|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Details estimate for the Construction of Sub mergible embankment in between km. 0.000 to km.56.949 = 3.879 km. & Drainage khal of Boro Haor (A) Hajir Khali Khal from km 0.08 to km 1.810 = 1.730 km( B) Karpasha khal form km. 0.093 to km 1.615 = 1.522 km. (C) Dampara khal from km 0.200 to km 3.600 = 3.400 ( D) Baniajang khal from km 0.206 to km 7.060 = 6.854 km (E) Suti Khal from km 0.00 to km 6.100 = 6.100km,(F) Degha Nadi from km.2400 to km.8.100 = 5.700km. & (G) Old Singua River from km.7.300 to km.18.160 = 10.860 km. = Total length = 36.166 km of Boro Haor Sub - Project in C/W Haor flood Management and Livelihood Improvement project Under Kishoreganj W.D Division, BWDB, Kishoreganj During the Financial year 2016-17& 2017-18 . Package No. BWDB/Kish/HFMLIP/PW-07.** | | | | |
| **Sl. No:** | **Item no & Code** | **Item Description** |  | **Qnty** |
|  | **A) Submergible Embankment** | |  |  |
| 1 | 16-100 | Erection of bamboo profile with full bamboo posts and pegs not less than 60mm in diameter and coir strings etc. complete as per direction of Engineer in charge. | Erection of Profile Length= 3879 m  Nos of profile = 3879÷50+6  = **84 nos** | **84.00**  **nos** |
| 2 | Approved analysis rate | Preparation and mobilization of the Site for Construction of Submersible Embankment or other Structural Components in c/w "Haor Flood Management and Livelihood Improved Improvement Project(BWDB Part) as per Technical Specifications, including land lease, rental charges, obtaining permissions for work, developing work area, preparation of platform for temporary semi pucca site office(40sqm), CI Sheet labour sheds(200sqm), CI Sheet Stores(200sqm), supply of wooden & cane seated furniture etc. as specified and as per Contractor's Method Statement and as per direction of Engineer in charge. | 1 iten LS =Tk. **967050.850** | **1.00** |
| 3 | 16-650-10 | Earth work by Mechanical Excavator (Long Boon) in constructing/ re sectioning of embankment/canal bank/ road etc. compacted to 85%/90% maximum dry density at optimum moisture content, with reference to laboratory density test AAHSTO modified hammer, with clayey soil(minm 30% clay, 0-40% silt, 0-30% sand) within the initial lead of 30m and all lifts including throwing the spoils to profiles in layers not exceeding 230mm in thickness with clod breaking to a maximum size of 100mm, benching the side slopes, removing roots and stumps of trees of girth upto 200mm from the ground, stripping/ploughing the base of embankment and borrow pit area, dug bailing, rough dressing including 150mm cambering at the centre of crest etc. complete, including maintenance of the same for 6 months after completion, (compaction will be done by the contractor with approved equipment, including all ancillary charges for compaction and testing) as per direction of Engineer in charge. | Total earth calculation Sheet  Attached = 12696.00 cum  30% Earth cutting by mechanical  Excavator = 12696.00 cum x 30%  = 3808.800 cum | **3,808.800**  **cum** |
| 4 | 16-410-10 | Earth work by carried earth (by truck/boat or any other means) supplied at contractor's own cost (including royalty) direction of Engineer in charge.Earth work by manual labour in all kinds of soil for excavation/ re-excavation of pond/ tank in layers of 150mm includingbreaking clods, dressing, profiling etc. complete with all leads and lifts as per direction of Engineer in charge. 16-410-10: 300m to 1.00 km.(85% compaction) | Total Earth = 12696.00 cum  Carried Earth = 40% of total earth  =12696.00cum x 40%  = 5078.400 cum | **5,078.400**  **cum** |
| 5 | 16-120-10 | Earth work by manual labour in constructing/ re sectioning of embankment/canal bank/ road etc. compacted to 85%/90% maximum dry density at optimum moisture content, with reference ..., (compaction will be done by the contractor with approved equipment, including all ancillary charges for compaction and testing) as per direction of Engineer in charge. 16-120-10: 0 m to 3 m height with 85% compaction. | Total Earth = 12696.00 cum  Earth work by manual  Labour = 30% of total earth  = 12696.00 x 30%  **= 3808.800 cum** | **3,808.800**  **cum** |
| 6 | 16-190 | Extra rate for every additional lead of 15m or part thereof beyond the initial lead of 30m upto a maximum of 19 leads (3m neglected) for all kinds of earth work. 3 nos lead =3x14.57= 43.71 | Lead calculation  =(1/2 x top of borrowpit+1/2x filling +dead lead-15.00)/30.00  (1/2x12.50+1/2x12.50+90.00-15.00)/30.00  =(6.250+6.250+90.00-15.00)30.00  =2.916 say = 3.00 nos lead  Extra Rate for every additional lead  Total Earth same as item no - 05  **= 3808.800 cum** | **3,808.800**  **cum** |
| 7 | 48-100 | Fine dressing and close turfing of the slopes and the crest of embankment with 75mm thick, good quality durba or charkanta sods of size 200mm x 200mm, with all leads and lifts, including ramming, watering until the turfgrows properly, maintaining etc. complete (measurement will be given onwell grown grass only). as per direction of Engineer in charge. | Turfing = 3878.00m x 2 x 5.50  **= 38790.00 sqm** | **38,790.000**  **sqm** |
| 8 | 48-130 | Biological protection of bare earth surface by Dholkalmi with minimum 50cm long sapling, planting @ not more than 30 cm apart including supplying, sizing, taping and nursing etc. complete as per direction of the Engineer in charge. | Dholkalmi = 2x3x3879.00  **= 23274.00 m** | **23274.00**  **m** |
|  |  | Submergible block road |  |  |
| 9 | 56-100 | Earth work in box cutting up to 1.00 m depth, in all kinds of soil with all leads, removing the spoils to a safe distance, including levelling and dressing, maintaining required cambering etc. complete, as per direction of Engineer in charge. | Total Length = 3879.00m x allow 10%  = 388.00m  Block rod Box cutting = 388.00x3x0.450  **= 523.800 cum** | **523.80**  **cum** |
| 10 | 56-110 | Construction of improved road sub-grade of sand (FM>=0.8) in maximum 150mm thick layer including dressing, levelling, ramming, watering, cambering and compacting to attain minimum CBR-8% by..drawing and direction of Engineer in charge (payment shall be made on compacted volume). | Sand = 388x3.00x0.150  **= 174.600cum** | **174.60**  **cum** |
| 11 | Approved Analysis rate | Preparetion of Bed by Cutting and filling including watering to bring moisture +- 2% of OMC & compacting by appropiate machanical meands etc to attain minimum compaction 98% oc MDD (standard) to obtain a minimum soaked CBR 4% etc all complete as per direction of the E-I-C. | **Sub grade 388x3.00**  **= 1164.00 sqm** | **1164.00**  **sqm** |
| 12 | Approved Analysis Rate | Manufacturing and supplying C.C. blocks in leanest mix. 1:2:4. With cement, sand (FM>=1.5) and Stone Chips (40mm down graded) to attain a28 days cylinder strength of 15 N/mm² including grading, washing stone chips, mixing, laying in forms, consolidation, curing for at least 21 days, including preparation of platform, shuttering and stacking in measurable stacks etc. complete including supply of all materials (steel shutter to be used) as per direction of Engineer in charge. Block size 30cmx30cmx30cm | Nos of C.C Block = 388.00 x 9**/**0.300  **= 11640.00 nos** | **11640.00**  **nos** |
| 13 | Approved Analysis Rate | Manufacturing and supplying C.C. blocks in leanest mix. 1:2:4 with cement, sand (FM>=1.5) and Stone Chips (40mm down graded) to attain a28 days cylinder strength of 15 N/mm² including grading, washing stone chips, mixing, laying in forms, consolidation, curing for at least 21 days, including preparation of platform, shuttering and stacking in measurable stacks etc. complete including supply of all materials (steel shutter to beused) as per direction of Engineer in charge. Block size 100cm x 65cm x12.5cm(Av) | Edging Block = 388.00 x 2**/**1.00  **= 776.00 nos** | **776.00**  **nos** |
| 14 | 24-310-10 | Flush pointing to brick works, in sand cement mortar (sand of FM>=1.3), including scaffolding, curing, raking out joints, clearing the surface etc. complete in all floors including the cost of all materials and as per direction of Engineer in charge. 24-310-10: proportion 1:2 | Flush Pointing = 388.00 x 3.00  **= 1164.00 sqm** | **1164.00**  **sqm** |
| 15 | 40-220-20 | Labour charge for protective works in laying CC blocks of different sizes including preparation of base, watering and ramming of base etc. complete as per direction of Engineer in charge . 40-220-10: Within 200 m. | = 30cum x 30cum x30cum Block  = 11640.00 Nos  Volume of block  = 11640.00 x 0.300 x 0.300 x 0.300  = 314.280 cum  Edging Block  = 100cum x 65 cum x 125 cum (av)  = 776.00 nos x 1.00 x 0.650 x 0.125  = 63.050 cum  **= 377.33 cum** | **377.33**  **cum** |
| 16 | 36-150-10 | Formwork for centering and water tight shuttering as per drawing with 14 BWG M.S. sheet, fitted and fixed with 40mmx40mmx6mm M.S. angle frame and 25mmx6mm F.I. bar stiffener, with necessary fabrication, welding, making the forms including fitting, fixing of steel forms with necessary ties, battens, struts, nuts & bolts, props etc. as per desired shape and size including levelling and removing the forms after specified period including the cost of all materials as per direction of Engineer in charge. 36-150-10: Vertical and inclined walls, columns, piers with 60-80mm dia barrack bamboo props. | Nos of km. post  = 56949÷1000.00+1= 58.00 nos  Shuttering km. post =22/7x0.250=0.785 m  Area of km shutter = 58x0.785x1.550  **= 70.571 sqm** | **70.57**  **sqm** |
| 17 | 76-120-10 | M.S. Work for reinforcement with deformed M.S. bar, fy=414 N/mm², (made from billet) in RCC works, including local handling, cutting, forging, bending, cleaning and fabrication with supply of deformed M.S. bar in different sizes and binding with 22 to 18 gages G.I. wire etc. complete including the cost of all materials as per direction of Engineer in charge. 76-120-10: 8mm dia to 30mm dia | D-10 = 6 nos  Total length= 58.00x6x1.500  = 522.00m x0.62  = 323.640 kg | **323.64**  **kg** |
| 18 | 76-115-10 | M.S Work for reinforcement with Standard deformed bar fy=276 N/mm^2 in RCC works including local handling, cutting, forging ,bending, cleaning and fabrication with supply of deformed M.S. bar in different sizes and bending with 22 to 18 gages G.I. Wire etc. complete including the cost of all materials as per direction of Engineer in charge. 76-115-10: 6mm dia . | D- 6  Each ring length = 0.688 m  Nos of ring = 8 nos  Total length  = 58x8x0.688  = 319.232m x0.22  **= 70.231 kg.** | **70.23**  **kg** |
| 19 | 28-200-10 | Reinforced cement concrete work in leanest mix. 1:1.5:3, with 20mm down graded coarse aggregates and sand of FM>2.0 to FM<=2.5, to attain a minimum 28 day cylinder strength of 22.0 N/mm², including breaking, screening, grading, washing aggregates with clean water, mixing, laying in forms, consolidation to levels, curing, including supply of all materials, excluding cost of M.S. work for reinforcements and formworks etc. complete and as per direction of Engineer in charge. 28-200-10: with stone chips . | Volume RCC work  = 58x22/7x0.250x1.550  **= 70.635 cum** | **70.64**  **cum** |
| 20 | 04-110 | Fixing in position, boundary pillars/bench mark pillars/K.M. Post etc. of size 110cm height, bottom dia 25cm and top dia 20cm, embedded 45cm below G.L. Including carriage, earth cutting, filling, ramming, etc. complete as per direction of Engineer in charge | Fixing km. post **= 58.00 nos** | **58.00**  **nos** |
|  |  | **Re-excavation of Khal** |  |  |
| 21 | 16-100 | Erecting of bamboo profile with full bamboo posts and pegs not les than 60 mm in diameter and coir strings etc. complete as per direction of Engineer in charge. | A) Hazirkhali khal- km 0.080 to km 1.810  = 1.730 km  B) Karpasha Khal- km 0.093 to km 1.615  = 1.522 km  C) Dampara khal- km 0.200 to km 3.600  = 3.400 km  D) Baniajang khal- km 0.206 to km 7.060  = 6.854 km  E) Suti khal- km 0.00 to km 6.100  = 6.100 km  F) Diga Nodi- km 2.400 to km 8.100  = 5.700 km  G) Old singua nodi - km 7.300 to km18.160  = 10.860 km  = 36.166 km  Peg wind @100.00 m interval  Nos of Peg = 36.166 x1000x100x4  **= 1447.00 nos** | **1447.00**  **nos** |
| 22 | 16-220 | Earth work by manual labor in all kinds of soil in construction of cross bundh/ ring bundh as per design and specification with all leads and lifts, throwing the earth in layers not exceeding 150 mm in thickness including breaking clods, rough dressing, clearing the jungle, removing stumps, dug bailing and 75 mm cambering etc. complete as per direction of Engineer in charge | Construction of ring bundh  A) Hazirkhali khal Length = 1.730 km  Ring bundh Construction @ 200m interval  Nos of ring bundh = 1.730x100÷200.00  = 9 nos  Earth quantity = 9x(2.00+9.50)/2 x(5.00+9.500)/2 x1.50  = 9x5.750x7.250x1.50  = 562.781 cum  B) Karpasha Khal length = 1.522 km  Ring bundh Construction @ 200m interval  Nos of ring bundh = 1.522x1000÷200  = 8 nos  Earth quantity = 8x(2.00+13.240)/2 x(5.00+13.430)/2 x2.81  = 8x7.620x9.215x2.81  = 1578.507 cum  C) Dampara khal length = 3.400 km  Ring bundh Construction @ 200m interval  Nos of ring bundh = 3.400x1000÷200+1  = 18 nos  Earth quantity = 18x(2.00+6.50)/2 x(8.00+14.00)/2 x1.50  = 1262.250 cum  D) Baniajang khal length = 6.854 km  @ 200m P/ring bundh  Nos of ring bundh = 6.854x1000÷200  = 34 nos  Earth quantity = 34x(2.00+10)/2 x(8.00+14.00)/2 x2.00  = 34x6.00x11.00x2.00  = 4488.00 cum  E) Suti khal length = 6.100 km  Ring bundh Construction @ 200m interval  Nos of ring bundh = 6.100x1000÷200  = 32 nos  Earth quantity = 32x(2.00+10)/2 x(10.00+16.00)/2 x2.00  = 32.00x6.00x13.00x2.00  = 4992.00 cum  F) Diga Nodi- = 5.700 km  Ring bundh Construction @ 200m interval  Nos of ring bundh = 5.700x1000÷200+1  = 30 nos  Earth quantity = 30x(2.00+9)/2 x(50.00+55.250)/2 x1.75  = 30.00x5.50x52.625x1.75  = 15195.468 cum  G) Old singua nodi lengh = 10.860 km  Ring bundh Construction @ 200m interval  Nos of ring bundh = 5.700x1000÷200+1  = 55 nos  Earth quantity = 55x(2.00+10)/2 x(12.00+18)/2 x2.00  = 30.00x5.50x52.625x1.75  = 9900.00 cum  = 37979.001 cum | **37979.01**  **cum** |
| 23 | 12-310-20 | Bailing out of water with all leads and lifts by manual labour or pump, with all arrangements for protection of ring bund and side slopes of foundation pit against erosion or washout etc. complete actual volume of work will be measured by sounding method before starting the work as per direction of Engineer in charge.  **12-310-20:** by Pump | **Bailing out of water**  A) Hazirkhali khal Length = 1.730 km  Volume  = 1.730x1000.00x(5.00+8.00)/2 x 1.00  **= 11245.00 cum**  B) Karpasha Khal length = 1.522 km  Volume  = 1.522x1000.00x(5.00+8.00)/2 x 1.00  **= 9893.00 cum**  C) Dampara khal length = 3.400 km  Volume  = 3.400x1000.00x(8.00+11.00)/2 x 1.00  **= 32300.00 cum**  D) Baniajang khal length = 6.854 km  Volume  = 6.854x1000.00x(8.00+11.00)/2 x 1.00  **= 65113.00 cum**  E) Suti khal length = 6.100 km  Volume  = 6.100x1000.00x(10+13.00)/2 x 1.00  **= 70.150 cum**  F) Diga Nodi- = 5.700 km  Volume  = 5.700x1000.00x(58.00+51.50)/2 x0.50  **= 144637.50 cum**  G) Old singua nodi lengh = 10.860 km  Volume  = 10.860x1000.00x(12.00+13.650)/2 x 0.50  **= 69639.75 cum**  **­­­­­­­­­­­­­­­­­­­ = 337341.600 cum**  **= 332898.4 cum** | 402978.25 |
| 24 | 16-600-10 | Earth work by Mechanical Excavator (long Boom) in all kinds of soil in excavation/ re-excavation of channel/canal/khal etc. including disposal of spoil soil up to 30m away from point of excavation with rough dressing and leveling etc. complete as per direction of Engineer- in- charge. | A) Hazirkhali khal Length = 1.730 km  **= 20305.80 cum**  B) Karpasha Khal length = 1.522 km  **= 24139.76 cum**  C) Dampara khal length = 3.400 km  **= 45994.00 cum**  D) Baniajang khal length = 6.854 km  **= 127296.540 cum**  E) Suti khal length = 6.100 km  **= 119605.50 cum**  F) Diga Nodi- = 5.700 km  **= 419656.64 cum**  G) Old singua nodi lengh = 10.860 km  **= 188140.80 cum**  **= 945139.040 x 94 %**    **= 888430.70 cum** | 888430.70 |
| 25 | 16-130 | Earth work by manual labour in all kinds of soil in excavation of channels with the initial lead of 30m and lift of 1.5 m including leveling dressing and throwing the spoils to profile with breaking clods, rough dressing, clearing jungles including cutting trees up to 200 mm girth, dug bailing etc. complete as per direction of Engineer in charge. | Earth work : **945139.040 x 6 %**  **= 56708.34 cum** | 56708.34 |
| 26 | 16-240 | Earth work by manual labor in all kinds of soil in removing cross bundh/ ring bundh, including all leads and lifts complete and placing the spoils to a safe distance, (minimum 15m apart from the bank) as per direction of Engineer in charge |  | 30383.20 |
| 27 | 16-190 | Extra rate for every additional lead of 15m or part thereof beyond the initiallead of 30m upto a maximum of 19 leads (3m neglected) for all kinds of earth work. Lead= 1 no | Same as Item no: 25  **= 56708.34** **cum** | 56708.34 |
| 28 | NSI | Video documents for every sequence of work for every Item all Through Package | 1 Item | 1.00 |
| 29 | 3.1/  Analysis rate | Mobilize, strengthen required land based construction equipment such as excavator, dump truck, chain dozer, vibro-compactor, and plants such as generator for site electrification, digital camera for taking photographs and digital video camera for recording/Taking photograph all sequences of works etc for keeping records of the Works by providing following information including transfer to site, complete for the purposes stated in the Technical Specification and Contractor’s Method Statement and as per direction of Engineer in charge. | 1 Item | 1.00 |
| 30 | 1.2/  Analysis rate | Provide and maintain 1 (one) no. Engine boat with boatmen having sun and rainproof cover to facilitate supervision by the Engineer/Engineer's Representative during whole construction period of the work as per Technical Specification, Contractor’s Method Statement and as per direction of Engineer in charge. | 1 Item | 1.00 |
| 31 | 2.1/  Analysis rate | Providing and maintaining adequate portable water supply by installing 6 Nos. of tube well and sanitation facilities by installing 6 Nos. of sanitary latrines for usage of labors, officials and others for prevailing the hygienic and healthy environment at all over the working site As per direction of the Engineer in charge. | 1 Item | 1.00 |
| 32 | 3.2/  Analysis rate | Operate, maintain of plant and equipment such as generator for site electrification, for the purpose stated in the Technical Specification and in the Contractor’s Method Statement and as per direction of Engineer in charge. | 1 Item | 1.00 |
| 33 | 1.3/  Analysis rate | Demobilization and clean-up of the site upon completion of the works, as per Specifications and Contractor's Method Statement and as per direction of Engineer in Charge | 1 Item | 1.00 |
|  |  |  |  |  |