

TENDER DOCUMENT FOR

**Earthwork, Repair & Construction of Distribution Network
(09 Nos. Minors) of Right Main Canal, Jharkhand and its
Structures under North Koel Reservoir Project, Jharkhand and
Bihar**

Estimated Cost (Rs. 11.72 Crores)

TENDER NO: WAP/INFRA./NK/DIST/JH/2025

VOLUME IV: PRICE SCHEDULE

Issued to M/s



(भारत सरकार का उपक्रम-जल शक्ति मंत्रालय)
(A Government of India Undertaking-Ministry of Jal Shakti)

Preamble to the Price Schedule

1. In case of Percentage Rate Tenders, contractor shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Price Schedule; he will be willing to execute the work. The tender submitted shall be treated as invalid if :-
 - The contractor does not quote percentage above/below/ at per on the total amount of tender or any section/sub head of the tender.
 - The percentage above/below/ at per is not quoted in figures & words both on the total amount of tender or any section/sub head of the tender.
 - The percentage quoted above/below/ at per is different in figures & words on the total amount of tender or any section/sub head of the tender.
2. In case the lowest tendered amount (amount worked on the basis of percentage above/below) of two or more contractors is same, such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/below on estimated cost of tender including all sub sections/sub heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.
3. In case any of such contractor refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50% of earnest money shall be forfeited.
4. If the revised tendered amount of two more contractors received in revised offer is again found to be equal, the lowest tender, among such contractors, shall be decided by draw of lots in the presence of Evaluation Committee of the Employer and the lowest contractors those have quoted equal amount of their tenders.
5. In case all the lowest contractors those have quoted same tendered amount, refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each bidder.
6. Contractor(s), whose earnest money is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the work.
7. Only percentage rate quoted tenders shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy.
8. In Percentage Rate Tender, the tenderer shall quote percentage below/above (in figures as well as in words) at which he will be willing to execute the work. He shall also work out the total amount of his offer and the same should be written in figures as well as in words in such a way that no interpolation is possible. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs. 2.15P and in case of words, the word 'Rupees' should precede and the word 'Paisa' should be written at the end.

9. Contractor should satisfy himself with the total amount of the contract (as worked out in the Price Schedule) for the execution of the complete work.
10. Any error, if any in the Price Schedule, Design, Drawings to be brought in the notice of WAPCOS on or before Pre-BID meeting.

PRICE SCHEDULE

WAPCOS LIMITED						
Quoting Sheet for the Bidder						
NIT No:	WAP/INFRA./NK/DIST/JH/2025					
Name of Work:	Earthwork, Repair & Construction of Distribution Network (09 Nos. Minors) of Right Main Canal, Jharkhand and its Structures under North Koel Reservoir Project, Jharkhand and Bihar					
Name of the Firm:						
	BOQ Amount(in Rs)	Above or Below or At par	% in Figures	% In Words	Amount Above or Below or At par	Total Cost
I	II	I	IV	V	VI= (II*IV)	VII= (II+VI)
PERCENTAGE RATE	11,71,82,078/-					
• Total Amount						
Total in figure						
Total in words						

Note:

1. The estimated amounts for items are given in the Estimate.
2. The tenderer has to quote their offer in percentage above/below/ at-par the estimated amount.
3. The percentage rate shall be quoted up to 2 decimals.
4. **The Percentage (%) rate quoted for the contract shall be inclusive of all charges, except GST @18% as indicated in the Price Schedule.** GST as applicable shall be paid on submission of proof and Bill shall be accepted only after Bill is uploaded at GST Portal, subject to receipt of the same by Employer on back to back terms.
5. **The rate for carriage of materials shall be on actual lead at site at the time of execution, if the lead is more than provided in the BOQ, nothing will be paid extra. However, if the lead is less than the BOQ, then a proportionate rate will be deducted.**
6. **The final rates on which the works is to be executed are to be approved by the competent authority based on the Financial Bids submitted by the Bidders. In case any item scheduled/non-scheduled whose rates have not been included in the BOQ, then the rate shall be decided by the competent authority for payment.**
7. The payment will be made as per the actual work done and item wise measurement basis.
8. Rate filled at any other place in the document shall not be considered.
9. Where there is a discrepancy between the words and figures, the lesser of the two will only be taken in to consideration.
10. Where there is an arithmetical discrepancy in the page total as well as grand total, the corrected total by the Employer will govern.
11. The rates quoted shall be for carrying out the work in conformity to the IS Standards and Technical Specifications and other Terms and Conditions set out in the Bid Document
12. All pages in the BOQ should be signed without omission. All corrections/over writing should be properly attested by the Bidder.
13. Change in the Quantities - If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item/items, the rates as in the agreement for the relevant items shall be paid.
14. The Method of measurement of completed work for payment shall be in accordance with the requirement as stated in the individual section of Technical Specifications or as per CPWD Specifications.
15. The contractor shall carry out the site establishment works/temporary works at his own cost. Nothing shall be paid over and above the contract amount.

NORTH KOEL RESERVOIR PROJECT , JHARKHAND MINORS

ABSTRACT OF COST

S no.	NAME OF MINOR	TOTAL (In Rs.)	TOTAL (In Lacs)
1	<i>Adhwara Minor</i>	₹ 26,564,225.90	265.64
2	<i>Parta Minor</i>	₹ 17,826,285.55	178.26
3	<i>Salempur Minor</i>	₹ 5,284,323.31	52.84
4	<i>Sonpurwa Minor</i>	₹ 6,355,218.22	63.55
5	<i>Devorikala Minor</i>	₹ 7,885,282.71	78.85
6	<i>Budhua Minor</i>	₹ 15,594,242.24	155.94
7	<i>Bishrampur Minor</i>	₹ 9,676,443.95	96.76
8	<i>Sonbarsha Minor</i>	₹ 16,801,695.95	168.02
9	<i>Pokhrahi Minor</i>	₹ 11,194,360.52	111.94
TOTAL (In Lacs)			1171.82

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND

ABSTRACT OF COST (ADHWARA MINOR)

S. No.	Items	Qty.	Unit	Total Estimated Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	8344419.77
2	Head Regulator	Detail as per BOQ	No.	3964613.43
3	Cross Drainage Works			
	<i>Ch. 0.500 Km</i>	Detail as per BOQ	No.	1690399.19
	<i>Ch. 1.150 Km</i>	Detail as per BOQ	No.	4031930.90
	<i>Ch. 1.550 Km</i>	Detail as per BOQ	No.	3378040.03
	<i>Ch. 2.100 Km</i>	Detail as per BOQ	No.	2670642.19
4	Outlets	19	No.	1857442.80
5	Kilometer Stone	07	No.	9612.93
6	Remodelling of Structures			
	<i>Culvert at 0.680 Km</i>	Detail as per BOQ	No.	25287.24
	<i>Culvert at 1.865 Km</i>	Detail as per BOQ	No.	7097.54
	<i>Culvert at 2.400 Km</i>	Detail as per BOQ	No.	125936.41
	<i>Culvert at 2.970 Km</i>	Detail as per BOQ	No.	3685.66
	<i>Culvert at 3.875 Km</i>	Detail as per BOQ	No.	121075.01
	<i>Culvert at 5.150 Km</i>	Detail as per BOQ	No.	159859.38
	<i>Culvert at 5.460 Km</i>	Detail as per BOQ	No.	138979.91
	<i>Culvert at 5.890 Km</i>	Detail as per BOQ	No.	35203.51
	TOTAL (In Rs.)			26564225.90
	TOTAL (In Lacs)			265.64

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND					
ABSTRACT OF QUANTITY OF EARTHWORK FOR ADHWARA MINOR .					
Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.55	Ha	73027.00	39881.57827
2	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	5350.31	Cum	110.83	592975.1344
3	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8).	1783.44	Cum	374.47	667843.8406
4	E/W in stripping by hydraulic M/c in grade A & B type of soil including morroum soil, soil mixed with kankar, pebbles, boulders upto 300 mm size and disposal of the same along with all organic materials in the country side beyond 150 m upto 500 m in all by tipper including construction & maintenance of haul road etc. all complete as per specification and direction of E/I. (WRD Part B 5.1.6.1)	819.18	Cum	106.11	86923.35
5	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	8439.34	Cum	117.56	992129.25
6	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1).				
i.	One extra lead - $1 \times 12.3 = 12.3$	4980.83	Cum	12.30	61264.22
ii.	Two extra lead - $2 \times 24.6 = 24.6$	3815.88	Cum	24.60	93870.60
iii.	Three extra lead - $3 \times 12.19 = 36.57$	1284.08	Cum	36.90	47382.37
7	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lift - $1 \times 12.3 = 12.3$	4898.06	Cum	12.30	60246.09
ii.	Two extra lift - $1 \times 12.3 = 24.6$	1284.08	Cum	24.60	31588.25

8	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B 7.1.26.1)				
A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	11815.08	Cum	172.93	2043182.00
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	8439.34	Cum	188.08	1587271.77
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	5063.61	Cum	206.29	1044571.33
9	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B 7.1.39)	40891.13	Cum	24.34	995289.98
TOTAL COST OF EARTHWORK (in Rs.)					8344419.77
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					83.444

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Adhwara Minor (OFFTAKE FROM RMC RD - 9+082 KM. (LT))								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	1049.595	Cum	110.83	116326.67			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	36.420	Cum	3279.00	119421.24	7.83	16.39	32.78
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	11.18	Cum	4068.00	45472.10	3.80	4.69	9.50
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	321.43	Cum	4891.00	1572096.22	125.36	135.00	273.21
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A 14.1 B)	8.81	Cum	5294.00	46652.95	3.75	3.44	6.87
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	7.89	M.T.	71410.00	563492.99			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	591.08	Sqm	385.50	227860.17			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	25.13	Sqm	414.88	10424.73			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry.(WRD Part B M-017)	3.54	Cum	408.85	1446.12			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I. (WRD Part B 7.7.18)	3.54	Cum	889.70	3146.87			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	39.21	Sqm	848.15	33255.96			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			

17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	35.00	Cum	106.98	3744.30			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	3.93	MT	159668.03	627714.57			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	159.520	Cum	678.60	108250.05			
	Coarse Aggregates (60 Km lead)	323.025	Cum	1002.60	323865.26			
	Cement (80 km lead)	140.732	MT	984.50	138551.02			
	Boulder (60 Km)	3.537	Cum	1120.65	3963.72			
	Brick (80 Km)	2352.600	No.	0.93	2184.15			
	Steel (80 km)	11.822	MT	984.50	11639.08			
TOTAL (In Rs.)					3964613.43			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR CROSS DRAINAGE WORKS OF ADHWARA MINOR								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
Cross Drainage at Ch. 0.500 K.M								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	355.12	Cum	110.83	39357.98			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	57.44	Cum	3279.00	188350.31	12.35	25.85	51.70
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A 7.3.1.1)	12.47	Cum	4068.00	50741.50	4.24	5.24	10.60
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	120.44	Cum	4891.00	589055.20	46.97	50.58	102.37
5	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	114.75	Sqm	385.50	44236.74			
6	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	430.60	Sqm	414.88	178646.54			
7	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	15.00	RM	4465.81	66987.11			
8	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I (WRD Part B 7.6.2.4)	15.00	RM	1289.47	19342.05			
9	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	2.84	MT	71410.00	202538.82			
10	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B. 7.1.31)	117.81	Cum	106.98	12603.15			
	Coarse Sand (35Km lead)	81.671	Cum	678.60	55421.79			
	Coarse Aggregates (60 Km lead)	164.671	Cum	1002.60	165098.80			
	Cement (80 km lead)	63.561	MT	984.50	62575.89			
	Hume Pipe (80 Km)	15.00	RM	843.40	12651.00			
	Steel (80 Km)	2.84	MT	984.50	2792.32			
TOTAL (In Rs.)					1690399.19			
Cross Drainage at Ch. 1.150 K.M								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	786.19	Cum	110.83	87133.02			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A. 7.1.12.4)	82.79	Cum	3279.00	271458.58	17.80	37.25	74.51
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A. 7.3.1.1)	17.46	Cum	4068.00	71027.25	5.94	7.33	14.84

4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A. 14.1 A)	292.11	Cum	4891.00	1428696.76	113.92	122.69	248.29
5	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	159.23	Sqm	385.50	61384.40			
6	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	781.72	Sqm	414.88	324320.93			
7	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	52.50	RM	4465.81	234454.89			
8	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I. (WRD Part B. 7.6.2.4)	52.50	RM	1289.47	67697.18			
9	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A. -8.3 - 13.6)	11.47	MT	71410.00	818730.73			
10	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B. 7.1.31)	328.99	Cum	106.98	35195.49			
	Coarse Sand (35Km lead)	167.272	Cum	678.60	113511.06			
	Coarse Aggregates (60 Km lead)	337.640	Cum	1002.60	338518.36			
	Cement (80 km lead)	137.657	MT	984.50	135523.76			
	Hume Pipe (80 Km)	52.50	RM	843.40	44278.50			
	Steel (80 Km)	11.47	MT	984.50	11287.50			
TOTAL (In Rs.)					4031930.90			
Cross Drainage at Ch. 1.550 K.M								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	636.61	Cum	110.83	70555.15			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A. 7.1.12.4)	79.90	Cum	3279.00	262007.70	17.18	35.96	71.91
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	17.46	Cum	4068.00	71027.25	5.94	7.33	14.84
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A. 14.1 A)	229.30	Cum	4891.00	1121529.48	89.43	96.31	194.91
5	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	158.29	Sqm	385.50	61021.26			
6	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	674.83	Sqm	414.88	279974.97			
7	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	52.50	RM	4465.81	234454.89			

8	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I. (WRD Part B. 7.6.2.4)	52.50	RM	1289.47	67697.18			
9	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A. -8.3 - 13.6)	9.00	MT	71410.00	642705.07			
10	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B. 7.1.31)	325.86	Cum	106.98	34860.20			
	Coarse Sand (35Km lead)	139.598	Cum	678.60	94731.43			
	Coarse Aggregates (60 Km lead)	281.664	Cum	1002.60	282396.63			
	Cement (80 km lead)	112.545	MT	984.50	110800.32			
	Hume Pipe (80 Km)	52.50	RM	843.40	44278.50			
	Steel (80 Km)	9.00	MT	984.50	8860.71			
TOTAL (In Rs.)					3378040.03			
Cross Drainage at Ch. 2.100 K.M								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	480.72	Cum	110.83	53277.80			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A. 7.1.12.4)	57.92	Cum	3279.00	189933.96	12.45	26.07	52.13
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A. 7.3.1.1)	12.47	Cum	4068.00	50741.50	4.24	5.24	10.60
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A. 14.1 A)	188.91	Cum	4891.00	923949.40	73.67	79.34	160.57
5	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	115.41	Sqm	385.50	44491.17			
6	Providing shuttering,including strutting propping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	565.33	Sqm	414.88	234543.36			
6	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	35.00	RM	4465.81	156303.26			
7	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I. (WRD Part B. 7.6.2.4)	35.00	RM	1289.47	45131.45			
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A. -8.3 - 13.6)	7.41	MT	71410.00	529479.59			
9	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B. 7.1.31)	236.80	Cum	106.98	25332.41			
	Coarse Sand (35Km lead)	110.646	Cum	678.60	75084.48			
	Coarse Aggregates (60 Km lead)	223.306	Cum	1002.60	223886.71			
	Cement (80 km lead)	90.369	MT	984.50	88968.10			
	Hume Pipe (80 Km)	35.00	RM	843.40	29519.00			
	Steel (80 Km)	7.41	MT	984.50	7299.72			
TOTAL (In Rs.)					2670642.19			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD Part-B 7.6.1.1)	7.50	RM	187.39	1405.43				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A-8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12657.95				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 Km lead)	0.11	M.T.	984.50	108.22				
	Hume Pipe (80 Km)	7.50	RM	843.40	6325.50				
TOTAL COST (In Rs.)					97760.15				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR KILOMETER STONES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates 60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (80 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
AOC FOR CULVERT (Ch.- 0.650 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	56.962	Sqm	51.66	2942.67	0.1566	0.205	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	3.01	Cum	4891.00	14720.93	1.17	1.26	2.56
4	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	23.675	Cum	106.98	2532.75			
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	1.469	Cum	678.60	996.99			
	Coarse Aggregates (60 Km lead)	2.558	Cum	1002.60	2564.98			
	Cement (80 km lead)	1.330	MT	984.50	1309.85			
TOTAL (In Rs.)					25287.24			
AOC FOR CULVERT (Ch.- 1.865 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.011	Ha	73027.00	803.30			
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	16.650	Cum	106.98	1781.22			
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	79.440	Sqm	51.66	4103.88	0.22	0.29	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.286	Cum	678.60	194.07			
	Coarse Aggregates 60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.218	MT	984.50	215.07			
TOTAL (In Rs.)					7097.54			

AOC FOR CULVERT (Ch.- 2.400 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	401.65		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	42.953	Sqm	51.66	2218.97	0.118	0.155
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	19.20	Cum	4891.00	93892.53	7.49	8.06 16.32
4	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	8.217	Cum	678.60	5576.31		
	Coarse Aggregates (60 Km lead)	16.317	Cum	1002.60	16359.88		
	Cement (80 km lead)	7.605	MT	984.50	7487.08		
TOTAL (In Rs.)					125936.41		
AOC FOR CULVERT (Ch. - 2.970Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	328.62		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	59.092	Sqm	51.66	3052.69	0.1625	0.213
3	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	0.213	Cum	678.6	144.36		
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00		
	Cement (80 km lead)	0.163	MT	984.50	159.98		
TOTAL (In Rs.)					3685.66		
AOC FOR CULVERT (Ch. - 3.875Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	46.051	Sqm	51.66	2379.00	0.1266	0.166
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	18.00	Cum	4891.00	88038.00	7.02	7.56 15.30

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1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	40.852	Sqm	51.66	2110.43	0.1123	0.147	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	19.17	Cum	4891.00	93760.47	7.48	8.05	16.29
4	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	125.00	Cum	106.98	13372.50			
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	8.198	Cum	678.60	5563.48			
	Coarse Aggregates (60 Km lead)	16.295	Cum	1002.60	16336.87			
	Cement (80 km lead)	7.589	MT	984.50	7471.02			
TOTAL (In Rs.)					138979.91			
AOC FOR CULVERT (Ch. - 5.890 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	70.176	Sqm	51.66	3625.29	0.1930	0.253	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	4.00	Cum	4891.00	19564.00	1.56	1.68	3.40
4	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	50.00	Cum	106.98	5349.00			
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	1.933	Cum	678.60	1311.49			
	Coarse Aggregates (60 Km lead)	3.400	Cum	1002.60	3408.84			
	Cement (80 km lead)	1.753	MT	984.50	1725.81			
TOTAL (In Rs.)					35203.51			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (PARTA MINOR)				
S. NO.	Items	Qty.	Unit	Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	11801693.66
2	Head Regulator	Detail as per BOQ	No.	3003903.08
3	Cross Drainage Works	Detail as per BOQ		
	<i>Ch. 1.250</i>	Detail as per BOQ	No.	1143851.05
4	Falls			
	<i>Fall (4.20 Km)</i>	Detail as per BOQ	No.	340567.29
5	Outlets	15	No.	1466383.64
6	Kilometer Stone	04	No.	5493.10
7	Remodelling of Structures	Detail as per BOQ		
	<i>Cross Drainage at 0.090 Km</i>	Detail as per BOQ	No.	19490.22
	<i>Culvert at 0.155 Km</i>	Detail as per BOQ	No.	6659.38
	<i>Culvert at 0.82 Km</i>	Detail as per BOQ	No.	4848.38
	<i>Culvert at 1.07 Km</i>	Detail as per BOQ	No.	4229.82
	<i>Culvert at 2.45 Km</i>	Detail as per BOQ	No.	29165.94
	TOTAL (In Rs.)			17826285.55
	TOTAL (In Lacs)			178.26

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND					
ABSTRACT OF QUANTITY OF EARTHWORK FOR PARTA MINOR .					
Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.59	Ha	73027.00	42730.65365
2	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	42421.05	Cum	110.83	4701524.972
3	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8).	4713.45	Cum	374.47	1765045.622
4	E/W in stripping by hydraulic M/c in grade A & B type of soil including morroum soil, soil mixed with kankar, pebbles, boulders upto 300 mm size and disposal of the same along with all organic materials in the country side beyond 150 m upto 500 m in all by tipper including construction & maintenance of haul road etc. all complete as per specification and direction of E/I. (WRD Part B 5.1.6.1)	877.70	Cum	106.11	93133.01
5	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	4975.55	Cum	117.56	584925.66
6	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1).				
i.	One extra lead - $1 \times 12.3 = 12.3$	12595.48	Cum	12.30	154924.43
ii.	Two extra lead - $2 \times 24.6 = 24.6$	9976.88	Cum	24.60	245431.13
iii.	Three extra lead - $3 \times 12.19 = 36.57$	8484.21	Cum	36.90	313067.35
7	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lift - $1 \times 12.3 = 12.3$	22205.64	Cum	12.30	273129.31
ii.	Two extra lift - $1 \times 12.3 = 24.6$	8484.21	Cum	24.60	208711.57

8	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B 7.1.26.1)				
A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	6965.77	Cum	172.93	1204590.61
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	4975.55	Cum	188.08	935801.44
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	2985.33	Cum	206.29	615843.73
9	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B 7.1.39)	27232.30	Cum	24.34	662834.18
TOTAL COST OF EARTHWORK (in Rs.)					11801693.66
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					118.017

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Parta Mr. (Offtaking from RMC at RD 11.758 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	671.420	Cum	110.83	74413.53			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	30.441	Cum	3279.00	99815.43	6.54	13.70	27.40
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	9.55	Cum	4068.00	38832.15	3.25	4.01	8.11
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	219.31	Cum	4891.00	1072669.26	85.53	92.11	186.42
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A .14.1 B)	8.91	Cum	5294.00	47161.18	3.79	3.47	6.95
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A .-8.3 - 13.6)	5.49	M.T.	71410.00	391771.66			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	510.81	Sqm	385.50	196915.57			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	15.53	Sqm	414.88	6441.88			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	3.05	Cum	408.85	1247.41			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	3.05	Cum	889.70	2714.47			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B .7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B .6.6.3)	33.47	Sqm	848.15	28390.97			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			

16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	10.00	Cum	106.98	1069.80			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	3.88	MT	159668.03	619117.38			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	113.294	Cum	678.60	76881.40			
	Coarse Aggregates (60 Km lead)	228.877	Cum	1002.60	229471.95			
	Cement (80 km lead)	99.109	MT	984.50	97573.04			
	Boulder (60 Km)	3.051	Cum	1120.65	3419.09			
	Brick (10 Km)	2008.440	No.	0.83	1673.03			
	Steel (80 km)	9.364	MT	984.50	9218.62			
TOTAL (In Rs.)					3003903.08			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CROSS DRAINAGE OF PARTA MINOR AT KM 1.250								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	203.13	Cum	110.83	22512.55			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A. 7.1.12.4)	29.73	Cum	3279.00	97475.94	6.39	13.38	26.75
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	7.05	Cum	4068.00	28696.55	2.40	2.96	6.00
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	83.23	Cum	4891.00	407081.94	32.46	34.96	70.75
5	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	67.18	Sqm	385.50	25899.19			
6	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	330.43	Sqm	414.88	137090.15			
7	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	15.00	RM	4465.81	66987.11			
8	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I. (WRD Part B .7.6.2.4)	15.00	RM	1289.47	19342.05			
9	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A .-8.3 - 13.6)	1.96	MT	71410.00	139969.73			
10	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	47.00	Cum	106.98	5028.55			
	Coarse Sand (35Km lead)	51.297	Cum	678.60	34810.16			
	Coarse Aggregates (60 Km lead)	103.497	Cum	1002.60	103765.98			
	Cement (80 km lead)	41.250	MT	984.50	40610.46			
	Hume Pipe (80 Km)	15.00	RM	843.40	12651.00			
	Steel (80 Km)	1.96	MT	984.50	1929.70			
TOTAL (In Rs.)					1143851.05			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND									
ABSTRACT OF COST OF FALL OF PARTA MR. AT KM. 4.200									
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	132.000	Cum	110.83	14629.56				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	8.466	Cum	3279.00	27760.05	1.82	3.81	7.62	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I.(WRD Part A Corrigendum 7.3.13.5)	14.42	Cum	4068.00	58646.63	4.90	6.05	12.25	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	10.33	Cum	4891.00	50501.01	4.03	4.34	8.78	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A .-8.3 - 13.6)	0.58	MT	71410.00	41608.54				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	59.99	Sqm	385.50	23124.41				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	37.69	Sqm	414.88	15636.83				
6	Providing 600mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . (RCD M301, 11.3)	10.00	RM	2293.25	22932.53				
7	Labour charges for laying 600mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I 7. (WRD 7.6.2.2)	10.00	RM	646.96	6469.60				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B .6.6.3)	17.77	Sqm	848.15	15073.32				
9	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	49.97	Cum	106.98	5345.36				
10	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	14.201	Cum	678.60	9637.00				
	Coarse Aggregates (60 Km lead)	28.650	Cum	1002.60	28724.49				
	Cement (80 km lead)	10.749	MT	984.50	10582.09				
	Hume Pipe (80 km)	10.000	RM	843.40	8434.00				
	Brick (10 Km)	1066.320	No.	0.83	888.24				
	Steel (80 km)	0.583	MT	984.50	573.64				
TOTAL (In Rs.)					340567.29				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	187.39	1405.43				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	243.69	1827.71				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A .-8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12656.72				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 km)	0.11	MT	984.50	108.21				
	Hume Pipe (80 Km)	7.50	RM	843.40	6325.50				
TOTAL (In Rs.)					97758.91				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR KILOMETER STONES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (50 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND									
ABSTRACT OF COST OF REPAIRED STRUCTURES									
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
AOC FOR CROSS DRAINAGE (Ch.- 0.090 Km)									
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	438.16				
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	113.167	Sqm	51.66	5846.20	0.3112	0.407		
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	1.97	Cum	4891.00	9628.42	0.77	0.83	1.67	
4	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	1.234	Cum	678.60	837.54				
	Coarse Aggregates (60 Km lead)	1.673	Cum	1002.60	1677.66				
	Cement (80 km lead)	1.079	MT	984.50	1062.24				
TOTAL (In Rs.)					19490.22				
AOC FOR CULVERT (Ch.- 0.155 Km)									
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14				
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	16.650	Cum	106.98	1781.22				
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	79.440	Sqm	51.66	4103.88	0.22	0.29		
4	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	0.286	Cum	678.60	194.07				
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00				
	Cement (80 km lead)	0.218	MT	984.50	215.07				
TOTAL (In Rs.)					6659.38				

AOC FOR CULVERT (Ch.- 0.820 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	80.201	Sqm	51.66	4143.20	0.221	0.289	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.289	Cum	678.60	195.93			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.221	MT	984.50	217.14			
TOTAL (In Rs.)					4848.38			
AOC FOR CULVERT (Ch. - 1.070Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	70.599	Sqm	51.66	3647.13	0.1941	0.254	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.254	Cum	678.60	172.47			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.194	MT	984.50	191.14			
TOTAL (In Rs.)					4229.82			
AOC FOR CULVERT (Ch. - 2.450Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	110.791	Sqm	51.66	5723.45	0.3047	0.399	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	3.51	Cum	4891.00	17167.41	1.37	1.47	2.98
4	Carriage of materials(As per Jharkhand SoR 2021)							

	Coarse Sand (35Km lead)	1.873	Cum	678.60	1271.05				
	Coarse Aggregates (60 Km lead)	2.984	Cum	1002.60	2991.26				
	Cement (80 km lead)	1.674	MT	984.50	1647.63				
TOTAL (In Rs.)					29165.94				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (SALEMPUR MINOR)				
S. No.	Items	Qty.	Unit	Total Estimated Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	1599170.20
2	Head Regulator	Detail as per BOQ	No.	2788570.62
3	Outlets	09	No.	879841.32
4	Kilometer Stone	01	No.	1373.28
5	Remodelling of Structures			
	<i>Culvert at 0.320 Km</i>	Detail as per BOQ	No.	6063.44
	<i>Culvert at 0.870 Km</i>	Detail as per BOQ	No.	4892.05
	<i>Culvert at 1.400 Km</i>	Detail as per BOQ	No.	4412.39
	TOTAL (In Rs.)			5284323.31
	TOTAL (In Lacs)			52.84

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

ABSTRACT OF QUANTITY OF EARTHWORK FOR SALEMPUR MINOR .

Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	273.51	Cum	110.83	30313.1133
2	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8) .	30.39	Cum	374.47	11380.1433
3	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	1968.83	Cum	117.56	231455.80
4	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1) .				
i.	One extra lead - $1 \times 12.3 = 12.3$	855.91	Cum	12.30	10527.69
ii.	Two extra lead - $2 \times 12.3 = 24.6$	645.35	Cum	24.60	15875.64
iii.	Three extra lead - $1 \times 12.3 = 36.9$	54.70	8179.23	36.90	2018.50
5	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lead - $1 \times 12.3 = 12.3$	530.52	Cum	12.30	6525.41
ii.	Two extra lead - $2 \times 12.3 = 24.6$	54.70	Cum	24.60	1345.67
6	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B 7.1.26.1)				

A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	2756.36	Cum	172.93	476657.98
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	1968.83	Cum	188.08	370297.78
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	1181.30	Cum	206.29	243690.12
7	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B 7.1.39)	8179.23	Cum	24.34	199082.34
TOTAL COST OF EARTHWORK (in Rs.)					1599170.20
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					15.992

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND ANALYSIS OF RATE OF HEAD REGULATOR GATE			
1	Cost of material (A)	Rs.	55000
2	Wastage 5% =	Rs.	2750
3	Cost of miscellaneous material like electrodes,oxygen, acetylene nut bolt, rope as per site	Rs.	35750
	<i>Total 1+2+3= (B) =</i>	Rs.	93500
4	Labour charge 30%(B) =	Rs.	28050
	Overhead charge + Contractor profit @14.95% A	Rs.	8222.5
5	Workshop and energy charge ,12 % of (B)	Rs.	11220
6	Transportation and erection charge ,15 % of B	Rs.	14025
	<i>Total = B+4+5+6+7 = C</i>	Rs.	155017.5
7	Other incidental charge , 3 % = of C	Rs.	4650.525
	<i>Total C+8 = D</i>	Rs.	159668

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Salempur Mr. (Offtaking from RMC at RD 15.934 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	533.465	Cum	110.83	59123.89			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	26.715	Cum	3279.00	87598.60	5.74	12.02	24.04
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	9.18	Cum	4068.00	37344.24	3.12	3.86	7.80
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	200.89	Cum	4891.00	982570.29	78.35	84.38	170.76
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A 14.1 B)	7.80	Cum	5294.00	41302.15	3.32	3.04	6.09
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	5.02	M.T.	71410.00	358674.36			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	481.95	Sqm	385.50	185791.40			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	12.43	Sqm	414.88	5157.83			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	2.24	Cum	408.85	916.24			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	2.24	Cum	889.70	1993.82			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			

13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	33.87	Sqm	848.15	28726.84			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	20.00	Cum	106.98	2139.60			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	3.82	MT	159668.03	610097.43			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	103.295	Cum	678.60	70096.20			
	Coarse Aggregates (60 Km lead)	209.351	Cum	1002.60	209895.67			
	Cement (80 km lead)	90.529	MT	984.50	89125.93			
	Boulder (60 Km)	2.241	Cum	1120.65	2511.37			
	Brick (10 Km)	2032.200	No.	0.83	1692.82			
	Steel (80 km)	8.844	MT	984.50	8706.71			
TOTAL (In Rs.)					2788570.62			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	187.39	1405.43				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12657.95				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 Km lead)	0.11	M.T.	984.50	108.22				
	Hume Pipe (80 km lead)	7.50	RM	843.40	6325.50				
TOTAL COST (In Rs.)					97760.15				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND

ABSTRACT OF COST FOR KILOMETER STONES

S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (50 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
AOC FOR CULVERT (Ch.- 0.320 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.008	Ha	73027.00	547.70			
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	13.275	Cum	106.98	1420.16			
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	72.092	Sqm	51.66	3724.28	0.198	0.260	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.260	Cum	678.60	176.12			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.198	MT	984.50	195.18			
TOTAL (In Rs.)					6063.44			
AOC FOR CULVERT (Ch. - .870Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	80.970	Sqm	51.66	4182.92	0.2227	0.291	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.291	Cum	678.60	197.81			
	Cement (80 km lead)	0.223	MT	984.50	219.22			
TOTAL (In Rs.)					4892.05			
AOC FOR CULVERT + FALL (Ch.- 1.400 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	401.65			

2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	70.599	Sqm	51.66	3647.13	0.194	0.254	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.254	Cum	678.60	172.47			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.194	MT	984.50	191.14			
TOTAL (In Rs.)					4412.39			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (SONPURWA MINOR)				
S. No.	Items	Qty.	Unit	Total Estimated Amount (Rs.)
1	Earthwork	Detail as per BOQ	No.	2702076.05
1	Head Regulator	Detail as per BOQ	No.	2596034.66
2	Outlets	10	No.	977601.47
3	Kilometer Stone	03	No.	4119.83
4	Remodelling of Structures			
	<i>Fall at 0.740 Km</i>	Detail as per BOQ	No.	27758.04
	<i>Culvert at .840 Km</i>	Detail as per BOQ	No.	4173.94
	<i>Fall at 1.020 Km</i>	Detail as per BOQ	No.	36768.55
	<i>Culvert at 1.490 Km</i>	Detail as per BOQ	No.	6685.69
	TOTAL (In Rs.)			6355218.22
	TOTAL (In Lacs)			63.55

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND					
ABSTRACT OF QUANTITY OF EARTHWORK FOR SONPURWA MINOR .					
Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	2220.03	Cum	110.83	246045.9249
2	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8) .	246.67	Cum	374.47	92370.5149
3	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	2864.74	Cum	117.56	336778.54
4	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1) .				
i.	One extra lead - $1 \times 12.3 = 12.3$	1700.90	Cum	12.30	20921.10
ii.	Two extra lead - $2 \times 12.3 = 24.6$	1303.43	Cum	24.60	32064.31
iii.	Three extra lead - $1 \times 12.3 = 36.9$	444.01	Cum	36.90	16383.82
5	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lead - $1 \times 12.3 = 12.3$	1682.96	Cum	12.30	20700.44
ii.	Two extra lead - $2 \times 12.3 = 24.6$	444.01	Cum	24.60	10922.55
6	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B 7.1.26.1)				

A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	4010.63	Cum	172.93	693558.68
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	2864.74	Cum	188.08	538799.83
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	1718.84	Cum	206.29	354580.02
7	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B 7.1.39)	13925.65	Cum	24.34	338950.32
TOTAL COST OF EARTHWORK (in Rs.)					2702076.05
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					27.021

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND ANALYSIS OF RATE OF HEAD REGULATOR GATE			
1	Cost of material (A)	Rs.	55000
2	Wastage 5% =	Rs.	2750
3	Cost of miscellaneous material like electrodes,oxygen, acetylene nut bolt, rope as per site	Rs.	35750
	<i>Total 1+2+3= (B) =</i>	Rs.	93500
4	Labour charge 30%(B) =	Rs.	28050
5	Overhead charge + Contractor profit @14.95% A	Rs.	8222.5
6	Workshop and energy charge ,12 % of (B)	Rs.	11220
7	Transportation and erection charge ,15 % of B	Rs.	14025
	<i>Total = B+4+5+6+7 = C</i>	Rs.	155017.5
8	Other incidental charge , 3 % = of C	Rs.	4650.525
	<i>Total C+8 = D</i>	Rs.	159668.025

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Sonpurwa Mr. (Offtaking from RMC at RD 11.758 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	296.366	Cum	110.83	32846.24			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	25.930	Cum	3279.00	85022.99	5.57	11.67	23.34
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5))	9.54	Cum	4068.00	38816.04	3.24	4.01	8.11
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	180.95	Cum	4891.00	885017.33	70.57	76.00	153.81
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A .14.1 B)	8.67	Cum	5294.00	45889.34	3.68	3.38	6.76
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -.8.3 - 13.6)	4.58	M.T.	71410.00	327250.03			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	456.29	Sqm	385.50	175899.31			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	13.28	Sqm	414.88	5510.89			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	2.78	Cum	408.85	1137.02			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	2.78	Cum	889.70	2474.26			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B .7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B .6.6.3)	28.97	Sqm	848.15	24569.21			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			

15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	20.00	Cum	106.98	2139.60			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	3.83	MT	159668.03	612042.89			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	95.055	Cum	678.60	64504.09			
	Coarse Aggregates (60 Km lead)	192.674	Cum	1002.60	193175.17			
	Cement (80 km lead)	83.073	MT	984.50	81785.19			
	Boulder (60 Km)	2.781	Cum	1120.65	3116.51			
	Brick (10 Km)	1738.080	No.	0.83	1447.82			
	Steel (80 km)	8.416	MT	984.50	8285.47			
TOTAL (In Rs.)					2596034.66			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	187.39	1405.43				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A .-8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12657.95				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 Km lead)	0.11	M.T.	984.50	108.22				
	Hume Pipe (80 Km)	7.50	RM	843.40	6325.50				
TOTAL (In Rs.)					97760.15				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR KILOMETER STONES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (50 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
AOC FOR FALL (Ch.- 0.740 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.010	Ha	73027.00	730.27			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	54.000	Sqm	51.66	2789.64	0.1485	0.194	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	4.32	Cum	4068.00	17593.90	1.47	1.82	3.68
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	2.011	Cum	678.60	1364.58			
	Coarse Aggregates (60 Km lead)	3.676	Cum	1002.60	3685.77			
	Cement (80 km lead)	1.619	MT	984.50	1593.89			
TOTAL (In Rs.)					27758.04			
AOC FOR CULVERT (Ch.- .840 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.002	Ha	73027.00	146.05			
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	11.250	Cum	106.98	1203.53			
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	49.716	Sqm	51.66	2568.31	0.14	0.18	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.179	Cum	678.60	121.45			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.137	MT	984.50	134.60			
TOTAL (In Rs.)					4173.94			

AOC FOR FALL (Ch.- 1.020 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	401.65		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	70.800	Sqm	51.66	3657.53	0.195	0.255
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	5.84	Cum	4068.00	23750.81	1.99	2.45
4	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	2.707	Cum	678.60	1836.99		
	Coarse Aggregates (60 Km lead)	4.963	Cum	1002.60	4975.59		
	Cement (80 km lead)	2.180	MT	984.50	2145.99		
TOTAL (In Rs.)					36768.55		
AOC FOR CULVERT (Ch. - 1.490 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	113.828	Sqm	51.66	5880.35	0.3130	0.410
3	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	0.410	Cum	678.60	278.08		
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00		
	Cement (80 km lead)	0.313	MT	984.50	308.18		
TOTAL (In Rs.)					6685.69		

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (DEVORI KALA MINOR)				
S. No.	Items	Qty.	Unit	Total Estimated Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	2773956.12
2	Head Regulator	Detail as per BOQ	No.	3253849.78
3	Falls			
	<i>Fall (1.550 Km)</i>	Detail as per BOQ	No.	694000.92
	<i>Fall (1.750 Km)</i>	Detail as per BOQ	No.	692959.24
4	Outlets	03	No.	293280.44
5	Kilometer Stone	02	No.	2746.55
6	Remodelling of Structures			
	<i>Bridge at 0.235 Km</i>	Detail as per BOQ	No.	17293.47
	<i>Bridge at 0.650 Km</i>	Detail as per BOQ	No.	63136.78
	<i>Bridge at 0.880 Km</i>	Detail as per BOQ	No.	64820.45
	<i>Culvert at 1.450 Km</i>	Detail as per BOQ	No.	29238.97
	TOTAL (In Rs.)			7885282.71
	TOTAL (In Lacs)			78.85

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND					
ABSTRACT OF QUANTITY OF EARTHWORK FOR DEVORIKALA MINOR .					
Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.17	Ha	73027.00	12206.71864
2	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	10782.32	Cum	110.83	1195003.971
3	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8).	1198.04	Cum	172.93	207176.1926
4	E/W in stripping by hydraulic M/c in grade A & B type of soil including morroum soil, soil mixed with kankar, pebbles, boulders upto 300 mm size and disposal of the same along with all organic materials in the country side beyond 150 m upto 500 m in all by tipper including construction & maintenance of haul road etc. all complete as per specification and direction of E/I. (WRD Part B 5.1.6.1)	250.73	Cum	106.11	26604.99
5	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	1281.88	Cum	118.58	152004.74
6	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1).				
i.	One extra lead - $1 \times 12.3 = 12.3$	3208.33	Cum	12.30	39462.44
ii.	Two extra lead - $2 \times 12.3 = 24.6$	2541.03	Cum	24.60	62509.23
iii.	Three extra lead - $3 \times 12.3 = 36.9$	2156.46	Cum	36.90	79573.48
7	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lead - $1 \times 12.3 = 12.3$	5647.53	Cum	12.30	69464.65
ii.	Two extra lead - $2 \times 12.3 = 24.6$	2156.46	Cum	24.60	53048.99

8	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B 7.1.26.1)				
A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	1794.63	Cum	172.93	310344.50
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	1281.88	Cum	188.08	241095.05
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	769.13	Cum	206.29	158662.80
9	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B 7.1.39)	6852.85	Cum	24.34	166798.37
TOTAL COST OF EARTHWORK (in Rs.)					2773956.12
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					27.740

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND ANALYSIS OF RATE OF HEAD REGULATOR GATE			
1	Cost of material (A)	Rs.	55000
2	Wastage 5% =	Rs.	2750
3	Cost of miscellaneous material like electrodes,oxygen, acetylene nut bolt, rope as per site	Rs.	35750
	<i>Total 1+2+3= (B) =</i>	Rs.	93500
4	Labour charge 30%(B) =	Rs.	28050
5	Overhead charge + Contractor profit @14.95% A	Rs.	8222.5
6	Workshop and energy charge ,12 % of (B)	Rs.	11220
7	Transportation and erection charge ,15 % of B	Rs.	14025
	<i>Total = B+4+5+6+7 = C</i>	Rs.	155017.5
8	Other incidental charge , 3 % = of C	Rs.	4650.525
	<i>Total C+8 = D</i>	Rs.	159668.025

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Devorikala Mr. (Offtaking from RMC at RD 20.281 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	292.073	Cum	110.83	32370.42			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	27.487	Cum	3279.00	90128.88	5.91	12.37	24.74
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	10.17	Cum	4068.00	41369.82	3.46	4.27	8.64
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	240.64	Cum	4891.00	1176991.88	93.85	101.07	204.55
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A 14.1 B)	11.00	Cum	5294.00	58243.11	4.68	4.29	8.58
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	6.05	M.T.	71410.00	431726.09			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	568.78	Sqm	385.50	219263.87			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	14.99	Sqm	414.88	6217.02			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	4.51	Cum	408.85	1843.52			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncraterd) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	4.51	Cum	889.70	4011.66			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	39.21	Sqm	848.15	33255.96			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			

15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	4.36	MT	159668.03	696030.35			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	122.002	Cum	678.60	82790.26			
	Coarse Aggregates (60 Km lead)	247.171	Cum	1002.60	247813.91			
	Cement (80 km lead)	107.894	MT	984.50	106221.99			
	Boulder (60 Km)	4.509	Cum	1120.65	5052.99			
	Brick (10 Km)	2352.60	No.	0.83	1959.72			
	Steel (80 km)	10.405	MT	984.50	10243.69			
TOTAL (In Rs.)					3253849.78			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND									
SHARDA TYPE FALL FOR DEVORI KALAN MINOR									
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
SHARDA TYPE FALL AT CH. 1.550 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	140.820	Cum	110.83	15607.08				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	10.049	Cum	3279.00	32950.72	2.16	4.52	9.04	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	73.22	Cum	4068.00	297876.94	24.90	30.75	62.24	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.18	Cum	4891.00	864.73	0.07	0.07	0.15	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	1.73	M.T.	71410.00	123439.24				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	188.07	Sqm	385.50	72500.54				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	21.57	Sqm	414.88	8950.21				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	13.49	Sqm	848.15	11439.85				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.59	Cum	408.85	242.86				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.59	Cum	889.70	528.48				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.59	Cum	1276.75	758.39				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.59	Cum	365.75	217.26				

13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	12.43	Sqm	51.66	642.18	0.0342	0.045		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				
15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	5.18	Cum	106.98	554.16				

16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	35.395	Cum	678.60	24019.26				
	Coarse Aggregates (60 Km lead)	72.029	Cum	1002.60	72216.43				
	Cement (80 km lead)	27.160	MT	984.50	26739.00				
	Boulder (60 Km)	0.59	Cum	1120.65	665.66				
	Brick (10 Km)	809.280	No.	0.83	674.13				
	Steel (80 km)	1.729	MT	984.50	1701.81				
TOTAL (In Rs.)					694000.92				

SHARDA TYPE FALL AT CH. 1.750 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	131.730	Cum	110.83	14599.64				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	10.049	Cum	3279.00	32950.72	2.16	4.52	9.04	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A 7.3.1.1)	73.22	Cum	4068.00	297876.94	24.90	30.75	62.24	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.18	Cum	4891.00	864.73	0.07	0.07	0.15	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	1.73	M.T.	71410.00	123439.24				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	188.07	Sqm	385.50	72500.54				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	21.57	Sqm	414.88	8950.21				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	13.49	Sqm	848.15	11439.85				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.59	Cum	408.85	242.86				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.59	Cum	889.70	528.48				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.59	Cum	1276.75	758.39				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.59	Cum	365.75	217.26				
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	12.43	Sqm	51.66	642.18	0.0342	0.045		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	4.86	Cum	106.98	519.92				
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16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	35.395	Cum	678.60	24019.26				
	Coarse Aggregates (60 Km lead)	72.029	Cum	1002.60	72216.43				
	Cement (80 km lead)	27.160	MT	984.50	26739.00				
	Boulder (60 Km)	0.59	Cum	1120.65	665.66				
	Brick (10 Km)	809.280	No.	0.83	674.13				
	Steel (80 km)	1.729	MT	984.50	1701.81				
TOTAL (In Rs.)					692959.24				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	187.39	1405.43				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12657.95				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 km)	0.11	MT	984.50	108.22				
	Hume Pipe (80 Km)	7.50	RM	843.40	6325.50				
TOTAL (In Rs.)					97760.15				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR KILOMETER STONES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (50 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
AOC FOR FALL (Ch.- 0.235 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	1.211	Sqm	4891.00	5924.96	0.47	0.51	1.03
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	92.262	Sqm	51.66	4766.25	0.2537	0.332	
4	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	38.00	Cum	106.98	4065.24			
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.841	Cum	678.60	570.66			
	Coarse Aggregates (60 Km lead)	1.030	Cum	1002.60	1032.37			
	Cement (80 km lead)	0.726	MT	984.50	714.91			
TOTAL (In Rs.)					17293.47			
AOC FOR CULVERT (Ch.- 0.650 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	240.0	Cum	106.98	25675.20			
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	58.320	Sqm	51.66	3012.81	0.16	0.21	

4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	5.28	Cum	4891.00	25824.48	2.06	2.22	4.49
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	2.428	Cum	678.60	1647.34			
	Coarse Aggregates (60 Km lead)	4.488	Cum	1002.60	4499.67			
	Cement (80 km lead)	2.220	MT	984.50	2185.18			
TOTAL (In Rs.)					63136.78			
AOC FOR FALL (Ch.- 0.880 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	438.16			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	58.320	Sqm	51.66	3012.81	0.160	0.210	
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	20.00	Cum	106.98	2139.60			
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	9.19	Cum	4891.00	44949.51	3.58	3.86	7.81
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	4.070	Cum	678.60	2761.80			
	Coarse Aggregates (60 Km lead)	7.812	Cum	1002.60	7832.02			
	Cement (80 km lead)	3.745	MT	984.50	3686.54			
TOTAL (In Rs.)					64820.45			
AOC FOR CULVERT (Ch. - 1.490 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	438.16			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	110.791	Sqm	51.66	5723.45	0.3047	0.399	

3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	3.51	Cum	4891.00	17167.41	1.37	1.47	2.98
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	1.873	Cum	678.60	1271.05			
	Coarse Aggregates (60 Km lead)	2.984	Cum	1002.60	2991.26			
	Cement (80 km lead)	1.674	MT	984.50	1647.63			
TOTAL (In Rs.)					29238.97			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (BUDHUA MINOR)				
S. No.	Items	Qty.	Unit	Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	6191817.59
2	Head Regulator	Detail as per BOQ	No.	3160249.91
3	Cross Drainage Works			
	<i>Ch. 1.800 Km</i>	Detail as per BOQ	No.	1647525.25
	<i>Ch. 2.550 Km</i>	Detail as per BOQ	No.	930828.47
4	Falls			
	<i>Fall (2.010 Km)</i>	Detail as per BOQ	No.	1046681.44
	<i>Fall (3.200 Km)</i>	Detail as per BOQ	No.	1139799.43
	<i>Fall (3.700 Km)</i>	Detail as per BOQ	No.	667397.33
5	Outlets	05	No.	488794.55
6	Kilometer Stone	06	No.	8239.65
7	Remodelling of Structures			
	<i>Bridge at 0.130 Km</i>	Detail as per BOQ	No.	10580.25
	<i>Bridge at 0.560 Km</i>	Detail as per BOQ	No.	16387.47
	<i>Culvert at 0.770 Km</i>	Detail as per BOQ	No.	109942.06
	<i>Bridge at 0.880 Km</i>	Detail as per BOQ	No.	18844.81
	<i>Bridge at 0.970 Km</i>	Detail as per BOQ	No.	8391.99
	<i>Cross Drainage at 1.020 Km</i>	Detail as per BOQ	No.	3983.64
	<i>Bridge at 1.100 Km</i>	Detail as per BOQ	No.	17096.06
	<i>Culvert at 1.335 Km</i>	Detail as per BOQ	No.	6113.56
	<i>Culvert at 1.450 Km</i>	Detail as per BOQ	No.	13273.71
	<i>Railway Bridge at 1.580 Km</i>	Detail as per BOQ	No.	14143.19
	<i>Culvert at 1.735 Km</i>	Detail as per BOQ	No.	17773.40
	<i>Culvert at 1.940 Km</i>	Detail as per BOQ	No.	15540.94
	<i>Culvert at 2.010 Km</i>	Detail as per BOQ	No.	5411.97
	<i>Culvert at 2.270 Km</i>	Detail as per BOQ	No.	2717.39

	<i>Culvert at 2.475 Km</i>	Detail as per BOQ	No.	4322.20
	<i>Culvert at 2.650 Km</i>	Detail as per BOQ	No.	4260.61
	<i>Culvert at 2.720 Km</i>	Detail as per BOQ	No.	7720.62
	<i>Culvert at 2.810 Km</i>	Detail as per BOQ	No.	9782.27
	<i>Culvert at 3.230 Km</i>	Detail as per BOQ	No.	18689.52
	<i>Culvert at 4.120 Km</i>	Detail as per BOQ	No.	7932.94
	TOTAL (In Rs.)			15594242.24
	TOTAL (In Lacs)			155.94

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

ABSTRACT OF QUANTITY OF EARTHWORK FOR BUDHUA MINOR .

Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.28	Ha	73027.00	20195.61685
2	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	2087.37	Cum	110.83	231343.2171
3	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8) .	231.93	Cum	374.47	86850.8271
4	E/W in stripping by hydraulic M/c in grade A & B type of soil including morroum soil, soil mixed with kankar, pebbles, boulders upto 300 mm size and disposal of the same along with all organic materials in the country side beyond 150 m upto 500 m in all by tipper including construction & maintenance of haul road etc. all complete as per specification and direction of E/I. (WRD Part B 5.1.6.1)	414.83	Cum	106.11	44017.08
5	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	7270.93	Cum	117.56	854769.94
6	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1).				
i.	One extra lead - $1 \times 12.3 = 12.3$	3430.21	Cum	12.30	42191.61
ii.	Two extra lead - $2 \times 12.3 = 24.6$	2598.75	Cum	24.60	63929.29
iii.	Three extra lead - $1 \times 12.3 = 36.9$	417.47	Cum	36.90	15404.79

7	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lead - $1 \times 12.3 = 12.3$	2497.87	Cum	12.30	30723.80
ii.	Two extra lead - $2 \times 12.3 = 24.6$	417.47	Cum	24.60	10269.86
8	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B 7.1.26.1)				
A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	10179.30	Cum	172.93	1760305.48
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	7270.93	Cum	188.08	1367515.57
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	4362.56	Cum	206.29	899951.47
9	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B 7.1.39)	31403.00	Cum	24.34	764349.02
TOTAL COST OF EARTHWORK (in Rs.)					6191817.59
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					61.918

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND ANALYSIS OF RATE OF HEAD REGULATOR GATE			
1	Cost of material (A)	Rs.	55000
2	Wastage 5% =	Rs.	2750
3	Cost of miscellaneous material like electrodes,oxygen, acetylene nut bolt, rope as per site	Rs.	35750
	<i>Total 1+2+3= (B) =</i>	Rs.	93500
4	Labour charge 30%(B) =	Rs.	28050
5	Overhead charge + Contractor profit @14.95% A	Rs.	8222.5
6	Workshop and energy charge ,12 % of (B)	Rs.	11220
7	Transportation and erection charge ,15 % of B	Rs.	14025
	<i>Total = B+4+5+6+7 = C</i>	Rs.	155017.5
8	Other incidental charge , 3 % = of C	Rs.	4650.525
	<i>Total C+8 = D</i>	Rs.	159668.025

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Budhua Mr. (Offtaking from RMC at RD 24.869 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	673.018	Cum	110.83	74590.57			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	29.424	Cum	3279.00	96479.92	6.33	13.24	26.48
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	11.67	Cum	4068.00	47478.44	3.97	4.90	9.92
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	223.45	Cum	4891.00	1092893.85	87.15	93.85	189.93
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A Corrigendum 14.1 B)	11.15	Cum	5294.00	59035.94	4.74	4.35	8.70
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 - 13.6)	5.64	M.T.	71410.00	402810.10			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	530.19	Sqm	385.50	204386.35			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	17.15	Sqm	414.88	7113.16			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	5.51	Cum	408.85	2251.97			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	5.51	Cum	889.70	4900.47			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B Corrigendum 7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B Corrigendum 6.6.3)	37.98	Sqm	848.15	32212.74			

14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
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15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	35.00	Cum	106.98	3744.30			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	4.34	MT	159668.03	693497.40			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	116.341	Cum	678.60	78948.72			
	Coarse Aggregates (60 Km lead)	235.692	Cum	1002.60	236305.18			
	Cement (80 km lead)	102.179	MT	984.50	100595.37			
	Boulder (60 Km)	5.508	Cum	1120.65	6172.51			
	Brick (10 Km)	2278.800	No.	0.83	1898.24			
	Steel (80 km)	9.984	MT	984.50	9829.42			
TOTAL (In Rs.)					3160249.91			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR CROSS DRAINAGE WORKS OF BUDHUA MINOR								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
Cross Drainage at Ch. 1.800 K.M								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	280.16	Cum	110.83	31050.25			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	34.50	Cum	3279.00	113118.44	7.42	15.52	31.05
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	7.52	Cum	4068.00	30606.10	2.56	3.16	6.40
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	133.23	Cum	4891.00	651605.68	51.96	55.95	113.24
5	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	74.63	Sqm	385.50	28769.71			
6	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	426.85	Sqm	414.88	177092.83			
7	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	17.50	RM	4465.81	78151.63			
8	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I .(WRD Part B Corrigendum 7.6.2.4)	17.50	RM	1289.47	22565.73			
9	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 - 13.6)	3.14	MT	71410.00	224045.97			
10	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	93.21	Cum	106.98	9971.20			
	Coarse Sand (35Km lead)	74.639	Cum	678.60	50649.78			
	Coarse Aggregates (60 Km lead)	150.685	Cum	1002.60	151076.56			
	Cement (80 km lead)	61.933	MT	984.50	60973.03			
	Hume Pipe (80 Km)	17.50	RM	843.40	14759.50			
	Steel (80 Km)	3.14	MT	984.50	3088.83			
TOTAL (In Rs.)					1647525.25			
Cross Drainage at Ch. 2.550 K.M								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	164.51	Cum	110.83	18232.68			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	31.19	Cum	3279.00	102260.65	6.71	14.03	28.07
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	7.52	Cum	4068.00	30606.10	2.56	3.16	6.40

4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	57.81	Cum	4891.00	282758.22	22.55	24.28	49.14
5	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	72.94	Sqm	385.50	28119.30			
6	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	256.19	Sqm	414.88	106286.20			
7	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	17.50	RM	4465.81	78151.63			
8	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I. (WRD Part B Corrigendum 7.6.2.4)	17.50	RM	1289.47	22565.73			
9	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 - 13.6)	1.36	MT	71410.00	97222.66			
10	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	49.01	Cum	106.98	5243.36			
	Coarse Sand (35Km lead)	41.475	Cum	678.60	28144.85			
	Coarse Aggregates (60 Km lead)	83.603	Cum	1002.60	83820.48			
	Cement (80 km lead)	31.810	MT	984.50	31316.74			
	Hume Pipe (80 Km)	17.50	RM	843.40	14759.50			
	Steel (80 Km)	1.36	MT	984.50	1340.37			
TOTAL (In Rs.)					930828.47			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
SHARDA TYPE FALL FOR BUDHUA MINOR								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
SHARDA TYPE FALL AT CH. 2.010 KM								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	259.020	Cum	110.83	28707.19			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	16.471	Cum	3279.00	54006.92	3.54	7.41	14.82
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	110.14	Cum	4068.00	448064.87	37.45	46.26	93.62
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	0.32	Cum	4891.00	1556.51	0.12	0.13	0.27
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 - 13.6)	2.60	M.T.	71410.00	185764.57			
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	265.13	Sqm	385.50	102205.91			
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	31.73	Sqm	414.88	13163.31			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B Corrigendum 6.6.3)	18.19	Sqm	848.15	15427.85			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry.(WRD Part B M-017)	1.25	Cum	408.85	512.09			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	1.25	Cum	889.70	1114.35			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B Corrigendum 7.2.2)	1.25	Cum	1276.75	1599.13			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	1.25	Cum	365.75	458.10			
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	17.42	Sqm	51.66	900.12	0.0479	0.063	
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	41.64	Cum	106.98	4454.65			
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16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	53.869	Cum	678.60	36555.18			
	Coarse Aggregates (60 Km lead)	109.969	Cum	1002.60	110254.62			
	Cement (80 km lead)	41.162	MT	984.50	40524.07			
	Boulder (60 Km)	1.25	Cum	1120.65	1403.61			
	Brick (10 Km)	1091.400	No.	0.83	909.14			
	Steel (80 km)	2.601	MT	984.50	2561.06			
TOTAL (In Rs.)					1046681.44			
SHARDA TYPE FALL AT CH. 3.200 KM								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	51.070	Cum	110.83	5660.09			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	17.090	Cum	3279.00	56037.86	3.67	7.69	15.38
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	123.93	Cum	4068.00	504153.77	42.14	52.05	105.34
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	0.31	Cum	4891.00	1496.65	0.12	0.13	0.26
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 - 13.6)	2.93	M.T.	71410.00	208931.06			
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	286.50	Sqm	385.50	110446.68			
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	31.72	Sqm	414.88	13158.33			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B Corrigendum 6.6.3)	18.19	Sqm	848.15	15427.85			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	1.25	Cum	408.85	512.09			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	1.25	Cum	889.70	1114.35			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B Corrigendum 7.2.2)	1.25	Cum	1276.75	1599.13			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	1.25	Cum	365.75	458.10			

13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	17.42	Sqm	51.66	900.12	0.0479	0.063	
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	44.95	Cum	106.98	4808.75			
16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	59.933	Cum	678.60	40670.52			
	Coarse Aggregates (60 Km lead)	122.235	Cum	1002.60	122553.21			
	Cement (80 km lead)	45.978	MT	984.50	45265.67			
	Boulder (60 Km)	1.25	Cum	1120.65	1403.61			
	Brick (10 Km)	1091.400	No.	0.83	909.14			
	Steel (80 km)	2.926	MT	984.50	2880.45			
TOTAL (In Rs.)					1139799.43			

SHARDA TYPE FALL AT CH. 3.700 KM								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	128.232	Cum	110.83	14211.95			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	12.068	Cum	3279.00	39571.13	2.59	5.43	10.86
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	66.71	Cum	4068.00	271388.64	22.68	28.02	56.71
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A Corrigendum 14.1 A)	0.27	Cum	4891.00	1297.09	0.10	0.11	0.23
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 - 13.6)	1.58	M.T.	71410.00	112637.67			
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	186.71	Sqm	385.50	71976.64			
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	25.61	Sqm	414.88	10624.45			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B Corrigendum 6.6.3)	18.19	Sqm	848.15	15427.85			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	1.25	Cum	408.85	512.09			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	1.25	Cum	889.70	1114.35			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B Corrigendum 7.2.2)	1.25	Cum	1276.75	1599.13			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	1.25	Cum	365.75	458.10			
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A Corrigendum 5.7.11)	14.45	Sqm	51.66	746.69	0.0397	0.052	
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	32.65	Cum	106.98	3492.79			
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16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	33.614	Cum	678.60	22810.13			
	Coarse Aggregates (60 Km lead)	69.045	Cum	1002.60	69224.76			
	Cement (80 km lead)	25.420	MT	984.50	25026.23			
	Boulder (60 Km)	1.25	Cum	1120.65	1403.61			
	Brick (10 Km)	1091.40	No.	0.83	909.14			
	Steel (80 km)	1.577	MT	984.50	1552.89			
TOTAL (In Rs.)					667397.33			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	187.39	1405.43				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12656.72				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 km lead)	0.11	MT	984.50	108.21				
	Hume Pipe (80 Km)	7.50	RM	843.40	6325.50				
TOTAL					97758.91				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR KILOMETER STONES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (80 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
AOC FOR CULVERT (Ch.- 0.130 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	125.629	Sqm	51.66	6490.00	0.3455	0.452	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.48	Cum	4891.00	2366.02	0.16	0.20	0.41
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.655	Cum	678.60	444.78			
	Coarse Aggregates (60 Km lead)	0.411	Cum	1002.60	412.26			
	Cement (80 km lead)	0.510	MT	984.50	502.05			
TOTAL (In Rs.)					10580.25			
AOC FOR CULVERT (Ch.- .560 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	401.65			
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	120.000	Cum	106.98	12837.60			
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	55.416	Sqm	51.66	2862.81	0.15	0.20	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.199	Cum	678.60	135.38			

	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.152	MT	984.50	150.03			
TOTAL (In Rs.)					16387.47			

AOC FOR CULVERT (Ch.- 0.770 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	89.724	Sqm	51.66	4635.14	0.247	0.323
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	16.42	Cum	4891.00	80310.22	5.58	6.90 13.96
4	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	7.219	Cum	678.60	4899.09		
	Coarse Aggregates (60 Km lead)	13.957	Cum	1002.60	13993.29		
	Cement (80 km lead)	5.830	MT	984.50	5739.18		
TOTAL (In Rs.)					109942.06		
AOC FOR CULVERT (Ch. - 0.880 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	328.62		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	325.930	Sqm	51.66	16837.54	0.8963	1.173
3	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	1.173	Cum	678.60	796.23		
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00		
	Cement (80 km lead)	0.896	MT	984.50	882.41		
TOTAL (In Rs.)					18844.81		
AOC OF CULVERT AT 0.970 KM							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11		

2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	95.500	Sqm	51.66	4933.53	0.2626	0.344	
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	25.00	Cum	106.98	2674.50			
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.344	Cum	678.60	233.30			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.263	MT	984.50	258.55			
TOTAL (In Rs.)					8391.99			
AOC OF CD AT 1.020 KM								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	64.980	Sqm	51.66	3356.87	0.1787	0.234	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.234	Cum	678.60	158.74			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.179	MT	984.50	175.93			
TOTAL (In Rs.)					3983.64			
AOC FOR CULVERT (Ch.- 1.110 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	328.62			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	65.676	Sqm	51.66	3392.84	0.181	0.236	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	1.54	Cum	4891.00	7553.66	0.53	0.65	1.31

4	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.885	Cum	678.60	600.62			
	Coarse Aggregates (60 Km lead)	1.313	Cum	1002.60	1316.15			
	Cement (80 km lead)	0.706	MT	984.50	694.77			
TOTAL (In Rs.)					17096.06			
AOC FOR CULVERT (Ch.- 1.335 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	47.264	Sqm	51.66	2441.66	0.130	0.170	
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.170	Cum	678.60	115.46			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.130	MT	984.50	127.96			
TOTAL (In Rs.)					6113.56			
AOC FOR CULVERT (Ch.- 1.450 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	41.360	Sqm	51.66	2136.66	0.114	0.149	

3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	1.20	Cum	4891.00	5869.20	0.41	0.50	1.02
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.504	Cum	678.60	342.01			
	Coarse Aggregates (60 Km lead)	1.020	Cum	1002.60	1022.65			
	Cement (80 km lead)	0.408	MT	984.50	401.68			
TOTAL (In Rs.)					13273.71			
AOC FOR RAIL BRIDGE (Ch.- 1.580 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.010	Ha	73027.00	730.27			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	236.100	Sqm	51.66	12196.93	0.649	0.850	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.850	Cum	678.60	576.78			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.649	MT	984.50	639.21			
TOTAL (In Rs.)					14143.19			
AOC FOR CULVERT (Ch.- 1.735 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	47.170	Sqm	51.66	2436.80	0.130	0.170	

3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	1.86	Cum	4891.00	9097.26	0.63	0.78	1.58
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.781	Cum	678.60	530.12			
	Coarse Aggregates (60 Km lead)	1.581	Cum	1002.60	1585.11			
	Cement (80 km lead)	0.632	MT	984.50	622.60			
TOTAL (In Rs.)					17773.40			
AOC FOR CULVERT (Ch.- 1.940 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	42.320	Sqm	51.66	2186.25	0.116	0.152	
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	1.56	Cum	4891.00	7629.96	0.53	0.66	1.33
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.655	Cum	678.60	444.62			
	Coarse Aggregates (60 Km lead)	1.326	Cum	1002.60	1329.45			
	Cement (80 km lead)	0.530	MT	984.50	522.18			
TOTAL (In Rs.)					15540.94			

AOC FOR CULVERT (Ch.- 2.010 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	90.122	Sqm	51.66	4655.70	0.248	0.324	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.324	Cum	678.60	220.16			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.248	MT	984.50	243.99			
TOTAL (In Rs.)					5411.97			
AOC FOR CULVERT (Ch.- 2.27 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	438.16			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	40.120	Sqm	51.66	2072.60	0.110	0.144	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.144	Cum	678.60	98.01			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.110	MT	984.50	108.62			
TOTAL (In Rs.)					2717.39			
AOC FOR CULVERT (Ch.- 2.475 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	69.654	Sqm	51.66	3598.33	0.192	0.251	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.251	Cum	678.60	170.16			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.192	MT	984.50	188.58			
TOTAL (In Rs.)					4322.20			
AOC FOR CULVERT (Ch.- 2.650 Km)								

1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	255.59			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	70.498	Sqm	51.66	3641.93	0.194	0.254	
3	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.254	Cum	678.60	172.22			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.194	MT	984.50	190.86			
TOTAL (In Rs.)					4260.61			
AOC FOR CULVERT (Ch.- 2.720 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	75.552	Sqm	51.66	3903.02	0.208	0.272	
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.272	Cum	678.60	184.57			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.208	MT	984.50	204.55			
TOTAL (In Rs.)					7720.62			
AOC FOR CULVERT (Ch.- 2.810 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	167.050	Sqm	51.66	8629.80	0.459	0.601	
3	Carriage of materials(As per Jharkhand SoR 2021)							

	Coarse Sand (35Km lead)	0.601	Cum	678.60	408.10			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.459	MT	984.50	452.27			
TOTAL (In Rs.)					9782.27			
AOC FOR CULVERT (Ch.- 3.230 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	59.040	Sqm	51.66	3050.01	0.162	0.213	
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	40.00	Cum	106.98	4279.20			
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	1.73	Cum	4891.00	8451.65	0.59	0.73	1.47
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.726	Cum	678.60	492.50			
	Coarse Aggregates (60 Km lead)	1.469	Cum	1002.60	1472.62			
	Cement (80 km lead)	0.588	MT	984.50	578.41			
TOTAL (In Rs.)					18689.52			
AOC FOR CULVERT (Ch.- 4.120 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	438.16			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	56.602	Sqm	51.66	2924.06	0.156	0.204	

3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	40.00	Cum	106.98	4279.20			
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.204	Cum	678.60	138.28			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.156	MT	984.50	153.24			
TOTAL (In Rs.)					7932.94			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (BISHRAMPUR MINOR)				
S. No.	Items	Qty.	Unit	Total Estimated Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	3915113.67
2	Head Regulator	Detail as per BOQ	No.	4257161.75
3	Falls			
	<i>Fall (2.200 Km)</i>	Detail as per BOQ	No.	539047.42
4	Outlets	08	No.	782081.18
5	Kilometer Stone	03	No.	4119.83
6	Remodelling of Structures			
	<i>Bridge at 0.140 Km</i>	Detail as per BOQ	No.	25283.60
	<i>Bridge at 0.330 Km</i>	Detail as per BOQ	No.	41043.65
	<i>Culvert at 0.550 Km</i>	Detail as per BOQ	No.	2309.65
	<i>Bridge at 0.800 Km</i>	Detail as per BOQ	No.	6758.71
	<i>Culvert at 1.395 Km</i>	Detail as per BOQ	No.	19659.14
	<i>Railway Bridge at 1.410 Km</i>	Detail as per BOQ	No.	43206.39
	<i>Fall at 2.925 Km</i>	Detail as per BOQ	No.	40658.95
	TOTAL (In Rs.)			9676443.95
	TOTAL (In Lacs)			96.76

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND					
ABSTRACT OF QUANTITY OF EARTHWORK FOR BISHRAMPUR MINOR .					
Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.33	Ha	73027.00	24020.40598
2	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	15488.33	Cum	110.83	1716572.057
3	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8) .	1720.93	Cum	374.47	644435.1592
4	E/W in stripping by hydraulic M/c in grade A & B type of soil including morroum soil, soil mixed with kankar, pebbles, boulders upto 300 mm size and disposal of the same along with all organic materials in the country side beyond 150 m upto 500 m in all by tipper including construction & maintenance of haul road etc. all complete as per specification and direction of E/I. (WRD Part B 5.1.6.1)	493.39	Cum	106.11	52353.35
5	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	1102.48	Cum	117.56	129607.99
6	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1).				
i.	One extra lead - $1*12.1 = 12.19$	4313.08	Cum	12.30	53050.85
ii.	Two extra lead - $2*12.19 = 24.38$	3428.41	Cum	24.60	84338.93
iii.	Three extra lead - $3*12.19 = 36.57$	3097.67	Cum	36.90	114303.90
7	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lift - $1*12.19 = 12.19$	7964.66	Cum	12.30	97965.36
ii.	Two extra lift - $2*12.19 = 24.38$	3097.67	Cum	24.60	76202.60

8	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B .7.1.26.1)				
A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	1543.48	Cum	172.93	266913.52
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	1102.48	Cum	188.08	207355.14
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	661.49	Cum	206.29	136458.82
9	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B .7.1.39)	12799.33	Cum	24.34	311535.57
TOTAL COST OF EARTHWORK (in Rs.)					3915113.67
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					39.151

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND ANALYSIS OF RATE OF HEAD REGULATOR GATE			
1	Cost of material (A)	Rs.	55000
2	Wastage 5% =	Rs.	2750
3	Cost of miscellaneous material like electrodes,oxygen, acetylene nut bolt, rope as per site	Rs.	35750
	<i>Total 1+2+3= (B) =</i>	Rs.	93500
4	Labour charge 30%(B) =	Rs.	28050
5	Overhead charge + Contractor profit @14.95% A	Rs.	8222.5
6	Workshop and energy charge ,12 % of (B)	Rs.	11220
7	Transportation and erection charge ,15 % of B	Rs.	14025
	<i>Total = B+4+5+6+7 = C</i>	Rs.	155017.5
8	Other incidental charge , 3 % = of C	Rs.	4650.525
	<i>Total C+8 = D</i>	Rs.	159668.025

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Bishrampur Mr. (Offtaking from RMC at RD 26.248 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	1082.593	Cum	110.83	119983.79			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	34.839	Cum	3279.00	114236.93	7.49	15.68	31.36
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	9.58	Cum	4068.00	38988.58	3.26	4.03	8.15
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	348.00	Cum	4891.00	1702082.51	135.72	146.16	295.80
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A .14.1 B)	10.03	Cum	5294.00	53098.56	4.26	3.91	7.82
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A .-8.3 - 13.6)	8.55	M.T.	71410.00	610838.20			
7	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	654.73	Sqm	385.50	252400.22			
8	Providing shuttering,including strutting propping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	23.40	Sqm	414.88	9709.89			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	3.75	Cum	408.85	1534.43			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	3.75	Cum	889.70	3339.04			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B .7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B .6.6.3)	37.98	Sqm	848.15	32212.74			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			

15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
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16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	30.00	Cum	106.98	3209.40			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	4.28	MT	159668.03	683407.14			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	169.776	Cum	678.60	115209.88			
	Coarse Aggregates (60 Km lead)	343.128	Cum	1002.60	344019.65			
	Cement (80 km lead)	151.393	MT	984.50	149046.30			
	Boulder (60 Km)	3.753	Cum	1120.65	4205.78			
	Brick (10 Km)	2278.800	No.	0.83	1898.24			
	Steel (80 km)	12.834	MT	984.50	12635.21			
TOTAL (In Rs.)					4257161.75			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND									
ABSTRACT OF QUANTITIES OF SHARDA TYPE FALL FOR BISHRAMPUR MINOR									
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
SHARDA TYPE FALL AT CH. 2.200 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	92.820	Cum	110.83	10287.24				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	10.401	Cum	3279.00	34105.30	2.24	4.68	9.36	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	53.89	Cum	4068.00	219242.88	18.32	22.64	45.81	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A .14.1 A)	0.18	Cum	4891.00	882.34	0.07	0.08	0.15	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -.8.3 - 13.6)	1.27	M.T.	71410.00	90938.08				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	165.00	Sqm	385.50	63606.62				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	20.79	Sqm	414.88	8627.35				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B .6.6.3)	8.97	Sqm	848.15	7609.60				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.76	Cum	408.85	311.55				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.76	Cum	889.70	677.95				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B .7.2.2)	0.76	Cum	1276.75	972.88				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.76	Cum	365.75	278.70				

13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	13.92	Sqm	51.66	719.17	0.0383	0.050		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				
15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	22.25	Cum	106.98	2380.31				

16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	27.442	Cum	678.60	18622.20				
	Coarse Aggregates (60 Km lead)	55.325	Cum	1002.60	55468.54				
	Cement (80 km lead)	20.669	MT	984.50	20348.65				
	Boulder (60 Km)	0.76	Cum	1120.65	853.93				
	Brick (10 Km)	538.320	No.	0.83	448.42				
	Steel (80 km)	1.273	MT	984.50	1253.73				
TOTAL (In Rs.)					539047.42				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	187.39	1405.43				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A .-8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12657.95				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 km)	0.11	MT	984.50	108.22				
	Hume Pipe(80Km)	7.50	RM	843.40	6325.50				
TOTAL (In Rs.)					97760.15				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR KILOMETER STONES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A .7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (80 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
ABSTRACT OF COST FOR CULVERT (Ch.-0.140 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	2.76	Cum	4068.00	11227.68	0.94	1.16	2.35
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	90.00	Cum	106.98	9628.20			
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	1.159	Cum	678.60	786.63			
	Coarse Aggregates (60 Km lead)	2.346	Cum	1002.60	2352.10			
	Cement (80 km lead)	0.938	MT	984.50	923.85			
TOTAL (In Rs.)					25283.60			
ABSTRACT OF COST FOR CULVERT (Ch.-0.330 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	438.16			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	6.33	Cum	4068.00	25765.90	2.15	2.66	5.38
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	261.213	Sqm	51.66	13494.25	0.72	0.94	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.940	Cum	678.60	638.13			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.718	MT	984.50	707.20			
TOTAL (In Rs.)					41043.65			

ABSTRACT OF COST FOR CULVERT (Ch.-0.550 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.010	Ha	73027.00	730.27		
2	Providing 1.5 mm thick cement punning including curing etc. complete job as per specifications & directions of E/I. BCD 5.7.11	27.801	Sqm	51.66	1436.20	0.076	0.100
3	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	0.100	Cum	678.6	67.92		
	Cement (80 km lead)	0.076	MT	984.50	75.27		
TOTAL (In Rs.)					2309.65		
ABSTRACT OF COST FOR CULVERT (Ch.-0.880 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	113.828	Sqm	51.66	5880.35	0.3130	0.410
3	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	0.410	Cum	678.6	278.08		
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00		
	Cement (80 km lead)	0.313	MT	984.50	308.18		
TOTAL (In Rs.)					6758.71		
ABSTRACT OF COST FOR CULVERT (Ch.-1.395 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.008	Ha	73027.00	584.22		
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.71	Cum	4068.00	6936.75	0.58	0.72
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	90.00	Cum	106.98	9628.20		
4	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	0.716	Cum	678.60	486.00		
	Coarse Aggregates (60 Km lead)	1.449	Cum	1002.60	1453.19		
	Cement (80 km lead)	0.580	MT	984.50	570.78		

TOTAL (In Rs.)					19659.14			
ABSTRACT OF COST FOR FALL (Ch.-1.490 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	5.77	Cum	4068.00	23471.18	1.96	2.42	4.90
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	90.00	Cum	106.98	9628.20			
4	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	24.180	Sqm	51.66	1249.14	0.0665	0.087	
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	2.423	Cum	678.60	1644.44			
	Coarse Aggregates (60 Km lead)	4.904	Cum	1002.60	4917.00			
	Cement (80 km lead)	1.962	MT	984.50	1931.30			
TOTAL (In Rs.)					43206.39			
ABSTRACT OF COST FOR FALL (Ch.-2.925 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	7.05	Cum	4068.00	28668.42	2.40	2.96	5.99
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B .7.1.31)	9.00	Cum	106.98	962.82			
4	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A .5.7.11)	5.600	Sqm	51.66	289.30	0.0154	0.020	
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	2.960	Cum	678.60	2008.57			
	Coarse Aggregates (60 Km lead)	5.990	Cum	1002.60	6005.78			

	Cement (80 km lead)	2.396	MT	984.50	2358.94			
TOTAL (In Rs.)					40658.95			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (SONBARSHA MINOR)				
S. No.	Items	Qty.	Unit	Total Estimated Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	7699434.29
2	Head Regulator	Detail as per BOQ	No.	2463860.29
3	Falls			
	<i>Fall (0.50 Km)</i>	Detail as per BOQ	No	475513.04
	<i>Fall (2.775 Km)</i>	Detail as per BOQ	No	860711.31
	<i>Fall (3.750 Km)</i>	Detail as per BOQ	No	903607.71
	<i>Fall (4.225 Km)</i>	Detail as per BOQ	No	532535.06
	<i>Fall (6.050 Km)</i>	Detail as per BOQ	No	779478.74
4	Outlets	16	No	1564162.35
5	Kilometer Stone	07	No	9612.93
6	Remodelling of Structures			
	<i>Culvert at 0.770 Km</i>	Detail as per BOQ	No	16969.11
	<i>Culvert at 1.230 Km</i>	Detail as per BOQ	No	49200.17
	<i>Culvert at 2.075 Km</i>	Detail as per BOQ	No	64998.88
	<i>Culvert at 2.365 Km</i>	Detail as per BOQ	No	28676.80
	<i>Fall at 2.470 km</i>	Detail as per BOQ	No	730.27
	<i>Culvert at 2.710 Km</i>	Detail as per BOQ	No	45816.18
	<i>Fall at 3.200 Km</i>	Detail as per BOQ	No	53385.08
	<i>Culvert at 4.050 Km</i>	Detail as per BOQ	No	41796.41
	<i>Culvert at 4.410 Km</i>	Detail as per BOQ	No	3006.47
	<i>Fall at 5.030 Km</i>	Detail as per BOQ	No	43573.82
	<i>Culvert at 5.340 Km</i>	Detail as per BOQ	No	7639.89
7	<i>CD WORK (5.300 Km)</i>	Detail as per BOQ	No	1156987.16
	TOTAL (In Rs.)			16801695.95
	TOTAL (In Lacs)			168.02

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

ABSTRACT OF QUANTITY OF EARTHWORK FOR SONBARSHA MINOR .

Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.73	Ha	73027.00	53177.4581
2	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	8403.68	Cum	110.83	931379.6327
3	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8) .	933.74	Cum	374.47	349658.3667
4	E/W in stripping by hydraulic M/c in grade A & B type of soil including morroum soil, soil mixed with kankar, pebbles, boulders upto 300 mm size and disposal of the same along with all organic materials in the country side beyond 150 m upto 500 m in all by tipper including construction & maintenance of haul road etc. all complete as per specification and direction of E/I. (WRD Part B 5.1.6.1)	1092.28	Cum	106.11	115902.20
5	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	7401.15	Cum	117.56	870079.34
6	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1) .				
i.	One extra lead - 1*12.19 = 12.19	5061.38	Cum	12.30	62254.97
ii.	Two extra lead - 2*12.19 = 24.38	3901.08	Cum	24.60	95966.59
iii.	Three extra lead - 3*12.19= 36.57	1680.74	Cum	36.90	62019.14

7	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lift - $1 \times 12.19 = 12.19$	5682.07	Cum	12.30	69889.45
ii.	Two extra lift - $2 \times 12.19 = 24.38$	1680.74	Cum	24.60	41346.10
8	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B . 7.1.26.1)				
A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	10361.61	Cum	172.93	1791833.52
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	7401.15	Cum	188.08	1392008.53
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	4440.69	Cum	206.29	916070.09
9	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B . 7.1.39)	38942.03	Cum	24.34	947848.89
TOTAL COST OF EARTHWORK (in Rs.)					7699434.29
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					76.994

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
ANALYSIS OF RATE OF HEAD REGULATOR GATE

1	Cost of material (A)	Rs.	55000
2	Wastage 5% =	Rs.	2750
3	Cost of miscellaneous material like electrodes,oxygen, acetylene nut bolt, rope as per site conditions, etc 65 % of (A)	Rs.	35750
	<i>Total 1+2+3= (B) =</i>	Rs.	93500
4	Labour charge 30%(B) =	Rs.	28050
5	Overhead charge + Contractor profit @14.95% A	Rs.	8222.5
6	Workshop and energy charge , 12 % of (B)	Rs.	11220
7	Transportation and erection charge , 15 % of B	Rs.	14025
	<i>Total = B+4+5+6+7 = C</i>	Rs.	155017.5
8	Other incidental charge , 3 % = of C	Rs.	4650.525
	<i>Total C+8 = D</i>	Rs.	159668

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Sonbharsha Mr. (Offtaking from RMC at RD 27.035 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	360.518	Cum	110.83	39956.23			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	24.644	Cum	3279.00	80807.86	5.30	11.09	22.18
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	8.63	Cum	4068.00	35088.03	2.93	3.62	7.33
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	169.82	Cum	4891.00	830611.34	66.23	71.33	144.35
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A . 14.1 B)	6.67	Cum	5294.00	35286.42	2.83	2.60	5.20
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	4.27	M.T.	71410.00	304817.98			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	444.16	Sqm	385.50	171221.86			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	11.58	Sqm	414.88	4804.77			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	1.27	Cum	408.85	518.84			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	1.27	Cum	889.70	1129.03			

11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B . 7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B . 6.6.3)	30.97	Sqm	848.15	26268.90			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	10.00	Cum	106.98	1069.80			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	3.76	MT	159668.03	599867.29			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	88.638	Cum	678.60	60149.91			
	Coarse Aggregates (60 Km lead)	179.721	Cum	1002.60	180188.25			
	Cement (80 km lead)	77.295	MT	984.50	76097.33			
	Boulder (70 Km)	1.269	Cum	1120.65	1422.10			
	Brick (10 Km)	1858.320	No.	0.83	1547.98			
	Steel (80 km)	8.026	MT	984.50	7901.13			
TOTAL (In Rs.)					2463860.29			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF FALL OF SONBARSHA MINOR AT KM. 0.050								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	159.790	Cum	110.83	17709.53			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	8.300	Cum	3279.00	27215.09	1.78	3.73	7.47
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	46.62	Cum	4068.00	189664.87	15.85	19.58	39.63
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	0.11	Cum	4891.00	534.10	0.01	0.05	0.09
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	1.10	M.T.	71410.00	78590.83			
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	151.66	Sqm	385.50	58466.45			
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	17.47	Sqm	414.88	7249.61			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B . 6.6.3)	10.60	Sqm	848.15	8993.78			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.28	Cum	408.85	115.30			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.28	Cum	889.70	250.90			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B . 7.2.2)	0.28	Cum	1276.75	360.04			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.28	Cum	365.75	103.14			
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	12.02	Sqm	51.66	620.97			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	13.80	Cum	106.98	1476.32			
16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	23.363	Cum	678.60	15853.93			
	Coarse Aggregates (60 Km lead)	47.475	Cum	1002.60	47598.16			
	Cement (80 km lead)	17.642	MT	984.50	17368.50			
	Boulder (60 Km)	0.282	Cum	1120.65	316.02			
	Brick (10 Km)	636.240	No.	0.83	529.99			
	Steel (80 km)	1.101	MT	984.50	1083.50			
TOTAL (In Rs.)					475513.04			
SHARDA TYPE FALL AT CH. 2.775 KM								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	189.410	Cum	110.83	20992.31			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	11.777	Cum	3279.00	38617.55	2.53	5.30	10.60
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	91.52	Cum	4068.00	372319.64	31.12	38.44	77.80
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	0.18	Cum	4891.00	865.71	0.07	0.07	0.15
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	2.16	M.T.	71410.00	154214.08			
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	241.18	Sqm	385.50	92973.33			
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	22.76	Sqm	414.88	9441.92			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B . 6.6.3)	10.31	Sqm	848.15	8742.73			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry.(WRD Part B M-017)	0.76	Cum	408.85	311.55			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.76	Cum	889.70	677.95			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B . 7.2.2)	0.76	Cum	1276.75	972.88			

12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.76	Cum	365.75	278.70			
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	13.92	Sqm	51.66	719.17			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	20.64	Cum	106.98	2208.07			
16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	43.814	Cum	678.60	29732.30			
	Coarse Aggregates (60 Km lead)	89.307	Cum	1002.60	89539.56			
	Cement (80 km lead)	33.719	MT	984.50	33196.65			
	Boulder (60 Km)	0.76	Cum	1120.65	853.93			
	Brick (10 Km)	618.480	No.	0.83	515.19			
	Steel (80 km)	2.160	MT	984.50	2126.09			
TOTAL (In Rs.)					860711.31			
SHARDA TYPE FALL AT CH. 3.750 KM								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	298.930	Cum	110.83	33130.41			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	12.366	Cum	3279.00	40546.67	2.66	5.56	11.13
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	95.39	Cum	4068.00	388041.20	32.43	40.06	81.08
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	0.18	Cum	4891.00	865.71	0.07	0.07	0.15
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	2.25	M.T.	71410.00	160713.35			
6	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	245.98	Sqm	385.50	94826.20			
7	Providing shuttering,including strutting propping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	23.71	Sqm	414.88	9837.22			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B . 6.6.3)	8.97	Sqm	848.15	7609.60			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.49	Cum	408.85	198.70			

10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.49	Cum	889.70	432.39			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B . 7.2.2)	0.49	Cum	1276.75	620.50			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.49	Cum	365.75	177.75			
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	15.86	Sqm	51.66	819.22			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	27.48	Cum	106.98	2939.81			
16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	45.702	Cum	678.60	31013.44			
	Coarse Aggregates (60 Km lead)	92.360	Cum	1002.60	92599.98			
	Cement (80 km lead)	35.160	MT	984.50	34614.80			
	Boulder (60 Km)	0.49	Cum	1120.65	544.63			
	Brick (10 Km)	538.320	No.	0.83	448.42			
	Steel (80 km)	2.251	MT	984.50	2215.69			
TOTAL (In Rs.)					903607.71			
SHARDA TYPE FALL AT CH. 4.225 KM								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	113.380	Cum	110.83	12565.91			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	8.702	Cum	3279.00	28534.02	1.87	3.92	7.83
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	54.07	Cum	4068.00	219967.90	18.38	22.71	45.96
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	0.15	Cum	4891.00	750.28	0.06	0.06	0.13
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	1.28	M.T.	71410.00	91192.39			
6	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	161.12	Sqm	385.50	62109.92			

7	Providing shuttering,including strutting propping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	19.71	Sqm	414.88	8178.16			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B . 6.6.3)	10.34	Sqm	848.15	8766.48			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.49	Cum	408.85	198.70			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.49	Cum	889.70	432.39			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B . 7.2.2)	0.49	Cum	1276.75	620.50			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.49	Cum	365.75	177.75			
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	12.11	Sqm	51.66	625.62			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	18.88	Cum	106.98	2020.00			
16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	26.691	Cum	678.60	18112.45			
	Coarse Aggregates (60 Km lead)	54.410	Cum	1002.60	54551.53			
	Cement (80 km lead)	20.315	MT	984.50	20000.61			
	Boulder (60 Km)	0.49	Cum	1120.65	544.63			
	Brick (10 Km)	620.160	No.	0.83	516.59			
	Steel (80 km)	1.277	MT	984.50	1257.23			
TOTAL (In Rs.)					532535.06			
SHARDA TYPE FALL AT CH. 6.050 KM								
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	179.132	Cum	110.83	19853.20			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	10.041	Cum	3279.00	32925.62	2.16	4.52	9.04
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	81.64	Cum	4068.00	332101.35	27.76	34.29	69.39

4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	0.11	Cum	4891.00	513.56	0.04	0.04	0.09
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	1.93	M.T.	71410.00	137466.81			
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	225.61	Sqm	385.50	86974.25			
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	20.59	Sqm	414.88	8543.37			
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B . 6.6.3)	10.22	Sqm	848.15	8664.70			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry.(WRD Part B M-017)	0.20	Cum	408.85	80.95			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.20	Cum	889.70	176.16			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B . 7.2.2)	0.20	Cum	1276.75	252.80			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.20	Cum	365.75	72.42			
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	15.37	Sqm	51.66	794.16			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			
15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	20.55	Cum	106.98	2198.44			
16	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	38.850	Cum	678.60	26363.92			
	Coarse Aggregates (60 Km lead)	88.734	Cum	1002.60	88965.06			
	Cement (80 km lead)	29.957	MT	984.50	29492.27			
	Boulder (60 Km)	0.20	Cum	1120.65	221.89			
	Brick (10 Km)	612.960	No.	0.83	510.60			
	Steel (80 km)	1.925	MT	984.50	1895.20			
TOTAL (In Rs.)					779478.74			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND
ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET

Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
3	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
4	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
5	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	187.39	1405.43				
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				

7	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12657.95				
8	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
9	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 km)	0.11	MT	984.50	108.22				
	Hume Pipe(80Km)	7.50	RM	843.40	6325.50				
TOTAL (In Rs.)					97760.15				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND

ABSTRACT OF COST FOR KILOMETER STONES

S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (50 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES OF SONBARSHA MINOR								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
AOC FOR CULVERT (Ch.- 0.770 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	306.71			
2	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	1.15	Cum	4891.00	5631.50	0.45	0.48	0.98
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	88.016	Sqm	51.66	4546.91	0.2420	0.317	
4	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	40.000	Cum	106.98	4279.20			
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.800	Cum	678.60	543.18			
	Coarse Aggregates (60 Km lead)	0.979	Cum	1002.60	981.23			
	Cement (80 km lead)	0.691	MT	984.50	680.38			
TOTAL (In Rs.)					16969.11			
AOC FOR CULVERT (Ch.- 1.230 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including	0.004	Ha	73027.00	262.90			
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	110.000	Cum	106.98	11767.80			

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1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.007	Ha	73027.00	474.68			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	110.411	Sqm	51.66	5703.82	0.3036	0.397	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	3.42	Cum	4891.00	16727.22	1.33	1.44	2.91
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	1.834	Cum	678.60	1244.47			
	Coarse Aggregates (60 Km lead)	2.907	Cum	1002.60	2914.56			
	Cement (80 km lead)	1.637	MT	984.50	1612.05			
TOTAL (In Rs.)					28676.80			
AOC FOR FALL (Ch. - 2.470 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.010	Ha	73027.00	730.27			
TOTAL (In Rs.)					730.27			
ABSTRACT OF COST FOR CULVERT (Ch.-2.710 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.008	Ha	73027.00	584.22			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	6.82	Cum	4068.00	27727.49	2.32	2.86	5.79

3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	27.36	Cum	106.98	2926.97			
4	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	87.973	Sqm	51.66	4544.67	0.2419	0.317	
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	2.863	Cum	678.60	1942.64			
	Coarse Aggregates (60 Km lead)	5.794	Cum	1002.60	5808.66			
	Cement (80 km lead)	2.317	MT	984.50	2281.52			
TOTAL (In Rs.)					45816.18			
ABSTRACT OF COST FOR FALL (Ch.-3.200 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	9.52	Cum	4068.00	38720.24	3.24	4.00	8.09
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	5.600	Sqm	51.66	289.30	0.0154	0.020	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	3.998	Cum	678.60	2712.82			
	Coarse Aggregates (60 Km lead)	8.091	Cum	1002.60	8111.55			
	Cement (80 km lead)	3.236	MT	984.50	3186.04			
TOTAL (In Rs.)					53385.08			
ABSTRACT OF COST FOR CULVERT (Ch.-4.050 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.008	Ha	73027.00	584.22			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	6.56	Cum	4068.00	26700.40	2.23	2.76	5.58

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1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.008	Ha	73027.00	584.22			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.00	Cum	4068.00	4051.85	0.34	0.42	0.85
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A . 5.7.11)	29.766	Sqm	51.66	1537.71	0.0819	0.107	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.418	Cum	678.60	283.88			
	Coarse Aggregates (60 Km lead)	0.847	Cum	1002.60	848.83			
	Cement (80 km lead)	0.339	MT	984.50	333.40			
TOTAL (In Rs.)					7639.89			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST CROSS DRAINAGE OF SONBARSHA MINOR AT KM 5.300								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	200.04	Cum	110.83	22170.03			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A . 7.1.12.4)	28.79	Cum	3279.00	94391.31	6.19	12.95	25.91
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A 7.3.13.5)	6.61	Cum	4068.00	26894.20	2.25	2.78	5.62
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A . 14.1 A)	87.09	Cum	4891.00	425940.69	33.96	36.58	74.02
5	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	61.45	Sqm	385.50	23689.44			
6	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	343.28	Sqm	414.88	142421.01			
7	Providing 1000mm NP3 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP3 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I M-301(11.6)	12.50	RM	4465.81	55822.59			
8	Labour for laying 1000mm NP3RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I .(WRD Part B . 7.6.2.4)	12.50	RM	1289.47	16118.38			
9	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A . -8.3 - 13.6)	2.05	MT	71410.00	146454.06			
10	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B . 7.1.31)	69.73	Cum	106.98	7459.28			
	Coarse Sand (35Km lead)	52.307	Cum	678.60	35495.56			
	Coarse Aggregates (60 Km lead)	105.551	Cum	1002.60	105825.51			
	Cement (80 km lead)	42.401	MT	984.50	41743.49			
	Hume Pipe (80 Km)	12.50	RM	843.40	10542.50			
	Steel (80 Km)	2.05	MT	984.50	2019.10			
TOTAL (In Rs.)					1156987.16			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND				
ABSTRACT OF COST (POKHRAHI MINOR)				
S. No.	Items	Qty.	Unit	Total Estimated Amount (Rs.)
1	Earthwork	Detail as per BOQ	Cum	2762902.14
2	Head Regulator	Detail as per BOQ	No.	2758139.11
3	Falls			
	<i>Fall (3.300Km)</i>	Detail as per BOQ	No.	499104.10
	<i>Fall (4.000 Km)</i>	Detail as per BOQ	No.	906303.63
	<i>Fall (5.150 Km)</i>	Detail as per BOQ	No.	485009.45
	<i>Fall (5.850 Km)</i>	Detail as per BOQ	No.	452963.16
	<i>Fall (6.100 Km)</i>	Detail as per BOQ	No.	415411.69
	<i>Fall (6.350 Km)</i>	Detail as per BOQ	No.	499123.62
	<i>Fall (6.850 Km)</i>	Detail as per BOQ	No.	464363.63
4	Outlets	17	No.	1661922.50
5	Kilometer Stone	08	No.	10986.20
6	Remodelling of Structures			
	<i>Bridge at 0.320 Km</i>	Detail as per BOQ	No.	130127.10
	<i>Bridge at 1.150 Km</i>	Detail as per BOQ	No.	14513.76
	<i>Railway Bridge at 1.660 Km</i>	Detail as per BOQ	No.	657.24
	<i>Bridge at 1.895 Km</i>	Detail as per BOQ	No.	6058.39
	<i>Fall at 2.080 Km</i>	Detail as per BOQ	No.	5042.70
	<i>Bridge at 2.220 Km</i>	Detail as per BOQ	No.	11427.39
	<i>Fall at 2.780 Km</i>	Detail as per BOQ	No.	5433.75
	<i>Bridge at 2.830 Km</i>	Detail as per BOQ	No.	11354.36
	<i>Fall at 3.580 Km</i>	Detail as per BOQ	No.	5359.07
	<i>Bridge at 3.710 Km</i>	Detail as per BOQ	No.	10327.13
	<i>Bridge at 4.000 Km</i>	Detail as per BOQ	No.	7113.47
	<i>Fall at 4.415 Km</i>	Detail as per BOQ	No.	43679.27
	<i>Bridge at 5.090 Km</i>	Detail as per BOQ	No.	9073.47
	<i>Culvert at 5.820 Km</i>	Detail as per BOQ	No.	10655.50

	<i>Bridge at 6.590 Km</i>	Detail as per BOQ	No.	1800.68
	<i>Culvert at 6.810 Km</i>	Detail as per BOQ	No.	5508.00
	TOTAL (In Rs.)			11194360.52
	TOTAL (In Lacs)			111.94

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND					
ABSTRACT OF QUANTITY OF EARTHWORK FOR POKHRAHI MINOR .					
Sl. No.	Particular	Quantity	Unit	Rate (in Rs.)	Amount in Rs.
1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.17	Ha	73027.00	12087.64812
2	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	11810.79	Cum	110.83	1308989.856
3	E/W in excavation in canal by the hydraulic excavator (Rock breaker) as per designed section in soft rock (where blasting is prohibited) vide type of soil item C with disposal of spoil upto 500 m with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I (WRD Part B 7.1.43.8).	1312.31	Cum	374.47	491420.7257
4	E/W in stripping by hydraulic M/c in grade A & B type of soil including morroum soil, soil mixed with kankar, pebbles, boulders upto 300 mm size and disposal of the same along with all organic materials in the country side beyond 150 m upto 500 m in all by tipper including construction & maintenance of haul road etc. all complete as per specification and direction of E/I. (WRD Part B 5.1.6.1)	189.11	Cum	106.11	20066.41
5	Earthwork in filling of canal banks (discharge upto 28 cumecs) as well as special repair of canal banks in ordinary soil in proper profile obtained from borrow area or any other sources free from logs, roots or any other ingredients etc. with initial lead of 15m and lift of 1.5 m as per specification and direction of E/I (WRD Part B 7.1.25)	381.03	Cum	117.56	44793.30
6	Extra for earth work in each additional of 25m beyond the initial as per specification and direction of E/I. for ordinary or hard soil (vide classification os soil item A &B) (Part B 7.1.33.1).				
i.	One extra lead - $1 \times 12.19 = 12.19$	3105.11	Cum	12.30	38192.82
ii.	Two extra lead - $2 \times 12.19 = 24.38$	2476.47	Cum	24.60	60921.05
iii.	Three extra lead - $3 \times 12.19 = 36.57$	2362.16	Cum	36.90	87163.63
7	Extra for Earth work for each subsequent lift of 1m over the initial lift of 1.5 m for ordinary and hard soil (vide classification of soil item A & B). (WRD Part B 7.1.34.1)				
i.	One extra lift - $1 \times 12.19 = 12.19$	5981.60	Cum	12.30	73573.68
ii.	Two extra lift - $2 \times 12.19 = 24.38$	2362.16	Cum	24.60	58109.09

8	Earthwork in flood embankment, canal banks as well as special repair of embankment in canal bank in grade A & B types of soil (vide soil - A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots, or any other ingredients with all lifts including breaking clods to maximum 60 mm size, placing earth in layers not exceeding 225mm thick complete as per specification & direction of E/I - Lead Beyond 150 m but upto 500 m. (WRD Part B 7.1.26.1)				
A.	Lead Beyond 150 m but upto 500 m (35 % of net filling)	533.44	Cum	172.93	92246.91
B.	Lead Beyond 500 m but upto 1 km (25% of net filling)	381.03	Cum	188.08	71663.18
C.	Lead Beyond 1 km but upto 2 km (15% of net filling)	228.62	Cum	206.29	47160.99
9	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density, including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts, finishing the surface as per plan and drawing, including hire charge of compaction machine and other tools and plants etc. for lined canal all complete as per specification and direction of E/I. (WRD Part B 7.1.39)	14647.20	Cum	24.34	356512.85
TOTAL COST OF EARTHWORK (in Rs.)					2762902.14
TOTAL COST OF EARTHWORK (in Rs. Lakhs)					27.629

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND ANALYSIS OF RATE OF HEAD REGULATOR GATE			
1	Cost of material (A)	Rs.	55000
2	Wastage 5% =	Rs.	2750
3	Cost of miscellaneous material like electrodes,oxygen, acetylene nut bolt, rope as per site	Rs.	35750
	<i>Total 1+2+3= (B) =</i>	Rs.	93500
4	Labour charge 30%(B) =	Rs.	28050
5	Overhead charge + Contractor profit @14.95% A	Rs.	8222.5
6	Workshop and energy charge ,12 % of (B)	Rs.	11220
7	Transportation and erection charge ,15 % of B	Rs.	14025
	<i>Total = B+4+5+6+7 = C</i>	Rs.	155017.5
8	Other incidental charge , 3 % = of C	Rs.	4650.525
	<i>Total C+8 = D</i>	Rs.	159668.025

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Pokharahi Mr. (Offtaking from RMC at RD 29.014 KM)								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	604.528	Cum	110.83	66999.87			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	26.853	Cum	3279.00	88049.50	5.77	12.08	24.17
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	9.12	Cum	4068.00	37113.58	3.10	3.83	7.75
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	196.50	Cum	4891.00	961084.80	76.64	82.53	167.03
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade (as per design) and approved quality of sand of requisite F.M. (2.5 to 3.0) washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. (WRD Part A 14.1 B)	8.91	Cum	5294.00	47159.90	3.79	3.47	6.95
6	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	4.96	M.T.	71410.00	354013.37			
7	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	485.23	Sqm	385.50	187058.04			
8	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	15.20	Sqm	414.88	6307.46			
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry.(WRD Part B M-017)	2.94	Cum	408.85	1203.26			
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	2.94	Cum	889.70	2618.39			
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.66	Cum	1276.75	842.66			
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.66	Cum	365.75	241.40			
13	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	35.11	Sqm	848.15	29780.24			
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00			

15	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. (14.17 PWD NH SOR CHHATISGARH 2021)	4.40	Sqm	73.00	321.20			
16	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & technical specifications. (RCD 14.18 ii)	11.00	RM	208.00	2288.00			
17	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
18	Structural Steel (Average rate of Angle, Joint and Channel) etc. (WRD M-178)	3.70	MT	159668.03	590691.98			
19	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	101.920	Cum	678.60	69162.85			
	Coarse Aggregates (60 Km lead)	206.556	Cum	1002.60	207093.10			
	Cement (80 km lead)	89.296	MT	984.50	87912.36			
	Boulder (60 Km)	2.943	Cum	1120.65	3298.06			
	Brick (80 Km)	2106.720	No.	0.83	1754.90			
	Steel (80 km)	8.657	MT	984.50	8522.79			
TOTAL (In Rs.)					2758139.11			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND									
SHARDA TYPE FALL FOR POKHRAI MINOR									
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
SHARDA TYPE FALL AT CH. 3.300 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	185.110	Cum	110.83	20515.74				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	8.572	Cum	3279.00	28108.56	1.84	3.86	7.72	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	48.87	Cum	4068.00	198814.98	16.62	20.53	41.54	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.16	Cum	4891.00	763.00	0.06	0.07	0.13	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	1.15	M.T.	71410.00	82452.18				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	152.53	Sqm	385.50	58798.72				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	18.89	Sqm	414.88	7837.71				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	11.02	Sqm	848.15	9346.61				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.50	Cum	408.85	203.61				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.50	Cum	889.70	443.07				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.50	Cum	1276.75	635.82				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.50	Cum	365.75	182.14				

13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	12.35	Sqm	51.66	637.80	0.0340	0.044		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	16.83	Cum	106.98	1800.47				
16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	24.494	Cum	678.60	16621.71				
	Coarse Aggregates (60 Km lead)	49.888	Cum	1002.60	50017.35				
	Cement (80 km lead)	18.555	MT	984.50	18267.03				
	Boulder (60 Km)	0.50	Cum	1120.65	558.08				
	Brick (10 Km)	661.200	No.	0.83	550.78				
	Steel (80 km)	1.155	MT	984.50	1136.73				
TOTAL (In Rs.)					499104.10				

SHARDA TYPE FALL AT CH. 4.000 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	330.140	Cum	110.83	36589.42				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	12.385	Cum	3279.00	40611.47	2.66	5.57	11.15	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	95.12	Cum	4068.00	386968.23	32.34	39.95	80.86	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.18	Cum	4891.00	880.38	0.07	0.08	0.15	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	2.24	M.T.	71410.00	160274.83				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	243.24	Sqm	385.50	93769.14				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	23.36	Sqm	414.88	9692.63				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	11.02	Sqm	848.15	9346.61				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.50	Cum	408.85	203.61				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.50	Cum	889.70	443.07				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.50	Cum	1276.75	635.82				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.50	Cum	365.75	182.14				
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	15.32	Sqm	51.66	791.23	0.0421	0.055		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	25.55	Cum	106.98	2733.77				
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16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	45.657	Cum	678.60	30982.57				
	Coarse Aggregates (60 Km lead)	92.654	Cum	1002.60	92894.88				
	Cement (80 km lead)	35.118	MT	984.50	34573.32				
	Boulder (60 Km)	0.50	Cum	1120.65	558.08				
	Brick (10 Km)	661.200	No.	0.83	550.78				
	Steel (80 km)	2.244	MT	984.50	2209.64				
TOTAL (In Rs.)					906303.63				

SHARDA TYPE FALL AT CH. 5.150 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	130.046	Cum	110.83	14413.00				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	9.296	Cum	3279.00	30482.38	2.00	4.18	8.37	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	47.45	Cum	4068.00	193024.52	16.13	19.93	40.33	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.10	Cum	4891.00	483.23	0.04	0.04	0.08	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	1.12	M.T.	71410.00	79962.22				
6	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	151.43	Sqm	385.50	58375.42				
7	Providing shuttering,including strutting propping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	18.13	Sqm	414.88	7520.16				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	11.02	Sqm	848.15	9346.61				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.50	Cum	408.85	203.61				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.50	Cum	889.70	443.07				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.50	Cum	1276.75	635.82				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.50	Cum	365.75	182.14				
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	12.35	Sqm	51.66	637.80	0.0340	0.044		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	17.99	Cum	106.98	1924.78				
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16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	24.198	Cum	678.60	16420.79				
	Coarse Aggregates (60 Km lead)	49.281	Cum	1002.60	49408.79				
	Cement (80 km lead)	18.204	MT	984.50	17921.84				
	Boulder (60 Km)	0.50	Cum	1120.65	558.08				
	Brick (10 Km)	661.200	No.	0.83	550.78				
	Steel (80 km)	1.120	MT	984.50	1102.41				
TOTAL (In Rs.)					485009.45				

SHARDA TYPE FALL AT CH. 5.850 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	22.066	Cum	110.83	2445.57				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	8.146	Cum	3279.00	26712.03	1.75	3.67	7.33	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	45.54	Cum	4068.00	185248.27	15.48	19.13	38.71	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.10	Cum	4891.00	508.66	0.04	0.04	0.09	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	1.07	M.T.	71410.00	76756.27				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	150.26	Sqm	385.50	57924.17				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	18.15	Sqm	414.88	7528.41				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	11.82	Sqm	848.15	10021.74				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.26	Cum	408.85	105.48				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.26	Cum	889.70	229.54				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.26	Cum	1276.75	329.40				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.26	Cum	365.75	94.36				
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	13.09	Sqm	51.66	675.98	0.0360	0.047		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	18.29	Cum	106.98	1956.66				
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16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	22.883	Cum	678.60	15528.13				
	Coarse Aggregates (60 Km lead)	46.385	Cum	1002.60	46505.99				
	Cement (80 km lead)	17.311	MT	984.50	17042.59				
	Boulder (60 Km)	0.26	Cum	1120.65	289.13				
	Brick (10 Km)	708.960	No.	0.83	590.56				
	Steel (80 km)	1.075	MT	984.50	1058.21				
TOTAL (In Rs.)					452963.16				

SHARDA TYPE FALL AT CH. 6.100 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	142.934	Cum	110.83	15841.38				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	7.373	Cum	3279.00	24177.29	1.59	3.32	6.64	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	40.20	Cum	4068.00	163518.46	13.67	16.88	34.17	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.10	Cum	4891.00	508.66	0.04	0.04	0.09	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	0.95	M.T.	71410.00	67773.20				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	134.56	Sqm	385.50	51873.66				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	16.90	Sqm	414.88	7010.64				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	10.20	Sqm	848.15	8651.13				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.26	Cum	408.85	105.48				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.26	Cum	889.70	229.54				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.26	Cum	1276.75	329.40				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.26	Cum	365.75	94.36				
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	13.09	Sqm	51.66	675.98	0.0360	0.047		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	12.72	Cum	106.98	1360.36				
16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	20.291	Cum	678.60	13769.64				
	Coarse Aggregates (60 Km lead)	41.149	Cum	1002.60	41256.26				
	Cement (80 km lead)	15.329	MT	984.50	15090.96				
	Boulder (60 Km)	0.26	Cum	1120.65	289.13				
	Brick (10 Km)	612.000	No.	0.83	509.80				
	Steel (80 km)	0.949	MT	984.50	934.36				
TOTAL (In Rs.)					415411.69				
SHARDA TYPE FALL AT CH. 6.350 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	141.041	Cum	110.83	15631.57				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	7.724	Cum	3279.00	25326.70	1.66	3.48	6.95	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	50.31	Cum	4068.00	204652.88	17.10	21.13	42.76	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.10	Cum	4891.00	508.66	0.04	0.04	0.09	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	1.19	M.T.	71410.00	84778.11				
6	Providing shuttering including strutting proping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	155.82	Sqm	385.50	60070.12				
7	Providing shuttering,including strutting proping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	18.00	Sqm	414.88	7469.08				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	10.20	Sqm	848.15	8651.13				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry.(WRD Part B M-017)	0.26	Cum	408.85	105.48				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.26	Cum	889.70	229.54				

11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.26	Cum	1276.75	329.40				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.26	Cum	365.75	94.36				
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	12.18	Sqm	51.66	629.20	0.0335	0.044		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	16.58	Cum	106.98	1773.94				
16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	24.693	Cum	678.60	16756.43				
	Coarse Aggregates (60 Km lead)	50.060	Cum	1002.60	50189.86				
	Cement (80 km lead)	18.839	MT	984.50	18547.40				
	Boulder (60 Km)	0.26	Cum	1120.65	289.13				
	Brick (10 Km)	612.000	No.	0.83	509.80				
	Steel (80 km)	1.187	MT	984.50	1168.80				
TOTAL (In Rs.)					499123.62				

SHARDA TYPE FALL AT CH. 6.850 KM									
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	55.850	Cum	110.83	6189.86				
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	7.393	Cum	3279.00	24240.25	1.59	3.33	6.65	
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	47.28	Cum	4068.00	192346.90	16.08	19.86	40.19	
4	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.08	Cum	4891.00	368.78	0.03	0.03	0.06	
5	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	1.12	M.T.	71410.00	79642.74				
6	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I. (7.3.18)	151.99	Sqm	385.50	58591.81				
7	Providing shuttering,including strutting propping etc and its removal after use in various components of canal structure or embankment structure as per specification and direction of E/I. (WRD 7.3.19)	17.42	Sqm	414.88	7225.38				
8	Providing pitching work with designation 75A brick in panel in herring bond pattern one brick on edge over a brick flat soling, joints filled with local sand free from clay contents including royalty and all taxes as per specification and direction of E/I. (Part B 6.6.3)	10.90	Sqm	848.15	9248.23				
9	Supply of quarried stone 150-200 mm size for hand broken at Quarry. (WRD Part B M-017)	0.13	Cum	408.85	51.52				
10	Labour Charges for pitching on apron slope of bank with stone boulders duly packed (uncrated) complete job (materials within 150m) and all lifts as per specification and direction of E/I.	0.13	Cum	889.70	112.10				
11	Providing filter of stone chips 20mm & down well graded as per design for lined canal, drains including hand packing etc. as per specification and direction of E/I. (WRD Part B 7.2.2)	0.13	Cum	1276.75	160.87				
12	Labour charges for laying fine filter or coarse dry graded filter either of jhama khoa or stone metal or stone chips under brick pitching or boulder pitching in slope and apron including light ramming etc. as per specification and direction of E/I. (WRD Part B 7.7.13)	0.13	Cum	365.75	46.08				
13	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	12.72	Sqm	51.66	657.05	0.0350	0.046		
14	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (RCD 14.9)	2.00	No.	706.00	1412.00				

15	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	17.65	Cum	106.98	1888.30				
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16	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	23.263	Cum	678.60	15786.23				
	Coarse Aggregates (60 Km lead)	47.034	Cum	1002.60	47156.17				
	Cement (80 km lead)	17.730	MT	984.50	17455.16				
	Boulder (60 Km)	0.13	Cum	1120.65	141.20				
	Brick (10 Km)	654.240	No.	0.83	544.98				
	Steel (80 km)	1.115	MT	984.50	1098.00				
TOTAL (In Rs.)					464363.63				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND ABSTRACT OF COST FOR CONSTRUCTION OF OUTLET									
Sl. No.	Name of Item	Qty.	Unit	Rate/unit (in Rs.)	Amount in Rs.	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulders (cum)
1	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	5.64	Cum	3279.00	18481.26	1.21	2.54	5.07	
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	1.97	Cum	4068.00	8029.01	0.67	0.89	1.78	
4	Providing rough dressed random rubble Stone Masonary in cement Mortar (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 m3 in volume and clean coarse sand of F.M. 2 to 2.5 including cost of screening, raking out joints to 20 mm depth, curing, taxes and royalty all complete job as per specification and direction of E/I. 3 (WRD 5.2.28 - Part A 4.28)	8.60	Cum	2500.94	21513.02	1.38	3.87		8.60
5	Providing 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 4 (M-300)	7.50	RM	243.69	1827.71				
6	Labour Charges for Laying of 150mm NP2 RCC Hume Pipe with collar as per I.S.S. 458-1971 including fixing and fitting NP2 hume pipe with collars in line, level and grade, as well as providing approved jointing materials and joints properly filled to make them water proof, all complete, as per specification & direction of E/I . 5 (WRD 7.6.1.1)	7.50	RM	187.39	1405.43				
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A -8.3 - 13.6)	0.03	M.T.	71410.00	2188.57				
8	Structural Steel (Average rate of Angle, Joint and Channel) etc. (M-178)	0.08	MT	159668.03	12657.95				
9	Providing coarse clean sand in filling (100 mm) in foudation of trenches including ramming, watering, royalty and all other taxes complete job as per specification and direction . (WRD 7.1.37)	0.89	Cum	287.45	256.07				
10	Carriage of materials(As per Jharkhand SoR 2021)								
	Coarse Sand (35Km lead)	7.74	Cum	678.60	5252.23				
	Coarse Aggregates 60 Km lead)	6.85	Cum	1002.60	6866.76				
	Cement (50 km lead)	3.26	MT	984.50	3208.65				
	Boulders (60 km lead)	8.60	Cum	1120.65	9639.76				
	Steel (80 km)	0.11	MT	984.50	108.22				
	Hume Pipe (80 Km)	7.50	RM	843.40	6325.50				
TOTAL (In Rs.)					97760.15				

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST FOR KILOMETER STONES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	0.21	Cum	110.83	23.77			
2	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A 7.1.12.4)	0.18	Cum	3279.00	574.23	0.04	0.08	0.16
3	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.13.5)	0.10	Cum	4068.00	386.76	0.03	0.04	0.08
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.12	Cum	678.60	80.57			
	Coarse Aggregates (60 Km lead)	0.24	Cum	1002.60	239.04			
	Cement (80 km lead)	0.07	MT	984.50	68.89			
TOTAL (In Rs.)					1373.28			

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
ABSTRACT OF COST OF REPAIRED STRUCTURES								
S. No.	Item of Works	Qty.	Unit	Rate (As per Jharkhand SoR 2021)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
AOC FOR BRIDGE (Ch.- 0.320 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.008	Ha	73027.00	584.22			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	54.000	Sqm	51.66	2789.64	0.1485	0.194	
3	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	19.88	Cum	4891.00	97217.43	6.76	8.35	16.90
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	8.543	Cum	678.60	5797.05			
	Coarse Aggregates (60 Km lead)	16.895	Cum	1002.60	16939.21			
	Cement (80 km lead)	6.907	MT	984.50	6799.56			
TOTAL (In Rs.)					130127.10			
AOC FOR BRIDGE (Ch.- 1.150 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	401.65			
2	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	1.37	Cum	4891.00	6708.50	0.47	0.58	1.17
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	94.784	Sqm	51.66	4896.52	0.26	0.34	
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.917	Cum	678.60	622.48			
	Coarse Aggregates (60 Km lead)	1.166	Cum	1002.60	1168.89			
	Cement (80 km lead)	0.727	MT	984.50	715.73			

TOTAL (In Rs.)	14513.76			
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AOC FOR RAILWAY BRIDGE (Ch.- 1.660 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.009	Ha	73027.00	657.24		
TOTAL (In Rs.)					657.24		
AOC FOR BRIDGE (Ch. - 1.895 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14		
2	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.21	Cum	4891.00	1043.54	0.07	0.09
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	76.318	Sqm	51.66	3942.59	0.2099	0.275
4	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	0.364	Cum	678.60	247.25		
	Coarse Aggregates (60 Km lead)	0.181	Cum	1002.60	181.83		
	Cement (80 km lead)	0.282	MT	984.50	278.04		
TOTAL (In Rs.)					6058.39		
AOC FOR FALL (Ch. - 2.080 Km)							
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.004	Ha	73027.00	292.11		
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	83.622	Sqm	51.66	4319.91	0.2300	0.301
3	Carriage of materials(As per Jharkhand SoR 2021)						
	Coarse Sand (35Km lead)	0.301	Cum	678.60	204.29		
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00		
	Cement (80 km lead)	0.230	MT	984.50	226.40		
TOTAL (In Rs.)					5042.70		
AOC FOR BRIDGE (Ch. - 2.220 Km)							

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1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.005	Ha	73027.00	365.14			
2	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	81.200	Sqm	51.66	4194.79	0.2233	0.292	
3	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	50.00	Cum	106.98	5349.00			
4	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.292	Cum	678.60	198.37			
	Coarse Aggregates (60 Km lead)	0.000	Cum	1002.60	0.00			
	Cement (80 km lead)	0.223	MT	984.50	219.84			
TOTAL (In Rs.)					10327.13			
AOC FOR BRIDGE (Ch. - 4.000 Km)								
1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.006	Ha	73027.00	438.16			
2	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.14	Cum	4891.00	704.30	0.05	0.06	0.12
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	44.880	Sqm	51.66	2318.50	0.1234	0.162	
4	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B 7.1.31)	30.00	Cum	106.98	3209.40			
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.222	Cum	678.60	150.68			
	Coarse Aggregates (60 Km lead)	0.122	Cum	1002.60	122.72			
	Cement (80 km lead)	0.172	MT	984.50	169.71			
TOTAL (In Rs.)					7113.47			
AOC FOR FALL (Ch. - 4.415 Km)								

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1	Clearing and Grubbing Road Land .(Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.) (WRD Part A 2.3 (i) B)	0.003	Ha	73027.00	219.08			
2	Providing & laying P.C.C. or R.C.C. M-200 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate of required grade and approved quality of sand of requisite F.M. (washed and screened including necessary tools & plants, vibrating, curing royalty etc. excluding cost of form work as well as reinforcement, its cutting bending, binding & placing complete as per specification & direction of E/I. including lead charges. (WRD Part A 14.1 A)	0.57	Cum	4891.00	2772.84	0.19	0.24	0.48
3	Providing 1.5 mm thick cement punning including curing, carriage of water with all leads and lifts as per building specification & direction of E/I. (WRD Part A 5.7.11)	29.600	Sqm	51.66	1529.14	0.0814	0.107	
5	Carriage of materials(As per Jharkhand SoR 2021)							
	Coarse Sand (35Km lead)	0.345	Cum	678.60	233.89			
	Coarse Aggregates (60 Km lead)	0.482	Cum	1002.60	483.14			
	Cement (80 km lead)	0.274	MT	984.50	269.91			
TOTAL (In Rs.)					5508.00			