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APPENDICES

Appendix A. Machine Operating Costs, Depreciation Costs and Delivery Costs
Tables

Table A.1 Machine operating costs and depreciation cost in case fuel prices 15.00 – 39.99 Baht

| Fuel prices | Recycling depth (cm.) | Unit | Machine operating costs (Baht/m ²) | Depreciation costs (Baht/) | | Total (Baht) | |
|-------------|-----------------------|----------------|--|----------------------------|-------|--------------|-------|
| | | | | Normal | Rainy | Normal | Rainy |
| 15.00-15.99 | 15 | m ² | 21.44 | 10.73 | 13.41 | 32.17 | 34.85 |
| | 20 | m ² | 26.80 | 13.41 | 16.76 | 40.21 | 43.56 |
| | 25 | m ² | 35.74 | 17.88 | 22.34 | 53.62 | 58.08 |
| 16.00-16.99 | 15 | m ² | 21.58 | 10.73 | 13.41 | 32.31 | 35.00 |
| | 20 | m ² | 26.98 | 13.41 | 16.76 | 40.39 | 43.74 |
| | 25 | m ² | 35.97 | 17.88 | 22.34 | 53.85 | 58.31 |
| 17.00-17.99 | 15 | m ² | 21.73 | 10.73 | 13.41 | 32.46 | 35.14 |
| | 20 | m ² | 27.16 | 13.41 | 16.76 | 40.57 | 43.92 |
| | 25 | m ² | 36.21 | 17.88 | 22.34 | 54.09 | 58.55 |
| 18.00-18.99 | 15 | m ² | 21.87 | 10.73 | 13.41 | 32.60 | 35.28 |
| | 20 | m ² | 27.33 | 13.41 | 16.76 | 40.74 | 44.10 |
| | 25 | m ² | 36.45 | 17.88 | 22.34 | 54.33 | 58.79 |
| 19.00-19.99 | 15 | m ² | 22.01 | 10.73 | 13.41 | 32.74 | 35.42 |
| | 20 | m ² | 27.51 | 13.41 | 16.76 | 40.92 | 44.27 |
| | 25 | m ² | 36.68 | 17.88 | 22.34 | 54.56 | 59.02 |
| 20.00-20.99 | 15 | m ² | 22.15 | 10.73 | 13.41 | 32.88 | 35.56 |
| | 20 | m ² | 27.69 | 13.41 | 16.76 | 41.10 | 44.45 |
| | 25 | m ² | 36.92 | 17.88 | 22.34 | 54.80 | 59.26 |
| 21.00-21.99 | 15 | m ² | 22.29 | 10.73 | 13.41 | 33.02 | 35.71 |
| | 20 | m ² | 27.87 | 13.41 | 16.76 | 41.28 | 44.63 |
| | 25 | m ² | 37.15 | 17.88 | 22.34 | 55.03 | 59.49 |
| 22.00-22.99 | 15 | m ² | 22.43 | 10.73 | 13.41 | 33.16 | 35.85 |
| | 20 | m ² | 28.04 | 13.41 | 16.76 | 41.45 | 44.81 |
| | 25 | m ² | 37.39 | 17.88 | 22.34 | 55.27 | 59.73 |
| 23.00-23.99 | 15 | m ² | 22.58 | 10.73 | 13.41 | 33.31 | 35.99 |
| | 20 | m ² | 28.22 | 13.41 | 16.76 | 41.63 | 44.98 |
| | 25 | m ² | 37.63 | 17.88 | 22.34 | 55.51 | 59.97 |
| 24.00-24.99 | 15 | m ² | 22.72 | 10.73 | 13.41 | 33.45 | 36.13 |
| | 20 | m ² | 28.40 | 13.41 | 16.76 | 41.81 | 45.16 |
| | 25 | m ² | 37.86 | 17.88 | 22.34 | 55.74 | 60.20 |
| 25.00-25.99 | 15 | m ² | 22.86 | 10.73 | 13.41 | 33.59 | 36.27 |
| | 20 | m ² | 28.58 | 13.41 | 16.76 | 41.98 | 45.33 |
| | 25 | m ² | 38.10 | 17.88 | 22.34 | 55.98 | 60.44 |

Table A.1 Machine operating costs and depreciation cost in case fuel prices 15.00 – 39.99 Baht (con)

| Fuel prices | Recycling depth (cm.) | Unit | Machine operating costs (Baht/m ²) | Depreciation costs (Baht/) | | Total (Baht) | |
|-------------|-----------------------|----------------|--|----------------------------|-------|--------------|-------|
| | | | | Normal | Rainy | Normal | Rainy |
| 26.00-26.99 | 15 | m ² | 23.00 | 10.73 | 13.41 | 33.73 | 36.41 |
| | 20 | m ² | 28.75 | 13.41 | 16.76 | 42.16 | 45.51 |
| | 25 | m ² | 38.34 | 17.88 | 22.34 | 56.22 | 60.68 |
| 27.00-27.99 | 15 | m ² | 23.14 | 10.73 | 13.41 | 33.87 | 36.55 |
| | 20 | m ² | 28.93 | 13.41 | 16.76 | 42.34 | 45.69 |
| | 25 | m ² | 38.57 | 17.88 | 22.34 | 56.45 | 60.91 |
| 28.00-28.99 | 15 | m ² | 23.29 | 10.73 | 13.41 | 34.02 | 36.7 |
| | 20 | m ² | 29.11 | 13.41 | 16.76 | 42.52 | 45.87 |
| | 25 | m ² | 38.81 | 17.88 | 22.34 | 56.69 | 61.15 |
| 29.00-29.99 | 15 | m ² | 23.43 | 10.73 | 13.41 | 34.16 | 36.84 |
| | 20 | m ² | 29.29 | 13.41 | 16.76 | 42.7 | 46.04 |
| | 25 | m ² | 39.05 | 17.88 | 22.34 | 56.93 | 61.39 |
| 30.00-30.99 | 15 | m ² | 23.57 | 10.73 | 13.41 | 34.3 | 36.98 |
| | 20 | m ² | 29.46 | 13.41 | 16.76 | 42.87 | 46.22 |
| | 25 | m ² | 39.28 | 17.88 | 22.34 | 57.16 | 61.62 |
| 31.00-31.99 | 15 | m ² | 23.71 | 10.73 | 13.41 | 34.44 | 37.13 |
| | 20 | m ² | 29.64 | 13.41 | 16.76 | 43.05 | 46.40 |
| | 25 | m ² | 39.52 | 17.88 | 22.34 | 57.40 | 61.86 |
| 32.00-32.99 | 15 | m ² | 23.85 | 10.73 | 13.41 | 34.58 | 37.27 |
| | 20 | m ² | 29.82 | 13.41 | 16.76 | 43.23 | 46.58 |
| | 25 | m ² | 39.76 | 17.88 | 22.34 | 57.64 | 62.10 |
| 33.00-33.99 | 15 | m ² | 24.00 | 10.73 | 13.41 | 34.73 | 37.41 |
| | 20 | m ² | 30.00 | 13.41 | 16.76 | 43.41 | 46.76 |
| | 25 | m ² | 39.99 | 17.88 | 22.34 | 57.87 | 62.33 |
| 34.00-34.99 | 15 | m ² | 24.14 | 10.73 | 13.41 | 34.87 | 37.55 |
| | 20 | m ² | 30.17 | 13.41 | 16.76 | 43.58 | 46.94 |
| | 25 | m ² | 40.23 | 17.88 | 22.34 | 58.11 | 62.57 |
| 35.00-35.99 | 15 | m ² | 24.28 | 10.73 | 13.41 | 35.01 | 37.69 |
| | 20 | m ² | 30.35 | 13.41 | 16.76 | 43.76 | 47.11 |
| | 25 | m ² | 40.47 | 17.88 | 22.34 | 58.35 | 62.81 |
| 36.00-36.99 | 15 | m ² | 24.42 | 10.73 | 13.41 | 35.15 | 37.83 |
| | 20 | m ² | 30.53 | 13.41 | 16.76 | 43.94 | 47.29 |
| | 25 | m ² | 40.70 | 17.88 | 22.34 | 58.58 | 63.04 |
| 37.00-37.99 | 15 | m ² | 24.56 | 10.73 | 13.41 | 35.29 | 37.98 |
| | 20 | m ² | 30.71 | 13.41 | 16.76 | 44.12 | 47.47 |
| | 25 | m ² | 40.94 | 17.88 | 22.34 | 58.82 | 63.28 |

Table A.1 Machine operating costs and depreciation cost in case fuel prices 15.00 – 39.99 Baht (con)

| Fuel prices | Recycling depth (cm.) | Unit | Machine operating costs (Baht/m ²) | Depreciation costs (Baht/) | | Total (Baht) | |
|-------------|-----------------------|----------------|--|----------------------------|-------|--------------|-------|
| | | | | Normal | Rainy | Normal | Rainy |
| 38.00-38.99 | 15 | m ² | 24.71 | 10.73 | 13.41 | 35.44 | 38.12 |
| | 20 | m ² | 30.88 | 13.41 | 16.76 | 44.29 | 47.65 |
| | 25 | m ² | 41.18 | 17.88 | 22.34 | 59.06 | 63.52 |
| 39.00-39.99 | 15 | m ² | 24.85 | 10.73 | 13.41 | 35.58 | 38.26 |
| | 20 | m ² | 31.06 | 13.41 | 16.76 | 44.47 | 47.82 |
| | 25 | m ² | 41.41 | 17.88 | 22.34 | 59.29 | 63.75 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Delivery costs can be categorized by type of truck and fuel prices level. The delivery costs for 10 truck and trailer (total weight not more than 47 ton) in case flat location, asphaltic pavement, normal condition, and fuel prices in range 25.00 – 25.99 can be shown in table A.2 and for fuel prices in range 29.00 – 29.99 can be shown in table A.3

Table A.2 Delivery costs in case of fuel prices 25.00 -25.99 Baht/liter

| Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) |
|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|
| 1 | 3.01 | 4.22 | 46 | 54.41 | 76.17 | 91 | 107.26 | 150.17 |
| 2 | 4.08 | 5.71 | 47 | 55.58 | 77.81 | 92 | 108.41 | 151.78 |
| 3 | 5.15 | 7.21 | 48 | 56.75 | 79.45 | 93 | 109.59 | 153.43 |
| 4 | 6.22 | 8.70 | 49 | 57.93 | 81.10 | 94 | 110.77 | 155.08 |
| 5 | 7.28 | 10.20 | 50 | 59.10 | 82.74 | 95 | 111.95 | 156.73 |
| 6 | 8.35 | 11.69 | 51 | 60.28 | 84.39 | 96 | 113.13 | 158.39 |
| 7 | 9.42 | 13.19 | 52 | 61.45 | 86.03 | 97 | 114.29 | 160.01 |
| 8 | 10.49 | 14.68 | 53 | 62.62 | 87.67 | 98 | 115.48 | 161.67 |
| 9 | 11.56 | 16.18 | 54 | 63.80 | 89.31 | 99 | 116.64 | 163.29 |
| 10 | 12.63 | 17.68 | 55 | 64.97 | 90.96 | 100 | 117.83 | 164.96 |
| 11 | 13.69 | 19.17 | 56 | 66.14 | 92.60 | 101 | 118.99 | 166.58 |
| 12 | 14.76 | 20.67 | 57 | 67.32 | 94.24 | 102 | 120.18 | 168.25 |
| 13 | 15.83 | 22.16 | 58 | 68.49 | 95.89 | 103 | 121.34 | 169.88 |
| 14 | 16.90 | 23.66 | 59 | 69.67 | 97.54 | 104 | 122.51 | 171.51 |
| 15 | 18.00 | 25.20 | 60 | 70.85 | 99.19 | 105 | 123.70 | 173.19 |
| 16 | 19.18 | 26.85 | 61 | 72.02 | 100.83 | 106 | 124.87 | 174.82 |
| 17 | 20.35 | 28.49 | 62 | 73.19 | 102.47 | 107 | 126.04 | 176.46 |
| 18 | 21.52 | 30.13 | 63 | 74.37 | 104.11 | 108 | 127.21 | 178.09 |
| 19 | 22.70 | 31.78 | 64 | 75.54 | 105.76 | 109 | 128.38 | 179.73 |
| 20 | 23.87 | 33.42 | 65 | 76.71 | 107.40 | 110 | 129.55 | 181.37 |
| 21 | 25.05 | 35.07 | 66 | 77.89 | 109.05 | 111 | 130.72 | 183.01 |
| 22 | 26.22 | 36.71 | 67 | 79.06 | 110.69 | 112 | 131.90 | 184.66 |
| 23 | 27.40 | 38.36 | 68 | 80.23 | 112.33 | 113 | 133.07 | 186.30 |
| 24 | 28.57 | 40.00 | 69 | 81.41 | 113.97 | 114 | 134.25 | 187.95 |
| 25 | 29.74 | 41.64 | 70 | 82.58 | 115.62 | 115 | 135.43 | 189.60 |
| 26 | 30.92 | 43.28 | 71 | 83.76 | 117.27 | 116 | 136.61 | 191.25 |
| 27 | 32.09 | 44.93 | 72 | 84.94 | 118.92 | 117 | 137.79 | 192.90 |
| 28 | 33.27 | 46.58 | 73 | 86.11 | 120.55 | 118 | 138.97 | 194.55 |
| 29 | 34.44 | 48.22 | 74 | 87.29 | 122.21 | 119 | 140.15 | 196.21 |
| 30 | 35.62 | 49.86 | 75 | 88.46 | 123.85 | 120 | 141.29 | 197.81 |
| 31 | 36.79 | 51.51 | 76 | 89.63 | 125.49 | 121 | 142.48 | 199.47 |
| 32 | 37.96 | 53.15 | 77 | 90.81 | 127.13 | 122 | 143.67 | 201.13 |
| 33 | 39.14 | 54.79 | 78 | 91.98 | 128.77 | 123 | 144.81 | 202.74 |
| 34 | 40.13 | 56.44 | 79 | 93.16 | 130.42 | 124 | 146.00 | 204.40 |
| 35 | 41.48 | 58.08 | 80 | 94.33 | 132.07 | 125 | 147.19 | 206.07 |
| 36 | 42.66 | 59.73 | 81 | 95.51 | 133.72 | 126 | 148.34 | 207.68 |
| 37 | 43.83 | 61.37 | 82 | 96.68 | 135.35 | 127 | 149.53 | 209.35 |
| 38 | 45.01 | 63.01 | 83 | 97.86 | 137.00 | 128 | 150.73 | 211.02 |
| 39 | 46.19 | 64.66 | 84 | 99.02 | 138.63 | 129 | 151.88 | 212.63 |
| 40 | 47.36 | 66.30 | 85 | 100.21 | 140.30 | 130 | 153.08 | 214.31 |
| 41 | 48.53 | 67.94 | 86 | 101.38 | 141.93 | 131 | 154.23 | 215.92 |
| 42 | 49.71 | 69.59 | 87 | 102.55 | 143.57 | 132 | 155.38 | 217.53 |
| 43 | 50.88 | 71.23 | 88 | 103.72 | 145.21 | 133 | 156.58 | 219.21 |
| 44 | 52.06 | 72.88 | 89 | 104.89 | 146.85 | 134 | 157.73 | 220.83 |
| 45 | 53.23 | 74.52 | 90 | 106.09 | 148.52 | 135 | 158.94 | 222.51 |

Table A.2 Delivery costs in case of fuel prices 25.00 -25.99 Baht/liter (con)

| Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) |
|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|
| 136 | 160.09 | 224.13 | 166 | 195.33 | 273.46 | 196 | 230.58 | 322.81 |
| 137 | 161.30 | 225.82 | 167 | 196.51 | 275.11 | 197 | 231.79 | 324.50 |
| 138 | 162.46 | 227.44 | 168 | 197.69 | 276.76 | 198 | 232.89 | 326.05 |
| 139 | 163.62 | 229.06 | 169 | 198.87 | 278.42 | 199 | 234.10 | 327.74 |
| 140 | 164.77 | 230.68 | 170 | 200.05 | 280.07 | 200 | 235.31 | 329.44 |
| 141 | 165.99 | 232.38 | 171 | 201.24 | 281.73 | | | |
| 142 | 167.15 | 234.00 | 172 | 202.42 | 283.39 | | | |
| 143 | 168.31 | 235.63 | 173 | 203.53 | 284.94 | | | |
| 144 | 169.52 | 237.33 | 174 | 204.71 | 286.60 | | | |
| 145 | 170.69 | 238.96 | 175 | 205.90 | 288.26 | | | |
| 146 | 171.85 | 240.59 | 176 | 207.09 | 289.92 | | | |
| 147 | 173.01 | 242.22 | 177 | 208.28 | 291.59 | | | |
| 148 | 174.18 | 243.85 | 178 | 209.47 | 293.25 | | | |
| 149 | 175.40 | 245.56 | 179 | 210.57 | 294.80 | | | |
| 150 | 176.57 | 247.19 | 180 | 211.76 | 296.47 | | | |
| 151 | 177.73 | 248.83 | 181 | 212.95 | 298.14 | | | |
| 152 | 178.90 | 250.46 | 182 | 214.15 | 299.81 | | | |
| 153 | 180.07 | 252.10 | 183 | 215.34 | 301.48 | | | |
| 154 | 181.24 | 253.73 | 184 | 216.45 | 303.03 | | | |
| 155 | 182.41 | 255.37 | 185 | 217.64 | 304.70 | | | |
| 156 | 183.58 | 257.01 | 186 | 218.84 | 306.38 | | | |
| 157 | 184.75 | 258.65 | 187 | 220.04 | 308.06 | | | |
| 158 | 185.92 | 260.29 | 188 | 221.14 | 309.60 | | | |
| 159 | 187.09 | 261.93 | 189 | 222.35 | 311.28 | | | |
| 160 | 188.27 | 263.58 | 190 | 223.55 | 312.97 | | | |
| 161 | 189.44 | 265.22 | 191 | 224.75 | 314.65 | | | |
| 162 | 190.62 | 266.86 | 192 | 225.85 | 316.20 | | | |
| 163 | 191.79 | 268.51 | 193 | 227.06 | 317.88 | | | |
| 164 | 192.97 | 270.16 | 194 | 228.27 | 319.57 | | | |
| 165 | 194.15 | 271.81 | 195 | 229.37 | 321.12 | | | |

Source: Standard estimation for road, bridge, and channel construction (2007)

For distance 201 to 1,000 km., delivery costs is 1.18 Baht/ton or 1.65 Baht/km.

Table A.3 Delivery costs in case of fuel prices 29.00 -29.99 Baht/liter

| Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) |
|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|
| 1 | 3.11 | 4.36 | 46 | 59.14 | 82.79 | 91 | 116.62 | 163.26 |
| 2 | 4.29 | 6.00 | 47 | 60.41 | 84.58 | 92 | 117.87 | 165.02 |
| 3 | 5.46 | 7.64 | 48 | 61.68 | 86.36 | 93 | 119.15 | 166.81 |
| 4 | 6.63 | 9.28 | 49 | 62.96 | 88.15 | 94 | 120.43 | 168.61 |
| 5 | 7.80 | 10.92 | 50 | 64.24 | 89.94 | 95 | 121.72 | 170.40 |
| 6 | 8.97 | 12.56 | 51 | 65.52 | 91.73 | 96 | 123.00 | 172.20 |
| 7 | 10.14 | 14.20 | 52 | 66.79 | 93.51 | 97 | 124.26 | 173.97 |
| 8 | 11.31 | 15.84 | 53 | 68.07 | 95.30 | 98 | 125.55 | 175.77 |
| 9 | 12.48 | 17.48 | 54 | 69.35 | 97.09 | 99 | 126.81 | 177.54 |
| 10 | 13.65 | 19.11 | 55 | 70.63 | 98.88 | 100 | 128.11 | 179.35 |
| 11 | 14.82 | 20.75 | 56 | 71.90 | 100.66 | 101 | 129.37 | 181.12 |
| 12 | 15.99 | 22.39 | 57 | 73.18 | 102.45 | 102 | 130.66 | 182.93 |
| 13 | 17.17 | 24.03 | 58 | 74.45 | 104.24 | 103 | 131.93 | 184.70 |
| 14 | 18.34 | 25.67 | 59 | 75.73 | 106.03 | 104 | 133.20 | 186.48 |
| 15 | 19.54 | 27.36 | 60 | 77.02 | 107.82 | 105 | 134.50 | 188.30 |
| 16 | 20.82 | 29.15 | 61 | 78.29 | 109.61 | 106 | 135.77 | 190.08 |
| 17 | 22.10 | 30.94 | 62 | 79.57 | 111.39 | 107 | 137.04 | 191.86 |
| 18 | 23.37 | 32.72 | 63 | 80.84 | 113.18 | 108 | 138.31 | 193.64 |
| 19 | 24.65 | 34.51 | 64 | 82.12 | 114.97 | 109 | 139.58 | 195.42 |
| 20 | 25.93 | 36.30 | 65 | 83.39 | 116.75 | 110 | 140.86 | 197.20 |
| 21 | 27.21 | 38.09 | 66 | 84.68 | 118.55 | 111 | 142.13 | 198.99 |
| 22 | 28.48 | 39.87 | 67 | 85.95 | 120.33 | 112 | 143.41 | 200.78 |
| 23 | 29.76 | 41.67 | 68 | 87.22 | 122.11 | 113 | 144.69 | 202.56 |
| 24 | 31.04 | 43.45 | 69 | 88.50 | 123.90 | 114 | 145.97 | 204.36 |
| 25 | 32.31 | 45.24 | 70 | 89.78 | 125.69 | 115 | 147.25 | 206.15 |
| 26 | 33.59 | 47.03 | 71 | 91.06 | 127.49 | 116 | 148.53 | 207.94 |
| 27 | 34.87 | 28.81 | 72 | 92.34 | 129.28 | 117 | 149.81 | 209.74 |
| 28 | 36.15 | 50.60 | 73 | 93.61 | 131.06 | 118 | 151.10 | 211.54 |
| 29 | 37.42 | 52.39 | 74 | 94.90 | 132.86 | 119 | 152.38 | 213.34 |
| 30 | 38.70 | 54.18 | 75 | 96.17 | 134.64 | 120 | 153.63 | 215.08 |
| 31 | 39.98 | 55.97 | 76 | 97.45 | 136.42 | 121 | 154.92 | 216.89 |
| 32 | 41.25 | 57.75 | 77 | 98.72 | 138.21 | 122 | 156.21 | 218.69 |
| 33 | 42.53 | 59.54 | 78 | 100.00 | 140.00 | 123 | 157.46 | 220.44 |
| 34 | 43.81 | 61.33 | 79 | 101.28 | 141.79 | 124 | 158.75 | 222.25 |
| 35 | 45.08 | 63.12 | 80 | 102.56 | 143.58 | 125 | 160.04 | 224.06 |
| 36 | 46.36 | 64.91 | 81 | 103.84 | 145.38 | 126 | 161.29 | 225.81 |
| 37 | 47.64 | 66.69 | 82 | 105.11 | 147.15 | 127 | 162.59 | 227.62 |
| 38 | 48.91 | 68.48 | 83 | 106.39 | 148.95 | 128 | 163.89 | 229.44 |
| 39 | 50.20 | 70.27 | 84 | 107.66 | 150.72 | 129 | 165.14 | 231.20 |
| 40 | 51.47 | 72.06 | 85 | 108.95 | 152.53 | 130 | 166.44 | 233.02 |
| 41 | 52.75 | 73.85 | 86 | 110.22 | 154.31 | 131 | 167.69 | 234.77 |
| 42 | 54.03 | 75.64 | 87 | 111.49 | 156.09 | 132 | 168.95 | 236.53 |
| 43 | 55.30 | 77.42 | 88 | 112.76 | 157.87 | 133 | 170.25 | 238.36 |
| 44 | 56.58 | 79.21 | 89 | 114.04 | 159.66 | 134 | 171.51 | 240.11 |
| 45 | 57.86 | 81.00 | 90 | 115.34 | 161.47 | 135 | 172.82 | 241.94 |

Table A.3 Delivery costs in case of fuel prices 29.00 -29.99 Baht/liter (con)

| Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) | Delivery distance (km.) | Delivery costs (Baht/ton) | Delivery costs (Baht/ton) |
|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|
| 136 | 174.07 | 243.70 | 166 | 212.39 | 297.35 | 196 | 250.73 | 351.02 |
| 137 | 175.39 | 245.54 | 167 | 213.68 | 299.15 | 197 | 252.04 | 352.85 |
| 138 | 176.64 | 247.30 | 168 | 214.96 | 300.94 | 198 | 253.24 | 354.54 |
| 139 | 177.90 | 249.07 | 169 | 216.24 | 302.74 | 199 | 254.56 | 356.38 |
| 140 | 179.17 | 250.83 | 170 | 217.53 | 304.54 | 200 | 255.87 | 358.22 |
| 141 | 180.48 | 252.67 | 171 | 218.82 | 306.34 | | | |
| 142 | 181.74 | 254.44 | 172 | 220.10 | 308.15 | | | |
| 143 | 183.01 | 256.21 | 173 | 221.31 | 309.83 | | | |
| 144 | 184.33 | 258.06 | 174 | 222.60 | 311.64 | | | |
| 145 | 185.59 | 259.83 | 175 | 223.89 | 313.44 | | | |
| 146 | 186.86 | 261.60 | 176 | 225.18 | 315.25 | | | |
| 147 | 188.12 | 263.37 | 177 | 226.47 | 317.06 | | | |
| 148 | 189.39 | 265.15 | 178 | 227.77 | 318.87 | | | |
| 149 | 190.72 | 267.01 | 179 | 228.97 | 320.56 | | | |
| 150 | 191.99 | 268.78 | 180 | 230.27 | 322.37 | | | |
| 151 | 193.26 | 270.56 | 181 | 231.56 | 324.19 | | | |
| 152 | 194.53 | 272.34 | 182 | 232.86 | 326.00 | | | |
| 153 | 195.80 | 274.12 | 183 | 234.16 | 327.82 | | | |
| 154 | 197.07 | 275.90 | 184 | 235.36 | 329.51 | | | |
| 155 | 198.34 | 277.68 | 185 | 236.66 | 331.33 | | | |
| 156 | 199.62 | 279.46 | 186 | 237.96 | 333.15 | | | |
| 157 | 200.89 | 281.24 | 187 | 239.26 | 334.97 | | | |
| 158 | 202.16 | 283.03 | 188 | 240.47 | 336.66 | | | |
| 159 | 203.44 | 284.82 | 189 | 241.77 | 338.48 | | | |
| 160 | 204.72 | 286.60 | 190 | 243.08 | 340.31 | | | |
| 161 | 205.99 | 288.39 | 191 | 244.39 | 342.14 | | | |
| 162 | 207.27 | 290.18 | 192 | 245.59 | 343.83 | | | |
| 163 | 208.55 | 291.97 | 193 | 246.90 | 345.66 | | | |
| 164 | 209.83 | 293.76 | 194 | 248.21 | 347.49 | | | |
| 165 | 211.11 | 295.56 | 195 | 249.41 | 349.18 | | | |

Source: Standard estimation for road, bridge, and channel construction (2007)

For distance 201 to 1,000 km., delivery costs is 1.28 Baht/ton or 1.79 Baht/km.

Appendix B. Factor F Tables for Road Construction

Factor F can be found by the following:

1. In case of direct costs of project is in defining range of direct costs in Factor table. Desired Factor F can be found by interpolation method as follows:

$$\text{Factor F of direct costs} \quad A = D - [(D-E) \times (A-B) / (C-B)]$$

| | | | | |
|----|----------------------------------|---|---|------|
| by | Desired Factor F of direct costs | = | A | Baht |
| | Direct costs less than A | = | B | Baht |
| | Direct costs higher than A | = | C | Baht |
| | Factor F of direct costs B | = | D | Baht |
| | Factor F of direct costs C | = | E | Baht |

2. In case of construction area is in rainy province. It has to use Factor F in case Factor F (rainy1) or Factor F (rainy2) from Factor F table.

2.1 Use Factor F (rainy1) for area is in the provinces e.g. Chanthaburi, Chumphon, Chiang Rai, Trang, Nakhon Phanom, Nakhon Si Thammarat, Prachin Buri, Pattani, Prachin Buri, Pattani, Phatthalung, Songkhla, Satun, Surat Thani, and/or Nong Khai

2.2 Use Factor F (rainy2) for area is in the provinces e.g. Trat, Narathiwat, Phangnga, Phuket, Yala, and/or Ranong.

3. Factor F tables can use with all fuel prices, but it will be changed by interest rate, advance payment, retention money, and VAT.

4. The interest rate is average minimum lower rate (MLR) of at least 3 big commercial bank.

Table B.1 Factor F case 1

| | | | |
|---------------------|-----|---------------|-----|
| Advancement payment | 0 % | Interest rate | 7 % |
| Retention money | 0 % | VAT | 7 % |

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy 2 |
|------------------------------|--------------------------------|--------------------------|---------------|--------------|----------------|------|-------------|-----------------------|------------------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 1.1667 | 5.5000 | 24.9028 | 1.2490 | 1.07 | 1.3365 | 1.3574 | 1.3784 |
| 10 | 14.0410 | 1.1667 | 5.5000 | 20.7076 | 1.2071 | 1.07 | 1.2916 | 1.3138 | 1.3360 |
| 20 | 9.7858 | 1.1667 | 5.5000 | 16.4525 | 1.1645 | 1.07 | 1.2460 | 1.2675 | 1.2889 |
| 30 | 6.9082 | 1.1667 | 5.5000 | 13.5749 | 1.1357 | 1.07 | 1.2153 | 1.2341 | 1.2530 |
| 40 | 6.9899 | 1.1667 | 5.0000 | 13.1565 | 1.1316 | 1.07 | 1.2108 | 1.2317 | 1.2526 |
| 50 | 6.4552 | 1.1667 | 5.0000 | 12.6218 | 1.1262 | 1.07 | 1.2051 | 1.2262 | 1.2474 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.2 Factor F case 2

| | | | |
|---------------------|-----|---------------|-----|
| Advancement payment | 5 % | Interest rate | 7 % |
| Retention money | 0 % | VAT | 7 % |

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy 2 |
|------------------------------|--------------------------------|--------------------------|---------------|--------------|----------------|------|-------------|-----------------------|------------------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 1.0354 | 5.5000 | 24.7715 | 1.2477 | 1.07 | 1.3351 | 1.3560 | 1.3770 |
| 10 | 14.0410 | 0.9917 | 5.5000 | 20.5326 | 1.2053 | 1.07 | 1.2897 | 1.3119 | 1.3341 |
| 20 | 9.7858 | 0.9479 | 5.5000 | 16.2337 | 1.1623 | 1.07 | 1.2437 | 1.2652 | 1.2866 |
| 30 | 6.9082 | 0.9479 | 5.5000 | 13.3561 | 1.1336 | 1.07 | 1.2129 | 1.2318 | 1.2507 |
| 40 | 6.9899 | 0.8896 | 5.0000 | 12.8795 | 1.1288 | 1.07 | 1.2078 | 1.2287 | 1.2497 |
| 50 | 6.4552 | 0.8604 | 5.0000 | 12.3156 | 1.1232 | 1.07 | 1.2018 | 1.2230 | 1.2441 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.3 Factor F case 3

Advancement payment 10 % Interest rate 7 %
 Retention money 0 % VAT 7 %

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy 2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|------------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 0.9042 | 5.5000 | 24.6403 | 1.2464 | 1.07 | 1.3337 | 1.3546 | 1.3756 |
| 10 | 14.0410 | 0.8167 | 5.5000 | 20.3576 | 1.2036 | 1.07 | 1.2878 | 1.3100 | 1.3322 |
| 20 | 9.7858 | 0.7292 | 5.5000 | 16.0150 | 1.1601 | 1.07 | 1.2414 | 1.2628 | 1.2843 |
| 30 | 6.9082 | 0.7292 | 5.5000 | 13.1374 | 1.1314 | 1.07 | 1.2105 | 1.2295 | 1.2483 |
| 40 | 6.9899 | 0.6125 | 5.0000 | 12.6024 | 1.1260 | 1.07 | 1.2048 | 1.2258 | 1.2467 |
| 50 | 6.4552 | 0.5542 | 5.0000 | 12.0093 | 1.1201 | 1.07 | 1.1985 | 1.2197 | 1.2409 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.4 Factor F case 4

Advancement payment 15 % Interest rate 7 %
 Retention money 0 % VAT 7 %

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy 2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|------------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 0.7729 | 5.5000 | 24.5090 | 1.2451 | 1.07 | 1.3322 | 1.3532 | 1.3742 |
| 10 | 14.0410 | 0.6417 | 5.5000 | 20.1826 | 1.2018 | 1.07 | 1.2860 | 1.3081 | 1.3303 |
| 20 | 9.7858 | 0.5104 | 5.5000 | 15.7962 | 1.1580 | 1.07 | 1.2390 | 1.2605 | 1.2819 |
| 30 | 6.9082 | 0.5104 | 5.5000 | 12.9186 | 1.1292 | 1.07 | 1.2082 | 1.2271 | 1.2460 |
| 40 | 6.9899 | 0.3354 | 5.0000 | 12.3253 | 1.1233 | 1.07 | 1.2019 | 1.2228 | 1.2437 |
| 50 | 6.4552 | 0.2479 | 5.0000 | 11.7031 | 1.1170 | 1.07 | 1.1952 | 1.2164 | 1.2376 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.5 Factor F case 5

Advancement payment 0% Interest rate 7%
Retention money 5% VAT 7%

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|-----------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 1.2396 | 5.5000 | 24.9757 | 1.2498 | 1.07 | 1.3372 | 1.3582 | 1.3792 |
| 10 | 14.0410 | 1.2833 | 5.5000 | 20.8243 | 1.2082 | 1.07 | 1.2928 | 1.3150 | 1.3372 |
| 20 | 9.7858 | 1.3271 | 5.5000 | 16.6129 | 1.1661 | 1.07 | 1.2478 | 1.2692 | 1.2907 |
| 30 | 6.9082 | 1.3271 | 5.5000 | 13.7353 | 1.1374 | 1.07 | 1.2170 | 1.2359 | 1.2547 |
| 40 | 6.9899 | 1.3854 | 5.0000 | 13.3453 | 1.1338 | 1.07 | 1.2131 | 1.2340 | 1.2550 |
| 50 | 6.4552 | 1.4146 | 5.0000 | 12.8698 | 1.1287 | 1.07 | 1.2077 | 1.2289 | 1.2501 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.6 Factor F case 6

Advancement payment 0% Interest rate 7%
Retention money 10% VAT 7%

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|-----------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 1.3125 | 5.5000 | 25.0486 | 1.2505 | 1.07 | 1.3380 | 1.3590 | 1.3800 |
| 10 | 14.0410 | 1.4000 | 5.5000 | 20.9410 | 1.2094 | 1.07 | 1.2941 | 1.3163 | 1.3384 |
| 20 | 9.7858 | 1.4875 | 5.5000 | 16.7733 | 1.1677 | 1.07 | 1.2495 | 1.2709 | 1.2924 |
| 30 | 6.9082 | 1.4875 | 5.5000 | 13.8957 | 1.1390 | 1.07 | 1.2187 | 1.2376 | 1.2565 |
| 40 | 6.9899 | 1.6042 | 5.0000 | 13.5940 | 1.1359 | 1.07 | 1.2155 | 1.2364 | 1.2573 |
| 50 | 6.4552 | 1.6625 | 5.0000 | 13.1177 | 1.1312 | 1.07 | 1.2104 | 1.2315 | 1.2527 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.7 Factor F case 7

Advancement payment 5% Interest rate 7%
Retention money 5% VAT 7%

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|-----------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 1.1083 | 5.5000 | 24.5444 | 1.2484 | 1.07 | 1.3358 | 1.3568 | 1.3778 |
| 10 | 14.0410 | 1.1083 | 5.5000 | 20.6493 | 1.2065 | 1.07 | 1.2909 | 1.3131 | 1.3353 |
| 20 | 9.7858 | 1.1083 | 5.5000 | 16.3941 | 1.1639 | 1.07 | 1.2454 | 1.2669 | 1.2883 |
| 30 | 6.9082 | 1.1083 | 5.5000 | 13.5165 | 1.1352 | 1.07 | 1.2146 | 1.2335 | 1.2524 |
| 40 | 6.9899 | 1.1083 | 5.0000 | 13.0982 | 1.1310 | 1.07 | 1.2102 | 1.2311 | 1.2520 |
| 50 | 6.4552 | 1.1083 | 5.0000 | 12.5635 | 1.1256 | 1.07 | 1.2044 | 1.2256 | 1.2468 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.8 Factor F case 8

Advancement payment 10% Interest rate 7%
Retention money 5% VAT 7%

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|-----------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 0.9771 | 5.5000 | 24.7132 | 1.2471 | 1.07 | 1.3344 | 1.3554 | 1.3764 |
| 10 | 14.0410 | 0.9333 | 5.5000 | 20.4743 | 1.2047 | 1.07 | 1.2591 | 1.3113 | 1.3335 |
| 20 | 9.7858 | 0.8896 | 5.5000 | 16.1754 | 1.1618 | 1.07 | 1.2431 | 1.2645 | 1.2860 |
| 30 | 6.9082 | 0.8896 | 5.5000 | 13.2978 | 1.1330 | 1.07 | 1.2123 | 1.2312 | 1.2501 |
| 40 | 6.9899 | 0.8313 | 5.0000 | 12.8211 | 1.1282 | 1.07 | 1.2072 | 1.2281 | 1.2490 |
| 50 | 6.4552 | 0.8021 | 5.0000 | 12.2573 | 1.1226 | 1.07 | 1.2012 | 1.2223 | 1.2435 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.9 Factor F case 9

| | | | |
|---------------------|------|---------------|-----|
| Advancement payment | 15 % | Interest rate | 7 % |
| Retention money | 5 % | VAT | 7 % |

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|-----------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 0.8458 | 5.5000 | 24.5819 | 1.2458 | 1.07 | 1.3330 | 1.3540 | 1.3750 |
| 10 | 14.0410 | 0.7583 | 5.5000 | 20.2993 | 1.2030 | 1.07 | 1.2872 | 1.3094 | 1.3316 |
| 20 | 9.7858 | 0.6708 | 5.5000 | 15.9566 | 1.1596 | 1.07 | 1.2407 | 1.2622 | 1.2836 |
| 30 | 6.9082 | 0.6708 | 5.5000 | 13.0790 | 1.1308 | 1.07 | 1.2099 | 1.2288 | 1.2477 |
| 40 | 6.9899 | 0.5542 | 5.0000 | 12.5440 | 1.1254 | 1.07 | 1.2042 | 1.2251 | 1.2461 |
| 50 | 6.4552 | 0.4958 | 5.0000 | 11.9510 | 1.1195 | 1.07 | 1.1979 | 1.2191 | 1.2402 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.10 Factor F case 10

| | | | |
|---------------------|------|---------------|-----|
| Advancement payment | 5 % | Interest rate | 7 % |
| Retention money | 10 % | VAT | 7 % |

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy2 |
|------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|-----------------|-----------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 1.1813 | 5.5000 | 24.9174 | 1.2492 | 1.07 | 1.3366 | 1.3576 | 1.3786 |
| 10 | 14.0410 | 1.2250 | 5.5000 | 20.7660 | 1.2077 | 1.07 | 1.2922 | 1.3144 | 1.3366 |
| 20 | 9.7858 | 1.2688 | 5.5000 | 16.5546 | 1.1655 | 1.07 | 1.2471 | 1.2686 | 1.2900 |
| 30 | 6.9082 | 1.2688 | 5.5000 | 13.6770 | 1.1368 | 1.07 | 1.2163 | 1.2352 | 1.2541 |
| 40 | 6.9899 | 1.3271 | 5.0000 | 13.3170 | 1.1332 | 1.07 | 1.2125 | 1.2334 | 1.2543 |
| 50 | 6.4552 | 1.3563 | 5.0000 | 12.8114 | 1.1281 | 1.07 | 1.2071 | 1.2283 | 1.2494 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.11 Factor F case 11

| | | | |
|---------------------|------|---------------|-----|
| Advancement payment | 10 % | Interest rate | 7 % |
| Retention money | 10 % | VAT | 7 % |

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy 2 |
|---------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|--------------------|---------------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 1.0500 | 5.5000 | 24.7861 | 1.2479 | 1.07 | 1.3352 | 1.3562 | 1.3772 |
| 10 | 14.0410 | 1.0500 | 5.5000 | 20.5910 | 1.2059 | 1.07 | 1.2903 | 1.3125 | 1.3347 |
| 20 | 9.7858 | 1.0500 | 5.5000 | 16.3358 | 1.1634 | 1.07 | 1.2448 | 1.2662 | 1.2877 |
| 30 | 6.9082 | 1.0500 | 5.5000 | 13.4582 | 1.1346 | 1.07 | 1.2140 | 1.2329 | 1.2518 |
| 40 | 6.9899 | 1.0500 | 5.0000 | 13.0399 | 1.1304 | 1.07 | 1.2095 | 1.2304 | 1.2514 |
| 50 | 6.4552 | 1.0500 | 5.0000 | 12.5052 | 1.1251 | 1.07 | 1.2038 | 1.2250 | 1.2462 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Table B.12 Factor F case 12

| | | | |
|---------------------|------|---------------|-----|
| Advancement payment | 15 % | Interest rate | 7 % |
| Retention money | 10 % | VAT | 7 % |

| Direct costs (M. Baht) | Operation costs (%) | | | | Factor form | VAT | Factor F | Factor F Rainy1 | Factor F Rainy 2 |
|---------------------------|--------------------------|--------------------|------------|-----------|-------------|------|----------|--------------------|---------------------|
| | Administrative costs (%) | Interest costs (%) | Profit (%) | Total (%) | | | | | |
| ≤ 5 | 18.2361 | 0.9188 | 5.5000 | 24.6549 | 1.2465 | 1.07 | 1.3338 | 1.3548 | 1.3758 |
| 10 | 14.0410 | 0.8750 | 5.5000 | 20.4160 | 1.2042 | 1.07 | 1.2885 | 1.3106 | 1.3328 |
| 20 | 9.7858 | 0.8313 | 5.5000 | 16.1171 | 1.1612 | 1.07 | 1.2425 | 1.2639 | 1.2854 |
| 30 | 6.9082 | 0.8313 | 5.5000 | 13.2395 | 1.1324 | 1.07 | 1.2117 | 1.2306 | 1.2494 |
| 40 | 6.9899 | 0.7729 | 5.0000 | 12.7628 | 1.1276 | 1.07 | 1.2066 | 1.2275 | 1.2484 |
| 50 | 6.4552 | 0.7438 | 5.0000 | 12.1989 | 1.1220 | 1.07 | 1.2005 | 1.2217 | 1.2429 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Appendix C. Operation Costs Calculation for Road Construction

1. Administrative costs

1.1 Contracting costs

1.1.1 Performance bond fee for bond value 5% of project prices and fee rate 2.5% of bond value can be shown in table C.1

Table C.1 Performance bond fee

| Direct costs (M. Baht) | Bond value (M. Baht) | Time (month) | Fee (Baht) | Fee (%) of direct costs |
|---------------------------|-------------------------|-----------------|---------------|----------------------------|
| ≤ 5 | 0.25 | 6 | 3,125 | 0.0625 |
| 10 | 0.50 | 9 | 9,375 | 0.0938 |
| 20 | 1.00 | 12 | 25,000 | 0.1250 |
| 30 | 1.50 | 12 | 37,500 | 0.1250 |
| 40 | 2.00 | 16 | 66,667 | 0.1667 |
| 50 | 2.50 | 18 | 93,750 | 0.1875 |

Source: Standard estimation for road, bridge, and channel construction (2007)

1.1.2 Guarantee bond for bond value 5% of project prices for 2 years and fee rate 2.5% of bond value is equal to 0.25% of direct costs.

1.1.3 Stamp duty is 0.01% of direct costs.

1.1.4 Compensation fund and social security fund

1.1.4.1 Compensation fund = 0.51% of labor costs and labor costs = 0.30% of direct costs, so compensation fund = $0.51 \times 0.30 = 0.1530\%$ of direct costs.

1.1.4.2 Social security fund = 0.35% of labor costs and labor costs = 0.30% of direct costs, so compensation fund = $0.35 \times 0.30 = 0.1050\%$ of direct costs.

So, compensation fund and social security fund $0.1530 + 0.1050 = 0.2580\%$ of direct costs.

The contracting costs from 1.1.1 to 1.1.4 can be concluded in table C.2

Table C.2 Contracting costs

| Direct costs (M. Baht) | 1.1.1 Performance bond (%) | 1.1.2 Guarantee bond (%) | 1.1.3 Stamp duty (%) | 1.1.4 Compensation fund and social security fund (%) | Contracting costs (%) |
|------------------------|----------------------------|--------------------------|----------------------|--|-----------------------|
| ≤ 5 | 0.0625 | 0.2500 | 0.1000 | 0.2580 | 0.6705 |
| 10 | 0.0938 | 0.2500 | 0.1000 | 0.2580 | 0.7018 |
| 20 | 0.1250 | 0.2500 | 0.1000 | 0.2580 | 0.7330 |
| 30 | 0.1250 | 0.2500 | 0.1000 | 0.2580 | 0.7330 |
| 40 | 0.1667 | 0.2500 | 0.1000 | 0.2580 | 0.7747 |
| 50 | 0.1875 | 0.2500 | 0.1000 | 0.2580 | 0.7955 |

Source: Standard estimation for road, bridge, and channel construction (2007)

1.2 Site office and vehicles costs for the project less than 60 million Baht can be shown in table C.3

Table C.3 Site office and vehicles costs

| No. | List | Unit | Number | Rent rate / costs (Baht/month) | Rent rate / costs (Baht/month) |
|-------|-----------------------------|----------------|--------|--------------------------------|--------------------------------|
| 1 | Building | | | | |
| 1.1 | Site office | house | 1 | 3,500.00 | 3,500.00 |
| 1.2 | Accommodation | house | 2 | 3,000.00 | 6,000.00 |
| 1.3 | Machine store | m ² | 1,000 | 2.00 | 2,000.00 |
| 1.4 | Office costs | project | 1 | 3,000.00 | 3,000.00 |
| 2 | Vehicles | | | | |
| 2.1 | Vehicles and operator costs | car | 2 | 21,500.00 | 43,000.00 |
| 2.2 | Fuel costs | car | 2 | 3,600.00 | 7,200.00 |
| 2.3 | Maintenance costs | car | 2 | 1,000.00 | 2,000.00 |
| 2.4 | Insurance costs | car | 2 | 840.00 | 1,680.00 |
| Total | | | | | 68,380.00 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Site office and vehicles costs can be calculated in percentage of direct costs as table C.4

Table C.4 Percentage of site office and vehicles costs in direct costs

| Direct costs (M. Baht) | Time (month) | Costs of 1 - 2 (Baht/month) | Total (Baht/month) | Costs of 1 - 2 (%) of direct costs |
|------------------------|--------------|-----------------------------|--------------------|------------------------------------|
| ≤ 5 | 6 | 68,380 | 410,280 | 8.2056 |
| 10 | 9 | 68,380 | 615,420 | 6.1542 |
| 20 | 12 | 68,380 | 820,560 | 4.1028 |
| 30 | 12 | 68,380 | 820,560 | 2.7352 |
| 40 | 16 | 68,380 | 1,094,080 | 2.7352 |
| 50 | 18 | 68,380 | 1,230,840 | 2.4617 |

Source: Standard estimation for road, bridge, and channel construction (2007)

1.3 Staff and headquarter costs for the project less than 60 million Baht can be shown in table C.5

Table C.5 Staff and headquarter costs

| No. | Position | Unit | Nimber | Salary / costs (Baht/month) | Salary / costs (Baht/month) |
|-------|------------------------------------|------|--------|-----------------------------|-----------------------------|
| 1 | Staff costs | | | | |
| 1.1 | Manager (for 2 Projects) | men | 1 | 30,000.00 | 15,000.00 |
| 1.2 | Site engineer | men | 1 | 15,000.00 | 15,000.00 |
| 1.3 | Foreman | men | 1 | 8,000.00 | 8,000.00 |
| 1.4 | Mechanic technician | men | 1 | 7,000.00 | 7,000.00 |
| 1.5 | Clerk | men | 1 | 6,000.00 | 6,000.00 |
| 1.6 | worker | men | 1 | 4,000.00 | 4,000.00 |
| Total | | | | | 55,000.00 |
| 2 | headquarter costs (for 4 Projects) | | | | |
| 2.1 | Office costs | | 1 | 3,000.00 | 750.00 |
| 2.2 | Vehicle costs | | 1 | 3,000.00 | 750.00 |
| 2.3 | Project manager | men | 1 | 50,000.00 | 12,500.00 |
| 2.4 | Technician | men | 1 | 8,000.00 | 2,000.00 |
| 2.5 | Accountance | men | 1 | 8,000.00 | 2,000.00 |
| 2.6 | Clerk | men | 1 | 6,000.00 | 1,500.00 |
| 2.7 | Coordinator | men | 1 | 4,000.00 | 1,000.00 |
| Total | | | | | 20,500.00 |

Source: Standard estimation for road, bridge, and channel construction (2007)

Staff and headquarter costs can be calculated in percentage of direct costs as table C.6

Table C.6 Percentage of staff and headquarter in direct costs

| Direct costs (M. Baht) | Time (month) | Costs of 1 (Baht/month) | Total (Baht) | Costs of 1 (%) | Costs of 2 (Baht/month) | Total (Baht) | Costs of 2 (%) | Costs of 1 - 2 (%) |
|------------------------|--------------|-------------------------|--------------|----------------|-------------------------|--------------|----------------|--------------------|
| ≤ 5 | 6 | 55,000 | 330,000 | 6.6000 | 20,500 | 123,000 | 2.4600 | 9.0600 |
| 10 | 9 | 56,000 | 504,000 | 5.0400 | 20,500 | 184,500 | 1.8450 | 6.8850 |
| 20 | 12 | 57,000 | 684,000 | 3.4200 | 20,500 | 246,000 | 1.2300 | 4.6500 |
| 30 | 12 | 58,000 | 696,000 | 2.3200 | 20,500 | 246,000 | 0.8200 | 3.1400 |
| 40 | 16 | 59,000 | 944,000 | 2.3600 | 20,500 | 328,000 | 0.8200 | 3.1800 |
| 50 | 18 | 60,000 | 1,080,000 | 2.1600 | 20,500 | 369,000 | 0.7380 | 2.8980 |

Source: Standard estimation for road, bridge, and channel construction (2007)

1.4 Risks costs consists of follows:

1.4.1 Insurance costs 0.25% of direct costs

1.4.2 Other risks costs 0.05% of direct costs

Total risks costs is $0.25 + 0.05 = 0.30$ % of direct costs

The costs in administrative costs from 1.1 – 1.4 can be summarized as shown in table C.7

Table C.7 Percentage of administrative costs in direct costs

| Direct costs (M. Baht) | Costs of 1.1 (%) | Costs of 1.2 (%) | Costs of 1.3 (%) | Costs of 1.4 (%) | administrative costs (%) of direct costs |
|------------------------|------------------|------------------|------------------|------------------|--|
| ≤ 5 | 0.6705 | 8.2056 | 9.0600 | 0.300 | 18.2361 |
| 10 | 0.7018 | 6.1542 | 6.8850 | 0.300 | 14.0410 |
| 20 | 0.7330 | 4.1028 | 4.6500 | 0.300 | 9.7858 |
| 30 | 0.7330 | 2.7352 | 3.1400 | 0.300 | 6.9082 |
| 40 | 0.7747 | 2.7352 | 3.1800 | 0.300 | 6.9899 |
| 50 | 0.7955 | 2.4617 | 2.8980 | 0.300 | 6.4552 |

Source: Standard estimation for road, bridge, and channel construction (2007)

2. Interest costs

Interest costs depends on interest rate, advanced payment, pay period, and retention money. Interest costs can calculated from equation 3.16. The interest cost in case interest rate 7%, advanced payment 0%, pay period 3 month, and retention money 0% can be shown in table C.8

Table C.8 Percentage of interest costs in direct costs

| Direct costs (M. Baht) | Time (month) | Advance payment (%) | Retention money (%) | Interest rate (%) | Interest costs (%) of direct costs |
|------------------------|--------------|---------------------|---------------------|-------------------|------------------------------------|
| ≤ 5 | 6 | 0.00 | 0.00 | 7 | 1.1667 |
| 10 | 9 | 0.00 | 0.00 | 7 | 1.1667 |
| 20 | 12 | 0.00 | 0.00 | 7 | 1.1667 |
| 30 | 12 | 0.00 | 0.00 | 7 | 1.1667 |
| 40 | 16 | 0.00 | 0.00 | 7 | 1.1667 |
| 50 | 18 | 0.00 | 0.00 | 7 | 1.1667 |

Source: Standard estimation for road, bridge, and channel construction (2007)

3. Profit is defined at constant rate at 5.5% for every direct costs

Table C.9 Percentage of profit in direct costs

| Direct costs (M. Baht) | Normal profit (%) | Business profit (%) | Profit (%) of direct costs |
|------------------------|-------------------|---------------------|----------------------------|
| ≤ 5 | 0.0000 | 5.5000 | 5.5000 |
| 10 | 0.0000 | 5.5000 | 5.5000 |
| 20 | 0.0000 | 5.5000 | 5.5000 |
| 30 | 0.0000 | 5.5000 | 5.5000 |
| 40 | 0.0000 | 5.0000 | 5.0000 |
| 50 | 0.0000 | 5.0000 | 5.0000 |

Source: Standard estimation for road, bridge, and channel construction (2007)

4. VAT is calculated at 7%

Appendix D: Portland cement type I prices

Table D.1 Monthly prices of Portland cement type I elephant brand at provinces (not include VAT) in 2007

| No. | Province | Unit | Monthly prices at provinces (Baht/ton) | | | | | | | | | | | | Average | | |
|-----|-----------------------|------|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | | | |
| 1 | Bangkok Metropolis | Ton | 2,306.00 | 2,306.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,364.00 | 2,480.00 | 2,364.00 |
| 2 | Chiang Mai | Ton | 2,355.14 | 2,364.49 | 2,317.76 | 2,345.80 | 2,214.96 | 2,261.68 | 2,261.68 | 2,261.68 | 2,252.34 | 2,252.34 | 2,205.61 | 2,224.30 | 2,224.30 | 2,495.33 | 2,295.95 |
| 3 | Lamphun | Ton | 2,331.78 | 2,336.45 | 2,331.78 | 2,341.12 | 2,331.78 | 2,322.43 | 2,299.07 | 2,299.07 | 2,280.38 | 2,280.38 | 2,275.70 | 2,275.70 | 2,275.70 | 2,462.62 | 2,322.43 |
| 4 | Lampang | Ton | 2,205.61 | 2,224.30 | 2,224.30 | 2,224.30 | 2,205.61 | 2,168.22 | 2,168.22 | 2,168.22 | 2,143.30 | 2,143.30 | 2,143.30 | 2,143.30 | 2,143.30 | 2,299.07 | 2,191.07 |
| 5 | Uttaradit | Ton | 2,448.60 | 2,448.60 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,411.22 | 2,411.22 | 2,411.22 | 2,411.22 | 2,428.35 |
| 6 | Phrae | Ton | 2,345.80 | 2,345.80 | 2,336.45 | 2,214.96 | 2,214.96 | 2,093.46 | 2,093.46 | 2,093.46 | 2,093.46 | 2,093.46 | 2,093.46 | 2,093.46 | 2,093.46 | 2,214.96 | 2,186.14 |
| 7 | Nan | Ton | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,392.52 | 2,392.52 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,442.37 |
| 8 | Phayao | Ton | 2,367.60 | 2,367.60 | 2,367.60 | 2,367.60 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,355.14 | 2,355.14 | 2,355.14 | 2,355.14 | 2,355.14 | 2,429.91 | 2,360.85 |
| 9 | Chiang Rai | Ton | 2,373.83 | 2,373.83 | 2,373.83 | 2,392.52 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,423.68 | 2,379.54 |
| 10 | Mae Hong Son | Ton | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 | 2,990.65 |
| 11 | Nakhon Sawan | Ton | 2,383.18 | 2,383.18 | 2,383.18 | 2,336.45 | 2,289.72 | 2,289.72 | 2,261.69 | 2,261.69 | 2,261.69 | 2,261.69 | 2,242.99 | 2,242.99 | 2,242.99 | 2,429.91 | 2,309.97 |
| 12 | Uthai Thani | Ton | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 | 2,317.76 |
| 13 | Kamphaeng Phet | Ton | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 | 2,149.53 |
| 14 | Tak | Ton | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 |
| 15 | Sukhothai | Ton | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 | 2,364.49 |
| 16 | Phitsanulok | Ton | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,420.56 | 2,403.43 |
| 17 | Phichit | Ton | 2,392.53 | 2,392.53 | 2,392.53 | 2,383.18 | 2,383.18 | 2,383.18 | 2,383.18 | 2,383.18 | 2,383.18 | 2,383.18 | 2,383.18 | 2,383.18 | 2,383.18 | 2,429.91 | 2,389.41 |
| 18 | Phetchabun | Ton | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | - | 2,429.91 |

Table D.1 Monthly prices of Portland cement type I elephant brand at provinces (not include VAT) in 2007 (con.)
Monthly prices at provinces (Baht/ton)

| No. | Province | Unit | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Average |
|-----|--------------------------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 19 | Phra Nakhon Si Ayutthaya | Ton | 2,355.14 | 2,355.14 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,355.14 | 2,355.14 | 2,383.18 | 2,346.57 |
| 20 | Ang Thong | Ton | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,500.00 | 2,500.00 | 2,363.71 |
| 21 | Lop Buri | Ton | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,205.61 | 2,205.61 | 2,205.61 | 2,168.23 | 2,168.23 | 2,242.99 | 2,242.99 | 2,221.19 |
| 22 | Sing Buri | Ton | 2,205.61 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,224.30 | 2,222.74 |
| 23 | Chai Nat | Ton | 2,308.41 | 2,308.41 | 2,308.41 | 2,308.41 | 2,308.41 | 2,289.72 | 2,289.72 | 2,289.72 | 2,289.72 | 2,271.03 | 2,271.03 | 2,271.03 | 2,292.84 |
| 24 | Saraburi | Ton | 2,252.34 | 2,252.34 | 2,252.34 | 2,252.34 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,251.95 |
| 25 | Chon Buri | Ton | 2,320.87 | 2,196.26 | 2,196.26 | 2,196.26 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,448.60 | 2,448.60 | 2,318.80 |
| 26 | Rayong | Ton | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,383.18 | 2,383.18 | 2,476.64 | 2,447.82 |
| 27 | Chanthaburi | Ton | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,585.67 | 2,585.67 | 2,585.67 | 2,585.67 | 2,585.67 | 2,523.36 | 2,523.36 | 2,672.90 | 2,475.08 |
| 28 | Trat | Ton | 2,565.42 | 2,565.42 | 2,565.42 | 2,585.67 | 2,585.67 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,523.36 | 2,429.91 | 2,549.46 |
| 29 | Chachoengsao | Ton | 2,448.60 | 2,448.60 | 2,448.60 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,398.75 | 2,398.75 | 2,429.91 | 2,429.39 |
| 30 | Prachin Buri | Ton | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 |
| 31 | Nakhon Nayok | Ton | 2,305.29 | 2,305.29 | 2,305.29 | 2,305.29 | 2,305.29 | 2,305.29 | 2,383.18 | 2,383.18 | 2,383.18 | 2,242.99 | 2,242.99 | 2,289.72 | 2,313.08 |
| 32 | Sa Kaeo | Ton | 2,308.41 | 2,308.41 | 2,308.41 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,373.83 | 2,357.48 |
| 33 | Ratchaburi | Ton | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,429.91 | 2,429.91 | 2,429.91 | 2,297.51 |
| 34 | Kanchanaburi | Ton | 2,331.78 | 2,331.78 | 2,313.09 | 2,313.09 | 2,314.25 | 2,314.25 | 2,314.25 | 2,314.25 | 2,314.25 | 2,314.25 | 2,251.87 | 2,251.87 | 2,306.58 |
| 35 | Suphan Buri | Ton | 2,205.61 | 2,275.70 | 2,205.61 | 2,177.57 | 2,177.57 | 2,182.25 | 2,182.25 | 2,191.59 | 2,186.92 | 2,182.24 | 2,182.24 | 2,266.36 | 2,202.10 |
| 36 | Nakhon Pathom | Ton | 2,411.21 | 2,411.21 | 2,411.21 | 2,336.45 | 2,336.45 | 2,336.45 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,409.66 |
| 37 | Samut Sakhon | Ton | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,303.74 | 2,303.74 | 2,303.74 | 2,303.74 | 2,303.74 | 2,383.18 | 2,326.72 |
| 38 | Samut Songkhram | Ton | 2,280.37 | 2,280.37 | 2,280.37 | 2,280.37 | 2,280.37 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,504.67 | 2,327.10 |

Table D.1 Monthly prices of Portland cement type I elephant brand at provinces (not include VAT) in 2007 (con.)

| No. | Province | Unit | Monthly prices at provinces (Baht/ton) | | | | | | | | | | | | Average | | |
|-----|---------------------|------|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | | | |
| 39 | Phetchaburi | Ton | 2,392.52 | 2,392.52 | 2,392.52 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,523.36 | 2,411.22 | 2,457.94 | 2,588.79 | 2,450.16 |
| 40 | Prachuap Khiri Khan | Ton | 2,522.90 | 2,522.90 | 2,513.55 | 2,457.01 | 2,457.01 | 2,457.01 | 2,457.01 | 2,457.01 | 2,457.01 | 2,429.91 | 2,429.91 | 2,429.91 | 2,429.91 | 2,616.82 | 2,474.73 |
| 41 | Nakhon Ratchasima | Ton | 2,429.91 | 2,149.53 | 2,149.53 | 2,149.53 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,056.07 | 2,056.07 | 2,056.07 | 2,056.07 | 2,056.07 | 2,149.53 | 2,149.53 |
| 42 | Buri Ram | Ton | 2,355.14 | 2,392.52 | 2,392.52 | 2,315.89 | 2,315.89 | 2,315.89 | 2,315.89 | 2,315.89 | 2,315.89 | 2,315.89 | 2,315.89 | 2,224.30 | 2,112.15 | 2,261.68 | 2,302.80 |
| 43 | Surin | Ton | 2,336.45 | 2,336.45 | 2,242.99 | 2,242.99 | 2,280.37 | 2,280.37 | 2,280.37 | 2,018.69 | 2,018.69 | 2,018.69 | 2,018.69 | 2,018.69 | 2,018.69 | 2,130.84 | 2,161.99 |
| 44 | Si Sa Ket | Ton | 2,582.34 | 2,582.34 | 2,582.34 | 2,640.00 | 2,526.36 | 2,526.36 | 2,526.36 | 2,580.00 | 2,580.00 | 2,580.00 | 2,580.00 | 2,580.00 | 2,580.00 | 2,580.00 | 2,576.65 |
| 45 | Ubon Ratchathani | Ton | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,336.45 | 2,507.78 |
| 46 | Yasothon | Ton | 2,271.03 | 2,271.03 | 2,271.03 | 2,336.45 | 2,417.44 | 2,417.44 | 2,417.44 | 2,417.44 | 2,417.44 | 2,417.44 | 2,367.60 | 2,367.60 | 2,305.29 | 2,305.29 | 2,347.09 |
| 47 | Chaiyaphum | Ton | 2,242.99 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,242.99 | 2,242.99 | 2,429.91 | 2,320.87 |
| 48 | Amnat Charoen | Ton | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,359.81 | 2,383.18 | 2,383.18 | 2,474.07 | 2,373.23 |
| 49 | Nong Bua Lam Phu | Ton | 1,869.16 | 2,383.18 | 2,383.18 | - | - | - | - | - | - | - | - | - | - | 2,289.72 | 2,231.31 |
| 50 | Khon Kaen | Ton | 2,233.65 | 2,327.11 | 2,378.51 | 2,355.14 | 2,345.80 | 2,392.52 | 2,392.52 | 2,018.69 | 2,018.69 | 2,037.38 | 2,065.42 | 2,121.50 | 2,084.12 | 2,308.41 | 2,222.35 |
| 51 | Udon Thani | Ton | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,205.61 | 2,205.61 | 2,205.61 | 2,205.61 | 2,158.88 | 2,140.19 | 2,140.19 | 2,256.23 |
| 52 | Loei | Ton | 2,205.61 | 2,205.61 | 2,205.61 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,149.53 | 2,149.53 | 2,336.45 | 2,225.86 |
| 53 | Nong Khai | Ton | 2,486.67 | 2,486.67 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,500.00 | 2,414.33 | 2,414.33 | 2,018.69 | 2,093.46 | 2,200.94 | 2,210.28 | 2,308.41 | 2,351.62 |
| 54 | Maha Sarakham | Ton | 2,317.76 | 2,322.43 | 2,317.76 | 2,322.43 | 2,322.43 | 2,186.92 | 2,186.92 | 2,186.92 | 2,186.92 | 2,074.77 | 2,074.77 | 2,074.77 | 2,037.38 | 2,037.38 | 2,198.99 |
| 55 | Roi Et | Ton | 2,252.34 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,663.56 | 2,629.29 |
| 56 | Kalasin | Ton | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 | 2,242.99 |

Table D.1 Monthly prices of Portland cement type I elephant brand at provinces (not include VAT) in 2007 (con.)

| No. | Province | Unit | Monthly prices at provinces (Baht/ton) | | | | | | | | | | | | Average | | | | | | | | | |
|-----|---------------------|------|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | | | | | | | | | | |
| 57 | Sakon Nakhon | Ton | 2,504.67 | 2,504.67 | 2,504.67 | 2,345.80 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,485.98 | 2,418.22 | |
| 58 | Nakhon Phanom | Ton | 2,579.44 | 2,579.44 | 2,504.67 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,500.00 |
| 59 | Mukdahan | Ton | 2,242.99 | 2,242.99 | 2,242.99 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,386.29 |
| 60 | Nakhon Si Thammarat | Ton | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,533.49 |
| 61 | Krabi | Ton | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,523.36 | 2,539.72 |
| 62 | Phangnga | Ton | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 | 2,626.17 |
| 63 | Phuket | Ton | 2,551.41 | 2,579.44 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,607.48 | 2,600.47 |
| 64 | Surat Thani | Ton | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,336.45 | 2,398.76 |
| 65 | Ranong | Ton | 2,663.56 | 2,663.56 | 2,663.56 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,672.90 | 2,683.55 |
| 66 | Chumphon | Ton | 2,560.75 | 2,560.75 | 2,560.75 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,582.55 |
| 67 | Songkhla | Ton | 2,500.00 | 2,500.00 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,570.10 | 2,558.42 |
| 68 | Satun | Ton | 2,623.06 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,635.52 | 2,647.46 |
| 69 | Trang | Ton | 2,429.91 | 2,429.91 | 2,429.91 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,495.33 | 2,503.12 |
| 70 | Phatthalung | Ton | 2,439.25 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,467.29 | 2,478.97 |
| 71 | Pattani | Ton | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,859.81 | 2,864.48 |
| 72 | Yala | Ton | 2,691.59 | 2,691.59 | 2,691.59 | 2,697.82 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,691.59 | 2,706.13 |
| 73 | Narathiwat | Ton | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,598.13 | 2,738.32 |

Source: Bureau of Index Prices Department of Commerce

Appendix E. Minimum daily wage

Minimum daily wage classified by provinces in Thailand in 1 January 1997 can be shown in table E.1.

Table E.1 Minimum daily wage

| Wage (Baht/day) | Provinces |
|--------------------|---|
| 194 | Bangkok, Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon |
| 193 | Phuket |
| 175 | Chon Buri |
| 170 | Saraburi |
| 165 | Chachoengsao, Nakhon Ratchasima, Phra Nakhon Si Ayutthaya Rayong |
| 163 | Ranong |
| 162 | Phangnga |
| 160 | Krabi Phetchaburi |
| 159 | Chiang Mai |
| 158 | Chanthaburi Lop Buri |
| 157 | Kanchanaburi |
| 156 | Ratchaburi, Sing Buri |
| 155 | Prachin Buri, Samut Songkhram, Sa Kaeo |
| 154 | Trang, Loei, Ang Thong |
| 152 | Prachuap Khiri Khan, Lamphun, Songkhla |
| 150 | Khon Kaen, Chumphon, Trat, Nakhon Nayok, Nakhon Si Thammarat, Nakhon Sawan, Buri Ram, Phatthalung, Phetchabun, Satun, Surat Thani, Nong Khai, Udon Thani, Uthai Thani |
| 149 | Kamphaeng Phet, Chai Nat, Lampang, Sukhothai, Suphan Buri |
| 148 | Kalasin, Nakhon Phanom, Narathiwat, Pattani, Phitsanulok, Mukdahan, Yala, Sakon Nakhon, Nong Bua Lam Phu |
| 147 | Tak, Maha Sarakham, Mae Hong Son, Yasothon, Roi Et, Surin, Uttaradit |
| 146 | Chaiyaphum, Chiang Rai, Phichit, Phrae, Si Sa Ket |
| 145 | Amnat Charoen, Ubon Ratchathani |
| 144 | Nan, Phayao |

Source: Department of Labor

Appendix F. Machine Prices and Operating Costs of Pavement In-Place Recycling Machine

The data of machine prices and operating costs of pavement in-place recycling machines used in this research come from S.D.C. International Co., Ltd. as following:

TEL NO. : (66 2) 896-0464-5 896-0797-8 FAX NO. : (66 2) 896-0583

QUOTATION

OUR REFERENCE NO. : 0020 2008

DATE : 24 MARCH 2008

เรียน คุณสุภาพ วิศวกรวิทย์

ช่างหัดสวนจำกัด แกรนด์ คอนซิลเมนต์ แอนด์ คอนสตรัคชั่น

บริษัท เอส.ดี.ซี. อินเตอร์เนชั่นแนล จำกัด เป็นตัวแทนจำหน่ายเครื่องจักรสำหรับงานก่อสร้างและบำรุงทาง

ยี่ห้อ "CMI" ผลิตภัณฑ์จากประเทศสหรัฐอเมริกา มีความยินดีขอเสนอราคาเครื่องจักรสำหรับงานบูรณะทาง
ผิวแอสฟัลท์ โดยวิธีปรับปรุงชั้นทางเดิม ในที่ PAVEMENT IN-PLACE RECYCLING ดังรายละเอียดต่อไปนี้

| ITEM | DESCRIPTION | QTY | AMOUNT BAHT |
|--------------------------------------|--|--------|----------------------|
| 1 | PAVEMENT IN-PLACE RECYCLING MACHINE | | |
| 1.1 | "CMI" MODEL : PR-800-7 COLD RECYCLER, YEAR 2003 ENGINE CAT 3412 EDITTA, 800 HP. DIESEL ENGINE ชุดฟันขุดกัด CUTTER DRUM 214 CM. *** เดารีด PAVING SCREED, CARLSON (BRAND NEW ปี 2008) # MODEL : EZIII-08 # หน้ากว้างมาตรฐานในการปู STANDARD PAVING WIDTH : 2.14 M. # ชุดระบบไฮดรอลิกขยายความกว้างในการปูได้ EXTENDED PAVING WIDTH : 13 FT. (4.11 M). *** สกรูเกลียวปรับระดับ AUGER SCREW (BRAND NEW ปี 2008) # MODEL : MIDLAND NC 121 # หน้ากว้างในการเกลียวปรับระดับวัสดุ 2.14 M. # ชุดต่อขยายความกว้าง 2 ชุด ช่างละ 75 CM. เพื่อให้ได้ความกว้าง 3.65 M. | 1 UNIT | |
| 1.2 | "CMI" MODEL : SRS-24 CEMENT SPREADER UNIT (BRAND NEW ปี 2008) *** ความจุถังปูนซีเมนต์ 20 M ³ *** ความจุถังน้ำ 5 M ³ *** ชุดควบคุมปริมาณและอัตราการผสมปูนซีเมนต์และน้ำด้วยระบบ MICRO-PROCESSOR CONTROLS | 1 UNIT | |
| TOTAL PRICE CIF, BANGKOK BAHT | | | 34,000,000.00 |

S.D.C. INTERNATIONAL CO.,LTD.

96/52-53 MOO. 9, RAMA II ROAD, BANGMOO, CHOMTHONG, BANGKOK 10150. THAILAND.

TEL. NO. : (66 2) 896-0464-5. 896-0797-8 FAX NO. : (66 2) 896-0680

QUOTATION

OUR REFER NO. : SDC/0023/2008

DATE : 25 เมษายน 2008

เรียน คุณสุภาพนา สุทธิธาทิพย์

ห้างหุ้นส่วนจำกัด แกรนด์ คอนซัลแตนท์ แอนด์ คอนสตรัคชั่น

บริษัท เอส.ดี.ซี. อินเตอร์เนชั่นแนล จำกัด เป็นตัวแทนจำหน่ายเครื่องจักรสำหรับงานก่อสร้างและบำรุงทาง
มีความยินดีขอเสนอราคาารถบดอัดถนนสะเทือน ยี่ห้อ DYNAPAC และ BOMAG ดังรายละเอียดต่อไปนี้ :-

| ITEM | DESCRIPTION | QTY | AMOUNT |
|------|--|-----|---------------------|
| | | | BAHT |
| 1 | VIBRATING ROLLER รถบดอัดถนนสะเทือน VIBRATING ROLLER ยี่ห้อ : DYNAPAC รุ่น : CA602D ปี : 2001 น้ำหนัก : 19,000 KG. หมายเลขตัวรถ : 71220928 DESCRIPTION : DRUM DRIVE, TYRES MICHELIN 20.5 x 25 70% GOOD, CUMMINGS 6 CIL 359/5.9 136 KW ENGINE, ORIGINAL PAINT, ROPS CAB. GOOD AND CLEAN CONDITION. TOTAL PRICE CIF. BANGKOK BAHT | | 3,400,000.00 |
| 2 | VIBRATING ROLLER รถบดอัดถนนสะเทือน VIBRATING ROLLER ยี่ห้อ : BOMAG รุ่น : BW219DH-3 ปี : 2000 น้ำหนัก : 19,000 KG. หมายเลขตัวรถ : 101680501123 DESCRIPTION : DRUM DRIVE, TYRES MICHELIN 20.5 x 25, ENGINE DEUTZ 6 CIL 145 KW. GOOD AND CLEAN CONDITION. TOTAL PRICE CIF. BANGKOK BAHT | | 3,300,000.00 |

S.D.C. INTERNATIONAL CO.,LTD.

96/52-53 MOO. 9, RAMA II ROAD, BANGMOD, CHOMTHONG, BANGKOK 10150, THAILAND.

TEL NO. : (66 2) 896-0464-5, 896-0797-8 FAX NO. : (66 2) 896-0680

เงื่อนไขการขาย

ราคาที่เสนอมารวม

- 1 ภาษีมูลค่าเพิ่ม 7%
- 2 ภาษีนำเข้าเครื่องจักร 5%
- 3 ค่าใช้จ่ายในการดำเนินการทางศุลกากร
- 4 ค่าขนส่งถึงหน่วยงานผู้ซื้อ

ราคาที่เสนอมารวมไม่รวม

- 1 รถบรรทุกสิบล้อ สำหรับติดตั้งถังบรรทุกซีเมนต์ SRS-24

เงื่อนไขการชำระเงิน

- *** ชำระเงินสด 30% โดยชำระเป็นเงินสด เมื่อเซ็นสัญญาซื้อขาย
- *** ชำระเงินส่วนที่เหลือ 70% โดยชำระเป็น LETTER OF CREDIT ในเทอม AT SIGHT ให้กับ SUPPLIER ต่างประเทศ

ขอแสดงความนับถือ

บริษัท เอส.ดี.ซี. อินเตอร์เนชั่นแนล จำกัด



นายสุदार จันทร์ (unc)

กรรมการผู้จัดการ

OPERATING COST PAVEMENT IN-PLACE RECYCLING MACHINE

UMI BRP-200-716 & UMI SR5-24

MODEL NO. 0710 1113

OPERATING 1 HOUR = 100 M²

WORKING 1 DAY = 8 HOURS

ONE DAY : 800 M²

| OPERATING COSTS | | TOTAL OPERATION COSTS | |
|--|-----------|---|-----------|
| DESCRIPTION | BAHT/HOUR | DESCRIPTION | BAHT |
| *** OPERATOR MAN (4) | 200 | TOTAL COSTS PER HOUR | 4,662 |
| | | TOTAL COSTS PER DAY | 44,336 |
| TOTAL | 200 | TOTAL COSTS PER M ² | 12,665 |
| | | TOTAL COSTS PER M ³ | 63,340 |
| LUBRICANT, FUEL, OIL, SPARE PARTS COST | | ค่าซ่อมแซมเครื่องจักร + OPERATING + SPARE PARTS | |
| | BAHT/HOUR | | BAHT |
| *** FUEL @ 97 L/HR. | 2,667 | TOTAL COSTS PER HOUR | 7,620.33 |
| *** LUBE & OIL | 200 | TOTAL COSTS PER DAY | 60,962.64 |
| *** HYDRAULIC OIL | 65 | TOTAL COSTS PER M ² | 17,419 |
| *** MAINTENANCE & REPAIR | 280 | TOTAL COSTS PER M ³ | 87,095 |
| *** FILTERS - HYD, AIR, FUEL, OIL | 60 | | |
| *** CUTTER BITS | 1150 | | |
| *** WEAR PLATES AUGER | 20 | | |
| *** TIRES | 20 | | |
| TOTAL | 4,462 | | |

| ค่าเสื่อมเครื่องจักร ต่อหน่วย | BAHT |
|----------------------------------|----------|
| PER HOUR | 2,958.33 |
| PER M ² | 0.846 |
| PER M ³ | 4.230 |
| | |
| | |

NOTE : ราคาน้ำมัน คิดที่ 30.00 บาท/ลิตร

OPERATING COST PAVEMENT IN-PLACE RECYCLING MACHINE

CMI PRP-800-716

ROAD WIDE : 8 - 10 METER

OPERATING : 1 HOUR = 300 M.

WORKING : 1 DAY = 8 HOURS

ONE DAY : 3,500 M²

| OPERATING COSTS | | TOTAL OPERATION COSTS | |
|--|------------|--|--------|
| DESCRIPTION | BAHT/HOUR. | DESCRIPTION | BAHT |
| *** OPERATOR MAN (2) | 100 | TOTAL COSTS PER HOUR | 3,920 |
| | | TOTAL COSTS PER DAY | 38,400 |
| TOTAL | 100 | TOTAL COSTS PER M ² | 10.972 |
| | | TOTAL COSTS PER M ³ | 54.860 |
| LUBRICANT.FUEL, OIL , SPARE PARTS COST | | ต้นทุนรวมค่าเชื้อเพลิง + OPERATING + SPARE PARTS | |
| | BAHT/HOUR | | BAHT |
| *** FUEL @ 82 L/HR. | 2,255 | TOTAL COSTS PER HOUR | 6,420 |
| *** LUBE & OIL | 120 | TOTAL COSTS PER DAY | 51,360 |
| *** HYDRAULIC OIL | 45 | TOTAL COSTS PER M ² | 14.675 |
| *** MAINTENANCE & REPAIR | 200 | TOTAL COSTS PER M ³ | 73.375 |
| *** FITTERS-HYD, AIR, FUEL, OIL | 50 | | |
| *** CUTTER BITS | 1,150 | | |
| TOTAL | 3,820 | | |

| ค่าเสื่อมเครื่องจักร ต่อหน่วย | BAHT |
|----------------------------------|-------|
| PER HOUR | 2,500 |
| PER M ² | 0.715 |
| PER M ³ | 3.575 |
| | |

NOTE : ราคาน้ำมัน คิดที่ 30.00 บาท/ลิตร

*** คิดราคาค่าเสื่อมเครื่องจักรที่ 5 ปี แบบเส้นตรง

ROM : S D C INTERNATIONAL

PHONE NO. : 662 8960680

Apr. 24 2008 02:52PM P6

OPERATING COST PAVEMENT IN-PLACE RECYCLING MACHINE

CMI SRS-24 CEMENT SPREADER UNIT

ROAD WIDE : 8 - 10 METER

OPERATING : 1 HOUR = 300 M.

WORKING : 1 DAY = 8 HOURS

ONE DAY : 3,500 M²

| OPERATING COSTS | | TOTAL OPERATION COSTS | |
|--|------------|--|----------|
| DESCRIPTION | BAHT/HOUR. | DESCRIPTION | BAHT |
| *** OPERATOR MAN (2) | 100 | TOTAL COSTS PER HOUR | 742. |
| | | TOTAL COSTS PER DAY | 5,936 |
| TOTAL | 100 | TOTAL COSTS PER M ² | 1,696 |
| | | TOTAL COSTS PER M ³ | 8,480 |
| LUBRICANT, FUEL, OIL, SPARE PARTS COST | | ต้นทุนน้ำมันเชื้อเพลิง + OPERATING + SPARE PARTS | |
| | BAHT/HOUR | | BAHT |
| *** FUEL @ 15 L/HR. | 412 | TOTAL COSTS PER HOUR | 1,200.33 |
| *** LUBE & OIL | 80 | TOTAL COSTS PER DAY | 9,602.64 |
| *** HYDRAULIC OIL | 20 | TOTAL COSTS PER M ² | 2,744. |
| *** MAINTENANCE & REPAIR | 80 | TOTAL COSTS PER M ³ | 13,720 |
| *** FITTERS-HYD, AIR, FUEL, OIL | 10 | | |
| *** WEAR PLATES AUGER | 20 | | |
| *** TIRES | 20 | | |

BIOGRAPHY

Mr. Thapana Suththathip was born in 17 January 1979. He graduated Bachelor Degree in Civil Engineering from Thammasat University in 1998 and also graduated Master Degree in Structural Engineering from Thammasat University in 2001.