

Table H.2.1 ANNUAL WORKABLE DAYS

| Month | Precipitation | 0 mm | < 5 mm | 5 - 9 mm | 10 - 20 mm | >20 mm | Calendar day | Amount, work suspend days | Holidays | Workable days Earth Work | Concrete Works |
|-----------|------------------|------|--------|----------|------------|--------|--------------|---------------------------|----------|--------------------------|----------------|
| January | Rainy day (days) | 29.6 | 1.1 | 0.3 | - | - | 31 | 0 | 4+(0)=4 | 27 | 27 |
| February | Rainy day (days) | 25.7 | 1.0 | 1.0 | 0.4 | 0.3 | 28 | 2 | 4+(1)=5 | 21 | 21 |
| March | Rainy day (days) | 26.6 | 1.3 | 0.7 | 1.1 | 1.3 | 31 | 4 | 5+(1)=6 | 21 | 21 |
| April | Rainy day (days) | 20.0 | 2.8 | 1.6 | 2.4 | 3.2 | 30 | 9 | 4+(#5)=9 | 12 | 12 |
| May | Rainy day (days) | 14.7 | 4.8 | 1.8 | 2.7 | 7.0 | 31 | 17 | 5+(1)=6 | 0(*8) | 8 |
| June | Rainy day (days) | 10.2 | 6.4 | 3.2 | 4.3 | 5.9 | 30 | 17 | 4+(2)=6 | 0(*7) | 7 |
| July | Rainy day (days) | 8.1 | 7.5 | 4.7 | 4.4 | 6.3 | 31 | 17 | 4+(1)=5 | 0(*9) | 0(*9) |
| August | Rainy day (days) | 10.3 | 9.2 | 3.4 | 3.9 | 4.2 | 31 | 13 | 5+(0)=5 | 0(*13) | 0(*13) |
| September | Rainy day (days) | 11.4 | 6.3 | 3.1 | 3.8 | 5.4 | 30 | 15 | 4+(1)=5 | 0(*10) | 0(*10) |
| October | Rainy day (days) | 23.1 | 2.7 | 1.3 | 1.4 | 2.5 | 31 | 7 | 4+(1)=5 | 0(*19) | 19 |
| November | Rainy day (days) | 28.8 | 0.3 | 0.3 | 0.2 | 0.4 | 30 | 3 | 5+(1)=6 | 21 | 21 |
| December | Rainy day (days) | 30.0 | 0.5 | 0.1 | 0.2 | 0.2 | 31 | 2 | 4+(1)=5 | 24 | 24 |

* <10 mm : No work suspend

10 - 20 mm : Work suspend on that date

<20 mm : Work suspend on that date plus the next day

()/(#) : National Holiday/Muslim Religious Holiday

(*) : Work Suspended Day

Total= 365

106

Total=

126

Assumed 130 days

160 days

Table H.3.1 UNIT PRICES OF TYPICAL MATERIALS

| Unit: Tk (1991 Price) | | | | | |
|------------------------------|------------------|----------------|------------|------------------------|----------------------|
| Item | Description | Unit | Price (TK) | Foreign Currency(%) | Local Currency(%) |
| Earth Material | Use for banking | m3 | 150 | 15 | 85 |
| Sodding | | m2 | 60 | 0 | 100 |
| Bricks | 1st class | 1000 Peaces | 3,100 | 20 | 80 |
| Ready mixed concrete (1:3:5) | 160 kg/cm2 | m3 | 2,900 | 40 | 60 |
| Ready mixed concrete (1:2:4) | 210 kg/cm2 | m3 | 3,100 | 45 | 55 |
| Cement (50 kg/bag) | Portland | bag | 250 | 60 | 40 |
| Sand | Use for concrete | m3 | 500 | 15 | 85 |
| Crushed Stone | | m3 | 1,300 | 15 | 85 |
| Riprap (Gravel) | 50-150 mm | m3 | 1,200 | 15 | 85 |
| Brick Chips | | m3 | 1,200 | 15 | 85 |
| Deformed Bar | SD 30 | t | 31,000 | 50 | 50 |
| Steel sheet pile | | t | 31,000 | 100 | 0 |
| Structural Steel | | t | 26,000 | 100 | 0 |
| Timber | Low Class | m3 | 15,000 | 0 | 100 |
| Timber | High Class | m3 | 25,000 | 20 | 80 |
| Gasoline | | L | 15.0 | 90 | 10 |
| Diesel oil | | L | 14.5 | 90 | 10 |

Table H.3.2 LABOUR WAGES

Unit :TK (1991 Price)

| Type of Labour | Labour Wage (TK) (1991 Price) |
|------------------------------|----------------------------------|
| 1. Common Labour | 80 |
| 2. Mason and Plasterer | 175 |
| 3. Reinforcement Worker | 145 |
| 4. Concrete Worker | 120 |
| 5. Pavement Worker | 130 |
| 6. Carpenter | 175 |
| 7. Painter | 140 |
| 8. Welder | 200 |
| 9. Foreman | 225 |
| 10. Chief Foreman | 340 |
| 11. Car Driver and Operator | 150 |
| 12. Heavy Equipment Operator | 270 |
| 13. Boat Man | 115 |
| 14. Boat Captain | 190 |
| 15. Mechanic | 210 |
| 16. Electrician | 210 |
| 17. Plumber | 230 |
| 18. Surveyor | 260 |

Table H.3.3 HOURLY COST OF EQUIPMENT

Unit: TK(1991 Price)

| No. | Equipment | Capacity | Base Cost (J.Y) (1000 Yen) | Freight ton | CIF Site Delivery Cost (1000TK) | Life Year | Operation Hr/Year | Operation Days/Year | Mobil.etc Days/Year | Yearly Rate of Mainte. (%) | Yearly Rate of Management (%) | Operation cost per hr. (TK) | Site Cost. Per hr. (TK) | Hourly Cost (7+8) (TK) | Assumed Hourly Cost |
|-----|-------------------------|------------|----------------------------|-------------|---------------------------------|-----------|-------------------|---------------------|---------------------|----------------------------|-------------------------------|-----------------------------|-------------------------|------------------------|---------------------|
| | | | (B) | (F) | (1) | (2) | (3) | (3A) | (4) | (5) | (6) | (7) | (8) | (9) | |
| 1. | Backhoe | 1.2m3 | 28400 | 70 | 9294 | 5 | 845 | 130 | 330 | 35 | 7 | 1760 | 1760 | 3520 | 3520 |
| 2. | Backhoe | 0.6 m3 | 14100 | 50 | 5011 | 5 | 1040 | 160 | 330 | 35 | 7 | 771 | 771 | 1542 | 1540 |
| 3. | Swamp bulldozer | 16 t | 15500 | 35 | 4989 | 6 | 845 | 130 | 330 | 45 | 7 | 886 | 886 | 1742 | 1740 |
| 4. | Bulldozer | 21t | 24000 | 35 | 7226 | 6 | 845 | 130 | 330 | 45 | 7 | 1283 | 1240 | 2523 | 2520 |
| 5. | Dump truck | 11t | 8530 | 65 | 3935 | 5 | 845 | 130 | 330 | 60 | 10 | 978 | 885 | 1863 | 1860 |
| 6. | Dump truck(*) | 6 t | 5630 | 50 | 2782 | 5 | 1040 | 160 | 330 | 60 | 10 | 562 | 508 | 1070 | 1070 |
| 7. | Clamshell | 0.8 m3 | 34500 | 50 | 10379 | 8 | 845 | 130 | 330 | 45 | 7 | 1382 | 1551 | 2933 | 2930 |
| 8. | Sand pile driver crane | 27 t | 64500 | 100 | 19574 | 6 | 845 | 130 | 330 | 40 | 7 | 3282 | 3359 | 6640 | 6640 |
| 9. | Diesel pile hammer | 2.5 t | 7930 | 10 | 2347 | 5 | 845 | 130 | 330 | 35 | 7 | 444 | 444 | 889 | 890 |
| 10. | Vibration hammer | 45 kw | 6890 | 10 | 2073 | 6 | 845 | 130 | 330 | 40 | 7 | 348 | 356 | 703 | 700 |
| 11. | Concrete Plant(*) | 30m3/hr | 27900 | 200 | 12542 | 6 | 1040 | 160 | 330 | 60 | 7 | 2110 | 1749 | 3859 | 3860 |
| 12. | Air Compressor | 10.5m3/min | 5020 | 10 | 1581 | 6 | 1040 | 160 | 330 | 50 | 5 | 241 | 190 | 431 | 430 |
| 13. | Tractor Shovel | 0.8m3 | 6400 | 50 | 2984 | 5 | 845 | 130 | 330 | 45 | 7 | 636 | 565 | 1201 | 1200 |
| 14. | D. generator(*) | 200 kva | 6520 | 15 | 2106 | 7 | 1040 | 160 | 330 | 45 | 5 | 260 | 231 | 492 | 490 |
| 15. | Concrete pump car(*) | 45 m3/h | 11500 | 55 | 4456 | 5 | 1040 | 160 | 330 | 60 | 7 | 900 | 686 | 1585 | 1590 |
| 16. | Concrete Track Mixer(*) | 6m3 | 10400 | 60 | 4297 | 5 | 1040 | 160 | 330 | 45 | 7 | 744 | 661 | 1405 | 1400 |
| 17. | Water tanker | 6 kl | 5660 | 40 | 2529 | 6 | 845 | 130 | 330 | 45 | 7 | 449 | 434 | 883 | 880 |
| 18. | Workshop car | 6 t | 3350 | 20 | 1402 | 6 | 1040 | 160 | 330 | 45 | 7 | 202 | 195 | 398 | 400 |
| 19. | Truck Crane(*) | 10 t | 14500 | 50 | 5116 | 8 | 1040 | 160 | 330 | 45 | 7 | 553 | 621 | 1174 | 1170 |
| 20. | Crawler Crane | 35 t | 33100 | 100 | 11311 | 7 | 845 | 130 | 330 | 45 | 7 | 1721 | 1797 | 3518 | 3520 |
| 21. | Compaction Roller | 10 t | 7020 | 30 | 2627 | 8 | 845 | 130 | 330 | 35 | 7 | 311 | 393 | 703 | 700 |

Note <1>: The life time was estimated based on data by Ministry of construction in Japan.

<2>: Yearly management cost of 5% to 10% was applied. The management cost comprises the insurance, tax, interest and other expenses for the equipment management.

<3>: (1)=(B)/3.8+Vol*TK13000*2/1000

<4>: (3)=6.5hr/day*Workable days per Year

<5>: (7) = (1) x (0.45 + (5)/(2)) / (3)

<6>: (8) = (1) x (0.45/(2) + (6)) / (3)

<7>: (*): Mainly for concrete work, etc

<8>: Exchange Rate 1\$ = 36 TK. = 137 Yen

Table H.3.4 (1) FREIGHT FOR TYPICAL ITEMS

Unit : TK/Freight Ton (1991 Price)

| Item | Unit Price /F. Ton (1) | Packing (2) | Shipping (3) | Ocean Freight(4) | Unloading (5) | Land Transport(6) | Insurence (7) | Total (2)-(7) |
|------------------------|---------------------------|----------------|-----------------|---------------------|------------------|----------------------|------------------|------------------|
| Sheet Pile | 31000 | 1570 | 1840 | 5970 | 160 | 2760 | 79 | 12379 |
| Pump Equipment | 950000 | 2960 | 1840 | 5970 | 160 | 2760 | 5297 | 18987 |
| Gate Equipment | 850000 | 2470 | 1840 | 5970 | 160 | 2760 | 4744 | 17944 |
| Construction Machinery | 108000 | 1570 | 1840 | 5970 | 160 | 2760 | 662 | 12962 |
| Miscellaneous Goods | 108000 | 2960 | 1840 | 5970 | 160 | 2760 | 787 | 14477 |

Note :

- 1). Unit Price : Average Price/F. ton
- 2). F. Ton : Freight ton
- 3). Insurance : $(1+2+3+4+5+6)*0.0055$
- 4). Miscellaneous Goods : Small Water Pump, Tamper Tools, etc.

Table H.3.4(2) CDST & TAX FOR IMPORTED MATERIALS

| ITEMS | Unit Price(CIF) 1 | Custum Duty (%) 2 | BAT $3=(1+2) \times 15\%$ | LF (%) | CDST & Tax 2+3+4 (%) | Remarks |
|---------------------------|----------------------|----------------------|------------------------------|-----------|-------------------------|---------|
| 1. Steel Sheet Pile | 100 | 100 | 30 | 5 | 135 Say=140% | |
| 2. Pump equipment | 100 | 100 | 30 | 5 | 135 Say=140% | |
| 3. Gate Equipment | 100 | 60 | 24 | 5 | 89 Say 90% | |
| 4. Construction Machinery | 100 | 100 | 100 | 5 | 135 Say=140% | |

Note:

- 1).BAT :Value Added Tax
- 2).L.F :Licence Fee Etc.

Table H.3.5 MAJOR EQUIPMENT AND ITS PRODUCTION RATE

| Work Item | Equipment | Capacity | Production Rate | Remarks | |
|--|----------------------------|-------------------------|----------------------|----------------------|-------|
| A. EARTH WORKS | | | | | |
| 1.EXCAVATION | a. BACKHOE | 1.2m ³ | 85m ³ /hr | Main for emb. | |
| | b. BACKHOE | 0.6m ³ | 45m ³ /hr | | |
| | c. CLAMSHELL | 0.8m ³ | 25m ³ /hr | | |
| | d. DREDGER(*) | | | | |
| 2.TRANSPORTATION | a. DAMPTRACK | 11t | 20m ³ /hr | Main for emb. | |
| | b. S. BULLDOZER | 16t | 30m ³ /hr | | |
| 3.SPREDING & COMPACTION | a. BULLDOZER | 21t | 60m ³ /hr | Main for emb. | |
| | b. S. BULLDOZER | 16t | 45m ³ /hr | | |
| 4.GEOTEXT. DRAIN /SAND DRAIN PILING | a. DRAIN PILE DRIVER | 50kw | 60m/hr | Foundation treatment | |
| | b. AIR COMPRESSOR | 10.5m ³ /min | | | |
| | c. GENERATOR | 200kva | | | |
| | d. TRACTAR SHOVEL(S.DRAIN) | 1.2m ³ | | | |
| | * SAND PILING CAPACITY | | 100 m/hr | | L=10m |
| | ** PAPER DRIN PILING | | 260 m/hr | | L=10m |
| B. CONCRETE WORK | | | | | |
| 1.CONCRETE | a. CONCRETE PLANT | 30m ³ /hr | 30m ³ /hr | For Pump sta. etc | |
| | b. CONCRETE PUMP CAR | 45m ³ /hr | 45m ³ /hr | | |
| | c. CONCRETE MIXER | 6m ³ | | | |
| | d. CONCRETE MIXER(*) | 0.4m ³ | | | |
| 2.R.C.PILE DRIVE | a. DIESEL HAMMER | 2.5t | | For Structures | |
| | b. CRAWLER CLANE | 35t | | | |
| | * PILING CAPACITY | | 1 hr/Nos | | L=10m |
| | | | 1.5hr/Nos | L=20m | |
| C. REVETMENT,ETC | | | | | |
| C. REVETMENT,ETC | a. TRACK CLANE | 10t | | | |
| | b. COMPACTION ROLLER | 10t | | | |

Note :

S. Bulldozer : Swamp Bulldozer

(*) :Available at Site

Main :Main Equipment

Table H.3.6 UNIT PRICE OF LAND

Unit: TK (1991 Price)

| Projec Area | Flood Mitigation Facility | Storm Water Drainage | Remarks |
|-----------------------|---------------------------|----------------------|-------------------|
| 1. Greater Dhaka East | | | |
| 1) DC - 1 | 280 | 230 | * 235/190 |
| 2) DC - 2 | 280 | 230 | * 150/120 |
| 3) DC - 3 | 280 | 230 | * 275/220 |
| 4) DC - 4 | 280 | 230 | * 210/170 |
| 2. DND | 740 | 310 | |
| 3. Narayanganj West | | | |
| 1) Western Part | 740 | 310 | |
| 2) Eastern Part | 740/**1230 | 740 | **Commercial Area |

Note: 1) * Surveyed Price : Flat/low land price in 1989/90 collected from the office of the Deputy Commissioner of Dhaka

2) Unit Price (Dhaka): Average surveyed price(1989/1990) x 1.3 (Price escalation, etc

3) Unit Price (DND/Narayaganj.W) : Surveyed price at site in 1991

Table H.3.7 UNIT CONSTRUCTION COST OF GENERAL ITEMS

Unit :TK(1991 Price)

| Item | Description | Unit | Price (TK) | Foreign Portion(%) | Local Portion(%) | Remarks |
|--------------------------|----------------------------|------|------------|--------------------|------------------|---------------------|
| Banking | By Equipment | m3 | 509 | 70 | 30 | Ref.Table H.3.8(1) |
| Excavation | By Equipment | m3 | 324 | 80 | 20 | Ref.Table H.3.8(2) |
| | By Man power | m3 | 159 | 20 | 80 | Ref.Table H.3.8(3) |
| Dredging | By Dredger & ManPower | m3 | 196 | 40 | 60 | Ref.Table H.3.8(1) |
| Back filling | By Equipment | m3 | 299 | 90 | 10 | Ref.Table H.3.8(2) |
| | By Man power (With Tamper) | m3 | 118 | 50 | 50 | Ref.Table H.3.8(4) |
| Foundation For Emb. | Pile With Mat | m2 | 1,132 | 55 | 45 | Ref.Table H.3.8(5) |
| Concrete work (1:3:5) | 160 kg/cm2 | m3 | 3,777 | 60 | 40 | do |
| Concrete work (1:2:4) | 210 kg/cm2 | do. | 4,786 | 60 | 40 | Ref.Table H.3.8(6) |
| Reinforcement work | | t | 44,717 | 60 | 40 | do |
| Formwork(Compl. Struct) | Metal Form | m2 | 761 | 80 | 20 | Ref.Table H.3.8(7) |
| Formwork(Simple Struct.) | do | m2 | 614 | 80 | 20 | do |
| Brick Protection work | Brick (t=35cm) | m2 | 1,579 | 40 | 60 | Ref.Table H.3.8(3) |
| Brick Works | Brick | m3 | 3,614 | 40 | 60 | Ref.Table H.3.8(8) |
| Revetment Work | Concrete Blockt=20cm) | m2 | 1,635 | 70 | 30 | Ref.Table H.3.8(9) |
| Maintenance Road | t=30cm | m2 | 588 | 90 | 10 | Ref.Table H.3.8(8) |
| Sodding | | m2 | 60 | 20 | 80 | Ref.Table H.3.8(9) |
| Steel Sheet Pile | Type II | m2 | 6,117 | 60 | 40 | Ref.Table H.3.8(10) |
| Concrete pile | 0.4x0.4m | m | 3,262 | 60 | 40 | Ref.Table H.3.8(11) |
| Bed Protection | 1x1x0.8m | m2 | 4,613 | 50 | 50 | Ref.Table H.3.8(12) |
| Operation Bridge | B=1.2m | m2 | 65,400 | 55 | 45 | do |

Note:

1.Emb:Embankment

2.Simple Struct: Flood Wall,Etc

3.Compli.struct.:Complicated shaped structures

Table H.3.8 UNIT COST OF CONSTRUCTION WORKS

Table H.3.8 (1) :Unit Cost of Construction Works

No:1

Work Banking (Embankment)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------|-------|---------|----------|------------|------|------------------|
| m3 | | | | | | |
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.03 | 225 | 7 | |
| b.Operator | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0.15 | 150 | 23 | |
| d.Labour | | " | 0 | 80 | 0 | |
| | | | | | 29 | |
| 2.Equipment | | | | | | |
| a.Backhoe | 1.2m3 | m3 | 0.5 | 52 | 26 | |
| b.Dump Truck | 11t | m3 | 1 | 116 | 116 | |
| c.Bulldozer | 21t | m3 | 1 | 56 | 56 | |
| d.Tamper | 100kg | day | 0.03 | 1101 | 33 | |
| | | | | | 231 | |
| 3.Material | | | | | | |
| a.Earth Material | | m3 | 0.5 | 150 | 75 | 50% from Outside |
| | | | | | 75 | |
| 4.Miscellaneous | | LS | 1 | | 67 | 20% |
| 5.Sub-Total | | | | | 402 | |
| 6.Site Expences | | LS | 1 | | 60 | |
| 7.Overhead | | LS | 1 | | 46 | |
| 8.Unit Cost | Perm3 | | | | 509 | |
| | | | L/C= | 163 | F/C= | 346 |
| | | | (%) | 32 | F/C= | 68 |

No:2

Work Excavation (Machine+Manpower)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|--------|---------|----------|------------|------|---------|
| m3 | | | | | | |
| 1.Manpower | | | | | | 0.5m3 |
| a.Foreman | | Man/day | 0.2 | 225 | 45 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.5 | 80 | 40 | |
| | | | | | 85 | |
| 2.Equipment | | | | | | |
| a.dreadger | Leased | m3 | 0.5 | 115 | 58 | 0.5m3 |
| | | | | | | |
| | | | | | 58 | |
| 3.Material | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 4.Miscellaneous | | LS | 1 | | 13 | |
| 5.Sub-Total | | | | | 155 | |
| 6.Site Expences | | LS | 1 | | 23 | |
| 7.Overhead | | LS | 1 | | 18 | |
| 8.Unit Cost | Perm3 | | | | 196 | |
| | | | L/C= | 107 | F/C= | 89 |
| | | | (%) | 54 | F/C= | 46 |

Table H.3.8(2) Unit Cost of Construction Works

No:1

Work Excavation By Equipment(m3)

TK

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|--------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.02 | 225 | 5 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.08 | 80 | 6 | |
| | | | | | 11 | |
| 2.Equipment | | | | | | |
| a.Backhoe | 1.2m3 | m3 | 1 | 52 | 52 | |
| b.S.Bulldozer | 16t | m3 | 2 | 80 | 160 | |
| | | | | | 212 | |
| 3.Material | | | | | | |
| | | | | | 0 | |
| 4.Miscellaneous | | LS | 1 | | 33 | |
| 5.Sub-Total | | | | | 256 | |
| 6.Site Expences | | LS | 1 | | 38 | |
| 7.Overhead | | LS | 1 | | 29 | |
| 8.Unit Cost | Per m3 | | | | 324 | |
| | | | L/C= | 58 | F/C= | 267 |
| | | | (%) | 18 | F/C= | 82 |

No:2

Work Backfill By Equipment

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|--------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.02 | 225 | 5 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.08 | 80 | 6 | |
| | | | | | 11 | |
| 2.Equipment | | | | | | |
| a.Backhoe | 0.6m3 | m3 | 1 | 85 | 85 | |
| b.Bulldozer | 16t | m3 | 1 | 80 | 80 | |
| c.Tamper | | Day | 0.027 | 1101 | 30 | |
| | | | | | 195 | |
| 3.Material | | | | | | |
| | | | | | 0 | |
| 4.Miscellaneous | | LS | | | 31 | |
| 5.Sub-Total | | | | | 236 | |
| 6.Site Expences | | LS | | | 35 | |
| 7.Overhead | | LS | | | 27 | |
| 8.Unit Cost | Per m3 | | | | 299 | |
| | | | L/C= | 34 | F/C= | 265 |
| | | | (%) | 11 | F/C= | 89 |

Table H.3.8(3) Unit Cost of Construction Works

No:1

Work Excavation By Manpower(m3)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|-------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.2 | 225 | 45 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.8 | 80 | 64 | |
| | | | | | 109 | |
| 2.Equipment | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 3.Material | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 4.Miscellaneous | | L.S | 1 | | 16 | |
| 5.Sub-Total | | | | | 125 | |
| 6.Site Expences | | L.S | 1 | | 19 | |
| 7.Overhead | | L.S | 1 | | 14 | |
| 8.Unit Cost | | | | | 159 | |
| | | | L/C= | 130 | F/C= | 29 |
| | | | (%) | 82 | F/C= | 18 |

No:2

Work Brick Protection(m2)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|---------|---------|----------|------------|---------|----------|
| 1.Manpower | | | | | | Per 10m2 |
| a.Foreman | | Man/day | 0.2 | 225 | 45 | |
| b.Oprater | | " | 0.7 | 270 | 189 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 1.2 | 80 | 96 | |
| | | | | | 330 | |
| 2.Equipment | | | | | | Per 10m2 |
| a.Track Crane | 10t | Hr | 0.8 | 1584 | 1267 | |
| | | | | | | |
| | | | | | 1267 | |
| 3.Material | | | | | | Per 10m2 |
| a.Brick | 0.21*10 | pcs | 1000 | 3.1 | 3100 | |
| b.Brick Chips | 0.15*10 | m3 | 1.5 | 1200 | 1800 | |
| c.Base Concrete | 0.5*0.5 | m3 | 0.5 | 4786 | 2393 | |
| d.Reinforcement | 60kg/m3 | kg | 30 | 45 | 1350 | |
| e.Formwork | | m2 | 1 | 614 | 614 | |
| | | | | | 9257 | |
| 4.Miscellaneous | | L.S | 1 | | 1628 | |
| 5.Sub-Total | | | | | 12482 | |
| 6.Site Expences | | L.S | 1 | | 1872 | |
| 7.Overhead | | L.S | 1 | | 1435 | |
| 8.Unit Cost | Per m2 | | | | 1579/10 | |
| | | | L/C= | 956 | F/C= | 623 |
| | | | (%) | 61 | F/C= | 39 |

Table H.3.8(4) Unit Cost of Construction Works

No:1

Work Backfilling&Compaction (m3)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------------|--------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.50 | 225 | 113 | |
| b.Oprater | | " | 0.00 | 270 | 0 | |
| c.Assistant | | " | 0.00 | 150 | 0 | |
| d.Labour | | " | 5.00 | 80 | 400 | |
| | | | | | 513 | |
| 2.Equipment | | | | | | |
| a.Tanper | | Day | 0.27 | 1101 | 297 | |
| | | | | | | |
| | | | | | 297 | |
| 3.Material | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 4.Miscellaneous | | | | | | |
| | | LS | 1 | | 121 | |
| 5.Sub-Total | | | | | | |
| | | | | | 931 | |
| 6.Site Expences | | | | | | |
| | | LS | 1 | | 140 | |
| 7.Overhead | | | | | | |
| | | LS | 1 | | 107 | |
| 8.Unit Cost | | | | | | |
| | Per m3 | | | | 118 | /10 |
| | | | L/C= | 63 | F/C= | 54 |
| | | | (%) | 54 | F/C= | 46 |

No:2

Work Cutting slope By Manpower(m2)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------------|-------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.7 | 225 | 158 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 5.3 | 80 | 424 | |
| | | | | | 582 | |
| 2.Equipment | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 3.Material | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 4.Miscellaneous | | | | | | |
| | | LS | 1 | | 87 | |
| 5.Sub-Total | | | | | | |
| | | | | | 669 | |
| 6.Site Expences | | | | | | |
| | | LS | 1 | | 100 | |
| 7.Overhead | | | | | | |
| | | LS | 1 | | 77 | |
| 8.Unit Cost | | | | | | |
| | | | | | 8 | /100 |
| | | | L/C= | 7 | F/C= | 2 |
| | | | (%) | 82 | F/C= | 18 |

Table H.3.8(5) Unit Cost of Construction Works

No:1

Work Geotext /Wick Drain Driving (L=10m)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|-----------|---------|----------|------------|--------|------------|
| 1.Manpower | | | | | | Per Day |
| a.Foreman | | Man/day | 3.75 | 225 | 844 | |
| b.Oprater | | " | 3.75 | 270 | 1013 | |
| c.Assistant | | " | 3 | 150 | 450 | |
| d.Labour | | " | 4.2 | 80 | 336 | |
| | | | | | 2642 | |
| 2.Equipment/Oil | | | | | | |
| a.Piling Driver | 45kw | Hr | 6.5 | 6500 | 42250 | 1690m/ day |
| b.Oil | | l | 101 | 14.5 | 1465 | |
| c.bulldozer | | Hr | 2.5 | 2520 | 6300 | |
| | | | | | 50015 | |
| 3.Material | | | | | | Per Day |
| a.Geotext Drain | | L.s | 1 | 61600 | 61600 | * |
| b.Geotext Mat | | m2 | 264.063 | 45 | 11883 | * |
| c.sand Mat | | m3 | 158.438 | 500 | 79219 | |
| | | | | | 152702 | |
| 4.Miscellaneous | | LS | 1 | | 30839 | |
| 5.Sub-Total | | | | | 236197 | |
| 6.Site Expences | | LS | 1 | | 35430 | |
| 7.Overhead | | LS | 1 | | 27163 | |
| 8.Unit Cost | Per m2 | | | | 1132 | |
| | Per10m/No | | | | 1768 | /169 |
| | | | L/C= | 800 | F/C= | 968 |
| | | | (%) | 45 | F/C= | 55 |

No:2

Work Concrete(1:3:5) m3

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-------------------|----------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.02 | 225 | 5 | |
| b.Oprater | | " | 0.04 | 270 | 11 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.04 | 80 | 3 | |
| | | | | | 19 | |
| 2.Equipment | | | | | | |
| a.Concrete Plant | 30m3/hr | Hr | 0.03 | 4489 | 135 | |
| b.Concret Mixer | 6m3 | Hr | 0.07 | 1834 | 128 | |
| c.Pump Car | 45m3/hr | Hr | 0.024 | 1960 | 47 | |
| d.Crusing | | LS | 1 | | 31 | 10% |
| | | | | | 341 | |
| 3.Material | | | | | | |
| a.Cement | 50kg/bag | bag | 5 | 250 | 1250 | |
| b.Sand | | m3 | 0.33 | 500 | 165 | |
| c.Crushed Stone | | m3 | 0.55 | 1300 | 715 | |
| d. Admixture, etc | | LS | 1 | | 107 | 5% |
| | | | | | 2237 | |
| 4.Miscellaneous | | LS | 1 | | 389 | |
| 5.Sub-Total | | | | | 2986 | |
| 6.Site Expences | | LS | 1 | | 448 | |
| 7.Overhead | | LS | 1 | | 343 | |
| 8.Unit Cost | Perm3 | | | | 3777 | |
| | | | L/C= | 1597 | F/C= | 2180 |
| | | | (%) | 42 | F/C= | 58 |

Table H.3.8(6) Unit Cost of Construction Works

No:1

Work Concrete(1:2:4)m³

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------------|----------------------|----------------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.02 | 225 | 5 | |
| b.Oprater | | " | 0.04 | 270 | 11 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.06 | 80 | 5 | |
| | | | | | 20 | |
| 2.Equipment | | | | | | |
| a.Concrete Plant | 30m ³ /hr | Hr | 0.04 | 4489 | 180 | |
| b.Concrete Mixer | 6m ³ | Hr | 0.07 | 1834 | 128 | |
| c.Pump Car | 45m ³ /hr | hr | 0.024 | 1960 | 47 | |
| d.Clasing | | LS | 1 | | 35 | |
| | | | | | 390 | |
| 3.Material | | | | | | |
| a.Cement | 50kg/bag | bag | 7 | 250 | 1750 | |
| b.Sand | | m ³ | 0.32 | 500 | 160 | |
| c.Crushed Stone | | m ³ | 0.64 | 1300 | 832 | |
| d. Admixture, etc | | LS | 1 | | 137 | 5% |
| | | | | | 2879 | |
| 4.Miscellaneous | | | | | | |
| | | LS | 1 | | 493 | |
| 5.Sub-Total | | | | | | |
| | | | | | 3783 | |
| 6.Site Expences | | | | | | |
| | | LS | 1 | | 567 | |
| 7.Overhead | | | | | | |
| | | LS | 1 | | 435 | |
| 8.Unit Cost | | | | | | |
| | Per m ³ | | | | 4786 | |
| | | | L/C= | 1978 | F/C= | 2808 |
| | | | (%) | 41 | F/C= | 59 |

No:2

Work Reinforcement Bar Arrangement with Material(t)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------------|---------|---------|----------|------------|-------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.5 | 225 | 113 | |
| b.Oprater | | " | 2.4 | 270 | 648 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 1.9 | 80 | 152 | |
| | | | | | 913 | |
| 2.Equipment | | | | | | |
| a.Track Crane | 10t | day | 0.08 | 10296 | 824 | |
| | | | | | 824 | |
| 3.Material | | | | | | |
| a.Deformed Bar | | t | 1.03 | 31000 | 31930 | |
| | | | | | 31930 | |
| 4.Miscellaneous | | | | | | |
| | | LS | 1 | | 1683 | 5% |
| 5.Sub-Total | | | | | | |
| | | | | | 35349 | |
| 6.Site Expences | | | | | | |
| | | LS | 1 | | 5302 | |
| 7.Overhead | | | | | | |
| | | LS | 1 | | 4065 | |
| 8.Unit Cost | | | | | | |
| | Per Ton | | | | 44717 | |
| | | | L/C= | 19003 | F/C= | 25714 |
| | | | (%) | 42 | F/C= | 58 |

Table H.3.8(7) Unit Cost of Construction Works

No:1

Work Form Work For Compl. Structure

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|--------|---------|----------|------------|-------|------------|
| 1.Manpower | | | | | | For 100 m2 |
| a.Foreman | | Man/day | 3.1 | 225 | 698 | |
| b.Plumber | | " | 5 | 230 | 1150 | |
| c.Carpenter | | " | 16.4 | 175 | 2870 | |
| d.Labour | | " | 16.4 | 80 | 1314 | |
| e.Operator | | " | 1.0 | 270 | 270 | |
| | | | | | 6301 | |
| 2.Equipment | | | | | | |
| a.Truck Crane | 10t | day | 1 | 10296 | 10296 | |
| | | | | | | |
| | | | | | 10296 | |
| 3.Material | | | | | | For 100 m2 |
| a.Metal | | m2 | 100 | 360 | 36000 | |
| | | | | | | |
| | | | | | 36000 | |
| 4.Miscellaneous | | LS | 1 | | 7600 | |
| 5.Sub-Total | | | | | 60197 | |
| 6.Site Expences | | LS | 1 | | 9029 | |
| 7.Overhead | | LS | 1 | | 6923 | |
| 8.Unit Cost | Per m2 | | | | 761 | /100 |
| | | | L/C= | 121 | F/C= | 640 |
| | | | (%) | 16 | F/C= | 84 |

No:2

Work Formwork For Simple Struct.(m2)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|--------|---------|----------|------------|-------|----------|
| 1.Manpower | | | | | | Per100m2 |
| a.Foreman | | Man/day | 3.1 | 225 | 698 | |
| b.Plumber | | " | 5 | 230 | 1150 | |
| c.Carpenter | | " | 16.4 | 175 | 2870 | |
| d.Labour | | " | 16.4 | 80 | 1314 | |
| | | | | | 6031 | |
| 2.Equipment | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 3.Material | | | | | | Per100m2 |
| a.Metal Form | | m2 | 100 | 360 | 36000 | |
| | | | | | | |
| | | | | | 36000 | |
| 4.Miscellaneous | | LS | 1 | | 6305 | |
| 5.Sub-Total | | | | | 48336 | |
| 6.Site Expences | | LS | 1 | | 7250 | |
| 7.Overhead | | LS | 1 | | 5559 | |
| 8.Unit Cost | Per m2 | | | | 611 | /100 |
| | | | L/C= | 140 | F/C= | 472 |
| | | | (%) | 23 | F/C= | 77 |

Table H.3.8(8) Unit Cost of Construction Works

No:1

Work Maintenance Road(Compaction With Material(m2))

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|---------------------|--------|---------|----------|------------|---------|-----------|
| 1.Manpower | | | | | | Per100 m2 |
| a.Foreman | | Man/day | 0.6 | 225 | 135 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 3.00 | 80 | 240 | |
| | | | | | 375 | |
| 2.Equipment | | | | | | Per100 m2 |
| a.Compaction Roller | 10t | Hr | 1.5 | 1094 | 1641 | |
| b.Bulldozer | | Hr | 1 | 2406 | 2406 | |
| | | | | | 4047 | |
| 3.Material | | | | | | Per100 m2 |
| a.Brickchips | | m3 | 30 | 1200 | 36000 | |
| | | | | | 36000 | |
| 4.Miscellaneous | | LS | 1 | | 6063 | |
| 5.Sub-Total | | | | | 46485 | |
| 6.Site Expences | | LS | 1 | | 6973 | |
| 7.Overhead | | LS | 1 | | 5346 | |
| 8.Unit Cost | Per m2 | | | | 588/100 | |
| | | | L/C= | 54 | F/C= | 534 |
| | | | (%) | 9 | F/C= | 91 |

No:2

Work Brick Works(m3)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|--------|---------|----------|------------|---------|----------|
| 1.Manpower | | | | | | Per 10m3 |
| a.Foreman | | Man/day | 0.6 | 225 | 135 | |
| b.Oprater | | " | 2.1 | 270 | 567 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 3.6 | 80 | 288 | |
| | | | 0 | | 990 | |
| 2.Equipment | | | 0 | | | Per 10m3 |
| a.Track Crane | 10t | Hr | 2.4 | 1584 | 3802 | |
| | | | | | 3802 | |
| 3.Material | | | | | | Per 10m3 |
| a.Brick | | pcs | 4762 | 3.1 | 14762 | |
| b.Mortal,Etc | | m3 | 1.4 | 3777 | 5288 | |
| | | | | | 20050 | |
| 4.Miscellaneous | | LS | 1 | | 3726 | |
| 5.Sub-Total | | | | | 28568 | |
| 6.Site Expences | | LS | 1 | | 4285 | |
| 7.Overhead | | LS | 1 | | 3285 | |
| 8.Unit Cost | Per m2 | | | | 3614/10 | |
| | | | L/C= | 2125 | F/C= | 1489 |
| | | | (%) | 59 | F/C= | 41 |

Table H.3.8(9) Unit Cost of Construction Works

No:2

Work Revetment (Plain Block m2)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|----------|---------|----------|------------|-------|----------|
| 1.Manpower | | | | | | Per 10m2 |
| a.Foreman | | Man/day | 0.2 | 225 | 45 | |
| b.Oprater | | " | 0.4 | 270 | 108 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.9 | 80 | 72 | |
| | | | | | 225 | |
| 2.Equipment | | | | | | Per 10m2 |
| a.Truck Clane | 10t | Hr | 0.8 | 1584 | 1267 | |
| | | | | | | |
| | | | | | 1267 | |
| 3.Material | | | | | | Per 10m2 |
| a.Concrete | .5*.5*.2 | m3 | 0.5 | 4786 | 2393 | |
| b.Brick Chips | .25*10 | m3 | 2.5 | 1200 | 3000 | |
| c.Base Concrete | 0.5*0.5 | m3 | 0.5 | 4786 | 2393 | |
| d.Reinfocement | 60kg/m3 | kg | 30 | 45 | 1350 | |
| e.Formwork | | m2 | 1 | 614 | 614 | |
| | | | | | 9750 | |
| 4.Miscellaneous | | L.S | 1 | | 1686 | |
| 5.Sub-Total | | | | | 12929 | |
| 6.Site Expences | | L.S | 1 | | 1939 | |
| 7.Overhead | | L.S | 1 | | 1487 | |
| 8.Unit Cost | Per m2 | | | | 1635 | /10 |
| | | | L/C= | 562 | F/C= | 1073 |
| | | | (%) | 34 | F/C= | 66 |

No:1

Work Sodding(m2)

(Tk.)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|---------------------|--------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.6 | 225 | 135 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 6.4 | 80 | 512 | |
| | | | | | 647 | |
| 2.Equipment | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 3.Material | | | | | | |
| a.Grass for sodding | | m2 | 100 | 35 | 3500 | |
| | | | | | | |
| | | | | | 3500 | |
| 4.Miscellaneous | | L.S | 1 | | 622 | |
| 5.Sub-Total | | | | | 4769 | |
| 6.Site Expences | | L.S | 1 | | 715 | |
| 7.Overhead | | L.S | 1 | | 548 | |
| 8.Unit Cost | Per m2 | | | | 60 | /100 |
| | | | L/C= | 49 | F/C= | 11 |
| | | | (%) | 82 | F/C= | 18 |

Table H.3.8(10) Unit Cost of Construction Works

No:1 Work Steel Sheet Pile (L=6m)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|-----------|---------|----------|------------|--------|--------------|
| 1.Manpower | | | | | | For 10sheets |
| a.Foreman | | Man/day | 0.23 | 225 | 52 | |
| b.Oprater | | " | 0.23 | 270 | 62 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.46 | 80 | 37 | |
| | | | | | 151 | |
| 2.Equipment | | | | | | For 10sheets |
| a.Vibro Hummer | 45kw | Hr | 1.7 | 907 | 1542 | |
| b.Clawler Crane | 30t | Hr | 1.7 | 4127 | 7016 | |
| c.Generator | 200kva | Day | 0.23 | 8132 | 1870 | |
| | | | | | 10428 | |
| 3.Material | | | | | | |
| a.Steel Sheet | | No | 1 | 89280 | 89280* | |
| | | | | | 89280 | |
| 4.Miscellaneous | | LS | 1 | | 14979 | |
| 5.Sub-Total | | | | | 114838 | |
| 6.Site Expences | | LS | 1 | | 17226 | |
| 7.Overhead | | LS | 1 | | 13206 | |
| 8.Unit Cost | Per Sheet | | | | 14527 | /10 |
| | | | L/C= | 5723 | F/C= | 8804 |
| | | | (%) | 39 | F/C= | 61 |

No:2 Work Steel Sheet Pile(10m)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-------------------|-----------|---------|----------|------------|---------|---------------|
| 1.Manpower | | | | | | For 10 sheets |
| a.Foreman | | Man/day | 0.46 | 225 | 104 | |
| b.Oprater | | " | 0.46 | 270 | 124 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.92 | 80 | 74 | |
| | | | | | 301 | |
| 2.Equipment | | | | | | For 10 sheets |
| a.Vibro Hummer | 45kw | Hr | 3.4 | 907 | 3084 | |
| b.Clawer Crane | 30t | Hr | 3.4 | 4127 | 14032 | |
| c.Generator | 200kva | Day | 0.46 | 8132 | 3741 | |
| | | | | | 20856 | |
| 3.Material | | | | | | |
| a.SteelSheet Pile | | No | 10 | 14880 | 148800* | |
| | | | | | 148800 | |
| 4.Miscellaneous | | LS | 1 | | 25494 | |
| 5.Sub-Total | | | | | 195451 | |
| 6.Site Expences | | LS | 1 | | 29318 | |
| 7.Overhead | | LS | 1 | | 22477 | |
| 8.Unit Cost | Per Sheet | | | | 24725 | /10 |
| | | | L/C= | 9618 | F/C= | 15107 |
| | | | (%) | 39 | F/C= | 61 |

Table H.3.8(11) Unit Cost of Construction Works

No:2

Work R.C Pile Driving 10m/No

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------------|----------|---------|----------|------------|-------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.16 | 225 | 36 | |
| b.Oprater | | " | 0.32 | 270 | 86 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.16 | 80 | 13 | |
| | | | | | 135 | |
| 2.Equipment | | | | | | |
| a.Diesel hummer | 2.5t | Hr | 1 | 1166 | 1166 | |
| b.Clawer Clane | 30t | Hr | 1 | 4127 | 4127 | |
| c.Generator | 200kva | Day | 0.16 | 8132 | 1301 | |
| | | | | | 6594 | |
| 3.Material | | | | | | |
| a.R.C Pile Concrete | .4*.4*10 | m3 | 1.6 | 4890 | 7824 | |
| b.Reinforcement | 100kg/m3 | kg | 160 | 45 | 7200 | |
| c.Formwork,Etc | | LS | 1 | | 1502 | 10% |
| | | | | | 16526 | |
| 4.Miscellaneous | | | | | | |
| | | LS | 1 | | 3488 | |
| 5.Sub-Total | | | | | | |
| | | | | | 26744 | |
| 6.Site Expences | | | | | | |
| | | LS | 1 | | 4012 | |
| 7.Overhead | | | | | | |
| | | LS | 1 | | 3076 | |
| 8.Unit Cost | | | | | | |
| | Per No | | | | 33831 | |
| | | | L/C= | 12538 | F/C= | 21294 |
| | | | (%) | 37 | F/C= | 63 |

No:1

Work R.C Pile Driving 20m/No

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------------|----------|---------|----------|------------|-------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.24 | 225 | 54 | |
| b.Oprater | | " | 0.48 | 270 | 130 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.48 | 80 | 38 | |
| | | | | | 222 | |
| 2.Equipment | | | | | | |
| a.Diesel Hummer | 2.5t | Hr | 1.5 | 1166 | 1749 | |
| b.Clawer Clane | 30t | Day | 1.5 | 4127 | 6191 | |
| c.Generator | 200kva | Day | 0.24 | 8132 | 1952 | |
| | | | | | 9891 | |
| 3.Material | | | | | | |
| a.R.C Pile | .4*.4*20 | m3 | 3.2 | 4890 | 15648 | |
| b.Reinforcement | 100kg/m3 | kg | 320 | 45 | 14400 | |
| c.Formwork,Etc | | LS | 1 | | 3005 | 10% |
| | | | | | 33053 | |
| 4.Miscellaneous | | | | | | |
| | | LS | 1 | | 6475 | |
| 5.Sub-Total | | | | | | |
| | | | | | 49641 | |
| 6.Site Expences | | | | | | |
| | | LS | 1 | | 7446 | |
| 7.Overhead | | | | | | |
| | | LS | 1 | | 5709 | |
| 8.Unit Cost | | | | | | |
| | Per No | | | | 62796 | |
| | | | L/C= | 24315 | F/C= | 38480 |
| | | | (%) | 39 | F/C= | 61 |

Table H.3.8(12) Unit Cost of Construction Works

No:1

Work Bed Protection (Block m2)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|---------|---------|----------|------------|-------|----------|
| 1.Manpower | | | | | | Per 10m2 |
| a.Foreman | | Man/day | 0.2 | 225 | 45 | |
| b.Oprater | | " | 0.4 | 270 | 108 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.9 | 80 | 72 | |
| | | | | | 225 | |
| 2.Equipment | | | | | | Per 10m2 |
| a.Truck Crane | 10t | Hr | 0.8 | 1584 | 1267 | |
| | | | | | | |
| | | | | | 1267 | |
| 3.Material | | | | | | Per 10m2 |
| a.Concrete | 1*1*0.8 | m3 | 8 | 3777 | 30216 | |
| | | | | | | |
| | | | | | 30216 | |
| 4.Miscellaneous | | L.S | 1 | | 4756 | |
| 5.Sub-Total | | | | | 36464 | |
| 6.Site Expences | | L.S | 1 | | 5470 | |
| 7.Overhead | | L.S | 1 | | 4193 | |
| 8.Unit Cost | Per m2 | | | | 4613 | /10 |
| | | | L/C= | 2210 | F/C= | 2403 |
| | | | (%) | 48 | F/C= | 52 |

No:2

Work Operation Bridge(m2)

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|-----------------|--------|---------|----------|------------|-------|------------------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0 | 225 | 0 | |
| b.Oprater | | " | 0 | 270 | 0 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0 | 80 | 0 | |
| | | | | | 0 | |
| 2.Equipment | | | | | | |
| | | | | | | |
| | | | | | 0 | |
| 3.Material | | | | | | |
| | | | | | 0 | |
| | | | | | 0 | |
| 4.Miscellaneous | | L.S | 1 | | 0 | |
| 5.Sub-Total | | | | | 0 | |
| 6.Site Expences | | L.S | 1 | | 0 | 1286000*(1.04)^2 |
| 7.Overhead | | L.S | 1 | | 0 | /17.7/1.2= |
| | | | | | | 65400/m2 |
| 8.Unit Cost | Per m2 | | | | 65400 | Ref.JICA Study |
| | | | L/C= | 0 | F/C= | 65400 |
| | | | (%) | 55 | F/C= | 45 |

Table H.3.8(13) Unit Cost of Construction Works

No:1

Work (Reference) Sand F10m/No

| Item | Spec. | Unit | Quantity | Unit Price | Cost | Remarks |
|------------------------|---------|---------|----------|------------|------|---------|
| 1.Manpower | | | | | | |
| a.Foreman | | Man/day | 0.09 | 225 | 20 | |
| b.Oprater | | " | 0.09 | 270 | 24 | |
| c.Assistant | | " | 0 | 150 | 0 | |
| d.Labour | | " | 0.18 | 80 | 14 | |
| | | | | | 59 | |
| 2.Equipment | | | | | | |
| a.Sand Pile Driver | 50kw | Hr | 0.15 | 7313 | 1097 | |
| b.Air Compressor | 10.5m3 | Day | 0.03 | 5311 | 159 | |
| c.Generator | 200 KVA | Day | 0.03 | 8132 | 244 | |
| d.Tractor Shovel | 0.8m3 | Hr | 0.15 | 1648 | 247 | |
| | | | | | 1747 | |
| 3.Material | | | | | | |
| a.Sand Pile | D=0.4m | m3 | 1.6 | 500 | 800 | |
| b.Geotex | | m2 | 4 | 45 | 180 | |
| c.Sand mat | d=0.6m | m3 | 2.4 | 500 | 1200 | |
| | | | | | 2180 | |
| 4.Miscellaneous | | | | | | |
| | | L.S | 1 | | 598 | |
| 5.Sub-Total | | | | | | |
| | | | | | 4584 | |
| 6.Site Expences | | | | | | |
| | | L.S | 1 | | 688 | |
| 7.Overhead | | | | | | |
| | | L.S | 1 | | 527 | |
| 8.Unit Cost | | | | | | |
| | Per No | | | | 5799 | |
| | | | L/C= | 2479 | F/C= | 3321 |
| | | | (%) | 43 | | 57 |

Table H.3.9 Total Project Cost of G.Dhaka East

Unit : Million TK (1991Price)

| Phase Project Area | Construction Cost (x10 ⁶) | | | | Total | Remarks |
|--------------------------------------|---------------------------------------|----|-------|-----|--------|----------------|
| | F/C | % | L/C | % | | |
| A. Construction Cost | 7,558 | 69 | 3,358 | 31 | 10,916 | |
| 1. Flood Mitigation | 3,732 | 66 | 1,964 | 34 | 5,696 | |
| 1) DC-1 | 1,675 | 66 | 852 | 34 | 2,527 | Ref. H.3.10(1) |
| 2) DC-2 | 658 | 65 | 362 | 35 | 1,020 | Ref. H.3.10(2) |
| 3) DC-3 | 664 | 65 | 361 | 35 | 1,025 | Ref. H.3.10(3) |
| 4) DC-4 | 735 | 65 | 389 | 35 | 1,124 | Ref. H.3.10(4) |
| 2. Storm Water Drainage | 3,827 | 73 | 1,393 | 27 | 5,220 | |
| 1) D-C 1 | 657 | 70 | 275 | 30 | 932 | |
| 2) DC-2 | 1,047 | 76 | 324 | 24 | 1,371 | |
| 3) DC-3 | 1,003 | 77 | 300 | 23 | 1,303 | |
| 4) DC-4 | 1,120 | 69 | 494 | 31 | 1,614 | |
| B. Physical Contingency | 1,134 | 69 | 501 | 31 | 1,635 | Ax15% |
| C. Engineering | 869 | 69 | 387 | 31 | 1,256 | (A+B)x10% |
| D. Administration | | 0 | 327 | 100 | 327 | Ax3% |
| E. Land Aquisition & Compensation | | 0 | 1,487 | 100 | 1,487 | Ref. H.3.12 |
| F. C.D.S.T & Tax | | 0 | 2,674 | 100 | 2,674 | Ref. H.3.13 |
| Total | 9,561 | 52 | 8,734 | 48 | 18,296 | |

Table H.3.10(1) Project Cost of Dhaka East (DC-1)

Unit : Million TK (1991Price)

| Phase Project Area | Construction Cost (x10 ⁶) | | | Remarks |
|--------------------------------------|---------------------------------------|-------|-------|----------------|
| | F/C | L/C | Total | |
| A. Construction Cost | 2,332 | 1,127 | 3,459 | |
| 1. Flood Mitigation | 1,675 | 852 | 2,527 | |
| 1). Embankment | 1,541 | 800 | 2,340 | Ref. H.3.13 |
| 2). Flood Wall | 15 | 8 | 22 | Ref. H.3.14 |
| 3). Sluice Gate | 120 | 45 | 165 | Ref. H.3.15 |
| 4). Related, Struc. Etc | 0 | 0 | 0 | |
| 2. Storm Water Drainage | 657 | 275 | 932 | |
| 1). Pump Sta. | 513 | 121 | 634 | Ref. H.3.17(1) |
| 2). Khal Improve. | 136 | 144 | 280 | Ref. H.3.18 |
| 3). Bridge, Etc | 7 | 10 | 17 | Ref. H.3.19 |
| B. Physical Contingency | 349 | 169 | 518 | Ax15% |
| C. Engineering | 268 | 130 | 398 | (A+B)x10% |
| D. Administration | 0 | 104 | 104 | Ax3% |
| E. Land Aquisition & Compensation | 0 | 565 | 565 | Ref. H.3.11 |
| F. CDST & Tax | 0 | 572 | 572 | Ref. H.3.12 |
| Total | 2,949 | 2,667 | 5,616 | |

Table H.310(2) Project Cost: Dhaka East (DC-2)

Unit : Million TK (1991Price)

| Phase Project Area | Construction Cost (x10 ⁶) | | | Remarks |
|--------------------------------------|---------------------------------------|-------|-------|----------------|
| | F/C | L/C | Total | |
| A. Construction Cost | 1,705 | 686 | 2,391 | |
| 1. Flood Mitigation | 658 | 362 | 1,020 | |
| 1). Embankment | 576 | 328 | 905 | Ref. H.3.13 |
| 2). Flood Wall | 16 | 8 | 24 | Ref. H.3.14 |
| 3). Sluice Gate | 66 | 26 | 92 | Ref. H.3.15 |
| 4). Related, Struc. Etc | 0 | 0 | 0 | |
| 2. Storm Water Drainage | 1,047 | 324 | 1,371 | |
| 1). Pump Sta. | 946 | 218 | 1,163 | Ref. H.3.17(1) |
| 2). Khal Improve. | 101 | 106 | 208 | Ref. H.3.18 |
| 3). Bridge, Etc | 0 | 0 | 0 | Ref. H.3.19 |
| B. Physical Contingency | 256 | 102 | 358 | Ax15% |
| C. Engineering | 196 | 79 | 275 | (A+B)x10% |
| D. Administration | 0 | 72 | 72 | Ax3% |
| E. Land Aquisition & Compensation | 0 | 272 | 272 | Ref. H.3.11 |
| F. CDST & Tax | 0 | 706 | 706 | Ref. H.3.12 |
| Total | 2,157 | 1,917 | 4,074 | |

Table H.3.10(3) Project Cost of Dhaka East (DC-3)

Unit : Million TK (1991Price)

| Phase Project Area | Construction Cost (x10 ⁶) | | | Remarks |
|-----------------------------------|---------------------------------------|-------|-------|----------------|
| | F/C | L/C | Total | |
| A. Construction Cost | 1,667 | 661 | 2,328 | |
| 1. Flood Mitigation | 664 | 361 | 1,025 | |
| 1). Embankment | 594 | 335 | 930 | Ref. H.3.13 |
| 2). Flood Wall | 10 | 5 | 16 | Ref. H.3.14 |
| 3). Sluice Gate | 60 | 20 | 80 | Ref. H.3.15 |
| 4). Related Struc. Etc | 0 | 0 | 0 | |
| 2. Storm Water Drainage | 1,002 | 300 | 1,303 | |
| 1). Pump Sta. | 927 | 206 | 1,133 | Ref. H.3.17(1) |
| 2). Khal Improve. | 76 | 94 | 170 | Ref. H.3.18 |
| 3). Bridge, Etc | 0 | 0 | 0 | Ref. H.3.19 |
| B. Physical Contingency | 250 | 98 | 348 | Ax15% |
| C. Engineering | 192 | 76 | 268 | (A+B)x10% |
| D. Administration | 0 | 70 | 70 | Ax3% |
| E. Land Aquisition & Compensation | 0 | 238 | 238 | Ref. H.3.11 |
| F. CDST & Tax | 0 | 709 | 709 | Ref. H.3.12 |
| Total | 2,109 | 1,852 | 3,961 | |

Table H.3.10(4) Project Cost: Dhaka East (DC-4)

Unit : Million TK (1991Price)

| Phase Project Area | Construction Cost (x10 ⁶) | | | Remarks |
|-----------------------------------|---------------------------------------|-------|-------|----------------|
| | F/C | L/C | Total | |
| A. Construction Cost | 1,854 | 884 | 2,738 | |
| 1. Flood Mitigation | 735 | 389 | 1,124 | |
| 1). Embankment | 655 | 359 | 1,013 | Ref. H.3.13 |
| 2). Flood Wall | 19 | 10 | 29 | Ref. H.3.14 |
| 3). Sluice Gate | 61 | 20 | 81 | Ref. H.3.15 |
| 4). Related Struc. Etc | 0 | 0 | 0 | |
| 2. Storm Water Drainage | 1,120 | 495 | 1,614 | |
| 1). Pump Sta. | 914 | 208 | 1,121 | Ref. H.3.17(1) |
| 2). Khal Improve. | 202 | 282 | 484 | Ref. H.3.18 |
| 3). Bridge, Etc | 4 | 5 | 9 | Ref. H.3.19 |
| B. Physical Contingency | 279 | 132 | 411 | Ax15% |
| C. Engineering | 213 | 102 | 315 | (A+B)x10% |
| D. Administration | 0 | 82 | 82 | Ax3% |
| E. Land Aquisition & Compensation | 0 | 412 | 412 | Ref. H.3.11 |
| F. CDST & Tax | 0 | 687 | 687 | Ref. H.3.12 |
| Total | 2,347 | 2,298 | 4,645 | |

Table H.3.11 Summary of Land Acquisition and Cost: G.Dhaka East

Unit : Million TK (1991 Prince)

| Project Area | Land Acquisition | | | Compensation | | | Total |
|--------------|------------------|----------------------|-----------|------------------|----------------------|-----------|---------|
| | Flood Mitigation | Storm Water Drainage | Sub-Total | Flood Mitigation | Storm Water Drainage | Sub-Total | |
| 1).DC-1 | 396.6 | 133.6 | 530.2 | 26.4 | 8.0 | 34.4 | 564.6 |
| 2) DC-2 | 135.6 | 114.6 | 250.2 | 19.7 | 2.0 | 21.7 | 271.9 |
| 3) DC-3 | 160.1 | 64.0 | 224.1 | 6.3 | 7.3 | 13.6 | 237.7 |
| 4) DC-4 | 223.3 | 157.0 | 380.3 | 16.2 | 15.0 | 31.2 | 411.5 |
| Total | 915.6 | 469.2 | 1,384.8 | 68.6 | 32.3 | 100.9 | 1,485.7 |

Table H.3.12 Summary of C.D.S.T. & Tax : G.Dhaka East

Unit : Million TK (1991 Prince)

| Project Area | Flood Mitigation | | | Storm Water Drainage | | | Total |
|--------------|------------------|-------------|-----------|----------------------|------------------|-----------|---------|
| | Embankment | Sluice Gate | Sub-Total | Pump Station | Khal Improvement | Sub-Total | |
| 1).DC-1 | 206.2 | 67.6 | 273.8 | 297.9 | 0.3 | 298.2 | 572.0 |
| 2) DC-2 | 113.4 | 32.2 | 145.6 | 560.1 | 0.0 | 560.1 | 705.7 |
| 3) DC-3 | 115.9 | 36.6 | 152.5 | 556.7 | 0.0 | 556.7 | 709.2 |
| 4) DC-4 | 105.7 | 36.5 | 142.2 | 545.2 | 0.0 | 545.2 | 687.4 |
| Total | 541.2 | 172.9 | 714.1 | 1,959.9 | 0.3 | 1,960.2 | 2,674.3 |

Table H.3.13 CONSTRUCTION COST OF EMBANKMENT: DHAKA EAST

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks (Tk1.05) |
|------------------------------|------|----------------|--------|--------|-----------|---------------------------|-----------|-----------|---------------------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | - | - | - | 1 | 160,280 | 86,759 | 247,038 | 5% |
| II. Direct Construction Cost | | | | | | | | | |
| DC-1: | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 53,600 | 13,893 | 3,473 | 17,366 | |
| 2. Banking | m3 | 509 | 70 | 30 | 2,171,952 | 773,866 | 331,657 | 1,105,524 | |
| 3. Foundation | m2 | 1,132 | 55 | 45 | 528,776 | 329,216 | 269,358 | 598,574 | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 190,276 | 217,771 | 93,330 | 311,101 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 108,400 | 57,365 | 6,374 | 63,739 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 438,156 | 5,258 | 21,031 | 26,289 | |
| 7. Miscellaneous | LS | - | - | - | 1 | 69,868 | 36,261 | 106,130 | |
| Sub-Total | | | | | | 1,467,238 | 761,486 | 2,228,724 | (2,340mill.) |
| DC-2: | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 12,000 | 3,110 | 778 | 3,888 | 2000m3/km |
| 2. Banking | m3 | 509 | 70 | 30 | 760,123 | 270,832 | 116,071 | 386,903 | |
| 3. Foundation | m2 | 1,132 | 55 | 45 | 290,755 | 181,024 | 148,111 | 329,135 | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 43,325 | 49,585 | 21,251 | 70,836 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 30,000 | 15,876 | 1,764 | 17,640 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 202,835 | 2,434 | 9,736 | 12,170 | |
| 7. Miscellaneous | LS | - | - | - | 1 | 26,143 | 14,885 | 41,029 | |
| Sub-Total | | | | | | 549,005 | 312,595 | 861,600 | (905 mill.) |
| DC-3: | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 24,740 | 6,413 | 1,603 | 8,016 | |
| 2. Banking | m3 | 509 | 70 | 30 | 777,401 | 276,988 | 118,709 | 395,697 | |
| 3. Foundation | m2 | 1,132 | 55 | 45 | 297,217 | 185,047 | 151,402 | 336,450 | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 39,270 | 44,945 | 19,262 | 64,206 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 43,110 | 22,814 | 2,535 | 25,349 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 223,971 | 2,688 | 10,751 | 13,438 | |
| 7. Miscellaneous | LS | - | - | - | 1 | 26,945 | 15,213 | 42,158 | |
| Sub-Total | | | | | | 565,839 | 319,475 | 885,314 | (930 mill.) |
| DC-4: | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 34,340 | 8,901 | 2,225 | 11,126 | |
| 2. Banking | m3 | 509 | 70 | 30 | 1,064,882 | 379,417 | 162,607 | 542,025 | |
| 3. Foundation | m2 | 1,132 | 55 | 45 | 270,953 | 168,695 | 138,023 | 306,719 | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 0 | 0 | 0 | 0 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 60,610 | 32,075 | 3,564 | 35,639 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 394,341 | 4,732 | 18,928 | 23,660 | |
| 7. Miscellaneous | LS | - | - | - | 1 | 29,691 | 16,267 | 45,958 | |
| Sub-Total | | | | | | 623,512 | 341,616 | 965,127 | (1,013mill.) |
| Total (II) | | | | | | 3,205,593 | 1,735,172 | 4,940,765 | |
| Total(I+II) | | | | | | 3,365,873 | 1,821,931 | 5,187,804 | |
| | | | | | | 0.65 | 0.35 | 1 | |
| Total: | | | | | | | | | |
| I. Preparation of Work | LS | - | - | - | 1 | 160,280 | 86,759 | 247,038 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 124,680 | 32,317 | 8,079 | 40,396 | |
| 2. Banking | m3 | 509 | 70 | 30 | 4,774,358 | 1,701,104 | 729,044 | 2,430,148 | |
| 3. Foundation | m2 | 1,132 | 55 | 45 | 1,387,701 | 863,983 | 706,895 | 1,570,878 | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 272,871 | 312,301 | 133,843 | 446,144 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 242,120 | 128,130 | 14,237 | 142,367 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 1,259,303 | 15,112 | 60,447 | 75,558 | |
| 7. Miscellaneous | LS | - | - | - | 4 | 152,647 | 82,627 | 235,275 | |
| Sub-Total (II) | | | | | | 3,205,593 | 1,735,172 | 4,940,765 | |
| Total (I+II) | | | | | | 3,365,873 | 1,821,931 | 5,187,804 | |
| III Land Aquisition | | | | | | | | | |
| DC-1 | m2 | 280 | | 100 | 1,416,282 | | 396,559 | 396,559 | |
| DC-2 | m2 | 280 | | 100 | 484,110 | | 135,551 | 135,551 | |
| DC-3 | m2 | 280 | | 100 | 571,782 | | 160,099 | 160,099 | |
| DC-4 | m2 | 280 | | 100 | 797,593 | | 223,326 | 223,326 | |
| Total | | | | | 3,269,767 | | 915,535 | 915,535 | |

Note : 1) Unit Construction costs are shown in Table H.3.7

2) Bill of Quantities are shown in Data Book

Table H.3.14 CONSTRUCTION COST OF FLOOD WALL:G.DHAKA EAST

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks (If x1.05) |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|--------|--------|-----------------------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1 | 2,848 | 1,475 | 4,324 | 5% |
| II. Direct Construction Cost | | | | | | | | | |
| 1).DC-1 | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 2,400 | 76 | 305 | 382 | |
| 2. Backfill &Filling | m3 | 118 | 50 | 50 | 24,249 | 1,431 | 1,431 | 2,861 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 1,255 | 3,604 | 2,403 | 6,006 | |
| 4. Form | m2 | 614 | 80 | 20 | 11,580 | 5,688 | 1,422 | 7,110 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 88 | 2,357 | 1,571 | 3,928 | |
| 6. Miscellaneous | LS | | | | 1 | 658 | 357 | 1,014 | |
| Subtotal | | | | | | 13,814 | 7,489 | 21,302 | (22 mill.) |
| 2).DC-2 | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 3,020 | 96 | 384 | 480 | |
| 2. Backfill &Filling | m3 | 118 | 50 | 50 | 12,790 | 755 | 755 | 1,509 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 1,410 | 4,049 | 2,699 | 6,748 | |
| 4. Form | m2 | 614 | 80 | 20 | 13,640 | 6,700 | 1,675 | 8,375 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 99 | 2,648 | 1,765 | 4,414 | |
| 6. Miscellaneous | LS | | | | 1 | 712 | 364 | 1,076 | |
| Subtotal | | | | | | 14,960 | 7,642 | 22,602 | (24 mill.) |
| 3).DC-3 | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 1,000 | 32 | 127 | 159 | |
| 2. Backfill &Filling | m3 | 118 | 50 | 50 | 13,975 | 825 | 825 | 1,649 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 900 | 2,584 | 1,723 | 4,307 | |
| 4. Form | m2 | 614 | 80 | 20 | 8,600 | 4,224 | 1,056 | 5,280 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 63 | 1,690 | 1,127 | 2,817 | |
| 6. Miscellaneous | LS | | | | 1 | 468 | 243 | 711 | |
| Subtotal | | | | | | 9,823 | 5,101 | 14,924 | (16 mill.) |
| 4).DC-4 | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 3,778 | 120 | 481 | 601 | |
| 2. Backfill &Filling | m3 | 118 | 50 | 50 | 2,754 | 162 | 162 | 325 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 1,966 | 5,646 | 3,764 | 9,409 | |
| 4. Form | m2 | 614 | 80 | 20 | 16,024 | 7,871 | 1,968 | 9,839 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 138 | 3,692 | 2,462 | 6,154 | |
| 6. Miscellaneous | LS | | | | 1 | 875 | 442 | 1,316 | |
| Subtotal | | | | | | 18,366 | 9,278 | 27,644 | (29 mill.) |
| Total | | | | | | 59,811 | 30,985 | 90,796 | |
| Total | | | | | | | | | |
| I. Preparation of Work | | | | | 1 | 2,848 | 1,475 | 4,324 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 10,198 | 324 | 1,297 | 1,621 | |
| 2. Backfill &Filling | m3 | 118 | 50 | 50 | 53,768 | 3,172 | 3,172 | 6,345 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 5,531 | 15,883 | 10,589 | 26,471 | |
| 4. Form | m2 | 614 | 80 | 20 | 49,844 | 24,483 | 6,121 | 30,604 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 387 | 10,388 | 6,925 | 17,313 | |
| 6. Miscellaneous | LS | | | | 4 | 2,713 | 1,405 | 4,118 | |
| Subtotal | | | | | | 56,963 | 29,509 | 86,473 | |
| Total | | | | | | 59,811 | 30,985 | 90,796 | |
| Land Aquisition | | | | | | | | | |
| 1).DC-1 | m2 | 280 | | 100 | 0 | | | 0 | |
| 2).DC-2 | m2 | 280 | | 100 | 0 | | | 0 | |
| 3).DC-3 | m2 | 280 | | 100 | 0 | | | 0 | |
| 4).DC-4 | m2 | 280 | | 100 | 0 | | | 0 | |
| Total | | | | | | | | | |

Table H.3.15 Summary of Construction Cost of Sluice Gate (DC-1~4)

Unit : Million Tk. (1991 Price)

| Area | No. Sluice | Construction Cos (x1000) | | | Remarks |
|-----------------------|--------------|--------------------------|----------------|----------------|-----------------------|
| | | F/C | L/C | Total | |
| DC - 1 | Gate No. 14 | 15,860 | 7,107 | 22,967 | Ref. Table H.3.16 (1) |
| | Gate No. 15 | 21,412 | 9,133 | 30,545 | Ref. Table H.3.16 (2) |
| | Gate No. 16 | 46,851 | 17,738 | 64,589 | Ref. Table H.3.16 (3) |
| | SG:(Sub-1) | 35,701 | 10,812 | 46,513 | Ref. Table H.3.16 (7) |
| | Sub-Total | 119,824 | 44,790 | 164,614 | |
| DC - 2 | Gate No. 17 | 65,916 | 26,272 | 92,188 | Ref. Table H.3.16 (4) |
| DC - 3 | Gate No. 18A | 59,951 | 19,875 | 79,826 | Ref. Table H.3.16 (5) |
| DC - 4 | Gate No. 18B | 60,880 | 20,496 | 81,376 | Ref. Table H.3.16 (6) |
| Total (DC-1~4) | Total | 306,571 | 111,433 | 418,004 | |

Table H.3.16(1) CONSTRUCTION COST OF SLUICE GATE : Gate No. 14

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 755 | 338 | 1094 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 1396.00 | 362 | 90 | 452 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 665.00 | 179 | 20 | 199 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 313.00 | 1149 | 766 | 1915 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 1216.00 | 2381 | 1588 | 3969 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 650.00 | 1867 | 1244 | 3111 | |
| 6. Form | m2 | 761 | 80 | 20 | 1430.00 | 871 | 218 | 1088 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 58.50 | 1570 | 1046 | 2616 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 322.00 | 743 | 743 | 1485 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 18.00 | 647 | 530 | 1177 | |
| 10. Miscellaneous | LS | | | | 1.00 | 488 | 312 | 801 | |
| Subtotal | | | | | | 10256 | 6557 | 16813 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 9.68 | 2556 | | 2556 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 9.68 | 1704 | | 1704 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 383 | 43 | 426 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 206 | 169 | 375 | |
| Subtotal | | | | | | 4849 | 211 | 5060 | |
| Total | | | | | | 15860 | 7107 | 22967 | |
| | | | | | | 0.69 | 0.31 | 1 | |

Table H.3.16(2) CONSTRUCTION COST OF SLUICE GATE : Gate No.15

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 1020 | 435 | 1455 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 1670.00 | 433 | 108 | 541 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 637.00 | 171 | 19 | 190 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 358.00 | 1314 | 876 | 2190 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 1796.00 | 3517 | 2345 | 5862 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 834.00 | 2395 | 1597 | 3992 | |
| 6. Form | m2 | 761 | 80 | 20 | 1834.80 | 1117 | 279 | 1396 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 75.06 | 2014 | 1343 | 3356 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 384.00 | 886 | 886 | 1771 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 18.00 | 647 | 530 | 1177 | |
| 10. Miscellaneous | LS | | | | 1.00 | 625 | 399 | 1024 | |
| Subtotal | | | | | | 13119 | 8381 | 21500 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 14.52 | 3833 | | 3833 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 14.52 | 2556 | | 2556 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 575 | 64 | 639 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 309 | 253 | 562 | |
| Subtotal | | | | | | 7273 | 317 | 7590 | |
| Total | | | | | | 21412 | 9133 | 30545 | |

Table H.3.16(3) CONSTRUCTION COST OF SLUICE GATE :Gate No.16

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 2231 | 845 | 3076 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 7597.00 | 1969 | 492 | 2461 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 2777.00 | 747 | 83 | 830 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 506.00 | 1857 | 1238 | 3095 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 3845.00 | 7530 | 5020 | 12550 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 1646.00 | 4727 | 3151 | 7878 | |
| 6. Form | m2 | 761 | 80 | 20 | 3621.20 | 2205 | 551 | 2756 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 148.14 | 3975 | 2650 | 6624 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 628.00 | 1448 | 1448 | 2897 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 24.00 | 863 | 706 | 1570 | |
| 10. Miscellaneous | LS | | | | 1.00 | 1266 | 767 | 2033 | |
| Subtotal | | | | | | 26587 | 16107 | 42695 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 36.00 | 9504 | | 9504 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 36.00 | 6336 | | 6336 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 1426 | 158 | 1584 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 767 | 627 | 1394 | |
| Subtotal | | | | | | 18032 | 786 | 18818 | |
| Total | | | | | | 46851 | 17738 | 64588 | |

Table H.16(4) CONSTRUCTION COST OF SLUICE GATE :Gate No.17

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 3139 | 1251 | 4390 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 10181.00 | 2639 | 660 | 3299 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 3024.00 | 814 | 90 | 904 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 612.00 | 2246 | 1497 | 3744 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 7300.00 | 14296 | 9531 | 23827 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 2213.00 | 6355 | 4237 | 10591 | |
| 6. Form | m2 | 761 | 80 | 20 | 4868.60 | 2964 | 741 | 3705 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 199.17 | 5344 | 3563 | 8906 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 792.00 | 1827 | 1827 | 3653 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 24.00 | 863 | 706 | 1570 | |
| 10. Miscellaneous | LS | | | | 1.00 | 1867 | 1143 | 3010 | |
| Subtotal | | | | | | 39215 | 23994 | 63209 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 47.04 | 12419 | | 12419 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 47.04 | 8279 | | 8279 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 1863 | 207 | 2070 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 1002 | 820 | 1821 | |
| Subtotal | | | | | | 23562 | 1027 | 24589 | |
| Total | | | | | | 65916 | 26272 | 92188 | |
| | | | | | | 0.72 | 0.28 | 1 | |

Table H.3.16(5) CONSTRUCTION COST OF SLUICE GATE :Gate No.18A

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 2855 | 946 | 3801 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 11022.00 | 2857 | 714 | 3571 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 3193.00 | 859 | 95 | 955 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 641.00 | 2353 | 1568 | 3921 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 2434.00 | 4767 | 3178 | 7945 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 2271.00 | 6521 | 4348 | 10869 | |
| 6. Form | m2 | 761 | 80 | 20 | 4996.20 | 3042 | 760 | 3802 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 204.39 | 5484 | 3656 | 9140 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 830.00 | 1914 | 1914 | 3829 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 22.80 | 820 | 671 | 1491 | |
| 10. Miscellaneous | LS | | | | 1.00 | 1431 | 845 | 2276 | |
| Subtotal | | | | | | 30048 | 17750 | 47798 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 54.00 | 14256 | | 14256 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 54.00 | 9504 | | 9504 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 2138 | 238 | 2376 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 1150 | 941 | 2091 | |
| Subtotal | | | | | | 27048 | 1178 | 28227 | |
| Total | | | | | | 59951 | 19875 | 79826 | |

Table H.16(6) CONSTRUCTION COST OF SLUICE GATE :Gate No.18.B

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 2899 | 976 | 3875 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 10919.00 | 2830 | 708 | 3538 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 3193.00 | 859 | 95 | 955 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 628.00 | 2305 | 1537 | 3841 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 2986.00 | 5848 | 3899 | 9746 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 2255.00 | 6475 | 4317 | 10792 | |
| 6. Form | m2 | 761 | 80 | 20 | 4961.00 | 3020 | 755 | 3775 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 202.95 | 5445 | 3630 | 9075 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 805.00 | 1857 | 1857 | 3713 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 22.80 | 820 | 671 | 1491 | |
| 10. Miscellaneous | LS | | | | 1.00 | 1473 | 873 | 2346 | |
| Subtotal | | | | | | 30933 | 18341 | 49274 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 54.00 | 14256 | | 14256 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 54.00 | 9504 | | 9504 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 2138 | 238 | 2376 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 1150 | 941 | 2091 | |
| Subtotal | | | | | | 27048 | 1178 | 28227 | |
| Total | | | | | | 60880 | 20496 | 81376 | |

Table H.3.16(7) CONSTRUCTION COST OF SLUICE GATE :Gate N0:Sub-1

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 1700 | 515 | 2215 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 4377.00 | 1135 | 284 | 1418 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 1428.00 | 384 | 43 | 427 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 430.00 | 1578 | 1052 | 2630 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 1585.00 | 3104 | 2069 | 5173 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 1227.00 | 3523 | 2349 | 5872 | |
| 6. Form | m2 | 761 | 80 | 20 | 2699.40 | 1643 | 411 | 2054 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 110.43 | 2963 | 1975 | 4938 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 190.00 | 438 | 438 | 876 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 18.00 | 647 | 530 | 1177 | |
| 10. Miscellaneous | LS | | | | 1.00 | 552 | 361 | 913 | |
| Subtotal | | | | | | 15968 | 9512 | 25480 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 36.00 | 9504 | | 9504 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 36.00 | 6336 | | 6336 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 1426 | 158 | 1584 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 767 | 627 | 1394 | |
| Subtotal | | | | | | 18032 | 786 | 18818 | |
| Total | | | | | | 35701 | 10812 | 46513 | |

Table H.3.17(I) : Construction Cost of Pump Station : G.Dhaka East

1) DC-1: P.5 (Q=25.60m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | |
|-------------------------------------|----------------|----------------|-----|----------|----------------------------|---------|---------|
| | | F/C(%) L/C(%) | | | F/C | L/C | Total |
| | | Total | | | | | |
| (1991 Price) | | | | | | | |
| I. Preparation Work | LS | 30,200,188 | 81 | 19 | 24,436 | 5,765 | 30,200 |
| II. Civil Work | | | | | | | |
| 1. Excavation | m ³ | 324 | 80 | 20 | 6,164 | 1,541 | 7,705 |
| 2. Embankment | m ³ | 509 | 70 | 30 | 6,492 | 2,782 | 9,274 |
| 3. Backfill | m ³ | 118 | 50 | 50 | 268 | 268 | 536 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 40 | 15,140 | 10,093 | 25,233 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 40 | 967 | 645 | 1,612 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 40 | 742 | 495 | 1,237 |
| 7. Concrete | m ³ | 4,786 | 60 | 40 | 13,288 | 8,859 | 22,146 |
| 8. Form | m ² | 761 | 80 | 20 | 5,276 | 8,595 | 6,595 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 40 | 12,198 | 8,132 | 20,331 |
| 10. Slope Protection | m ² | 1,579 | 40 | 60 | 909 | 1,363 | 2,271 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 50 | 387 | 387 | 775 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 60 | 284 | 426 | 710 |
| 13. Sodding | m ² | 60 | 20 | 80 | 29 | 114 | 143 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 45 | 647 | 530 | 1,177 |
| 15. Building Works | LS | 63,500,000 | 40 | 60 | 25,400 | 38,100 | 63,500 |
| 16. Miscellaneous | LS | 16,324,545 | 54 | 46 | 8,819 | 7,505 | 16,325 |
| 17. Coffor Dam | LS | 35,913,999 | 54 | 46 | 19,402 | 16,512 | 35,914 |
| Subtotal | | | 54 | 46 | 116,412 | 99,072 | 215,484 |
| III. Mechanical & Electrical Work | | | | | | | |
| 1. #2000 Pump | Place | 156,000,000 | 100 | 0 | 156,000 | 0 | 156,000 |
| 2. 560 kw Main Motor | Place | 50,736,842 | 100 | 0 | 50,737 | 0 | 50,737 |
| 3. Pipe and Valve | Place | 37,263,158 | 100 | 0 | 37,263 | 0 | 37,263 |
| 4. Electrical Facilities | LS | 40,000,000 | 100 | 0 | 40,000 | 0 | 40,000 |
| 5. Crane and Spare Parts | LS | 10,800,000 | 100 | 0 | 10,800 | 0 | 10,800 |
| 6. Automatic Trash Screen | LS | 27,156,842 | 100 | 0 | 27,137 | 0 | 27,137 |
| 7. Gate Leaf and Sheet | LS | 3,060,000 | 100 | 0 | 3,060 | 0 | 3,060 |
| 8. Hoist Machine | LS | 2,040,000 | 100 | 0 | 2,040 | 0 | 2,040 |
| 9. Installation | LS | 32,703,684 | 90 | 10 | 29,433 | 3,270 | 32,704 |
| 10. Miscellaneous | LS | 28,779,242 | 55 | 45 | 15,829 | 12,951 | 28,779 |
| Subtotal | | | 96 | 4 | 372,299 | 16,221 | 388,520 |
| Total | | | 81 | 19 | 513,147 | 121,057 | 634,204 |

2) DC-2: P.6 (Q=54.60m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | |
|-------------------------------------|----------------|----------------|-----|----------|----------------------------|---------|-----------|
| | | F/C(%) L/C(%) | | | F/C | L/C | Total |
| | | Total | | | | | |
| (1991 Price) | | | | | | | |
| I. Preparation Work | LS | 55,401,864 | 81 | 19 | 45,038 | 10,364 | 55,402 |
| II. Civil Work | | | | | | | |
| 1. Excavation | m ³ | 324 | 80 | 20 | 8,702 | 2,176 | 10,878 |
| 2. Embankment | m ³ | 509 | 70 | 30 | 6,371 | 2,731 | 9,102 |
| 3. Backfill | m ³ | 118 | 50 | 50 | 405 | 405 | 810 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 40 | 25,567 | 17,045 | 42,612 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 40 | 1,218 | 812 | 2,030 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 40 | 1,233 | 822 | 2,054 |
| 7. Concrete | m ³ | 4,786 | 60 | 40 | 24,387 | 16,258 | 40,645 |
| 8. Form | m ² | 761 | 80 | 20 | 9,605 | 2,401 | 12,006 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 40 | 22,453 | 14,969 | 37,421 |
| 10. Slope Protection | m ² | 1,579 | 40 | 60 | 842 | 1,262 | 2,104 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 50 | 291 | 291 | 581 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 60 | 550 | 826 | 1,376 |
| 13. Sodding | m ² | 60 | 20 | 80 | 25 | 99 | 124 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 45 | 647 | 530 | 1,177 |
| 15. Building Works | LS | 122,100,000 | 40 | 60 | 48,840 | 73,260 | 122,100 |
| 16. Miscellaneous | LS | 28,501,982 | 53 | 47 | 15,114 | 13,388 | 28,502 |
| 17. Coffor Dam | LS | 62,704,360 | 53 | 47 | 33,250 | 29,455 | 62,704 |
| Subtotal | | | 53 | 47 | 199,499 | 176,728 | 376,226 |
| III. Mechanical & Electrical Work | | | | | | | |
| 1. #2000 Pump | Place | 312,000,000 | 100 | 0 | 312,000 | 0 | 312,000 |
| 2. 560 kw Main Motor | Place | 103,705,263 | 100 | 0 | 103,705 | 0 | 103,705 |
| 3. Pipe and Valve | Place | 74,526,316 | 100 | 0 | 74,526 | 0 | 74,526 |
| 4. Electrical Facilities | LS | 56,000,000 | 100 | 0 | 56,000 | 0 | 56,000 |
| 5. Crane and Spare Parts | LS | 10,800,000 | 100 | 0 | 10,800 | 0 | 10,800 |
| 6. Automatic Trash Screen | LS | 49,978,947 | 100 | 0 | 49,979 | 0 | 49,979 |
| 7. Gate Leaf and Sheet | LS | 5,395,263 | 100 | 0 | 5,395 | 0 | 5,395 |
| 8. Hoist Machine | LS | 3,596,842 | 100 | 0 | 3,597 | 0 | 3,597 |
| 9. Installation | LS | 61,600,263 | 90 | 10 | 55,440 | 6,160 | 61,600 |
| 10. Miscellaneous | LS | 54,208,232 | 55 | 45 | 29,815 | 24,394 | 54,208 |
| Subtotal | | | 96 | 4 | 701,257 | 30,554 | 731,811 |
| Total | | | 81 | 19 | 945,794 | 217,645 | 1,163,439 |

Note: Preparation work (site clearing, site office motor pool, survey works, soil boring, safety control, etc.)

Table H.3.17(2) : Construction Cost of Pump Station : G.Dhaka East

3) DC-3: P:7A (Q=53.10m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | |
|--|----------------|----------------|--------|----------|----------------------------|---------|-----------|
| | | Total | F/C(%) | | L/C(%) | Total | |
| | | | | | | | F/C(%) |
| I. Preparation Work | LS | 53,949,712 | 82 | 1 | 44,124 | 9,826 | 53,950 |
| II. Civil Work | | | | | | | |
| 1. Excavation | m ³ | 324 | 80 | 48931 | 12,683 | 3,171 | 15,854 |
| 2. Embankment | m ³ | 509 | 70 | 13026 | 4,641 | 1,989 | 6,630 |
| 3. Backfill | m ³ | 118 | 50 | 9126 | 538 | 538 | 1,077 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 6540 | 12,801 | 8,534 | 21,335 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 332 | 1,218 | 812 | 2,030 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 540 | 1,223 | 815 | 2,038 |
| 7. Concrete | m ³ | 4,786 | 60 | 8443 | 24,245 | 16,163 | 40,408 |
| 8. Form | m ² | 761 | 80 | 15679 | 9,545 | 2,386 | 11,931 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 833 | 22,340 | 14,893 | 37,234 |
| 10. Slope Protection | m ² | 1,579 | 40 | 1715 | 1,083 | 1,624 | 2,707 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 126 | 291 | 291 | 581 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 872 | 550 | 826 | 1,376 |
| 13. Sodding | m ² | 60 | 20 | 1499 | 18 | 72 | 90 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 17 | 611 | 500 | 1,112 |
| 15. Building Works | LS | 122,100,000 | 40 | 1 | 48,840 | 73,260 | 122,100 |
| 16. Miscellaneous | LS | 26,650,382 | 53 | 1 | 14,063 | 12,588 | 26,650 |
| 17. Coffor Dam | LS | 58,630,841 | 53 | 1 | 30,938 | 27,693 | 58,631 |
| Subtotal | | | 53 | 47 | 185,629 | 166,156 | 351,785 |
| III. Mechanical & Electrical Work | | | | | | | |
| 1. #2000 Pump | Place | 312,000,000 | 100 | 1 | 312,000 | 0 | 312,000 |
| 2. 560 kw Main Motor | Place | 100,673,684 | 100 | 1 | 100,674 | 0 | 100,674 |
| 3. Pipe and Valve | Place | 74,526,316 | 100 | 1 | 74,526 | 0 | 74,526 |
| 4. Electrical Facilities | LS | 55,157,895 | 100 | 1 | 55,158 | 0 | 55,158 |
| 5. Crane and Spare Parts | LS | 10,800,000 | 100 | 1 | 10,800 | 0 | 10,800 |
| 6. Automatic Trash Screen | LS | 49,978,947 | 100 | 1 | 49,979 | 0 | 49,979 |
| 7. Gate Leaf and Sheet | LS | 5,395,263 | 100 | 1 | 5,395 | 0 | 5,395 |
| 8. Hoist Machine | LS | 3,596,842 | 100 | 1 | 3,597 | 0 | 3,597 |
| 9. Installation | LS | 61,212,895 | 90 | 10 | 55,092 | 6,121 | 61,213 |
| 10. Miscellaneous | LS | 53,867,347 | 55 | 45 | 29,627 | 24,240 | 53,867 |
| Subtotal | | | 96 | 4 | 696,848 | 30,362 | 727,209 |
| Total | | | 82 | 18 | 926,601 | 206,343 | 1,132,944 |

Note : Bill of Quantities are shown in Table H.0

4) DC-4: P:7B (Q=47.20m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | |
|--|----------------|----------------|--------|----------|----------------------------|---------|-----------|
| | | Total | F/C(%) | | L/C(%) | Total | |
| | | | | | | | F/C(%) |
| I. Preparation Work | LS | 53,387,818 | 81 | 19 | 43,505 | 9,883 | 53,388 |
| II. Civil Work | | | | | | | |
| 1. Excavation | m ³ | 324 | 80 | 46400 | 12,027 | 3,007 | 15,034 |
| 2. Embankment | m ³ | 509 | 70 | 11246 | 4,007 | 1,717 | 5,724 |
| 3. Backfill | m ³ | 118 | 50 | 10072 | 594 | 594 | 1,188 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 7975 | 15,608 | 10,405 | 26,014 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 330 | 1,210 | 807 | 2,017 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 531 | 1,204 | 803 | 2,007 |
| 7. Concrete | m ³ | 4,786 | 60 | 8377 | 24,055 | 16,037 | 40,092 |
| 8. Form | m ² | 761 | 80 | 15535 | 9,458 | 2,364 | 11,822 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 826 | 22,171 | 14,781 | 36,952 |
| 10. Slope Protection | m ² | 1,579 | 40 | 1810 | 1,143 | 1,715 | 2,858 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 126 | 291 | 291 | 581 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 872 | 550 | 826 | 1,376 |
| 13. Sodding | m ² | 60 | 20 | 1336 | 16 | 64 | 80 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 18 | 647 | 530 | 1,177 |
| 15. Building Works | LS | 122,100,000 | 40 | 1 | 48,840 | 73,260 | 122,100 |
| 16. Miscellaneous | LS | 26,902,238 | 53 | 47 | 14,182 | 12,720 | 26,902 |
| 17. Coffor Dam | LS | 59,184,925 | 53 | 47 | 31,201 | 27,984 | 59,185 |
| Subtotal | | | 53 | 47 | 187,205 | 167,904 | 355,110 |
| III. Mechanical & Electrical Work | | | | | | | |
| 1. #2000 Pump | Place | 312,000,000 | 100 | 1 | 312,000 | 0 | 312,000 |
| 2. 560 kw Main Motor | Place | 90,694,737 | 100 | 1 | 90,695 | 0 | 90,695 |
| 3. Pipe and Valve | Place | 74,526,316 | 100 | 1 | 74,526 | 0 | 74,526 |
| 4. Electrical Facilities | LS | 53,684,211 | 100 | 1 | 53,684 | 0 | 53,684 |
| 5. Crane and Spare Parts | LS | 10,800,000 | 100 | 1 | 10,800 | 0 | 10,800 |
| 6. Automatic Trash Screen | LS | 49,978,947 | 100 | 1 | 49,979 | 0 | 49,979 |
| 7. Gate Leaf and Sheet | LS | 4,912,105 | 100 | 1 | 4,912 | 0 | 4,912 |
| 8. Hoist Machine | LS | 3,274,737 | 100 | 1 | 3,275 | 0 | 3,275 |
| 9. Installation | LS | 59,987,105 | 90 | 10 | 53,988 | 5,999 | 59,987 |
| 10. Miscellaneous | LS | 52,788,653 | 55 | 45 | 29,034 | 23,755 | 52,789 |
| Subtotal | | | 96 | 4 | 682,893 | 29,754 | 712,647 |
| Total | | | 81 | 19 | 913,603 | 207,541 | 1,121,144 |

Note : Preparation work (site clearing, site office motor pool, survey works, soil boring, safety control, etc.)

Tble H.3.18 Construction Cost of Khal Improvement : G. Dhaka East

| Zone | Khal | Channel Works | | | | Maintenance Road | | | | Banking | | | | Dredging | | | | Total | | |
|-----------|-----------|---------------|---------|---------|--------|------------------|---------|---------|--------|---------|---------|---------|---------|-----------|---------|--------|--|-------|-------|--|
| | | L/C | | TOTAL | | F/C | | TOTAL | | L/C | | TOTAL | | F/C | | TOTAL | | L/C | TOTAL | |
| | | FC | L/C | F/C | TOTAL | F/C | TOTAL | L/C | TOTAL | F/C | TOTAL | L/C | TOTAL | F/C | TOTAL | | | | | |
| DC-1 | KD-1-1 | 63 | 251 | 314 | 1,588 | 176 | 1,764 | 826 | 1,652 | 798 | 3,193 | 3,991 | 3,275 | 4,447 | 7,721 | | | | | |
| | KD-1-2 | 239 | 954 | 1,193 | 6,033 | 670 | 6,703 | 3,139 | 6,278 | 1,173 | 5,867 | 10,584 | 10,584 | 9,457 | 20,041 | | | | | |
| | KD-1-3 | 289 | 1,155 | 1,444 | 7,303 | 811 | 8,114 | 3,800 | 7,998 | 2,097 | 8,389 | 10,486 | 13,489 | 14,155 | 27,644 | | | | | |
| | KD-1-4 | 213 | 854 | 1,067 | 5,398 | 600 | 5,998 | 2,808 | 5,617 | 1,027 | 4,109 | 5,136 | 9,447 | 8,371 | 17,818 | | | | | |
| | KD-1-5 | 126 | 502 | 628 | 3,175 | 353 | 3,528 | 1,652 | 2,913 | 728 | 2,913 | 3,641 | 5,681 | 5,420 | 11,101 | | | | | |
| | KD-2 | 171 | 684 | 855 | 4,445 | 494 | 4,939 | 2,313 | 4,586 | 237 | 237 | 296 | 6,988 | 3,728 | 10,716 | | | | | |
| | KD-3-1 | 176 | 706 | 882 | 4,128 | 459 | 4,586 | 2,148 | 4,295 | 0 | 0 | 0 | 6,452 | 3,312 | 9,764 | | | | | |
| | KD-3-2 | 190 | 760 | 950 | 4,445 | 494 | 4,939 | 2,313 | 4,626 | 0 | 0 | 0 | 6,452 | 3,312 | 9,764 | | | | | |
| | KD-4 | 10,719 | 16,078 | 26,797 | 3,810 | 423 | 4,234 | 1,982 | 3,965 | 123 | 614 | 614 | 16,634 | 18,975 | 35,609 | | | | | |
| | KD-5-6 | 132 | 529 | 662 | 3,175 | 353 | 3,528 | 1,652 | 3,304 | 1,030 | 5,132 | 5,132 | 5,990 | 6,656 | 12,645 | | | | | |
| KD-5-7 | 181 | 722 | 903 | 4,445 | 494 | 4,939 | 2,313 | 4,445 | 598 | 2,991 | 2,989 | 7,536 | 5,920 | 13,457 | | | | | | |
| KD-10-1 | 258 | 1,032 | 1,290 | 6,350 | 706 | 7,056 | 3,304 | 6,608 | 1,251 | 5,004 | 6,255 | 11,163 | 10,045 | 21,209 | | | | | | |
| KD-10-2 | 17,257 | 25,885 | 43,142 | 6,668 | 741 | 7,409 | 3,469 | 6,938 | 4,905 | 19,621 | 24,526 | 32,299 | 49,716 | 82,015 | | | | | | |
| Sub-Total | 30,013 | 50,115 | 80,128 | 60,964 | 6,774 | 67,738 | 31,718 | 63,437 | 13,791 | 68,953 | 136,486 | 143,769 | 280,255 | | | | | | | |
| DC-2 | KD-5-1 | 339 | 1,358 | 1,697 | 7,938 | 882 | 8,620 | 4,130 | 8,260 | 4,720 | 18,881 | 23,601 | 17,128 | 25,251 | 42,378 | | | | | |
| | KD-5-2 | 95 | 380 | 475 | 2,223 | 247 | 2,470 | 1,156 | 2,313 | 629 | 2,693 | 7,866 | 5,047 | 8,076 | 13,123 | | | | | |
| | KD-5-3 | 190 | 760 | 950 | 4,445 | 494 | 4,939 | 2,313 | 4,626 | 2,538 | 10,152 | 12,690 | 9,486 | 13,719 | 23,205 | | | | | |
| | KD-5-4 | 272 | 1,086 | 1,358 | 6,350 | 706 | 7,056 | 3,304 | 6,608 | 2,598 | 10,392 | 12,990 | 12,524 | 15,488 | 28,012 | | | | | |
| | KD-5-5 | 299 | 1,195 | 1,493 | 6,985 | 776 | 7,762 | 3,634 | 7,269 | 1,941 | 7,653 | 9,704 | 12,859 | 13,368 | 26,228 | | | | | |
| | KD-6 | 238 | 953 | 1,191 | 5,715 | 635 | 6,350 | 2,974 | 5,947 | 433 | 1,732 | 2,166 | 9,360 | 6,294 | 15,655 | | | | | |
| | KD-7-1 | 217 | 869 | 1,086 | 5,080 | 564 | 5,645 | 2,643 | 5,286 | 880 | 3,521 | 4,401 | 8,821 | 7,597 | 16,418 | | | | | |
| | KD-7-2 | 284 | 1,135 | 1,419 | 6,985 | 776 | 7,762 | 3,634 | 7,269 | 744 | 2,976 | 3,721 | 11,648 | 8,522 | 20,170 | | | | | |
| | KD-8 | 238 | 953 | 1,191 | 5,715 | 635 | 6,350 | 2,974 | 5,947 | 220 | 879 | 1,099 | 9,147 | 5,441 | 14,588 | | | | | |
| | KD-9 | 132 | 529 | 662 | 3,175 | 353 | 3,528 | 1,652 | 3,304 | 51 | 202 | 253 | 5,010 | 2,737 | 7,747 | | | | | |
| Sub-Total | 2,305 | 9,218 | 11,523 | 54,613 | 6,068 | 60,682 | 28,414 | 56,829 | 15,698 | 62,792 | 78,490 | 101,030 | 106,493 | 207,523 | | | | | | |
| DC-3 | KD-11-1 | 321 | 1,284 | 1,605 | 6,985 | 776 | 7,762 | 3,634 | 7,269 | 4,319 | 17,275 | 21,593 | 15,260 | 22,970 | 38,229 | | | | | |
| | KD-11-2 | 394 | 1,576 | 1,970 | 8,573 | 953 | 9,526 | 4,460 | 8,921 | 4,960 | 19,838 | 24,798 | 18,387 | 26,827 | 45,214 | | | | | |
| | KD-11-3 | 237 | 946 | 1,183 | 5,398 | 600 | 5,998 | 2,808 | 5,617 | 3,521 | 14,085 | 17,606 | 11,964 | 18,439 | 30,403 | | | | | |
| | KD-12-1 | 155 | 619 | 774 | 3,810 | 423 | 4,234 | 1,982 | 3,965 | 1,203 | 4,811 | 6,013 | 7,150 | 7,836 | 14,986 | | | | | |
| | KD-12-2 | 146 | 582 | 728 | 4,128 | 459 | 4,586 | 2,148 | 4,295 | 1,141 | 4,565 | 5,707 | 7,562 | 7,754 | 15,316 | | | | | |
| | KD-13-1 | 257 | 1,026 | 1,283 | 5,715 | 635 | 6,350 | 2,974 | 5,947 | 1,884 | 2,335 | 2,335 | 9,417 | 6,519 | 15,935 | | | | | |
| | KD-13-2 | 167 | 668 | 835 | 3,810 | 423 | 4,234 | 1,982 | 3,965 | 128 | 510 | 638 | 6,087 | 3,584 | 9,671 | | | | | |
| | Sub-Total | 1,676 | 6,703 | 8,378 | 38,420 | 4,269 | 42,689 | 19,989 | 39,978 | 15,742 | 62,967 | 78,709 | 75,827 | 93,928 | 169,755 | | | | | |
| | DC-4 | KD-14-1 | 75 | 292 | 365 | 1,588 | 176 | 1,764 | 826 | 1,652 | 5,057 | 20,230 | 25,287 | 7,544 | 21,524 | 29,068 | | | | |
| | | KD-14-2 | 277 | 1,109 | 1,386 | 6,033 | 670 | 6,703 | 3,139 | 6,278 | 4,875 | 19,500 | 24,375 | 14,324 | 24,418 | 38,742 | | | | |
| KD-14-3 | | 146 | 584 | 730 | 3,175 | 353 | 3,528 | 1,652 | 3,304 | 3,722 | 14,887 | 18,609 | 8,695 | 17,476 | 26,171 | | | | | |
| KD-14-4 | | 6,628 | 9,942 | 16,569 | 2,223 | 247 | 2,470 | 1,156 | 2,313 | 1,436 | 5,743 | 7,179 | 11,442 | 17,088 | 28,330 | | | | | |
| KD-14-5 | | 13,934 | 20,901 | 34,835 | 4,763 | 529 | 5,292 | 2,478 | 4,956 | 3,549 | 14,194 | 17,743 | 24,724 | 38,103 | 62,826 | | | | | |
| KD-15-1 | | 171 | 684 | 855 | 4,445 | 494 | 4,939 | 2,313 | 4,626 | 1,958 | 9,788 | 12,743 | 7,921 | 10,920 | 18,842 | | | | | |
| KD-15-2 | | 171 | 684 | 855 | 4,445 | 494 | 4,939 | 2,313 | 4,626 | 2,755 | 11,021 | 13,776 | 9,684 | 14,512 | 24,196 | | | | | |
| KD-16 | | 208 | 831 | 1,039 | 5,398 | 600 | 5,998 | 2,808 | 5,617 | 2,512 | 10,046 | 12,558 | 10,926 | 14,285 | 25,211 | | | | | |
| KD-17-1 | | 88 | 350 | 438 | 1,905 | 212 | 2,117 | 991 | 1,982 | 204 | 814 | 1,018 | 3,187 | 2,367 | 5,555 | | | | | |
| KD-17-2 | | 306 | 1,225 | 1,531 | 6,985 | 776 | 7,762 | 3,634 | 7,269 | 2,604 | 10,415 | 13,019 | 13,530 | 16,050 | 29,580 | | | | | |
| KD-17-3 | 348 | 1,393 | 1,741 | 8,573 | 953 | 9,526 | 4,460 | 8,921 | 3,752 | 15,008 | 18,760 | 17,134 | 21,814 | 38,948 | | | | | | |
| KD-18-1 | 306 | 1,225 | 1,531 | 6,985 | 776 | 7,762 | 3,634 | 7,269 | 1,785 | 7,141 | 8,926 | 12,776 | 12,776 | 25,487 | | | | | | |
| KD-18-2 | 113 | 452 | 565 | 2,858 | 318 | 3,175 | 1,487 | 2,974 | 630 | 2,519 | 3,148 | 5,087 | 4,775 | 9,862 | | | | | | |
| KD-19 | 226 | 903 | 1,129 | 6,033 | 670 | 6,703 | 3,139 | 6,278 | 450 | 1,801 | 2,251 | 8,848 | 6,513 | 16,361 | | | | | | |
| KD-20-1 | 157 | 627 | 784 | 3,493 | 388 | 3,881 | 1,817 | 3,634 | 1,507 | 6,029 | 7,537 | 6,974 | 8,862 | 15,836 | | | | | | |
| KD-20-2 | 11,844 | 17,766 | 29,610 | 4,128 | 459 | 4,586 | 2,148 | 4,295 | 1,094 | 4,376 | 5,470 | 19,213 | 24,748 | 43,961 | | | | | | |
| KD-20-3 | 11,612 | 17,418 | 29,030 | 4,128 | 459 | 4,586 | 2,148 | 4,295 | 1,470 | 5,882 | 7,332 | 19,356 | 25,906 | 45,263 | | | | | | |
| Sub-Total | 46,607 | 76,385 | 122,993 | 76,522 | 8,502 | 85,025 | 39,813 | 79,626 | 39,359 | 157,437 | 196,796 | 202,302 | 282,138 | 484,440 | | | | | | |
| Total | 80,601 | 142,421 | 223,022 | 230,520 | 25,613 | 256,133 | 119,935 | 239,870 | 84,599 | 358,358 | 422,947 | 515,645 | 626,328 | 1,141,973 | | | | | | |

Table H.3.19 Construction Cost of Bridge/Aqueduct : G.Dhaka East

| Zone | Khal No. | Bridge No. | Length (m) | Type | Area (m ²) | Unit Cost (TK) | | | Construction Cost (1000TK) | | | C.D.S.T. (1000Tk) | Remarks |
|------|-----------|------------|------------|---------------|------------------------|----------------|--------|--------|----------------------------|--------|--------|-------------------|----------------|
| | | | | | | Total | F/C(%) | L/C(%) | F/C | L/C | Total | | |
| | | | | | | | | | | | | | |
| DC-1 | KD-5-7 | BD-5 | 9.40 | Deck Girder | - | - | - | - | 724 | 730 | 1,454 | 315 | Railway bridge |
| | KD-10-1 | BD-6 | 11.20 | Girder bridge | 40.99 | 52.00 | 40 | 60 | 853 | 1,279 | 2,131 | - | Road bridge |
| | " | BD-7 | 11.20 | " " | 40.99 | 52.00 | 40 | 60 | 853 | 1,279 | 2,131 | - | " " |
| | " | BD-8 | 11.20 | " " | 40.99 | 52.00 | 40 | 60 | 853 | 1,279 | 2,131 | - | " " |
| | KD-10-2 | BD-9 | 7.00 | " " | 25.62 | 72.00 | 40 | 60 | 738 | 1,107 | 1,845 | - | " " |
| | " | BD-10 | 7.00 | " " | 25.62 | 72.00 | 40 | 60 | 738 | 1,107 | 1,845 | - | " " |
| | " | BD-11 | 7.00 | " " | 25.62 | 72.00 | 40 | 60 | 738 | 1,107 | 1,845 | - | " " |
| | " | BD-12 | 7.00 | " " | 25.62 | 72.00 | 40 | 60 | 738 | 1,107 | 1,845 | - | " " |
| | " | BD-13 | 7.00 | " " | 25.62 | 72.00 | 40 | 60 | 738 | 1,107 | 1,845 | - | " " |
| | Sub Total | | | | | | 41 | 59 | 6,971 | 10,101 | 17,072 | 315 | |
| DC-4 | KD-14-2 | BD-14 | 25.00 | Cantilever | 91.50 | 30.10 | 47 | 53 | 1,294 | 1,460 | 2,754 | - | Road bridge |
| | KD-14-5 | BD-16 | 10.00 | Girder bridge | 36.60 | 56.00 | 40 | 60 | 820 | 1,230 | 2,050 | - | " " |
| | KD-17-2 | BD-17 | 9.60 | " " | 35.14 | 57.00 | 40 | 60 | 801 | 1,202 | 2,003 | - | " " |
| | KD-20-1 | BD-18 | 8.20 | " " | 30.01 | 64.00 | 40 | 60 | 768 | 1,152 | 1,921 | - | " " |
| | | Sub Total | | | | | 42 | 58 | 3,684 | 5,044 | 8,727 | 0 | |
| | Total | | | | | | 41 | 59 | 10,655 | 15,144 | 25,799 | 315 | |

Table H.3.20 Project Cost of DND Area

Unit : Million TK (1991Price)

| Phase Project Area | Construction Cost (x10 ⁶) | | | Remarks |
|--------------------------------------|---------------------------------------|-------|-------|-------------|
| | F/C | L/C | Total | |
| A. Construction Cost | 1,742 | 914 | 2,656 | |
| 1. Flood Mitigation | 82 | 32 | 114 | |
| 1) Flood Wall Works | 32 | 18 | 50 | Ref. H.3.23 |
| 2) Sluice Gate | 49 | 13 | 62 | Ref. H.3.24 |
| 3) Related Struc. Etc | 2 | 1 | 3 | Ref. H.3.25 |
| 2. Storm Water Drainage | 1,660 | 882 | 2,542 | |
| 1) Pump Sta. | 1,144 | 219 | 1,363 | Ref. H.3.26 |
| 2) Khal Improve. | 467 | 593 | 1,059 | Ref. H.3.27 |
| 3) Bridge, Etc | 49 | 70 | 119 | Ref. H.3.28 |
| B. Physical Contingency | 261 | 137 | 398 | Ax15% |
| C. Engineering | 200 | 105 | 305 | (A+B)x10% |
| D. Administration | 0 | 80 | 80 | Ax3% |
| E. Land Aquisition & Compensation | 0 | 400 | 400 | Ref. H.3.21 |
| F. CDST & Tax | | 755 | 755 | Ref. H.3.22 |
| Total | 2,203 | 2,392 | 4,594 | |

Table H.3.21 Summary of Land Acquisition and Compensation Cost : DND Area

Unit : Million TK (1991 Prince)

| Project Area | Land Acquisition | | | Compensation | | | Total |
|--------------|------------------|----------------------|-----------|------------------|----------------------|-----------|-------|
| | Flood Mitigation | Storm Water Drainage | Sub-Total | Flood Mitigation | Storm Water Drainage | Sub-Total | |
| DND | 0.0 | 338.7 | 338.7 | 0.0 | 61.7 | 61.7 | 400.4 |

Table H.3.22 Summary of C.D.S.T. & Tax : DND Area

Unit : Million TK (1991 Prince)

| Project Area | Flood Mitigation | | | Storm Water Drainage | | | Total |
|--------------|------------------|-------------|-----------|----------------------|------------------|-----------|-------|
| | Embankment | Sluice Gate | Sub-Total | Pump Station | Khal Improvement | Sub-Total | |
| DND | 0.0 | 36.3 | 36.3 | 717.0 | 2.0 | 719.0 | 755.3 |

Table H.3.23 :CONSTRUCTION COST OF FLOOD WALL AND REHABILITATION WORKS : DND AREA

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks (Rs1.05) |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|---------------|---------------|---------------------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1 | 1,518 | 873 | 2,391 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1).DW.0-27 (L=10625 m) | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 0 | 0 | 0 | 0 | |
| 2. Backfill / Filling | m3 | 118 | 50 | 50 | 31,040 | 1,831 | 1,831 | 3,663 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 0 | 0 | 0 | 0 | |
| 4. Form | m2 | 614 | 80 | 20 | 0 | 0 | 0 | 0 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 0 | 0 | 0 | 0 | |
| 6. Brick Solling | m2 | 588 | 90 | 10 | 0 | 0 | 0 | 0 | |
| 7. Sodding | m2 | 60 | 20 | 80 | 22,424 | 269 | 4 | 273 | |
| 8. Miscellaneous | LS | | | | 1 | 92 | 92 | 183 | |
| Subtotal | | | | | | 2,192 | 1,927 | 4,119 | |
| 2).DN.0-22 (L= 8580m) | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 424 | 13 | 54 | 67 | |
| 2. Backfill / Filling | m3 | 118 | 50 | 50 | 69,445 | 4,097 | 4,097 | 8,195 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 422 | 1,212 | 808 | 2,020 | |
| 4. Form | m2 | 614 | 80 | 20 | 4,888 | 2,401 | 600 | 3,001 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 30 | 793 | 19 | 812 | |
| 6. Brick Solling | m2 | 588 | 90 | 10 | 145 | 77 | 1 | 77 | |
| 7. Sodding | m2 | 60 | 20 | 80 | 44,428 | 533 | 9 | 542 | |
| 8. Miscellaneous | LS | | | | 1 | 426 | 279 | 705 | |
| Subtotal | | | | | | 9,552 | 5,866 | 15,418 | |
| 3).DE.0-26 (L=10155 m) | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 453 | 14 | 58 | 72 | |
| 2. Backfill / Filling | m3 | 118 | 50 | 50 | 75,068 | 4,429 | 4,429 | 8,858 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 370 | 1,062 | 708 | 1,771 | |
| 4. Form | m2 | 614 | 80 | 20 | 3,870 | 1,901 | 475 | 2,376 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 26 | 695 | 17 | 712 | |
| 6. Brick Solling | m2 | 588 | 90 | 10 | 263 | 139 | 1 | 140 | |
| 7. Sodding | m2 | 60 | 20 | 80 | 44,734 | 537 | 9 | 545 | |
| 8. Miscellaneous | LS | | | | 1 | 405 | 284 | 689 | |
| Subtotal | | | | | | 9,183 | 5,981 | 15,164 | |
| 4).DS.0-6 (L= 2150 m) | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 1,682 | 53 | 214 | 267 | |
| 2. Backfill / Filling | m3 | 118 | 50 | 50 | 13,090 | 772 | 772 | 1,545 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 790 | 2,269 | 1,512 | 3,781 | |
| 4. Form | m2 | 614 | 80 | 20 | 7,880 | 3,871 | 968 | 4,838 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 55 | 1,484 | 36 | 1,519 | |
| 6. Brick Solling | m2 | 588 | 90 | 10 | 838 | 443 | 4 | 447 | |
| 7. Sodding | m2 | 60 | 20 | 80 | 10,166 | 122 | 2 | 124 | |
| 8. Miscellaneous | LS | | | | 1 | 422 | 175 | 598 | |
| Subtotal | | | | | | 9,437 | 3,683 | 13,120 | |
| Total | | | | | | 31,881 | 18,331 | 50,212 | (50 mill.) |
| Total (Flood Wall) | | | | | | | | | |
| I. Preparation of Work | | | | | 1 | 1,518 | 873 | 2,391 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 2,559 | 81 | 326 | 407 | |
| 2. Backfill / Filling | m3 | 118 | 50 | 50 | 188,643 | 11,130 | 11,130 | 22,260 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 1,582 | 4,543 | 3,029 | 7,571 | |
| 4. Form | m2 | 614 | 80 | 20 | 16,638 | 8,173 | 2,043 | 10,216 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 111 | 2,971 | 71 | 3,042 | |
| 6. Brick Solling | m2 | 588 | 90 | 10 | 1,246 | 659 | 6 | 665 | |
| 7. Sodding | m2 | 60 | 20 | 80 | 121,752 | 1,461 | 23 | 1,484 | |
| 8. Miscellaneous | LS | | | | 4 | 1,345 | 830 | 2,175 | |
| Subtotal | | | | | | 30,363 | 17,458 | 47,821 | |
| Total | | | | | | 31,881 | 18,331 | 50,212 | |

Table H.3.24 CONSTRUCTION COST OF SLUICE GATE :Gate No.20

| Const.Cost Unit : x1000 (TK) (1991 Price) | | | | | | | | | |
|---|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1 | 2317 | 641 | 2959 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 6635 | 1720 | 430 | 2150 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 1955 | 526 | 58 | 585 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 580 | 2129 | 1419 | 3548 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 1444 | 2828 | 1885 | 4713 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 1381 | 3966 | 2644 | 6609 | |
| 6. Form | m2 | 761 | 80 | 20 | 3038 | 1850 | 462 | 2312 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 124 | 3335 | 2223 | 5558 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 748 | 1725 | 1725 | 3451 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 8 | 302 | 247 | 549 | |
| 10. Miscellaneous | LS | | 50 | 50 | 1 | 919 | 555 | 1474 | |
| Subtotal | | | | | | 19299 | 11649 | 30948 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 54 | 14256 | | 14256 | * |
| 2. Hoist Machine | m2 | 176000 | 100 | | 54 | 9504 | | 9504 | * |
| 3. Installation | LS | 44000 | 90 | 10 | 1 | 2138 | 238 | 2376 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1 | 1150 | 941 | 2091 | |
| Subtotal | | | | | | 27048 | 1178 | 28227 | |
| Total | | | | | | 48665 | 13469 | 62134 | |

Table H.3.25 CONSTRUCTION COST OF STOP LOG STRUCTURE

| Const.Cost Unit : x1000 (TK) (1991 Price) | | | | | | | | | |
|---|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1 | 1.3 | 0.7 | 2 | |
| II. Direct Construction Cost | | | | | | | | | |
| Per One Place | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 5.9 | 0.2 | 0.8 | 1 | |
| 2. Backfill | m3 | 118 | 50 | 50 | 3.7 | 0.2 | 0.2 | 0 | |
| 3. Concrete | m3 | 4786 | 60 | 40 | 3.0 | 8.6 | 5.7 | 14 | |
| 4. Form | m2 | 614 | 80 | 20 | 19.0 | 9.3 | 2.3 | 12 | |
| 5. Re. Bar | t | 44717 | 60 | 40 | 0.3 | 7.2 | 4.8 | 12 | |
| 6. Miscellaneous | LS | | 50 | 50 | 1 | 1.3 | 0.7 | 2 | |
| Subtotal | | | | | | 26.9 | 14.6 | 41 | |
| Total | | | | | | 28.2 | 15.3 | 44 | |
| Total (58 Places) | | | | | | | | | |
| I. Preparation of Work | LS | | | | 1 | 77.9 | 42.2 | 120 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 342.2 | 10.9 | 43.5 | 54 | |
| 2. Backfill | m3 | 118 | 50 | 50 | 214.6 | 12.7 | 12.7 | 25 | |
| 3. Concrete | m3 | 4786 | 60 | 40 | 174.0 | 499.7 | 333.1 | 833 | |
| 4. Form | m2 | 614 | 80 | 20 | 1102.0 | 541.3 | 135.3 | 677 | |
| 5. Re. Bar | t | 44717 | 60 | 40 | 15.7 | 420.2 | 280.1 | 700 | |
| 6. Miscellaneous | LS | | 50 | 50 | 1 | 74.2 | 40.2 | 114 | |
| Subtotal | | | | | | 1558.9 | 845.0 | 2404 | |
| Total | | | | | | 1636.8 | 887.2 | 2524 | |

Table H.3.26 : CONSTRUCTION COST OF PUMP STATION : DND Area

B. DND

1) NA-1: P.10 (Q=14.50m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | Total |
|----------------------------------|-------|----------------|--------|----------|----------------------------|-------|---------|
| | | Total | F/C(%) | | F/C | L/C | |
| | | | | | | | |
| I. Preparation Work | LS | 11,370,156 | 96 | 4 | 10,895 | 475 | 11,370 |
| II. Mechanical & Electrical Work | | | | | | | |
| 1. #1200 Pump | Place | 86,947,365 | 100 | 0 | 86,947 | 0 | 86,947 |
| 2. 170 kw Main Motor | Place | 33,078,145 | 100 | 0 | 33,078 | 0 | 33,078 |
| 3. Pipe and Valve | Place | 23,729,889 | 100 | 0 | 23,730 | 0 | 23,730 |
| 4. Electrical Facilities | LS | 40,000,000 | 100 | 0 | 40,000 | 0 | 40,000 |
| 5. Crane and Spare Parts | LS | 3,500,000 | 100 | 0 | 3,500 | 0 | 3,500 |
| 6. Gate Leaf and Sheet | LS | 2,496,823 | 100 | 0 | 2,497 | 0 | 2,497 |
| 7. Hoist Machine | LS | 1,664,548 | 100 | 0 | 1,665 | 0 | 1,665 |
| 8. Installation | LS | 19,141,677 | 90 | 10 | 17,228 | 1,914 | 19,142 |
| 9. Miscellaneous | LS | 16,844,676 | 55 | 45 | 9,265 | 7,580 | 16,845 |
| Subtotal | | | 96 | 4 | 217,909 | 9,494 | 227,403 |
| Total | | | 96 | 4 | 228,804 | 9,969 | 238,773 |

1) NA-2: P.11 (Q=50.20m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | Total |
|-------------------------------------|----------------|----------------|--------|----------|----------------------------|---------|-----------|
| | | Total | F/C(%) | | F/C | L/C | |
| | | | | | | | |
| I. Preparation Work | LS | 53,533,249 | 81 | 19 | 43,602 | 9,951 | 53,553 |
| II. Civil Work | | | | | | | |
| 1. Excavation | m ³ | 324 | 80 | 20 | 14,047 | 3,512 | 17,558 |
| 2. Embankment | m ³ | 509 | 70 | 30 | 6,660 | 2,854 | 9,514 |
| 3. Backfill | m ³ | 118 | 50 | 50 | 14,952 | 881 | 1,762 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 40 | 72,59 | 9,471 | 23,678 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 40 | 338 | 1,241 | 2,068 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 40 | 549 | 1,244 | 2,074 |
| 7. Concrete | m ³ | 4,786 | 60 | 40 | 8348 | 23,971 | 15,980 |
| 8. Form | m ² | 761 | 80 | 20 | 15496 | 9,434 | 2,558 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 40 | 823 | 22,087 | 14,724 |
| 10. Slope Protection | m ² | 1,579 | 40 | 60 | 2,220 | 1,402 | 2,103 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 50 | 147 | 339 | 678 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 60 | 872 | 550 | 826 |
| 13. Sodding | m ² | 60 | 20 | 80 | 632 | 8 | 38 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 45 | 11 | 396 | 719 |
| 15. Building Works | LS | 122,100,000 | 40 | 60 | 1 | 48,840 | 73,260 |
| 16. Miscellaneous | LS | 27,362,496 | 53 | 47 | 1 | 14,531 | 12,832 |
| 17. Coffor Dam | LS | 60,197,492 | 53 | 47 | 1 | 31,967 | 28,230 |
| Subtotal | | | 53 | 47 | 191,803 | 169,382 | 361,185 |
| III. Mechanical & Electrical Work | | | | | | | |
| 1. #2000 Pump | Place | 312,000,000 | 100 | 0 | 312,000 | 0 | 312,000 |
| 2. 560 kw Main Motor | Place | 89,305,263 | 100 | 0 | 89,305 | 0 | 89,305 |
| 3. Pipe and Valve | Place | 74,526,316 | 100 | 0 | 74,526 | 0 | 74,526 |
| 4. Electrical Facilities | LS | 53,684,211 | 100 | 0 | 53,684 | 0 | 53,684 |
| 5. Crane and Spare Parts | LS | 10,800,000 | 100 | 0 | 10,800 | 0 | 10,800 |
| 6. Automatic Trash Screen | LS | 49,978,947 | 100 | 0 | 49,979 | 0 | 49,979 |
| 7. Gate Leaf and Sheet | LS | 4,348,421 | 100 | 0 | 4,348 | 0 | 4,348 |
| 8. Hoist Machine | LS | 2,898,947 | 100 | 0 | 2,899 | 0 | 2,899 |
| 9. Installation | LS | 59,754,211 | 90 | 10 | 53,779 | 5,975 | 59,754 |
| 10. Miscellaneous | LS | 52,583,705 | 55 | 45 | 28,921 | 23,663 | 52,584 |
| Subtotal | | | 96 | 4 | 680,242 | 29,638 | 709,880 |
| Total | | | 81 | 19 | 915,647 | 208,971 | 1,124,618 |

Note : Preparation work (site clearing, site office motor pool, survey works, soil boring, safety control, etc.)

Tble H.3.27 Construction Cost of Khal Improvement : DND Area

| Zone | Khal | Chamel Works | | | Maintenance Road | | | Banking | | | Dredging | | | Total | | |
|-----------|---------|--------------|---------|---------|------------------|---------|--------|---------|---------|--------|----------|---------|---------|---------|-----------|--------|
| | | FC | L/C | TOTAL | FC | L/C | TOTAL | FC | L/C | TOTAL | FC | L/C | TOTAL | FC | L/C | TOTAL |
| NA-1 | KN-1-1 | 18,758 | 28,136 | 46,894 | 6,668 | 741 | 7,409 | 3,469 | 3,469 | 6,938 | 708 | 2,833 | 3,541 | 29,603 | 35,179 | 64,782 |
| | KN-1-2 | 95 | 380 | 475 | 2,223 | 247 | 2,470 | 1,156 | 1,156 | 2,313 | 1,095 | 4,381 | 5,476 | 4,569 | 6,164 | 10,794 |
| | KN-1-3 | 136 | 543 | 679 | 3,175 | 353 | 3,528 | 1,652 | 1,652 | 3,304 | 1,368 | 5,472 | 6,840 | 6,351 | 8,020 | 14,351 |
| | KN-1-4 | 81 | 326 | 407 | 1,905 | 212 | 2,117 | 991 | 991 | 1,982 | 378 | 1,514 | 1,892 | 3,356 | 3,042 | 6,399 |
| | KN-1-5 | 244 | 978 | 1,222 | 5,715 | 635 | 6,350 | 2,974 | 2,974 | 5,947 | 2,445 | 9,779 | 12,224 | 11,378 | 14,365 | 25,743 |
| | KN-1-6 | 185 | 741 | 927 | 4,445 | 494 | 4,939 | 2,313 | 2,313 | 4,626 | 1,586 | 6,342 | 7,928 | 8,529 | 9,890 | 18,419 |
| | KN-1-7 | 138 | 554 | 692 | 3,810 | 423 | 4,234 | 1,982 | 1,982 | 3,965 | 938 | 3,754 | 4,692 | 7,479 | 6,713 | 15,583 |
| | KN-1-8 | 4,395 | 6,592 | 10,987 | 1,905 | 212 | 2,117 | 991 | 991 | 1,982 | 188 | 940 | 1,128 | 7,479 | 8,547 | 16,025 |
| | KN-2-1 | 212 | 847 | 1,059 | 5,080 | 564 | 5,645 | 2,643 | 2,643 | 5,286 | 1,093 | 4,571 | 5,463 | 9,028 | 8,425 | 17,453 |
| | KN-2-2 | 12,862 | 19,293 | 32,156 | 5,080 | 564 | 5,645 | 2,643 | 2,643 | 5,286 | 678 | 2,712 | 3,390 | 21,264 | 25,213 | 46,477 |
| | KN-3 | 225 | 900 | 1,125 | 5,398 | 600 | 5,998 | 2,808 | 2,808 | 5,617 | 534 | 2,134 | 2,668 | 8,965 | 6,443 | 15,408 |
| | KN-13 | 159 | 635 | 794 | 3,810 | 423 | 4,234 | 1,982 | 1,982 | 3,965 | 1,251 | 5,005 | 6,257 | 7,203 | 8,046 | 15,249 |
| | KN-14-1 | 199 | 794 | 993 | 4,763 | 529 | 5,292 | 2,478 | 2,478 | 4,956 | 1,532 | 6,128 | 7,661 | 8,971 | 9,930 | 18,901 |
| | KN-14-2 | 193 | 774 | 967 | 4,763 | 529 | 5,292 | 2,478 | 2,478 | 4,956 | 1,154 | 4,617 | 5,772 | 8,589 | 8,398 | 16,987 |
| | KN-14-3 | 11,719 | 17,579 | 29,298 | 5,080 | 564 | 5,645 | 2,643 | 2,643 | 5,286 | 880 | 3,521 | 4,401 | 20,323 | 24,307 | 44,630 |
| | KN-15 | 174 | 695 | 869 | 5,080 | 564 | 5,645 | 2,643 | 2,643 | 5,286 | 372 | 1,487 | 1,859 | 8,269 | 5,390 | 13,659 |
| KN-16 | 18,472 | 27,708 | 46,179 | 6,985 | 776 | 7,762 | 3,634 | 3,634 | 7,269 | 1,369 | 5,475 | 6,843 | 30,460 | 37,593 | 68,053 | |
| Sub-Total | 68,247 | 107,475 | 175,723 | 75,887 | 8,432 | 84,319 | 39,483 | 39,483 | 78,966 | 17,569 | 70,277 | 87,846 | 201,186 | 225,667 | 426,853 | |
| NA-2 | KN-4-1 | 16,721 | 25,082 | 41,803 | 5,715 | 635 | 6,350 | 2,974 | 2,974 | 5,947 | 730 | 29,200 | 36,500 | 32,710 | 57,890 | 90,600 |
| | KN-4-2 | 185 | 741 | 927 | 4,128 | 459 | 4,586 | 2,148 | 2,148 | 4,295 | 3,774 | 15,096 | 18,870 | 10,235 | 18,444 | 28,678 |
| | KN-4-3 | 171 | 684 | 855 | 3,810 | 423 | 4,234 | 1,982 | 1,982 | 3,965 | 1,960 | 7,842 | 9,802 | 7,924 | 10,932 | 18,856 |
| | KN-4-4 | 204 | 815 | 1,019 | 4,763 | 529 | 5,292 | 2,478 | 2,478 | 4,956 | 2,351 | 9,404 | 11,755 | 9,795 | 13,226 | 23,021 |
| | KN-4-5 | 14,792 | 22,188 | 36,979 | 5,715 | 635 | 6,350 | 2,974 | 2,974 | 5,947 | 792 | 3,169 | 3,961 | 24,273 | 28,965 | 53,237 |
| | KN-4-6 | 6,145 | 9,218 | 15,363 | 2,540 | 282 | 2,822 | 1,322 | 1,322 | 2,643 | 661 | 2,646 | 3,307 | 10,669 | 13,468 | 24,136 |
| | KN-5-1 | 250 | 1,002 | 1,252 | 5,715 | 635 | 6,350 | 2,974 | 2,974 | 5,947 | 8,171 | 32,685 | 40,857 | 17,111 | 37,296 | 54,407 |
| | KN-5-2 | 8,932 | 13,398 | 22,330 | 3,175 | 353 | 3,528 | 1,652 | 1,652 | 3,304 | 2,138 | 8,532 | 10,690 | 15,897 | 23,955 | 39,852 |
| | KN-6 | 122 | 489 | 611 | 2,858 | 318 | 3,175 | 1,487 | 1,487 | 2,974 | 586 | 2,346 | 2,932 | 5,053 | 4,639 | 9,692 |
| | KN-7-1 | 342 | 1,369 | 1,711 | 7,620 | 847 | 8,467 | 3,965 | 3,965 | 7,930 | 6,240 | 24,960 | 31,201 | 18,168 | 31,140 | 49,308 |
| | KN-7-2 | 114 | 456 | 570 | 2,540 | 282 | 2,822 | 1,322 | 1,322 | 2,643 | 1,349 | 5,395 | 6,743 | 5,324 | 7,455 | 12,779 |
| | KN-7-3 | 10,933 | 16,399 | 27,332 | 3,810 | 423 | 4,234 | 1,982 | 1,982 | 3,965 | 789 | 3,157 | 3,946 | 17,515 | 21,962 | 39,477 |
| | KN-7-4 | 11,755 | 17,632 | 29,387 | 4,445 | 494 | 4,939 | 2,313 | 2,313 | 4,626 | 1,091 | 4,363 | 5,454 | 19,604 | 24,802 | 44,405 |
| | KN-7-5 | 6,288 | 9,432 | 15,721 | 2,540 | 282 | 2,822 | 1,322 | 1,322 | 2,643 | 277 | 1,107 | 1,383 | 10,427 | 12,143 | 22,570 |
| | KN-8 | 139 | 557 | 696 | 3,175 | 353 | 3,528 | 1,652 | 1,652 | 3,304 | 653 | 2,613 | 3,266 | 5,620 | 5,174 | 10,794 |
| | KN-9 | 181 | 724 | 905 | 4,128 | 459 | 4,586 | 2,148 | 2,148 | 4,295 | 996 | 3,984 | 4,980 | 7,452 | 7,314 | 14,766 |
| KN-10 | 220 | 880 | 1,100 | 5,715 | 635 | 6,350 | 2,974 | 2,974 | 5,947 | 636 | 2,544 | 3,180 | 9,545 | 7,032 | 16,577 | |
| KN-11 | 195 | 779 | 974 | 4,445 | 494 | 4,939 | 2,313 | 2,313 | 4,626 | 960 | 3,840 | 7,913 | 9,545 | 15,339 | 24,266 | |
| KN-12 | 13,148 | 19,722 | 32,870 | 5,080 | 564 | 5,645 | 2,643 | 2,643 | 5,286 | 285 | 1,140 | 1,425 | 21,157 | 24,070 | 45,226 | |
| KN-17 | 178 | 713 | 891 | 4,763 | 529 | 5,292 | 2,478 | 2,478 | 4,956 | 1,505 | 6,019 | 7,524 | 8,924 | 9,739 | 18,663 | |
| Sub-Total | 91,016 | 142,279 | 233,295 | 86,683 | 9,631 | 96,314 | 45,100 | 45,100 | 90,199 | 42,515 | 170,060 | 212,575 | 265,314 | 367,070 | 632,384 | |
| Total | 159,263 | 249,755 | 409,018 | 162,570 | 18,063 | 180,634 | 84,582 | 84,582 | 169,165 | 60,084 | 240,337 | 300,421 | 466,500 | 592,737 | 1,059,237 | |

Table H.3.28 Construction Cost of Bridge/Aqueduct : DND Area

(1991 Price)

| Zone | Khal No. | Bridge No. | Length (m) | Type | Area (m ²) | Unit Cost (TK) | | | Construction Cost (1000TK) | | | C.D.S.T. (1000TK) | Remarks |
|-------|-----------|------------|---------------|----------------|------------------------|----------------|--------|--------|----------------------------|--------|---------|-------------------|----------------|
| | | | | | | Total | F/C(%) | L/C(%) | F/C | L/C | Total | | |
| NA-1 | KN-1-2 | BN-3 | 15.80 | Girder bridge | 632.00 | 43.00 | 40 | 60 | 10,870 | 16,306 | 27,176 | - | Highway bridge |
| | KN-1-3 | BN-4 | 14.70 | " " | 53.80 | 45.00 | 40 | 60 | 968 | 1,453 | 2,421 | - | Road bridge |
| | KN-1-5 | BN-5 | 12.60 | " " | 504.00 | 48.00 | 40 | 60 | 9,677 | 14,515 | 24,192 | - | Highway bridge |
| | KN-1-6 | BN-6 | 11.50 | " " | 42.09 | 52.00 | 40 | 60 | 875 | 1,313 | 2,189 | - | Road bridge |
| | NA-2-1 | BN-9 | 7.00 | Rect. Aqueduct | - | - | - | - | 629 | 1,010 | 1,639 | - | Rect. Aqueduct |
| | " | BN-10 | 6.70 | Girder bridge | 24.52 | 74.00 | 40 | 60 | 726 | 1,089 | 1,814 | - | Road brige |
| | " | BN-11 | 6.80 | " " | 24.89 | 73.00 | 40 | 60 | 727 | 1,090 | 1,817 | - | " " |
| | " | BN-12 | 6.80 | " " | 24.89 | 73.00 | 40 | 60 | 727 | 1,090 | 1,817 | - | " " |
| | KN-2-2 | BN-13 | 3.80 | Slab bridge | 13.91 | 112.40 | 40 | 60 | 625 | 938 | 1,563 | - | " " |
| | " | BN-14 | 4.00 | " " | 14.64 | 112.30 | 40 | 60 | 658 | 986 | 1,644 | - | " " |
| | KN-3 | BN-15 | 6.80 | Girder bridge | 24.89 | 73.00 | 40 | 60 | 727 | 1,090 | 1,817 | - | " " |
| | KN-13 | BN-16 | 6.70 | " " | 24.52 | 74.00 | 40 | 60 | 726 | 1,089 | 1,814 | - | " " |
| | KN-14-3 | BN-17 | 3.00 | Slab bridge | 21.00 | 113.50 | 40 | 60 | 953 | 1,430 | 2,384 | - | " " |
| | KN-15 | BN-18 | 5.00 | " " | 18.30 | 111.50 | 40 | 60 | 816 | 1,224 | 2,040 | - | " " |
| | | Sub Total | | | | | | | | 29,705 | 44,623 | 74,328 | 0 |
| NA-2 | KN-4-1 | BN-19 | 26.10 | Deck Girder | - | - | - | - | 1,430 | 1,092 | 2,522 | 878 | Railway bridge |
| | " | BN-20 | 26.10 | Cantilever | 95.53 | 29.30 | 47 | 53 | 1,316 | 1,483 | 2,799 | - | Road bridge |
| | " | BN-21 | 26.10 | Deck Girder | - | - | - | - | 1,430 | 1,092 | 2,522 | 878 | Railway bridge |
| | KN-4-3 | BN-22 | 13.20 | Girder bridge | 48.31 | 47.00 | 40 | 60 | 908 | 1,362 | 2,271 | - | Road bridge |
| | " | BN-23 | 13.20 | " " | 48.31 | 47.00 | 40 | 60 | 908 | 1,362 | 2,271 | - | " " |
| | KN-4-4 | BN-24 | 9.40 | " " | 34.40 | 58.00 | 40 | 60 | 798 | 1,197 | 1,995 | - | " " |
| | " | BN-25 | 9.50 | " " | 34.77 | 57.50 | 40 | 60 | 800 | 1,200 | 1,999 | - | " " |
| | KN-4-5 | BN-26 | 5.00 | Slab bridge | 18.30 | 111.50 | 40 | 60 | 816 | 1,224 | 2,040 | - | " " |
| | " | BN-27 | 5.10 | Girder bridge | 18.67 | 90.00 | 40 | 60 | 672 | 1,008 | 1,680 | - | " " |
| | " | BN-28 | 5.10 | " " | 18.67 | 90.00 | 40 | 60 | 672 | 1,008 | 1,680 | - | " " |
| | " | BN-29 | 5.20 | " " | 19.03 | 89.00 | 40 | 60 | 677 | 1,016 | 1,694 | - | " " |
| | KN-4-6 | BN-30 | 4.40 | Deck Girder | - | - | - | - | 420 | 464 | 884 | 147 | Railway bridge |
| | KN-7-1 | BN-35 | 15.00 | Rect. Aqueduct | - | - | - | - | 999 | 1,554 | 2,553 | - | Rect. Aqueduct |
| | " | BN-36 | 14.30 | Girder Bridge | 52.34 | 46.00 | 40 | 60 | 963 | 1,445 | 2,408 | - | Road bridge |
| | KN-7-4 | BN-37 | 5.30 | " " | 19.40 | 87.00 | 40 | 60 | 675 | 1,013 | 1,688 | - | " " |
| | " | BN-38 | 5.30 | " " | 19.40 | 87.00 | 40 | 60 | 675 | 1,013 | 1,688 | - | " " |
| | " | BN-39 | 5.35 | " " | 19.58 | 86.00 | 40 | 60 | 674 | 1,010 | 1,684 | - | " " |
| | " | BN-40 | 5.45 | " " | 19.95 | 85.00 | 40 | 60 | 678 | 1,017 | 1,696 | - | " " |
| | " | BN-41 | 5.50 | " " | 20.35 | 84.00 | 40 | 60 | 684 | 1,026 | 1,709 | - | " " |
| | " | BN-42 | 5.56 | " " | 20.35 | 83.50 | 40 | 60 | 680 | 1,020 | 1,699 | - | " " |
| | Kn-7-5 | BN-43 | 3.50 | Deck Girder | - | - | - | - | 367 | 420 | 787 | 117 | Railway bridge |
| | KN-9 | BN-44 | 7.00 | Girder | 25.62 | 72.00 | 40 | 60 | 738 | 1,107 | 1,845 | - | Road bridge |
| | KN-10 | BN-46 | 6.30 | Girder bridge | 23.06 | 77.00 | 40 | 60 | 710 | 1,065 | 1,776 | - | " " |
| " | BN-47 | 6.30 | " " | 23.06 | 77.00 | 40 | 60 | 710 | 1,065 | 1,776 | - | " " | |
| KN-12 | BN-48 | 3.60 | Slab bridge | 13.18 | 112.70 | 40 | 60 | 594 | 891 | 1,485 | - | " " | |
| KN-17 | BN-49 | 6.20 | Girder bridge | 22.69 | 78.00 | 40 | 60 | 708 | 1,062 | 1,770 | - | " " | |
| | Sub Total | | | | | | | | 20,703 | 28,217 | 48,920 | 2,020 | |
| | Total | | | | | | | | 50,407 | 72,841 | 123,248 | 2,020 | |

Table H.3.29 Project Cost of Narayananj West

Unit : Million TK (1991Price)

| Phase Project Area | Construction Cost (x10 ⁶) | | | Remarks |
|---------------------------------------|---------------------------------------|--------------|--------------|-------------|
| | F/C | L/C | Total | |
| A. Construction Cost | 1,421 | 633 | 2,054 | |
| 1. Flood Mitigation | 757 | 302 | 1,060 | |
| 1) Embankment | 478 | 208 | 686 | Ref. H.3.32 |
| 2) Flood Wall | 159 | 52 | 211 | Ref. H.3.33 |
| 3) Sluice Gate | 120 | 42 | 162 | Ref. H.3.34 |
| 4) Related Struc. Etc | 1 | 0 | 1 | Ref. H.3.36 |
| 2. Storm Water Drainage | 663 | 331 | 994 | |
| 1) Pump Sta. | 440 | 96 | 536 | Ref. H.3.37 |
| 2) Khal Improve. | 216 | 223 | 439 | Ref. H.3.39 |
| 3) Bridge, Etc | 8 | 12 | 19 | Ref. H.3.40 |
| B. Physical Contingency | 213 | 94 | 307 | Ax15% |
| C. Engineering | 163 | 73 | 236 | (A+B)x10% |
| D. Administration | 0 | 62 | 62 | Ax3% |
| E. Land Acquisition & Compensation | 0 | 1,082 | 1,082 | Ref. H.3.30 |
| F. CDST & Tax | 0 | 356 | 356 | Ref. H.3.31 |
| Total | 1,797 | 2,299 | 4,097 | |

Table H.3.30 Summary of Land Acquisition and Compensation Cost : Narayanganj West

Unit : Million TK (1991 Prince)

| Project Area | Land Acquisition | | | Compensation | | | Total |
|--------------|------------------|----------------------|-----------|------------------|----------------------|-----------|---------|
| | Flood Mitigation | Storm Water Drainage | Sub-Total | Flood Mitigation | Storm Water Drainage | Sub-Total | |
| N. West | 703.8 | 212.5 | 916.3 | 126.3 | 39.2 | 165.5 | 1,081.8 |

Table H.3.31 Summary of C.D.S.T. & Tax : Narayanganj West

Unit : Million TK (1991 Prince)

| Project Area | Flood Mitigation | | | Storm Water Drainage | | | Total |
|--------------|------------------|-------------|-----------|----------------------|------------------|-----------|-------|
| | Embankment | Sluice Gate | Sub-Total | Pump Station | Khal Improvement | Sub-Total | |
| N. West | 18.9 | 82.4 | 101.3 | 254.1 | 0.4 | 254.5 | 355.8 |

Table H. 3.32 CONSTRUCTION COST OF EMBANKMENT :NARAYANGANJ WEST

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|---------|---------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | - | | | 1 | 22,752 | 9,917 | 32,668 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1). Sta.NW.0-29: | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 11,278 | 2,923 | 731 | 3,654 | |
| 2. Banking | m3 | 509 | 70 | 30 | 161,641 | 57,593 | 24,683 | 82,275 | |
| 3. Foundation | m2 | 1,132 | 60 | 40 | 0 | | | | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 0 | | | | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 19,995 | 10,581 | 1,176 | 11,757 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 88,422 | 1,061 | 4,244 | 5,305 | |
| 7. Miscellaneous | LS | | | | 1 | 3,608 | 1,542 | 5,150 | |
| Sub-Total | | | | | | 75,766 | 32,375 | 108,141 | |
| 2).Sta.NE.48-55 | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 6,900 | 1,788 | 447 | 2,236 | |
| 2. Banking | m3 | 509 | 70 | 30 | 196,783 | 70,114 | 30,049 | 100,163 | |
| 3. Foundation | m2 | 1,132 | 60 | 40 | 0 | | | | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 24,971 | 28,579 | 12,248 | 40,828 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 17,250 | 9,129 | 1,014 | 10,143 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 50,565 | 607 | 2,427 | 3,034 | |
| 7. Miscellaneous | LS | | | | 1 | 5,511 | 2,309 | 7,820 | |
| Sub-Total | | | | | | 115,728 | 48,495 | 164,223 | |
| 3).Sta.NE.62-87 | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 13,800 | 3,577 | 894 | 4,471 | |
| 2. Banking | m3 | 509 | 70 | 30 | 320,609 | 114,233 | 48,957 | 163,190 | |
| 3. Foundation | m2 | 1,132 | 60 | 40 | 48,475 | 32,924 | 21,949 | 54,874 | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 70,939 | 81,190 | 34,796 | 115,985 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 34,500 | 18,257 | 2,029 | 20,286 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 67,570 | 811 | 3,243 | 4,054 | |
| 7. Miscellaneous | LS | | | | 1 | 12,550 | 5,593 | 18,143 | |
| Sub-Total | | | | | | 263,542 | 117,462 | 381,003 | |
| Total (II) | | | | | | 455,036 | 198,332 | 653,367 | |
| Total (I+II) | | | | | | 477,788 | 208,248 | 686,036 | |
| | | | | | | 1 | 0 | 1 | |
| Total: | | | | | | | | | |
| I. Preparation of Work | LS | - | | | 1 | 22,752 | 9,917 | 32,668 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 31,978 | 8,289 | 2,072 | 10,361 | |
| 2. Banking | m3 | 509 | 70 | 30 | 679,033 | 241,939 | 103,688 | 345,628 | |
| 3. Foundation | m2 | 1,132 | 60 | 40 | 48,475 | 32,924 | 21,949 | 54,874 | |
| 4. Revetment Work | m2 | 1,635 | 70 | 30 | 95,910 | 109,769 | 47,044 | 156,813 | |
| 5. Maint.Road | m2 | 588 | 90 | 10 | 71,745 | 37,967 | 4,219 | 42,186 | |
| 6. Sodding | m2 | 60 | 20 | 80 | 206,557 | 2,479 | 9,915 | 12,393 | |
| 7. Miscellaneous | LS | | | | 3 | 21,668 | 9,444 | 31,113 | |
| Total (II) | | | | | | 455,036 | 198,332 | 653,367 | |
| Total (I+II) | | | | | | 477,788 | 208,248 | 686,036 | |
| III Land Acquisition | | | | | | | | | |
| 1). Sta.NW.0-29 | m2 | 740 | | 100 | 285,839 | | 211,521 | | |
| 2). Sta.NE.48-55 | m2 | 740 | | 100 | 201,763 | | 149,305 | | |
| 3). Sta.NE.62-87 | m2 | 740 | | 100 | 385,344 | | 285,155 | | |
| Total | | | | | 872,946 | | 645,980 | | |

Table H.3.33 CONSTRUCTION COST OF FLOOD WALL :NARAYANGANJ WEST

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|--------|---------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1 | 7,570 | 2,455 | 10,025 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1).NE.0-48 (L=9600m) | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 26,204 | 833 | 3,333 | 4,166 | |
| 2. Backfill & Filling | m3 | 118 | 50 | 50 | 16,135 | 952 | 952 | 1,904 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 14,129 | 40,573 | 27,049 | 67,621 | |
| 4. Form | m2 | 614 | 80 | 20 | 65,321 | 32,086 | 8,021 | 40,107 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 989 | 26,536 | 637 | 27,173 | |
| 6. Foot Protection | m2 | 588 | 90 | 10 | 43,415 | 22,975 | 207 | 23,182 | |
| 7. Miscellaneous | LS | | | | 1 | 5,049 | 2,000 | 7,049 | |
| Subtotal | | | | | | 129,004 | 42,198 | 171,202 | |
| 2).NE.55-62 (L=1580 m) | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 3,850 | 122 | 490 | 612 | |
| 2. Backfill & Filling | m3 | 118 | 50 | 50 | 2,361 | 139 | 139 | 279 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 2,080 | 5,973 | 3,982 | 9,955 | |
| 4. Form | m2 | 614 | 80 | 20 | 10,180 | 5,000 | 1,250 | 6,251 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 146 | 3,906 | 94 | 4,000 | |
| 6. Foot Protection | m2 | 588 | 90 | 10 | 7,100 | 3,757 | 34 | 3,791 | |
| 7. Miscellaneous | LS | | | | 1 | 757 | 298 | 1,055 | |
| Subtotal | | | | | | 19,656 | 6,286 | 25,942 | |
| 3).NE.87-88 (L=500 m) | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 325 | 10 | 41 | 52 | |
| 2. Backfill & Filling | m3 | 118 | 50 | 50 | 250 | 15 | 15 | 30 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 175 | 503 | 335 | 838 | |
| 4. Form | m2 | 614 | 80 | 20 | 1,500 | 737 | 184 | 921 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 12 | 329 | 8 | 337 | |
| 6. Foot Protection | m2 | 588 | 90 | 10 | 2,000 | 1,058 | 10 | 1,068 | |
| 7. Miscellaneous | LS | | | | 1 | 80 | 29 | 109 | |
| Subtotal | | | | | | 2,731 | 622 | 3,353 | |
| Total | | | | | | 158,960 | 51,562 | 210,522 | |
| Total | | | | | | | | | |
| I. Preparation of Work | | | | | | 7,570 | 2,455 | | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 30,379 | 966 | 3,864 | 4,830 | |
| 2. Backfill & Filling | m3 | 118 | 50 | 50 | 18,746 | 1,106 | 1,106 | 2,212 | |
| 3. Concrete | m3 | 4,786 | 60 | 40 | 16,384 | 47,048 | 31,366 | 78,414 | |
| 4. Form | m2 | 614 | 80 | 20 | 77,001 | 37,823 | 9,456 | 47,279 | |
| 5. Re. Bar | t | 44,717 | 60 | 40 | 1,147 | 30,771 | 739 | 31,510 | |
| 6. Foot Protection | m2 | 588 | 90 | 10 | 52,515 | 27,791 | 250 | 28,041 | |
| 7. Miscellaneous | LS | | | | 3 | 5,886 | 2,326 | 8,212 | |
| Subtotal | | | | | | 151,391 | 49,107 | 200,498 | |
| Total | | | | | | 158,960 | 51,562 | 210,522 | |
| Land Acquisition | | | | | | | | | |
| 1).Commercial Area | m2 | 1,230 | | 100 | 34,975 | | 43,019 | 43,019 | |
| 2).Non Commercial | m2 | 740 | | 100 | 20,000 | | 14,800 | 14,800 | |
| Total | | | | | 54,975 | | 57,819 | 57,819 | |

Table H.3.34 Summary of Construction Cost of Sluice Gate

Unit : Million Tk. (1991 Price)

| No. of sluice Gate | Construction Cos (x1000) | | | Remarks |
|--------------------|--------------------------|---------------|----------------|----------------|
| | F/C | L/C | Total | |
| 21 | 6,266 | 2,775 | 9,041 | Ref.H.3.35(1) |
| 22 | 12,612 | 5,566 | 18,178 | Ref.H.3.35(2) |
| 23 | 13,006 | 5,605 | 18,611 | Ref.H.3.35(3) |
| 24 | 10,878 | 3,869 | 14,747 | Ref.H.3.35(4) |
| 25 | 4,943 | 1,379 | 6,322 | Ref.H.3.35(5) |
| 26 | 4,944 | 1,379 | 6,323 | Ref.H.3.35(6) |
| 27 | 4,945 | 1,380 | 6,325 | Ref.H.3.35(7) |
| 28 | 4,947 | 1,380 | 6,327 | Ref.H.3.35(8) |
| 29 | 6,436 | 1,354 | 7,790 | Ref.H.3.35(9) |
| 30 | 4,871 | 1,205 | 6,076 | Ref.H.3.35(10) |
| 31 | 3,925 | 1,239 | 5,164 | Ref.H.3.35(11) |
| 32 | 3,961 | 1,061 | 5,022 | Ref.H.3.35(12) |
| 33A | 17,391 | 7,113 | 24,504 | Ref.H.3.35(13) |
| 33B | 20,467 | 7,067 | 27,534 | Ref.H.3.35(14) |
| Total | 119,592 | 42,372 | 161,964 | |

Table H.3.35 (1) BREAKDOWN OF CONSTRUCTION COST OF SLUICE GATE :GATE NO.21

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|-------------|-------------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 298 | 132 | 431 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 365.00 | 95 | 24 | 118 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 232.00 | 62 | 7 | 69 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 194.00 | 712 | 475 | 1187 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 168.00 | 329 | 219 | 548 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 216.00 | 620 | 414 | 1034 | |
| 6. Form | m2 | 761 | 80 | 20 | 475.20 | 289 | 72 | 362 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 19.44 | 522 | 348 | 869 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 147.00 | 339 | 339 | 678 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 18.00 | 647 | 530 | 1177 | |
| 10. Miscellaneous | LS | | | | 1.00 | 181 | 121 | 302 | |
| Subtotal | | | | | | 3797 | 2548 | 6345 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 396000 | 100 | | 2.89 | 1144 | | 1144 | |
| 2. Hoist Machine | m2 | 264000 | 100 | | 2.89 | 763 | | 763 | |
| 3. Installation | LS | 66000 | 90 | 10 | 1.00 | 172 | 19 | 191 | |
| 4. Miscellaneous | LS | 58080 | 55 | 45 | 1.00 | 92 | 76 | 168 | |
| Subtotal | | | | | | 2171 | 95 | 2266 | |
| Total | | | | | | 6266 | 2775 | 9041 | |

Table H.3.35 (2) BREAKDOWN OF CONSTRUCTION COST OF SLUICE GATE :GATE NO.22

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|-------------|--------------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 601 | 265 | 866 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 2917.00 | 756 | 189 | 945 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 2012.00 | 541 | 60 | 602 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 298.00 | 1094 | 729 | 1823 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 485.00 | 950 | 633 | 1583 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 526.00 | 1510 | 1007 | 2517 | |
| 6. Form | m2 | 761 | 80 | 20 | 1157.20 | 705 | 176 | 881 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 47.34 | 1270 | 847 | 2117 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 312.00 | 720 | 720 | 1439 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 18.60 | 669 | 547 | 1216 | |
| 10. Miscellaneous | LS | | | | 1.00 | 411 | 245 | 656 | |
| Subtotal | | | | | | 8626 | 5154 | 13779 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 6.76 | 1785 | | 1785 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 6.76 | 1190 | | 1190 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 268 | 30 | 297 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 144 | 118 | 262 | |
| Subtotal | | | | | | 3386 | 148 | 3534 | |
| Total | | | | | | 12612 | 5566 | 18178 | |

Table H.3.35(3) CONSTRUCTION COST OF SLUICE GATE :GATE NO.23

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 619 | 267 | 886 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 763.00 | 198 | 49 | 247 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 416.00 | 112 | 12 | 124 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 312.00 | 1145 | 763 | 1909 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 524.00 | 1026 | 684 | 1710 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 547.00 | 1571 | 1047 | 2618 | |
| 6. Form | m2 | 761 | 80 | 20 | 1203.40 | 733 | 183 | 916 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 49.23 | 1321 | 881 | 2201 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 316.00 | 729 | 729 | 1458 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 18.60 | 669 | 547 | 1216 | |
| 10. Miscellaneous | LS | | | | 1.00 | 375 | 245 | 620 | |
| Subtotal | | | | | | 7878 | 5141 | 13020 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 9.00 | 2376 | | 2376 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 9.00 | 1584 | | 1584 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 356 | 40 | 396 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 192 | 157 | 348 | |
| Subtotal | | | | | | 4508 | 196 | 4704 | |
| Total | | | | | | 13006 | 5605 | 18611 | |

Table H.3.35(4) CONSTRUCTION COST OF SLUICE GATE :GATE NO.24

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 518 | 184 | 702 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 788.00 | 204 | 51 | 255 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 369.00 | 99 | 11 | 110 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 254.00 | 932 | 621 | 1554 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 491.00 | 962 | 641 | 1603 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 386.00 | 1108 | 739 | 1847 | |
| 6. Form | m2 | 761 | 80 | 20 | 849.20 | 517 | 129 | 646 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 34.74 | 932 | 621 | 1553 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 214.00 | 494 | 494 | 987 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 262 | 165 | 428 | |
| Subtotal | | | | | | 5511 | 3473 | 8984 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 9.68 | 2556 | | 2556 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 9.68 | 1704 | | 1704 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 383 | 43 | 426 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 206 | 169 | 375 | |
| Subtotal | | | | | | 4849 | 211 | 5060 | |
| Total | | | | | | 10878 | 3869 | 14747 | |

Table H.3.35(5) BREAKDOWN OF CONSTRUCTION COST OF SLUICE GATE :GATE NO..25

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 235 | 66 | 301 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 126.00 | 33 | 8 | 41 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 78.00 | 21 | 2 | 23 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 177.00 | 650 | 433 | 1083 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 51.00 | 100 | 67 | 166 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 73.00 | 210 | 140 | 349 | |
| 6. Form | m2 | 761 | 80 | 20 | 160.60 | 98 | 24 | 122 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 6.57 | 176 | 118 | 294 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 145.00 | 334 | 334 | 669 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 81 | 56 | 137 | |
| Subtotal | | | | | | 1702 | 1183 | 2885 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 396000 | 100 | | 4.00 | 1584 | | 1584 | * |
| 2. Hoist Machine | m2 | 264000 | 100 | | 4.00 | 1056 | | 1056 | * |
| 3. Installation | LS | 66000 | 90 | 10 | 1.00 | 238 | 26 | 264 | |
| 4. Miscellaneous | LS | 58080 | 55 | 45 | 1.00 | 128 | 105 | 232 | |
| Subtotal | | | | | | 3005 | 131 | 3136 | |
| Total | | | | | | 4943 | 1379 | 6322 | |

Table H.3.35(6) BREAKDOWN OF CONSTRUCTION COST OF SLUICE GATE :GATE NO.26

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 235 | 66 | 301 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 127.00 | 33 | 8 | 41 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 79.00 | 21 | 2 | 24 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 177.00 | 650 | 433 | 1083 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 51.00 | 100 | 67 | 166 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 73.00 | 210 | 140 | 349 | |
| 6. Form | m2 | 761 | 80 | 20 | 160.60 | 98 | 24 | 122 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 6.57 | 176 | 118 | 294 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 145.00 | 334 | 334 | 669 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 81 | 56 | 137 | |
| Subtotal | | | | | | 1703 | 1183 | 2886 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 396000 | 100 | | 4.00 | 1584 | | 1584 | * |
| 2. Hoist Machine | m2 | 264000 | 100 | | 4.00 | 1056 | | 1056 | * |
| 3. Installation | LS | 66000 | 90 | 10 | 1.00 | 238 | 26 | 264 | |
| 4. Miscellaneous | LS | 58080 | 55 | 45 | 1.00 | 128 | 105 | 232 | |
| Subtotal | | | | | | 3005 | 131 | 3136 | |
| Total | | | | | | 4944 | 1379 | 6323 | |

Table H.3.35(7) BREAKDOWN OF CONSTRUCTION COST OF SLUICE GATE :GATE NO.27

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 235 | 66 | 301 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 131.00 | 34 | 8 | 42 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 81.00 | 22 | 2 | 24 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 177.00 | 650 | 433 | 1083 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 51.00 | 100 | 67 | 166 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 73.00 | 210 | 140 | 349 | |
| 6. Form | m2 | 761 | 80 | 20 | 160.60 | 98 | 24 | 122 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 6.57 | 176 | 118 | 294 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 145.00 | 334 | 334 | 669 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 81 | 56 | 138 | |
| Subtotal | | | | | | 1705 | 1183 | 2888 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 396000 | 100 | | 4.00 | 1584 | | 1584 | * |
| 2. Hoist Machine | m2 | 264000 | 100 | | 4.00 | 1056 | | 1056 | * |
| 3. Installation | LS | 66000 | 90 | 10 | 1.00 | 238 | 26 | 264 | |
| 4. Miscellaneous | LS | 58080 | 55 | 45 | 1.00 | 128 | 105 | 232 | |
| Subtotal | | | | | | 3005 | 131 | 3136 | |
| Total | | | | | | 4945 | 1380 | 6325 | |

Table H.3.35(8) BREAKDOWN OF CONSTRUCTION COST OF SLUICE GATE :Gate No.28

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 236 | 66 | 301 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 133.00 | 34 | 9 | 43 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 83.00 | 22 | 2 | 25 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 177.00 | 650 | 433 | 1083 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 51.00 | 100 | 67 | 166 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 73.00 | 210 | 140 | 349 | |
| 6. Form | m2 | 761 | 80 | 20 | 160.60 | 98 | 24 | 122 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 6.57 | 176 | 118 | 294 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 145.00 | 334 | 334 | 669 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 81 | 56 | 138 | |
| Subtotal | | | | | | 1706 | 1183 | 2889 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 396000 | 100 | | 4.00 | 1584 | | 1584 | * |
| 2. Hoist Machine | m2 | 264000 | 100 | | 4.00 | 1056 | | 1056 | * |
| 3. Installation | LS | 66000 | 90 | 10 | 1.00 | 238 | 26 | 264 | |
| 4. Miscellaneous | LS | 58080 | 55 | 45 | 1.00 | 128 | 105 | 232 | |
| Subtotal | | | | | | 3005 | 131 | 3136 | |
| Total | | | | | | 4947 | 1380 | 6327 | |

Table H.3.35(9) CONSTRUCTION COST OF SLUICE GATE :GATE NO.29

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 306 | 64 | 371 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 123.00 | 32 | 8 | 40 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 66.00 | 18 | 2 | 20 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 183.00 | 672 | 448 | 1119 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 75.00 | 147 | 98 | 245 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 69.00 | 198 | 132 | 330 | |
| 6. Form | m2 | 761 | 80 | 20 | 151.80 | 92 | 23 | 116 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 6.21 | 167 | 111 | 278 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 95.00 | 219 | 219 | 438 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 77 | 52 | 129 | |
| Subtotal | | | | | | 1622 | 1093 | 2715 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 9.00 | 2376 | | 2376 | * |
| 2. Hoist Machine | m2 | 176000 | 100 | | 9.00 | 1584 | | 1584 | * |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 356 | 40 | 396 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 192 | 157 | 348 | |
| Subtotal | | | | | | 4508 | 196 | 4704 | |
| Total | | | | | | 6436 | 1354 | 7790 | |

Table H.3.35(10) CONSTRUCTION COST OF SLUICE GATE :GATE NO.30

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 232 | 57 | 289 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 145.00 | 38 | 9 | 47 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 85.00 | 23 | 3 | 25 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 171.00 | 628 | 418 | 1046 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 63.00 | 123 | 82 | 206 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 63.00 | 181 | 121 | 302 | |
| 6. Form | m2 | 761 | 80 | 20 | 138.60 | 84 | 21 | 105 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 5.67 | 152 | 101 | 254 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 90.00 | 208 | 208 | 415 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 72 | 48 | 120 | |
| Subtotal | | | | | | 1508 | 1011 | 2520 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 6.25 | 1650 | | 1650 | * |
| 2. Hoist Machine | m2 | 176000 | 100 | | 6.25 | 1100 | | 1100 | * |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 248 | 28 | 275 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 133 | 109 | 242 | |
| Subtotal | | | | | | 3131 | 136 | 3267 | |
| Total | | | | | | 4871 | 1205 | 6076 | |

Table H.3.35(11) CONSTRUCTION COST OF SLUICE GATE :GATE NO.31

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 187 | 59 | 246 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 133.00 | 34 | 9 | 43 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 86.00 | 23 | 3 | 26 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 167.00 | 613 | 409 | 1022 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 43.00 | 84 | 56 | 140 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 65.00 | 187 | 124 | 311 | |
| 6. Form | m2 | 761 | 80 | 20 | 143.00 | 87 | 22 | 109 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 5.85 | 157 | 105 | 262 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 133.00 | 307 | 307 | 614 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 75 | 52 | 126 | |
| Subtotal | | | | | | 1567 | 1085 | 2652 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 396000 | 100 | | 2.89 | 1144 | | 1144 | * |
| 2. Hoist Machine | m2 | 264000 | 100 | | 2.89 | 763 | | 763 | * |
| 3. Installation | LS | 66000 | 90 | 10 | 1.00 | 172 | 19 | 191 | |
| 4. Miscellaneous | LS | 58080 | 55 | 45 | 1.00 | 92 | 76 | 168 | |
| Subtotal | | | | | | 2171 | 95 | 2266 | |
| Total | | | | | | 3925 | 1239 | 5164 | |

Table H.3.35(12) CONSTRUCTION COST OF SLUICE GATE :GATE NO.32

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 189 | 51 | 239 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 118.00 | 31 | 8 | 38 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 71.00 | 19 | 2 | 21 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 161.00 | 591 | 394 | 985 | * |
| 4. R.C Pile | m | 3264 | 60 | 40 | 55.00 | 108 | 72 | 180 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 54.00 | 155 | 103 | 258 | |
| 6. Form | m2 | 761 | 80 | 20 | 118.80 | 72 | 18 | 90 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 4.86 | 130 | 87 | 217 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 77.00 | 178 | 178 | 355 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | | | | | |
| 10. Miscellaneous | LS | | | | 1.00 | 64 | 43 | 107 | |
| Subtotal | | | | | | 1348 | 905 | 2252 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf, Sheet | m2 | 264000 | 100 | | 4.84 | 1278 | | 1278 | * |
| 2. Hoist Machine | m2 | 176000 | 100 | | 4.84 | 852 | | 852 | * |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 192 | 21 | 213 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 103 | 84 | 187 | |
| Subtotal | | | | | | 2424 | 106 | 2530 | |
| Total | | | | | | 3961 | 1061 | 5022 | |

Table H.3.35(13) CONSTRUCTION COST OF SLUICE GATE :GATE NO.33A

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 828 | 339 | 1167 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 3057.00 | 792 | 198 | 990 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 1603.00 | 431 | 48 | 479 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 307.00 | 1127 | 751 | 1878 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 1147.00 | 2246 | 1498 | 3744 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 666.00 | 1912 | 1275 | 3187 | |
| 6. Form | m2 | 761 | 80 | 20 | 1465.20 | 892 | 223 | 1115 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 59.94 | 1608 | 1072 | 2680 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 260.00 | 600 | 600 | 1199 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 18.60 | 669 | 547 | 1216 | |
| 10. Miscellaneous | LS | | | | 1.00 | 514 | 311 | 825 | |
| Subtotal | | | | | | 10792 | 6523 | 17315 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 11.52 | 3041 | | 3041 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 11.52 | 2028 | | 2028 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 456 | 51 | 507 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 245 | 201 | 446 | |
| Subtotal | | | | | | 5770 | 251 | 6022 | |
| Total | | | | | | 17391 | 7113 | 24504 | |

Table H.3.35(14) CONSTRUCTION COST OF SLUICE GATE :GATE NO.33.B

Const. Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|------------------------------|------|----------------|--------|--------|----------|---------------------------|------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1.00 | 975 | 337 | 1311 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 324 | 80 | 20 | 2930.00 | 759 | 190 | 949 | |
| 2. Backfill | m3 | 299 | 90 | 10 | 1418.00 | 382 | 42 | 424 | |
| 3. Sheet Pile | m2 | 6117 | 60 | 40 | 324.00 | 1189 | 793 | 1982 | |
| 4. R.C Pile | m | 3264 | 60 | 40 | 889.00 | 1741 | 1161 | 2902 | |
| 5. Concrete | m3 | 4786 | 60 | 40 | 719.00 | 2065 | 1376 | 3441 | |
| 6. Form | m2 | 761 | 80 | 20 | 1581.80 | 963 | 241 | 1204 | |
| 7. Re. Bar | t | 44717 | 60 | 40 | 64.71 | 1736 | 1157 | 2894 | |
| 8. Bed Protection | m2 | 4613 | 50 | 50 | 336.00 | 775 | 775 | 1550 | |
| 9. Operation Bridge | m2 | 65400 | 55 | 45 | 10.20 | 367 | 300 | 667 | |
| 10. Miscellaneous | LS | | | | 1.00 | 499 | 302 | 801 | |
| Subtotal | | | | | | 10476 | 6337 | 16813 | |
| III. Gate Leaf & equipment | | | | | | | | | |
| 1. Gate Leaf,Sheet | m2 | 264000 | 100 | | 18.00 | 4752 | | 4752 | |
| 2. Hoist Machine | m2 | 176000 | 100 | | 18.00 | 3168 | | 3168 | |
| 3. Installation | LS | 44000 | 90 | 10 | 1.00 | 713 | 79 | 792 | |
| 4. Miscellaneous | LS | 38720 | 55 | 45 | 1.00 | 383 | 314 | 697 | |
| Subtotal | | | | | | 9016 | 393 | 9409 | |
| Total | | | | | | 20467 | 7067 | 27534 | |

Table H.3.36 CONSTRUCTION COST OF STOP LOG.STRUCTURE:N.WEST

Const.Cost Unit : x1000 (TK) (1991 Price)

| Item | Unit | Unit Cost (TK) | | | Quantity | Construction Cost (x1000) | | | Remarks |
|---|------|----------------|--------|--------|----------|---------------------------|-------|-------|---------|
| | | Total | F/C(%) | L/C(%) | | F/C | L/C | Total | |
| I. Preparation of Work | LS | | | | 1 | 1.6 | 0.9 | 2 | |
| II. Direct Construction Cost Per One Place | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 7.0 | 0.2 | 0.9 | 1 | |
| 2. Backfill | m3 | 118 | 50 | 50 | 4.5 | 0.3 | 0.3 | 1 | |
| 3. Concrete | m3 | 4786 | 60 | 40 | 3.5 | 10.1 | 6.7 | 17 | |
| 4. Form | m2 | 614 | 80 | 20 | 23.0 | 11.3 | 2.8 | 14 | |
| 5. Re. Bar | l | 44717 | 60 | 40 | 0.3 | 8.5 | 5.6 | 14 | |
| 6. Miscellaneous | LS | | 50 | 50 | 1 | 1.5 | 0.8 | 2 | |
| Subtotal | | | | | | 31.8 | 17.1 | 49 | |
| Total | | | | | | 33.4 | 18.0 | 51 | |
| Total (17 Places) | | | | | | | | | |
| I. Preparation of Work | LS | | | | 1 | 27.0 | 14.6 | 42 | |
| II. Direct Construction Cost | | | | | | | | | |
| 1. Excavation | m3 | 159 | 20 | 80 | 119.0 | 3.8 | 15.1 | 19 | |
| 2. Backfill | m3 | 118 | 50 | 50 | 76.5 | 4.5 | 4.5 | 9 | |
| 3. Concrete | m3 | 4786 | 60 | 40 | 59.5 | 170.9 | 113.9 | 285 | |
| 4. Form | m2 | 614 | 80 | 20 | 391.0 | 192.1 | 48.0 | 240 | |
| 5. Re. Bar | l | 44717 | 60 | 40 | 5.4 | 143.7 | 95.8 | 239 | |
| 6. Miscellaneous | LS | | 50 | 50 | 1 | 25.7 | 13.9 | 40 | |
| Subtotal | | | | | | 540.6 | 291.2 | 832 | |
| Total | | | | | | 567.7 | 305.8 | 873 | |

Table H.3.37 Summary of Construction Cost of Pump Station : Narayanganj West

Unit : Million Tk. (1991 Price)

| No. of sluice Gate | Construction Cos (x10 ⁶) | | | Remarks |
|--------------------|--------------------------------------|-----------|------------|-----------------------|
| | F/C | L/C | Total | |
| P12 | 98 | 22 | 120 | Ref. Table H.3.38 (1) |
| P13 | 97 | 21 | 118 | Ref. Table H.3.38 (1) |
| P14A | 103 | 22 | 125 | Ref. Table H.3.38 (2) |
| P14B | 142 | 31 | 173 | Ref. Table H.3.38 (2) |
| Total | 440 | 96 | 536 | |

Table H.3.38(1) : Breakdown of Construction Cost of Pump Station : Narayanganj West

1) NB-1: P.12 (Q=2.00m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | Total |
|--|----------------|----------------|--------|----------|----------------------------|--------|---------|
| | | F/C(%) | L/C(%) | | F/C | L/C | |
| | | | | | | | |
| I. Preparation Work | LS | 82 | 18 | 1 | 4,654 | 1,029 | 5,683 |
| II. Civil Work | | | | | | | |
| 1. Excavation | m ³ | 80 | 20 | 11418 | 2,960 | 740 | 3,699 |
| 2. Embankment | m ³ | 70 | 30 | 4338 | 1,546 | 662 | 2,208 |
| 3. Backfill | m ³ | 118 | 50 | 4000 | 236 | 236 | 472 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 1221 | 2,390 | 1,593 | 3,983 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 209 | 767 | 511 | 1,278 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 89 | 202 | 135 | 337 |
| 7. Concrete | m ³ | 4,786 | 60 | 925 | 2,656 | 1,771 | 4,427 |
| 8. Form | m ² | 761 | 80 | 1760 | 1,071 | 268 | 1,339 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 90 | 2,423 | 1,615 | 4,038 |
| 10. Slope Protection | m ² | 1,579 | 40 | 1203 | 760 | 1,140 | 1,900 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 63 | 145 | 145 | 291 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 130 | 82 | 123 | 206 |
| 13. Sodding | m ² | 60 | 20 | 652 | 8 | 31 | 39 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 16 | 576 | 471 | 1,046 |
| 15. Building Works | LS | 6,460,000 | 40 | 1 | 2,584 | 3,876 | 6,460 |
| 16. Miscellaneous | LS | 3,172,424 | 58 | 42 | 1,841 | 1,332 | 3,172 |
| 17. Coffor Dam | LS | 6,979,334 | 58 | 42 | 4,049 | 2,930 | 6,979 |
| Subtotal | | 58 | 42 | | 24,296 | 17,580 | 41,876 |
| III. Mechanical & Electrical Work | | | | | | | |
| 1. ø700 Pump | Place | 15,073,684 | 100 | 0 | 15,074 | 0 | 15,074 |
| 2. 75 kw Main Motor | Place | 4,294,737 | 100 | 0 | 4,295 | 0 | 4,295 |
| 3. Pipe and Valve | Place | 3,284,211 | 100 | 0 | 3,284 | 0 | 3,284 |
| 4. Electrical Facilities | LS | 34,526,316 | 100 | 0 | 34,526 | 0 | 34,526 |
| 5. Crane and Spare Parts | LS | 2,421,053 | 100 | 0 | 2,421 | 0 | 2,421 |
| 6. Gate Leaf and Sheet | LS | 496,579 | 100 | 0 | 497 | 0 | 497 |
| 7. Hoist Machine | LS | 331,053 | 100 | 0 | 331 | 0 | 331 |
| 8. Installation | LS | 6,042,763 | 90 | 10 | 5,438 | 604 | 6,043 |
| 9. Miscellaneous | LS | 5,317,632 | 55 | 45 | 2,925 | 2,393 | 5,318 |
| Subtotal | | 96 | 4 | | 68,791 | 2,997 | 71,788 |
| Total | | 82 | 18 | | 97,741 | 21,607 | 119,347 |

2) NB-2: P.13 (Q=2.20m³/s)

| Item | Unit | Unit Cost (TK) | | Quantity | Construction Cost (1000TK) | | Total |
|--|----------------|----------------|--------|----------|----------------------------|--------|---------|
| | | F/C(%) | L/C(%) | | F/C | L/C | |
| | | | | | | | |
| I. Preparation Work | LS | 82 | 18 | 1 | 4,613 | 1,006 | 5,619 |
| II. Civil Work | | | | | | | |
| 1. Excavation | m ³ | 324 | 20 | 8783 | 2,277 | 569 | 2,846 |
| 2. Embankment | m ³ | 509 | 30 | 7342 | 2,616 | 1,121 | 3,737 |
| 3. Backfill | m ³ | 118 | 50 | 3077 | 182 | 182 | 363 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 1302 | 2,548 | 1,699 | 4,247 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 209 | 767 | 511 | 1,278 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 87 | 197 | 132 | 329 |
| 7. Concrete | m ³ | 4,786 | 60 | 861 | 2,472 | 1,648 | 4,121 |
| 8. Form | m ² | 761 | 80 | 1639 | 998 | 249 | 1,247 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 84 | 2,254 | 1,502 | 3,756 |
| 10. Slope Protection | m ² | 1,579 | 40 | 749 | 473 | 709 | 1,182 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 63 | 145 | 145 | 291 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 130 | 82 | 123 | 206 |
| 13. Sodding | m ² | 60 | 20 | 1104 | 13 | 53 | 66 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 16 | 576 | 471 | 1,046 |
| 15. Building Works | LS | 6,460,000 | 40 | 1 | 2,584 | 3,876 | 6,460 |
| 16. Miscellaneous | LS | 3,117,523 | 58 | 42 | 1,818 | 1,299 | 3,118 |
| 17. Coffor Dam | LS | 6,858,550 | 58 | 42 | 4,000 | 2,858 | 6,859 |
| Subtotal | | 58 | 42 | | 24,002 | 17,149 | 41,151 |
| III. Mechanical & Electrical Work | | | | | | | |
| 1. ø700 Pump | Place | 14,694,737 | 100 | 0 | 14,695 | 0 | 14,695 |
| 2. 75 kw Main Motor | Place | 4,294,737 | 100 | 0 | 4,295 | 0 | 4,295 |
| 3. Pipe and Valve | Place | 3,200,000 | 100 | 0 | 3,200 | 0 | 3,200 |
| 4. Electrical Facilities | LS | 34,526,316 | 100 | 0 | 34,526 | 0 | 34,526 |
| 5. Crane and Spare Parts | LS | 2,421,053 | 100 | 0 | 2,421 | 0 | 2,421 |
| 7. Gate Leaf and Sheet | LS | 496,579 | 100 | 0 | 497 | 0 | 497 |
| 8. Hoist Machine | LS | 331,053 | 100 | 0 | 331 | 0 | 331 |
| 9. Installation | LS | 5,996,447 | 90 | 10 | 5,397 | 600 | 5,996 |
| 10. Miscellaneous | LS | 5,276,874 | 55 | 45 | 2,902 | 2,375 | 5,277 |
| Subtotal | | 96 | 4 | | 68,264 | 2,974 | 71,238 |
| Total | | 82 | 18 | | 96,879 | 21,129 | 118,009 |

Note : Preparation work (site clearing, site office motor pool, survey works, soil boring, safety control, etc.)

Table H.3.38(2) : Breakdown of Construction Cost of Pump Station : Narayanganj West

3) NB-4: P.14A (Q=2.70m³/s)

| Item | Unit | (1991 Price) | | | |
|-------------------------------------|----------------|----------------|--------|----------------------------|---------|
| | | Unit Cost (TK) | | Construction Cost (1000TK) | |
| | | Total | F/C(%) | L/C | Total |
| I. Preparation Work | LS | 5,961,408 | 82 | 1,059 | 5,961 |
| II. Civil Work | | | | | |
| 1. Excavation | m ³ | 324 | 80 | 550 | 2,751 |
| 2. Embankment | m ³ | 509 | 70 | 1,172 | 3,907 |
| 3. Backfill | m ³ | 118 | 50 | 175 | 351 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 1,821 | 4,552 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 522 | 1,304 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 219 | 365 |
| 7. Concrete | m ³ | 4,786 | 60 | 2,777 | 4,628 |
| 8. Form | m ² | 761 | 80 | 1,233 | 1,403 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 2,535 | 4,226 |
| 10. Slope Protection | m ² | 1,579 | 40 | 226 | 565 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 145 | 291 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 89 | 222 |
| 13. Sodding | m ² | 60 | 20 | 14 | 69 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 611 | 500 |
| 15. Building Works | LS | 7,120,000 | 40 | 2,848 | 7,120 |
| 16. Miscellaneous | LS | 3,286,529 | 58 | 1,921 | 3,287 |
| 17. Coffor Dam | LS | 7,230,363 | 58 | 4,227 | 7,230 |
| Subtotal | | | 58 | 25,359 | 43,382 |
| III. Mechanical & Electrical Work | | | | | |
| 1. ø800 Pump | Place | 17,473,684 | 100 | 17,474 | 17,474 |
| 2. 75kw Main Motor | Place | 4,294,737 | 100 | 4,295 | 4,295 |
| 3. Pipe and Valve | Place | 4,210,526 | 100 | 4,211 | 4,211 |
| 4. Electrical Facilities | LS | 34,526,316 | 100 | 34,526 | 34,526 |
| 5. Crane and Spare Parts | LS | 2,421,053 | 100 | 2,421 | 2,421 |
| 6. Gate Leaf and Sheet | LS | 550,263 | 100 | 550 | 550 |
| 7. Hoist Machine | LS | 366,842 | 100 | 367 | 367 |
| 8. Installation | LS | 6,384,342 | 90 | 5,746 | 6,384 |
| 9. Miscellaneous | LS | 5,618,221 | 55 | 3,090 | 5,618 |
| Subtotal | | | 96 | 72,679 | 75,846 |
| Total | | | 82 | 102,941 | 125,190 |

4) NB-5: P.14B (Q=5.30m³/s)

| Item | Unit | (1991 Price) | | | |
|-------------------------------------|----------------|----------------|--------|----------------------------|---------|
| | | Unit Cost (TK) | | Construction Cost (1000TK) | |
| | | Total | F/C(%) | L/C | Total |
| I. Preparation Work | LS | 8,243,386 | 82 | 1,460 | 8,243 |
| II. Civil Work | | | | | |
| 1. Excavation | m ³ | 324 | 80 | 873 | 4,364 |
| 2. Embankment | m ³ | 509 | 70 | 713 | 1,019 |
| 3. Backfill | m ³ | 118 | 50 | 278 | 557 |
| 4. R.C. Pile (0.4x0.4) | m | 3,262 | 60 | 2,834 | 4,723 |
| 5. Sheet Pile (Type II) | m ² | 6,117 | 60 | 867 | 1,445 |
| 6. Leveling Concrete | m ² | 3,777 | 60 | 314 | 523 |
| 7. Concrete | m ³ | 4,786 | 60 | 3,528 | 5,880 |
| 8. Form | m ² | 761 | 80 | 1,430 | 1,787 |
| 9. Reinforcement Bar | t | 44,717 | 60 | 3,212 | 5,353 |
| 10. Slope Protection | m ² | 1,579 | 40 | 810 | 2,026 |
| 11. Bed Protection (Concrete Block) | m ² | 4,613 | 50 | 145 | 291 |
| 12. Bed Protection (brick) | m ² | 1,579 | 40 | 122 | 305 |
| 13. Sodding | m ² | 60 | 20 | 4 | 18 |
| 14. Operation Bridge | m ² | 65,400 | 55 | 288 | 525 |
| 15. Building Works | LS | 13,130,000 | 40 | 5,252 | 13,130 |
| 16. Miscellaneous | LS | 4,194,347 | 56 | 2,329 | 4,194 |
| 17. Coffor Dam | LS | 9,227,564 | 56 | 5,123 | 9,228 |
| Subtotal | | | 56 | 30,740 | 55,365 |
| III. Mechanical & Electrical Work | | | | | |
| 1. ø1200 Pump | Place | 34,778,947 | 100 | 34,779 | 34,779 |
| 2. 132 kw Main Motor | Place | 10,273,684 | 100 | 10,274 | 10,274 |
| 3. Pipe and Valve | Place | 8,673,684 | 100 | 8,674 | 8,674 |
| 4. Electrical Facilities | LS | 33,473,684 | 100 | 33,474 | 33,474 |
| 5. Crane and Spare Parts | LS | 3,452,632 | 100 | 3,453 | 3,453 |
| 6. Gate Leaf and Sheet | LS | 912,632 | 100 | 913 | 913 |
| 7. Hoist Machine | LS | 608,421 | 100 | 608 | 608 |
| 8. Installation | LS | 9,217,368 | 90 | 8,296 | 9,217 |
| 9. Miscellaneous | LS | 8,111,284 | 55 | 4,461 | 8,111 |
| Subtotal | | | 96 | 104,931 | 109,502 |
| Total | | | 82 | 142,454 | 173,111 |

Note : Preparation work (site clearing, site office motor pool, survey works, soil boring, safety control, etc.)

Tble H.3.39 Construction Cost of Khal Improvement : Narayanganj West

(Unit: 1000Tk.,1991 Price)

| Zone | Khal | Channel Works | | | Maintenance Road | | | Banking | | | Dredging | | | Total | | |
|-----------|-----------|---------------|---------|--------|------------------|--------|--------|---------|--------|-------|----------|--------|---------|---------|---------|--------|
| | | F/C | L/C | TOTAL | F/C | L/C | TOTAL | F/C | L/C | TOTAL | F/C | L/C | TOTAL | F/C | L/C | TOTAL |
| NB-1 | KN-18 | 2,501 | 3,752 | 6,253 | 1,270 | 141 | 1,411 | 661 | 661 | 1,322 | 176 | 702 | 878 | 4,607 | 5,256 | 9,863 |
| | KN-19 | 122 | 489 | 611 | 3,810 | 423 | 4,234 | 1,982 | 1,982 | 3,965 | 949 | 3,797 | 4,746 | 6,864 | 6,691 | 13,555 |
| | Sub-Total | 2,623 | 4,240 | 6,863 | 5,080 | 564 | 5,645 | 2,643 | 2,643 | 5,286 | 1,125 | 4,499 | 5,624 | 11,471 | 11,947 | 23,418 |
| NB-2 | KN-20 | 76 | 305 | 382 | 2,858 | 318 | 3,175 | 1,487 | 1,487 | 2,974 | 269 | 1,076 | 1,345 | 4,690 | 3,186 | 7,876 |
| | KN-21 | 8,754 | 13,130 | 21,884 | 4,445 | 494 | 4,939 | 2,313 | 2,313 | 4,626 | 855 | 3,422 | 4,277 | 16,367 | 19,359 | 35,726 |
| | KN-22 | 5,717 | 8,575 | 14,291 | 2,540 | 282 | 2,822 | 1,322 | 1,322 | 2,643 | 313 | 1,252 | 1,565 | 9,891 | 11,430 | 21,322 |
| Sub-Total | 14,546 | 22,011 | 36,557 | 9,843 | 1,094 | 10,937 | 5,121 | 5,121 | 10,242 | 1,437 | 5,749 | 7,187 | 30,948 | 33,975 | 64,925 | |
| NB-3 | KN-23 | 3,752 | 5,627 | 9,379 | 1,905 | 212 | 2,117 | 991 | 991 | 1,982 | 248 | 992 | 1,240 | 6,896 | 7,822 | 14,718 |
| | KN-24 | 4,377 | 6,565 | 10,942 | 2,223 | 247 | 2,470 | 1,156 | 1,156 | 2,313 | 356 | 1,425 | 1,781 | 8,112 | 9,393 | 17,505 |
| | KN-25 | 2,501 | 3,752 | 6,253 | 1,270 | 141 | 1,411 | 661 | 661 | 1,322 | 0 | 0 | 0 | 4,432 | 4,553 | 8,985 |
| | KN-26 | 3,752 | 5,627 | 9,379 | 1,905 | 212 | 2,117 | 991 | 991 | 1,982 | 0 | 0 | 0 | 6,648 | 6,830 | 13,478 |
| | KN-27 | 1,876 | 2,814 | 4,689 | 953 | 106 | 1,058 | 496 | 496 | 991 | 57 | 229 | 286 | 3,381 | 3,644 | 7,025 |
| | S-1 | 45,701 | 30,467 | 76,168 | - | - | - | - | - | - | - | - | - | 45,701 | 30,467 | 76,168 |
| S-2 | 3,873 | 4,547 | 8,420 | - | - | - | - | - | - | - | - | - | 3,873 | 4,547 | 8,420 | |
| S-3 | 2,348 | 2,757 | 5,105 | - | - | - | - | - | - | - | - | - | 2,348 | 2,757 | 5,105 | |
| Sub-Total | 68,179 | 62,156 | 130,335 | 8,256 | 917 | 9,173 | 4,295 | 4,295 | 8,590 | 661 | 2,646 | 3,307 | 81,391 | 70,014 | 151,405 | |
| NB-4 | KN-28-1 | 92 | 367 | 458 | 2,858 | 318 | 3,175 | 1,487 | 1,487 | 2,974 | 326 | 1,304 | 1,630 | 4,762 | 3,475 | 8,237 |
| | KN-28-2 | 48 | 190 | 238 | 1,588 | 176 | 1,764 | 826 | 826 | 1,652 | 138 | 551 | 688 | 2,599 | 1,743 | 4,342 |
| | KN-29 | 10,004 | 15,006 | 25,010 | 4,445 | 494 | 4,939 | 2,313 | 2,313 | 4,626 | 1,126 | 4,503 | 5,629 | 17,888 | 22,316 | 40,203 |
| Sub-Total | 10,143 | 15,563 | 25,706 | 8,891 | 988 | 9,878 | 4,626 | 4,626 | 9,251 | 1,589 | 6,357 | 7,947 | 25,249 | 27,534 | 52,782 | |
| NB-5 | KN-30-1 | 2,144 | 3,216 | 5,359 | 953 | 106 | 1,058 | 496 | 496 | 991 | 430 | 1,720 | 2,150 | 4,022 | 5,537 | 9,559 |
| | KN-30-2 | 10,719 | 16,078 | 26,797 | 4,763 | 529 | 5,292 | 2,478 | 2,478 | 4,956 | 435 | 1,739 | 2,174 | 18,594 | 20,824 | 39,218 |
| | KN-31-1 | 81 | 326 | 407 | 2,540 | 282 | 2,822 | 1,322 | 1,322 | 2,643 | 725 | 2,900 | 3,625 | 4,668 | 4,830 | 9,498 |
| | KN-31-2 | 9,289 | 13,934 | 23,224 | 4,128 | 459 | 4,586 | 2,148 | 2,148 | 4,295 | 1,059 | 4,236 | 5,295 | 16,624 | 20,776 | 37,400 |
| | KN-32 | 12,862 | 19,293 | 32,156 | 5,715 | 635 | 6,350 | 2,974 | 2,974 | 5,947 | 1,196 | 4,783 | 5,978 | 22,747 | 27,685 | 50,432 |
| Sub-Total | 35,096 | 52,847 | 87,943 | 18,099 | 2,011 | 20,110 | 9,416 | 9,416 | 18,833 | 3,844 | 15,377 | 19,222 | 66,455 | 79,652 | 146,106 | |
| Total | 130,587 | 156,816 | 287,404 | 50,168 | 5,574 | 55,742 | 26,102 | 26,102 | 52,203 | 8,657 | 34,629 | 43,286 | 215,514 | 223,121 | 438,636 | |

Table H.3.40 Construction Cost of Bridge/Aqueduct : Narayanganj West

| Zone | Khal No. | Bridge No. | Length (m) | Type | Area (m ²) | Unit Cost (TK) | | | Construction Cost (1000TK) | | | C.D.S.T. (1000Tk) | Remarks |
|-------|-----------|------------|------------|---------------|------------------------|----------------|--------|--------|----------------------------|--------|--------|-------------------|----------------|
| | | | | | | Total | F/C(%) | L/C(%) | F/C | L/C | Total | | |
| | | | | | | | | | | | | | |
| NB-1 | KN-19 | BN-50 | 5.60 | Girder bridge | 20.50 | 83.00 | 40 | 60 | 681 | 1,021 | 1,702 | - | Road bridge |
| | Sub Total | | | | | | 40 | 60 | 681 | 1,021 | 1,702 | 0 | |
| NB-2 | KN-21 | BN-51 | 2.70 | Slab bridge | 9.88 | 114.00 | 40 | 60 | 451 | 676 | 1,126 | - | Road bridge |
| | KN-22 | BN-52 | 5.30 | Girder bridge | 19.40 | 87.00 | 40 | 60 | 675 | 1,013 | 1,688 | - | " " |
| | " | BN-53 | 5.30 | Deck Girder | - | - | - | - | 473 | 509 | 982 | 178 | Railway bridge |
| | Sub Total | | | | | | | 42 | 58 | 1,599 | 2,197 | 3,796 | 178 |
| NB-3 | KN-23 | BN-54 | 3.50 | " " | - | - | - | - | 367 | 420 | 787 | 117 | Railway bridge |
| | KN-24 | BN-55 | 3.50 | " " | - | - | - | - | 367 | 420 | 787 | 117 | " " |
| | Sub Total | | | | | | | 47 | 53 | 734 | 840 | 1,574 | 234 |
| NB-4 | KN-29 | BN-60 | 3.50 | Slab bridge | 12.81 | 112.80 | 40 | 60 | 578 | 867 | 1,445 | - | Road bridge |
| | " | BN-61 | 3.50 | " " | 12.81 | 112.80 | 40 | 60 | 578 | 867 | 1,445 | - | " " |
| | Sub Total | | | | | | | 40 | 60 | 1,156 | 1,734 | 2,890 | 0 |
| NB-5 | KN-30-1 | BN-62 | 8.80 | Girder bridge | 32.21 | 61.00 | 40 | 60 | 786 | 1,179 | 1,965 | - | Road bridge |
| | KN-31-1 | BN-64 | 6.00 | Slab bridge | 21.96 | 110.90 | 40 | 60 | 974 | 1,461 | 2,435 | - | " " |
| | KN-31-2 | BN-65 | 3.50 | " " | 12.81 | 112.80 | 40 | 60 | 578 | 867 | 1,445 | - | " " |
| | " | BN-66 | 3.50 | " " | 12.81 | 112.80 | 40 | 60 | 578 | 867 | 1,445 | - | " " |
| | KN-32 | BN-67 | 3.90 | " " | 14.27 | 112.30 | 40 | 60 | 641 | 962 | 1,603 | - | " " |
| | " | BN-68 | 3.90 | " " | 14.27 | 112.30 | 40 | 60 | 641 | 962 | 1,603 | - | " " |
| | Sub Total | | | | | | | 40 | 60 | 4,198 | 6,297 | 10,495 | 0 |
| Total | | | | | | | 41 | 59 | 8,367 | 12,089 | 20,457 | 412 | |

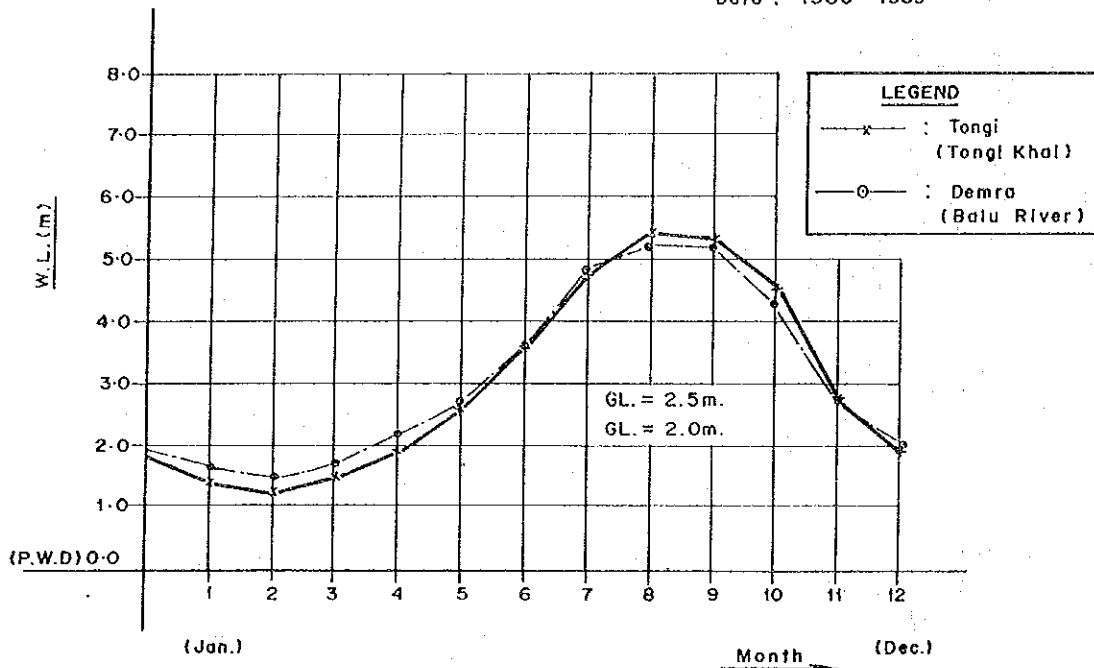
Table H.4.1 Proposed Disbursement Schedule

Unit : Million Tk.

| Year | '94 | '95 | '96 | '97 | '98 | '99 | 2000 | '01 | '02 | '03 | '04 | '05 | '06 | '07 | '08 | '09 | '10 | Total Project Cost | |
|-----------------------------|-----|-----|-----|-------|-------|-------|------|-------|-------|-------|-------|-----|-----|-----|-------|-----|-----|--------------------|--|
| I G. Dhaka East | | | | | | | | | | | | | | | | | | | |
| 1. DC-1 (Total) | | | | | | 498 | 499 | 900 | 1,181 | 1,181 | 1,179 | | | | | 3 | 175 | 5,616 | |
| (F/C) | | | | | | 134 | 134 | 506 | 702 | 703 | 696 | | | | | | 74 | 2,949 | |
| (L/C) | | | | | | 364 | 365 | 394 | 479 | 478 | 483 | | | | | 3 | 101 | 2,667 | |
| 2. DC-2 (Total) | | | | | | | | | | | | | | | | | | | |
| (F/C) | | | | | | | | | | | | 284 | 285 | 745 | 1,141 | 636 | 983 | 4,074 | |
| (L/C) | | | | | | | | | | | | 98 | 98 | 392 | 691 | 362 | 516 | 2,157 | |
| 3. DC-3 (Total) | | | | | | | | | | | | | | | | | | | |
| (F/C) | | | | | | | 263 | 263 | 746 | 1,118 | 607 | 610 | | | 6 | 348 | | 3,961 | |
| (L/C) | | | | | | | 96 | 96 | 395 | 678 | 346 | 348 | | | | 150 | | 2,109 | |
| 4. DC-4 (Total) | | | | | | | | | | | | | | | | | | | |
| (F/C) | 106 | 107 | 314 | 639 | 641 | 395 | | | | | | | | 5 | 340 | | | 4,645 | |
| (L/C) | 269 | 271 | 306 | 459 | 461 | 332 | | | | | | | | 5 | 194 | | | 2,348 | |
| II DND | | | | | | | | | | | | | | | | | | | |
| Total | | | 723 | 1,191 | 1,192 | 1,143 | | | | | | | | | 5 | 340 | | 4,594 | |
| (F/C) | | | 200 | 630 | 631 | 592 | | | | | | | | | | 150 | | 2,203 | |
| (L/C) | | | 521 | 533 | 533 | 523 | | | | | | | | | | 87 | | 2,197 | |
| III Narayanganj West | | | | | | | | | | | | | | | | | | | |
| Total | | | | | | 717 | 799 | 1,047 | 745 | 389 | 400 | | | | | | | 4,097 | |
| (F/C) | | | | | | 163 | 294 | 459 | 462 | 208 | 211 | | | | | | | 1,797 | |
| (L/C) | | | | | | 554 | 505 | 588 | 283 | 181 | 189 | | | | | | | 2,300 | |

Monthly Mean Water Level
: Dhaka East (Tongi & Demra)

Date : 1980-1989



Monthly Mean Water Level

: Narayanganj Area (Narayanganj & Hariharpara)

Date : 1980-1989

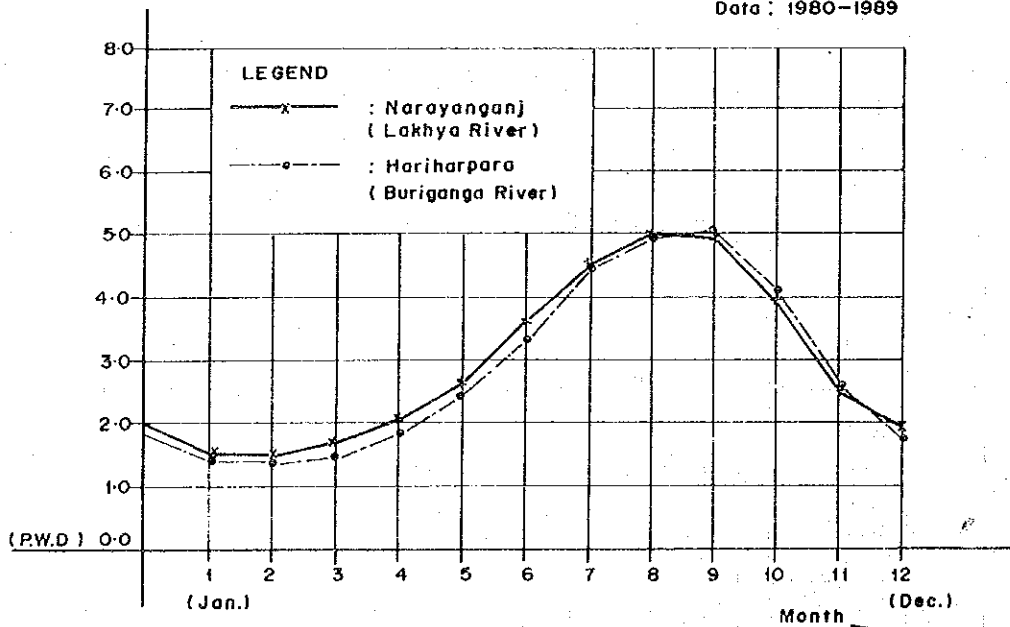


FIG. H.2.1

MONTHLY MEAN WATER LEVEL

GREATER DHAKA PROTECTION PROJECT (STUDY IN DHAKA METROLOLITAN AREA) OF BANGLADESH FLOOD ACTION PLAN NO.8A IN THE PEOPLE'S REPUBLIC OF BANGLADESH

| Phase | Year | | | | | | | | | | Remarks | | | | | | | | | |
|---------------------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----|---------|-----|-----|-----|-----|-----|-----|-----|-----|----------------------|
| | '92 | '93 | '94 | '95 | '96 | '97 | '98 | '99 | 2000 | '01 | | '02 | '03 | '04 | '05 | '06 | '07 | '08 | '09 | '10 |
| Preparation Stage by GOB | | | | | | | | | | | | | | | | | | | | |
| G.Dhaka East | | | | | | | | | | | | | | | | | | | | |
| 1.NORTHERN COMPT.(DC-1) | | | | | | | | | | | | | | | | | | | | |
| A.Project Preparation | | | | | | | | | | | | | | | | | | | | |
| B.Flood Mitigation | | | | | | | | | | | | | | | | | | | | |
| C.Storm Water Drainage | | | | | | | | | | | | | | | | | | | | Including Sub-Emb.SA |
| 2. CENTRAL COMPT.(DC-2) | | | | | | | | | | | | | | | | | | | | |
| A.Project Preparation | | | | | | | | | | | | | | | | | | | | |
| B.Flood Mitigation | | | | | | | | | | | | | | | | | | | | |
| C.Storm Water Drainage | | | | | | | | | | | | | | | | | | | | |
| 3.SOUTHERN COMPT.-1(DC-3) | | | | | | | | | | | | | | | | | | | | |
| A.Project Preparation | | | | | | | | | | | | | | | | | | | | |
| B.Flood Mitigation | | | | | | | | | | | | | | | | | | | | |
| C.Storm Water Drainage | | | | | | | | | | | | | | | | | | | | Including Sub-Emb.SB |
| 4.SOUTHERN COMPT.-2(DC-4) | | | | | | | | | | | | | | | | | | | | |
| A.Project Preparation | | | | | | | | | | | | | | | | | | | | |
| B.Flood Mitigation | | | | | | | | | | | | | | | | | | | | |
| C.Storm Water Drainage | | | | | | | | | | | | | | | | | | | | Including Sub-Emb.SC |
| Narayanganj | | | | | | | | | | | | | | | | | | | | |
| 1.DND | | | | | | | | | | | | | | | | | | | | |
| A.Project Preparation | | | | | | | | | | | | | | | | | | | | |
| B.Flood Mitigation | | | | | | | | | | | | | | | | | | | | |
| C.Storm Water Drainage | | | | | | | | | | | | | | | | | | | | |
| 2.Narayanganj West | | | | | | | | | | | | | | | | | | | | |
| A.Project Preparation | | | | | | | | | | | | | | | | | | | | |
| B.Flood Mitigation | | | | | | | | | | | | | | | | | | | | |
| C.Storm Water Drainage | | | | | | | | | | | | | | | | | | | | |

Note:

- 1) Preparation stage by GOB :including development study, etc.
- 2) Sub-Emb:Sub-Embarkment.

FIG. PROPOSED IMPLEMENTATION SCHEDULE

FIG.

GREATER DHAKA PROTECTION PROJECT (STUDY IN DHAKA METROPOLITAN AREA) OF BANGLADESH FLOOD ACTION PLAN NO.8A IN THE PEOPLE'S REPUBLIC OF BANGLADESH



SUPPORTING REPORT I
PROJECT EVALUATION

SUPPORTING REPORT I: PROJECT EVALUATION

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SUPPORTING REPORT I : PROJECT EVALUATION

1. General

Project evaluation will be done by comparing the flood damages in the "with" and "without project" situations.

To make an overall evaluation of the project, not only the economic aspect, but also the socio-economic and environmental aspects were taken into account. The JICA Study team tried to express the socio-economic impacts of the project in quantitative terms as much as possible. But, environmental impacts are very hard to be quantitatively estimated. Therefore, qualitative analysis was employed for assessment of environmental aspects.

For project evaluation the Study Area was divided into 6 projects, i.e. Greater Dhaka East (or DC) -1, -2, -3, -4, Narayanganj DND and Narayanganj West Projects. For the sake of reference the combined total of the 4 Dhaka projects was also subjected to evaluation.

The period of project life was assumed basically to be 30 years. The opportunity cost of capital (OCC) is assumed as 12%. These are based on the "FAP: Guidelines of Economic (Micro) Analysis".

The estimation of NPVR(2) and the sensitivity analysis using such variables as the increase of capital costs, the increase of O&M costs and the reduction of benefits were done in accordance with the "Guidelines".

Financial analysis were also done, centering on the ways and means to get financial resources for O&M costs.

2. Estimation of Benefits and Costs

2.1 Estimation of Benefits

In the "with" situation flood damages expected under the "without" situation will be virtually avoided. That is to say, flood damages under the "without" situation just turn into project benefits in the "with" situation.

Economic losses deriving from floods and inundations are manifold and profound. They range from direct damages to houses, establishments, institutions, agricultural crops, infrastructures, etc., to income losses of households, to sales losses of private and public enterprises and to traffic damages in the form of reduced sales, more operating cost and more operating hours.

They have been estimated by project area, by type/scale of floods for 1990 and 2010 in "B Flood and Flood Damage" of this report. Ultimately they were converted into "average annual flood damages", that is, average flood damages to be expected annually, which were estimated based on probability theory. In the "with" situation they just become project benefits. (Refer to Table I.1).

Project benefits are summarized as follows :

(Unit : Tk. Million)

| Project | 1990 | 2010 |
|--------------------|-------|---------|
| DC - 1 | 43.2 | 648.4 |
| DC - 2 | 26.4 | 176.7 |
| DC - 3 | 195.1 | 628.5 |
| DC - 4 | 293.0 | 791.3 |
| Greater Dhaka East | 557.7 | 2,244.9 |
| Narayanganj DND | 153.4 | 639.9 |
| Narayanganj West | 113.4 | 395.3 |
| Total | 824.5 | 3,280.1 |

2.2 Estimation of Costs

Costs are divided into capital cost which is required to install/construct necessary equipment/facilities concerned, and operation and maintenance (O&M) cost which is required annually after the implementation of a project. Capital cost is further divided into initial cost and replacement cost. Replacement cost is required to replace pumping equipment.

In performing economic analysis costs were converted into economic costs. To convert capital cost into economic cost, a conversion factor was employed for a specific type of work.

Conversion factors employed are 89.8% for embankment, 85.2% for flood wall, 97.2% for sluice gate, 95.1% for pump station and 88.0% for khal improvement.

Land acquisition cost was valued as a stream of annual net benefits of production foregone.

Replacement cost is assumed to be required every 15 years.

Economic costs are summarized below. (For more details refer to Table I.2).

(Unit : Tk. Million)

| Project | Costs | | |
|--------------------|---------|--------|-----|
| | Capital | NBOPF* | O&M |
| DC - 1 | 4,955 | 2.3 | 37 |
| DC - 2 | 2,991 | 1.1 | 30 |
| DC - 3 | 3,457 | 1.0 | 29 |
| DC - 4 | 3,920 | 1.7 | 32 |
| Greater Dhaka East | 15,323 | 6.1 | 128 |
| Narayanganj DND | 4,088 | 1.2 | 28 |
| Narayanganj West | 2,858 | 1.4 | 21 |
| Total | 22,269 | 8.7 | 177 |

Note : NBOPF = Annual Net Benefits of Production Foregone

The annual O&M cost corresponds to 0.79% of capital cost on total average basis.

In performing economic analysis, a part of the costs of the ADB project now under way under FAP 8B were incorporated into the costs of DC-3 and DC-4 Projects because beneficiary areas of the two projects encompass some of the ADB project areas.

The costs of the JICA drainage project now on-going were also incorporated into the costs of the DC-3 Project. Further, the costs of the raising of roads and the construction

of flood walls around DND were incorporated into the costs of the Narayanganj DND Project. The above table does not take into account these costs.

3. Economic Evaluation

Results of economic analysis on the 6 projects are described in the followings. The case where the Narayanganj DND Project and the Narayanganj West Project are combined together is additionally taken up and economically evaluated in Supplementary Study. Also, an additional economic analysis applying the standard conversion factor (SCF) to the benefits was performed.

3.1 Calculation of EIRR and Other Decision Criteria

In accordance with the implementation schedule, initial costs were distributed over years for each of the 6 projects. Also, based on the initial cost distribution O&M and replacement costs were determined and allotted over years.

Benefits of each of the intermediate years between 1990 and 2010 and beyond were calculated based on the estimated benefits for 1990 and 2010 employing a simple equation. Benefits during the project implementation period were assumed to be realized in proportion to the extent of project implementation.

In this way cost benefit streams for the 6 projects were prepared. (Refer to Table I.3).

Using those cost benefit streams economic internal rate of return (EIRR), net present value (NPV) and benefit cost ratio (B/C) were calculated. In addition, NPVR (2) was calculated. It is given by NPV divided by the present value of capital and O&M costs. The results are shown under.

| Project | EIRR (%) | NPV (Tk. Mln.) | B/C | NPVR (2) |
|--------------------|----------|----------------|------|----------|
| DC - 1 | 14.8 | 274 | 1.22 | 0.162 |
| DC - 2 | 8.0 | - 98 | 0.74 | -0.155 |
| DC - 3 | 13.9 | 263 | 1.19 | 0.147 |
| DC - 4 | 18.9 | 1,032 | 1.55 | 0.416 |
| Greater Dhaka East | 15.8 | 1,501 | 1.31 | 0.228 |
| Narayanganj DND | 14.5 | 371 | 1.21 | 0.151 |
| Narayanganj West | 14.3 | 152 | 1.18 | 0.110 |

The DC-4 Project has the highest EIRR of 18.9%. The EIRR's of the DC-1, Narayanganj DND, Narayanganj West and DC-3 Projects are not much different, being all distributed in the surroundings of 14%. All of these five projects have the EIRR's exceeding the OCC of 12%.

The DC-2 Project has the EIRR of 8.0%. This project is marginal so far as economic evaluation is concerned.

In terms of NPV, the DC-4 Project is the biggest with Tk. 1,032 million. The second place goes to the Narayanganj DND Project with Tk. 371 million, followed by the DC-1 and DC-3 Projects with Tk. 274 million and Tk. 263 million, respectively. The Narayanganj West Project is placed fifth with the NPV of Tk. 152 million. The DC-2 Project has the negative NPV of Tk. -98 million.

The highest B/C of 1.55 is held by the DC-4 Project. The B/C's of the DC-1, Narayanganj DND, DC-3 and Narayanganj West Projects are not much different, being all distributed in the surroundings of 1.2. The DC-2 Project has the B/C of less than one with 0.74.

Turning to NPVR (2), the DC-4 Project has the highest value of 0.416. It is expected that the project will contribute to the increase of national income by the amount corresponding to 41.6% of project costs. The NPVR (2)'s of the DC-1, Narayanganj DND, DC-3 and Narayanganj West Projects are mutually not widely apart, all ranging between 0.1 and 0.2. The DC-2 Project has the negative NPVR (2) with -0.155.

It is to be noted regarding priority order that the DC-4 Project is placed first in all the decision criteria, the DC-1 Project is placed second except in NPV where it is the third, the Narayanganj DND Project is placed third except in NPV where it is the second, the DC-3 Project is placed fourth except in EIRR where it is the fifth and the Narayanganj West Project is placed fifth except in EIRR where it is the fourth. The DC-2 Project is always placed sixth.

As seen in the above, the five projects, namely the DC-4, DC-1, Narayanganj DND, DC-3 and Narayanganj West Projects are judged to be economically feasible, while the DC-2 Project is marginal so far as economic evaluation is concerned. However, in case of social projects such as this one the EIRR's of over 7% have proved to be on the high side.