| | | | | | | |
|---|---|---|---|---|---|---|
| | Used rate per hourx2.832/1.98 | | | | 94.40 | |
| | (ii) Vibrator 1no. To vibrate 2.832 cum on thebasic of vibrator capacity 1.98 cum per hour. **( Vide iten no 3.22 )** | **93.65** | | | | |
| | Used rate per hourx2.832/1.98 | | | | 133.94 | |
| | | | | | 8801.69 | |
| | Add Overhead charge & C.P@15% | | | | 1320.25 | |
| | | | | | 10121.95 | |
| | Add 1% cess | | | | 101.22 | |
| | | | | | 10223.17 | 3609.88 |
| | | Say Rs | | **3609.90** | Per $M^3$ | |
| 6.3.8 | Providing and laying P.C.C or R.C.C M-150 with nominal mix of (1: 2 : 4 ) in various components of Barrage superstructure with approved quality of gravel coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened excluding cost of shuttering or form work as well as reinforcement its cutting, bending, binding, and placing but including necessary tools and plants, vibrating, curing, royalty and all taxes etc. complete job as per specifications and direction of E/I. | **Analysis same as Item 5.3.9** | | | | |
| 6.3.9 | Providing and laying P.C.C or R.C.C M-200 with nominal mix of (1: 1.5 : 3 ) in various components of Barrage superstructure with approved quality of gravel coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened excluding cost of shuttering or form work as well as reinforcement its cutting, bending, binding, and placing but including necessary tools and plants, vibrating, curing, royalty and all taxes etc. complete job as per specifications and direction of E/I. | **Analysis same as Item 5.3.10** | | | | |
| 6.3.10 | Providing and laying P.C.C or R.C.C M-250 with nominal mix of (1: 1 : 2 ) in various components of Barrage superstructure with approved quality of gravel coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened excluding cost of shuttering or form work as well as reinforcement its cutting, bending, binding, and placing but including necessary tools and plants, vibrating, curing, royalty and all taxes etc. complete job as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=2.832 Cum | | | | | |
| | **MATERIALS** | | | | | |
| | Coarse aggregates (20 mm To 10 mm) **(Rate of approved quality of aggregate as per Design)** | 2.40 | $M^3$ | 690.30 | 1656.72 | |
| | Sand | 1.20 | $M^3$ | 145.10 | 174.12 | |
| | Cement | 1.20 | $M^3$ | 8912.00 | 10694.40 | |
| | **Labour** | | | | | |
| | Head mason | 0.5 | nos | 279.00 | 139.50 | |
| | Mason Gr II | 1.25 | nos | 249.00 | 311.25 | |
| | Unskilled mazdoor | 12 | nos | 206.00 | 2472.00 | |
| | Bhisti | 1 | nos | 207.00 | 207.00 | |
| | **HIRE CHARGES OF MACHINE** | | | | | |
| | (i)Concrete mixer (10 H.P ) for 2.832 cum consists on the basic of mixer production capacity 1.98 $M^3$ per hour. **(vide item 3.25)** | **66.00** | | | | |
| | Used rate per hourx2.832/1.98 | | | | 94.40 | |
| | (ii) Vibrator 1no. To vibrate 2.832 cum on thebasic of vibrator capacity 1.98 cum per hour. **( Vide iten no 3.22 )** | **93.65** | | | | |
| | Used rate per hourX2.832/1.98 | | | | 133.94 | |
| | | | | | 15883.33 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add Overhead charge & C.P@15% | | | | 2382.50 | |
| | | | | | 18265.83 | |
| | Add 1% cess | | | | 182.66 | |
| | | | | | 18448.49 | 6514.30 |
| | | Say Rs | | **6514.30** | Per $M^3$ | |
| 6.3.11 | Providing and laying R.C.C M-150 with nominal mix of ( 1: 2 : 4 ) in deck slab with approved quality of graded coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened excluding cost of shuttering or form work as well as reinforcement its cutting, bending, binding, and placing but including necessary tools and plants, vibrating, curing, royalty and all taxes etc. complete job as per specifications and direction of E/I. | **Analysis same as Item 5.3.12** | | | | |
| 6.3.12 | Providing and laying R.C.C M-200 with nominal mix of (1: 1.5 : 3 ) in deck slab with approved quality of graded coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened excluding cost of shuttering or form work as well as reinforcement its cutting, bending, binding, and placing but including necessary tools and plants, vibrating, curing, royalty and all taxes etc. complete job as per specifications and direction of E/I. | **Analysis same as Item 5.3.13** | | | | |
| 6.3.13 | Providing and laying mass concrete of M-100 with nominal mix of (1:3:6 ) in flow and non-over flow of dam section with approved quality of qraded coarse aggregate and approved quality sand of requisite F.M washed and screened including vibrating,precooling etc. as well as royalty and all taxes etc.but excluding cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.00 Cum | | | | | |
| | **MATERIALS** | | | | | |
| | Coarse aggregates **Gr IV** **(Rate of approved quality of aggregate as per Design)** | 0.94 | $M^3$ | 512.40 | 481.66 | |
| | Sand | 0.470 | $M^3$ | 145.10 | 68.20 | |
| | Cement | 0.157 | $M^3$ | 8912.00 | 1399.18 | |
| | | | | | | |
| (B) | (a). Batching and mixing charge | | | | | |
| | **Use rate of Batching and mixing plant (vide item 3.13a)** | **2596.00** | | | | |
| | Batching and mixing plant capacity 26.76 cum (35 cuyd ) | 26.76 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Rate per cum= Use rate/26.76*0.69 | 66.94 | | | 66.94 | |
| | | | | | | |
| | (b) Transport of concrete by 3.06 cum ( 4 cuyd ) buckets hauled by 5 T Diesel Locomotive from batching and mixing plant to pick up point | 3.06 | cum | | | |
| | Average lead= 1.0 Km | 1.00 | Km | | | |
| | Hauling Cycle time | | | | | |
| | Ideal production at Batching plant=57.34 cum (75 cuy | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |
| | I.Loading time of a Train –3.06 x2 x60/39.56 –9.28 minutes | 9.28 | minute | | | |
| | ii.spolting time and waiting time = | 1.50 | minutes | | | |
| | iii.Turning and unloading time | 9.28 | minutes | | | |
| | iv.Empty haul @6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | v.Loaded haul @ 6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | Total hauling cycle time=(i +ii+iii+iv+v) | 40.06 | minutes | | | |
| | No of trips in 50 cum in working | 1.25 | | | | |
| | Output of one train with 2 buckets per hr | 7.65 | cum | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Use rate of Diesel Locomotive (Vide item 3.17a)** | #VALUE! | | | | |
| | **Use rate of concrete buckets 2.nos (Vide item 3.30a)** | 21.00 | | | | |
| | Total use rate | #VALUE! | | | | |
| | Transport rate per cum= Total use rate/7.65 | #VALUE! | | | #VALUE! | |
| | ( c). Placement of concrete by Hammer Head Crane | | | | | |
| | **Use rate per cum (vide item 3.20 b)** | 1111.00 | | | | |
| | Output of crane per hour ( production ) using 2 no Bucates of 3.06 cum (4 cuyd ) capacity each | 3.06 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Ideal production =57.34 cum (75 cuyd ) | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |
| | Rate per cum= Use rate/26.76*0.69 | 28.08 | | | 28.08 | |
| | **(d). Vibrating the concrete. (Vide item no 3.22) Hire charge of vibrator per hr** | | | | 93.65 | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@1%% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | | Say | Rs | #VALUE! | Per $M^3$ | |
| 6.3.14 | Providing and laying mass concrete of M-150 with nominal mix of (1:2 :4 ) in over flow and non-over flow sectopm of dry intake, structures and bridges etc with approved quality of qraded coarse aggregate and approved quality sand of requisite F.M washed and screened including vibrating,precooling etc. as well as royalty and all taxes etc.but excluding cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.00Cum | | | | | |
| A | MATERIALS | | | | | |
| | Coarse aggregates (20 mm To 10 mm) **(Rate of approved quality of aggregate as per Design)** | 0.90 | $M^3$ | 690.30 | 621.27 | |
| | Sand | 0.450 | $M^3$ | 145.10 | 65.30 | |
| | Cement | 0.225 | $M^3$ | 8912.00 | 2005.20 | |
| (B) | (a). Batching and mixing charge | | | | | |
| | **Use rate of Batching and mixing plant (vide item 3.13a)** | 2596.00 | | | | |
| | Batching and mixing plant capacity 26.76 cum (35 cuyd ) | 26.76 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Rate per cum= Use rate/26.76*0.69 | 66.94 | | | 66.94 | |
| | | | | | | |
| | (b) Transport of concrete by 3.06 cum ( 4 cuyd ) buckets hauled by 5 T Diesel Locomotive from batching and mixing plant to pick up point | 3.06 | cum | | | |
| | Average lead= 1.0 Km | 1.00 | Km | | | |
| | Hauling Cycle time | | | | | |
| | Ideal production at Batching plant=57.34 cum (75 cuy | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |
| | I.Loading time of a Train =3.06 x2 x60/39.56 =9.28 minutes | 9.28 | minute | | | |
| | ii.spolting time and waiting time = | 1.50 | minutes | | | |
| | iii.Turning and unloading time | 9.28 | minutes | | | |
| | iv.Empty haul @6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | v.Loaded haul @ 6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | Total hauling cycle time=(i +ii+iii+iv+v) | 40.06 | minutes | | | |
| | No of trips in 50 cum in working | 1.25 | | | | |
| | Output of one trian with 2 buckets per hr | 7.65 | cum | | | |
| | **Use rate of Diesel Locomotive (Vide item 3.17a)** | #VALUE! | | | | |
| | **Use rate of concrete buckets 2.nos (Vide item 3.30a)** | 21.00 | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total use rate | #VALUE! | | | | |
| | Transport rate per cum= Total use rate/7.65 | #VALUE! | | | #VALUE! | |
| | ( c). Placement of concrete by Hammer Head Crane | | | | | |
| | **Use rate per cum (vide item 3.20 b)** | **1111.00** | | | | |
| | Output of crane per hour ( production ) using 2 no Bucates of 3.06 cum (4 cuyd ) capacity each | 3.06 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Ideal production =57.34 cum (75 cuyd ) | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |
| | Rate per cum= Use rate/26.76*0.69 | 28.08 | | | 28.08 | |
| | **(d). Vibrating the concrete. (Vide item no 3.22) Hire charge of vibrator per hr** | | | | **93.65** | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | | Say Rs | | #VALUE! | Per $M^3$ | |
| 6.3.15 | Providing and laying mass concrete of M-200 with nominal mix of (1:1.5 :3 ) in Dam and Spillways with approved quality of qraded coarse aggregate and approved quality sand of requisite F.M washed and screened including vibrating,precooling etc. as well as royalty and all taxes etc.but excluding cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.00Cum | | | | | |
| (A) | MATERIALS | | | | | |
| | Coarse aggregates (20 mm To 10 mm) **(Rate of approved quality of aggregate as per Design)** | 0.860 | $M^3$ | 690.30 | 593.66 | |
| | Sand | 0.430 | $M^3$ | 145.10 | 62.39 | |
| | Cement | 0.287 | $M^3$ | 8912.00 | 2557.74 | |
| (B) | (a). Batching and mixing charge | | | | | |
| | **Use rate of Batching and mixing plant (vide item 3.13a)** | **2596.00** | | | | |
| | Batching and mixing plant capacity 26.76 cum (35 cuyd ) | 26.76 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Rate per cum= Use rate/26.76*0.69 | 66.94 | | | 66.94 | |
| | | | | | | |
| | (b) Transport of concrete by 3.06 cum ( 4 cuyd ) buckets hauled by 5 T Diesel Locomotive from batching and mixing plant to pick up point | 3.06 | cum | | | |
| | Average lead= 1.0 Km | 1.00 | Km | | | |
| | Hauling Cycle time | | | | | |
| | Ideal production at Batching plant=57.34 cum (75 cuy | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |
| | I.Loading time of a Train =3.06 x2 x60/39.56 =9.28 minutes | 9.28 | minute | | | |
| | ii.spolting time and waiting time = | 1.50 | minutes | | | |
| | iii.Turning and unloading time | 9.28 | minutes | | | |
| | iv.Empty haul @6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | v.Loaded haul @ 6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | Total hauling cycle time=(i +ii+iii+iv+v) | 40.06 | minutes | | | |
| | No of trips in 50 cum in working | 1.25 | | | | |
| | Output of one trian with 2 buckets per hr | 7.65 | cum | | | |
| | **Use rate of Diesel Locomotive (Vide item 3.17a)** | **#VALUE!** | | | | |
| | **Use rate of concrete buckets 2.nos (Vide item 3.30a)** | **21.00** | | | | |
| | Total use ratr | #VALUE! | | | | |
| | Transport rate per cum= Total use rate/7.65 | #VALUE! | | | #VALUE! | |
| | ( c). Placement of concrete by Hammer Head Crane | | | | | |
| | **Use rate per cum (vide item 3.20 b)** | **1111.00** | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Output of crane per hour ( production ) using 2 no Bucates of 3.06 cum (4 cuyd ) capacity each | 3.06 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Ideal production =57.34 cum (75 cuyd ) | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |
| | Rate per cum= Use rate/26.76*0.69 | 28.08 | | | 28.08 | |
| | **(d). Vibrating the concrete. (Vide item no 3.22) Hire charge of vibrator per hr** | | | | **93.65** | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | | Say Rs | | #VALUE! | Per $M^3$ | |
| 6.3.16 | Providing and laying mass concrete of M-200 with nominal mix of (1: 1 : 2 ) in Dam , Spillways and Head works with approved quality of qraded coarse aggregate and approved quality sand of requisite F.M washed and screened including vibrating,precooling etc. as well as royalty and all taxes etc.but excluding cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.00 Cum | | | | | |
| A | MATERIALS | | | | | |
| | Coarse aggregates (20 mm To 10 mm) **(Rate of approved quality of aggregate as per Design)** | 0.84 | $M^3$ | 690.30 | 579.85 | |
| | Sand | 0.420 | $M^3$ | 145.10 | 60.94 | |
| | Cement | 0.42 | $M^3$ | 8912.00 | 3743.04 | |
| (B) | (a). Batching and mixing charge | | | | | |
| | **Use rate of Batching and mixing plant (vide item 3.13a)** | **2596.00** | | | | |
| | Batching and mixing plant capacity 26.76 cum (35 cuyd ) | 26.76 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Rate per cum= Use rate/26.76*0.69 | 66.94 | | | 66.94 | |
| | | | | | | |
| | (b) Transport of concrete by 3.06 cum ( 4 cuyd ) buckets hauled by 5 T Diesel Locomotive from batching and mixing plant to pick up point | 3.06 | cum | | | |
| | Average lead= 1.0 Km | 1.00 | Km | | | |
| | Hauling Cycle time | | | | | |
| | Ideal production at Batching plant=57.34 cum (75 cuy | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |
| | I.Loading time of a Train =3.06 x2 x60/39.56 =9.28 minutes | 9.28 | minute | | | |
| | ii.spolting time and waiting time = | 1.50 | minutes | | | |
| | iii.Turning and unloading time | 9.28 | minutes | | | |
| | iv.Empty haul @6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | v.Loaded haul @ 6.00 K.M per hour =Average Leadx60/6 | 10.00 | minutes | | | |
| | Total hauling cycle time=(i +ii+iii+iv+v) | 40.06 | minutes | | | |
| | No of trips in 50 cum in working | 1.25 | | | | |
| | Output of one trian with 2 buckets per hr | 7.65 | cum | | | |
| | **Use rate of Diesel Locomotive (Vide item 3.17a)** | **#VALUE!** | | | | |
| | **Use rate of concrete buckets 2.nos (Vide item 3.30a)** | **21.00** | | | | |
| | Total use ratr | #VALUE! | | | | |
| | Transport rate per cum= Total use rate/7.65 | #VALUE! | | | #VALUE! | |
| | ( c). Placement of concrete by Hammer Head Crane | | | | | |
| | **Use rate per cum (vide item 3.20 b)** | **1111.00** | | | | |
| | Output of crane per hour ( production ) using 2 no Bucates of 3.06 cum (4 cuyd ) capacity each | 3.06 | cum | | | |
| | (Taking job management factor as 0.69 ) | 0.69 | | | | |
| | Ideal production =57.34 cum (75 cuyd ) | 57.34 | cum | | | |
| | Actual production with 0.69 x 57.34=39.56 cum | 39.56 | cum | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Rate per cum= Use rate/26.76*0.69 | 28.08 | | | 28.08 | |
| | **(d). Vibrating the concrete. (Vide item no 3.22) Hire charge of vibrator per hr** | | | | **93.65** | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | | Say Rs | | #VALUE! | Per $M^3$ | |
| 6.3.17 | Providing and laying dry pitching with precast cement concrete block 600 mm x 600 mm x 300 mm size of M-75 with nominal mix of ( 1:4:8 ) in floor and flank wall with approved quality of graded coarse aggregate of required grade ( asper design ) and approved quality of sand of requisite F.M washed and screened including necessary form work, tools and plants, vibrating, curing as well royalty and all taxes complete job as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=2.832 Cum | | | | | |
| A | **MATERIALS** | | | | | |
| | Coarse aggregates Gr III **(Rate of approved quality of aggregate as per Design)** | 2.720 | $M^3$ | 489.70 | 1331.98 | |
| | Sand | 1.360 | $M^3$ | 145.10 | 197.34 | |
| | Cement | 0.34 | $M^3$ | 8912.00 | 3030.08 | |
| | | | | | 4559.40 | A |
| B | **LABOUR** | | | | | |
| | Head mason | 0.5 | nos | 279.00 | 139.50 | |
| | Mason Gr II | 1 | nos | 249.00 | 249.00 | |
| | Unskilled mazdoor | 12 | nos | 206.00 | 2472.00 | |
| | Bhisti | 1 | nos | 207.00 | 207.00 | |
| | Unskilled mazdoor for placing blocks in position | 4 | nos | 206.00 | 824.00 | |
| | | | | | 3891.50 | B |
| C | **HIRE CHARGES OF MACHINE** | | | | | |
| | (i)Concrete mixer (10 H.P ) for 2.832 cum consists | **66.00** | | | | |
| | on the basic of mixer production capacity 1.98 m3 | | | | | |
| | per hour. Used rate per hourx2.832/1.98 | | | | 95.83 | |
| | (ii) Vibrator 1no. To vibrate 2.832 cum on the | **93.65** | | | | |
| | basic of vibrator capacity 1.98 cum per hour. | | | | | |
| | Used rate per hourx2.832/1.98 | | | | 133.94 | |
| | | | | | 229.77 | C |
| D | **SHUTTERING CHARGES** | | | | | |
| | Shuttering 25 blocks 25 mm thick mango planks | | | | | |
| | with 10 % wastage 20.45 sqm 20.45X25/1000 | 0.51 | $M^3$ | 33253.00 | 5339.5 | |
| | Add 1 % for cost of nails and spikes | | | | 53.40 | |
| | LABOUR for shuttering | | | | | |
| | Carpenter Gr II | 3 | nos | 249.00 | 747.00 | |
| | Unskilled mazdoor | 8 | nos | 206.00 | 1648.00 | |
| | Total cost of Shuttering | | | | 7787.90 | |
| | Assuming 4 uses to calculate | | | | | |
| | Cost of Shuttering for 2.832 Cum=total cost/4 | | | | 1946.97 | D |
| | Total Cost =A+B+C+D | | | | 10627.65 | |
| | Add Overhead charge & C.P@15% | | | | 1594.15 | |
| | | | | | 12221.79 | |
| | Add 1% cess | | | | 122.21794 | |
| | | | | | 12344.01 | 4358.76 |
| | | Say Rs | | **4358.80** | Per $M^3$ | |
| 6.3.18 | Providing and laying dry pitching with precast cement concrete block 600 mm x 600 mm x 300 mm size of M-100 with nominal mix of ( 1:3:6 ) in floor and flank wall with approved quality of graded coarse aggregate of required grade ( asper design ) and approved quality of sand of requisite F.M washed and screened including necessary form work, tools and plants, vibrating, curing as well royalty and all taxes complete job as per specifications and direction of E/I. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Unit:- Per Cum | | | | | |
| | Taking Out put–2.832 Cum | | | | | |
| A | **MATERIALS** | | | | | |
| | Coarse aggregates GR III **(Rate of approved quality of aggregate as per Design)** | 2.66 | $M^3$ | 489.70 | 1302.60 | |
| | Sand | 1.33 | $M^3$ | 145.10 | 192.98 | |
| | Cement | 0.45 | $M^3$ | 8912.00 | 4010.40 | |
| | | | | | 5505.99 | A |
| B | **LABOUR** | | | | | |
| | Head mason | 0.5 | nos | 279.00 | 139.50 | |
| | Mason Gr II | 1 | nos | 249.00 | 249.00 | |
| | Unskilled mazdoor | 12 | nos | 206.00 | 2472.00 | |
| | Bhisti | 1 | nos | 207.00 | 207.00 | |
| | Unskilled mazdoor for placing blocks in position | 4 | nos | 206.00 | 824.00 | |
| | | | | | 3891.50 | B |
| C | **HIRE CHARGES OF MACHINE** | | | | | |
| | (i)Concrete mixer (10 H.P ) for 2.832 cum consists | **66.00** | | | | |
| | on the basic of mixer production capacity 1.98 m3 | | | | | |
| | per hour. Used rate per hourx2.832/1.98 | | | | 94.40 | |
| | (ii) Vibrator 1no. To vibrate 2.832 cum on the | **93.65** | | | | |
| | basic of vibrator capacity 1.98 cum per hour. | | | | | |
| | Used rate per hourx2.832/1.98 | | | | 133.94 | |
| | | | | | 228.34 | C |
| D | **SHUTTERING CHARGES** | | | | | |
| | Shuttering 25 blocks 25 mm thick mango planks | | | | | |
| | with 10 % wastage 20.45 sqm 20.45X25/1000 0.51M | 0.51 | $PerM^3$ | 33253.00 | 16959.03 | |
| | Add 1 % for cost of nails and spikes | | | | 169.59 | |
| | **LABOUR** | | | | | |
| | Carpenter Gr II | 3 | nos | 249.00 | 747.00 | |
| | Unskilled mazdoor | 8 | nos | 206.00 | 1648.00 | |
| | Total cost of Shuttering | | | | 19523.62 | |
| | Assuming 4 uses to calculate | | | | | |
| | Cost of shuttering for 2.832 cum total cost/4 | | | | 4880.91 | D |
| | TOTAL Cost=A+B+C+D | | | | 14506.73 | |
| | Add overhead charges & C.P @15% | | | | 2176.01 | |
| | | | | | 16682.74 | |
| | Add 1% cess | | | | 166.82743 | |
| | | | | | 16849.57 | 5949.71 |
| | | Say Rs | | **5949.70** | Per $M^3$ | |
| 6.3.19 | Centring and shuttering in major Barrage work involving mass concrete including cost of form work, their carriage from work shop to work site, errection with the help of suitable crane and stripping etc. complete job as per specifications and direction of E/I. | | | | | |
| | Brief specification | | | | | |
| | Heavir type steel shuttering for use in dams | | | | | |
| | Working with suitable crane | | | | | |
| | Shuttering once manufactured shall be used thirty four times. | | | | | |
| | Materials ( for 100 sqm). | | | | | |
| | (A).Materials ( for 100 sqm). | | | | | |
| | M.S. plates 3 mm thick | 57 | kg | #VALUE! | #VALUE! | |
| | M.S. plates 2 mm thick | 23 | kg | #VALUE! | #VALUE! | |
| | M.S. plates 60x60x10 mm thick | 47 | kg | #VALUE! | #VALUE! | |
| | M.S. plates 65x45x8 mm thick | 20 | kg | #VALUE! | #VALUE! | |
| | M.S. channel 125 x 50 mm | 82 | kg | #VALUE! | #VALUE! | |
| | M.S. channel 150x55 mm | 42 | kg | #VALUE! | #VALUE! | |
| | M.S. channel 100x45 mm | 30 | kg | #VALUE! | #VALUE! | |
| | M.S. plates 63x6 mm | 22 | kg | #VALUE! | #VALUE! | |
| | G.I pipe 50 mm dia | 3.5 | M | IINPUT | #VALUE! | |
| | Nuts and bolts 10 mm dia and 85 mm long( 31 nos) | 4.5 | kg | 61.90 | 278.55 | |
| | Slotted pins and wedges 10 mm dia and 60 mm long | 30 | nos | #VALUE! | #VALUE! | |
| | Tube and nuts 25 mm dia and above | 26 | nos | #VALUE! | #VALUE! | |
| | Total of materials cost | | | | #VALUE! | |
| | Deduct salvage @ 20 % of the above sub total | | | | #VALUE! | |
| | Net total cost of materials | | | | #VALUE! | |
| | Additional materials ( per 50 % sqm ) | 50 | % | | #VALUE! | |
| | M.S. rods 16 mm and 25 mm dia for ancorage 24 kg | 24 | kg | 32.47 | 779.37 | |
| | Linssed oil @ 8 litres per % sqm | 8 | lit | 114.46 | 915.68 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Sub Total of materials | | | | #VALUE! | |
| | (B). Transportation and fabrication ( per % sqm ) | | | | | |
| | i. Transportation shuttering from work shops to work site including loading, unloading for lead below 5 km @ 5% of sub Total of materials cost at sl (A) | | | | #VALUE! | |
| | ii. Fabrication charge including cutting, welding, marking and oil other operations @ 90 % of the materials item 1 to 12 | | | | #VALUE! | |
| | Total transportaion and febrication charge per sqm. | | | | #VALUE! | |
| | (C ). Machinery charge | | | | | |
| | Taking in output of crane / hr | 8.33 | sqm | | | |
| | **Hourly use rate or crane** | **1111.00** | | | | |
| | Machinary charge per sqm = Use rate of crane x 100 / 8.33 | | | | 13337.33 | |
| | (D). Labour charge | | | | | |
| | Foreman | 0.25 | nos | 354.00 | 88.5 | |
| | Semi Skilled mazdoor | 20 | nos | 215.00 | 4300 | |
| | Carpenters Gr II | 4 | nos | 249.00 | 996 | |
| | Total | | | | 5384.5 | |
| | Total Of A+B+C | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | % | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Say Rs | | | #VALUE! | Per $M^2$ | |
| 6.3.20 | Providing shuttering including structting proping etc. and its removal after use in foundation work as per specifications and direction of E/I. | **Analysis same as Item 5.3.18** | | | | |
| 6.3.21 | Providing shuttering including structting. Proping etc. and its removal after use in superstructure portion of various components of Barrage work as per specifications and direction of E/I. | **Analysis same as Item 5.3.19** | | | | |
| 6.3.22 | Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. | | | | | |
| | (Assuming size in slab 7.32 x 3.05 =22.326 sqm ) | | | | | |
| A. | **MATERIALS** | | | | | |
| | a. 40 mm thick local wood planks 22.326 x40 / 1000 | | | | | |
| | =0.85 | | | | | |
| | Add 5 % for wastages =0.04 | | | | | |
| | =0.89 | 0.89 | cum | 33253.00 | | |
| | Assuming 4 uses to calculate | | | | | |
| | Cost of planks per use =0.89 x rate of local wood /4 | | | | 7398.79 | |
| | b. Assuming av. Hight of slab from G.L=3.66 M | | | | | |
| | 150 mm salbullah required =78 nos | | | | | |
| | Length of sal bullah =78 x3.66 =285.48 Mtr | 285.48 | mtr | 30.30 | | |
| | (Assuming sal bullah to be used 10 times for centerins | | | | | |
| | =285.48 x Rate per Mtr / 10 | | | | 865.00 | |
| | c. Salwood scanting required (75 mm x 63 mm size) =0.311 cum | 0.311 | cum | 54109.00 | | |
| | ( Assuming 10 uses ) | | | | | |
| | Cost per use =0.311 x Rate per Mtr/10 | | | | 1682.79 | |
| | | | | | 9946.59 | |
| | Add 1 % for cost of nails and spikes | | | | 99.47 | |
| | | | | | 10046.05 | ( A ) |
| B. | **LABOUR** | | | | | |
| | Carpenter Gr II | 4 | nos | 249.00 | 996.00 | |
| | Unskilled mazdoor | 7 | nos | 206.00 | 1442.00 | |
| | | | | | 2438.00 | ( B ) |
| C. | Carriage of materials | | | | | |
| | Cost of the carriage of materials from Godowm and back to godown after use including loading unloading and stacking @ 1 % of Total cost of wooden materials | | | | 99.47 | ( C ) |
| | TOTAL cost per 22.326 sqm =A+B+C | | | | 12583.52 | |
| | Add Overhead charge & C.P@15% | | | | 1887.53 | |
| | | | | | 14471.05 | |
| | Add 1% cess | | | | 144.71 | |
| | | | | | 14615.76 | 654.65 |
| | Say Rs | | | **654.70** | Per $M^2$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6.3.23 | Providing M.S reinforcement( Plain steel ) as per approved design , drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S rods in position complete job as per specifications and direction of E/I. | **Analysis same as Item 5.3.21** | | | | |
| 6.3.24 | Providing M.S reinforcement ( Tor steel ) as per approved design , drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S rods in position complete job as per specifications and direction of E/I. | **Analysis same as Item 5.3.22** | | | | |
| 6.3.25 | Grouting for Dam foundation per bags of cement all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Bag of Cement | | | | | |
| | Taking Out put=1.0 Bag | | | | | |
| | (A). Cost of 1.05 bag of cement at site including 5 % wastage and incidental charge | 0.0357 | Cum | 8912.00 | 318.16 | |
| | (B ). Grouting | | | | | |
| | **i. Hourly use rate of grouting machine** | **163.00** | | | | |
| | Taking progress of grouting 8 bags of cement per ho | 8 | Bags | | | |
| | Cost of Grouting= use rate/8 | | | | 20.38 | |
| | | | | | 338.53 | |
| | Add Overhead charge & C.P@15% | | | | 50.78 | |
| | | | | | 389.31 | |
| | Add 1% cess | | | | 3.89 | |
| | | | | | 393.20 | 393.20 |
| | | Say Rs | | **393.20** | Bags of cement | |
| 6.3.26 | Providing and laying mass concrete of M-100 with nominal mix of (1:3:6 ) in Barrage with approved quality of graded coarse aggregate of required grades as per design and approved quality sand of requisite F.M washed and screened including vibrating, curing etc. as well as royalty and all taxes etc.but excluding the cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | **With Batching Plant, Transit Mixer And Concrete Pump** | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.0 Cum | | | | | |
| | **MATERIALS** | | | | | |
| | Coarse aggregates **Gr IV (Rate of approved quality of aggregate as per Design)** | 0.94 | $M^3$ | 512.40 | 481.66 | |
| | Sand | 0.470 | $M^3$ | 145.10 | 68.20 | |
| | Cement | 0.157 | $M^3$ | 8912.00 | 1399.18 | |
| | **(b)LABOURS** | | | | | |
| | Mate | 0.01 | nos | 225.00 | 1.58 | |
| | Mason | 0.03 | nos | 249.00 | 6.23 | |
| | Mazdoor | 0.15 | nos | 206.00 | 30.90 | |
| | **c) Machinery** | | | | | |
| | Batching Plant @ 20 cum/hour | 0.05 | hr | 1558.00 | 77.90 | |
| | Generator 100 KVA | 0.05 | hr | 1698.00 | 84.90 | |
| | Loader 1 cum capacity | 0.05 | hr | 1185.00 | 59.25 | |
| | Transit Mixer 4 cum capacity for lead up to 1 km. | 0.13 | hr | 1211.00 | 151.38 | **Lead** |
| | Lead beyond 1 km, L-lead in km | 2.50 | t.km | 6.00 | 15.00 | 1 |
| | Concrete Pump | 0.05 | hr | 333.00 | 16.65 | |
| | **(d). Vibrating the concrete.** | | | | **93.65** | |
| | | | | | 2486.46 | |
| | Add Overhead charge & C.P@15% | | | | 372.97 | |
| | | | | | 2859.43 | |
| | Add 1% cess | | | | 28.59 | |
| | | | | | 2888.02 | 2888.02 |
| | | Say Rs | | **2888.00** | Per $M^3$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6.3.27 | Providing and laying mass concrete of M-150 with nominal mix of (1:2:4 ) in Barrage with approved quality of graded coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened including vibrating,curing etc. as well as royalty and all taxes etc.but excluding the cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | **With Batching Plant, Transit Mixer And Concrete Pump** | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.0 Cum | | | | | |
| | MATERIALS | | | | | |
| | Coarse aggregates (20 mm To 10 mm) **(Rate of approved quality of aggregate as per Design)** | 0.90 | $M^3$ | 690.30 | 621.27 | |
| | Sand | 0.450 | $M^3$ | 145.10 | 65.30 | |
| | Cement | 0.225 | $M^3$ | 8912.00 | 2005.20 | |
| | **(b)LABOURS** | | | | | |
| | Mate | 0.01 | nos | 225.00 | 1.58 | |
| | Mason | 0.03 | nos | 249.00 | 6.23 | |
| | Mazdoor | 0.15 | nos | 206.00 | 30.90 | |
| | **c) Machinery** | | | | | |
| | Batching Plant @ 20 cum/hour | 0.05 | hr | 1558.00 | 77.90 | |
| | Generator 100 KVA | 0.05 | hr | 1698.00 | 84.90 | |
| | Loader 1 cum capacity | 0.05 | hr | 1185.00 | 59.25 | |
| | Transit Mixer 4 cum capacity for lead upto 1 km. | 0.13 | hr | 1211.00 | 151.38 | **Lead** |
| | Lead beyond 1 km, L-lead in km | 2.50 | t.km | 6.00 | 15.00 | 1 |
| | Concrete Pump | 0.05 | hr | 333.00 | 16.65 | |
| | **(d). Vibrating the concrete.** | | | | **93.65** | |
| | | | | | 3229.19 | |
| | Add Overhead charge & C.P@15% | | | | 484.38 | |
| | | | | | 3713.56 | |
| | Add 1% cess | | | | 37.14 | |
| | | | | | 3750.70 | 3750.70 |
| | | Say Rs | | **3750.70** | Per $M^3$ | |
| 6.3.28 | Providing and laying mass concrete of M-200 with nominal mix of (1:1.5:3 ) in Barrage with approved quality of graded coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened including vibrating,curing etc. as well as royalty and all taxes etc.but excluding the cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | **With Batching Plant, Transit Mixer And Concrete Pump** | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.0 Cum | | | | | |
| | MATERIALS | | | | | |
| | Coarse aggregates (20 mm To 10 mm) **(Rate of approved quality of aggregate as per Design)** | 0.86 | $M^3$ | 690.30 | 593.66 | |
| | Sand | 0.430 | $M^3$ | 145.10 | 62.39 | |
| | Cement | 0.287 | $M^3$ | 8912.00 | 2557.74 | |
| | **(b)LABOURS** | | | | | |
| | Mate | 0.01 | nos | 225.00 | 1.58 | |
| | Mason | 0.03 | nos | 249.00 | 6.23 | |
| | Mazdoor | 0.15 | nos | 206.00 | 30.90 | |
| | **c) Machinery** | | | | | |
| | Batching Plant @ 20 cum/hour | 0.05 | hr | 1558.00 | 77.90 | |
| | Generator 100 KVA | 0.05 | hr | 1698.00 | 84.90 | |
| | Loader 1 cum capacity | 0.05 | hr | 1185.00 | 59.25 | |
| | Transit Mixer 4 cum capacity for lead upto 1 km. | 0.13 | hr | 1211.00 | 151.38 | **Lead** |
| | Lead beyond 1 km, L-lead in km | 2.50 | t.km | 6.00 | 15.00 | 1 |
| | Concrete Pump | 0.05 | hr | 333.00 | 16.65 | |
| | **(d). Vibrating the concrete.** | | | | **93.65** | |
| | | | | | 3751.22 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add Overhead charge & C.P@15% | | | | 562.68 | |
| | | | | | 4313.90 | |
| | Add 1% cess | | | | 43.14 | |
| | | | | | 4357.04 | 4357.04 |
| | | Say Rs | | **4357.00** | Per $M^3$ | |
| 6.3.29 | Providing and laying mass concrete of M-250 with nominal mix of (1:1:2 ) in Barrage with approved quality of graded coarse aggregate of required qrades as per design and approved quality sand of requisite F.M washed and screened including vibrating, curing etc. as well as royalty and all taxes etc.but excluding the cost of form work etc. wherever provided and removed after use, all complete as per specifications and direction of E/I. | | | | | |
| | **With Batching Plant, Transit Mixer And Concrete Pump** | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=1.0 Cum | | | | | |
| | MATERIALS | | | | | |
| | Coarse aggregates (20 mm To 10 mm) **(Rate of approved quality of aggregate as per Design)** | 0.84 | $M^3$ | 690.30 | 579.85 | |
| | Sand | 0.420 | $M^3$ | 145.10 | 60.94 | |
| | Cement | 0.42 | $M^3$ | 8912.00 | 3743.04 | |
| | **(b)LABOURS** | | | | | |
| | Mate | 0.01 | nos | 225.00 | 1.58 | |
| | Mason | 0.03 | nos | 249.00 | 6.23 | |
| | Mazdoor | 0.15 | nos | 206.00 | 30.90 | |
| | **c) Machinery** | | | | | |
| | Batching Plant @ 20 cum/hour | 0.05 | hr | 1558.00 | 77.90 | |
| | Generator 100 KVA | 0.05 | hr | 1698.00 | 84.90 | |
| | Loader 1 cum capacity | 0.05 | hr | 1185.00 | 59.25 | |
| | Transit Mixer 4 cum capacity for lead upto 1 km. | 0.13 | hr | 1211.00 | 151.38 | **Lead** |
| | Lead beyond 1 km, L-lead in km | 2.50 | t.km | 6.00 | 15.00 | 1 |
| | Concrete Pump | 0.05 | hr | 333.00 | 16.65 | |
| | **(d). Vibrating the concrete.** | | | | **93.65** | |
| | | | | | 4921.26 | |
| | Add Overhead charge & C.P@15% | | | | 738.19 | |
| | | | | | 5659.44 | |
| | Add 1% cess | | | | 56.59 | |
| | | | | | 5716.03 | 5716.03 |
| | | Say Rs | | **5716.00** | Per $M^3$ | |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|

# 6.4 MASONARY WORK

| Sr.No | Item | Rate | Uni |
|---|---|---|---|
| 6.4.1 | Brick work in designation 100 A Brick with cement motar (1 : 3 ) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 5191.60 | Per $M^3$ |
| | Patna | 4632.20 | Per $M^3$ |
| | Muzaffarpur | 4669.90 | Per $M^3$ |
| | Darbhanga | 4669.90 | Per $M^3$ |
| | Bhagalpur | 4653.00 | Per $M^3$ |
| | Munger | 4653.00 | Per $M^3$ |
| | Saharsa | 4746.30 | Per $M^3$ |
| | Purnea | 4899.60 | Per $M^3$ |
| | Gaya | 4463.50 | Per $M^3$ |
| | Saran | 4500.70 | Per $M^3$ |
| 6.4.2 | Brick work in designation 100 A Brick with cement motar(1 : 4 ) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 5013.60 | Per $M^3$ |
| | Patna | 4454.20 | Per $M^3$ |
| | Muzaffarpur | 4491.90 | Per $M^3$ |
| | Darbhanga | 4491.90 | Per $M^3$ |
| | Bhagalpur | 4478.10 | Per $M^3$ |
| | Munger | 4478.10 | Per $M^3$ |
| | Saharsa | 4568.30 | Per $M^3$ |
| | Purnea | 4721.60 | Per $M^3$ |
| | Gaya | 4295.10 | Per $M^3$ |
| | Saran | 4325.70 | Per $M^3$ |
| 6.4.3 | Brick work in designation 100A Brick with cement motar (1 : 5 ) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 4869.20 | Per $M^3$ |
| | Patna | 4309.80 | Per $M^3$ |
| | Muzaffarpur | 4347.50 | Per $M^3$ |
| | Darbhanga | 4347.50 | Per $M^3$ |
| | Bhagalpur | 4336.00 | Per $M^3$ |
| | Munger | 4336.00 | Per $M^3$ |
| | Saharsa | 4423.90 | Per $M^3$ |
| | Purnea | 4577.20 | Per $M^3$ |
| | Gaya | 4158.50 | Per $M^3$ |
| | Saran | 4183.70 | Per $M^3$ |
| 6.4.4 | Brick work in designation 100 A Brick with cement motar (1:3) in superstructure with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royalty and all taxes etc. complete job as per specification and direction of E / I. | | |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| | Patna Urban | 5276.10 | Per $M^3$ |
| | Patna | 4716.70 | Per $M^3$ |
| | Muzaffarpur | 4754.40 | Per $M^3$ |
| | Darbhanga | 4754.40 | Per $M^3$ |
| | Bhagalpur | 4737.50 | Per $M^3$ |
| | Munger | 4737.50 | Per $M^3$ |
| | Saharsa | 4830.80 | Per $M^3$ |
| | Purnea | 4984.10 | Per $M^3$ |
| | Gaya | 4548.00 | Per $M^3$ |
| | Saran | 4585.20 | Per $M^3$ |
| 6.4.5 | Brick work in designation 100 A Brick with cement motar (1 : 4 ) in superstructure with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 5098.10 | Per $M^3$ |
| | Patna | 4538.70 | Per $M^3$ |
| | Muzaffarpur | 4576.40 | Per $M^3$ |
| | Darbhanga | 4576.40 | Per $M^3$ |
| | Bhagalpur | 4562.50 | Per $M^3$ |
| | Munger | 4562.50 | Per $M^3$ |
| | Saharsa | 4652.80 | Per $M^3$ |
| | Purnea | 4806.10 | Per $M^3$ |
| | Gaya | 4379.60 | Per $M^3$ |
| | Saran | 4410.20 | Per $M^3$ |
| 6.4.6 | Brick work in designation 100 A Brick with cement motar (1 : 5 ) in superstructure with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 4953.60 | Per $M^3$ |
| | Patna | 4394.30 | Per $M^3$ |
| | Muzaffarpur | 4432.00 | Per $M^3$ |
| | Darbhanga | 4432.00 | Per $M^3$ |
| | Bhagalpur | 4420.50 | Per $M^3$ |
| | Munger | 4420.50 | Per $M^3$ |
| | Saharsa | 4508.40 | Per $M^3$ |
| | Purnea | 4661.70 | Per $M^3$ |
| | Gaya | 4242.90 | Per $M^3$ |
| | Saran | 4268.20 | Per $M^3$ |
| 6.4.7 | Providing rough dressed random rubble stone masonry in cement mortar (1:3) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E/I. | | |
| | Patna Urban | 2415.40 | Per $M^3$ |
| | Patna | 2415.40 | Per $M^3$ |
| | Muzaffarpur | 2415.40 | Per $M^3$ |
| | Darbhanga | 2415.40 | Per $M^3$ |
| | Bhagalpur | 2394.30 | Per $M^3$ |
| | Munger | 2394.30 | Per $M^3$ |
| | Saharsa | 2415.40 | Per $M^3$ |
| | Purnea | 2415.40 | Per $M^3$ |
| | Gaya | 2347.80 | Per $M^3$ |
| | Saran | 2394.30 | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 6.4.8 | Providing rough dressed random rubble stone masonry in cement mortar (1:4) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E/I. | | |
| | Patna Urban | 2163.70 | Per $M^3$ |
| | Patna | 2163.70 | Per $M^3$ |
| | Muzaffarpur | 2163.70 | Per $M^3$ |
| | Darbhanga | 2163.70 | Per $M^3$ |
| | Bhagalpur | 2146.80 | Per $M^3$ |
| | Munger | 2146.80 | Per $M^3$ |
| | Saharsa | 2163.70 | Per $M^3$ |
| | Purnea | 2163.70 | Per $M^3$ |
| | Gaya | 2109.60 | Per $M^3$ |
| | Saran | 2146.80 | Per $M^3$ |
| 6.4.9 | Providing rough dressed random rubble stone masonry in cement mortar (1:5) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E/I. | | |
| | Patna Urban | 2006.40 | Per $M^3$ |
| | Patna | 2006.40 | Per $M^3$ |
| | Muzaffarpur | 2006.40 | Per $M^3$ |
| | Darbhanga | 2006.40 | Per $M^3$ |
| | Bhagalpur | 1992.20 | Per $M^3$ |
| | Munger | 1992.20 | Per $M^3$ |
| | Saharsa | 2006.40 | Per $M^3$ |
| | Purnea | 2006.40 | Per $M^3$ |
| | Gaya | 1960.80 | Per $M^3$ |
| | Saran | 1992.20 | Per $M^3$ |
| 6.4.10 | Providing rough dressed random rubble stone masonry in cement mortar (1:3) in superstructure with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | | |
| | Patna Urban | 2521.00 | Per $M^3$ |
| | Patna | 2521.00 | Per $M^3$ |
| | Muzaffarpur | 2521.00 | Per $M^3$ |
| | Darbhanga | 2521.00 | Per $M^3$ |
| | Bhagalpur | 2499.90 | Per $M^3$ |
| | Munger | 2499.90 | Per $M^3$ |
| | Saharsa | 2521.00 | Per $M^3$ |
| | Purnea | 2521.00 | Per $M^3$ |
| | Gaya | 2453.40 | Per $M^3$ |
| | Saran | 2499.90 | Per $M^3$ |
| 6.4.11 | Providing rough dressed random rubble stone masonry in cement mortar (1:4) in superstructure with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | | |
| | Patna Urban | 2269.30 | Per $M^3$ |
| | Patna | 2269.30 | Per $M^3$ |
| | Muzaffarpur | 2269.30 | Per $M^3$ |
| | Darbhanga | 2269.30 | Per $M^3$ |
| | Bhagalpur | 2252.40 | Per $M^3$ |
| | Munger | 2252.40 | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| | Saharsa | 2269.30 | Per $M^3$ |
| | Purnea | 2269.30 | Per $M^3$ |
| | Gaya | 2215.20 | Per $M^3$ |
| | Saran | 2252.40 | Per $M^3$ |
| 6.4.12 | Providing rough dressed random rubble stone masonry in cement mortar (1:5) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E/I. | | |
| | Patna Urban | 2112.00 | Per $M^3$ |
| | Patna | 2112.00 | Per $M^3$ |
| | Muzaffarpur | 2112.00 | Per $M^3$ |
| | Darbhanga | 2112.00 | Per $M^3$ |
| | Bhagalpur | 2097.80 | Per $M^3$ |
| | Munger | 2097.80 | Per $M^3$ |
| | Saharsa | 2112.00 | Per $M^3$ |
| | Purnea | 2112.00 | Per $M^3$ |
| | Gaya | 2066.40 | Per $M^3$ |
| | Saran | 2097.80 | Per $M^3$ |

# 6. 4 MASONARY WORK

| Sl.No. | Description | Quantity | Unit | Rate | Amount | Ref. |
|---|---|---|---|---|---|---|
| 6.4.1 | Brick work in designation 100 A Brick with cement motar (1 : 3 ) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.1** | | | | |
| 6.4.2 | Brick work in designation 100 A Brick with cement mortar (1 : 4 ) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.2** | | | | |
| 6.4.3 | Brick work in designation 100 A Brick with cement mortar (1 : 5 ) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.3** | | | | |
| 6.4.4 | Brick work in designation 100 A Brick with cement mortar (1 : 3 ) in superstructure with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.5** | | | | |
| 6.4.5 | Brick work in designation 100 A Brick with cement mortar (1 : 4 ) in superstructure with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.6** | | | | |
| 6.4.6 | Brick work in designation 100 A Brick with cement mortar (1 : 5 ) in superstructure with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curing, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.7** | | | | |
| 6.4.7 | Providing rough dressed random rubble stone masonry in cement mortar (1:3) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.9** | | | | |
| 6.4.8 | Providing rough dressed random rubble stone masonry in cement mortar (1:4) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.10** | | | | |

| | | | |
|---|---|---|---|
| 6.4.9 | Providing rough dressed random rubble stone masonry in cement mortar (1:5) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.11** | |
| 6.4.10 | Providing rough dressed random/coursed rubble stone masonry in cement mortar (1:3) in superstructure with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.12** | |
| 6.4.11 | Providing rough dressed random /coursed rubble stone masonry in cement mortar (1:4) in superstructure with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.13** | |
| 6.4.12 | Providing rough dressed random/coursed rubble stone masonry in cement mortar (1:5) in foundation with approved quality of coarse sand of requisite F.M. washed and screened with raking out joints, curing, scaffolding and its removal wherever required including royalty and all taxes etc.complete job as per specification and direction of E / I. | **Analysis same as Item 5.4.14** | |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|

# 6.5. PLASTER WORK

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 6.5.1 | Providing 12 mm thick cement plaster ( 1: 3 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 132.80 | Per $M^2$ |
| | Patna | 132.80 | Per $M^2$ |
| | Muzaffarpur | 132.80 | Per $M^2$ |
| | Darbhanga | 132.80 | Per $M^2$ |
| | Bhagalpur | 132.00 | Per $M^2$ |
| | Munger | 132.00 | Per $M^2$ |
| | Saharsa | 132.80 | Per $M^2$ |
| | Purnea | 132.80 | Per $M^2$ |
| | Gaya | 130.30 | Per $M^2$ |
| | Saran | 132.00 | Per $M^2$ |
| 6.5.2 | Providing 12 mm thick cement plaster ( 1: 4 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 122.90 | Per $M^2$ |
| | Patna | 122.90 | Per $M^2$ |
| | Muzaffarpur | 122.90 | Per $M^2$ |
| | Darbhanga | 122.90 | Per $M^2$ |
| | Bhagalpur | 122.30 | Per $M^2$ |
| | Munger | 122.30 | Per $M^2$ |
| | Saharsa | 122.90 | Per $M^2$ |
| | Purnea | 122.90 | Per $M^2$ |
| | Gaya | 120.90 | Per $M^2$ |
| | Saran | 122.30 | Per $M^2$ |
| 6.5.3 | Providing 12 mm thick cement plaster ( 1: 5 ) with approved quality sand of requisite F.M., washed and screened, including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 116.30 | Per $M^2$ |
| | Patna | 116.30 | Per $M^2$ |
| | Muzaffarpur | 116.30 | Per $M^2$ |
| | Darbhanga | 116.30 | Per $M^2$ |
| | Bhagalpur | 115.80 | Per $M^2$ |
| | Munger | 115.80 | Per $M^2$ |
| | Saharsa | 116.30 | Per $M^2$ |
| | Purnea | 116.30 | Per $M^2$ |
| | Gaya | 114.70 | Per $M^2$ |
| | Saran | 115.80 | Per $M^2$ |
| 6.5.4 | Providing 25 mm thick cement plaster ( 1: 3 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 223.00 | Per $M^2$ |
| | Patna | 223.00 | Per $M^2$ |
| | Muzaffarpur | 223.00 | Per $M^2$ |
| | Darbhanga | 223.00 | Per $M^2$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| | Bhagalpur | 221.50 | Per $M^2$ |
| | Munger | 221.50 | Per $M^2$ |
| | Saharsa | 223.00 | Per $M^2$ |
| | Purnea | 223.00 | Per $M^2$ |
| | Gaya | 218.00 | Per $M^2$ |
| | Saran | 221.50 | Per $M^2$ |
| 6.5.5 | Providing 25 mm thick cement plaster ( 1: 4 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 204.50 | Per $M^2$ |
| | Patna | 204.50 | Per $M^2$ |
| | Muzaffarpur | 204.50 | Per $M^2$ |
| | Darbhanga | 204.50 | Per $M^2$ |
| | Bhagalpur | 203.30 | Per $M^2$ |
| | Munger | 203.30 | Per $M^2$ |
| | Saharsa | 204.50 | Per $M^2$ |
| | Purnea | 204.50 | Per $M^2$ |
| | Gaya | 200.50 | Per $M^2$ |
| | Saran | 203.30 | Per $M^2$ |
| 6.5.6 | Providing 25 mm thick cement plaster ( 1: 5 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 189.80 | Per $M^2$ |
| | Patna | 189.80 | Per $M^2$ |
| | Muzaffarpur | 189.80 | Per $M^2$ |
| | Darbhanga | 189.80 | Per $M^2$ |
| | Bhagalpur | 188.80 | Per $M^2$ |
| | Munger | 188.80 | Per $M^2$ |
| | Saharsa | 189.80 | Per $M^2$ |
| | Purnea | 189.80 | Per $M^2$ |
| | Gaya | 186.60 | Per $M^2$ |
| | Saran | 188.80 | Per $M^2$ |
| 6.5.7 | Providing 12 mm thick water proof cement plaster (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 142.80 | Per $M^2$ |
| | Patna | 142.80 | Per $M^2$ |
| | Muzaffarpur | 142.80 | Per $M^2$ |
| | Darbhanga | 142.80 | Per $M^2$ |
| | Bhagalpur | 142.00 | Per $M^2$ |
| | Munger | 142.00 | Per $M^2$ |
| | Saharsa | 142.80 | Per $M^2$ |
| | Purnea | 142.80 | Per $M^2$ |
| | Gaya | 140.30 | Per $M^2$ |
| | Saran | 142.00 | Per $M^2$ |
| 6.5.8 | Providing 25 mm thick water proof cement plaster (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 243.00 | Per $M^2$ |
| | Patna | 243.00 | Per $M^2$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| | Muzaffarpur | 243.00 | Per $M^2$ |
| | Darbhanga | 243.00 | Per $M^2$ |
| | Bhagalpur | 241.40 | Per $M^2$ |
| | Munger | 241.40 | Per $M^2$ |
| | Saharsa | 243.00 | Per $M^2$ |
| | Purnea | 243.00 | Per $M^2$ |
| | Gaya | 238.00 | Per $M^2$ |
| | Saran | 241.40 | Per $M^2$ |
| 6.5.9 | Providing 25 mm thick water proof cement plaster (1:4 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 224.50 | Per $M^2$ |
| | Patna | 224.50 | Per $M^2$ |
| | Muzaffarpur | 224.50 | Per $M^2$ |
| | Darbhanga | 224.50 | Per $M^2$ |
| | Bhagalpur | 223.20 | Per $M^2$ |
| | Munger | 223.20 | Per $M^2$ |
| | Saharsa | 224.50 | Per $M^2$ |
| | Purnea | 224.50 | Per $M^2$ |
| | Gaya | 220.50 | Per $M^2$ |
| | Saran | 223.20 | Per $M^2$ |
| 6.5.10 | Providing 1.5 mm thick cement punning including curing, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 39.70 | Per $M^2$ |
| | Patna | 39.70 | Per $M^2$ |
| | Muzaffarpur | 39.70 | Per $M^2$ |
| | Darbhanga | 39.70 | Per $M^2$ |
| | Bhagalpur | 39.50 | Per $M^2$ |
| | Munger | 39.50 | Per $M^2$ |
| | Saharsa | 39.70 | Per $M^2$ |
| | Purnea | 39.70 | Per $M^2$ |
| | Gaya | 38.90 | Per $M^2$ |
| | Saran | 39.50 | Per $M^2$ |
| 6.5.11 | Providing cement ruled pointing (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 114.50 | Per $M^2$ |
| | Patna | 114.50 | Per $M^2$ |
| | Muzaffarpur | 114.50 | Per $M^2$ |
| | Darbhanga | 114.50 | Per $M^2$ |
| | Bhagalpur | 114.30 | Per $M^2$ |
| | Munger | 114.30 | Per $M^2$ |
| | Saharsa | 114.50 | Per $M^2$ |
| | Purnea | 114.50 | Per $M^2$ |
| | Gaya | 113.70 | Per $M^2$ |
| | Saran | 114.30 | Per $M^2$ |
| 6.5.12 | Providing cement flush pointing (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| | Patna Urban | 86.10 | Per $M^2$ |
| | Patna | 86.10 | Per $M^2$ |
| | Muzaffarpur | 86.10 | Per $M^2$ |
| | Darbhanga | 86.10 | Per $M^2$ |
| | Bhagalpur | 85.80 | Per $M^2$ |
| | Munger | 85.80 | Per $M^2$ |
| | Saharsa | 86.10 | Per $M^2$ |
| | Purnea | 86.10 | Per $M^2$ |
| | Gaya | 85.30 | Per $M^2$ |
| | Saran | 85.80 | Per $M^2$ |
| 6.5.13 | Providing cement truck pointing (1:3 ) on Brick work with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 127.00 | Per $M^2$ |
| | Patna | 127.00 | Per $M^2$ |
| | Muzaffarpur | 127.00 | Per $M^2$ |
| | Darbhanga | 127.00 | Per $M^2$ |
| | Bhagalpur | 126.70 | Per $M^2$ |
| | Munger | 126.70 | Per $M^2$ |
| | Saharsa | 127.00 | Per $M^2$ |
| | Purnea | 127.00 | Per $M^2$ |
| | Gaya | 125.80 | Per $M^2$ |
| | Saran | 126.70 | Per $M^2$ |
| 6.5.14 | Providing cement truck pointing (1:3) on stone masonry with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | | |
| | Patna Urban | 166.60 | Per $M^2$ |
| | Patna | 166.60 | Per $M^2$ |
| | Muzaffarpur | 166.60 | Per $M^2$ |
| | Darbhanga | 166.60 | Per $M^2$ |
| | Bhagalpur | 166.00 | Per $M^2$ |
| | Munger | 166.00 | Per $M^2$ |
| | Saharsa | 166.60 | Per $M^2$ |
| | Purnea | 166.60 | Per $M^2$ |
| | Gaya | 164.70 | Per $M^2$ |
| | Saran | 166.00 | Per $M^2$ |

# 6.5 PLASTER WORK

| Sl.no. | Description | Quantity | Unit | Rate | Amount | Ref. |
|---|---|---|---|---|---|---|
| 6.5.1 | Providing 12 mm thick cement plaster ( 1: 3 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.1 | | | | |
| 6.5.2 | Providing 12 mm thick cement plaster ( 1: 4 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.2 | | | | |
| 6.5.3 | Providing 12 mm thick cement plaster ( 1: 5 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.3 | | | | |
| 6.5.4 | Providing 25 mm thick cement plaster ( 1: 3 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever required and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.4 | | | | |
| 6.5.5 | Providing 25 mm thick cement plaster ( 1: 4 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.5 | | | | |
| 6.5.6 | Providing 25 mm thick cement plaster ( 1: 5 ) with approved quality sand of requisite F.M . Washed and screened including curing, scaffolding wherever and its removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.6 | | | | |
| 6.5.7 | Providing 12 mm thick water proof cement plaster (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.7 | | | | |
| 6.5.8 | Providing 25 mm thick water proof cement plaster (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.8 | | | | |
| 6.5.9 | Providing 25 mm thick water proof cement plaster (1:4 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.9 | | | | |
| 6.5.10 | Providing 1.5 mm thick cement punning including curing, , royalty and all taxes etc. complete job as per specification and direction of E / I. | Analysis same as Item 5.5.10 | | | | |

| | | | |
|---|---|---|---|
| 6.5.11 | Providing cement ruled pointing (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.5.11** | |
| 6.5.12 | Providing cement flush pointing (1:3 ) with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.5.12** | |
| 6.5.13 | Providing cement truck pointing (1:3 ) on Brick work with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.5.13** | |
| 6.5.14 | Providing cement truck pointing (1:3 ) on stone masonry with approved quality sand of requisite F.M . Washed and screened and stander water proofing compound including curing, scaffolding wherever required and their removal, royalty and all taxes etc. complete job as per specification and direction of E / I. | **Analysis same as Item 5.5.14** | |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|

# 6.6 PITCHING & PILING

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 6.6.1 | Labour for laying dry graded jhama khoa or stone filter under brick pitching or boulder pitching in slope or apron including light ramming etc.all complete job as per specification and direction of E / I. | 253.50 | Per $M^3$ |
| 6.6.2 | Labour for laying sand filter under brick pitching or boulder pitching in slope or apron including light ramming etc.all complete job as per specification and direction of E / I. | 253.50 | Per $M^3$ |
| 6.6.3 | Providing pitching work with designation 100A bricks in panel in herring bond pattern one brick on edge over a brick flat soling filled with local sand free from clay contents including royalty and all taxes as per approved design, specifications and direction of E/I | | |
| | Patna Urban | 807.20 | Per $M^2$ |
| | Patna | 688.70 | Per $M^2$ |
| | Muzaffarpur | 696.70 | Per $M^2$ |
| | Darbhanga | 696.70 | Per $M^2$ |
| | Bhagalpur | 696.70 | Per $M^2$ |
| | Munger | 696.70 | Per $M^2$ |
| | Saharsa | 712.90 | Per $M^2$ |
| | Purnea | 745.30 | Per $M^2$ |
| | Gaya | 664.40 | Per $M^2$ |
| | Saran | 664.40 | Per $M^2$ |
| 6.6.4 | Providing pitching work with designation 100A bricks in panel two brick on edge over a brick flat soling joints filled with local sand free from clay contents including royalty and all taxes as per approved design, specifications and direction of E/I | | |
| | Patna Urban | 1336.70 | Per $M^2$ |
| | Patna | 1144.10 | Per $M^2$ |
| | Muzaffarpur | 1157.10 | Per $M^2$ |
| | Darbhanga | 1157.10 | Per $M^2$ |
| | Bhagalpur | 1157.10 | Per $M^2$ |
| | Munger | 1157.10 | Per $M^2$ |
| | Saharsa | 1183.40 | Per $M^2$ |
| | Purnea | 1236.20 | Per $M^2$ |
| | Gaya | 1104.60 | Per $M^2$ |
| | Saran | 1104.60 | Per $M^2$ |
| 6.6.5 | Providing Brick flat soling work with designation 100A bricks joints filled with local sand free from clay contents including royalty and all taxes as per approved design, specifications and direction of E/I | | |
| | Patna Urban | 308.90 | Per $M^2$ |
| | Patna | 264.40 | Per $M^2$ |
| | Muzaffarpur | 267.40 | Per $M^2$ |
| | Darbhanga | 267.40 | Per $M^2$ |
| | Bhagalpur | 267.40 | Per $M^2$ |
| | Munger | 267.40 | Per $M^2$ |
| | Saharsa | 273.50 | Per $M^2$ |
| | Purnea | 285.70 | Per $M^2$ |
| | Gaya | 255.30 | Per $M^2$ |
| | Saran | 255.30 | Per $M^2$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 6.6.6 | Labour charge for pitching with stone boulder duly packed in slope and apron with materials within 150 meter of work site and all lifts as per approved design, specifications and direction of E/I | 608.20 | Per $M^2$ |
| 6.6.7 | Providing and laying coarse clean sand in filling in foundation trenches including ramming as well as royalty and all taxes etc. as per approved design, specifications and direction of E/I | 227.00 | Per $M^3$ |

## 6.6 PITCHING & PILING

| Sl.No. | Description | Quantity | Unit | Rate | Amount | Ref. |
|---|---|---|---|---|---|---|
| 6.6.1 | Labour for laying dry graded jhama khoa or stone filter under brick pitching or boulder pitching in slope or apron including light ramming etc.all complete job as per specification and direction of E / I. | | | | | |
| | Unit: Per Cum | | | | | |
| | Taking Out put=2.832 Cum | | | | | |
| | Unskilled mazdoor | 3 | nos | 206.00 | 618.00 | |
| | | | | | 618.00 | |
| | Add Overhead charge & C.P@15% | | | | 92.70 | |
| | | | | | 710.70 | |
| | Add 1% cess | | | | 7.107 | |
| | | | | | 717.81 | 253.46 |
| | Say Rs | | | **253.50** | Per $M^3$ | |
| 6.6.2 | Labour for laying sand filter under brick pitching or boulder pitching in slope or apron including light ramming etc.all complete job as per specification and direction of E / I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=2.832 Cum | | | | | |
| | Unskilled mazdoor | 3 | nos | 206.00 | 618.00 | |
| | | | | | 618.00 | |
| | Add Overhead charge & C.P@15% | | | | 92.70 | |
| | | | | | 710.70 | |
| | Add 1% cess | | | | 7.107 | |
| | | | | | 717.81 | 253.46 |
| | Say Rs | | | **253.50** | Per $M^3$ | |
| 6.6.3 | Providing pitching work with designation 100A bricks in panel in herring bond pattern one brick on edge over a brick flat soling filled with local sand free from clay contents including royalty and all taxes as per approved design, specifications and direction of E/I | | | | | |
| | Unit:-Per Sqm | | | | | |
| | Taking Out put=9.30 Sqm | | | | | |
| | **Materials** | | | | | |
| | Bricks | 800 | er%0nos | 7084.00 | 5667.20 | |
| | Local Sand | 0.43 | $M^3$ | 122.70 | 52.15 | |
| | **Labour** | | | | | |
| | Mason Gr II | 1.13 | nos | 249.00 | 280.13 | |
| | Unskilled mazdoor | 2.25 | nos | 206.00 | 463.50 | |
| | | | | | 6462.97 | |
| | Add Overhead charge & C.P@15% | | | | 969.45 | |
| | | | | | 7432.42 | |
| | Add 1% cess | | | | 74.32 | |
| | | | | | 7506.74 | 807.18 |
| | Say Rs | | | **807.20** | Per $M^2$ | |
| 6.6.4 | Providing pitching work with designation 100A bricks in panel two brick on edge over a brick flat soling joints filled with local sand free from clay contents including royalty and all taxes as per approved design, specifications and direction of E/I | | | | | |
| | Unit:-Per Sqm | | | | | |
| | Taking Out put=9.30 Sqm | | | | | |
| | **Materials** | | | | | |
| | Bricks | 1300 | er%0nos | 7084.00 | 9209.20 | |
| | Local Sand | 0.56 | $M^3$ | 122.70 | 68.22 | |
| | **Labour** | | | | | |
| | Mason Gr II | 2 | nos | 249.00 | 498.00 | |
| | Unskilled mazdoor | 4.50 | nos | 206.00 | 927.00 | |
| | | | | | 10702.42 | |
| | Add Overhead charge & C.P@15% | | | | 1605.36 | |
| | | | | | 12307.78 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add 1% cess | | | | 123.08 | |
| | | | | | 12430.86 | 1336.65 |
| | Say Rs | | | **1336.70** | Per $M^2$ | |
| 6.6.5 | Providing Brick flat soling work with designation 100A bricks joints filled with local sand free from clay contents including royalty and all taxes as per approved design, specifications and direction of E/I | | | | | |
| | Unit:-Per Sqm | | | | | |
| | Taking Out put=9.30 Sqm | | | | | |
| | **Materials** | | | | | |
| | Bricks | 300 | er%0nos | 7084.00 | 2125.20 | |
| | Local Sand | 0.142 | $M^3$ | 122.70 | 17.42 | |
| | **Labour** | | | | | |
| | Mason Gr II | 0.50 | nos | 249.00 | 124.50 | |
| | Unskilled mazdoor | 1 | nos | 206.00 | 206.00 | |
| | | | | | 2473.12 | |
| | Add Overhead charge & C.P@15% | | | | 370.97 | |
| | | | | | 2844.09 | |
| | Add 1% cess | | | | 28.44 | |
| | | | | | 2872.53 | 308.87 |
| | Say Rs | | | **308.90** | Per $M^2$ | |
| 6.6.6 | Labour charge for pitching with stone boulder duly packed in slope and apron with materials within 150 metre of work site and all lifts as per approved design, specifications and direction of E/I | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=2.832 Cum | | | | | |
| | Unskilled mazdoor for lifting stone boulder on head carrying to work site and unloading from head at place of work site | 6 | nos | 206.00 | 1236.00 | |
| | Mason Gr II | 0.50 | nos | 249.00 | 124.50 | |
| | Stone dresser | 0.25 | nos | 265.00 | 66.25 | |
| | Mate | 0.25 | nos | 225.00 | 56.25 | |
| | | | | | 1483.00 | |
| | Add Overhead charge & C.P@15% | | | | 222.45 | |
| | | | | | 1705.45 | |
| | Add 1% cess | | | | 17.05 | |
| | | | | | 1722.50 | 608.23 |
| | Say Rs | | | **608.20** | Per $M^2$ | |
| 6.6.7 | Providing and laying coarse clean sand in filling in foundation trenches including ramming as well as royalty and all taxes etc. as per approved design, specifications and direction of E/I | | | | | |
| | Unit:-Per Cum | | | | | |
| | Taking Out put=2.832 Cum | | | | | |
| | **Materials** | | | | | |
| | Local sand | 2.832 | cum | 122.70 | 347.49 | |
| | **Labour** | | | | | |
| | Unskilled mazdoor | 1 | nos | 206.00 | 206.00 | |
| | | | | | 553.49 | |
| | Add Overhead charge & C.P@15% | | | | 83.02 | |
| | | | | | 636.51 | |
| | Add 1% cess | | | | 6.37 | |
| | | | | | 642.88 | 227.01 |
| | Say Rs | | | **227.00** | Per $M^3$ | |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|

# 6.7 MISCELLANEOUS

| Sr.No | Item | Rate | Unit |
|---|---|---|---|
| 6.7.1 | Supplying, fitting and fixing copper strip of 16 gauge of approved quality ( with 99 % purity ) in expansion joints complete job as per drawing, specifications and direction of E/I. | 904.70 | Per kg |
| 6.7.2 | Supplying, fitting and fixing rubber seal of ( water stop ) of approved quality for construction joints expansion joints complete job as per drawing, specifications and direction of E/I. | #VALUE! | Per mtr |
| 6.7.3 | Supplying, and fixing in position 25 mm thick Bituminous board ( Shalitex or equivalent ) in expansion or construction joint in dam and its allied works all complete as per approved design, specifications and direction of E/I | 744.80 | Per $M^2$ |
| 6.7.4 | Supplying, and fixing Bitumen filter (Bitumen, cement and sand ) in construction joints in dam and its allied works all complete as per approved design, specifications and direction of E/I | | |
| | Patna Urban | 170.00 | cm width/cm depth/100 M length |
| | Patna | 170.00 | |
| | Muzaffarpur | 170.00 | |
| | Darbhanga | 169.80 | |
| | Bhagalpur | 169.80 | |
| | Munger | 170.00 | |
| | Purnea | 170.00 | |
| | Gaya | 169.50 | |
| | Saran | 169.80 | |
| 6.7.5.1 | Providing and driving steel sheet piles on specified alignment and upto designed levels including painting the sheet piles with two coats of anti-corrosive bitumen paint ( portion of sheet pile inside concrete shell not be painted ) including cost of sheet piles and hire charges of sheet pile driving plant etc. all complete as per specifications and direction of E/I . ( For the purpose of payment of sheet pile driving, measurement of sheet pile duly driven shall be taken only ) | #VALUE! | Per M.T |
| 6.7.5.2 | Labour rate for extracting steel sheet piles on specified alignment with hire charges of sheet pile driving plant etc. all complete as per specifications and direction of E/I . ( For the purpose of payment of sheet pile extracting, measurement of sheet pile duly extracted shall be taken only ) | #VALUE! | Per M.T |
| 6.7.6 | Providing weep holes with dry graded Stone metal filter of 20 mm to 40 mm size in abutment and wing wall as per specification and direction of E/I | 69.40 | Each |

# 6.7 MISCELLANEOUS

| Sl.No. | Description | Quantity | Unit | Rate | Amount | Ref. |
|---|---|---|---|---|---|---|
| 6.7.1 | Supplying, fitting and fixing copper strip of 16 gauge of approved quality (with 99 % purity ) in expansion joints complete job as per drawing, specifications and direction of E/I. | **Analysis same as Item 5.8.1** | | | | |
| 6.7.2 | Supplying, fitting and fixing rubber seal of ( water stop ) of approved quality for construction joints expansion joints complete job as per drawing, specifications and direction of E/I. | **Analysis same as Item 5.8.2** | | | | |
| 6.7.3 | Supplying, and fixing in position 25 mm thick Bituminous board (Shalitex or equivalent ) in expansion or construction joint in dam and its allied works all complete as per approved design, specifications and direction of E/I | **Analysis same as Item 5.8.3** | | | | |
| 6.7.4 | Supplying, and fixing Bitumen filter (Bitumen, cement and sand ) in construction joints in dam and its allied works all complete as per approved design, specifications and direction of E/I | **Analysis same as Item 5.8.4** | | | | |
| 6.7.5.1 | Providing and driving steel sheet piles on specified alignment and up to designed levels including painting the sheet piles with two coats of anti-corrosive bitumen paint ( portion of sheet pile inside concrete shell not be painted) including cost of sheet piles and hire charges of sheet pile driving plant etc. all complete as per specifications and direction of E/I.( For the purpose of payment of sheet pile driving, measurement of sheet pile duly driven shall be taken only ) | **Analysis same as Item 5.8.5.1** | | | | |
| 6.7.5.2 | Labour rate for extracting steel sheet piles on specified alignment with hire charges of sheet pile driving plant etc. all complete as per specifications and direction of E/I .( For the purpose of payment of sheet pile extracting, measurement of sheet pile duly extracted shall be taken only ) | **Analysis same as Item 5.8.5.2** | | | | |
| 6.7.6 | Providing weep holes with dry graded Stone metal filter of 20 mm to 40 mm size in abutment and wing wall as per specification and direction of E/I | **Analysis same as Item 5.8.6(a)** | | | | |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|

# CHAPTER VII

## *EARTHEN MASONARY AND COCRETE DAM WITH SPILLWAY OUTLET INTAKE WELL, SURGE TANK AND TUNNELLING ETC.*

## 7.1 EARTH WORK

| Sr.No | Item | Rate | Unit |
|---|---|---|---|
| 7.1.1 | Cutting of trees along with branches and their removal away from the work site and stacking the same as per specifications and direction of E/I.(Measurement of girth at a height of one meter above the ground level ) | | |
| | (a) Girth above 0.50 meter but upto 0.75 meter | 191.90 | Each |
| | (b) Girth above 0.75 meter but upto 1.50 meter | 383.90 | Each |
| | (c) Girth above 1.5 meter but upto2.50 meter | 695.40 | Each |
| | (d) Girth above 2.50 meter but upto 4.00 meter | 1126.70 | Each |
| | (e) Girth above 4.00 meter | 1630.20 | Each |
| 7.1.2 | Uprooting of stumps and their removal ,away from the work site as per specifications and direction of E/I. | | |
| | (a) Girth above 0.50 meter but upto 0.75 meter | 119.60 | Each |
| | (b) Girth above 0.75 meter but upto 1.50 meter | 119.60 | Each |
| | (c) Girth above 1.5 meter but upto2.50 meter | 159.50 | Each |
| | (d) Girth above 2.50 meter but upto 4.00 meter | 239.30 | Each |
| | (e) Girth above 4.00 meter | 299.10 | Each |
| 7.1.3.1 | Preparation of borrow areas by removing the grass and the jungle, bushes from the top before excavation as per specifications and direction of E/I. | 1.90 | Per $M^2$ |
| 7.1.3.2 | Jungle clearance and weeding out shrubs including small tree upto 0.50 M girth and removal as per specifications and direction of E/I. | 5.80 | Per $M^2$ |
| 7.1.4 | Removal of stone boulder of more than 300 mm size from alignment of the dam and stacking the same ( beyond 50 M away from Toe of the dam base in the country side ) within initial lead of 150M as per specifications and direction of E/I. | 76.00 | Per $M^3$ |
| 7.1.5 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials (beyond 50M away from Toe of the dam base in the country side) with initial lead of 150M and all lifts as per specifications and direction of E/I. | 141.70 | Per $M^3$ |
| 7.1.6 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond initial lead of 150M but within 1.00 K.M and all lifts by Truck including loading unloading and maintenance of haul roads as per specifications and direction of E/I. | 284.90 | Per $M^3$ |
| 7.1.7 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond 1.00 K.M but up to 2 K.M away with all lifts by Truck including loading unloading and maintenance of haul roads as per specifications and direction of E/I. | 306.30 | Per $M^3$ |
| 7.1.8 | Earth work in excavation of cut -off trenches as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same ( beyond 50 mtr away from Toe of the dam base in the country side ) with initial lead of 150 m and initial lifts of 1.5 mtr as per specifications and direction of E/I. | 129.30 | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 7.1.9 | Earth work in excavation of cut -off trenches as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 mtr but up to1 K.M away with all lifts by truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 289.70 | Per $M^3$ |
| 7.1.10.1 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil ( beyond 50 M away from Toe of the dam base in the country side ) with initial lead of 150M and initial lifts of 1.5 M including making the section in proper profile, dressing side in proper slope and bed in proper grade etc.all complete as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by concerned Chief Engineer ) | 548.10 | Per $M^3$ |
| 7.1.10.2 | Earth work in excavation of cut-off trenches as per designed section in soft rock or ordinary rock (Where blasting is not required) (vide classification of soil item C) disposal of soil (beyond 50M away from Toe of the dam base in the country side) with initial lead of 150M and initial lifts of 1.5M including making the section in proper profile, dressing side in proper slope and bed in proper grade etc.all complete as per specifications and direction of E/I. | 361.60 | Per $M^3$ |
| 7.1.11.1 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil beyond 150 M from the Toe of the dam but within 1 k.m with all lifts by Truck including loading unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by concerned Chief Engineer ) | 678.20 | Per $M^3$ |
| 7.1.11.2 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock. ( Where blasting is not required ) ( vide classification of soil item C ) with disposal of soil beyond 150 mtr from the Toe of the dam but within 1 k.m with all lifts by truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I | 438.40 | Per $M^3$ |
| 7.1.12 | Earth work in excavation of cut -off trenches as per designed section in hard rock and stacking properly in approved stack size in approved stack yard ( beyond 50 M away from Toe of the dam base in the country side ) with initial lead of 150 M and initial lifts of 1.5 M as per specifications and direction of E/I. | 935.10 | Per $M^3$ |
| 7.1.13 | Earth work in excavation of cut-off trenches as per designed section in hard rock and stacking properly in approved stack size in approved stack yard beyond initial lead of 150 M but upto 1 k.m in country side with all lifts by truck including loading, unloading, stacking properly in approved stack yards, construction and maintenance of haul roads as per specifications and direction of E/I. | 1125.20 | Per $M^3$ |
| 7.1.14.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc.as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same (beyond 50 M away the edge of the trench ) with initial lead of 150 M and initial lift of 1.5 M , as per specifications and direction of E/I. | 129.30 | Per $M^3$ |
| 7.1.14.2 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 M but up to 1 K.M away with all lifts by truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 360.80 | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 7.1.15.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil ( beyond 50 M from Toe the edge of the trench ) with initial lead of 150 M and initial lifts of 1.5 M,all complete as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by concerned Chief Engineer ) | 429.80 | Per $M^3$ |
| 7.1.15.2 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock (where blasting is not required) (vide classification of soil item C) disposal of soil (beyond 50M from Toe the edge of the trench ) with initial lead of 150 M and initial lifts of 1.5 M, all complete as per specifications and direction of E/I. | 356.10 | Per $M^3$ |
| 7.1.15.3 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock ( vide classification of soil Item C ) disposal of soil beyond 150 mtr but upto 1 k.m away from toe of the dam with all lifts by truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by concerned Chief Engineer ) | 678.20 | Per $M^3$ |
| 7.1.15.4 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock( Where blasting is not required) (vide classification of soil item C) disposal of soil beyond 150 M but upto 1 k.m away from toe of the dam with all lifts by truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 438.40 | Per $M^3$ |
| 7.1.16.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in hard rock where blasting needed and staking properly in approved stack size in approved stack yard ( beyond 50 M from the edge of the trench in country side) with initial lead of 150 M and initial lifts of 1.5 M, all complete as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by concerned Chief Engineer ) | 935.20 | Per $M^3$ |
| 7.1.16.2 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in hard rock where blasting needed and disposal of excavated rock by truck beyond initial lead of 150 M but upto 1 k.m away from toe of the dam with all lifts including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 1125.20 | Per $M^3$ |
| 7.1.17.1 | Earth work in excavation of the toe drain and heel trench as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same (beyond 50M away the edge of the trench ) with initial lead of 100 M and initial lift of 1.5 M,all comlete as per specifications and direction of E/I. | 121.10 | Per $M^3$ |
| 7.1.17.2 | Earth work in excavation of the drain and heel trench as per designed section in soft rock or ordinary rock ( vide classification of soil item C) with disposal of the soil (beyond 50M away from the toe drain in country side) with initial lead of 100M and initial lifts of 1.5 M,all complete as per specifications and direction of E/I. (Soft rock where blasting is required and approved by concerned Chief Engineer ) | 525.70 | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 7.1.17.3 | Earth work in excavation of the drain and heel trench as per designed section in soft rock or ordinary rock ( Where blasting is not required ) ( vide classification of soil item C ) with disposal of the soil (beyond 50 M away from the toe drain in country side) with initial lead of 100 M and initial lifts of 1.5 M,all complete as per specifications and direction of E/I. | 356.10 | Per $M^3$ |
| 7.1.17.4 | Earth work in excavation of the toe drain and heel trench as per designed section in hard rock where blasting needed and and stacking properly in approved stack yard ( beyond 50 M away from the toe drain in country side)and approved stack size with initial lead of 150 M and initial lifts of 1.5 M,all complete as per specifications and direction of E/I. | 935.10 | Per $M^3$ |
| 7.1.17.5 | Earth work in excavation of the toe drain and heel trench as per designed section in hard rock with chisel and hammer and stacking properly in approved stack yard ( beyond 50M away from the toe drain with initial lead of 100 m and initial lifts of 1.5 M,all complete as per specifications and direction of E/I. | 348.50 | Per $M^3$ |
| 7.1.18 | Earth work in excavation of foundation trenches in hard rock ( on-blasting zone ) or dismantling cement concrete (1:2:4) by manual labour with chisel hammer, wedging barring etc. disposal of excavated materials with an initial lead of and initial lifts of 1.5M including making the edges straight, dressing, profiling and final preparation of surface all complete as per specifications and direction of E/I. | 348.50 | Per $M^3$ |
| 7.1.19 | Earth work in dam fill by head load in semi previous or impervious soil with initial lead of 150 M and initial lift of 1.5 M including breaking clods to maximum 63 mm cubs, placing the earth in layer not exceeding 225 mm thick all complete as per specifications and direction of E/I. (Mode of measurement- sectional measurement of compacted earth ). | 182.40 | Per $M^3$ |
| 7.1.20.1 | Extra for earth work in all kinds of soil for each additional lead of 25 Mtr or part there of over the initial lead as per specification and direction of E/I. | 8.40 | Per $M^3$ |
| 7.1.20.2 | Extra for earth work in rock for each additional lead of 25M or part there of over the initial lead as per specification and direction of E/I. | 12.70 | Per $M^3$ |
| 7.1.21.1 | Extra for earth work in all kinds of soil for each additional lift of 1 Mtr or part there of over the initial lift of 1.50M as per specification and direction of E/I. | 8.40 | Per $M^3$ |
| 7.1.21.2 | Extra for earth work in rock each additional lift of 1 M or part there of over the initial lift of 1.50 M as per specification and direction of E/I. | 12.70 | Per $M^3$ |
| 7.1.22 | Earth work in dam fill in semi previous or impervious zone by manual excavation and carriage by Tipper and loading by manual labours including , making dam in proper design section including earth to be laid in layers of not more than 225 mm thick with all lift and breaking clods to maximum 63 mm cubs as well as construction and maintenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurement- sectional measurement of compacted earth ). | | |
| 7.1.22.1 | **Lead beyond 150 mtr but upto 1/2 K.M** | 315.00 | Per $M^3$ |
| 7.1.22.2 | **Lead beyond 1/2 K.M but upto 1 K.M** | 325.90 | Per $M^3$ |
| 7.1.22.3 | **Lead beyond 1 K.M but upto 2 K.M** | 342.80 | Per $M^3$ |
| 7.1.22.4 | **Lead beyond 2 K.M but upto 3 K.M** | #VALUE! | Per $M^3$ |
| 7.1.23 | Earth work in **dam fill in semi previous or impervious zone** fill materials to be loosened and excavated by **Ripper and shove**l at the borrow area and transported **by truck** to the dam fill site with all lift as well as spreading leveling by Dozer including construction and maintenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurement- sectional measurement of compacted earth ). | | |
| 7.1.23.1 | **Lead beyond 150 mtr but upto 1/2 K.M** | #VALUE! | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 7.1.23.2 | **Lead beyond 1/2 K.M but upto 1 K.M** | #VALUE! | Per $M^3$ |
| 7.1.23.3 | **Lead beyond 1 K.M but upto 2 K.M** | #VALUE! | Per $M^3$ |
| 7.1.23.4 | **Lead beyond 2 K.M but upto 3 K.M** | #VALUE! | Per $M^3$ |
| 7.1.24 | Earth work in dam fill **in semi previous or impervious zone** fill materials to be loosened and excavated by **Ripper and shovel** at the borrow area and transported **by Dumper** to the dam fill site with all lift as well as spreading leveling by Dozer including construction and maintenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurement- sectional measurement of compacted earth ). | | |
| 7.1.24.1 | **Lead beyond 150 mtr but upto 1/2 K.M** | #VALUE! | Per $M^3$ |
| 7.1.24.2 | **Lead beyond 1/2 K.M but upto 1 K.M** | #VALUE! | Per $M^3$ |
| 7.1.24.3 | **Lead beyond 1 K.M but upto 2 K.M** | #VALUE! | Per $M^3$ |
| 7.1.24.4 | **Lead beyond 2 K.M but upto 3 K.M** | #VALUE! | Per $M^3$ |
| 7.1.25 | Earth work in dam fill in semi previous or impervious zone fill materials to be loosened and excavated by **Ripper and scraper** at the borrow area and transported **by Scraper** itself to the dam fill site with all lift as well as spreading leveling by Dozer including construction and maintenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurement- sectional measurement of compacted earth ). | | |
| 7.1.25.1 | **Lead beyond 150 mtr but upto 1/2 K.M** | #VALUE! | Per $M^3$ |
| 7.1.25.2 | **Lead beyond 1/2 K.M but upto 1 K.M** | #VALUE! | Per $M^3$ |
| 7.1.25.3 | **Lead beyond 1 K.M but upto 2 K.M** | #VALUE! | Per $M^3$ |
| 7.1.25.4 | **Lead beyond 2 K.M but upto 3 K.M** | #VALUE! | Per $M^3$ |
| 7.1.26* | Labour for initial Rolling and compacting the ground before forming the embankment with power **road roller** at O.M.C to achieve minimum 95 % of dry density including sprinkling the required quanting of water, making arrangement for supply and carriage of water with all leads and lifts, finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine and other tools and plants etc. all complete as per specifications and direction of E/I. | 58.60 | Per 10 $M^2$ |
| 7.1.27 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C by **sheep foot roller** driven by tractor to achieve minimum 95 % of dry density includingsprinking the required quanting of water,making arrangement for supply and carriage of water with all leads and lifts, finishing the surfaces plan and drawing including hire charge of compaction, machine and other tools and plants etc. for lined canal all complete as per specifications and direction of E/I. ( mode of measurement-sectional measurement of compacted earth ) | #VALUE! | Per $M^3$ |
| 7.1.28 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **road roller** to achieve minimum **95 %** of maximum dry density including sprinkling the required quanting of **water by tanker within 1 km. lead** and all lifts including cost of water, finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | 31.80 | Per $M^3$ |
| 7.1.29 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **sheep foot roller** driven by tractor to achieve minimum **90 %** of maximum dry density including sprinkling the required quanting of **water by tanker within 1 km. lead** and all lifts including cost of water, finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | #VALUE! | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 7.1.30 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **road roller** to achieve minimum **90 %** of maximum dry density including sprinkling the required quanting of water **by tanker within 1 km. lead and** all lifts including cost of water, finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | 30.80 | Per $M^3$ |
| 7.1.31 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **sheep foot roller** driven by tractor to achieve minimum **95 %** of maximum dry density including sprinkling the required quanting of water making arrangement for supply and carriage of water with all leads and lift finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | #VALUE! | Per $M^3$ |
| 7.1.32 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **road roller** to achieve minimum **95 %** of maximum dry density including sprinkling the required quanting of water making arrangement for supply and carriage of water with all leads and lift finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | 36.70 | Per $M^3$ |
| 7.1.33 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **sheep foot roller driven by tractor** to achieve minimum **90 % of** maximum dry density including sprinkling the required quanting of water making arrangement for supply and carriage of water with all leads and lift finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | #VALUE! | Per $M^3$ |
| 7.1.34 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **road roller** to achieve minimum **90 %** of maximum dry density including sprinkling the required quanting of water making arrangement for supply and carriage of water with all leads and lift finishing the surface with proper grade, camber or super elevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | 35.60 | Per $M^3$ |
| 7.1.35 | Close timbering in trenches including shuttering, shoring and packing cavities ( wherever required ) depth not exceeding 1.5 meter all complete as per specifications and direction of E/I. ( Measurement to be taken of the face area timbered ) | 130.70 | Per $M^2$ |
| 7.1.36 | Close timbering in trenches including shuttering, shoring and packing cavities ( wherever required ) depth not exceeding 1.5 meter but upto 3.0 meter all complete as per specifications and direction of E/I. ( Measurement to be taken of the face area timbered ) | 134.10 | Per $M^2$ |
| 7.1.37 | Supply and laying 300 mm thick humous earth layer on slopes of dam with manual compaction and turfing the surface with approved dub grass with 1 k.m lead including watering and ramming till growth of grass all complete as per specifications and direction of E/I. | #NAME? | Per $M^2$ |
| 7.1.38 | Trimming an dressing the side slope of dam to proper section with all lead and lifts as per drawing, specifications and direction of E/I. | 22.90 | Per $M^2$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 7.1.39 | Earth work in foundation excavation as per designed section in ordinary or soft rock ( vide classification of soil item C ) by shovel and its disposal upto 1 k.m by dumper with all lift including construction and maintenance of haul roads, all complete as per specifications and direction of E/I. | #VALUE! | Per $M^3$ |
| 7.1.40 | Earth work in foundation excavation as per designed section in hard rock where blasting is needed and disposal of excavated rock with the combination of machines shovel, Dumper and Tractor - Dozer within one k.m with all lift including stacking properly in approved stack yard as well as construction and maintenance of haul roads, all complete as per specifications and direction of E/I. | #REF! | Per $M^3$ |
| 7.1.41 | Earth work in foundation excavation as per designed section in sand and slushes soil in river bed and disposal of the same upto 1/2 k.m with the combination of machines Dragline Dumper and Tractor - Dozer complete job including construction and maintenance of haul roads, all complete as per specifications and direction of E/I. | #VALUE! | Per $M^3$ |
| 7.1.42 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond initial lead of 150 mtr but within 1.00 K.M and all lifts by Tipper and loading by Front end loader, including unloading and maintenance of haul roads as per specifications and direction of E/I. | 240.20 | Per $M^3$ |
| 7.1.43 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond 1.00 K.M but up to 2 K.M away with all lifts by by Tipper and loading by Front end loader, including unloading and maintenance of haul roads as per specifications and direction of E/I. | 271.10 | Per $M^3$ |
| 7.1.44 | Earth work in excavation of cut -off trenches as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 M but up to1 K.M away with all lifts by Tipper and loading by Front end loader, including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 245.00 | Per $M^3$ |
| 7.1.45.1 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil beyond 150 M from the Toe of the dam but within 1 k.m with all lifts by by Tipper and loading by Front end loader, including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by concerned Chief Engineer ) | 591.00 | Per $M^3$ |
| 7.1.45.2 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock. ( Where blasting is not required ) ( vide classification of soil item C ) with disposal of soil beyond 150 M from the Toe of the dam but within 1 k.m with all lifts by Tipper and loading by Front end loader, including unloading, construction and maintenance of haul roads as per specifications and direction of E/I | 374.80 | Per $M^3$ |
| 7.1.46 | Earth work in excavation of cut -off trenches as per designed section in hard rock and stacking properly in approved stack size in approved stack yard beyond initial lead of 150 M but upto 1 k.m in country side with all lifts by Tipper and loading by Front end loader, including unloading, stacking properly in approved stack yards, construction and maintenance of haul roads as per specifications and direction of E/I. | 1038.40 | Per $M^3$ |

| Sr.No. | Item | Rate | Unit |
|---|---|---|---|
| 7.1.47 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 M but up to 1 K.M away with all lifts by Tipper and loading by Front end loader, including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 245.00 | Per $M^3$ |
| 7.1.48.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil beyond 150 M but upto 1 k.m away from toe of the dam with all lifts by Tipper and loading by Front end loader, including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by concerned Chief Engineer ) | 591.20 | Per $M^3$ |
| 7.1.48.2 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock( Where blasting is not required) ( vide classification of soil item C ) disposal of soil beyond 150 M but upto 1 k.m away from toe of the dam with all lifts by Tipper and loading by Front end loader, including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 374.80 | Per $M^3$ |
| 7.1.49 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in hard rock where blasting needed and disposal of excavated rock by Tipper and loading by Front end loader, including beyond initial lead of 150 M but upto 1 k.m away from toe of the dam with all lifts including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | 1038.40 | Per $M^3$ |
| 7.1.50 | Earth work in dam fill in semi previous or impervious zone by manual excavation and carriage by Tipper and loading by manual labours including , making dam in proper design section including earth to be laid in layers of not more than 225 mm thick with all lift and breaking clods to maximum 63 mm cubs as well as construction and maintenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurement- sectional measurement of compacted earth ). | | |
| 7.1.50.1 | **Lead beyond 150 mtr but upto 1/2 K.M** | 294.30 | Per $M^3$ |
| 7.1.50.2 | **Lead beyond 1/2 K.M but upto 1 K.M** | 309.70 | Per $M^3$ |
| 7.1.50.3 | **Lead beyond 1 K.M but upto 2 K.M** | 340.60 | Per $M^3$ |
| 7.1.50.4 | **Lead beyond 2 K.M but upto 3 K.M** | 371.50 | Per $M^3$ |

# CHAPTER --VIII

*EARTHEN MASONARY AND COCRETE DAM WITH SPILLWAY OUTLET INTAKE WELL, SURGE TANK AND TUNNELLING ETC.*

## 7.1 EARTH WORK

| Sl.no. | Description | Quantity | unit | Rate | amount | Ref. |
|---|---|---|---|---|---|---|
| 7.1.1 | Cutting of trees alongwith branches and their removal away from the work site and stacking the same as per specifications and direction of E/I.(Measurment of girth at a hight of one metre above the ground level ) | **Analysis same as Item 5.1.4** | | | | |
| 7.1.2 | Up.rooting of stumps and their removal ,away from the work site as per specifications and direction of | **Analysis same as Item 5.1.5** | | | | |
| 7.1.3.1 | Preparation of borrow areas by removing the grass and the jungle, bushes from the top befor excavation as per specifications and direction of E/I. | **Analysis same as Item 5.1.2** | | | | |
| 7.1.3.2 | Jungle clearance and weeding out shurbs including small tree upto 0.50 mtr girth and removal as per specifications and direction of E/I. | **Analysis same as Item 5.1.3** | | | | |
| 7.1.4 | Removal of stone boulder of more than 300 mm size from alignment of the dam and stacking the same ( beyond 50 mtr away from Toe of the dam base in the country side ) within initial lead of 150 m as per specifications and direction of E/I. | **Analysis same as Item 6.1.4** | | | | |
| 7.1.5 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials ( beyond 50 mtr away from Toe of the dam base in the country side ) with initial lead of 150 m and all lifts as per specifications and direction of E/I. | **Analysis same as Item 6.1.5** | | | | |
| 7.1.6 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond initial lead of 150 mtr but within 1.00 K.M and all lifts by Truck including loading unloading and maintenance of haul roads as per specifications and direction of E/I. | **Analysis same as Item 6.1.6** | | | | |
| 7.1.7 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond 1.00 K.M but up to 2 K.M away with all lifts by Truck including loading unloading and maintenance of haul roads as per specifications and direction of E/I. | **Analysis same as Item 6.1.7** | | | | |

200

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.1.8 | Earth work in excavation of cut -off trenches as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same ( beyond 50 mtr away from Toe of the dam base in the country side ) with initial lead of 150 m and initial lifts of 1.5 mtr as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Unskilled mazdoor for cutting earth | 7 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for profilling dressing and making edge straight | 1 | nos | 206.00 | 206.00 | |
| | Unskilled mazdoor for carrying excavated materials | 7 | nos | 206.00 | 1442.00 | |
| | Mason Gr II | 0.25 | nos | 249.00 | 62.25 | |
| | | | | | 3152.25 | |
| | Add Overhead charge & C.P@15% | | | | 472.84 | |
| | | | | | 3625.09 | |
| | Add 1% cess | | | | 36.25 | |
| | | | | | 3661.34 | 129.28 |
| | Say Rs | | | **129.30** | Per $M^3$ | |
| 7.1.9 | Earth work in excavation of cut -off trenches as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 mtr but up to 1K.M away with all lifts by Truck including loading unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| A. | Unskilled mazdoor for cutting earth | 7.00 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for profilling dressing and making edge straight | 1.00 | nos | 206.00 | 206.00 | |
| | Mason Gr I | 0.25 | nos | 279.00 | 69.75 | |
| B. | Carriage of earth by 10 M.T capacity Truck | | | | | |
| | Carriage cost of earth for 1 k.m lead | | | | | |
| | Average lead | 575 | M | | | |
| | Truck capicty 8 MT ( compacted earth ) | 4.8 | Cum | | | |
| | Cycle time---- Average speed | 16 | km/hr | | | |
| | (a) Hauling time =Average leadx60x2/1000xAverage speed | 4.31 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.31 | minutes | | | |
| | No of trip per working hour = L,U & S time / Total hauli | 0.93 | trips | | | |
| | Material carried=tripsxnet capacity | 4.48 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per 28.32 cum for carriage only=Use rate of truckx28.32/material carrieed | | | Rs | 5090.87 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 254.54 | |
| | | | | | 7063.16 | |
| | Add Overhead charge & C.P 15% | | | | 1059.47 | |
| | | | | | 8122.64 | |
| | Add 1% cess | | | | 81.23 | |
| | | | | | 8203.86 | 289.68 |
| | Say Rs | | | **289.70** | Per $M^3$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.1.10.1 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil ( beyond 50 mtr away from Toe of the dam base in the country side ) with initial lead of 150 m and initial lifts of 1.5 mtr including making the section in proper frofile, dressing side in proper slope and bed in proper grade etc.all complete as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by conccerned Chief Engineer ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 9.50 | nos | 206.00 | 1957.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.33 | nos | 347.00 | 114.51 | |
| | **Materials** | | | | | |
| | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.00 | Kg | 928.10 | 1856.20 | M-104 |
| | Detonator | 10 | nos | 6.52 | 63.14 | M-094 |
| | Fuse coil | 1 | nos | 15.61 | 15.61 | 326 |
| | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 15.00 | |
| | | | | | 4718.53 | |
| | Add Overhead charge & C.P @15% | | | | 707.78 | |
| | | | | | 5426.31 | |
| | Add 1% cess | | | | 54.263095 | |
| | | | | | 5480.57 | 548.06 |
| | Say Rs | | | **548.10** | Per $M^3$ | |
| 7.1.10.2 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock (Where blasting is not required )( vide classification of soil item C ) disposal of soil ( beyond 50 mtr away from Toe of the dam base in the country side ) with initial lead of 150 m and initial lifts of 1.5 mtr including making the section in proper frofile, dressing side in proper slope and bed in proper grade etc.all complete as per specifications and direction of | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work (i.e cutting & carrying etc.) | 11.50 | nos | 206.00 | 2369.00 | |
| | Mason Gr I | 0.50 | nos | 279.00 | 139.50 | |
| | | | | | 3113.50 | |
| | Add Overhead charge & C.P15% | | | | 467.025 | |
| | | | | | 3580.53 | |
| | Add 1% cess | | | | 35.81 | |
| | | | | | 3616.33 | 361.63 |
| | Say Rs | | | **361.60** | Per $M^3$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.1.11.1 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil beyond 150 mtr from the Toe of the dam but within 1 k.m with all lifts by Truck including loading unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by conccerned Chief Engineer ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 4.00 | nos | 206.00 | 824.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.33 | nos | 347.00 | 114.51 | |
| **B.** | **Cost of carriage of 10 cum earth by Truck including loadingand unloading** | | | | | |
| | Carriage cost of earth for 1 k.m lead | | | | | |
| | Average lead= | 575 | M | | | |
| | Truck capicty 8 MT | 6 | cum | | | |
| | Swell factor | 0.67 | | | | |
| | Net capacity=Truck capacityx swell factor | 4.02 | Cum | | | |
| | Cycle time---- Average speed | 16 | km/hr | | | |
| | (a) Hauling time =Average leadx60x2/1000xAverage speed | 4.31 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.31 | minutes | | | |
| | No of trip per working hour = Loading unloding turning and spollting time / Total hauling time | 0.93 | trips | | | |
| | Material carried=tripsxnet capacity | 3.75 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per 10 cum for carriage only=Use rate of truckx10/material carrieed | | | Rs | 2146.42 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 107.32 | |
| | **Materials** | | | | | |
| **C.** | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.00 | Kg | 928.10 | 1856.20 | |
| | Detonator | 10 | nos | 6.52 | 63.14 | |
| | Fuse coil | 1 | nos | 15.61 | 15.61 | |
| | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 15.00 | |
| | | | | | 5839.27 | |
| | Add Overhead charge & C.P@15% | | | | 875.89 | |
| | | | | | 6715.16 | |
| | Add 1% cess | | | | 67.15 | |
| | | | | | 6782.31 | 678.23 |
| | Say Rs | | | **678.20** | Per $M^3$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.1.11.2 | Earth work in excavation of cut -off trenches as per designed section in soft rock of ordinary rock. ( Where blasting is not required ) ( vide classification of soil item C ) with disposal of soil beyond 150 mtr from the Toe of the dam but within 1 k.m with all lifts Truck including loading unloading, construction and maintenance of haul roads as per specifications and direction of E/I | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 4 | nos | 206.00 | 824.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| B. | **Cost of carriage of 10 cum earth by Truck including loadingand unloading** | | | | | |
| | Carriage cost of earth for 1 k.m lead | | | | | |
| | Average lead= | 575 | M | | | |
| | Truck capicty 8 MT | 6 | cum | | | |
| | Swell factor | 0.67 | | | | |
| | Net capacity=Truck capacity X swell factor | 4.02 | Cum | | | |
| | Cycle time---- Average speed | 16 | km/hr | | | |
| | (a) Hauling time = Average lead X 60 X 2/1000 X Average speed | 4.31 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.31 | minutes | | | |
| | No of trip per working hour = Loading unloding turning and spollting time / Total hauling time | 0.93 | trips | | | |
| | Material carried=tripsxnet capacity | 3.75 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per 10 cum for carriage only=Use rate of truckx10/material carrieed | | | Rs | 2146.42 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 107.32 | |
| | | | | | 3774.81 | |
| | Add Overhead charge & C.P@15% | | | | 566.22 | |
| | | | | | 4341.03 | |
| | Add 1% cess | | | | 43.41 | |
| | | | | | 4384.44 | 438.44 |
| | Say Rs | | | **438.40** | Per $M^3$ | |
| 7.1.12 | Earth work in excavation of cut -off trenches as per designed section in hard rock and stacking properly in approved stack size in approved stack yard ( beyond 50 mtr away from Toe of the dam base in the country side ) with initial lead of 150 m and initial lifts of 1.5 mtr as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 10.50 | nos | 220.00 | 2310.00 | |
| | Unskilled mazdoor for all work | 13.00 | nos | 206.00 | 2678.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.67 | nos | 347.00 | 231.33 | |
| | **Materials** | | | | | |
| B. | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.75 | Kg | 928.10 | 2552.28 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Detonator | 18 | nos | 6.52 | 113.65 | |
| | Fuse coil | 3 | nos | 15.61 | 46.83 | |
| C. | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| | | | | | 8050.66 | |
| | Add Overhead charge & C.P@15% | | | | 1207.60 | |
| | | | | | 9258.26 | |
| | Add 1% cess | | | | 92.58 | |
| | | | | | 9350.84 | 935.08 |
| | Say Rs | | | **935.10** | Per $M^3$ | |
| 7.1.13 | Earth work in excavation of cut -off trenches as per designed section in hard rock and stacking properly in approved stack size in approved stack yard beyond initial lead of 150 mtr but upto 1 k.m in country side with all lifts by Truck including loading, unloading, stacking properly in approved stack yards,construction and maintenance of haul roads as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 10.50 | nos | 220.00 | 2310.00 | |
| | Unskilled mazdoor for all work | 10.00 | nos | 206.00 | 2060.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.67 | nos | 347.00 | 232.49 | |
| | **Materials** | | | | | |
| B. | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.75 | Kg | 928.10 | 2552.28 | |
| | Detonator | 18 | nos | 6.52 | 113.65 | |
| | Fuse coil | 3 | nos | 15.61 | 46.83 | |
| C. | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| D. | **Cost of carriage of 10 cum earth by Truck including loadingand unloading** | | | | | |
| | Carriage cost of earth for 1 k.m lead | | | | | |
| | Average lead= | 575 | M | | | |
| | Truck capicty 8 MT | 6 | cum | | | |
| | Swell factor | 0.67 | | | | |
| | Net capacity=Truck capacityx swell factor | 4.02 | Cum | | | |
| | Cycle time---- Average speed | 16 | km/hr | | | |
| | (a) Hauling time = Average leadx60x2/1000xAverage speed | 4.31 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.31 | minutes | | | |
| | No of trip per working hour = Loading unloding turning and spollting time / Total hauling time | 0.93 | trips | | | |
| | Material carried=tripsxnet capacity | 3.75 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26 b)** | **805.00** | hr | | | |
| | Rate per 10 cum for carriage only=Use rate of truckx10/material carrieed | | | Rs | 2146.42 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 107.32 | |
| | | | | | 9687.55 | |
| | Add Overhead charge & C.P@15% | | | | 1453.13 | |
| | | | | | 11140.68 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add 1% cess | | | | 111.41 | |
| | | | | | 11252.09 | 1125.21 |
| | Say Rs | | | **1125.20** | Per $M^3$ | |
| 7.1.14.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc.as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same (beyond 50 mte away the edge of the trench ) with initinal lead of 150 mtr and initial lift of 1.5 mtr , as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Unskilled mazdoor for cutting earth | 7 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for profilling dressing and making edge straight | 1 | nos | 206.00 | 206.00 | |
| | Unskilled mazdoor for carrying excavated materials | 7 | nos | 206.00 | 1442.00 | |
| | Mason Gr II | 0.25 | nos | 249.00 | 62.25 | |
| | | | | | 3152.25 | |
| | Add Overhead charge & C.P@15% | | | | 472.8375 | |
| | | | | | 3625.09 | |
| | Add 1% cess | | | | 36.250875 | |
| | | | | | 3661.34 | 129.28 |
| | Say Rs | | | **129.30** | Per $M^3$ | |
| 7.1.14.2 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 mtr but up to 1 K.M away with all lifts by Truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Unskilled mazdoor for cutting foundation | 7 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for forming spoil | 1 | nos | 206.00 | 206.00 | |
| | Mason Gr II | 0.25 | nos | 249.00 | 62.25 | |
| B. | **Cost of carriage of 28.32 cum earth by Truck including loadingand unloading** | | L.S | | 4.50 | |
| | Carriage cost of earth for 1 k.m lead | | | | 1714.75 | |
| | Average lead | 575 | M | | | |
| | Truck capicty 8 MT ( compacted earth ) | 4.8 | Cum | | | |
| | Cycle time---- Average speed | 17 | km/hr | | | |
| | (a) Hauling time =Average leadx60x2/1000xAverage speed | 4.06 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.06 | minutes | | | |
| | No of trip per working hour = Loading unloding turning and spollting time / Total hauling time | 0.94 | trips | | | |
| | Material carried=tripsxnet capacity | 4.46 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum= Use rate of truckx28.32/material carrieed | | | Rs | 5111.57 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 255.58 | |
| | | | | | 8796.65 | |
| | Add Overhead charge & C.P@15% | | | | 1319.50 | |
| | | | | | 10116.15 | |
| | Add 1% cess | | | | 101.16 | |
| | | | | | 10217.31 | 360.78 |
| | Say Rs | | | **360.80** | Per $M^3$ | |
| 7.1.15.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil ( beyond 50 mtr from Toe the edge of the trench ) with initial lead of 150 m and initial lifts of 1.5 mtr .all complete as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10.0 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for cutting | 4 | nos | 206.00 | 824.00 | |
| | Unskilled mazdoor for carrying | 0.50 | nos | 206.00 | 103.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.33 | nos | 347.00 | 114.51 | |
| B. | **Materials** | | | | | |
| | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.00 | Kg | 928.10 | 1856.20 | |
| | Detonator | 10 | nos | 6.52 | 63.14 | |
| | Fuse coil | 1 | nos | 15.61 | 15.61 | |
| C | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| | | | | | 3700.04 | |
| | Add Overhead charge & C.P@15% | | | | 555.01 | |
| | | | | | 4255.05 | |
| | Add 1% cess | | | | 42.55 | |
| | | | | | 4297.60 | 429.76 |
| | Say Rs | | | **429.80** | Per $M^3$ | |
| 7.1.15.2 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock ( where blasting is not required ) ( vide classification of soil item C ) disposal of soil ( beyond 50 mtr from Toe the edge of the trench ) with initial lead of 150 m and initial lifts of 1.5 mtr .all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10.0 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for cutting | 11.50 | nos | 206.00 | 2369.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | | | | | 3066.08 | |
| | Add Overhead charge & C.P@15% | | | | 459.91 | |
| | | | | | 3525.99 | |
| | Add 1% cess | | | | 35.26 | |
| | | | | | 3561.25 | 356.13 |
| | Say Rs | | | **356.10** | Per $M^3$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.1.15.3 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil beyond 150 mtr but upto 1 k.m away from toe of the dam with all lifts by Truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by conccerned Chief Engineer ) | | | | | |
| | Unit:-Per Cum | Per $M^3$ | | | | |
| | Assuming out put=10.0 Cum | 10 | Cum | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 4 | nos | 206.00 | 824.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.33 | nos | 347.00 | 114.51 | |
| B. | **Cost of carriage of 10 cum earth by Truck including loadingand unloading** | | | | | |
| | Carriage cost of earth for 1 k.m lead | | | | | |
| | Average lead= | 575 | M | | | |
| | Truck capicty 8 MT | 6 | cum | | | |
| C. | Swell factor | 0.67 | | | | |
| | Net capacity=Truck capacityx swell factor | 4.02 | Cum | | | |
| | Cycle time---- Average speed | 16 | km/hr | | | |
| | (a) Hauling time =Average leadx60x2/1000xAverage speed | 4.31 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.31 | minutes | | | |
| | No of trip per working hour = Loading unloding turning and spollting time / Total | 0.93 | trips | | | |
| | Material carried=tripsxnet capacity | 3.75 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum=Use rate of truckx10/material carrieed | | | Rs | 2146.42 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 107.32 | |
| | **Materials** | | | | | |
| C. | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.00 | Kg | 928.10 | 1856.20 | |
| | Detonator | 10 | nos | 6.52 | 63.14 | |
| | Fuse coil | 1 | nos | 15.61 | 15.61 | |
| D. | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 15.00 | |
| | | | | | 5839.27 | |
| | Add Overhead charge & C.P@15% | | | | 875.89 | |
| | | | | | 6715.16 | |
| | Add 1% cess | | | | 67.15 | |
| | | | | | 6782.31 | 678.23 |
| | | Say Rs | | **678.20** | Per $M^3$ | |
| 7.1.15.4 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock( Where blasting is not required) ( vide classification of soil item C ) disposal of soil beyond 150 mtr but upto 1 k.m away from toe of the dam with all lifts by Truck including loading, unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 4 | nos | 206.00 | 824.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| B. | **Cost of carriage of 10 cum earth by Truck including loadingand unloading** | | | | | |
| | Carriage cost of earth for 1 k.m lead | | | | | |
| | Average lead= | 575 | M | | | |
| | Truck capicty 8 MT | 6 | cum | | | |
| | Swell factor | 0.67 | | | | |
| | Net capacity=Truck capacityx swell factor | 4.02 | Cum | | | |
| | Cycle time---- Average speed | 16 | km/hr | | | |
| | (a) Hauling time =Average leadx60x2/1000xAverage speed | 4.31 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.31 | minutes | | | |
| | No of trip per working hour = Loading unloding turning and spollting time / Total hauling time | 0.93 | trips | | | |
| | Material carried=tripsxnet capacity | 3.75 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum=Use rate of truckx10/material carrieed | | | Rs | 2146.42 | |
| C. | Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 107.32 | |
| | Rate (A+B+C) | | | | 3774.81 | |
| | Add Overhead charge & C.P@15% | | | | 566.22 | |
| | | | | | 4341.03 | |
| | Add 1% cess | | | | 43.41 | |
| | | | | | 4384.44 | 438.44 |
| | | Say Rs | | **438.40** | Per $M^3$ | |
| 7.1.16.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in hard rock where blasting needed and staking properly in approved stack size in approved stack yard ( beyond 50 mtr from the edge of the trench in country side) with initial lead of 150 m and initial lifts of 1.5 mtr .all complete as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by conccerned Chief Engineer ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 10.50 | nos | 220.00 | 2310.00 | |
| | Unskilled mazdoor for all job | 13.00 | nos | 206.00 | 2678.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.67 | nos | 347.00 | 232.49 | |
| B. | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.75 | Kg | 928.10 | 2552.28 | |
| | Detonator | 18 | nos | 6.52 | 113.65 | |
| | Fuse coil | 3 | nos | 15.61 | 46.83 | |
| C. | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| | | | | | 8051.83 | |
| | Add Overhead charge & C.P@15% | | | | 1207.77 | |
| | | | | | 9259.60 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add 1% cess | | | | 92.60 | |
| | | | | | 9352.19 | 935.22 |
| | Say Rs | | | **935.20** | Per $M^3$ | |
| 7.1.16.2 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in hard rock where blasting needed and disposal of excavated rock by Truck beyond initial lead of 150 mtr but upto 1 k.m away from toe of the dam with all lifts including loading, unloading and stacking properly in approved stock size in approved stock yard as well as construction and maintenance of haul roads as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 10.50 | nos | 220.00 | 2310.00 | |
| | Unskilled mazdoor for all work | 10 | nos | 206.00 | 2060.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.67 | nos | 347.00 | 232.49 | |
| B. | **Cost of carriage of 10 cum earth by Truck including loadingand unloading** | | | | | |
| | Carriage cost of earth for 1 k.m lead | | | | | |
| | Average lead= | 575 | M | | | |
| | Truck capicty 8 MT | 6 | cum | | | |
| | Swell factor | 0.67 | | | | |
| | Net capacity=Truck capacityx swell factor | 4.02 | Cum | | | |
| | Cycle time---- Average speed | 16 | km/hr | | | |
| | (a) Hauling time =Average leadx60x2/1000xAverage speed | 4.31 | minutes | | | |
| | (b) Loading unloading turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time= | 64.31 | minutes | | | |
| | No of trip per working hour = Loading unloding turning and spollting time / Total hauling time | 0.93 | trips | | | |
| | Material carried=tripsxnet capacity | 3.75 | $M^3$ | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum=Use rate of truckx10/material carrieed | | | Rs | 2146.42 | |
| | Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 107.32 | |
| | **Materials** | | | | | |
| C. | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.75 | Kg | 928.10 | 2552.28 | |
| | Detonator | 18 | nos | 6.52 | 113.65 | |
| | Fuse coil | 3 | nos | 15.61 | 46.83 | |
| D. | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| | | | | | 9687.55 | |
| | Add Overhead charge & C.P@15% | | | | 1453.13 | |
| | | | | | 11140.68 | |
| | Add 1% cess | | | | 111.41 | |
| | | | | | 11252.09 | 1125.21 |
| | | Say Rs | | **1125.20** | Per $M^3$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.1.17.1 | Earth work in excavation of the toe drain and heel trench as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same (beyond 50 mte away the edge of the trench ) with initinal lead of 100 mtr and initial lift of 1.5 mtr , s as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Unskilled mazdoor for cutting earth | 7 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for profilling dressing and making edge straight | 1 | nos | 206.00 | 206.00 | |
| | Unskilled mazdoor for carrying excavated materials | 6 | nos | 206.00 | 1236.00 | |
| | Mason Gr I | 0.25 | nos | 279.00 | 69.75 | |
| | | | | | 2953.75 | |
| | Add Overhead charge & C.P@15% | | | | 443.06 | |
| | | | | | 3396.81 | |
| | Add 1% cess | | | | 33.97 | |
| | | | | | 3430.78 | 121.14 |
| | Say Rs | | | **121.10** | Per $M^3$ | |
| 7.1.17.2 | Earth work in excavation of the drain and heel trench as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) with disposal of the soil ( beyond 50 mtr away from the toe drian in country side) with initial lead of 100 m and initial lifts of 1.5 mtr .all complete as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by conccerned Chief Engineer ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for cutting | 4.00 | nos | 206.00 | 824.00 | |
| | Unskilled mazdoor for carryingand stacking | 4.50 | nos | 206.00 | 927.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.33 | nos | 347.00 | 114.51 | |
| | **Materials** | | | | | |
| | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.00 | Kg | 928.10 | 1856.20 | |
| | Detonator | 10 | nos | 6.52 | 65.19 | |
| | Fuse coil | 1 | nos | 15.61 | 15.61 | |
| | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| | | | | | 4526.09 | |
| | Add Overhead charge & C.P@15% | | | | 678.91 | |
| | | | | | 5205.00 | |
| | Add 1% cess | | | | 52.05 | |
| | | | | | 5257.05 | 525.71 |
| | Say Rs | | | **525.70** | Per $M^3$ | |
| 7.1.17.3 | Earth work in excavation of the drain and heel trench as per designed section in soft rock or ordinary rock ( Where blasting is not required ) ( vide classification of soil item C ) with disposal of the soil ( beyond 50 mtr away from the toe drian in country side) with initial lead of 100 m and initial lifts of 1.5 mtr .all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Assuming out put=10 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for cutting | 7 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for carryingand stacking | 4.50 | nos | 206.00 | 927.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | | | | | 3066.07 | |
| | Add Overhead charge & C.P@15% | | | | 459.91 | |
| | | | | | 3525.98 | |
| | Add 1% cess | | | | 35.26 | |
| | | | | | 3561.24 | 356.12 |
| | Say Rs | | | **356.10** | Per $M^3$ | |
| 7.1.17.4 | Earth work in excavation of the toe drian and heel trench as per designed section in hard rock where blasting needed and and stacking properly in approved stack yard ( beyond 50 mtr away from the toe drian in country side)and approved stack size with initial lead of 150 m and initial lifts of 1.5 mtr .all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 10.50 | nos | 220.00 | 2310.00 | |
| | Unskilled mazdoor for all work | 13 | nos | 206.00 | 2678.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.67 | nos | 347.00 | 231.33 | |
| | **Materials** | | | | | |
| | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.75 | Kg | 928.10 | 2552.28 | |
| | Detonator | 18 | nos | 6.52 | 113.65 | |
| | Fuse coil | 3 | nos | 15.61 | 46.83 | |
| | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| | | | | | 8050.66 | |
| | Add Overhead charge & C.P@15% | | | | 1207.60 | |
| | | | | | 9258.26 | |
| | Add 1% cess | | | | 92.58 | |
| | | | | | 9350.84 | 935.08 |
| | Say Rs | | | **935.10** | Per $M^3$ | |
| 7.1.17.5 | Earth work in excavation of the toe drain and heel trench as per designed section in hard rock with chiesel and hammer and stacking properly in approved stack yard ( beyond 50 mtr away from the toe drian with initial lead of 100 m and initial lifts of 1.5 mtr .all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 2.25 | nos | 220.00 | 495.00 | |
| | Skilled mazdoor for all work | 2.25 | nos | 262.00 | 589.50 | |
| | Unskilled mazdoor for collecting the excavated materials and carrying the same beyond 50 m and stacing properly | 4 | nos | 206.00 | 824.00 | |
| | Unskilled mazdoor for making edge straight, dressing, profiling and final prepartion of surface | 3 | nos | 206.00 | 618.00 | |
| | Blacksmith | 1 | nos | 249.00 | 249.00 | |
| | Mate | 1 | nos | 225.00 | 225.00 | |
| | | | | | 3000.50 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add Overhead charge & C.P@15% | | | | 450.08 | |
| | | | | | 3450.58 | |
| | Add 1% cess | | | | 34.51 | |
| | | | | | 3485.08 | 348.51 |
| | Say Rs | | | **348.50** | Per $M^3$ | |
| 7.1.18 | Earth work in excavation of foundation trenches in hard rock ( non- blasting zone ) or dismentling cement cocrete (1:2:4) by manual labour with chisel hammer, wedging barring etc. disposal of excavated materials with an initial lead of and initial lifts of 1.5 mtr. including making the edges straight, dressing, profiling and final preparation of surface all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=10 Cum | | | | | |
| | **Labour** | | | | | |
| | Hammer man | 2.25 | nos | 220.00 | 495.00 | |
| | Skilled mazdoor for all work | 2.25 | nos | 262.00 | 589.50 | |
| | Unskilled mazdoor for collecting the excavated materials and carrying the same beyond 50 m and stacing properly | 4 | nos | 206.00 | 824.00 | |
| | Unskilled mazdoor for making edge straight, dressing, profiling and final prepartion of surface | 3 | nos | 206.00 | 618.00 | |
| | Blacksmith | 1 | nos | 249.00 | 249.00 | |
| | Mate | 1 | nos | 225.00 | 225.00 | |
| | | | | | 3000.50 | |
| | Add Overhead charge & C.P@15% | | | | 450.08 | |
| | | | | | 3450.58 | |
| | Add 1% cess | | | | 34.51 | |
| | | | | | 3485.08 | 348.51 |
| | Say Rs | | | **348.50** | Per $M^3$ | |
| 7.1.19 | Earth work in dam fill by head load in semi previous or impervious soil with initinal lead of 150 mtr and initial lift of 1.5 mtr including breaking clods to maximum 63 mm cubs, placing the earth in layer not exceeding 225 mm thick all complete as per specifications and direction of E/I. (Mode of measurment- sectional measurement of compacted earth ). | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Unskilled mazdoor for stripping the borrow area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for throwing the stripped earth from borrpw area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for cutting earth | 5 | nos | 206.00 | 1030.00 | |
| | Unskilled mazdoor for carriage of earth | 14 | nos | 206.00 | 2884.00 | |
| | Mate | 1 | nos | 225.00 | 225.00 | |
| | | | | | 4448.00 | |
| | Add Overhead charge & C.P@15% | | | | 667.20 | |
| | | | | | 5115.20 | |
| | Add 1% cess | | | | 51.15 | |
| | | | | | 5166.35 | 182.43 |
| | Say Rs | | | **182.40** | Per $M^3$ | |
| 7.1.20.1 | Extra for earth work in all kinds of soil for each additional lead of 25 Mtr or part there of over the initial lead as per specification and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Unskilled mazdoor for cutting | 1 | nos | 206.00 | 206.00 | |
| | | | | | 206.00 | |
| | Add Overhead charge & C.P@15% | | | | 30.90 | |
| | | | | | 236.90 | |
| | Add 1% cess | | | | 2.37 | |
| | | | | | 239.27 | 8.45 |
| | | | Say Rs | **8.40** | Per $M^3$ | |
| 7.1.20.2 | Extra for earth work in rock for each additional lead of 25 Mtr or part there of over the initial lead as per specification and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Unskilled mazdoor for cutting | 1.50 | nos | 206.00 | 309.00 | |
| | | | | | 309.00 | |
| | Add Overhead charge & C.P@15%^ | | | | 46.35 | |
| | | | | | 355.35 | |
| | Add 1% cess | | | | 3.55 | |
| | | | | | 358.90 | 12.67 |
| | | | Say Rs | **12.70** | Per $M^3$ | |
| 7.1.21.1 | Extra for earth work in all kinds of soil for each additional lift of 1 Mtr or part there of over the initial lift of 1.50 mtr as per specification and direction of E/I. | | | | | |
| | Unit: Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Unskilled mazdoor for cutting | 1 | nos | 206.00 | 206.00 | |
| | | | | | 206.00 | |
| | Add Overhead charge & C.P@15% | | | | 30.90 | |
| | | | | | 236.90 | |
| | Add 1% cess | | | | 2.369 | |
| | | | | | 239.27 | 8.45 |
| | | | Say Rs | **8.40** | Per $M^3$ | |
| 7.1.21.2 | Extra for earth work in rock each additional lift of 1 Mtr or part there of over the initial lift of 1.50 mtr as per specification and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Unskilled mazdoor for cutting | 1.50 | nos | 206.00 | 309.00 | |
| | | | | | 309.00 | |
| | Add Overhead charge & C.P@15% | | | | 46.35 | |
| | | | | | 355.35 | |
| | Add 1% cess | | | | 3.5535 | |
| | | | | | 358.90 | 12.67 |
| | | | Say Rs | **12.70** | Per $M^3$ | |
| 7.1.22 | Earth work in dam fill in semi previous or imprevious zone by manual excavation and carriage by Truck including loading, including , making dam in proper design section including earth to be laid in layers of not more than 225 mm thick with all lift and breaking clods to maximum 63 mm cubsas well as construcion and mainttenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurment- sectional measurement of compacted earth ). | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| 7.1.22.1 | **Lead beyound 150 mtr but upto 1/2 K.M** | | | | | |
| **A.** | **Labour** | | | | | |
| | Unskilled mazdoor for stripping the borrow area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for throwing the stripped earth from borrpw area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for cutting earth | 9.50 | nos | 206.00 | 1957.00 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Mate | 1 | nos | 225.00 | 225.00 | |
| B. | **Carriage of earth by 10 M.T capacity Truck** | | | | | |
| | Average lead | 325 | M | | | |
| | Truck capicty 8 MT | 4.8 | Cum | | | |
| | Cycle time---- | | | | | |
| | (a) Hauling time @ 16 KM ( Average )speed per hours | 16 | k.m/hr | | | |
| | =Average leadx60x2/1000xhauling time= | 2.44 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time=(a+b) | 62.44 | minutes | | | |
| | No of trip per working hour = 60 / Total hauling time | 0.96 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 4.61 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum=Use rate of truckx28.32/material carrieed | | | Rs | 4942.45 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 247.12 | |
| | | | | | 7680.57 | |
| | Add Overhead charge & C.P@15% | | | | 1152.09 | |
| | | | | | 8832.66 | |
| | Add 1% cess | | | | 88.33 | |
| | | | | | 8920.98 | 315.01 |
| | | | Say Rs | **315.00** | Per $M^3$ | |
| 7.1.22.2 | **Lead beyound 1/2 K.M but upto 1 K.M** | | | | | |
| A. | **Labour** | | | | | |
| | Unskilled mazdoor for stripping the borrow area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for throwing the stripped earth from borrpw area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for cutting earth | 9.50 | nos | 206.00 | 1957.00 | |
| | Mate | 1.00 | nos | 225.00 | 225.00 | |
| B. | **Carriage of earth by 10 M.T capacity Truck** | | | | | |
| | Average lead | 750 | M | | | |
| | Truck capicty 8 MT | 4.8 | Cum | | | |
| | Cycle time---- | | | | | |
| | (a) Hauling time @ 16 KM ( Average )speed per hours | 16 | k.m/hr | | | |
| | =Average leadx60x2/1000xhauling time=5.63 minutes | 5.63 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time=(a+b) | 65.63 | minutes | | | |
| | No of trip per working hour = 60 / Total hauling time | 0.91 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 4.39 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum=Use rate of truckx28.32/material carrieed | | | Rs | 5194.77 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 259.74 | |
| | | | | | 7945.50 | |
| | Add Overhead charge & C.P@15% | | | | 1191.8256 | |
| | | | | | 9137.33 | |
| | Add 1% cess | | | | 91.37 | |
| | | | | | 9228.70 | 325.87 |
| | | | Say Rs | **325.90** | Per $M^3$ | |
| 7.1.22.3 | **Lead beyound 1 K.M but upto 2 K.M** | | | | | |
| A. | **Labour** | | | | | |
| | Unskilled mazdoor for stripping the borrow area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for throwing the stripped earth from borrpw area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for cutting earth | 9.50 | nos | 206.00 | 1957.00 | |
| | Mate | 1.00 | nos | 225.00 | 225.00 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| B. | **Carriage of earth by 10 M.T capacity Truck** | | | | | |
| | Average lead | 1.5 | M | | | |
| | Truck capicty 8 MT | 4.8 | Cum | | | |
| | Cycle time---- | | | | | |
| | (a) Hauling time @ 17 KM ( Average )speed per hours | 17 | k.m/hr | | | |
| | =Average leadx60x2/hauling time=5.63 minutes | 10.59 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 60 | minutes | | | |
| | Total hauling cycle time=(a+b) | 70.59 | minutes | | | |
| | No of trip per working hour = 60 / Total hauling time | 0.85 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 4.080 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum=Use rate of truckx28.32/material carrieed | | | Rs | 5587.65 | |
| | © Constuction and maintenance of haul road @ 5 % of Item ( B ) | | | Rs | 279.38 | |
| | | | | | 8358.03 | |
| | Add Overhead charge & C.P@15% | | | | 1253.70 | |
| | | | | | 9611.73 | |
| | Add 1% cess | | | | 96.117338 | |
| | | | | | 9707.85 | 342.79 |
| | | | Say Rs | **342.80** | Per $M^3$ | |
| 7.1.22.4 | **Lead beyound 2 K.M but upto 3 K.M** | | | | | |
| A. | **Labour** | | | | | |
| | Unskilled mazdoor for stripping the borrow area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for throwing the stripped earth from borrpw area | 0.75 | nos | 206.00 | 154.50 | |
| | Unskilled mazdoor for cutting earth | 9.50 | nos | 206.00 | 1957.00 | |
| | Mate | 1.00 | nos | 225.00 | 225.00 | |
| B. | **Carriage of earth by 8 M.T capacity Truck** | | | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shoval per hour 172.48x0.69x0.88 =104.72 Say100 cum | | | | | |
| | Truck capicty | 8 | M.T | | | |
| | **Machinery charges** | | | | | |
| | **i. Ripper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | P&M-041 |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour (vide item no 3.10)** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii. Carriage by Truck** | | | | | |
| | Truck capicty 8 MT =4.8 cum ( compacted earth ) | 4.8 | cum | | | |
| | Average lead 2.5 k.m | 2.5 | k.m | | | |
| | Cycle time---- | | | | | |
| | (i). Loading time per minute= Body capacityx60/ shove | 2.88 | minute | | | |
| | (ii) Hauling time @ 17.5 KM ( Average )speed per hour | 17.50 | k.m/hr | | | |
| | =Average leadx60x2/hauling time= | 17.14 | minutes | | | |
| | (b) Loading unloding turning and spollting time= | 20 | minutes | | | |
| | Total hauling cycle time=(a+b) | 37.14 | minutes | | | |
| | No of trip per working hour = 60 / Total hauling time | 1.62 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 7.75 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | hr | | | |
| | Rate per cum= Use rate of truckx28.32/material carrieed | | | Rs | 2940.17 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | © Constuction and maintenance of haul road @ 5 % of Item | | | Rs | 147.01 | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.23 | Earth work in **dam fill in semi previous or imprevious zone** fill materials to be loosened and excavated by **Ripper and shove**l at the borrow area and transported **by truck** to the dam fill site with all lift as well as spreading levelling by Dozer including construction and mainttenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurment- sectional measurement of compacted earth ). | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=1.0 Cum | | | | | |
| 7.1.23.1 | **Lead beyound 150 mtr but upto 1/2 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 325 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Truck capacity 10 M.T | 10 | M.T | | | |
| A. | Clearing and grubbing of borrow area | | L.S | | 1.00 | |
| B. | Machinery charges | | | | | |
| | **I. Ripper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour (vide item no 3.10)** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii. Carriage by Truck** | | | | | |
| | Truck capicty 8 MT =4.8 cum ( compacted earth ) | 4.8 | cum | | | |
| | Average lead 325 M | 325 | M | | | |
| | Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 2.88 | minute | | | |
| | (b) Hauling time @ 16 KM ( Average )speed per hours | 16.00 | k.m/hr | | | |
| | =Average leadx60x2/1000xhauling time= | 2.44 | minutes | | | |
| | (c) Loading unloding turning and spollting time= | 20 | minutes | | | |
| | Total hauling cycle time=(a+b+c) | 25.32 | minutes | | | |
| | No of trip per working hour of 50 minute = 50 / Total hauling time | 1.97 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 9.48 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | | | | |
| | Rate per cum=Use rate of truck / Material carried | | | | 84.92 | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer** | **5011.38** | | | | P&M-014 |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |
| | Total Machinary charges (i+ii+iii+iv ) | #VALUE! | | | #VALUE! | |
| C. | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.23.2 | **Lead beyound 1/2 K.M but upto 1 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 750 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Truck capacity 10 M.T | 10 | M.T | | | |
| A. | Clearing and grubbing of borrow area | | L.S | | 1.00 | |
| B. | Machinery charges | | | | | |
| | I. Ripper with D-9 tractor dozer | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | ii.Shovel | | | | | |
| | **Use rate per working hour** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | iii. Carriage by Truck | | | | | |
| | Truck capicty 8 MT =4.8 cum ( compacted earth ) | 4.8 | cum | | | |
| | Average lead 750 M | 750 | M | | | |
| | Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 2.88 | minute | | | |
| | (b) Hauling time @ 16 KM ( Average )speed per hours | 16.00 | k.m/hr | | | |
| | =Average leadx60x2/1000xhauling time= | 5.63 | minutes | | | |
| | (c) Loading unloding turning and spollting time= | 20 | minutes | | | |
| | Total hauling cycle time=(a+b+c) | 28.51 | minutes | | | |
| | No of trip per working hour of 50 minute = 50 / Total hauling time | 1.75 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 8.42 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | | | | |
| | Rate per cum=Use rate of truck / Material carried | | | | 95.61 | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer** | **5011.38** | | | | |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total Machinary charges (i+ii+iii+iv ) | | | | #VALUE! | |
| C. | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.23.3 | **Lead beyound 1 K.M but upto 2 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 1500 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Truck capacity 10 M.T | 10 | M.T | | | |
| A | Machinery charges | | | | | |
| | **i. Ropper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour (Vide item no 3.10)** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii. Carriage by Truck** | | | | | |
| | Truck capicty 8 MT =4.8 cum ( compacted earth ) | 4.8 | cum | | | |
| | Average lead | 1500 | M | | | |
| | Cycle time---- | | | | | |
| | (a) Loading time per minute= Body capacity / shovel out put | 2.88 | minute | | | |
| | (b) Hauling time @ 16 KM ( Average )speed per hours | 16.00 | k.m/hr | | | |
| | =Average leadx60x2/1000xhauling time= | 11.25 | minutes | | | |
| | (c) Loading unloding turning and spollting time= | 20 | minutes | | | |
| | Total hauling cycle time=(a+b+c) | 34.13 | minutes | | | |
| | No of trip per working hour of 50 minute = 50 / Total hauling time | 1.46 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 7.03 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | | | | |
| | Rate per cum=Use rate of truck / Material carried | | | | 114.48 | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer (vide item no 3.11 a)** | **5011.38** | | | | |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |
| | Total Machinary charges (i+ii+iii+iv ) | | | | #VALUE! | |
| B. | Add for | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.23.4 | **Lead beyound 2 K.M but upto 3 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 2500 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Truck capacity 10 M.T | 10 | M.T | | | |
| A. | Machinery charges | | | | | |
| | **I. Ripper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour (Vide item no 3.10)** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii. Carriage by Truck** | | | | | |
| | Truck capicty 8 MT =4.8 cum ( compacted earth ) | 4.8 | cum | | | |
| | Average lead 750 M | 2500 | M | | | |
| | Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 2.88 | minute | | | |
| | (b) Hauling time @ 16 KM ( Average )speed per hours | 16.00 | k.m/hr | | | |
| | =Average leadx60x2/1000xhauling time= | 18.75 | minutes | | | |
| | (c) Loading unloding turning and spollting time= | 20 | minutes | | | |
| | Total hauling cycle time=(a+b+c) | 41.63 | minutes | | | |
| | No of trip per working hour of 50 minute = 50 / Total hauling time | 1.20 | Trips | | | |
| | Material carried=TripsxTruck capicty = | 5.77 | Cum | | | |
| | **Hourly use rate of truck ( Vide item no 3.26)** | **805.00** | | | | |
| | Rate per cum=Use rate of truck / Material carried | | | | 139.63 | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer (vide item no 3.11 a)** | **5011.38** | | | | |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |
| | Total Machinary charges (i+ii+iii+iv ) | | | | #VALUE! | |
| B. | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.24 | Earth work in dam fill **in semi previous or impreviously zone** fill materials to be loosened and excavated by **Ripper and shovel** at the borrow area and transported **by Dumper** to the dam fill site with all lift as well as spreading levelling by Dozer including construction and mainttenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurment- sectional measurement of compacted earth ). | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=1.0 Cum | | | | | |
| 7.1.24.1 | **Lead beyound 150 mtr but upto 1/2 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 325 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Dumper 15 M.T | 10 | M.T | | | |
| | Capacity 8.33 cum | 8.33 | cum | | | |
| | Swell factor= 0.75 | 0.75 | | | | |
| A | Machinery charges | | | | | |
| | **I. Ripper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | Per hr | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii.Dumper** | | | | | |
| | Average lead | 325 | M | | | |
| | Body capicity= capacity x Swell factor | 6.25 | (Bank volume ) | | | |
| | Handling Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 3.75 | minute | | | |
| | (b) spolting time= | 0.30 | minutes | | | |
| | (c ). Turning and dumping time | 2.00 | minutes | | | |
| | (d). Empty haul @ 15 K.M per hour =Average Leadx60/15x1000 | 1.3 | minutes | | | |
| | (e). Loaded haul @10 K.M per hour =Average Leadx60/15x1000 | 1.95 | minutes | | | |
| | Total hauling cycle time=(a+b+c+d+e) | 9.30 | minutes | | | |
| | No of dumper trip per working hour of 50 minute = 50 / Total hauling time | 5.38 | Trips | | | |
| | Material carried=TripsxDumper capaicty = | 33.59 | Cum | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hourly use rate of Dumper 15 T (vide** | **#VALUE!** | | | | |
| | Rate per cum=Use rate of Dumper/ Material carried | | | | #VALUE! | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer** | **5011.38** | | | | |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |
| | Total Machinary charges (i+ii+iii+iv ) | | | | #VALUE! | |
| B | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.24.2 | **Lead beyound 1/2 K.M but upto 1 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 750 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Dumper 15 M.T | 10 | M.T | | | |
| | Capacity 8.33 cum | 8.33 | cum | | | |
| | Swell factor= 0.75 | 0.75 | | | | |
| A. | Machinery charges | | | | | |
| | **I. Ripper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | iii.Dumper | | | | | |
| | **Average lead** | 750 | M | | | |
| | Body capicity= capacity x Swell factor | 6.25 | (Bank volume ) | | | |
| | Handling Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 3.75 | minute | | | |
| | (b) spolting time= | 0.30 | minutes | | | |
| | (c ). Turning and dumping time | 2.00 | minutes | | | |
| | (d). Empty haul @ 25 K.M per hour =Average Leadx60/25x1000 | 1.8 | minutes | | | |
| | (e). Loaded haul @20 K.M per hour =Average Leadx60/20x1000 | 2.25 | minutes | | | |
| | Total hauling cycle time=(a+b+c+d+e) | 10.10 | minutes | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | No of dumper trip per working hour of 50 minute = 50 / Total hauling time | 4.95 | Trips | | | |
| | Material carried=TripsxDumper capaicty = | 30.93 | Cum | | | |
| | **Hourly use rate of Dumper** | **#VALUE!** | | | | |
| | Rate per cum=Use rate of Dumper/ Material carried | | | | #VALUE! | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer (vide item 3.11a )** | **5011.38** | | | | |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |
| | Total Machinary charges (i+ii+iii+iv ) | | | | #VALUE! | |
| B. | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.24.3 | **Lead beyound 1 K.M but upto 2 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 1500 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Dumper 15 M.T | 10 | M.T | | | |
| | Capacity 8.33 cum | 8.33 | cum | | | |
| | Swell factor= 0.75 | 0.75 | | | | |
| A. | Machinery charges | | | | | |
| | **I. Ripper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | ii.Shovel | | | | | |
| | **Use rate per working hour (vide item 3.10a ) =** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii.Dumper** | | | | | |
| | Average lead | 1500 | M | | | |
| | Body capicity= capacity x Swell factor | 6.25 | (Bank volume ) | | | |
| | Handling Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 3.75 | minute | | | |
| | (b) spolting time= | 0.30 | minutes | | | |
| | (c ). Turning and dumping time | 2.00 | minutes | | | |
| | (d). Empty haul @ 25 K.M per hour =Average Leadx60/25x1000 | 3.6 | minutes | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (e). Loaded haul @20 K.M per hour =Average Leadx60/20x1000 | 4.5 | minutes | | | |
| | Total hauling cycle time=(a+b+c+d+e) | 14.15 | minutes | | | |
| | No of dumper trip per working hour of 50 minute = 50 / Total hauling time | 3.53 | Trips | | | |
| | Material carried=TripsxDumper capaicty = | 22.08 | Cum | | | |
| | **Hourly use rate of Dumper (Vide item no 3.12c )** | **#VALUE!** | | | | |
| | Rate per cum=Use rate of Dumper/ Material carried | | | | #VALUE! | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer (vide item 3.11a )** | **5011.38** | | | | |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |
| | Total Machinary charges (i+ii+iii+iv ) | | | | #VALUE! | |
| B. | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.24.4 | **Lead beyound 2 K.M but upto 3 K.M** | | | | | |
| | **(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 page 89 to 93 )** | | | | | |
| | Average lead = | 2500 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking effiCiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| | Dumper 15 M.T | 10 | M.T | | | |
| | Capacity 8.33 cum | 8.33 | cum | | | |
| | Swell factor= 0.75 | 0.75 | | | | |
| A. | Machinery charges | | | | | |
| | **I. Ripper with D-9 tractor dozer** | | | | | |
| | Out put per working hour = | 150 | cum | | | |
| | **Use rate per working hour (Vide item no 3.11 b+3.27c)** | **#VALUE!** | | | | |
| | Cost of ripping per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour (vide item 3.10a ) =** | **#VALUE!** | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii.Dumper** | | | | | |
| | Average lead | 2500 | M | | | |
| | Body capicity= capacity x Swell factor | 6.25 | (Bank volume ) | | | |
| | Handling Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 3.75 | minute | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (b) spolting time= | 0.30 | minutes | | | |
| | (c ). Turning and dumping time | 2.00 | minutes | | | |
| | (d). Empty haul @ 25 K.M per hour =Average Leadx60/25x1000 | 6 | minutes | | | |
| | (e). Loaded haul @20 K.M per hour =Average Leadx60/20x1000 | 7.5 | minutes | | | |
| | Total hauling cycle time=(a+b+c+d+e) | 19.55 | minutes | | | |
| | No of dumper trip per working hour of 50 minute = 50 / Total hauling time | 2.56 | Trips | | | |
| | Material carried=TripsxDumper capaicty = | 15.98 | Cum | | | |
| | **Hourly use rate of Dumper (Vide item no 3.12c )** | **#VALUE!** | | | | |
| | Rate per cum=Use rate of Dumper/ Material carried | | | | #VALUE! | |
| | **(iv). Spreading charge at placement by D- 8 Tractor Dozer** | | | | | |
| | Out put per working hour = | 300 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer (vide item 3.11a )** | **5011.38** | | | | |
| | Rate per cumof D-8=Use rate of / Out put | | | | 16.70 | |
| | | | | | | |
| | Total Machinary charges (i+ii+iii+iv ) | | | | #VALUE! | |
| C. | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | |
| | ii. Levelling and triming of waste pile etc. @ 5 % of machinery charges | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.25 | Earth work in dam fill in semi previous or imprevious zone fill materials to be loosened and excavated by **Dozer and scraper** at the borrow area and transported **by Scraper** itself to the dam fill site with all lift as well as spreading levelling by Dozer including construction and mainttenance of haul roads, all complete as per specifications and direction of E/I. (Mode of measurment- sectional measurement of compacted earth ). | | | | | |
| | Unit:-Per Cum | | | | | |
| 7.1.25.1 | **Lead beyound 150 mtr but upto 1/2 K.M** | | | | | |
| | Average lead = | 325 | Metre | | | |
| | Capacity of scraper 9.175 cum (12 cyd ) but actually loaded to 7.645 cum ( 10 cyd) for all practical purpose. | 7.645 | cum | | | |
| | Assuming speed of scraper as 8 km per hr | 8 | km/hr | | | |
| | For average condition ( Ref:- Back "construction planing, equipment and methods" by R.L .Peurifey ) | | | | | |
| | (a). Loading time | 1.00 | minute | | | |
| | (b) Time of dumping and running | 0.50 | minutes | | | |
| | (c ). Time for accelerating and decelerating | 0.40 | minutes | | | |
| | Total time=(a+b+c) | 1.90 | minutes | | | |
| | Operating efficiency of scraper | 0.83 | | | | |
| | No of trip per hour = 1000x8xefficiency / average leadx2 | 10.22 | Trips | | | |
| | Loading and unloading time =Tripsx total time | 19.41 | minutes | | | |
| | Total time taken by scraper in 10.21 trip=1 per 19.41 m | 1.32 | hr | | | |
| | Eart work involved per day= Actu.capacityx no of tripsx 8 hr/Total time taken by scraper in no of trips | **472.07** | **cum** | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Time taken by ripper per day @ 15 minutes per 1.32 hr | 1.51 | hr | | | |
| | **(I). Cost of 8 hour of scraper ( vide Item no 3.23a )** | **8** | **hr** | **#VALUE!** | #VALUE! | |
| | **(ii). Cost of 1.51 hour of dozer ( vide Item no 3.11a)** | **1.51** | **hr** | **5011.38** | 7572.99 | |
| | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of (i+ii) | #VALUE! | | | #VALUE! | |
| | ii. Unskilled mazdoor for controlling slope | 1.00 | nos | 206.00 | 206.00 | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.25.2 | **Lead beyound 1/2 K.M but upto 1 K.M** | | | | | |
| | Average lead =500+500/2 | 750 | Metre | | | |
| | Capacity of scraper 9.175 cum (12 cyd ) but actually loaded to 7.645 cum ( 10 cyd) for all practical | 7.645 | cum | | | |
| | Assuming speed of scraper as 8 km per hr | 8 | km/hr | | | |
| | For average condition ( Ref:- Back "construction planing, equipment and methods" by R.L .peurifey ) | | | | | |
| | (a). Loading time ut | 1.00 | minute | | | |
| | (b) Time of dumping and running | 0.50 | minutes | | | |
| | (c ). Time for accelerating and decelerating | 0.40 | minutes | | | |
| | Total time=(a+b+c) | 1.90 | minutes | | | |
| | Operating efficiency of scraper | 0.83 | | | | |
| | No of trip per hour = 1000x8xefficiency / average leadx2 | 4.43 | Trips | | | |
| | Loading and unloading time =Tripsx total time | 8.41 | minutes | | | |
| | Total time taken by scraper in 10.21 trip=1 per 19.41 minutes | 1.14 | hr | | | |
| | Eart work involved per day= Actu.capacityx no of tripsx 8 hr/Total time taken by scraper in no of trips | **237.45** | **cum** | | | |
| | Time taken by dozer per day @ 8 minutes per 1.14 hr | 0.94 | hr | | | |
| | **(I). Cost of 8 hour of scraper ( vide Item no 3.23a )** | **8** | **hr** | **#VALUE!** | #VALUE! | |
| | **(ii). Cost of 0.94 hour of dozer ( vide Item no 3.11a)** | **0.94** | **hr** | **5011.38** | 4688.2794 | |
| | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of (i+ii) | #VALUE! | | | #VALUE! | |
| | ii. Unskilled mazdoor for controlling slope | 1.00 | nos | 206.00 | 206.00 | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.25.3 | **Lead beyound 1 K.M but upto 2 K.M** | | | | | |
| | | | | | | |
| | Average lead = | 1500 | Metre | | | |
| | Capacity of scraper 9.175 cum (12 cyd ) but actually loaded to 7.645 cum 9 10 cyd 0 for all practical purpose. | 7.645 | cum | | | |
| | Assuming speed of scraper as 8 km per hr | 8 | km/hr | | | |
| | For average condition ( Ref:- Back "construction planing, equipment and methods" by R.L .Peurifey ) | | | | | |
| | (a). Loading time ut | 1.00 | minute | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (b) Time of dumping and running | 0.50 | minutes | | | |
| | (c ). Time for accelerating and decelerating | 0.40 | minutes | | | |
| | Total time=(a+b+c) | 1.90 | minutes | | | |
| | Operating efficiency of scraper | 0.83 | | | | |
| | No of trip per hour = 1000x8xefficiency / average leadx2 | 2.21 | Trips | | | |
| | Loading and unloading time =Tripsx total time | 4.21 | minutes | | | |
| | Total time taken by scraper in 10.21 trip=1 per 19.41 minutes | 1.07 | hr | | | |
| | Eart work involved per day= Actu.capacityx no of tripsx 8 hr/Total time taken by scraper in no of trips | **126.50** | **cum** | | | |
| | Time taken by dozer per day @ 4 minutes per 1.07 hr | 0.50 | hr | | | |
| | **(I). Cost of 8 hour of scraper ( vide Item no3.23a )** | **8** | **hr** | **#VALUE!** | #VALUE! | |
| | **(ii). Cost of 0.50 hour of dozer ( vide Item no 3.11a)** | **0.50** | **hr** | **5011.38** | 2497.6766 | |
| | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of (i+ii) | #VALUE! | | | #VALUE! | |
| | ii. Unskilled mazdoor for controlling slope | 1.00 | nos | 206.00 | 206.00 | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.25.4 | **Lead beyound 2 K.M but upto 3 K.M** | | | | | |
| | Average lead = | 2500 | Metre | | | |
| | Capacity of scraper 9.175 cum (12 cyd ) but actually loaded to 7.645 cum 9 10 cyd 0 for all practical purpose. | 7.645 | cum | | | |
| | Assuming speed of scraper as 8 km per hr | 8 | km/hr | | | |
| | For average condition ( Ref:- Back "construction planing, equipment and methods" by R.L >peurifey ) | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | | | | | |
| | (a). Loading time ut | 1.00 | minute | | | |
| | (b) Time of dumping and running | 0.50 | minutes | | | |
| | (c ). Time for accelerating and decelerating | 0.40 | minutes | | | |
| | Total time=(a+b+c) | 1.90 | minutes | | | |
| | Operating efficiency of scraper | 0.83 | | | | |
| | No of trip per hour = 1000x8xefficiency / average leadx2 | 1.33 | Trips | | | |
| | Loading and unloading time =Tripsx total time | 2.52 | minutes | | | |
| | Total time taken by scraper in 10.21 trip=1 per 19.41 minutes | 1.04 | hr | | | |
| | Eart work involved per day= Actu.capacityx no of tripsx 8 hr/Total time taken by scraper in no of trips | **77.94** | **cum** | | | |
| | Time taken by dozer per day @ 2.5 minutes per 1.04 hr | 0.32 | hr | | | |
| | **(I). Cost of 8 hour of scraper ( vide Item no3.23a )** | **8** | **hr** | **#VALUE!** | #VALUE! | |
| | **(ii). Cost of 0.32 hour of dozer ( vide Item no 3.11a)** | **0.32** | **hr** | **5011.38** | 1603.05 | |
| | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of (i+ii) | #VALUE! | | | #VALUE! | |
| | ii. Unskilled mazdoor for controlling slope | 1 | nos | 206.00 | 206.00 | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add 1% cess | | | | #VALUE! | #VALUE! |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.26 | Labour for initial Rolling and compacting the ground before forming the embankment with **power road roller** at O.M.C to achieve minimum 95 % of dry density including sprinking the required quanting of water, making arrangement for supply and carriage of water with all leads and lifts, finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine and other tools and plants etc. all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Sqm | | | | | |
| | Assuming out put=93 Sqm | | | | | |
| | Unskiiled mazdoor | 0.2 | nos | 206.00 | 41.20 | |
| | Bhisti for carriage of water and sprikling | 1 | nos | 207.00 | 207.00 | |
| | Cost of water | | | | 15.00 | |
| | **Hire charge of Roller (Vide item no3.16a )** | | | | | |
| | Assuming 2300 sqm. to be rolled in 8 hrs | 0.32 | hrs | **644.00** | 206.08 | |
| | | | | | 469.28 | |
| | Add Overhead charge & C.P@15% | | | | 70.39 | |
| | | | | | 539.67 | |
| | Add 1% cess | | | | 5.40 | |
| | | | | | 545.07 | 58.61 |
| | | | Say Rs | **58.60** | Per 10 $M^2$ | |
| 7.1.27 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C. by **sheep foot roller** driven by tractor to achieve minimum **95 %** of maximum dry density including sprinking the required quanting of **water by tanker within 1 km. lead** and all lifts including cost of water, finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=100 Cum Fill | | | | | |
| | (A). Watering for compaction | | | | | |
| | Assuming additional moisture required 7 % including 1 % loss. Quantity of water reqwired = 100 x 62.5x 35.3x7/10x100 =1544.38 gal for 100 cum fill | 1544.38 | Gal for 100 cm fill | | | |
| | One Imp gail = 10 lbs | 10 | lbs | | | |
| | Bound trip time for 8000 gail tankar | | | | | |
| | Filling time + hauling (1 km ) 16 km / hr+ Return @ 24 kmh | | | | | |
| | Sprinkling at 500 gpm+ lost time=16+3.75+2.5-16+6=44.25 mts. | 44.25 | mts | | | |
| | Quantity hauled per hour ( 50 mts )= 50 x 8000/44.25=90.40 gallon | 9040 | gallon | | | |
| | **Use Rate of tanker (vide item 3.29b )** | **632.00** | | | | |
| | Cost of water | **1.11** | Per gallon | | | |
| | Rate per 100 cum fill=1544.38x Use rate of tanker/9040 gallom+cost of water per gallonx1544.38 | | | | 1823.84 | |
| | (B). Hire charge of **sheep foot** roller for 100 cum | | | | | |
| | Assuming 1450 cum to be rolled in 8 hrs **(Vide item no 3.16 d )** | 0.55 | hrs | **#VALUE!** | #VALUE! | |
| | | | | | #VALUE! | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.28 | Labour for Rolling and compacting the earth in layers of 225 mm thicl at O.M.C. by **road roller** to achieve minimum **95 %** of maximum dry density including sprinking the required quanting of **water by tanker within 1 km. lead** and all lifts including cost of water, finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=100 Cum | | | | | |
| | (A). Watering for compaction | | | | | |
| | Assuming additional moisture required 7 % including 1 % loss. Quantity of water reqwired = 100 x 62.5x 35.3x7/10x100 =1544.38 gal for 100 cum fill | 1544.38 | for 100 cm fill | | | |
| | One Imp gail = 10 lbs | | | | | |
| | capacity of tanker | 8000 | gallon | | | |
| | Bound trip time for 8000 gal tankar = | | | | | |
| | Filling time | 16 | mts | | | |
| | Hauling (1 km ) 16 km / hr | 3.75 | mts | | | |
| | Returning Time @ 24 kmh | 2.5 | mts | | | |
| | Sprinkling Time at 500 gpm | 16 | mts | | | |
| | lost time | 6 | mts | | | |
| | Total time | 44.25 | mts | | | |
| | Quantity hauled per hour ( 50 mts )= 50 x 8000/44.25=9040 gallon | 9040 | gallon | | | |
| | **Use Rate of tanker (vide item 3.29b )** | **632.00** | | | | |
| | Cost of water | **1.11** | Per gallon | | | |
| | Rate per 100 cum fill=1544.38x Use rate of tanker/9040 gallom+cost of water per gallonx1544.38 | | | | 1823.85 | |
| | (B). Hire charge of **Road roller** for 100 cum | | | | | |
| | Assuming 566 cum to be rolled in 8 hrs (**Vide item no3.16a** ) | 1.41 | hrs | **644.00** | 910.25 | |
| | | | | | 2734.09 | |
| | Add Overhead charge & C.P@15% | | | | 410.11 | |
| | | | | | 3144.21 | |
| | Add 1% cess | | | | 31.44 | |
| | | | | | 3175.65 | 31.76 |
| | | | Say Rs | **31.80** | Per $M^3$ | |
| 7.1.29 | Labour for Rolling and compacting the earth in layers of 225 mm thicl at O.M.C. by **sheep foot roller** driven by tractor to achieve minimum **90 %** of maximum dry density including sprinking the required quanting of **water by tanker within 1 km. lead** and all lifts including cost of water, finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=100 Cum fill | | | | | |
| | (A). Watering for compaction | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Assuming additional moisture required 7 % including 1 % loss. Quantity of water reqwired = 100 x 62.5x 35.3x7/10x100 =1544.38 gal for 100 cum fill | 1544.38 | for 100 cm fill | | | |
| | One Imp gail = 10 lbs | | | | | |
| | capacity of tanker | 8000 | gallon | | | |
| | Bound trip time for 8000 gal tankar = | | | | | |
| | Filling time | 16 | mts | | | |
| | Hauling (1 km ) 16 km / hr | 3.75 | mts | | | |
| | Returning Time @ 24 kmh | 2.5 | mts | | | |
| | Sprinkling Timeat 500 gpm | 16 | mts | | | |
| | lost time | 6 | mts | | | |
| | Total time | 44.25 | mts | | | |
| | Quantity hauled per hour ( 50 mts )= 50 x 8000/44.25=9040 gallon | 9040 | gallon | | | |
| | **Use Rate of tanker (vide item 3.29b )** | **632.00** | | | | |
| | Cost of water = Rs 500 / gallon | 1.11 | Per gallon | | | |
| | Rate per 100 cum fill=1544.38x Use rate of tanker/9040 gallom+cost of water per gallonx1544.38 | | | | 1823.85 | |
| | (B). Hire charge of **sheep foot roller** for 100 cum | | | | | |
| | Assuming 1755 cum to be rolled in 8 hrs **(Vide item no 3.16 d )** | 0.46 | hrs | **#VALUE!** | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.30 | Labour for Rolling and compacting the earth in layers of 225 mm thicl at O.M.C. by **road roller** to achieve minimum **90 %** of maximum dry density including sprinking the required quanting of water **by tanker within 1 km. lead and** all lifts including cost of water, finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=100 Cum fill | | | | | |
| | (A). Watering for compaction | | | | | |
| | Assuming additional moisture required 7 % including 1 % loss. Quantity of water reqwired = 100 x 62.5x 35.3x7/10x100 =1544.38 gal for 100 cum fill | 1544.38 | for 100 cm fill | | | |
| | One Imp gail = 10 lbs | | | | | |
| | capacity of tanker | 8000 | gallon | | | |
| | Bound trip time for 8000 gal tankar = | | | | | |
| | Filling time | 16 | mts | | | |
| | Hauling (1 km ) 16 km / hr | 3.75 | mts | | | |
| | Returning Time @ 24 kmh | 2.5 | mts | | | |
| | Sprinkling Timeat 500 gpm | 16 | mts | | | |
| | lost time | 6 | mts | | | |
| | Total time | 44.25 | mts | | | |
| | Quantity hauled per hour ( 50 mts )= 50 x 8000/44.25=9040 gallon | 9039.55 | gallon | | | |
| | **Use Rate of tanker (vide item 3.29b )** | **632.00** | | | | |
| | Cost of water = Rs 500 / gallon | 1.11 | Per gallon | | | |
| | Rate per 100 cum fill=1544.38x Use rate of tanker/9040 gallom+cost of water per gallonx1544.38 | | | | 1823.85 | |
| | (B). Hire charge of **Road roller** for 100 cum | | | | | |
| | Assuming 623 cum to be rolled in 8 hrs **(Vide item no 4.16a )** | 1.28 | hrs | **644.00** | 824.32 | |
| | | | | | 2648.17 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Add Overhead charge & C.P@15% | | | | 397.23 | |
| | | | | | 3045.39 | |
| | Add 1% cess | | | | 30.45 | |
| | | | | | 3075.85 | 30.76 |
| | | | Say Rs | **30.80** | Per $M^3$ | |
| 7.1.31 | Labour for Rolling and compacting the earth in layers of 225 mm thick at O.M.C by **sheep foot roller** driven by tractor to achieve minmum 95 % of dry density including sprinking the required quanting of water making arragement for supply and carriage of water with all leads and lifts, finishing the surfaceas plan and drawing including hire charge of compaction, machine and other tools and plants etc. for lined canal all complete as per specifications and direction of E/I. ( mode of measurement-sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Bhisti for carriage of water and sprikling | 3 | nos | 207.00 | 621.00 | |
| | Cost of water | | | | 15.00 | |
| | **Hire charge of seep foot roller assuming 1450 cum to be rolled in 8 hr (vide item no 4.16 d)** | 0.16 | hr | **#VALUE!** | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | 1 | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | Say | Rs | #VALUE! | Per $M^3$ | |
| 7.1.32 | Labour for Rolling and compacting the earth in layers of 225 mm thicl at O.M.C. by **road roller** to achieve minimum **95 %** of maximum dry density including sprinking the required quanting of water making arrangement for supply and carriage of water with all leads and lift finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Bhisti for carriage of water and sprikling | 3.0 | nos | 207.00 | 621.00 | |
| | Cost of water | | | | 15.00 | |
| | (B). Hire charge of **road roller** for 100 cum | | | | | |
| | Assuming 566 cum to be rolled in 8 hrs **(Vide item no 4.16a )** | 0.40 | hrs | **644.00** | 257.78 | |
| | | | | | 893.78 | |
| | Add Overhead charge & C.P@15% | | | | 134.07 | |
| | | | | | 1027.85 | |
| | Add 1% cess | | | | 10.28 | |
| | | | | | 1038.13 | 36.66 |
| | | | Say Rs | **36.70** | Per $M^3$ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.1.33 | Labour for Rolling and compacting the earth in layers of 225 mm thicl at O.M.C. by **sheep foot roller driven by tractor** to achieve minimum **90 %** of maximum dry density including sprinking the required quanting of water making arrangement for supply and carriage of water with all leads and lift finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Bhisti for carriage of water and sprikling | 3.0 | nos | 207.00 | 621.00 | |
| | Cost of water | | | | 15.00 | |
| | (B). Hire charge of **sheep foot roller** for 100 cum | | | | | |
| | Assuming **1755** cum to be rolled in 8 hrs **(Vide item no 4.16 d)** | 0.13 | hrs | **#VALUE!** | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.34 | Labour for Rolling and compacting the earth in layers of 225 mm thicl at O.M.C. by **road roller** to achieve minimum **90 %** of maximum dry density including sprinking the required quanting of water making arrangement for supply and carriage of water with all leads and lift finishing the surface with proper grade, camber or superelevation including, hire charges of compaction machine tanker and other tools and plants etc. all complete as per specifications and direction of E/I. .( Mode of measurement - Sectional measurement of compacted earth ) | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| | Bhisti for carriage of water and sprikling | 3.0 | nos | 207.00 | 621.00 | |
| | Cost of water | | | | 15.00 | |
| | (B). Hire charge of **road roller** for 100 cum | | | | | |
| | Assuming 623 cum to be rolled in 8 hrs **(Vide item no 4.16a)** | 0.36 | hrs | **644.00** | 231.84 | |
| | | | | | 867.84 | |
| | Add Overhead charge & C.P@15% | | | | 130.18 | |
| | | | | | 998.02 | |
| | Add 1% cess | | | | 9.98 | |
| | | | | | 1008.00 | 35.59 |
| | | | Say Rs | **35.60** | Per $M^3$ | |
| 7.1.35 | Close timbering in trenches including shuttering, shoring and packing cavities ( wherever required ) depth not exceeding 1.5 metre all complete as per specifications and direction of E/I. ( Measurement to be taken of the face area timbered ) | | | | | |
| | Unit:-Per Sqm | | | | | |
| | Assuming out put=90 Sqm | | | | | |
| | **Assuming trench 30 metre long 1.5 metre deep** | | | | | |
| | Area=2x30x1.5= 90 sqm. | | | | | |
| | **Piling boards** | | | | | |
| | Local wood 90x0.038 | 3.42 | cum | 33253.00 | 113725.26 | |
| | **Walings 100 mm x 100 mm** | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Local wood4 x30 x0.1 x0.1 | 1.2 | cum | 33253.00 | 39903.60 | |
| | **Ball struts** | | | | | |
| | Sal ballah (125 mm dia 1.5 metre long ) | | | | | |
| | 2 x17 x 1.5 | 51 | metre | 30.30 | 1545.30 | |
| | **Carriage** | | | | | |
| | Cost of carriage of material including loading, unloading and stacking 1 % of total cot of materials | | | | 1551.74 | |
| | | | | | 156725.90 | A |
| | Deduct credit for materials 75 % of the cost of materials. This can be used four times (Ax0.75) | | | (-) | 117544.43 | |
| | | | | | 39181.48 | B |
| | Therefore cost of use =B/4 | | | | 9795.37 | |
| | **Labour** | | | | | |
| | Carpenter Gr II | 0.5 | nos | 249.00 | 124.50 | |
| | Unskilled mazdoor | 1 | nos | 206.00 | 206.00 | |
| | | | | | 10125.87 | |
| | Add Overhead charge & C.P@15% | | | | 1518.88 | |
| | | | | | 11644.75 | |
| | Add 1% cess | | | | 116.45 | |
| | | | | | 11761.20 | 130.68 |
| | | | Say Rs | **130.70** | Per $M^2$ | |
| 7.1.36 | Close timbering in trenches including shuttering, shoring and packing cavities ( wherever required ) depth not exceeding 1.5 metre but upto 3.0 metre all complete as per specifications and direction of E/I. ( Measurement to be taken of the face area timbered ) | | | | | |
| | Unit:-Per Sqm | | | | | |
| | Assuming out put=90 Sqm | | | | | |
| | **Assuming trench 30 metre long 1.5 metre deep** | | | | | |
| | Area=2x30x1.5= 90 sqm. | | | | | |
| | **Piling boards** | | | | | |
| | Local wood 90x0.038 | 3.42 | cum | 33253.00 | 113725.26 | |
| | **Walings 100 mm x 100 mm** | | | | | |
| | Local wood4 x30 x0.1 x0.1 | 1.2 | cum | 33253.00 | 39903.60 | |
| | **Ball struts** | | | | | |
| | Sal ballah (125 mm dia 1.5 metre long ) | | | | | |
| | 2 x17 x 1.5 | 51 | metre | 30.30 | 1545.30 | |
| | **Carriage** | | | | | |
| | Cost of carriage of material including loading, unloading and stacking 1 % of total cot of materials | | | | 1551.74 | |
| | | | | | 156725.90 | A |
| | Deduct credit for materials 75 % of the cost of materials. This can be used four times | | | (-) | 117544.43 | |
| | | | | | 39181.48 | B |
| | Therefore cost of use =B/4 | | | | 9795.37 | |
| | **Labour** | | | | | |
| | Carpenter Gr II | 0.75 | nos | 249.00 | 186.75 | |
| | Unskilled mazdoor | 2 | nos | 206.00 | 412.00 | |
| | | | | | 10394.12 | |
| | Add Overhead charge & C.P@15% | | | | 1559.12 | |
| | | | | | 11953.24 | |
| | Add 1% cess | | | | 119.53 | |
| | | | | | 12072.77 | 134.14 |
| | | | Say Rs | **134.10** | Per $M^2$ | |
| 7.1.37 | Supply and laying 300 mm thick humous earth layer on slopes of dam with manual compaction and turfing the surface with approved dub grass with 1 k.m lead including watering and ramming till growth of grass all complete as per specifications and direction of | | | | | |
| | Unit:-Per Sqm | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Assuming out put=100 Sqm | | | | | |
| | Unskilled mazdoor for cutting humous earth and dub grass | 6 | nos | 206.00 | 1236.00 | |
| | Unskilled mazdoor for carrying earth to drm slope and laying in layers | 8 | nos | 206.00 | 1648.00 | |
| | Carriage of earth by truck with 1 km lead | 28.32 | cum | #NAME? | #NAME? | |
| | Unskilled mazdoor for ramming for proper consolidation | 2 | nos | 206.00 | 412.00 | |
| | Unskilled mazdoor for watering the surface including carriage of water | 1 | nos | 206.00 | 206.00 | |
| | Unskilled mazdoor for or carriage of grass sides on slope | 2 | nos | 206.00 | 412.00 | |
| | Unskilled mazdoor for watering the planted grass till gramination | 2 | nos | 206.00 | 412.00 | |
| | Mate | 0.5 | nos | 225.00 | 112.50 | |
| | | | | | #NAME? | |
| | Add Overhead charge & C.P@15% | | | | #NAME? | |
| | | | | | #NAME? | |
| | Add 1% cess | | | | #NAME? | |
| | | | | | #NAME? | #NAME? |
| | | | Say Rs | #NAME? | Per $M^2$ | |
| 7.1.38 | Trimming an dressing the side slope of dam to proper section with all lead and lifts as per drawing, specifications and direction of E/I. | | | | | |
| | Unit:-Per Sqm | | | | | |
| | Assuming out put=100 Sqm | | | | | |
| | Mason Gr II | 0.25 | nos | 249.00 | 62.25 | |
| | Unskilled mazdoor for cutting slope | 4 | nos | 206.00 | 824.00 | |
| | Unskilled mazdoor for carrying the spoils | 4 | nos | 206.00 | 824.00 | |
| | Unskilled mazdoor for dressing the slope | 1 | nos | 206.00 | 206.00 | |
| | Mate | 0.25 | nos | 225.00 | 56.25 | |
| | | | | | 1972.50 | |
| | Add Overhead charge & C.P@15% | | | | 295.875 | |
| | | | | | 2268.38 | |
| | Add 1% cess | | | | 22.68 | |
| | | | | | 2291.06 | 22.91 |
| | | | Say Rs | **22.90** | Per $M^2$ | |
| 7.1.39 | Earth work in foundation excavation as per designed section in ordinary or soft rock ( vide classification of soil item C ) by **shovel** and its disposal upto 1 k.m by **dumper** with all lift including construction and mainttenance of haul roads, all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=1.0 Cum | | | | | |
| | Assuming Per cum | | | | | |
| | Average lead = | 500 | Metre | | | |
| | Diesel Shovel capacity | 2 | cum | | | |
| | Ideal production per hour=196 cum ( Bank volume ) | 196 | cum | | | |
| | Taking depth of cut and angle of swing factor =0.88 | 0.88 | | | | |
| | Production per hour=Ideal production per hour X depth of cut and angle of swing factor | 172.48 | cum | | | |
| | Taking efficiency factor | 0.88 | | | | |
| | Job management factor | 0.69 | | | | |
| | Out put of shovel per hour=Production per hr x efficiency factor x Job management factor | 104.73 | cum | | | |
| | Say | 100 | cum | | | |
| A.. | Machinery charges | | | | | |
| | **I. D-9 tractor dozer** | | | | | |
| | Assuming that one Dozer will work one shovel out put of Tracter Dozer output of shovelper working hour = | 100 | cum | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Use rate per working hour (vide item 3.11b )** | #VALUE! | | | | |
| | Rate per Cum= Use rate / out put | | | | #VALUE! | |
| | **ii.Shovel** | | | | | |
| | **Use rate per working hour (vide item 3.10a )** | #VALUE! | | | | |
| | Out put per working hour = | 100 | cum | | | |
| | Rate per Cum= Use rate of shovel / out put | | | | #VALUE! | |
| | **iii.Dumper 15 M.T** | | | | | |
| | Average lead | 500 | M | | | |
| | Swell factor | 0.67 | | | | |
| | Capacity | 8.33 | | | | |
| | Body capicity= capacity x Swell factor | 5.58 | mpacted volume ) | | | |
| | Handling Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / shovel out put | 3.35 | minute | | | |
| | (b) spolting time= | 0.30 | minutes | | | |
| | (c ). Turning and dumping time | 2.00 | minutes | | | |
| | (d). Empty haul @ 25 K.M per hour =Average Leadx60/25x1000 | 1.2 | minutes | | | |
| | (e). Loaded haul @20 K.M per hour =Average Leadx60/20x1000 | 1.5 | minutes | | | |
| | Total hauling cycle time=(a+b+c+d+e) | 8.35 | minutes | | | |
| | No of dumper trip per working hour of 50 minute = 50 / Total hauling time | 5.99 | Trips | | | |
| | Material carried=TripsxDumper capaicty = | 33.43 | Cum | | | |
| | **Hourly use rate of Dumper (Vide item no 4.12c )** | #VALUE! | | | | |
| | Rate per cum=Use rate of Dumper/ Material carried | | | | #VALUE! | |
| | Total Machinary charges (i+ii+iii) | | | | #VALUE! | A |
| B. | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | | | | #VALUE! | B |
| | Total(A+B) | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | % | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |

7.1.40 Earth work in foundation excavation as per designed section in hard rock where blasting is needed and disposal of excavated rock with the combination of machines shovel, Dumper and Tractor - Dozer within one k.m with all lift including stacking properly in approved stack yard as well as construction and mainttenance of haul roads, all complete as per specifications and direction of E/I.

Unit:-Per Cum
Assuming out put=100 Cum

**A.** Drilling and blasting

(a). Drilling charges

Rock drilling for excavation will be carried out br jack hammers on the basis of the following table(Construction, planing, equipment and methods by R.L.Peurify page 259) Considering 1 ft hole sufficient for blasting 0.92 cu.yd (0.92 cum ) of rock.

**(Ref.Report of committee on cost control of River vally projects voi II. Jan. 1981 )**

| Size of hole in mm | Hole patter meter | Area per hole cum | Quantity of rock per linear m. of hole cum | Kg. Of explosives per linear m. of hole | Kg of esplosive per cum of rock @ of hole filled | | |
|---|---|---|---|---|---|---|---|
| | | | | | 100% | 75% | 50% |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 38 | 1.52x1.52 | 2.31 | 2.31 | 1.34 | 0.58 | 0.43 | 0.28 |

| | | |
|---|---|---|
| Depth of drilling per 100 cum of rock=100/2.31=43.29 m | 43.29 | mtr |
| Horizontal drilling and pull effect @ 50 % | 21.65 | mtr |
| Total drilling per 100 cum of rock | 64.94 | mtr |
| Say | 65.00 | mtr |
| Cost of drilling | | |
| Rate of drilling per hour 2.3 m | 2.3 | mtr |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hourly use rate (vide item 3.19)** | 436.00 | | | 12321.74 | |
| | **Cost of compracssed air**= Total drilling per 100 cum of rockx hourly use rate (vide item 4.19)/rate of drilling per hour | | | | | |
| | **Hourly use rate (vide item 3.2)** | 844.00 | | | | |
| | **Cost of drilling by jack hammer**=Total drilling per 100 cum of rockx hourly use rate (vide item 4.2)/rate of drilling per hour | | | | 23852.17 | |
| **B.** | **Use rate of drilling steel per mt ( Vide item no 4.2 a)** | #VALUE! | | | | |
| | Cost of drill steel 65 m | 65 | mtr | | #VALUE! | |
| **C.** | Blasting materials including excise, sales tax. Carriage from Gomia to worksite, storage etc. | | | | | |
| | (I). Cost of Gelatine | | | | | |
| | Assuming that the drill holes can be filled with dynamite upto 75 % of thick capacity. The quantity of explosive required per 100 cum of rock=0.43x100 | 43 | Kg | | | |
| | Cost of Gelatine | 43 | Kg | 928.10 | 39908.30 | |
| | (ii). Cost of Detonators | | | | | |
| | Average depth of hole | 1.75 | mtr | | | |
| | Quantity of rock per linear metre of hole | 2.31 | mtr | | | |
| | Quantity of rock per 1.75 m deep hole= | 4.04 | | | | |
| | No of holes per 100 cum= | 24.74 | | | | |
| | Say | 25 | | | | |
| | Using one detenator per hole | | | | | |
| | Nos of detonators per 100 cum | 25 | nos | 6.52 | 162.98 | |
| | (iii). Blasting batteries, primer, primac rod and loading wire etc. per 100 cum @ 50 % of the cost of detonators | | | | 81.49 | |
| | (iv). Stemming @ 40 % of the cost of detonators | | | | 65.19 | |
| | Total (A+B+C) | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | Rate per cum | | | | #VALUE! | |
| | **Carriage of blasted rock upto 1 km.lead (vide item no 7.1.39)** | | | | Input | |
| | | | | | #VALUE! | |
| | | | Say Rs | #REF! | Per $M^3$ | |
| 7.1.41 | Earth work in foundation excavation as per designed section in sand and slushes soil in river bed and disposal of the same upto 1/2 k.m with the combination of machines Dragline Dumper and Tractor - Dozer complete job including construction and mainttenance of haul roads, all complete as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=1.0 Cum | | | | | |
| | Average lead = | 250 | Metre | | | |
| | Tata P and H , Dragline capacity | 2 | cum | | | |
| | Net output of Dragline/hr | 115 | cum | | | |
| | Dumper 15 M.T | 15 | M.T | | | |
| | Capacity 8.33 cum | 8.33 | cum | | | |
| | Swell factor= 0.75 | 0.75 | | | | |
| (A). | Machinery charges | | | | | |
| | **I. Use rate of Dragline/hr ( Vide item 3.37a )** | 1722.60 | | | | |
| | Rate Per cum=Use rate / out put | 14.98 | **a** | | | |
| | **ii.Dumper 15 T** | | | | | |
| | Average lead | 250 | M | | | |
| | Body capicity= capacity x Swell factor | 6.25 | (Bank volume ) | | | |
| | Handling Cycle time---- | | | | | |
| | (a). Loading time per minute= Body capacity / Dragline out put/minutes | 3.26 | minute | | | |
| | (b) spolting time= | 0.30 | minutes | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (c ). Turning and dumping time | 2.00 | minutes | | | |
| | (d). Empty haul @ 15 K.M per hour =Average Leadx60/15x1000 | 1 | minutes | | | |
| | (e). Loaded haul @10 K.M per hour =Average Leadx60/10x1000 | 1.5 | minutes | | | |
| | Total hauling cycle time=(a+b+c+d+e) | 8.06 | minutes | | | |
| | No of dumper trip per working hour of 50 minute = 50 / Total hauling time | 6.20 | Trips | | | |
| | Material carried=TripsxDumper capaicty = | 38.76 | Cum | | | |
| | **Hourly use rate of Dumper (Vide item no 3.12c )** | **#VALUE!** | | | | |
| | Rate per cum=Use rate of Dumper/ Material carried | #VALUE! | **b** | | | |
| | **(iii). D- 8 Tractor Dozer** | | | | | |
| | Assuming that one Dozer will work with one Draglines | | | | | |
| | Therefore out put of D-8 Tractor Dozer = | 230 | cum | | | |
| | **Use Rate of D-8 Tractor Dozer (vide item 3.11a )** | **5011.38** | | | | |
| | Rate per cum of D-8=Use rate of / Out put | 21.79 | **c** | | | |
| | | | | | | |
| | Total Machinary charges (a+b+c) | #VALUE! | | | #VALUE! | |
| B | Add for | | | | | |
| | I. Constuction and maintenance of haul road @ 5 % of machinery charges | #VALUE! | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add Overhead charge & C.P@15% | | | | #VALUE! | |
| | | | | | #VALUE! | |
| | Add 1% cess | | | | #VALUE! | |
| | | | | | #VALUE! | #VALUE! |
| | | | Say Rs | #VALUE! | Per $M^3$ | |
| 7.1.42 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond initial lead of 150 mtr but within 1.00 K.M and all lifts by Tipper and loading by Front end loader,including unloading and maintenance of haul roads as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| **A.** | **Labour** | | | | | |
| | Unskilled mazdoor for dagbelling | 0.50 | nos | 206.00 | 103.00 | |
| | Unskilled mazdoor for for cutting earth as well as removing organic materials etc. | 6 | nos | 206.00 | 1236.00 | |
| | Unskilled mazdoor for preparation of sheet | 1 | nos | 206.00 | 206.00 | |
| | Mate | 0.25 | nos | 225.00 | 56.25 | |
| | | | | | 1601.25 | |
| | Add Overhead charge & C.P@15% | | | | 240.1875 | |
| | | | | | 1841.44 | 65.02 |
| **B.** | **Carriage of earth by 5.5 cum capacity Tipper** | | | | | |
| | Taking output = 1 cum.km | | | | | |
| | Loading of earth by Front end loader (Vide item no 4.1) | 1 | cum | 142.20 | 142.20 | |
| | Cost of Haulage vide item no 4.4( c) | 1 | cum.km | 30.60 | 30.60 | **Lead x $H_{ka}$** |
| | | | | | 172.80 | 172.80 |
| | | | | | | 237.82 |
| | Add 1% cess | | | | | 2.38 |
| | | | | | | 240.20 |
| | Say Rs | | | **240.20** | Per $M^3$ | |
| 7.1.43 | Earth work in stripping in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same along with all organic materials in country side beyond 1.00 K.M but up to 2 K.M away with all lifts by Tipper and loading by Front end loader,including unloading and maintenance of haul roads as per specifications and direction of E/I. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Unskilled mazdoor for dagbelling | 0.50 | nos | 206.00 | 103.00 | |
| | Unskilled mazdoor for for cutting earth as well as removing organic materials etc. | 6 | nos | 206.00 | 1236.00 | |
| | Unskilled mazdoor for preparation of sheet | 1 | nos | 206.00 | 206.00 | |
| | Mate | 0.25 | nos | 225.00 | 56.25 | |
| | | | | | 1601.25 | |
| | Add Overhead charge & C.P@15% | | | | 240.1875 | |
| | | | | | 1841.44 | 65.02 |
| B. | Carriage of earth by 5.5 cum capacity Tipper | | | | | |
| | Taking output = 1 cum.km | | | | | |
| | Loading of earth by Front end loader (Vide item no 4.1) | 1 | cum | 142.20 | 142.20 | |
| | Cost of Haulage vide item no 4.4( c) | 1 | cum.km | 61.20 | 61.20 | **Lead x $H_{ka}$** |
| | | | | | 203.40 | 203.40 |
| | | | | | | 268.42 |
| | Add 1% cess | | | | | 2.68 |
| | | | | | | 271.11 |
| | Say Rs | | | **271.10** | Per $M^3$ | |
| 7.1.44 | Earth work in excavation of cut -off trenches as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 mtr but up to1 K.M away with all lifts by Tipper and loading by Front end loader,including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | | | | | |
| | Unit:-Per Cum | | | | | |
| | Assuming out put=28.32 Cum | | | | | |
| A. | **Labour** | | | | | |
| | Unskilled mazdoor for cutting earth | 7.00 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for profilling dressing and making edge straight | 1.00 | nos | 206.00 | 206.00 | |
| | Mason Gr I | 0.25 | nos | 279.00 | 69.75 | |
| | | | | | 1717.75 | |
| | Add Overhead charge & C.P@15% | | | | 257.6625 | |
| | | | | | 1975.41 | 69.75 |
| B. | **Carriage of earth by 5.5 cum capacity Tipper and loading by front end loader** | | | | | |
| | Taking output = 1 cum.km | | | | | |
| | Loading of earth by Front end loader (Vide item no 4.1) | 1 | cum | 142.20 | 142.20 | |
| | Cost of Haulage vide item no 4.4( c) | 1 | cum.km | 30.60 | 30.60 | **Lead x $H_{ka}$** |
| | | | | | 172.80 | 172.80 |
| | Rate (A+B) | | | | | 242.55 |
| | Add 1% cess | | | | | 2.43 |
| | | | | | | 244.98 |
| | | | | **245.00** | Per $M^3$ | |
| 7.1.45.1* | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil beyond 150 mtr from the Toe of the dam but within 1 k.m with all lifts by Tipper and loading by Front end loader,including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by conccerned Chief Engineer ) | | | | | |
| | Assuming 10cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 4.00 | nos | 206.00 | 824.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.33 | nos | 347.00 | 114.51 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |
| | Special Gelatin | 2.00 | Kg | 928.10 | 1856.20 | |
| | Detonator | 10 | nos | 6.52 | 63.14 | |
| | Fuse coil | 1 | nos | 15.61 | 15.61 | |
| | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 15.00 | |
| | | | | | 3585.53 | |
| | Add Overhead charge & C.P@15% | | | | 537.83 | |
| | | | | | 4123.36 | 412.34 |
| B. | **Carriage of earth by 5.5 cum capacity Tipper and loading by front end loader** | | | | | |
| | Taking output = 1 cum.km | | | | | |
| | Loading of earth by Front end loader (Vide item no 4.1) | 1 | cum | 142.20 | 142.20 | |
| | Cost of Haulage vide item no 4.4( c) | 1 | cum.km | 30.60 | 30.60 | **Lead x $H_{ka}$** |
| | | | | | 172.80 | 172.80 |
| | Rate (A+B) | | | | | 585.14 |
| | Add 1% cess | | | | | 5.85 |
| | | | | | | 590.99 |
| | | Say Rs | | **591.00** | Per $M^3$ | |
| 7.1.45.2 | Earth work in excavation of cut -off trenches as per designed section in soft rock or ordinary rock, ( Where blasting is not required ) ( vide classification of soil item C ) with disposal of soil beyond 150 mtr from the Toe of the dam but within 1 k.m with all lifts by Tipper and loading by Front end loader,including unloading, construction and maintenance of haul roads as per specifications and direction of E/I | | | | | |
| | Assuming 10cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 4.00 | nos | 206.00 | 824.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | | | | | 1724.47 | |
| | Add Overhead charge & C.P@15% | | | | 258.67 | |
| | | | | | 1983.14 | 198.31 |
| B. | **Carriage of earth by 5.5 cum capacity Tipper and loading by front end loader** | | | | | |
| | Taking output = 1 cum.km | | | | | |
| | Loading of earth by Front end loader (Vide item no 4.1) | 1 | cum | 142.20 | 142.20 | |
| | Cost of Haulage vide item no 4.4(c ) | 1 | cum.km | 30.60 | 30.60 | **Lead x $H_{ka}$** |
| | | | | | 172.80 | 172.80 |
| | Rate (A+B) | | | | | 371.11 |
| | Add 1% cess | | | | | 3.71 |
| | | | | | | 374.83 |
| | | Say Rs | | **374.80** | Per $M^3$ | |
| 7.1.46 | Earth work in excavation of cut -off trenches as per designed section in hard rock and stacking properly in approved stack size in approved stack yard beyond initial lead of 150 mtr but upto 1 k.m in country side with all lifts by Tipper and loading by Front end loader,including unloading, stacking properly in approved stack yards,construction and maintenance of haul roads as per specifications and | | | | | |
| | Taking out put=10 Cum | | | | | |
| A. | **For Excavation** | | | | | |
| | Hammer man | 10.50 | nos | 220.00 | 2310.00 | |
| | Unskilled mazdoor for all work | 10.00 | nos | 206.00 | 2060.00 | |
| | Mason Gr I | 0.33 | nos | 279.00 | 92.07 | |
| | Blaster | 0.67 | nos | 347.00 | 232.49 | |
| | **Blasting material including excise, sales tax, carriage from Gomia to work site, storage etc.** | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Special Gelatin | 2.75 | Kg | 928.10 | 2552.28 | |
| | Detonator | 18 | nos | 6.52 | 117.34 | |
| | Fuse coil | 3 | nos | 15.61 | 46.83 | |
| | **Tools and Plants** | | | | | |
| | Cost of hire charge of compressor, drilling equpment and other accessories | | | | 26.50 | |
| | | | | | 7437.51 | |
| | Add Overhead charge & C.P@15% | | | | 1115.63 | |
| | | | | | 8553.13 | 855.31 |
| B. | **Carriage of earth by 5.5 cum capacity Tipper and loading by front end loader** | | | | | |
| | Taking output = 1 cum.km | | | | | |
| | Loading of earth by Front end loader (Vide item no 4.1) | 1 | cum | 142.20 | 142.20 | |
| | Cost of Haulage vide item no 4.4(c ) | 1 | cum.km | 30.60 | 30.60 | **Lead x $H_{ka}$** |
| | | | | | 172.80 | 172.80 |
| | Rate (A+B) | | | | | 1028.11 |
| | Add 1% cess | | | | | 10.28 |
| | | | | | | 1038.39 |
| | | Say Rs | | **1038.40** | Per $M^3$ | |
| 7.1.47 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in all kinds of soil including moorum soil, soil mixed with kanker, pebbles, and boulder upto 300 mm size and disposal of the same in country side beyond initial lead of 150 mtr but up to 1 K.M away with all lifts by Tipper and loading by Front end loader,including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. | | | | | |
| | Assuming 28.32 cum | | | | | |
| A. | **Labour** | | | | | |
| | Unskilled mazdoor for cutting foundation | 7.00 | nos | 206.00 | 1442.00 | |
| | Unskilled mazdoor for forming spoil | 1.00 | nos | 206.00 | 206.00 | |
| | Mason Gr I | 0.25 | nos | 279.00 | 69.75 | |
| | | | | | 1717.75 | |
| | Add Overhead charge & C.P@15% | | | | 257.66 | |
| | | | | | 1975.41 | 69.75 |
| B. | **Carriage of earth by 5.5 cum capacity Tipper and loading by front end loader** | | | | | |
| | Taking output = 1 cum.km | | | | | |
| | Loading of earth by Front end loader (Vide item no 4.1) | 1 | cum | 142.20 | 142.20 | |
| | Cost of Haulage vide item no 4.4(c ) | 1 | cum.km | 30.60 | 30.60 | **Lead x $H_{ka}$** |
| | | | | | 172.80 | 172.80 |
| | Rate (A+B) | | | | | 242.55 |
| | Add 1% cess | | | | | 2.43 |
| | | | | | | 244.98 |
| | | Say Rs | | **245.00** | Per $M^3$ | |
| 7.1.48.1 | Earth work in excavation of foundation trenches of toe wall, spillway, head regulators, outlets, intake wells etc as per designed section in soft rock or ordinary rock ( vide classification of soil item C ) disposal of soil beyond 150 mtr but upto 1 k.m away from toe of the dam with all lifts by Tipper and loading by Front end loader,including unloading, construction and maintenance of haul roads as per specifications and direction of E/I. ( Soft rock where blasting is required and approved by conccerned Chief Engineer ) | | | | | |
| | Assuming 10cum | | | | | |
| A. | **Labour** | | | | | |
| | Hammer man | 2.75 | nos | 220.00 | 605.00 | |
| | Unskilled mazdoor for all work | 4.00 | nos | 206.00 | 824.00 | |