 60.24 | 5.356 |
| 1996 | 3.780.528 | 5.370.618 | 688.37 m2 | 7 | 98.34 | 7.802 |
| 1996 | 2.597.441 | 3.689.925 | 472.95 m2 | 7 | 67.56 | 7.802 |
| 1996 | 3.532.800 | 5.018.696 | 736.00 m2 | 14 | 52.57 | 6.819 |
| 1996 | 4.483.200 | 6.368.834 | 934.00 m2 | 14 | 66.71 | 6.819 |

Simulasi Volume Pekerjaan per hari

| Data Historis | Luasan / hari | Prob | Bilangan Random | |
|---------------|------------------|------------|-----------------|----|
| 1 | 43.24 m2 | 8 | 0 | 7 |
| 2 | 45.38 m2 | 8 | 8 | 15 |
| 3 | 52.57 m2 | 9 | 16 | 24 |
| 4 | 58.55 m2 | 10 | 25 | 35 |
| 5 | 60.24 m2 | 11 | 36 | 45 |
| 6 | 66.71 m2 | 12 | 46 | 57 |
| 7 | 67.56 m2 | 12 | 58 | 69 |
| 8 | 67.77 m2 | 12 | 70 | 81 |
| 9 | 98.34 m2 | 18 | 82 | 99 |
| Total | 560.37 m2 | 100 | | |

Simulasi Biaya per satuan Volume

| Data Historis | Biaya Satuan | Prob | Bilangan Random | |
|---------------|---------------|------------|-----------------|----|
| 1 | 5.356 | 9 | 0 | 8 |
| 2 | 6.500 | 11 | 9 | 19 |
| 3 | 6.500 | 11 | 20 | 29 |
| 4 | 6.500 | 11 | 30 | 40 |
| 5 | 6.500 | 11 | 41 | 51 |
| 6 | 6.819 | 11 | 52 | 62 |
| 7 | 6.819 | 11 | 63 | 73 |
| 8 | 7.802 | 13 | 74 | 86 |
| 9 | 7.802 | 13 | 87 | 99 |
| Total | 60,598 | 100 | | |

| | Bilangan Random | Luasan / hari | Hari | Luasan / hari Kumulatif | Hari Kumulatif |
|----|-----------------|---------------|------|-------------------------|----------------|
| 1 | 86 | 98.34 m2 | 1 | 98.34 m2 | 1 |
| 2 | 38 | 66.71 m2 | 1 | 165.05 m2 | 2 |
| 3 | 70 | 67.77 m2 | 1 | 232.82 m2 | 3 |
| 4 | 42 | 66.71 m2 | 1 | 299.53 m2 | 4 |
| 5 | 65 | 67.77 m2 | 1 | 367.30 m2 | 5 |
| 6 | 58 | 67.77 m2 | 1 | 435.06 m2 | 6 |
| 7 | 3 | 43.24 m2 | 1 | 478.30 m2 | 7 |
| 8 | 65 | 67.77 m2 | 1 | 546.07 m2 | 8 |
| 9 | 5 | 45.38 m2 | 1 | 591.45 m2 | 9 |
| 10 | 77 | 98.34 m2 | 1 | 689.79 m2 | 10 |
| 11 | 1 | 43.24 m2 | 1 | 733.02 m2 | 11 |
| 12 | 56 | 67.77 m2 | 1 | 800.79 m2 | 12 |
| 13 | 3 | 43.24 m2 | 1 | 844.03 m2 | 13 |
| 14 | 64 | 67.77 m2 | 1 | 911.79 m2 | 14 |
| 15 | 28 | 60.24 m2 | 1 | 972.03 m2 | 15 |
| 16 | 73 | 67.77 m2 | 1 | 1039.80 m2 | 16 |
| 17 | 35 | 66.71 m2 | 1 | 1106.51 m2 | 17 |
| 18 | 26 | 60.24 m2 | 1 | 1166.76 m2 | 18 |
| 19 | 68 | 67.77 m2 | 1 | 1234.52 m2 | 19 |
| 20 | 92 | 98.34 m2 | 1 | 1332.86 m2 | 20 |
| 21 | 53 | 67.56 m2 | 1 | 1400.43 m2 | 21 |
| 22 | 29 | 60.24 m2 | 1 | 1460.67 m2 | 22 |
| 23 | 39 | 66.71 m2 | 1 | 1527.38 m2 | 23 |
| 24 | 42 | 66.71 m2 | 1 | 1594.10 m2 | 24 |
| 25 | 13 | 52.57 m2 | 1 | 1646.67 m2 | 25 |

| | Bilangan Random | Biaya Satuan | Luasan | Biaya sat Kumulatif | Luasan Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 86 | 7,802 | 1 | 7,802 | 1 |
| 2 | 38 | 6,819 | 1 | 14,621 | 2 |
| 3 | 70 | 7,802 | 1 | 22,423 | 3 |
| 4 | 42 | 6,819 | 1 | 29,242 | 4 |
| 5 | 65 | 7,802 | 1 | 37,044 | 5 |
| 6 | 58 | 7,802 | 1 | 44,846 | 6 |
| 7 | 3 | 5,356 | 1 | 50,201 | 7 |
| 8 | 65 | 7,802 | 1 | 58,003 | 8 |
| 9 | 5 | 6,500 | 1 | 64,503 | 9 |
| 10 | 77 | 7,802 | 1 | 72,305 | 10 |
| 11 | 1 | 5,356 | 1 | 77,661 | 11 |
| 12 | 56 | 7,802 | 1 | 85,463 | 12 |
| 13 | 3 | 5,356 | 1 | 90,818 | 13 |
| 14 | 64 | 7,802 | 1 | 98,620 | 14 |
| 15 | 28 | 6,500 | 1 | 105,121 | 15 |
| 16 | 73 | 7,802 | 1 | 112,923 | 16 |
| 17 | 35 | 6,819 | 1 | 119,741 | 17 |
| 18 | 26 | 6,500 | 1 | 126,242 | 18 |
| 19 | 68 | 7,802 | 1 | 134,044 | 19 |
| 20 | 92 | 7,802 | 1 | 141,845 | 20 |
| 21 | 53 | 6,819 | 1 | 148,664 | 21 |
| 22 | 29 | 6,500 | 1 | 155,164 | 22 |
| 23 | 39 | 6,819 | 1 | 161,983 | 23 |
| 24 | 42 | 6,819 | 1 | 168,802 | 24 |
| 25 | 13 | 6,500 | 1 | 175,302 | 25 |

| Luasan per hari = 65.87 m2 | | |
|----------------------------|------------|----|
| Proyek baru | Durasi | |
| Basement | 3316.01 m2 | 50 |
| Ground Fl. | 1344.04 m2 | 20 |
| Lt. 1 | 1541.48 m2 | 23 |
| Lt. 2 | 1171.39 m2 | 18 |
| Lt. 3 | 1262.50 m2 | 19 |

| Biaya per m2 = 7,012 | | |
|----------------------|------------|------------|
| Proyek baru | Biaya | |
| Basement | 3316.01 m2 | 23,252,180 |
| Ground Fl. | 1344.04 m2 | 9,424,539 |
| Lt. 1 | 1541.48 m2 | 10,808,997 |
| Lt. 2 | 1171.39 m2 | 8,213,885 |
| Lt. 3 | 1262.50 m2 | 8,852,794 |

Pekerjaan : PASANGAN BATA MERAH

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|-----------|------------------|----------|--------|------------|--------------|
| 1998 | 4,312,238 | 7,197,988 | 38.87 m3 | 14 | 2.78 m3 | 185,181 |
| 1998 | 5,187,334 | 8,658,698 | 47.52 m3 | 14 | 3.39 m3 | 182,212 |
| 1998 | 5,252,965 | 8,768,249 | 48.15 m3 | 14 | 3.44 m3 | 182,103 |
| 1998 | 5,894,707 | 9,839,445 | 54.33 m3 | 14 | 3.88 m3 | 181,105 |
| 1998 | 6,382,448 | 10,653,582 | 58.36 m3 | 14 | 4.17 m3 | 182,549 |
| 1998 | 7,953,828 | 13,276,530 | 73.82 m3 | 14 | 5.27 m3 | 179,850 |
| 1998 | 7,920,300 | 13,220,565 | 73.67 m3 | 14 | 5.26 m3 | 179,457 |
| 1998 | 8,813,357 | 14,711,256 | 82.16 m3 | 14 | 5.87 m3 | 179,056 |

Simulasi Volume Pekerjaan per hari

| Data | Vol / hari | Prob | Bilangan Random | |
|--------------|-------------------|------------|-----------------|----|
| 1 | 2.78 m3 | 8 | 0 | 7 |
| 2 | 3.39 m3 | 10 | 8 | 17 |
| 3 | 3.44 m3 | 10 | 18 | 27 |
| 4 | 3.88 m3 | 11 | 28 | 39 |
| 5 | 4.17 m3 | 12 | 40 | 51 |
| 6 | 5.27 m3 | 15 | 52 | 66 |
| 7 | 5.26 m3 | 15 | 67 | 82 |
| 8 | 5.87 m3 | 17 | 83 | 99 |
| Total | 34.0629 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|------------------|------------|-----------------|----|
| 1 | 179,056 | 12 | 0 | 11 |
| 2 | 179,457 | 12 | 12 | 24 |
| 3 | 179,850 | 12 | 25 | 36 |
| 4 | 181,105 | 12 | 37 | 49 |
| 5 | 182,103 | 13 | 50 | 61 |
| 6 | 182,212 | 13 | 62 | 74 |
| 7 | 182,549 | 13 | 75 | 86 |
| 8 | 185,181 | 13 | 87 | 99 |
| Total | 1,451,513 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|------------|------|----------------------|----------------|
| 1 | 100 | 5.87 m3 | 1 | 5.87 m3 | 1 |
| 2 | 94 | 5.87 m3 | 1 | 11.74 m3 | 2 |
| 3 | 32 | 3.88 m3 | 1 | 15.62 m3 | 3 |
| 4 | 77 | 5.26 m3 | 1 | 20.88 m3 | 4 |
| 5 | 33 | 3.88 m3 | 1 | 24.76 m3 | 5 |
| 6 | 95 | 5.87 m3 | 1 | 30.63 m3 | 6 |
| 7 | 21 | 3.44 m3 | 1 | 34.07 m3 | 7 |
| 8 | 8 | 2.78 m3 | 1 | 36.85 m3 | 8 |
| 9 | 18 | 3.39 m3 | 1 | 40.24 m3 | 9 |
| 10 | 67 | 5.27 m3 | 1 | 45.51 m3 | 10 |
| 11 | 16 | 3.39 m3 | 1 | 48.91 m3 | 11 |
| 12 | 65 | 5.27 m3 | 1 | 54.18 m3 | 12 |
| 13 | 27 | 3.44 m3 | 1 | 57.62 m3 | 13 |
| 14 | 51 | 4.17 m3 | 1 | 61.79 m3 | 14 |
| 15 | 41 | 4.17 m3 | 1 | 65.96 m3 | 15 |
| 16 | 82 | 5.26 m3 | 1 | 71.22 m3 | 16 |
| 17 | 52 | 5.27 m3 | 1 | 76.49 m3 | 17 |
| 18 | 77 | 5.26 m3 | 1 | 81.75 m3 | 18 |
| 19 | 96 | 5.87 m3 | 1 | 87.62 m3 | 19 |
| 20 | 77 | 5.26 m3 | 1 | 92.88 m3 | 20 |
| 21 | 20 | 3.44 m3 | 1 | 96.32 m3 | 21 |
| 22 | 27 | 3.44 m3 | 1 | 99.76 m3 | 22 |
| 23 | 39 | 3.88 m3 | 1 | 103.64 m3 | 23 |
| 24 | 46 | 4.17 m3 | 1 | 107.81 m3 | 24 |
| 25 | 36 | 3.88 m3 | 1 | 111.69 m3 | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 100 | 185,181 | 1 | 185,181 | 1 |
| 2 | 94 | 185,181 | 1 | 370,362 | 2 |
| 3 | 32 | 179,850 | 1 | 550,212 | 3 |
| 4 | 77 | 182,549 | 1 | 732,762 | 4 |
| 5 | 33 | 179,850 | 1 | 912,612 | 5 |
| 6 | 95 | 185,181 | 1 | 1,097,793 | 6 |
| 7 | 21 | 179,457 | 1 | 1,277,249 | 7 |
| 8 | 8 | 179,056 | 1 | 1,456,305 | 8 |
| 9 | 18 | 179,457 | 1 | 1,635,762 | 9 |
| 10 | 67 | 182,212 | 1 | 1,817,974 | 10 |
| 11 | 16 | 179,457 | 1 | 1,997,430 | 11 |
| 12 | 65 | 182,212 | 1 | 2,179,642 | 12 |
| 13 | 27 | 179,850 | 1 | 2,359,492 | 13 |
| 14 | 51 | 182,103 | 1 | 2,541,595 | 14 |
| 15 | 41 | 181,105 | 1 | 2,722,700 | 15 |
| 16 | 82 | 182,549 | 1 | 2,905,249 | 16 |
| 17 | 52 | 182,103 | 1 | 3,087,352 | 17 |
| 18 | 77 | 182,549 | 1 | 3,269,901 | 18 |
| 19 | 96 | 185,181 | 1 | 3,455,082 | 19 |
| 20 | 77 | 182,549 | 1 | 3,637,632 | 20 |
| 21 | 20 | 179,457 | 1 | 3,817,088 | 21 |
| 22 | 27 | 179,850 | 1 | 3,996,938 | 22 |
| 23 | 39 | 181,105 | 1 | 4,178,044 | 23 |
| 24 | 46 | 181,105 | 1 | 4,359,149 | 24 |
| 25 | 36 | 179,850 | 1 | 4,538,999 | 25 |

| Volume per hari = 4.47 m3 | |
|---------------------------|----------------|
| Proyek baru | Durasi |
| Basement | 16.23 m3 / 4 |
| Ground Fl. | 125.19 m3 / 28 |
| Lt. 1 | 104.96 m3 / 23 |
| Lt. 2 | 101.73 m3 / 23 |
| Lt. 3 | 115.79 m3 / 26 |
| Lt. 4 | 163.10 m3 / 37 |
| Lt. Atap | 35.46 m3 / 8 |

| Biaya per m3 = 181,560 | |
|------------------------|------------------------|
| Proyek baru | Biaya |
| Basement | 16.23 m3 / 2,946,718 |
| Ground Fl. | 125.19 m3 / 22,729,491 |
| Lt. 1 | 104.96 m3 / 19,055,625 |
| Lt. 2 | 101.73 m3 / 18,470,094 |
| Lt. 3 | 115.79 m3 / 21,021,919 |
| Lt. 4 | 163.10 m3 / 29,611,521 |
| Lt. Atap | 35.46 m3 / 6,438,116 |

Pekerjaan : RANGKA ATAP

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|-------------|------------------|--------------|--------|-------------|--------------|
| 1998 | 138,872,923 | 118,625,251 | 7,868.39 kg | 7 | 1,124.06 kg | 15,076 |
| 1998 | 215,911,774 | 184,431,837 | 13,087.38 kg | 14 | 934.81 kg | 14,092 |
| 1996 | 84,326,490 | 211,296,886 | 12,680.00 kg | 14 | 905.71 kg | 16,664 |
| 1998 | 70,909,640 | 177,678,037 | 12,841.00 kg | 14 | 917.21 kg | 13,837 |
| 1996 | 78,967,000 | 197,867,612 | 11,600.00 kg | 14 | 828.57 kg | 17,058 |

Simulasi Volume Pekerjaan per hari

| Data | Vol / hari | Prob | Bilangan Random | |
|--------------|--------------------|------------|-----------------|----|
| 1 | 828.57 kg | 18 | 0 | 17 |
| 2 | 905.71 kg | 19 | 18 | 36 |
| 3 | 917.21 kg | 19 | 37 | 55 |
| 4 | 934.81 kg | 20 | 56 | 75 |
| 5 | 1,124.06 kg | 24 | 76 | 99 |
| Total | 4,710.37 kg | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|---------------|------------|-----------------|----|
| 1 | 13,837 | 18 | 0 | 17 |
| 2 | 14,092 | 18 | 18 | 35 |
| 3 | 15,076 | 20 | 36 | 55 |
| 4 | 16,664 | 22 | 56 | 77 |
| 5 | 17,058 | 22 | 78 | 99 |
| Total | 76,727 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|-------------|------|----------------------|----------------|
| 1 | 42 | 917.21 kg | 1 | 917.21 kg | 1 |
| 2 | 63 | 934.81 kg | 1 | 1,852.03 kg | 2 |
| 3 | 41 | 917.21 kg | 1 | 2,769.24 kg | 3 |
| 4 | 57 | 934.81 kg | 1 | 3,704.05 kg | 4 |
| 5 | 82 | 1,124.06 kg | 1 | 4,828.11 kg | 5 |
| 6 | 65 | 934.81 kg | 1 | 5,762.92 kg | 6 |
| 7 | 66 | 934.81 kg | 1 | 6,697.74 kg | 7 |
| 8 | 50 | 917.21 kg | 1 | 7,614.95 kg | 8 |
| 9 | 99 | 1,124.06 kg | 1 | 8,739.01 kg | 9 |
| 10 | 70 | 934.81 kg | 1 | 9,673.82 kg | 10 |
| 11 | 9 | 828.57 kg | 1 | 10,502.39 kg | 11 |
| 12 | 14 | 828.57 kg | 1 | 11,330.96 kg | 12 |
| 13 | 58 | 934.81 kg | 1 | 12,265.77 kg | 13 |
| 14 | 65 | 934.81 kg | 1 | 13,200.59 kg | 14 |
| 15 | 76 | 934.81 kg | 1 | 14,135.40 kg | 15 |
| 16 | 77 | 1,124.06 kg | 1 | 15,259.46 kg | 16 |
| 17 | 31 | 905.71 kg | 1 | 16,165.17 kg | 17 |
| 18 | 4 | 828.57 kg | 1 | 16,993.74 kg | 18 |
| 19 | 34 | 905.71 kg | 1 | 17,899.46 kg | 19 |
| 20 | 1 | 828.57 kg | 1 | 18,728.03 kg | 20 |
| 21 | 67 | 934.81 kg | 1 | 19,662.84 kg | 21 |
| 22 | 14 | 828.57 kg | 1 | 20,491.41 kg | 22 |
| 23 | 97 | 1,124.06 kg | 1 | 21,615.47 kg | 23 |
| 24 | 66 | 934.81 kg | 1 | 22,550.28 kg | 24 |
| 25 | 78 | 1,124.06 kg | 1 | 23,674.34 kg | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya sat Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 42 | 15,076 | 1 | 15,076 | 1 |
| 2 | 63 | 16,664 | 1 | 31,740 | 2 |
| 3 | 41 | 15,076 | 1 | 46,816 | 3 |
| 4 | 57 | 16,664 | 1 | 63,480 | 4 |
| 5 | 82 | 17,058 | 1 | 80,537 | 5 |
| 6 | 65 | 16,664 | 1 | 97,201 | 6 |
| 7 | 66 | 16,664 | 1 | 113,865 | 7 |
| 8 | 50 | 15,076 | 1 | 128,941 | 8 |
| 9 | 99 | 17,058 | 1 | 145,999 | 9 |
| 10 | 70 | 16,664 | 1 | 162,663 | 10 |
| 11 | 9 | 13,837 | 1 | 176,499 | 11 |
| 12 | 14 | 13,837 | 1 | 190,336 | 12 |
| 13 | 58 | 16,664 | 1 | 207,000 | 13 |
| 14 | 65 | 16,664 | 1 | 223,664 | 14 |
| 15 | 76 | 16,664 | 1 | 240,328 | 15 |
| 16 | 77 | 16,664 | 1 | 256,991 | 16 |
| 17 | 31 | 14,092 | 1 | 271,084 | 17 |
| 18 | 4 | 13,837 | 1 | 284,921 | 18 |
| 19 | 34 | 14,092 | 1 | 299,013 | 19 |
| 20 | 1 | 13,837 | 1 | 312,850 | 20 |
| 21 | 67 | 16,664 | 1 | 329,514 | 21 |
| 22 | 14 | 13,837 | 1 | 343,351 | 22 |
| 23 | 97 | 17,058 | 1 | 360,408 | 23 |
| 24 | 66 | 16,664 | 1 | 377,072 | 24 |
| 25 | 78 | 17,058 | 1 | 394,129 | 25 |

| | |
|--------------------------|------------------|
| Volume per hari = | 946.97 kg |
| Proyek baru | Durasi |
| 38,170.00 kg | 40 |

| | |
|-----------------------|---------------|
| Biaya per kg = | 15,765 |
| Proyek baru | Biaya |
| 38,170.00 kg | 601,756,788 |

Pekerjaan : PENUTUP ATAP

| Tahun | Biaya | Biaya tahun 2000 | Luasan | Durasi | Luasan / hari | Biaya Satuan |
|-------|-------------|------------------|-------------------------|--------|-----------------------|--------------|
| 1998 | 166,826,315 | 156,699,957 | 2,014.30 m ² | 21 | 95.92 m ² | 77,794 |
| 1998 | 253,511,030 | 238,122,911 | 3,133.64 m ² | 21 | 149.46 m ² | 75,868 |
| 1996 | 91,580,048 | 222,640,255 | 2,861.00 m ² | 21 | 136.24 m ² | 77,819 |
| 1996 | 81,843,500 | 198,969,733 | 2,537.00 m ² | 21 | 120.81 m ² | 78,427 |

Simulasi Volume Pekerjaan per hari

| Data | Luasan / hari | Prob | Bilangan Random | |
|--------------|-----------------------------|------------|-----------------|----|
| 1 | 95.92 m ² | 19 | 0 | 18 |
| 2 | 120.81 m ² | 24 | 19 | 42 |
| 3 | 136.24 m ² | 27 | 43 | 69 |
| 4 | 149.46 m ² | 30 | 70 | 99 |
| Total | 502.43 m³ | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|----------------|------------|-----------------|----|
| 1 | 75,868 | 24 | 0 | 23 |
| 2 | 77,794 | 25 | 24 | 49 |
| 3 | 77,819 | 25 | 50 | 74 |
| 4 | 78,427 | 25 | 75 | 99 |
| Total | 309,908 | 100 | | |

| | Bilangan Random | Luasan / hari | Hari | Luasan / hari Kumulatif | Hari Kumulatif |
|----|-----------------|-----------------------|------|-------------------------|----------------|
| 1 | 24 | 120.81 m ² | 1 | 120.81 m ² | 1 |
| 2 | 38 | 120.81 m ² | 1 | 241.62 m ² | 2 |
| 3 | 100 | 149.46 m ² | 1 | 391.08 m ² | 3 |
| 4 | 78 | 149.46 m ² | 1 | 540.54 m ² | 4 |
| 5 | 7 | 95.92 m ² | 1 | 636.46 m ² | 5 |
| 6 | 53 | 136.24 m ² | 1 | 772.69 m ² | 6 |
| 7 | 77 | 149.46 m ² | 1 | 922.15 m ² | 7 |
| 8 | 76 | 149.46 m ² | 1 | 1,071.61 m ² | 8 |
| 9 | 72 | 149.46 m ² | 1 | 1,221.07 m ² | 9 |
| 10 | 85 | 149.46 m ² | 1 | 1,370.53 m ² | 10 |
| 11 | 51 | 136.24 m ² | 1 | 1,506.77 m ² | 11 |
| 12 | 1 | 95.92 m ² | 1 | 1,602.69 m ² | 12 |
| 13 | 62 | 136.24 m ² | 1 | 1,738.93 m ² | 13 |
| 14 | 19 | 95.92 m ² | 1 | 1,834.84 m ² | 14 |
| 15 | 36 | 120.81 m ² | 1 | 1,955.65 m ² | 15 |
| 16 | 95 | 149.46 m ² | 1 | 2,105.11 m ² | 16 |
| 17 | 77 | 149.46 m ² | 1 | 2,254.57 m ² | 17 |
| 18 | 76 | 149.46 m ² | 1 | 2,404.03 m ² | 18 |
| 19 | 47 | 136.24 m ² | 1 | 2,540.27 m ² | 19 |
| 20 | 42 | 120.81 m ² | 1 | 2,661.08 m ² | 20 |
| 21 | 65 | 136.24 m ² | 1 | 2,797.32 m ² | 21 |
| 22 | 48 | 136.24 m ² | 1 | 2,933.56 m ² | 22 |
| 23 | 30 | 120.81 m ² | 1 | 3,054.36 m ² | 23 |
| 24 | 100 | 149.46 m ² | 1 | 3,203.82 m ² | 24 |
| 25 | 17 | 95.92 m ² | 1 | 3,299.74 m ² | 25 |

| | Bilangan Random | Biaya Satuan | Luasan | Biaya sat Kumulatif | Luasan Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 24 | 75,868 | 1 | 75,868 | 1 |
| 2 | 38 | 77,794 | 1 | 153,662 | 2 |
| 3 | 100 | 78,427 | 1 | 232,089 | 3 |
| 4 | 78 | 78,427 | 1 | 310,516 | 4 |
| 5 | 7 | 75,868 | 1 | 386,384 | 5 |
| 6 | 53 | 77,819 | 1 | 464,203 | 6 |
| 7 | 77 | 78,427 | 1 | 542,631 | 7 |
| 8 | 76 | 78,427 | 1 | 621,058 | 8 |
| 9 | 72 | 77,819 | 1 | 698,877 | 9 |
| 10 | 85 | 78,427 | 1 | 777,304 | 10 |
| 11 | 51 | 77,819 | 1 | 855,123 | 11 |
| 12 | 1 | 75,868 | 1 | 930,991 | 12 |
| 13 | 62 | 77,819 | 1 | 1,008,810 | 13 |
| 14 | 19 | 75,868 | 1 | 1,084,678 | 14 |
| 15 | 36 | 77,794 | 1 | 1,162,472 | 15 |
| 16 | 95 | 78,427 | 1 | 1,240,899 | 16 |
| 17 | 77 | 78,427 | 1 | 1,319,327 | 17 |
| 18 | 76 | 78,427 | 1 | 1,397,754 | 18 |
| 19 | 47 | 77,794 | 1 | 1,475,547 | 19 |
| 20 | 42 | 77,794 | 1 | 1,553,341 | 20 |
| 21 | 65 | 77,819 | 1 | 1,631,160 | 21 |
| 22 | 48 | 77,794 | 1 | 1,708,954 | 22 |
| 23 | 30 | 77,794 | 1 | 1,786,748 | 23 |
| 24 | 100 | 78,427 | 1 | 1,865,175 | 24 |
| 25 | 17 | 75,868 | 1 | 1,941,043 | 25 |

| | |
|--------------------------|-----------------------------|
| Volume per hari = | 131.99 m² |
| Proyek baru | Durasi |
| 1,993.00 m ² | 15 |

| | |
|----------------------------------|---------------|
| Biaya per m² = | 77,642 |
| Proyek baru | Biaya |
| 1,993.00 m ² | 154,739,959 |

Pekerjaan : SALURAN AIR HUJAN

| Tahun | Biaya | Biaya tahun 2000 | Volume | Durasi | Vol / hari | Biaya Satuan |
|-------|------------|------------------|-----------------------|--------|---------------------|--------------|
| 1998 | 49,163,746 | 24,090,235 | 122.30 m ³ | 30 | 4.08 m ³ | 196,977 |
| 1996 | 26,373,163 | 45,361,840 | 157.52 m ³ | 30 | 5.25 m ³ | 287,975 |
| 1996 | 20,078,626 | 34,535,237 | 208.00 m ³ | 30 | 6.93 m ³ | 166,035 |
| 1996 | 28,097,200 | 44,887,184 | 161.00 m ³ | 30 | 5.37 m ³ | 278,802 |

Simulasi Volume Pekerjaan per hari

| Data | Vol / hari | Prob | Bilangan Random | |
|--------------|----------------------------|------------|-----------------|----|
| 1 | 4.08 m ³ | 19 | 0 | 18 |
| 2 | 5.25 m ³ | 24 | 19 | 42 |
| 3 | 5.37 m ³ | 25 | 43 | 67 |
| 4 | 6.93 m ³ | 32 | 68 | 99 |
| Total | 21.63 m³ | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|----------------|------------|-----------------|----|
| 1 | 166,035 | 18 | 0 | 17 |
| 2 | 196,977 | 21 | 18 | 38 |
| 3 | 278,802 | 30 | 39 | 68 |
| 4 | 287,975 | 31 | 69 | 99 |
| Total | 929,789 | 100 | | |

| | Bilangan Random | Vol / hari | Hari | Vol / hari Kumulatif | Hari Kumulatif |
|----|-----------------|---------------------|------|-----------------------|----------------|
| 1 | 1 | 4.08 m ³ | 1 | 4.08 m ³ | 1 |
| 2 | 67 | 5.37 m ³ | 1 | 9.44 m ³ | 2 |
| 3 | 75 | 6.93 m ³ | 1 | 16.38 m ³ | 3 |
| 4 | 73 | 6.93 m ³ | 1 | 23.31 m ³ | 4 |
| 5 | 43 | 5.25 m ³ | 1 | 28.56 m ³ | 5 |
| 6 | 77 | 6.93 m ³ | 1 | 35.49 m ³ | 6 |
| 7 | 6 | 4.08 m ³ | 1 | 39.57 m ³ | 7 |
| 8 | 77 | 6.93 m ³ | 1 | 46.50 m ³ | 8 |
| 9 | 47 | 5.37 m ³ | 1 | 51.87 m ³ | 9 |
| 10 | 87 | 6.93 m ³ | 1 | 58.80 m ³ | 10 |
| 11 | 97 | 6.93 m ³ | 1 | 65.74 m ³ | 11 |
| 12 | 6 | 4.08 m ³ | 1 | 69.81 m ³ | 12 |
| 13 | 88 | 6.93 m ³ | 1 | 76.75 m ³ | 13 |
| 14 | 99 | 6.93 m ³ | 1 | 83.68 m ³ | 14 |
| 15 | 18 | 4.08 m ³ | 1 | 87.76 m ³ | 15 |
| 16 | 82 | 6.93 m ³ | 1 | 94.69 m ³ | 16 |
| 17 | 28 | 5.25 m ³ | 1 | 99.94 m ³ | 17 |
| 18 | 28 | 5.25 m ³ | 1 | 105.19 m ³ | 18 |
| 19 | 93 | 6.93 m ³ | 1 | 112.13 m ³ | 19 |
| 20 | 31 | 5.25 m ³ | 1 | 117.38 m ³ | 20 |
| 21 | 58 | 5.37 m ³ | 1 | 122.74 m ³ | 21 |
| 22 | 98 | 6.93 m ³ | 1 | 129.68 m ³ | 22 |
| 23 | 9 | 4.08 m ³ | 1 | 133.75 m ³ | 23 |
| 24 | 59 | 5.37 m ³ | 1 | 139.12 m ³ | 24 |
| 25 | 37 | 5.25 m ³ | 1 | 144.37 m ³ | 25 |

| | Bilangan Random | Biaya Satuan | Volume | Biaya per Volume Kumulatif | Volume Kumulatif |
|----|-----------------|--------------|--------|----------------------------|------------------|
| 1 | 1 | 166,035 | 1 | 166,035 | 1 |
| 2 | 67 | 278,802 | 1 | 444,837 | 2 |
| 3 | 75 | 287,975 | 1 | 732,812 | 3 |
| 4 | 73 | 287,975 | 1 | 1,020,787 | 4 |
| 5 | 43 | 278,802 | 1 | 1,299,590 | 5 |
| 6 | 77 | 287,975 | 1 | 1,587,565 | 6 |
| 7 | 6 | 166,035 | 1 | 1,753,600 | 7 |
| 8 | 77 | 287,975 | 1 | 2,041,575 | 8 |
| 9 | 47 | 278,802 | 1 | 2,320,377 | 9 |
| 10 | 87 | 287,975 | 1 | 2,608,352 | 10 |
| 11 | 97 | 287,975 | 1 | 2,896,327 | 11 |
| 12 | 6 | 166,035 | 1 | 3,062,362 | 12 |
| 13 | 88 | 287,975 | 1 | 3,350,337 | 13 |
| 14 | 99 | 287,975 | 1 | 3,638,312 | 14 |
| 15 | 18 | 166,035 | 1 | 3,804,347 | 15 |
| 16 | 82 | 287,975 | 1 | 4,092,322 | 16 |
| 17 | 28 | 196,977 | 1 | 4,289,299 | 17 |
| 18 | 28 | 196,977 | 1 | 4,486,276 | 18 |
| 19 | 93 | 287,975 | 1 | 4,774,251 | 19 |
| 20 | 31 | 196,977 | 1 | 4,971,227 | 20 |
| 21 | 58 | 278,802 | 1 | 5,250,030 | 21 |
| 22 | 98 | 287,975 | 1 | 5,538,005 | 22 |
| 23 | 9 | 166,035 | 1 | 5,704,039 | 23 |
| 24 | 59 | 278,802 | 1 | 5,982,842 | 24 |
| 25 | 37 | 196,977 | 1 | 6,179,818 | 25 |

| | |
|-------------------------|---------------------|
| Volume per hari = | 5 // m ³ |
| Proyek baru | Durasi |
| 1,270.00 m ³ | 220 |

| | |
|----------------------------|-------------|
| Biaya per m ³ = | 247,193 |
| Proyek baru | Biaya |
| 1,270.00 m ³ | 313,934,777 |

Pekerjaan : CAT

| Tahun | Biaya | Biaya tahun 2000 | Luasan | Durasi | Luasan / hari | Biaya Satuan |
|-------|------------|------------------|-------------------------|--------|----------------------|--------------|
| 1998 | 9.660,050 | 14.490,075 | 310,67 m ² | 21 | 14,79 m ² | 46,641 |
| 1998 | 14.145,800 | 21.218,700 | 459,72 m ² | 21 | 21,89 m ² | 46,156 |
| 1996 | 14.645,200 | 40.578,920 | 1.132,80 m ² | 42 | 26,97 m ² | 35,822 |
| 1996 | 6.806,085 | 18.860,784 | 446,74 m ² | 21 | 21,27 m ² | 42,219 |
| 1996 | 11.256,500 | 31.189,510 | 871,00 m ² | 35 | 24,89 m ² | 35,809 |

Simulasi Volume Pekerjaan per hari

| Data | Luasan / hari | Prob | Bilangan Random | |
|-------|-----------------------|------|-----------------|----|
| 1 | 14,79 m ² | 13 | 0 | 12 |
| 2 | 21,27 m ² | 19 | 13 | 32 |
| 3 | 21,89 m ² | 20 | 33 | 52 |
| 4 | 24,89 m ² | 23 | 53 | 74 |
| 5 | 26,97 m ² | 25 | 75 | 99 |
| Total | 109,82 m ² | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|-------|--------------|------|-----------------|----|
| 1 | 35,809 | 17 | 0 | 16 |
| 2 | 35,822 | 17 | 17 | 34 |
| 3 | 42,219 | 20 | 35 | 54 |
| 4 | 46,156 | 22 | 55 | 76 |
| 5 | 46,641 | 23 | 77 | 99 |
| Total | 206,646 | 100 | | |

| | Bilangan Random | Luasan / hari | Hari | Luasan / hari Kumulatif | Hari Kumulatif |
|----|-----------------|----------------------|------|-------------------------|----------------|
| 1 | 84 | 26,97 m ² | 1 | 26,97 m ² | 1 |
| 2 | 92 | 26,97 m ² | 1 | 53,94 m ² | 2 |
| 3 | 56 | 24,89 m ² | 1 | 78,83 m ² | 3 |
| 4 | 8 | 14,79 m ² | 1 | 93,62 m ² | 4 |
| 5 | 91 | 26,97 m ² | 1 | 120,59 m ² | 5 |
| 6 | 48 | 21,89 m ² | 1 | 142,49 m ² | 6 |
| 7 | 77 | 26,97 m ² | 1 | 169,46 m ² | 7 |
| 8 | 97 | 26,97 m ² | 1 | 196,43 m ² | 8 |
| 9 | 8 | 14,79 m ² | 1 | 211,22 m ² | 9 |
| 10 | 52 | 21,89 m ² | 1 | 233,11 m ² | 10 |
| 11 | 43 | 21,89 m ² | 1 | 255,00 m ² | 11 |
| 12 | 92 | 26,97 m ² | 1 | 281,98 m ² | 12 |
| 13 | 60 | 24,89 m ² | 1 | 306,86 m ² | 13 |
| 14 | 50 | 21,89 m ² | 1 | 328,75 m ² | 14 |
| 15 | 72 | 24,89 m ² | 1 | 353,64 m ² | 15 |
| 16 | 36 | 21,89 m ² | 1 | 375,53 m ² | 16 |
| 17 | 75 | 24,89 m ² | 1 | 400,42 m ² | 17 |
| 18 | 81 | 26,97 m ² | 1 | 427,39 m ² | 18 |
| 19 | 45 | 21,89 m ² | 1 | 449,28 m ² | 19 |
| 20 | 5 | 14,79 m ² | 1 | 464,07 m ² | 20 |
| 21 | 7 | 14,79 m ² | 1 | 478,87 m ² | 21 |
| 22 | 75 | 24,89 m ² | 1 | 503,75 m ² | 22 |
| 23 | 73 | 24,89 m ² | 1 | 528,64 m ² | 23 |
| 24 | 85 | 26,97 m ² | 1 | 555,61 m ² | 24 |
| 25 | 100 | 26,97 m ² | 1 | 582,58 m ² | 25 |

| | Bilangan Random | Biaya Satuan | Luasan | Biaya sat Kumulatif | Luasan Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 84 | 46,641 | 1 | 46,641 | 1 |
| 2 | 92 | 46,641 | 1 | 93,283 | 2 |
| 3 | 56 | 46,156 | 1 | 139,438 | 3 |
| 4 | 8 | 35,809 | 1 | 175,247 | 4 |
| 5 | 91 | 46,641 | 1 | 221,889 | 5 |
| 6 | 48 | 42,219 | 1 | 264,107 | 6 |
| 7 | 77 | 46,156 | 1 | 310,263 | 7 |
| 8 | 97 | 46,641 | 1 | 356,904 | 8 |
| 9 | 8 | 35,809 | 1 | 392,713 | 9 |
| 10 | 52 | 42,219 | 1 | 434,932 | 10 |
| 11 | 43 | 42,219 | 1 | 477,151 | 11 |
| 12 | 92 | 46,641 | 1 | 523,792 | 12 |
| 13 | 60 | 46,156 | 1 | 569,948 | 13 |
| 14 | 50 | 42,219 | 1 | 612,167 | 14 |
| 15 | 72 | 46,156 | 1 | 658,322 | 15 |
| 16 | 36 | 42,219 | 1 | 700,541 | 16 |
| 17 | 75 | 46,156 | 1 | 746,697 | 17 |
| 18 | 81 | 46,641 | 1 | 793,338 | 18 |
| 19 | 45 | 42,219 | 1 | 835,557 | 19 |
| 20 | 5 | 35,809 | 1 | 871,366 | 20 |
| 21 | 7 | 35,809 | 1 | 907,175 | 21 |
| 22 | 75 | 46,156 | 1 | 953,330 | 22 |
| 23 | 73 | 46,156 | 1 | 999,486 | 23 |
| 24 | 85 | 46,641 | 1 | 1.046.127 | 24 |
| 25 | 100 | 46,641 | 1 | 1.092.769 | 25 |

| | |
|-----------------------|----------------------|
| Luasan per hari = | 23,30 m ² |
| Proyek baru | Durasi |
| 668,70 m ² | 29 |

| | |
|----------------------------|------------|
| Biaya per m ² = | 43,711 |
| Proyek baru | Biaya |
| 668,70 m ² | 29.229,376 |

Pekerjaan : PENANGKAL PETIR

| Tahun | Biaya | Biaya tahun 2000 | Unit | Durasi | Unit / hari | Biaya Satuan |
|-------|------------|------------------|-----------|--------|-------------|--------------|
| 1998 | 20,461,000 | 40,922,000 | 1.00 unit | 21 | 0.0476 unit | 40,922,000 |
| 1996 | 10,516,200 | 38,594,454 | 1.00 unit | 45 | 0.0222 unit | 38,594,454 |
| 1996 | 6,332,000 | 23,238,440 | 1.00 unit | 60 | 0.0167 unit | 23,238,440 |
| 1996 | 9,624,000 | 35,320,080 | 1.00 unit | 60 | 0.0167 unit | 35,320,080 |

Simulasi Volume Pekerjaan per hari

| Data | Unit / hari | Prob | Bilangan Random |
|--------------|----------------|------------|-----------------|
| 1 | 0.0167 unit | 16 | 0 |
| 2 | 0.0167 unit | 16 | 16 |
| 3 | 0.0222 unit | 22 | 32 |
| 4 | 0.0476 unit | 46 | 54 |
| Total | 0.10 m3 | 100 | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random |
|--------------|--------------------|------------|-----------------|
| 1 | 23,238,440 | 17 | 0 |
| 2 | 35,320,080 | 26 | 17 |
| 3 | 38,594,454 | 28 | 42 |
| 4 | 40,922,000 | 30 | 70 |
| Total | 138,074,974 | 100 | |

| | Bilangan Random | Unit / hari | Hari | Unit / hari Komulatif | Hari Komulatif |
|----|-----------------|-------------|------|-----------------------|----------------|
| 1 | 55 | 0.0476 unit | 1 | 0.0476 unit | 1 |
| 2 | 18 | 0.0167 unit | 1 | 0.0643 unit | 2 |
| 3 | 76 | 0.0476 unit | 1 | 0.1119 unit | 3 |
| 4 | 47 | 0.0222 unit | 1 | 0.1341 unit | 4 |
| 5 | 48 | 0.0222 unit | 1 | 0.1563 unit | 5 |
| 6 | 55 | 0.0476 unit | 1 | 0.2040 unit | 6 |
| 7 | 76 | 0.0476 unit | 1 | 0.2516 unit | 7 |
| 8 | 89 | 0.0476 unit | 1 | 0.2992 unit | 8 |
| 9 | 12 | 0.0167 unit | 1 | 0.3159 unit | 9 |
| 10 | 87 | 0.0476 unit | 1 | 0.3635 unit | 10 |
| 11 | 41 | 0.0222 unit | 1 | 0.3857 unit | 11 |
| 12 | 25 | 0.0167 unit | 1 | 0.4024 unit | 12 |
| 13 | 73 | 0.0476 unit | 1 | 0.4500 unit | 13 |
| 14 | 25 | 0.0167 unit | 1 | 0.4667 unit | 14 |
| 15 | 89 | 0.0476 unit | 1 | 0.5143 unit | 15 |
| 16 | 75 | 0.0476 unit | 1 | 0.5619 unit | 16 |
| 17 | 89 | 0.0476 unit | 1 | 0.6095 unit | 17 |
| 18 | 46 | 0.0222 unit | 1 | 0.6317 unit | 18 |
| 19 | 95 | 0.0476 unit | 1 | 0.6794 unit | 19 |
| 20 | 22 | 0.0167 unit | 1 | 0.6960 unit | 20 |
| 21 | 41 | 0.0222 unit | 1 | 0.7183 unit | 21 |
| 22 | 61 | 0.0476 unit | 1 | 0.7659 unit | 22 |
| 23 | 89 | 0.0476 unit | 1 | 0.8135 unit | 23 |
| 24 | 1 | 0.0167 unit | 1 | 0.8302 unit | 24 |
| 25 | 65 | 0.0476 unit | 1 | 0.8778 unit | 25 |

| | Bilangan Random | Biaya Satuan | Unit | Biaya sat Komulatif | Unit Komulatif |
|----|-----------------|--------------|------|---------------------|----------------|
| 1 | 55 | 38,594,454 | 1 | 38,594,454 | 1 |
| 2 | 18 | 35,320,080 | 1 | 73,914,534 | 2 |
| 3 | 76 | 40,922,000 | 1 | 114,836,534 | 3 |
| 4 | 47 | 38,594,454 | 1 | 153,430,988 | 4 |
| 5 | 48 | 38,594,454 | 1 | 192,025,442 | 5 |
| 6 | 55 | 38,594,454 | 1 | 230,619,896 | 6 |
| 7 | 76 | 40,922,000 | 1 | 271,541,896 | 7 |
| 8 | 89 | 40,922,000 | 1 | 312,463,896 | 8 |
| 9 | 12 | 23,238,440 | 1 | 335,702,336 | 9 |
| 10 | 87 | 40,922,000 | 1 | 376,624,336 | 10 |
| 11 | 41 | 35,320,080 | 1 | 411,944,416 | 11 |
| 12 | 25 | 35,320,080 | 1 | 447,264,496 | 12 |
| 13 | 73 | 40,922,000 | 1 | 488,186,496 | 13 |
| 14 | 25 | 35,320,080 | 1 | 523,506,576 | 14 |
| 15 | 89 | 40,922,000 | 1 | 564,428,576 | 15 |
| 16 | 75 | 40,922,000 | 1 | 605,350,576 | 16 |
| 17 | 89 | 40,922,000 | 1 | 646,272,576 | 17 |
| 18 | 46 | 38,594,454 | 1 | 684,867,030 | 18 |
| 19 | 95 | 40,922,000 | 1 | 725,789,030 | 19 |
| 20 | 22 | 35,320,080 | 1 | 761,109,110 | 20 |
| 21 | 41 | 35,320,080 | 1 | 796,429,190 | 21 |
| 22 | 61 | 38,594,454 | 1 | 835,023,644 | 22 |
| 23 | 89 | 40,922,000 | 1 | 875,945,644 | 23 |
| 24 | 1 | 23,238,440 | 1 | 899,184,084 | 24 |
| 25 | 65 | 38,594,454 | 1 | 937,778,538 | 25 |

| | |
|------------------------|--------------------|
| Unit per hari = | 0.0351 unit |
| Proyek baru | Durasi |
| 1 00 unit | 28 |

| | |
|-------------------------|-------------------|
| Biaya per unit = | 37,511,142 |
| Proyek baru | Biaya |
| 1 00 unit | 37,511,142 |

Pekerjaan : WATERPROFING

| Tahun | Biaya | Biaya tahun 2000 | Luasan | Durasi | Luasan / hari | Biaya Satuan |
|-------|-----------|------------------|-----------------------|--------|----------------------|--------------|
| 1996 | 940.270 | 3.818.060 | 55.31 m ² | 7 | 7.90 m ² | 69.030 |
| 1996 | 4.928.500 | 20.012.667 | 394.28 m ² | 14 | 28.16 m ² | 50.758 |
| 1996 | 4.125.000 | 16.749.975 | 330.00 m ² | 14 | 23.57 m ² | 50.758 |

Simulasi Volume Pekerjaan per hari

| Data | Luasan / hari | Prob | Bilangan Random |
|--------------|----------------------------|------------|-----------------|
| 1 | 7.90 m ² | 13 | 0 |
| 2 | 23.57 m ² | 40 | 13 |
| 3 | 28.16 m ² | 47 | 53 |
| Total | 59.64 m³ | 100 | |

| | Bilangan Random | Luasan / hari | Hari | Luasan / hari Kumulatif | Hari Kumulatif |
|----|-----------------|----------------------|------|-------------------------|----------------|
| 1 | 55 | 28.16 m ² | 1 | 28.16 m ² | 1 |
| 2 | 79 | 28.16 m ² | 1 | 56.33 m ² | 2 |
| 3 | 67 | 28.16 m ² | 1 | 84.49 m ² | 3 |
| 4 | 9 | 7.90 m ² | 1 | 92.39 m ² | 4 |
| 5 | 7 | 7.90 m ² | 1 | 100.29 m ² | 5 |
| 6 | 85 | 28.16 m ² | 1 | 128.45 m ² | 6 |
| 7 | 84 | 28.16 m ² | 1 | 156.62 m ² | 7 |
| 8 | 82 | 28.16 m ² | 1 | 184.78 m ² | 8 |
| 9 | 97 | 28.16 m ² | 1 | 212.94 m ² | 9 |
| 10 | 15 | 23.57 m ² | 1 | 236.51 m ² | 10 |
| 11 | 38 | 23.57 m ² | 1 | 260.09 m ² | 11 |
| 12 | 5 | 7.90 m ² | 1 | 267.99 m ² | 12 |
| 13 | 70 | 28.16 m ² | 1 | 296.15 m ² | 13 |
| 14 | 45 | 23.57 m ² | 1 | 319.72 m ² | 14 |
| 15 | 69 | 28.16 m ² | 1 | 347.88 m ² | 15 |
| 16 | 74 | 28.16 m ² | 1 | 376.05 m ² | 16 |
| 17 | 51 | 23.57 m ² | 1 | 399.62 m ² | 17 |
| 18 | 31 | 23.57 m ² | 1 | 423.19 m ² | 18 |
| 19 | 5 | 7.90 m ² | 1 | 431.09 m ² | 19 |
| 20 | 23 | 23.57 m ² | 1 | 454.66 m ² | 20 |
| 21 | 50 | 23.57 m ² | 1 | 478.23 m ² | 21 |
| 22 | 44 | 23.57 m ² | 1 | 501.81 m ² | 22 |
| 23 | 93 | 28.16 m ² | 1 | 529.97 m ² | 23 |
| 24 | 64 | 28.16 m ² | 1 | 558.13 m ² | 24 |
| 25 | 79 | 28.16 m ² | 1 | 586.29 m ² | 25 |

| Luasan per hari = | | 23.45 m ² |
|--------------------------|-----------------------|----------------------|
| Proyek baru | Durasi | |
| Waterprofing (Tahap 1) | 6/0 00 m ² | 29 |
| Waterprofing (Tahap 2) | 467 90 m ² | 20 |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random |
|--------------|----------------|------------|-----------------|
| 1 | 50.758 | 30 | 0 |
| 2 | 50.758 | 30 | 30 |
| 3 | 69.030 | 40 | 60 |
| Total | 170,545 | 100 | |

| | Bilangan Random | Biaya Satuan | Luasan | Biaya sat Kumulatif | Luasan Kumulatif |
|----|-----------------|--------------|--------|---------------------|------------------|
| 1 | 55 | 50.758 | 1 | 50.758 | 1 |
| 2 | 79 | 69.030 | 1 | 119.788 | 2 |
| 3 | 67 | 69.030 | 1 | 188.818 | 3 |
| 4 | 9 | 50.758 | 1 | 239.575 | 4 |
| 5 | 7 | 50.758 | 1 | 290.333 | 5 |
| 6 | 85 | 69.030 | 1 | 359.363 | 6 |
| 7 | 84 | 69.030 | 1 | 428.393 | 7 |
| 8 | 82 | 69.030 | 1 | 497.424 | 8 |
| 9 | 97 | 69.030 | 1 | 566.454 | 9 |
| 10 | 15 | 50.758 | 1 | 617.211 | 10 |
| 11 | 38 | 50.758 | 1 | 667.969 | 11 |
| 12 | 5 | 50.758 | 1 | 718.726 | 12 |
| 13 | 70 | 69.030 | 1 | 787.756 | 13 |
| 14 | 45 | 50.758 | 1 | 838.514 | 14 |
| 15 | 69 | 69.030 | 1 | 907.544 | 15 |
| 16 | 74 | 69.030 | 1 | 976.574 | 16 |
| 17 | 51 | 50.758 | 1 | 1.027.332 | 17 |
| 18 | 31 | 50.758 | 1 | 1.078.089 | 18 |
| 19 | 5 | 50.758 | 1 | 1.128.847 | 19 |
| 20 | 23 | 50.758 | 1 | 1.179.604 | 20 |
| 21 | 50 | 50.758 | 1 | 1.230.362 | 21 |
| 22 | 44 | 50.758 | 1 | 1.281.119 | 22 |
| 23 | 93 | 69.030 | 1 | 1.350.150 | 23 |
| 24 | 64 | 69.030 | 1 | 1.419.180 | 24 |
| 25 | 79 | 69.030 | 1 | 1.488.210 | 25 |

| Biaya per m ² = | | 59.528 |
|----------------------------|-----------------------|------------|
| Proyek baru | Biaya | |
| Waterprofing (Tahap 1) | 670 00 m ² | 39.884.025 |
| Waterprofing (Tahap 2) | 467 90 m ² | 27.853.336 |

Pekerjaan : CROSS VENTILATION

| Tahun | Biaya | Biaya tahun 2000 | Unit | Durasi | Unit / hari | Biaya Satuan |
|-------|-----------|------------------|------------|--------|-------------|--------------|
| 1998 | 2,000,000 | 1,200,000 | 10.00 unit | 7 | 1 43 unit | 120,000 |
| 1998 | 3,600,000 | 2,160,000 | 18.00 unit | 7 | 2 57 unit | 120,000 |
| 1996 | 1,230,930 | 1,830,885 | 15.00 unit | 10 | 1 50 unit | 122,059 |
| 1998 | 600,000 | 892,440 | 12.00 unit | 7 | 1 71 unit | 74,370 |
| 1996 | 2,400,000 | 3,569,760 | 12.00 unit | 7 | 1 71 unit | 297,480 |

Simulasi Volume Pekerjaan per hari

| Date | Unit / hari | Prob | Bilangan Random | |
|--------------|------------------|------------|-----------------|----|
| 1 | 1 43 unit | 16 | 0 | 15 |
| 2 | 1 50 unit | 17 | 16 | 32 |
| 3 | 1 71 unit | 19 | 33 | 51 |
| 4 | 1 71 unit | 19 | 52 | 70 |
| 5 | 2 57 unit | 29 | 71 | 99 |
| Total | 8.93 unit | 100 | | |

Simulasi Biaya per satuan Volume

| Date | Biaya Satuan | Prob | Bilangan Random | |
|--------------|----------------|------------|-----------------|----|
| 1 | 74,370 | 10 | 0 | 9 |
| 2 | 120,000 | 16 | 10 | 25 |
| 3 | 120,000 | 16 | 26 | 42 |
| 4 | 122,059 | 17 | 43 | 58 |
| 5 | 297,480 | 41 | 59 | 99 |
| Total | 733,909 | 100 | | |

| | Bilangan Random | Unit / hari | Hari | Unit / hari Kumulatif | Hari Kumulatif |
|----|-----------------|-------------|------|-----------------------|----------------|
| 1 | 55 | 1 71 unit | 1 | 1 71 unit | 1 |
| 2 | 39 | 1 71 unit | 1 | 3 43 unit | 2 |
| 3 | 54 | 1 71 unit | 1 | 5 14 unit | 3 |
| 4 | 9 | 1 43 unit | 1 | 6 57 unit | 4 |
| 5 | 59 | 1 71 unit | 1 | 8 29 unit | 5 |
| 6 | 33 | 1 50 unit | 1 | 9 79 unit | 6 |
| 7 | 10 | 1 43 unit | 1 | 11 21 unit | 7 |
| 8 | 10 | 1 43 unit | 1 | 12 64 unit | 8 |
| 9 | 27 | 1 50 unit | 1 | 14 14 unit | 9 |
| 10 | 90 | 2 57 unit | 1 | 16 71 unit | 10 |
| 11 | 4 | 1 43 unit | 1 | 18 14 unit | 11 |
| 12 | 45 | 1 71 unit | 1 | 19 86 unit | 12 |
| 13 | 57 | 1 71 unit | 1 | 21 57 unit | 13 |
| 14 | 55 | 1 71 unit | 1 | 23 29 unit | 14 |
| 15 | 11 | 1 43 unit | 1 | 24 71 unit | 15 |
| 16 | 57 | 1 71 unit | 1 | 26 43 unit | 16 |
| 17 | 13 | 1 43 unit | 1 | 27 86 unit | 17 |
| 18 | 89 | 2 57 unit | 1 | 30 43 unit | 18 |
| 19 | 37 | 1 71 unit | 1 | 32 14 unit | 19 |
| 20 | 31 | 1 50 unit | 1 | 33 64 unit | 20 |
| 21 | 46 | 1 71 unit | 1 | 35 36 unit | 21 |
| 22 | 15 | 1 43 unit | 1 | 36 79 unit | 22 |
| 23 | 39 | 1 71 unit | 1 | 38 50 unit | 23 |
| 24 | 32 | 1 50 unit | 1 | 40 00 unit | 24 |
| 25 | 92 | 2 57 unit | 1 | 42 57 unit | 25 |

| | Bilangan Random | Biaya Satuan | Unit | Biaya sat Kumulatif | Unit Kumulatif |
|----|-----------------|--------------|------|---------------------|----------------|
| 1 | 55 | 122,059 | 1 | 122,059 | 1 |
| 2 | 39 | 120,000 | 1 | 242,059 | 2 |
| 3 | 54 | 122,059 | 1 | 364,118 | 3 |
| 4 | 9 | 74,370 | 1 | 438,488 | 4 |
| 5 | 59 | 122,059 | 1 | 560,547 | 5 |
| 6 | 33 | 120,000 | 1 | 680,547 | 6 |
| 7 | 10 | 120,000 | 1 | 800,547 | 7 |
| 8 | 10 | 74,370 | 1 | 874,917 | 8 |
| 9 | 27 | 120,000 | 1 | 994,917 | 9 |
| 10 | 90 | 297,480 | 1 | 1,292,397 | 10 |
| 11 | 4 | 74,370 | 1 | 1,366,767 | 11 |
| 12 | 45 | 122,059 | 1 | 1,488,826 | 12 |
| 13 | 57 | 122,059 | 1 | 1,610,885 | 13 |
| 14 | 55 | 122,059 | 1 | 1,732,944 | 14 |
| 15 | 11 | 120,000 | 1 | 1,852,944 | 15 |
| 16 | 57 | 122,059 | 1 | 1,975,003 | 16 |
| 17 | 13 | 120,000 | 1 | 2,095,003 | 17 |
| 18 | 89 | 297,480 | 1 | 2,392,483 | 18 |
| 19 | 37 | 120,000 | 1 | 2,512,483 | 19 |
| 20 | 31 | 120,000 | 1 | 2,632,483 | 20 |
| 21 | 46 | 122,059 | 1 | 2,754,542 | 21 |
| 22 | 15 | 120,000 | 1 | 2,874,542 | 22 |
| 23 | 39 | 120,000 | 1 | 2,994,542 | 23 |
| 24 | 32 | 120,000 | 1 | 3,114,542 | 24 |
| 25 | 92 | 297,480 | 1 | 3,412,022 | 25 |

| | |
|------------------------|------------------|
| Unit per hari = | 1 70 unit |
| Proyek baru | Durasi |
| 10.00 unit | 6 |

| | |
|-------------------------|----------------|
| Biaya per unit = | 136,481 |
| Proyek baru | Biaya |
| 10.00 unit | 1,364,809 |

Pekerjaan : PEMBERSIHAN KEMBALI

| Tahun | Biaya | Biaya tahun 2000 | Unit | Durasi | Unit / hari | Biaya Satuan |
|-------|-----------|------------------|-----------|--------|-------------|--------------|
| 1998 | 500,000 | 500,000 | 1 00 unit | 36 | 0 0278 unit | 500 000 |
| 1996 | 2,000,000 | 2,000,000 | 1 00 unit | 60 | 0 0167 unit | 2 000 000 |
| 1996 | 200,000 | 200 000 | 1 00 unit | 30 | 0 0333 unit | 200 000 |
| 1996 | 1,000,000 | 1,000,000 | 1 00 unit | 60 | 0 0167 unit | 1 000 000 |

Simulasi Volume Pekerjaan per hari

| Data | Unit / hari | Prob | Bilangan Random | |
|--------------|----------------|------------|-----------------|----|
| 1 | 0 0167 unit | 18 | 0 | 17 |
| 2 | 0 0167 unit | 18 | 18 | 34 |
| 3 | 0 0278 unit | 29 | 35 | 64 |
| 4 | 0 0333 unit | 35 | 65 | 99 |
| Total | 0 09 m3 | 100 | | |

Simulasi Biaya per satuan Volume

| Data | Biaya Satuan | Prob | Bilangan Random | |
|--------------|------------------|------------|-----------------|----|
| 1 | 200,000 | 5 | 0 | 4 |
| 2 | 500,000 | 14 | 5 | 18 |
| 3 | 1,000,000 | 27 | 19 | 45 |
| 4 | 2,000,000 | 54 | 46 | 99 |
| Total | 3,700,000 | 100 | | |

| | Bilangan Random | Unit / hari | Hari | Unit / hari Kumulatif | Hari Kumulatif |
|----|-----------------|-------------|------|-----------------------|----------------|
| 1 | 66 | 0 0333 unit | 1 | 0 0333 unit | 1 |
| 2 | 25 | 0 0167 unit | 1 | 0 0500 unit | 2 |
| 3 | 23 | 0 0167 unit | 1 | 0 0667 unit | 3 |
| 4 | 28 | 0 0167 unit | 1 | 0 0833 unit | 4 |
| 5 | 55 | 0 0278 unit | 1 | 0 1111 unit | 5 |
| 6 | 32 | 0 0167 unit | 1 | 0 1278 unit | 6 |
| 7 | 85 | 0 0333 unit | 1 | 0 1611 unit | 7 |
| 8 | 0 | 0 0167 unit | 1 | 0 1778 unit | 8 |
| 9 | 93 | 0 0333 unit | 1 | 0 2111 unit | 9 |
| 10 | 58 | 0 0278 unit | 1 | 0 2389 unit | 10 |
| 11 | 1 | 0 0167 unit | 1 | 0 2556 unit | 11 |
| 12 | 89 | 0 0333 unit | 1 | 0 2889 unit | 12 |
| 13 | 14 | 0 0167 unit | 1 | 0 3056 unit | 13 |
| 14 | 74 | 0 0333 unit | 1 | 0 3389 unit | 14 |
| 15 | 10 | 0 0167 unit | 1 | 0 3556 unit | 15 |
| 16 | 53 | 0 0278 unit | 1 | 0 3833 unit | 16 |
| 17 | 64 | 0 0278 unit | 1 | 0 4111 unit | 17 |
| 18 | 63 | 0 0278 unit | 1 | 0 4389 unit | 18 |
| 19 | 46 | 0 0278 unit | 1 | 0 4667 unit | 19 |
| 20 | 87 | 0 0333 unit | 1 | 0 5000 unit | 20 |
| 21 | 27 | 0 0167 unit | 1 | 0 5167 unit | 21 |
| 22 | 93 | 0 0333 unit | 1 | 0 5500 unit | 22 |
| 23 | 22 | 0 0167 unit | 1 | 0 5667 unit | 23 |
| 24 | 91 | 0 0333 unit | 1 | 0 6000 unit | 24 |
| 25 | 28 | 0 0167 unit | 1 | 0 6167 unit | 25 |

| | Bilangan Random | Biaya Satuan | Unit | Biaya sat Kumulatif | Unit Kumulatif |
|----|-----------------|--------------|------|---------------------|----------------|
| 1 | 66 | 2,000,000 | 1 | 2,000,000 | 1 |
| 2 | 25 | 1,000,000 | 1 | 3,000,000 | 2 |
| 3 | 23 | 1,000,000 | 1 | 4,000,000 | 3 |
| 4 | 28 | 1,000,000 | 1 | 5,000,000 | 4 |
| 5 | 55 | 2,000,000 | 1 | 7,000,000 | 5 |
| 6 | 32 | 1,000,000 | 1 | 8,000,000 | 6 |
| 7 | 85 | 2,000,000 | 1 | 10,000,000 | 7 |
| 8 | 0 | 200,000 | 1 | 10,200,000 | 8 |
| 9 | 93 | 2,000,000 | 1 | 12,200,000 | 9 |
| 10 | 58 | 2,000,000 | 1 | 14,200,000 | 10 |
| 11 | 1 | 200,000 | 1 | 14,400,000 | 11 |
| 12 | 89 | 2,000,000 | 1 | 16,400,000 | 12 |
| 13 | 14 | 500,000 | 1 | 16,900,000 | 13 |
| 14 | 74 | 2,000,000 | 1 | 18,900,000 | 14 |
| 15 | 10 | 500,000 | 1 | 19,400,000 | 15 |
| 16 | 53 | 2,000,000 | 1 | 21,400,000 | 16 |
| 17 | 64 | 2,000,000 | 1 | 23,400,000 | 17 |
| 18 | 63 | 2,000,000 | 1 | 25,400,000 | 18 |
| 19 | 46 | 2,000,000 | 1 | 27,400,000 | 19 |
| 20 | 87 | 2,000,000 | 1 | 29,400,000 | 20 |
| 21 | 27 | 1,000,000 | 1 | 30,400,000 | 21 |
| 22 | 93 | 2,000,000 | 1 | 32,400,000 | 22 |
| 23 | 22 | 1,000,000 | 1 | 33,400,000 | 23 |
| 24 | 91 | 2,000,000 | 1 | 35,400,000 | 24 |
| 25 | 28 | 1,000,000 | 1 | 36,400,000 | 25 |

| | |
|-----------------|-------------|
| Unit per hari = | 0 0247 unit |
| Proyek baru | Durasi |
| 1 00 unit | 41 |

| | |
|------------------|-----------|
| Biaya per unit = | 1 456 000 |
| Proyek baru | Biaya |
| 1 00 unit | 1,456,000 |



serviens in lumine veritatis

Lampiran 7
Print Out Data Input
Software Quantitative Systems Linear Programming

Input Data for tesis

08-21-2001 16:18:34

Objective: Minimization

38524 T7 + 645028 T10 + 66437080 T17 + 372921 T18 + 165037 T19 + 538483 T23 + 30562 T27 + 312214 T28 + 98099 T29 + 5022873 T32 + 392160 T33 + 111603 T34 + 7404 T37 + 1083061 T38 + 1400128 T41 + 290484 T42 + 30482 T45 + 18034 T46 + 79 T47 + 276700 T48 + 4462 T49 + 53006 T53 + 53006 T54 + 80083 T58 + 176673 T62 + 119658 T63 + 3245343 T65 + 49106 T67 + 331487 T70 + 65754 T71 + 209544 T75 + 188 T77 + 9154 T78 + 9484 T79 + 731504 T81 + 24291 T83 + 77465 T90

Subject to

- (1) T7 ≤ 29
- (2) T10 ≤ 6
- (3) T17 ≤ 1
- (4) T18 ≤ 18
- (5) T19 ≤ 8
- (6) T23 ≤ 14
- (7) T27 ≤ 14
- (8) T28 ≤ 18
- (9) T29 ≤ 14
- (10) T32 ≤ 13
- (11) T33 ≤ 16
- (12) T34 ≤ 13
- (13) T37 ≤ 10
- (14) T38 ≤ 14
- (15) T41 ≤ 18
- (16) T42 ≤ 11
- (17) T45 ≤ 5
- (18) T46 ≤ 11
- (19) T47 ≤ 7
- (20) T48 ≤ 2
- (21) T49 ≤ 23
- (22) T53 ≤ 10
- (23) T54 ≤ 10
- (24) T58 ≤ 9
- (25) T62 ≤ 7
- (26) T63 ≤ 7
- (27) T65 ≤ 1
- (28) T67 ≤ 12
- (29) T70 ≤ 4
- (30) T71 ≤ 10
- (31) T75 ≤ 4
- (32) T77 ≤ 7
- (33) T78 ≤ 17
- (34) T79 ≤ 20
- (35) T81 ≤ 29
- (36) T83 ≤ 18
- (37) T90 ≤ 2
- (38) X2 - X3 ≥ 21
- (39) - X3 + X5 ≥ 15
- (40) - X5 + X6 ≥ 11
- (41) X7 - X11 ≥ 25
- (42) - X6 + X10 ≥ 5
- (43) T10 - X10 + X11 ≥ 3
- (44) - X11 + X12 ≥ 9
- (45) - X12 + X13 ≥ 31
- (46) - X12 + X14 ≥ 70
- (47) T10 - X10 + X16 ≥ 5
- (48) - X12 + X17 ≥ 12
- (49) T17 - X17 + X18 ≥ 9
- (50) T17 - X17 + X19 ≥ 28
- (51) T18 - X18 + X20 ≥ 82
- (52) T18 - X18 + X22 ≥ 12
- (53) - X22 + X23 ≥ 2
- (54) T23 - X23 + X24 ≥ 41
- (55) T23 - X23 + X25 ≥ 77
- (56) T23 - X23 + X27 ≥ 8

(57) T27 - X27 + X28 ≥ 10
 (58) T28 - X28 + X29 ≥ 16
 (59) T28 - X28 + X30 ≥ 77
 (60) T28 - X28 + X32 ≥ 8
 (61) T32 - X32 + X33 ≥ 9
 (62) T33 - X33 + X34 ≥ 15
 (63) T33 - X33 + X35 ≥ 67
 (64) T33 - X33 + X37 ≥ 6
 (65) T37 - X37 + X38 ≥ 7
 (66) T37 - X37 + X39 ≥ 72
 (67) T38 - X38 + X41 ≥ 9
 (68) T41 - X41 + X42 ≥ 8
 (69) - X5 + X45 ≥ 12
 (70) T7 - X7 + X46 ≥ 10
 (71) T7 - X7 + X47 ≥ 45
 (72) T46 - X46 + X47 ≥ 35
 (73) T47 - X47 + X48 ≥ 9
 (74) T48 - X48 + X49 ≥ 12
 (75) - X12 + X50 ≥ 55
 (76) - X50 + X51 ≥ 0
 (77) T7 - X7 + X53 ≥ 21
 (78) T53 - X53 + X54 ≥ 33
 (79) T18 - X18 + X55 ≥ 54
 (80) T54 - X54 + X56 ≥ 9
 (81) - X56 + X57 ≥ 24
 (82) T18 - X18 + X58 ≥ 72
 (83) T53 - X53 + X59 ≥ 15
 (84) T23 - X23 + X61 ≥ 77
 (85) - X61 + X62 ≥ 24
 (86) T62 - X62 + X63 ≥ 4
 (87) T28 - X28 + X65 ≥ 77
 (88) T65 - X65 + X66 ≥ 30
 (89) T28 - X28 + X67 ≥ 68
 (90) T33 - X33 + X69 ≥ 71
 (91) - X69 + X70 ≥ 12
 (92) T70 - X70 + X71 ≥ 0
 (93) T38 - X38 + X73 ≥ 60
 (94) - X73 + X74 ≥ 12
 (95) - X74 + X75 ≥ 0
 (96) T42 - X42 + X77 ≥ 49
 (97) T77 - X77 + X78 ≥ 9
 (98) T42 - X42 + X79 ≥ 39
 (99) T42 - X42 + X80 ≥ 16
 (100) - X80 + X81 ≥ 21
 (101) - X14 + X82 ≥ 18
 (102) T81 - X81 + X83 ≥ 0
 (103) T81 - X80 + X82 ≥ 0
 (104) - X12 + X86 ≥ 15
 (105) - X86 + X87 ≥ 35
 (106) T41 - X41 + X88 ≥ 53
 (107) T42 - X42 + X89 ≥ 54
 (108) T77 - X77 + X90 ≥ 4
 (109) - X89 + X91 ≥ 30
 (110) - X2 + X92 ≥ 24
 (111) - X13 + X92 ≥ 6
 (112) - X14 + X92 ≥ 20
 (113) - X16 + X92 ≥ 9
 (114) T19 - X19 + X92 ≥ 18
 (115) - X20 + X92 ≥ 24
 (116) - X24 + X92 ≥ 51
 (117) - X25 + X92 ≥ 23
 (118) T29 - X29 + X92 ≥ 23
 (119) - X30 + X92 ≥ 21
 (120) T34 - X34 + X92 ≥ 23
 (121) - X35 + X92 ≥ 24
 (122) - X39 + X92 ≥ 20
 (123) T45 - X45 + X92 ≥ 9
 (124) T49 - X49 + X92 ≥ 27
 (125) - X51 + X92 ≥ 12
 (126) - X55 + X92 ≥ 18
 (127) - X57 + X92 ≥ 24
 (128) T58 - X58 + X92 ≥ 29

(129) - X59 + X92 ≥ 6
 (130) T63 - X63 + X92 ≥ 30
 (131) - X66 + X92 ≥ 21
 (132) T67 - X67 + X92 ≥ 30
 (133) T71 - X71 + X92 ≥ 29
 (134) T75 - X75 + X92 ≥ 30
 (135) T78 - X78 + X92 ≥ 26
 (136) T79 - X79 + X92 ≥ 26
 (137) - X82 + X92 ≥ 66
 (138) T83 - X83 + X92 ≥ 47
 (139) - X84 + X92 ≥ 41
 (140) - X87 + X92 ≥ 14
 (141) - X88 + X92 ≥ 12
 (142) - X89 + X92 ≥ 18
 (143) T90 - X90 + X92 ≥ 8
 (144) - X91 + X92 ≥ 18
 (145) X92 ≤ 225
 (146) X7 - X16 ≥ 30

| Variable | Type | Lower Bound | Upper Bound |
|----------|------|-------------|-------------|
| T7 | C | 0 | Infinity |
| T10 | C | 0 | Infinity |
| T17 | C | 0 | Infinity |
| T18 | C | 0 | Infinity |
| T19 | C | 0 | Infinity |
| T23 | C | 0 | Infinity |
| T27 | C | 0 | Infinity |
| T28 | C | 0 | Infinity |
| T29 | C | 0 | Infinity |
| T32 | C | 0 | Infinity |
| T33 | C | 0 | Infinity |
| T34 | C | 0 | Infinity |
| T37 | C | 0 | Infinity |
| T38 | C | 0 | Infinity |
| T41 | C | 0 | Infinity |
| T42 | C | 0 | Infinity |
| T45 | C | 0 | Infinity |
| T46 | C | 0 | Infinity |
| T47 | C | 0 | Infinity |
| T48 | C | 0 | Infinity |
| T49 | C | 0 | Infinity |
| T53 | C | 0 | Infinity |
| T54 | C | 0 | Infinity |
| T58 | C | 0 | Infinity |
| T62 | C | 0 | Infinity |
| T63 | C | 0 | Infinity |
| T65 | C | 0 | Infinity |
| T67 | C | 0 | Infinity |
| T70 | C | 0 | Infinity |
| T71 | C | 0 | Infinity |
| T75 | C | 0 | Infinity |
| T77 | C | 0 | Infinity |
| T78 | C | 0 | Infinity |
| T79 | C | 0 | Infinity |
| T81 | C | 0 | Infinity |
| T83 | C | 0 | Infinity |
| T90 | C | 0 | Infinity |
| X2 | C | 0 | Infinity |
| X3 | C | 0 | Infinity |
| X5 | C | 0 | Infinity |
| X6 | C | 0 | Infinity |
| X7 | C | 0 | Infinity |
| X10 | C | 0 | Infinity |
| X11 | C | 0 | Infinity |
| X12 | C | 0 | Infinity |
| X13 | C | 0 | Infinity |
| X14 | C | 0 | Infinity |
| X16 | C | 0 | Infinity |
| X17 | C | 0 | Infinity |
| X18 | C | 0 | Infinity |
| X19 | C | 0 | Infinity |



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Lampiran 8
Print Out Data Output
Software Quantitative Systems Linear Programming

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 1 | T7 | 0 | 38524 | 0 | 38524 | M |
| 2 | T10 | 0 | 332814 | 312214 | 645028 | M |
| 3 | T17 | 0 | 66124864 | 312214 | 66437080 | M |
| 4 | T18 | 0 | 60707 | 312214 | 372921 | M |
| 5 | T19 | 0 | 165037 | 0 | 165037 | M |
| 6 | T23 | 0 | 226269 | 312214 | 538483 | M |
| 7 | T27 | 0 | 4218348 | 312214 | 4530562 | M |
| 8 | T28 | 9 | 0 | 290484 | 312214 | 372921 |
| 9 | T29 | 0 | 98099 | 0 | 98099 | M |
| 10 | T32 | 0 | 4710659 | 312214 | 5022873 | M |
| 11 | T33 | 0 | 79946 | 312214 | 392160 | M |
| 12 | T34 | 0 | 111603 | 0 | 111603 | M |
| 13 | T37 | 0 | 6905190 | 312214 | 7217404 | M |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 14 | T38 | 0 | 770847 | 312214 | 1083061 | M |
| 15 | T41 | 0 | 1087914 | 312214 | 1400128 | M |
| 16 | T42 | 11 | 0 | -M | 290484 | 312214 |
| 17 | T45 | 0 | 30482 | 0 | 30482 | M |
| 18 | T46 | 0 | 18034 | 0 | 18034 | M |
| 19 | T47 | 0 | 7995 | 0 | 7995 | M |
| 20 | T48 | 0 | 276700 | 0 | 276700 | M |
| 21 | T49 | 0 | 4462 | 0 | 4462 | M |
| 22 | T53 | 0 | 53006 | 0 | 53006 | M |
| 23 | T54 | 0 | 53006 | 0 | 53006 | M |
| 24 | T58 | 0 | 80083 | 0 | 80083 | M |
| 25 | T62 | 0 | 176673 | 0 | 176673 | M |
| 26 | T63 | 0 | 119658 | 0 | 119658 | M |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 27 | T65 | 0 | 3245343 | 0 | 3245343 | M |
| 28 | T67 | 0 | 49106 | 0 | 49106 | M |
| 29 | T70 | 0 | 331487 | 0 | 331487 | M |
| 30 | T71 | 0 | 65754 | 0 | 65754 | M |
| 31 | T75 | 0 | 209544 | 0 | 209544 | M |
| 32 | T77 | 0 | 195188 | 0 | 195188 | M |
| 33 | T78 | 0 | 9154 | 0 | 9154 | M |
| 34 | T79 | 0 | 9484 | 0 | 9484 | M |
| 35 | T81 | 0 | 731504 | 0 | 731504 | M |
| 36 | T83 | 0 | 24291 | 0 | 24291 | M |
| 37 | T90 | 0 | 77465 | 0 | 77465 | M |
| 38 | X2 | 201 | 0 | -M | 0 | O |
| 39 | X3 | 0 | 312214 | -312214 | 0 | M |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 40 | X5 | 15 | 0 | -312214 | 0 | M |
| 41 | X6 | 26 | 0 | -312214 | 0 | M |
| 42 | X7 | 114 | 0 | -38524 | 0 | O |
| 43 | X10 | 31 | 0 | -312214 | 0 | M |
| 44 | X11 | 34 | 0 | -312214 | 0 | 332814 |
| 45 | X12 | 43 | 0 | -312214 | 0 | 332814 |
| 46 | X13 | 219 | 0 | -M | 0 | O |
| 47 | X14 | 141 | 0 | -M | 0 | O |
| 48 | X16 | 84 | 0 | -38524 | 0 | O |
| 49 | X17 | 55 | 0 | -312214 | 0 | 332814 |
| 50 | X18 | 64 | 0 | -312214 | 0 | 332814 |
| 51 | X19 | 207 | 0 | -165037 | 0 | O |
| 52 | X20 | 201 | 0 | -M | 0 | O |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 53 | X22 | 76 | 0 | -312214 | 0 | 60707 |
| 54 | X23 | 78 | 0 | -312214 | 0 | 60707 |
| 55 | X24 | 174 | 0 | -M | 0 | 0 |
| 56 | X25 | 202 | 0 | -M | 0 | 0 |
| 57 | X27 | 86 | 0 | -312214 | 0 | 60707 |
| 58 | X28 | 96 | 0 | -312214 | 0 | 60707 |
| 59 | X29 | 202 | 0 | -98099 | 0 | 0 |
| 60 | X30 | 204 | 0 | -M | 0 | 0 |
| 61 | X32 | 95 | 0 | -79946 | 0 | 21730 |
| 62 | X33 | 104 | 0 | -79946 | 0 | 21730 |
| 63 | X34 | 202 | 0 | -111603 | 0 | 0 |
| 64 | X35 | 201 | 0 | -M | 0 | 0 |
| 65 | X37 | 110 | 0 | -770847 | 0 | 21730 |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 66 | X38 | 117 | 0 | -770847 | 0 | 21730 |
| 67 | X39 | 205 | 0 | -M | 0 | 0 |
| 68 | X41 | 126 | 0 | -1087914 | 0 | 21730 |
| 69 | X42 | 134 | 0 | -M | 0 | 21730 |
| 70 | X45 | 216 | 0 | -30482 | 0 | 0 |
| 71 | X46 | 142 | 0 | -4462 | 0 | 0 |
| 72 | X47 | 177 | 0 | -4462 | 0 | 0 |
| 73 | X48 | 186 | 0 | -4462 | 0 | 0 |
| 74 | X49 | 198 | 0 | -4462 | 0 | 0 |
| 75 | X50 | 98 | 0 | 0 | 0 | 332814 |
| 76 | X51 | 213 | 0 | -M | 0 | 0 |
| 77 | X53 | 135 | 0 | -53006 | 0 | 0 |
| 78 | X54 | 168 | 0 | -53006 | 0 | 0 |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 79 | X55 | 207 | 0 | -M | 0 | 0 |
| 80 | X56 | 177 | 0 | -M | 0 | 0 |
| 81 | X57 | 201 | 0 | -M | 0 | 0 |
| 82 | X58 | 196 | 0 | -80083 | 0 | 0 |
| 83 | X59 | 219 | 0 | -M | 0 | 0 |
| 84 | X61 | 167 | 0 | -119658 | 0 | 0 |
| 85 | X62 | 191 | 0 | -119658 | 0 | 0 |
| 86 | X63 | 195 | 0 | -119658 | 0 | 0 |
| 87 | X65 | 174 | 0 | -3245343 | 0 | 0 |
| 88 | X66 | 204 | 0 | -M | 0 | 0 |
| 89 | X67 | 195 | 0 | -49106 | 0 | 0 |
| 90 | X69 | 175 | 0 | 0 | 0 | 21730 |
| 91 | X70 | 187 | 0 | 0 | 0 | 21730 |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 92 | X71 | 196 | 0 | -65754 | 0 | 0 |
| 93 | X73 | 177 | 0 | 0 | 0 | 21730 |
| 94 | X74 | 189 | 0 | 0 | 0 | 21730 |
| 95 | X75 | 195 | 0 | -209544 | 0 | 0 |
| 96 | X77 | 190 | 0 | -9154 | 0 | 0 |
| 97 | X78 | 199 | 0 | -9154 | 0 | 0 |
| 98 | X79 | 199 | 0 | -9484 | 0 | 0 |
| 99 | X80 | 139 | 0 | 0 | 0 | 312214 |
| 100 | X81 | 160 | 0 | 0 | 0 | 312214 |
| 101 | X82 | 159 | 0 | -M | 0 | 0 |
| 102 | X83 | 178 | 0 | -24291 | 0 | 0 |
| 103 | X84 | 184 | 0 | -M | 0 | 0 |
| 104 | X86 | 176 | 0 | -M | 0 | 0 |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

Solution Summary for tesis

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| Variable Number | Variable Name | Solution | Opportunity Cost | Minimum Obj. Coef. | Current Obj. Coef. | Maximum Obj. Coef. |
|-----------------|---------------|----------|------------------|--------------------|--------------------|--------------------|
| 105 | X87 | 211 | 0 | -M | 0 | 0 |
| 106 | X88 | 213 | 0 | -M | 0 | 0 |
| 107 | X89 | 177 | 0 | -M | 0 | 312214 |
| 108 | X90 | 217 | 0 | -77465 | 0 | 0 |
| 109 | X91 | 207 | 0 | -M | 0 | 312214 |
| 110 | X92 | 225 | 0 | -M | 0 | 312214 |

Minimized OBJ = 6005250 Iteration = 119 Elapsed CPU seconds = 16.03125

