

## TENDER DOCUMENT FOR

**Package-10: Lining, Repair & Construction of Right Main Canal and its Structures  
from RD 90.02 to 96.53 km under North Koel Reservoir Project,  
Jharkhand and Bihar**

**Estimated Cost (Rs. 41.82 Crores)**

**TENDER NO: WAP/INFRA./NK/RMC(P-10)/2023**

**VOLUME IV: PRICE SCHEDULE**

**Issued to M/s**

---



**वाष्कोस लिमिटेड**  
**WAPCOS LIMITED**

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

**Tele: +91-124-2348021,**  
**Email: [wapcos.rud@gmail.com](mailto:wapcos.rud@gmail.com)**  
**[commercial@wapcos.co.in](mailto:commercial@wapcos.co.in)**  
**Website: [www.wapcos.co.in](http://www.wapcos.co.in)**

### **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 'Paissa' 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						
<b>NIT No:</b>	<b>WAP/ INFRA./NK/RMC(P-10)/2023</b>					
<b>Name of Work:</b>	<b>P-10: Lining, Repair &amp; Construction of Right Main Canal and its Structures from RD 90.02 to 96.53 km under North Koel Reservoir Project, Jharkhand and Bihar</b>					
<b>Name of the Firm:</b>						
	<b>BOQ Amount(in Rs)</b>	<b>Above or Below or At par</b>	<b>% in Figures</b>	<b>% In Words</b>	<b>Amount Above or Below or At par</b>	<b>Total Cost</b>
<b>I</b>	<b>II</b>	<b>I</b>	<b>IV</b>	<b>V</b>	<b>VI= (II*IV)</b>	<b>VII= (II+VI)</b>
<b>PERCENTAGE RATE</b>	<b>41,82,33,497/-</b>					
• Total Amount						
<b>Total in figure</b>						
<b>Total in words</b>						



**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.

ABSTRACT OF COST (90.02-96.53 Km)				
<b>Name of Work:</b>	Package-8: Lining, Repair & Construction of Right Main Canal and its Structures from RD 90.02 to 96.53 km under North Koel Reservoir Project, Jharkhand and Bihar			
<b>Estimated Cost:</b>	Rs. 41.82 Crores			
<b>Tender No.:</b>	WAP/INFRA./NK/RMC(P-10)/2023			
S.No.	Schedule No.	Name of Component	Amount (In Figures)	Amount (In Words)
1	Schedule 1A	Preliminary (Fixing Distance Marks and Boundary Pillars)	₹ 64,521	Rupees sixty four thousand five hundred twenty one only
2	Schedule 1B	Earthwork	₹ 2,49,80,892	Rupees two crores fourty nine lacs eighty thousand eight hundred ninety two only
3	Schedule 1C	Lining	₹ 16,24,75,500	Rupees sixteen crores twenty four lacs seventy five thousand five hundred only
4	Schedule 1D	GSB on Service Road	₹ 1,02,87,423	Rupees one crores two lacs eighty seven thousand four hundred twenty three only
5	Schedule 1E	Catch water Drain	₹ 1,85,93,009	Rupees one crores eighty five lacs ninety three thousand nine only
6	Schedule 1F	Aqueducts		
7	Schedule 1G	Cross Regulators (2 nos.)	₹ 2,55,67,456	Rupees two crores fifty five lacs sixty seven thousand four hundred fifty six only
8	Schedule 1H	Head Regulators (1 no.)	₹ 33,89,975	Rupees thirty three lacs eighty nine thousand nine hundred seventy five only
9	Schedule 1I	Bridges (8 nos.) & Super Passages (8 nos.)	₹ 15,12,70,151	Rupees fifteen crores twelve lacs seventy thousand one hundred fifty one only
10	Schedule 1J	Demolition of 7 no. bridges and 8 nos. Super Passages	₹ 6,74,413	Rupees six lacs seventy four thousand four hundred thirteen only
11	Schedule 1K	Diversion of 7 no. Bridges	₹ 37,32,000	Rupees thirty seven lacs thirty two thousand only
12	Schedule 1L	Outlets (1 no.)	₹ 3,57,118	Rupees three lacs fifth seven thousand one hundred eighteen only
13	Schedule 1M	Approach Roads (4 nos.)	₹ 1,68,41,040	Rupees one crores sixty eight lacs fourty one thousand fourty only
<b>Total (in Rs)</b>			<b>₹ 41,82,33,497</b>	Rupees fourty one cores eighty two lacs thirty three thousand four hundred ninety seven only

**Schedule 1A**

**Preliminary (Fixing  
Distance Marks and  
Boundary Pillars)**

**₹ 64,521**

## A-Preliminary (Fixing Distance Marks and Boundary Pillars)

S. No.	Description	Unit	Quantity	SOR 2020 Rate (Rs)	Amount (Rs)
1	Earth work in excavation of foundation trenches in ordinary soil (vide classification of soil item A) and disposal of excavated earth so obtained to a distance upto 50 mtr and average lift of 1.5 mtr including leveling, removing the roots of shrubs etc. all complete as per specification and direction of E/I.(SR. 5.1.27)	M <sup>3</sup>	2.83	140.90	398.9526295
2	Providing and laying P.C.C. or R.C.C. M150 with nominal mix 1:2:4 in superstructure of various component of canal taxes etc.all complete as per specification and direction of E/I.orembankment structure with approved quality of graded coarse aggregate of required grade( as per design) and approved quality of sand tools and plants,vibrating,curing,royalty and all taxes etc.all complete as per specification and direction of E/I. (5.3.9)	M <sup>3</sup>	0.92	4607.30	4234.757393
3	Providing and laying p.c.c. or R.C.C. M100 with nominal mix 1:3:6 in foundation of various component of canal orembankment structure with approved quality of graded coarse aggregate of required grade( as per design) and approved quality of sand tools and plants,vibrating,curing,royalty and all taxes etc.all complete as per specification and direction of E/I. (SR 5.3.3)	M <sup>3</sup>	2.37	3899.20	9236.590773
4	Providing MS reinforcement (FE 500) as per approved design drawing removal rust cutting, bending, binding including supplying annealed wire, playing MS rods in position complete job as per specification and direction of E/I (5.3.22)				
	i) 8mm dia bar	MT	0.13	75333.10	9417.912218
5	Providing shuttering including centering, etc and its removal after use in various components of canal structures or embankment structure as per specification and direction of E/I (5.3.19)	M2	40.42	516.30	20869.8249
6	<b>Carriage of materials.</b>				
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	M <sup>3</sup>	1.49	862.90	1289.24984
	Stone chips+Metal (100 Km lead)	M <sup>3</sup>	2.99	2390.6	7143.540775
	Cement (30 Km lead)	MT	16.21	715.80	11605.6191
	Steel (30 km)	MT	0.13	715.80	89.48711212
<b>S.total (A)</b>					<b>64285.93475</b>
	<b>Seigniorage Charges</b>				
a	Coarse Sand (30Km lead)	M <sup>3</sup>	1.49	175.8	262.66
b	Stone chips+Metal (100 Km lead)	M <sup>3</sup>	2.99	697.55	2084.4
	<b>S.total</b>				<b>2347.06</b>
	<b>Seigniorage Charges@ 10% of S.total (B)</b>				<b>234.706</b>
	<b>G.total (A+B) (in Rs.)</b>				<b>64520.64075</b>

## **Schedule 1B**

### **Earthwork**

**₹ 2,49,80,892**

L- Earthwork					
S. No.	Description	Unit	Quantity	SOR 2020 Rate (Rs)	Amount (Rs)
1	Preparation of borrow areas of embankment or canals by removing the grass and the jungle, bushes from the top including weeding out shrubs including levelling all complete as per specification and direction of E/I (SR No. 5.1.2)	M <sup>2</sup>	1,62,750.00	2.8	455700
2	Earth work in excavation (filling) of canals and dhars carrying minimum full supply discharge above 28 cumecs (1000 cusecs) in ordinary soil (vide soil A ) and making banks with excavated earth in proper profile and laying earth in 225 mm layers and rough dressing with initial lead of 30 m and lift of 1.5m. all complete as per specification and direction of E/I(5.1.6)	M <sup>3</sup>	6,912.00	182.4	1260748.8
3	Earth work in excavation of canals and dhars carrying minimum full supply discharge above 28 cumecs (1000 cusecs) in ordinary soil (vide soil A ) and making banks with excavated earth in proper profile and laying earth in 225 mm layers and rough dressing with initial lead of 30 m and lift of 1.5m. all complete as per specification and direction of E/I(5.1.6) (Excluding Royalty of Rs 33/-)	M <sup>3</sup>	1,34,784.00	149.4	20136729.6
4	Earth work in excavation in soft rock or ordinary rock (where blasting is not required ) (vide classification of soil C ) with initial lead of 30 m and lift of 1.5 m including dressing, making the sides in profile and dressing the bed in proper grade etc all complete as per specification and direction of E/I(5.1.13.2)	M <sup>3</sup>	-	442.3	-
5	Earthwork in leap cutting in side slopes and bed of canals in ordinary soil with initial lead of 30m and lift of 1.5m including the cost of formation of subgrade of canal lining profile levelling, controlling of slopes and fine dressing, disposal of excavated earth and nominal dewatering if any all complete as per approved design, specification and direction of E/I (5.1.21)	M <sup>3</sup>	22,088.37	141.6	3127713.475
		Total			2,49,80,891.88

## **Schedule 1C**

### **Lining**

**₹ 16,24,75,500**

L-Lining					
S. No.	Description	Unit	Quantity	SOR 2020 Rate (Rs)	Amount (Rs)
1a)	Providing and laying CNS layer of approved quality(60% moorum and 40% local sand) on the earth subgrade in a layer of 750 mm or as per site conditions & compaction watering etc all complete as per direction of E/I (As per Analysis of rate given in DPR(Bihar)-Page No. L-15)	M <sup>3</sup>	-	350.2	-
1b)	Providing and laying CNS layer of approved quality on the Earth subgrade outside the Lining Zone in a layer of 200mm and compaction, watering and all complete as per IS Code 9451: 1994 (As per Analysis of rate given in DPR(Bihar)-Page No. L-15)	M <sup>3</sup>	38,679.00	350.2	1,35,45,385.80
2	Providing Transverse Porous Concrete Sleepers under lining E/I.(Analysis derived from Bihar SoR 5.3.2)	M <sup>3</sup>	479.34	3590.9	17,21,248.65
3	Providing and Laying non wooven Geo Synthetic Filters (for Transverse Sleeper) as per ISO-9863 5mm thick for wrapping Porous Sleeper in the bed of Canal and side slope as per specification of E/I (Analysis Derived from 5.2.23)	Sqm	17,243.73	83.75	14,44,162.53
4	Providing M 100 with nominal mix 1:3:6with well graded stone chips (20mm and down) and coarse sand of approved quality and of requisite FM in coping of the canal in panels with construction joints including cost of formwork and its removal curing, royalty and all taxes etc.all complete as per specification and direction of E/I. (SR 5.2.19)	M <sup>3</sup>	974.49	6779.2	66,06,242.27
5	Providing and laying ( in position ) design mix concrete M-150 using cement concrete not less than minimum cement as specified in IS 456: 2000 manufactured in fully automatic batching plant and transported to site of work in transit mixer having continous agitated mixer, manufactured as per design of specified grade and laying the same with paver or by other means (wherever laying of concrete with paver is not possbile) for cement concrete lining 100/ 75 mm thick including cost of admixtures in recommended proportions as per IS-9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and duability including cost of cutting grooves and inserting PVC water stop seals (excluding cost of PVC seals) for joints, supply , carriage , all leads and lifts, loading and unloading of all materials , curing , all taxes etc.all complete as per specification and direction of E/I. (Fresh Lining )	M <sup>3</sup>	8,948.80	7234.2	6,47,37,379.18
6	Extra for Lining with Pavers and Design Mix (As per Morth)	M <sup>2</sup>	1,19,317.28	45.90	54,76,663.08
7	Providing Longitudinal porous concrete sleepers with 7.7cm*20cm on both sides along the bed 1:4(1-Cement and 4-Aggregate) with Water/Cement ratio=0.27-0.34 of graded coarse aggregate including necessary tools and plants, curing, royalty and all taxes as per specification and direction of E/I.(Analysis derived from Bihar SoR 5.3.2)	M <sup>3</sup>	88	3590.9	3,17,501.62



S. No.	Description	Unit	Quantity	SOR 2020 Rate (Rs)	Amount (Rs)
8	Providing and Laying non woven Geo Synthetic Filters ( around Longitudinal Sleeper) as per ISO-9863 5mm thick for wrapping Porous Sleeper in the bed of Canal and side slope as per specification of E/I (Analysis Derived from 5.2.23)	Sqm	3181	83.75	2,66,402.05
9	Providing 50mm dia perforated GI/Steel Pipes with a total length of 120mm <b>E/I (Chapter II-List of Material- S.no 190</b>	M	1378	223.45	3,07,918.03
10	Providing LDPE film (50 Microns) @46gm/sqm in the bed of the canal and side slope and under coping as per specifications and direction of E/I including 5% for overlap and wastage. <b>Rate derived from Bihar SoR (E/I 5.2.23)</b>	Sqm	123323	25.6	31,57,068.30
11	Supplying, fitting & fixing rubber water Stop of approved quality for construction joint complete job as per drawing, design , specification (IS 15058:2000) and instruction of <b>E/I ( 5.8.2)</b>				-
	For Longitudinal Joint	M	28,098.76	107.50	30,20,616.70
	For Transverse Joint	M	23,918.57	107.50	25,71,245.80
12	Providing safety Ladder in lined section of canal with MS rod embedded in cement concrete (1:3:6) in accordance with IS 3812:1966 including royalty , all taxes etc. all complete as per specification and direction of <b>E/I (7.2.17) As per Jharkhand SoR-2018</b>	Nos	11	7846.82	85,138.00
13	<b>Carriage of materials.</b>				-
	Moorum (30Km lead)	M <sup>3</sup>	23207.4	717.7	1,66,55,950.98
	Local sand (3KM)	M <sup>3</sup>	2320.74	304.7	7,07,129.48
	Local sand (30KM)	M <sup>3</sup>	13150.86	894	1,17,56,868.84
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	M <sup>3</sup>	4385.734208	862.9	37,84,450.05
	Stone chips+Metal (100km)	M <sup>3</sup>	9468.67116	2390.6	2,26,35,805.28
	Cement (30KM)	MT	3283.069901	715.8	23,50,021.44
	<b>S.total (A)</b>				<b>16,11,47,198.05</b>
	<b>Seigniorage Charges</b>				
a	Moorum (30Km lead)	M <sup>3</sup>	23207.40	159.97	37,12,487.78
b	Coarse Sand (30Km lead)	M <sup>3</sup>	4385.73	175.80	7,71,012.07
c	Local sand (30KM)	M <sup>3</sup>	15471.60	141.85	21,94,646.46
d	Stone chips+Metal (100 Km lead)	M <sup>3</sup>	9468.67	697.55	66,04,871.57
	S.total				<b>13283017.88</b>
	<b>Seigniorage Charges@ 10% of S.total (B)</b>				<b>1328301.79</b>
	<b>G.total (A+B) (in Rs.)</b>				<b>162475499.84</b>

## **Schedule 1D**

### **GSB on Service Road**

**₹ 1,02,87,423**

## L- GSB on Service Road

S. No.	Description	Unit	Quantity	SOR 2020 Rate (Rs)	Amount (Rs)
1	Excavation for road work in soil with hydraulic excavator including cutting and loading in tipper , trimming bottom and side slopes in accordance with requirements of lines grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000 m(RCD SSR item no. 301)	M <sup>3</sup>	4056.912	93.80	380538.35
2	Construction of Granular Sub-Base by Providing close graded material,material spreading in uniform layers with Motor grader on prepared surfaces, mixing by mix in place method with front end loader at OMC and compacting with Vibratory roller to achieve the desired density complete as per RCD SOR clause 401 ( RCD SOR item No. 4.01(B-II) )	M <sup>3</sup>	4056.912	920.90	3736010.26
3	Grading Material (26.5 mm & below)(40 Km lead)(Carriage of GSB Material)	M <sup>3</sup>	5476.831	1081.20	5921549.89
<b>Total</b>					<b>1,00,38,098.50</b>
<b>Seigniorage Charges</b>					
a	26.50mm to 9.50mm	M <sup>3</sup>	1916.891	647.19	1240592.63
b	9.50mm to 4.75mm	M <sup>3</sup>	684.6039	625.53	428240.28
c	4.75mm below	M <sup>3</sup>	2875.336	286.72	824416.45
S.total					<b>2493249.36</b>
<b>Seigniorage Charges@ 10% of S.total (B)</b>					<b>249324.936</b>
<b>G.total (A+B) (in Rs.)</b>					<b>1,02,87,423.44</b>

## **Schedule 1E**

### **Catch water Drain**

**₹ 1,85,93,009**

L- Catch water Drain					
S.No.	Description of Items	Quantity	Unit	SOR 2020 Rate (Rs)	Amount (in Rs)
1	Earthwork in excavation of canals and dhars carrying minimum full supply discharge above 28 cumecs in ordinary soil (vide classification of soil item-A) and making the banks with excavated earth in proper profile and clod breaking and laying earth in 225 mm layers with an initial lead of 30 m and lift of 1.5 m, all complete as per approved design, specification and direction of E/I (5.1.6)	2,122.26	M3	149.40	3,17,065.64
2	Dismantling pucca brick or lime work including stacking(Precast Lining of Canals 50mm thick) serviceable materials in countable stacks within 15 meter lead and disposal of unserviceable materials with all leads, as per building specifications and direction of E/I.(5.8.7)	42,445.20	Per Sqm	25.10	10,65,374.52
3	Laying of 600 mm*525mm*55mm; 600mm*450mm*55mm;600mm*425mm*55mm size precast P.C.C. slab in side slopes and berm of canal with groove of the slab and lug slab set in C.M.(1:3) and flush pointing (1:2) including royalty, all taxes,etc. but excluding the cost of precast slabs all complete as per specification and direction of E/I.(5.2.18)	42,445.20	Per Sqm	401.60	1,70,45,992.32
4	<b>Carriage of Materials</b>				
	1) Cement (30 KM)	72.73	MT	715.80	52057.72
	2) Sand (30 km)(Taken the rates of Stone Chips)	127.79	M3	862.90	110271.72
	<b>S. Total (A)</b>				<b>18590761.92</b>
	<b>Seigniorage Charges</b>				
a	Coarse Sand (30Km lead)	127.79	M3	175.8	<b>22465.8336</b>
	<b>Seigniorage Charges@ 10% (B)</b>				<b>2246.58336</b>
	<b>G.total (A+B) (in Rs.)</b>				<b>18593008.51</b>
	<b>Total</b>				<b>1,85,90,761.92</b>

**Schedule 1G**

**Cross Regulators (2  
nos.)**

**₹ 2,55,67,456**

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND								
ESTIMATE FOR CROSS REGULATOR AT KM. 94.000 FOR CHAIN NAWADA DY.								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per 8th RCE)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	719.43	Cum	140.90	101368.27			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	65.75	Cum	4607.30	302931.15	22.36	27.62	55.89
3	Providing and laying P.C.C. or R.C.C M-200 with nominal mix of in foundation/ superstructure of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design ) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing, royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. (5.3.5)	477.26	Cum	5081.80	2425358.44	186.13	200.45	405.67
4	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of (1:1:2) in foundation 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. (5.3.6)	466.23	Cum	6201.50	2891345.96	198.15	181.83	363.66
5	Providing TMT bar reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 )	43.60	MT	77690.80	3387076.34			
6	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	1179.06	Sqm	516.30	608747.85			
7	Design, fabrication, supply, erection, testing and commissioning of Vertical lift sliding type gate consisting of skin plate, sealing frame, stiffeners, horizontal and vertical girders, guide, stainless steel flat/Brass flat, rivets, wedges, lifting rods etc., with all accessories including frame & gate complete set for Low head Canal/Tank /other water resources structure regulator gates as per IS:5620 and IS:4622 without concreting work including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, surface which are in contact with concrete applying cement primer and other surfaces with paints, should be same as painting item no 8.38, as per IS :14177, seal fixing etc., complete as per specifications and approved drawings with all lead and lifts, including packing & forwarding charges for structural steel components and other materials.(As per analysis)	25.16	T	128746.20	3238948.27			
8	Carriage of materials(As per Bihar SoR)							
	Coarse Sand (30Km lead)	409.90	Cum	862.90	353699.98			
	Coarse Aggregates (100 Km lead)	825.22	Cum	2390.60	1972780.06			
	Cement (30 Km lead)	406.64	MT	715.80	291070.82			
	Steel (30 Km)	43.60	MT	715.80	31206.65			
TOTAL (In Rs.)					15604533.80			
Seignorage Fee@10 %			Rate	Amount (Rs)	10%			
Coarse Sand (Cum)		409.897	175.8	72059.86	7205.99			
Coarse Aggregates (Cum)		825.224	697.55	575634.87	57563.49			
Boulders (Cum)		0.000	355.68	0.00	0.00			
					64769.47			

Cost Estimate					
RD 96.53 Cross regulator					
S. No.	Description	Quantity	Unit	SOR 2020	Amount (INR)
1	Jungle clearance including weeding out shrubs, small trees upto 0.50 m dia. Girth and their removal as per specifications and directions of E/I-5.1.3	140	m <sup>2</sup>	8.50	1,190
2	Earthwork in excavation of foundation trenches in ordinary soil (vide classification of soil item A) and disposal of excavated earth so obtained to a distance of 50 m and average lift of 1.5 m including leveling, ramming the foundation trenches, removing the roots of shrubs etc. all complete as per specification and direction of E/I-5.1.27	828	m <sup>3</sup>	140.90	1,16,665
3	Extra for earthwork in marshy, slushy and daldal soil all complete as per specification and direction of E/I-5.1.11 @ 10% of Item No.: 2	85	m <sup>3</sup>	37.30	3,171
4	Earthwork in filling and 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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-5.1.31	225	m <sup>3</sup>	107.70	24,233
5	Providing and laying PCC M-10 with nominal mix of (1:3:6) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate or required grade (as per design) and approved quality of sand of requisite FM washed and screened including necessary tools and plants, vibrating curing royalty and all taxes etc. excluding cost of form works as well reinforcement its cutting binding and placing complete job as per specification and direction of E/I-5.3.3	16	m <sup>3</sup>	3,899.20	62,387
6	Providing RCC M-25 with nominal mix of (1:1:2) in superstructure of various components of canal or embankment structures with approved quality of graded coarse aggregate or required grade (as per design) and approved quality of sand of requisite FM washed and screened including necessary tools and plants, vibrating curing royalty and all taxes etc. excluding cost of form works as well reinforcement its cutting binding and placing complete job as per specification and direction of E/I-5.3.11				
	a. Pier	167	m <sup>3</sup>	6,162.70	10,29,171
	b. Canal lining	119	m <sup>3</sup>	6,162.70	7,33,361
	c. Bottom raft	185	m <sup>3</sup>	6,162.70	11,40,100
	d. Deck Slab	32	m <sup>3</sup>	6,162.70	1,97,206
	e. Paraper wall	5	m <sup>3</sup>	6,162.70	30,814
7	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-5.3.19	607	m <sup>2</sup>	516.30	3,13,394
8	Providing centering including strutting and propping etc. and removal after use in deck slab as per specification and direction of E/I-5.3.20	60	m <sup>2</sup>	705.90	42,354
9	Providing MS reinforcement (Fe 500) as per approved design drawing removal rust cutting, bending, binding including supplying annealed wire, playing MS rods in position complete job as per specification and direction of E/I-5.3.22	34.5	MT	77,690.80	26,80,333
10	Providing and fixing in position 25mm thick bituminastic board (shallitx or equivalent) as per I.S. 1838-1938 in expansion or construction joints all complete job as per specification and direction of E/I-5.8.3	11	m <sup>2</sup>	939.14	10,331
11	H-M Works (Gates)	2	Nos	7,93,110.60	15,86,221
12	Chain pully block for Hoisting arrange for the gates(20T Capacity)	2	Nos	1,00,000.00	2,00,000
13	Structural steel Avg. of M6, M8 & M9	1.300	MT	57,450.00	74,685
14	Demolition of existing wing wall and disposing the debris to the designated dumping site(DSR 2021 15.2.1)	218	m <sup>3</sup>	2,007.10	4,37,548
15	Scrap Value of Debris( M-7)	218.00	m <sup>3</sup>	1,004.00	-2,18,872
16	Coarse Sand (30Km lead)	205.32	m <sup>3</sup>	862.90	1,77,171
17	Stone chips+Metal (100Km lead)	410.64	m <sup>3</sup>	2390.60	9,81,676.0
18	Cement (30Km lead)	219.34	MT	715.80	1,57,004
19	Steel (30 km lead)	34.50	MT	715.80	24,695
20	Providing paper bearing of reinforced bitumen laminated craft 140 G.S.M paper conforming to IS 1398.	3750	m <sup>2</sup>	58.00	2,17,500
				<b>Total</b>	<b>1,00,22,336</b>
21	Salvage value for the existing gates and its embeded parts	2	MT	78,218	1,56,436



## **Schedule 1H**

### **Head Regulators (1 no.)**

**₹ 33,89,975**

NORTH KOEL RESERVOIR PROJECT , BIHAR AND JHARKHAND								
Abstract of Cost of Head Regulator of Chain Nawada Dy. (Offtaking from RMC at RD 93.950 KM )								
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earthwork in Excavation of canals carrying minnum full supply discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A)and making the banks with excavated earth in proper profile and clod breaking, laying earth in 225 mm layer & rough dressing of soil with initial lead of 30 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. <b>(WRD 5.1.8)</b>	299.130	Cum	113.00	33801.65			
2	Providing & laying <b>P.C.C. M-100</b> with nominal mix (1:3:6) of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. <b>(5.3.3)</b>	23.749	Cum	3899.20	92602.02	5.11	10.69	21.37
3	Providing & laying <b>P.C.C. or R.C.C. M-150</b> with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. <b>(5.3.4)</b>	10.38	Cum	4607.30	47811.06	3.53	4.36	8.82
4	Providing & laying <b>P.C.C. or R.C.C. M-200</b> with nominal mix in foundation of various components of canal or embankment structures with approved quality of 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. <b>(5.3.5)</b>	164.24	Cum	5081.80	834638.50	64.05	68.98	139.60
5	Providing & laying <b>P.C.C. or R.C.C. M-250</b> with nominal mix in foundation of various components of canal or embankment structures with approved quality of 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. <b>(5.3.6)</b>	15.05	Cum	6201.50	93347.48	6.40	5.87	11.74
6	Providing shuttering including strutting, proping etc. and its removal after use in various components of canal structure or embankment structure as per specifications and direction of E/I. <b>(5.3.19)</b>	443.34	Sqm	516.30	228898.04			
7	Providing centering including strutting, proping etc. and its removal after use in deck slab as per specifications and direction of E/I. <b>(5.3.20)</b>	5.16	Sqm	705.90	3641.53			
8	Providing M.S reinforcement (tor steel) (Fe-500) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. <b>(5.3.22 )</b>	10.36	M.T.	77690.80	805193.53			
9	Stone Boulders + 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. <b>(M-003 + 5.7.21)</b>	17.56	Cum	1449.78	25454.08			
10	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. <b>(5.2.2)</b>	4.29	Cum	1171.10	5028.16			

11	Providing pitching work with designation 100A 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. <b>(5.7.16)</b>	17.66	Sqm	763.30	13476.82			
12	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. <b>(RCD Jharkhand 14.9)</b>	2.00	No.	797.00	1594.00			
13	Providing & Fixing in position Tar Paper Bearing for slab as per approved drawings & specifications. <b>(14.17 - NHPWD Chhatisgarh - SOR 2021)</b>	4.20	Sqm	73.00	306.60			
14	Providing and fixing 25 mm thick Bituminous board in expansion joint or construction joints in dam and its allied works all complete as per approve drawing & technical specifications and direction of E/I. <b>(5.8.3)</b>	3.15	Sqm	504.10	1587.92			
15	Earthwork in filling in foundation trenches and back filling of structures in layers not exceeding 150 mm thick well watered, rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches an placed in a suitable profile within a lead of 30 mtr and lift of 1,5 mtr complete as per specification & direction of E/I <b>(5.1.31)</b>	50.00	Cum	107.70	5385.00			
16	Design, fabrication, supply, erection, testing and commissioning of vertical lift sliding type gate consisting of skin plate, sealing frame, stiffeners, horizontal and vertical girders, I guide, stainless steel flat/Brass flat, rivets, wedges, lifting rods etc., with all accessories including frame & Canal/Tank/other water resources structure regulator gates as per IS:5620 and IS:4622 without concreting work including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, surface which are in contact with concrete applying cement prime and other surfaces with paints, should be same painting item no 8.38, as per IS:14177, seal fixing etc., complete as per specifications and approved drawings with all lead and lifts, including packing & forwarding charges for structure steel components and other materials. <b>(As per approved rates in RCE)</b>	2.65	MT	128746.20	341177.43			
17	Chain pully block for Hoisting arrangement for the gates (upto 10T capacity)	2.00	Nos.	70000.00	140000.00			
18	Structural Steel (Avg. M6, M8 & M9) WRD Bihar Dec'21 Material rates	1.60	MT	57450.00	91920.00			
19	Demolition of existing wing wall and disposing the debris to the designated dumping site <b>(CPWD 15.2.1)</b>	13.47	Cum	221.00	2976.34			
20	Scrap value of Debris <b>(M-7)</b>	13.47	Cum	221.00	2976.34			
21	<b>Carriage of materials(As per Bihar SoR 2020)</b>							
	Coarse Sand (30Km lead)	89.897	Cum	862.90	77572.14			
	Coarse Aggregates (100 Km lead)	181.540	Cum	2390.60	433990.06			
	Steel (30 Km lead)	10.364	MT	715.80	7418.61			
	Cement (30 km lead)	79.085	MT	715.80	56609.36			
	Boulder (60 Km)	17.557	Cum	1577.70	27699.99			
<b>TOTAL (In Rs.)</b>					<b>3375106.67</b>			

Seignorage Fee@10 %		Rate	Amount (Rs)	10%
Coarse Sand (Cum)	89.897	175.8	15803.90	1580.39
Coarse Aggregates (Cum)	181.540	697.55	126633.38	12663.34
Boulders (Cum)	17.557	355.68	6244.74	624.47
				<b>14868.20</b>

**Schedule 1I**

**Bridges (8 nos.) &  
Super Passages (8  
nos.)**

**₹ 15,12,70,151**

NORTH KOEL								
ESTIMATE FOR SINGLE LANE BRIDGE WITH THREE BEAMS (Km: 90.148)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	690.68	Cum	140.90	97317.23			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	38.77	Cum	4607.30	178606.59	13.18	16.28	32.95
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	175.99	Cum	7739.20	1362019.10	92.39	68.64	137.27
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	109.42	Cum	6201.50	678560.38	46.50	42.67	85.35
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	24.70	MT	77690.80	1918746.33			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	267.51	Sqm	516.30	138113.04			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	220.11	Sqm	705.90	155374.70			

9	Bearing ( Elastomeric Bearing assembly consisting of 7 internal layers of slastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)( <b>M-066</b> )+ Fitting and fixing in position true to line and level elastomeric bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRTH specifications (Excluding Cost of Bearing) complete including all accessories as per drawing and Technical Specifications ( <b>U.K.PWD S.O.R. Sl. No. 13-14, Pg. No. 58</b> )	82560	Cucm	<b>0.66</b>	54489.60			
10	Providing Drainage Spouts complete as per drawings & techincal specifications & as per clause 2705 of specifications. ( <b>G.O.M.P. I.S.S.R. V-3, R&amp;B, Ch-15, S.L.No. 15.9, Pg. 105</b> )	6	No.	<b>890.00</b>	5340.00			
11	Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldsable structural steel plate as per IS:2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm ( <b>U.K.PWD S.O.R. Sl. No. 14-17, Pg. No. 64</b> )	10.5	R.M.	<b>1656.50</b>	17393.25			
12	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-( <b>5.1.31</b> )	399.77	Cum	<b>107.70</b>	43055.12			
13	<b>Carriage of materials(As per Bihar SoR)</b>			0.00				
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	130.90	Cum	<b>862.90</b>	112954.65			
	Coarse Aggregates (100 Km lead)	262.19	Cum	<b>2390.60</b>	626791.57			
	Cement (30 Km lead)	156.11	MT	<b>715.80</b>	111743.28			
	Steel (30 Km)	24.70	MT	<b>715.80</b>	17678.27			
<b>TOTAL (In Rs.)</b>					<b>5574395.52</b>			

NORTH KOEL								
ESTIMATE FOR SINGLE LANE BRIDGE WITH TWO BEAMS (Km: 90.577)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	804.34	Cum	140.90	113331.22			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	43.78	Cum	4607.30	201689.16	14.88	18.39	37.21
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	201.31	Cum	7739.20	1557980.21	105.69	78.51	157.02
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	173.95	Cum	6201.50	1078763.79	73.93	67.84	135.68
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	31.03	MT	77690.80	2410704.03			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	338.60	Sqm	516.30	174816.60			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	195.96	Sqm	705.90	138329.34			

9	Bearing ( Elastomeric Bearing assembly consisting of 7 internal layers of slastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)( <b>M-066</b> )+ Fitting and fixing in position true to line and level elastomeric bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRTH specifications (Excluding Cost of Bearing) complete including all accessories as per drawing and Technical Specifications ( <b>U.K.PWD S.O.R. Sl. No. 13-14, Pg. No. 58</b> )	55040	Cucm	<b>0.66</b>	36326.40			
10	Providing Drainage Spouts complete as per drawings & techincal specifications & as per clause 2705 of specifications. ( <b>G.O.M.P. I.S.S.R. V-3, R&amp;B, Ch-15, S.L.No. 15.9, Pg. 105</b> )	6	No.	<b>890.00</b>	5340.00			
11	Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldsable structural steel plate as per IS:2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm ( <b>U.K.PWD S.O.R. Sl. No. 14-17, Pg. No. 64</b> )	10.5	R.M.	<b>1656.50</b>	17393.25			
12	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-( <b>5.1.31</b> )	600.95	Cum	<b>107.70</b>	64722.21			
13	<b>Carriage of materials(As per Bihar SoR)</b>			0.00				
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	168.05	Cum	<b>862.90</b>	145008.99			
	Coarse Aggregates (100 Km lead)	336.53	Cum	<b>2390.60</b>	804519.66			
	Cement (30 Km lead)	198.53	MT	<b>715.80</b>	142109.93			
	Steel (30 Km)	31.03	MT	<b>715.80</b>	22210.89			
<b>TOTAL (In Rs.)</b>					<b>6969458.09</b>			



NORTH KOEL								
ESTIMATE FOR SINGLE LANE BRIDGE WITH TWO BEAMS (Km: 90.931)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	896.62	Cum	140.90	126333.62			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	46.06	Cum	4607.30	212193.81	15.66	19.34	39.15
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	211.81	Cum	7739.20	1639241.81	111.20	82.61	165.21
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	192.85	Cum	6201.50	1195972.14	81.96	75.21	150.42
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	33.21	MT	77690.80	2580240.59			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	367.50	Sqm	516.30	189737.67			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	195.96	Sqm	705.90	138329.34			



NORTH KOEL								
ESTIMATE FOR SINGLE LANE BRIDGE WITH TWO BEAMS (Km: 91.708)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	993.49	Cum	140.90	139983.02			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	50.62	Cum	4607.30	233203.10	17.21	21.26	43.02
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	229.03	Cum	7739.20	1772510.83	120.24	89.32	178.64
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	207.09	Cum	6201.50	1284246.77	88.01	80.76	161.53
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	40.28	MT	77690.80	3129179.78			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	391.26	Sqm	516.30	202005.37			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	195.96	Sqm	705.90	138329.34			

9	Bearing ( Elastomeric Bearing assembly consisting of 7 internal layers of slastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)( <b>M-066</b> )+ Fitting and fixing in position true to line and level elastomeric bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRTH specifications (Excluding Cost of Bearing) complete including all accessories as per drawing and Technical Specifications ( <b>U.K.PWD S.O.R. Sl. No. 13-14, Pg. No. 58</b> )	55040	Cucm	<b>0.66</b>	36326.40			
10	Providing Drainage Spouts complete as per drawings & techincal specifications & as per clause 2705 of specifications. ( <b>G.O.M.P. I.S.S.R. V-3, R&amp;B, Ch-15, S.L.No. 15.9, Pg. 105</b> )	6	No.	<b>890.00</b>	5340.00			
11	Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldsable structural steel plate as per IS:2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm ( <b>U.K.PWD S.O.R. Sl. No. 14-17, Pg. No. 64</b> )	10.5	R.M.	<b>1656.50</b>	17393.25			
12	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-( <b>5.1.31</b> )	701.04	Cum	<b>107.70</b>	75501.68			
13	<b>Carriage of materials(As per Bihar SoR)</b>			0.00				
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	194.65	Cum	<b>862.90</b>	167967.32			
	Coarse Aggregates (100 Km lead)	389.82	Cum	<b>2390.60</b>	931891.86			
	Cement (30 Km lead)	229.49	MT	<b>715.80</b>	164271.61			
	Steel (30 Km)	40.28	MT	<b>715.80</b>	28830.53			
<b>TOTAL (In Rs.)</b>					<b>8383193.28</b>			

NORTH KOEL								
ESTIMATE FOR SINGLE LANE BRIDGE WITH TWO BEAMS (Km: 92.068)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	1059.56	Cum	140.90	149292.57			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	48.34	Cum	4607.30	222698.45	16.43	20.30	41.09
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	222.31	Cum	7739.20	1720503.41	116.71	86.70	173.40
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	198.71	Cum	6201.50	1232273.24	84.45	77.50	154.99
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	35.30	MT	77690.80	2742282.69			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	377.55	Sqm	516.30	194929.17			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	195.96	Sqm	705.90	138329.34			

9	Bearing ( Elastomeric Bearing assembly consisting of 7 internal layers of slastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)( <b>M-066</b> )+ Fitting and fixing in position true to line and level elastomeric bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRTH specifications (Excluding Cost of Bearing) complete including all accessories as per drawing and Technical Specifications ( <b>U.K.PWD S.O.R. Sl. No. 13-14, Pg. No. 58</b> )	55040	Cucm	<b>0.66</b>	36326.40			
10	Providing Drainage Spouts complete as per drawings & techincal specifications & as per clause 2705 of specifications. ( <b>G.O.M.P. I.S.S.R. V-3, R&amp;B, Ch-15, S.L.No. 15.9, Pg. 105</b> )	6	No.	<b>890.00</b>	5340.00			
11	Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldable structural steel plate as per IS:2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm ( <b>U.K.PWD S.O.R. Sl. No. 14-17, Pg. No. 64</b> )	10.5	R.M.	<b>1656.50</b>	17393.25			
12	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-( <b>5.1.31</b> )	705.68	Cum	<b>107.70</b>	76001.63			
13	<b>Carriage of materials(As per Bihar SoR)</b>			0.00				
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	187.81	Cum	<b>862.90</b>	162059.12			
	Coarse Aggregates (100 Km lead)	376.10	Cum	<b>2390.60</b>	899100.90			
	Cement (30 Km lead)	221.63	MT	<b>715.80</b>	158641.82			
	Steel (30 Km)	35.30	MT	<b>715.80</b>	25265.87			
<b>TOTAL (In Rs.)</b>					<b>7836650.27</b>			

NORTH KOEL								
ESTIMATE FOR SINGLE LANE BRIDGE WITH THREE BEAMS (Km: 96.250)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	1059.56	Cum	140.90	149292.57			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	48.34	Cum	4607.30	222698.45	16.43	20.30	41.09
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	222.31	Cum	7739.20	1720503.41	116.71	86.70	173.40
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	198.71	Cum	6201.50	1232273.24	84.45	77.50	154.99
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	35.30	MT	77690.80	2742282.69			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	377.55	Sqm	516.30	194929.17			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	195.96	Sqm	705.90	138329.34			

9	Bearing ( Elastomeric Bearing assembly consisting of 7 internal layers of slastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)( <b>M-066</b> )+ Fitting and fixing in position true to line and level elastomeric bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRTH specifications (Excluding Cost of Bearing) complete including all accessories as per drawing and Technical Specifications ( <b>U.K.PWD S.O.R. Sl. No. 13-14, Pg. No. 58</b> )	55040.00	Cucm	<b>0.66</b>	36326.40			
10	Providing Drainage Spouts complete as per drawings & techinal specifications & as per clause 2705 of specifications. ( <b>G.O.M.P. I.S.S.R. V-3, R&amp;B, Ch-15, S.L.No. 15.9, Pg. 105</b> )	6.00	No.	<b>890.00</b>	5340.00			
11	Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldable structural steel plate as per IS:2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm ( <b>U.K.PWD S.O.R. Sl. No. 14-17, Pg. No. 64</b> )	10.50	R.M.	<b>1656.50</b>	17393.25			
12	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-( <b>5.1.31</b> )	705.68	Cum	<b>107.70</b>	76001.63			
13	<b>Carriage of materials(As per Bihar SoR)</b>	0.00		0.00				
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	187.81	Cum	<b>862.90</b>	162059.12			
	Coarse Aggregates (100 Km lead)	376.10	Cum	<b>2390.60</b>	899100.90			
	Cement (30 Km lead)	221.63	MT	<b>715.80</b>	158641.82			
	Steel (30 Km)	35.30	MT	<b>715.80</b>	25265.87			
<b>TOTAL (In Rs.)</b>					<b>7836650.27</b>			



NORTH KOEL									
ESTIMATE FOR SUPER-PASSAGE ON R.M.C. at Km 91.470 Km									
ABSTRACT OF COST									
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	880.71	Cum	140.90	124092.04				
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix in foundation 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. (5.3.4)	72.72	Cum	4607.30	335039.77	24.72	30.54	61.81	
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix in foundation/ superstructure of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	52.46	Cum	7739.20	405971.73	27.54	20.46	40.92	
4	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix in foundation/superstructure of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	247.08	Cum	6201.50	1532247.71	105.01	96.36	192.72	
5	Providing TMT bar reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 )	19.89	MT	77690.80	1545350.81				
6	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	507.42	Sqm	516.30	261983.27				
7	Labour charge for pitching above water on Apron slope of bank with stone boulder in crates of specied size (materials within 150 m & all lifts) including boxing & tying the crates with 12 to 14 gauge G.I. wire including cost of G.I. wire all complete job as per specification and direction of E/I. (5.7.21) + Stone Boulder (M-003)	61.56	Cum	1497.60	92192.26				64.64
8	Providing filter of stone chips 20 mm& down well graded as per designed for lined canal, drains including hand packing etc. as per specification & direction of E/I. (5.2.2)	1.30	Cum	1171.10	1517.75				
9	Supplying fitting & fixing rubber seal (water stop) of approved quality for construction joints complete job as per specification & direction of E/I. (Bihar, wrd, 5.8.2)	2.90	M	107.50	311.75				
10	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and technical specifications. (Pune PWD S.O.R. SI.No. 15/25 MoRTH Pg. No. 303)	3.68	MT Capacity	253.05	931.22				

11	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-(5.1.31)	432.18	Cum	107.70	46545.57				
12	Carriage of materials(As per Bihar SoR)			0.00					
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	147.36	Cum	862.90	127157.10				
	Coarse Aggregates (100 Km lead)	296.74	Cum	2390.60	709395.16				
	Cement (30 Km lead)	157.27	MT	715.80	112575.27				
	Steel (30 Km)	19.8910	MT	715.80	14238.01				
	Boulders (30 Km)	64.64	Cum	1577.70	101979.37				
<b>TOTAL (In Rs.)</b>					<b>5411528.78</b>				

NORTH KOEL									
ESTIMATE FOR SUPER-PASSAGE ON R.M.C. at Km 92.010 Km									
ABSTRACT OF COST									
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	2790.96	Cum	140.90	393245.70				
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix in foundation 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. (5.3.4)	236.84	Cum	4607.30	1091184.45	80.52	99.47	201.31	
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix in foundation/ superstructure of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	251.55	Cum	7739.20	1946784.93	132.06	98.10	196.21	
4	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix in foundation/superstructure of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	802.36	Cum	6201.50	4975808.70	341.00	312.92	625.84	
5	Providing TMT bar reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22)	59.93	MT	77690.80	4655874.98				
6	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	1493.31	Sqm	516.30	770993.54				
7	Labour charge for pitching above water on Apron slope of bank with stone boulder in crates of specied size (materials within 150 m & all lifts) including boxing & tying the crates with 12 to 14 gauge G.I. wire including cost of G.I. wire all complete job as per specification and direction of E/I. (5.7.21) + Stone Boulder (M-003)	179.82	Cum	1497.60	269298.43				188.81
8	Providing filter of stone chips 20 mm& down well graded as per designed for lined canal, drains including hand packing etc. as per specification & direction of E/I. (5.2.2)	8.42	Cum	1171.10	9865.35				
9	Supplying fitting & fixing rubber seal (water stop) of approved quality for construction joints complete job as per specification & direction of E/I. (Bihar, wrd, 5.8.2)	21.40	M	107.50	2300.50				
10	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and technical specifications. (Pune PWD S.O.R. Sl.No. 15/25 MoRTH Pg. No. 303)	154.01	MT Capacity	253.05	38971.72				

11	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-(5.1.31)	857.43	Cum	107.70	92345.43				
12	Carriage of materials(As per Bihar SoR)			0.00					
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	510.49	Cum	862.90	440505.87				
	Coarse Aggregates (100 Km lead)	1031.78	Cum	2390.60	2466577.49				
	Cement (30 Km lead)	553.59	MT	715.80	396259.11				
	Steel (30 Km)	59.9283	MT	715.80	42896.65				
	Boulders (30 Km)	188.81	Cum	1577.70	297887.11				
TOTAL (In Rs.)					17890799.97				

NORTH KOEL									
ESTIMATE FOR SUPER-PASSAGE ON R.M.C. at Km 92.751 Km									
ABSTRACT OF COST									
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	1292.57	Cum	140.90	182122.97				
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix in foundation 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. (5.3.4)	107.46	Cum	4607.30	495101.54	36.54	45.13	91.34	
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix in foundation/ superstructure of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	104.86	Cum	7739.20	811506.59	55.05	40.89	81.79	
4	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix in foundation/superstructure of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	440.27	Cum	6201.50	2730345.54	187.12	171.71	343.41	
5	Providing TMT bar reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22)	29.83	MT	77690.80	2317211.11				
6	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	840.78	Sqm	516.30	434094.22				
7	Labour charge for pitching above water on Apron slope of bank with stone boulder in crates of specified size (materials within 150 m & all lifts) including boxing & tying the crates with 12 to 14 gauge G.I. wire including cost of G.I. wire all complete job as per specification and direction of E/I. (5.7.21) + Stone Boulder (M-003)	98.42	Cum	1497.60	147386.30				103.34
8	Providing filter of stone chips 20 mm& down well graded as per designed for lined canal, drains including hand packing etc. as per specification & direction of E/I. (5.2.2)	2.59	Cum	1171.10	3035.49				
9	Supplying fitting & fixing rubber seal (water stop) of approved quality for construction joints complete job as per specification & direction of E/I. (Bihar, wrd, 5.8.2)	6.70	M	107.50	720.25				
10	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and technical specifications. (Pune PWD S.O.R. Sl.No. 15/25 MoRTH Pg. No. 303)	13.43	MT Capacity	253.05	3398.97				

11	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-(5.1.31)	609.08	Cum	107.70	65598.35				
12	Carriage of materials(As per Bihar SoR)			0.00					
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	257.73	Cum	862.90	222398.14				
	Coarse Aggregates (100 Km lead)	519.13	Cum	2390.60	1241040.27				
	Cement (30 Km lead)	278.70	MT	715.80	199494.70				
	Steel (30 Km)	29.8261	MT	715.80	21349.50				
	Boulders (30 Km)	103.34	Cum	1577.70	163032.81				
<b>TOTAL (In Rs.)</b>					<b>9037836.76</b>				

NORTH KOEL									
ESTIMATE FOR SUPER-PASSAGE ON R.M.C. at Km 93.030 Km									
ABSTRACT OF COST									
S. No.	Item of Works	Qty.	Unit	Rate (As per Bihar SoR 2020)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	947.40	Cum	140.90	133488.94				
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix in foundation 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. (5.3.4)	103.24	Cum	4607.30	475640.31	35.10	43.36	87.75	
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix in foundation/ superstructure of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. Modified 5.3.6	104.86	Cum	7739.20	811506.59	55.05	40.89	81.79	
4	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix in foundation/superstructure of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	410.59	Cum	6201.50	2546260.21	174.50	160.13	320.26	
5	Providing TMT bar reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22)	27.50	MT	77690.80	2136622.43				
6	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	820.27	Sqm	516.30	423503.05				
7	Labour charge for pitching above water on Apron slope of bank with stone boulder in crates of specified size (materials within 150 m & all lifts) including boxing & tying the crates with 12 to 14 gauge G.I. wire including cost of G.I. wire all complete job as per specification and direction of E/I. (5.7.21) + Stone Boulder (M-003)	98.42	Cum	1497.60	147386.30				103.34
8	Providing filter of stone chips 20 mm& down well graded as per designed for lined canal, drains including hand packing etc. as per specification & direction of E/I. (5.2.2)	2.59	Cum	1171.10	3035.49				
9	Supplying fitting & fixing rubber seal (water stop) of approved quality for construction joints complete job as per specification & direction of E/I. (Bihar, wrd, 5.8.2)	6.70	M	107.50	720.25				
10	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and technical specifications. (Pune PWD S.O.R. Sl.No. 15/25 MoRTH Pg. No. 303)	13.43	MT Capacity	253.05	3398.97				

11	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-(5.1.31)	596.52	Cum	107.70	64245.63				
12	Carriage of materials(As per Bihar SoR)			0.00					
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	244.38	Cum	862.90	210877.70				
	Coarse Aggregates (100 Km lead)	492.39	Cum	2390.60	1177106.26				
	Cement (30 Km lead)	264.65	MT	715.80	189436.38				
	Steel (30 Km)	27.5016	MT	715.80	19685.66				
	Boulders (30 Km)	103.34	Cum	1577.70	163032.81				
TOTAL (In Rs.)					8505946.98				





11	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-(5.1.31)	920.16	Cum	107.70	99101.02				
12	Carriage of materials(As per Bihar SoR)			0.00					
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	836.76	Cum	862.90	722036.92				
	Coarse Aggregates (100 Km lead)	1697.58	Cum	2390.60	4058243.85				
	Cement (30 Km lead)	913.17	MT	715.80	653646.88				
	Steel (30 Km)	95.7839	MT	715.80	68562.15				
	Boulders (30 Km)	328.29	Cum	1577.70	517947.87				
<b>TOTAL (In Rs.)</b>					<b>29394973.28</b>				

NORTH KOEL									
ESTIMATE FOR SUPER-PASSAGE ON R.M.C. at Km 90.410 Km									
ABSTRACT OF COST									
S. No.	Item of Works	Qty.	Unit	Rate (As per 8th RCE)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	480.70	Cum	140.90	67730.49				
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	64.08	Cum	4607.30	295246.62	21.79	26.91	54.47	
3	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 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. (5.3.6)	213.31	Cum	6201.50	1322855.04	90.66	83.19	166.38	
4	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix in foundation/ super structure of various components of canal or embankment structures with approved quality of 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. (Modified 5.3.6)	118.08	Cum	7739.20	913833.20	61.99	46.05	92.10	
5	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 )	19.41	MT	77690.80	1508263.42				
6	Providing Shuttering, including strutting proping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	628.04	Sqm	516.30	324255.40				
7	Labour charge for pitching above water on Apron slope of bank with stone boulder in crates of specified size (materials within 150 m & all lifts) including boxing & tying the crates with 12 to 14 gauge G.I. wire including cost of G.I. wire all complete job as per specification and direction of E/I. (5.7.21) + Stone Boulder (M-003)	24.30	Cum	1449.78	35229.65				25.52
8	Providing filter of stone chips 20mm & down well graded as per designed for lined canal, drains including hand packing etc. as per specification & direction of E/I. (5.2.2) (corrigendum)	1.90	Cum	1171.10	2229.24				
9	Supplying fitting & fixing rubber seal (water stop) of approved quality for construction joints complete job as per specification & direction of E/I. (5.8.2)	11.24	M	107.50	1208.30				
10	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and technical specifications. (Pune PWD S.O.R. SI No. 15/25 Morth Pg. No. 303)	2.00	No.	20244.00	40488.00				
11	Providing Drainage Spouts complete as per drawings & technical specifications & as per clause 2705 of specifications. (G.O.M.P. I.S.S.R. V-3, R&B, Ch-15, S.L.No. 15.9, Pg. 105)	4.00	No.	890.00	3560.00				
12	Earthwork in filling in foundation trenches and back filling of structures in layers not exceeding 150 mm thick well watered, rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches an placed in a suitable profile within a lead of 30 mtr and lift of 1,5 mtr complete as per specification & direction of E/I (5.1.31)	183.83	Cum	107.70	19798.28				

13	<b>Carriage of materials(As per Bihar SOR )</b>							
	Coarse Sand (30 Km lead)	156.16	Cum	<b>862.90</b>	134747.81			
	Coarse Aggregates (100 Km lead)	312.95	Cum	<b>2390.60</b>	748149.46			
	Cement (30 Km lead)	174.44	MT	<b>715.80</b>	124861.91			
	Steel (30 Km lead)	19.4137	MT	<b>715.80</b>	13896.30			
	Boulders (60 Km lead)	25.52	Cum	<b>1577.70</b>	40255.02			
<b>TOTAL (In Rs.)</b>					<b>5596608.15</b>			
Seignorage Fee@10 %			Rate	Amount (Rs)	10%			
Coarse Sand (Cum)		156.157	175.8	27452.39	2745.24			
Coarse Aggregates (Cum)		312.955	697.55	218301.54	21830.15			
Boulders (Cum)		25.515	355.68	9075.18	907.52			
					<b>25482.91</b>			

NORTH KOEL								
ESTIMATE FOR SUPER-PASSAGE ON R.M.C. at Km 91.010 Km								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per 8th RCE)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I <b>(5.1.27)</b>	1930.94	Cum	<b>140.90</b>	272069.87			
2	Providing & laying <b>P.C.C. or R.C.C. M-150</b> with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. <b>(5.3.4)</b>	84.39	Cum	<b>4607.30</b>	388797.88	28.69	35.44	71.73
3	Providing & laying <b>P.C.C. or R.C.C. M-250</b> with nominal mix in foundation of various components of canal or embankment structures with approved quality of 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. <b>(5.3.6)</b>	448.19	Cum	<b>6201.50</b>	2779469.91	190.48	174.80	349.59
4	Providing & laying <b>P.C.C. or R.C.C. M-350</b> with nominal mix in foundation/ super structure of various components of canal or embankment structures with approved quality of 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. <b>(Modified 5.3.6)</b>	86.12	Cum	<b>7739.20</b>	666501.06	45.21	33.59	67.17
5	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. <b>(5.3.22)</b>	73.24	MT	<b>77690.80</b>	5689969.90			
6	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. <b>(5.3.19)</b>	747.74	Sqm	<b>516.30</b>	386057.49			
7	Labour charge for pitching above water on Apron slope of bank with stone boulder in crates of specified size (materials within 150 m & all lifts) including boxing & tying the crates with 12 to 14 gauge G.I. wire including cost of G.I. wire all complete job as per specification and direction of E/I. <b>(5.7.21) + Stone Boulder (M-003)</b>	8.10	Cum	<b>1449.78</b>	11743.22			
8	Providing filter of stone chips 20mm & down well graded as per designed for lined canal, drains including hand packing etc. as per specification & direction of E/I. <b>(5.2.2) (corrigendum)</b>	0.65	Cum	<b>1171.10</b>	756.61			
9	Supplying fitting & fixing rubber seal (water stop) of approved quality for construction joints complete job as per specification & direction of E/I. <b>(5.8.2)</b>	7.56	M	<b>107.50</b>	812.70			
10	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and technical specifications. <b>(Pune PWD S.O.R. Sl No. 15/25 Morth Pg. No. 303)</b>	2.00	No.	<b>20244.00</b>	40488.00			



NORTH KOEL									
ESTIMATE FOR SUPER-PASSAGE ON R.M.C. at Km 92.160 Km									
ABSTRACT OF COST									
S. No.	Item of Works	Qty.	Unit	Rate (As per 8th RCE)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)	Boulder's (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	1385.13	Cum	140.90	195164.11				
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	69.13	Cum	4607.30	318493.70	23.50	29.03	58.76	
3	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix in foundation of various components of canal or embankment structures with approved quality of 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. (5.3.6)	370.01	Cum	6201.50	2294607.42	157.25	144.30	288.61	
4	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix in foundation/ super structure of various components of canal or embankment structures with approved quality of 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. (Modified 5.3.6)	91.09	Cum	7739.20	704965.89	47.82	35.53	71.05	
5	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 )	31.77	MT	77690.80	2468487.23				
6	Providing Shuttering, including strutting proping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	714.67	Sqm	516.30	368984.90				
7	Labour charge for pitching above water on Apron slope of bank with stone boulder in crates of specied size (materials within 150 m & all lifts) including boxing & tying the crates with 12 to 14 gauge G.I. wire including cost of G.I. wire all complete job as per specification and direction of E/I. (5.7.21) + Stone Boulder (M-003)	12.96	Cum	1449.78	18789.15				13.61
8	Providing filter of stone chips 20mm & down well graded as per designed for lined canal, drains including hand packing etc. as per specification & direction of E/I. (5.2.2) (corrigendum)	0.80	Cum	1171.10	936.26				
9	Supplying fitting & fixing rubber seal (water stop) of approved quality for construction joints complete job as per specification & direction of E/I. (5.8.2)	7.76	M	107.50	834.20				
10	Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and technical specifications. (Pune PWD S.O.R. Sl No. 15/25 Morth Pg. No. 303)	2.00	No.	20244.00	40488.00				
11	Providing Drainage Spouts complete as per drawings & techincal specifications & as per clause 2705 of specifications. (G.O.M.P. I.S.S.R. V-3, R&B, Ch-15, S.L.No. 15.9, Pg. 105)	4.00	No.	890.00	3560.00				
12	Earthwork in filling in foundation trenches and back filling of structures in layers not exceeding 150 mm thick well watered, rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches an placed in a suitable profile within a lead of 30 mtr and lift of 1,5 mtr complete as per specification & direction of E/I (5.1.31)	622.08	Cum	107.70	66998.45				
13	Carriage of materials(As per Bihar SOR )								
	Coarse Sand (30 Km lead)	208.86	Cum	862.90	180227.27				
	Coarse Aggregates (100 Km lead)	418.42	Cum	2390.60	1000264.96				
	Cement (30 Km lead)	228.58	MT	715.80	163617.23				
	Steel (30 Km lead)	31.7732	MT	715.80	22743.27				
	Boulders (60 Km lead)	13.61	Cum	1577.70	21469.34				
TOTAL (In Rs.)					7870631.37				
Seignorage Fee@10 %				Rate	Amount (Rs)	10%			
Coarse Sand (Cum)				208.862	175.8	36717.99	3671.80		
Coarse Aggregates (Cum)				418.416	697.55	291865.98	29186.60		
Boulders (Cum)				13.608	355.68	4840.09	484.01		
						33342.41			

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND								
ESTIMATE FOR SINGLE LANE BRIDGE WITH THREE BEAMS (Km: 93.000)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per 8th RCE)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	810.16	Cum	140.90	114151.26			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	36.64	Cum	4607.30	168793.04	12.46	15.39	31.14
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. From D.S.R.	175.99	Cum	7739.20	1362019.10	92.39	68.64	137.27
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. From D.S.R.	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	119.17	Cum	6201.50	739062.21	50.65	46.48	92.96
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	25.23	MT	77690.80	1960395.91			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	283.77	Sqm	516.30	146508.08			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	220.11	Sqm	705.90	155374.70			



9	Bearing ( Elastomeric Bearing assembly consisting of 7 internal layers of slastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)( <b>M-066</b> )+ Fitting and fixing in position true to line and level elastomeric bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRTH specifications (Excluding Cost of Bearing) complete including all accessories as per drawing and Technical Specifications ( <b>U.K.PWD S.O.R. Sl. No. 13-14, Pg. No. 58</b> )	82560	Cucm	<b>0.66</b>	54489.60			
10	Providing Drainage Spouts complete as per drawings & techincal specifications & as per clause 2705 of specifications. ( <b>G.O.M.P. I.S.S.R. V-3, R&amp;B, Ch-15, S.L.No. 15.9, Pg. 105</b> )	6	No.	<b>890.00</b>	5340.00			
11	Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldsable structural steel plate as per IS:2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm ( <b>U.K.PWD S.O.R. Sl. No. 14-17, Pg. No. 64</b> )	10.5	R.M.	<b>1656.5</b>	17393.25			
12	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-( <b>5.1.31</b> )	492.14	Cum	<b>107.70</b>	53003.48			
13	<b>Carriage of materials(As per Bihar SoR)</b>							
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	133.81	Cum	<b>862.90</b>	115465.89			
	Coarse Aggregates (100 Km lead)	267.99	Cum	<b>2390.60</b>	640655.09			
	Cement (30 Km lead)	159.53	MT	<b>715.80</b>	114192.82			
	Steel (30 Km)	25.23	MT	<b>715.80</b>	18062.00			
<b>TOTAL (In Rs.)</b>					<b>5721118.84</b>			
Seignorage Fee@10 %								
		Rate	Amount (Rs)		10%			
	Coarse Sand (Cum)	133.811	175.8	23524.05	2352.41			
	Coarse Aggregates (Cum)	267.989	697.55	186935.90	18693.59			
	Boulders (Cum)	0.000	355.68	0.00	0.00			
					<b>21046.00</b>			

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND								
ESTIMATE FOR SINGLE LANE BRIDGE WITH THREE BEAMS (Km: 94.740)								
ABSTRACT OF COST								
S. No.	Item of Works	Qty.	Unit	Rate (As per 8th RCE)	Amount (Rs)	Cement (MT)	Coarse Sand (Cum)	Coarse Aggregate (Cum)
1	Earth work in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth so obtained to a distance upto 50m and average lift of 1.5m. including levelling, ramming the foundation trenches removing the roots and shrubs etc. all complete as per specification and direction of E/I (5.1.27)	302.35	Cum	140.90	42600.69			
2	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.4)	32.38	Cum	4607.30	149165.94	11.01	13.60	27.52
3	Providing & laying P.C.C. or R.C.C. M-350 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. From D.S.R.	159.74	Cum	7739.20	1236257.10	83.86	62.30	124.60
4	Providing & laying P.C.C. or R.C.C. M-300 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade & approved quality sand of requisite Fm washed & screened including necessary tools & plant, vibrating, curing & all taxes excluding the cost of form work as well as reinforcements its cutting, bending etc complete job as per the specification & direction of E/I. From D.S.R.	8.49	Cum	6622.80	56212.41	4.03	3.31	6.62
5	Providing & laying P.C.C. or R.C.C. M-250 with nominal mix of in foundation of various components of canal or embankment structures with approved quality of required grade (as per design) & approved quality of sand of requisite F.M. washed & screened including necessary tools & plants, vibrating, curing, royalty & all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding & placing, complete job as per specifications & direction of E/I. (5.3.6)	103.89	Cum	6201.50	644266.08	44.15	40.52	81.03
6	Providing M.S reinforcement (tor steel) as per approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. (5.3.22 m)	23.61	MT	77690.80	1834406.36			
7	Providing Shuttering, including strutting propping etc & its removal after use in various components of canal structure or embankment structure as per specifications & directions of E/I. (5.3.19)	256.29	Sqm	516.30	132320.15			
8	Providing centering including strutting, propping etc & removing after use in deck slab as per specifications & directions of E/I. (5.3.20)	220.11	Sqm	705.90	155374.70			

9	Bearing ( Elastomeric Bearing assembly consisting of 7 internal layers of slastomer bonded to 6 nos. internal reinforcing steel laminates by the process of vulcanisation,)( <b>M-066</b> )+ Fitting and fixing in position true to line and level elastomeric bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRTH specifications (Excluding Cost of Bearing) complete including all accessories as per drawing and Technical Specifications ( <b>U.K.PWD S.O.R. Sl. No. 13-14, Pg. No. 58</b> )	82560	Cucm	<b>0.66</b>	54489.60			
10	Providing Drainage Spouts complete as per drawings & techinical specifications & as per clause 2705 of specifications. ( <b>G.O.M.P. I.S.S.R. V-3, R&amp;B, Ch-15, S.L.No. 15.9, Pg. 105</b> )	6	No.	<b>890.00</b>	5340.00			
11	Providing and laying a burried expansion joint, expansion gap being 20 mm, covered with 12 mm thick, 200 mm wide galvanised wieldable structural steel plate as per IS:2062, placed symmetrical to centre line of the joint, resting freely over the top surface of the deck concrete, welding of 8 mm dia. 100 mm long galvanised nails spaced 300 mm ( <b>U.K.PWD S.O.R. Sl. No. 14-17, Pg. No. 64</b> )	10.5	R.M.	<b>1656.5</b>	17393.25			
12	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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of E/I-( <b>5.1.31</b> )	145.51	Cum	<b>107.70</b>	15671.21			
13	<b>Carriage of materials(As per Bihar SoR)</b>							
	Coarse Sand (30Km lead)(Taken the rates of Stone Chips)	119.72	Cum	<b>862.90</b>	103309.15			
	Coarse Aggregates (100 Km lead)	239.77	Cum	<b>2390.60</b>	573194.56			
	Cement (30 Km lead)	143.06	MT	<b>715.80</b>	102399.15			
	Steel (30 Km)	23.61	MT	<b>715.80</b>	16901.20			
<b>TOTAL (In Rs.)</b>					<b>5139301.57</b>			
Seignorage Fee@10 %			Rate	Amount (Rs)	10%			
Coarse Sand (Cum)		119.723	175.8	21047.34	2104.73			
Coarse Aggregates (Cum)		239.770	697.55	167251.68	16725.17			
Boulders (Cum)		0.000	355.68	0.00	0.00			
					<b>18829.90</b>			

**Schedule 1J**  
**Demolition of 7 no.**  
**bridges and**  
**8 nos. Super**  
**Passages**  
**₹ 6,74,413**

NORTH KOEL					
ESTIMATE FOR DISMANTLING SLR Bridge /Cart Bridge/Foot Bridge					
ABSTRACT OF COST					
S. No.	Item of Works	Qty.	Unit	Rate (As per CPWD SoR 2016)	Amount (Rs)
1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 meters lead as per direction of Engineer in Charge. Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix) <b>(15.2.1)</b>	45.70	Cum	824.62	37687.19
2	Demolishing stone rubber masonry manually/ by mechanical means including stacking of servicable material & disposal of unservicable material within 50 meters lead as per direction of Engineer in Charge. In cement mortar. <b>(15.9.1)</b>	92.67	Cum	830.1	76927.41
3	Demolishing R.C.C work manually/ by mechanical means including stacking of steel bars & disposal of unservicable material within 50 meters lead as per direction of Engineer in Charge <b>(15.3)</b>	23.13	Cum	1203.02	27820.12
4	Scrap Value for Brick Bat( <b>Jharkhand SOR 2018 M-199</b> )	45.70	cum	450	-20566.12
5	Scrap Value for Stone Masonry( <b>Jharkhand SOR 2018 M-003</b> )	115.80	cum	537.20	-62206.52
6	Scrap Value for Steel( <b>Jharkhand SOR 2018 M-079</b> )	1815.33	kg	15.4	-27956.10
TOTAL (In Rs.)					31705.98
TOTAL FOR 8 BRIDGES (In Rs.)					253647.84

NORTH KOEL					
ESTIMATE FOR DISMANTLING SUPER PASSAGE					
ABSTRACT OF COST					
S. No.	Item of Works	Qty.	Unit	Rate (As per CPWD SoR 2016)	Amount (Rs)
1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 meters lead as per direction of Engineer in Charge. Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix) <b>(15.2.1)</b>	29.40	Cum	824.62	24243.56
2	Demolishing stone rubber masonry manually/ by mechanical means including stacking of servicable material & disposal of unservicable material within 50 meters lead as per direction of Engineer in Charge. In cement mortar. <b>(15.9.1)</b>	84.82	Cum	830.10	70408.07
3	Demolishing R.C.C work manually/ by mechanical means including stacking of steel bars & disposal of unservicable material within 50 meters lead as per direction of Engineer in Charge <b>(15.3)</b>	8.13	Cum	1203.02	9784.95
4	Scrap Value for Brick Bat( <b>Jharkhand SOR 2018 M-199</b> )	29.40	cum	450.00	-13229.86
5	Scrap Value for Stone Masonry( <b>Jharkhand SOR 2018 M-003</b> )	92.95	cum	537.20	-49934.05
6	Scrap Value for Steel( <b>Jharkhand SOR 2018 M-079</b> )	638.49	kg	15.40	-9832.77
TOTAL (In Rs.)					31439.90
TOTAL FOR 6 SUPER PASSAGES (In Rs.)					188639.40

NORTH KOEL					
ESTIMATE FOR DISMANTLING SUPER PASSAGE DOUBLE TROUGH					
ABSTRACT OF COST					
S. No.	Item of Works	Qty.	Unit	Rate (As per CPWD )	Amount (Rs)
1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 meters lead as per direction of Engineer in Charge. Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix) <b>(15.2.1)</b>	128.66	Cum	824.62	106094.38
2	Demolishing stone rubber masonry manually/ by mechanical means including stacking of servicable material & disposal of unservicable material within 50 meters lead as per direction of Engineer in Charge. In cement mortar. <b>(15.9.1)</b>	323.89	Cum	830.10	268862.30
3	Demolishing R.C.C work manually/ by mechanical means including stacking of steel bars & disposal of unservicable material within 50 meters lead as per direction of Engineer in Charge <b>(15.3)</b>	49.72	Cum	1203.02	59816.75
4	Scrap Value for Brick Bat( <b>Jharkhand SOR 2018 M-199</b> )	128.66	cum	450.00	-57896.33
5	Scrap Value for Stone Masonry( <b>Jharkhand SOR 2018 M-003</b> )	373.61	cum	537.20	-200705.23
6	Scrap Value for Steel( <b>Jharkhand SOR 2018 M-079</b> )	3903.19	kg	15.40	-60109.11
TOTAL (In Rs.)					<b>116062.75</b>
TOTAL FOR 2 SUPER PASSAGES (In Rs.)					<b>232125.50</b>

## **Schedule 1K**

**Diversion of 7 no.  
Bridges**

**₹ 37,32,000**



### The provision of diversion for 18 M Span Bridges

#### By Providing a Belly Bridge:

As quotation received by Bridge & Roof Co. (India) Ltd., Rate of 60ft(18m) Span=Rs. 17.86Lkhs

Add Sub Structure Cost @ 15% =  $0.15 \times 17.86 = 2.679$  Lkhs

Add Erection Cost @ 5% =  $0.05 \times 17.86 = 0.893$  Lkhs

Total Cost of Bailey Bridge =  $17.86 + 2.679 + 0.893 =$  Rs. 21.432 Lkhs

After Usage of this bridge for 3 months, its value will be depreciated to 75%, i.e. Rs. 16.074 Lkhs

So, Net Cost of Bridge=  $21.432 - 16.074$  **535800 Rs**

The provision of Bailey Bridge for Rs. 5.35 Lkhs is recommended for temporary diversion.

### The provision of diversion for 15 M Span Bridges

#### By Providing a Belly Bridge:

As quotation received by Bridge & Roof Co. (India) Ltd., Rate of 60ft(18m) Span=Rs. 15.55Lkhs

Add Sub Structure Cost @ 15% =  $0.15 \times 15.55 = 2.332$  Lkhs

Add Erection Cost @ 5% =  $0.05 \times 15.55 = 0.777$  Lkhs

Total Cost of Bailey Bridge =  $15.55 + 2.332 + 0.777 =$  Rs. 18.66 Lkhs

After Usage of this bridge for 3 months, its value will be depreciated to 75%, i.e. Rs. 13.995 Lkhs

So, Net Cost of Bridge=  $18.66 - 13.995$  **466500 Rs**

The provision of Bailey Bridge for Rs. 4.66 Lkhs is recommended for temporary diversion.

### The provision of diversion for 9 M Span Bridges

#### By Providing a Belly Bridge:

As quotation received by Bridge & Roof Co. (India) Ltd., Rate of 60ft(18m) Span=Rs. 9.40 Lkhs

Add Sub Structure Cost @ 15% =  $0.15 \times 9.40 = 1.41$  Lkhs

Add Erection Cost @ 5% =  $0.05 \times 9.40 = 0.47$  Lkhs

Total Cost of Bailey Bridge =  $9.40 + 1.41 + 0.47 =$  Rs. 11.28 Lkhs

After Usage of this bridge for 3 months, its value will be depreciated to 75%, i.e. Rs. 8.46 Lkhs

So, Net Cost of Bridge=  $11.28 - 8.46$  **282000 Rs**

The provision of Bailey Bridge for Rs. 2.82 Lkhs is recommended for temporary diversion.

## **Schedule 1L**

**Outlets (1 no.)**

**₹ 3,57,118**

Cost Estimate					
Pump Minor 5 at RD 92.53 KM of RMC					
S.No.	Description	Quantity	Unit	WRD, GoB SOR, 2020	Amount (INR)
1	Earthwork in excavation of foundation trenches in ordinary soil (vide classification of soil item A) and disposal of excavated earth so obtained to a distance of 50 m and average lift of 1.5 m including leveling, ramming the foundation trenches, removing the roots of shrubs etc. all complete as per specification and direction of <b>E/I-5.1.27</b>	181.36	m <sup>3</sup>	140.90	25553.62
2	Earthwork in filling and 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 on of foundation trenches and placed in suitable profile with a lead of 30m and lift of 1.5m complete job as per specification and direction of <b>E/I-5.1.31</b>	90.57	m <sup>3</sup>	107.70	9754.29
3	Providing and laying P.C.C. or R.C.C M-100 with nominal mix of (1:3:6 ) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design ) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. (5.3.3)	2.03	m <sup>3</sup>	3899.20	7915.38
4	Providing and laying PCC M-15 with nominal mix of (1:2:4) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate or required grade (as per design) and approved quality of sand of requisite FM washed and screened including necessary tools and plants, vibrating curing royalty and all taxes etc. excluding cost of form works as well reinforcement its cutting binding and placing complete job as per specification and direction of <b>E/I-5.3.4</b>	4.21	m <sup>3</sup>	4607.30	19374.47
5	Brick work in designation 100 A Brick with cement motar (1 : 6 ) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of <b>E / I. 5.4.4</b>	40.98	m <sup>3</sup>	4572.00	187360.56
6	Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per direction of <b>E/I 6.02 RCD, Bihar, 2021</b>	1.27	m <sup>3</sup>	5151.00	6536.62

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3 ) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design ) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. <b>5.3.5</b>	0.76	m <sup>3</sup>	6201.90	4696.43
8	Providing M.S reinforcement (TMT FE-500D) approved design, drawing, removal of rust, cutting, bending, binding, including supplying annealed wire, placing M.S. rods in position, all complete job as per specification & direction of E/I. <b>(5.3.22)</b>	0.08	MT	77690.80	5883.19
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I- <b>5.3.19</b>	9.69	m <sup>2</sup>	516.30	5003.58
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. <b>5.3.20</b>	6.53	m <sup>2</sup>	705.90	4611.79
11	Coarse Sand (30Km lead)	43.24	m <sup>3</sup>	862.90	37309.56
12	Stone chips+Metal (100Km lead)	7.20	m <sup>3</sup>	2390.60	17205.90
13	Cement (30Km lead)	11.59	MT	715.80	8298.40
14	Bricks (30 Km lead)	16638	2000 Nos	1965.60	16351.83
<b>S.total (in Rs.) (A)</b>					<b>355855.61</b>
<b>Seignorage Charges</b>					
	Coarse Sand (Cum)	43.24	m <sup>3</sup>	175.80	7601.14
	Coarse Aggregates (Cum)	7.20	m <sup>3</sup>	697.55	5020.49
<b>S.total (in Rs.)</b>					<b>12621.62</b>
<b>10% of above S.total (in Rs.) (B)</b>					<b>1262.16</b>
<b>Total (in Rs.) (A+B)</b>					<b>357117.78</b>

## **Schedule 1M**

### **Approach Roads (4 nos.)**

**₹ 1,68,41,040**

### Abstract of Cost for Approach Road (90.020 Km to 96.53 Km)

Item No	Description of Item	Unit	Nos	Qty	Rate	Amount
3.03	Excavation for road work in soil with hydraulic excavator including cutting and loading in tipper , trimming bottom and side slopes in accordance with requirements of lines grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000 m(RCD SSR item no. 301)	Cum	1	3000.55	177.40	5,32,297.57
4.14-A	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	Cum	1	210.00	1067.80	2,24,238.00
4.01-B-II	Construction of Granular Sub-Base by Providing close graded material,material spreading in uniform layers with Motor grader on prepared surfaces, mixing by mix in place method with front end loader at OMC and compacting with Vibratory roller to achieve the desired density complete as per RCD SOR clause 401 ( RCD SOR item No. 4.01(B-II) )	Cum	1	140.00	920.90	1,28,926.00
5.7.16	Providing pitching work with designation 100A bricks in pannel and 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, all complete as per approved design,specifications and direction of E/I	Sqm	1	1955	637.40	12,46,117.00
5.01-A-II	Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1.00	800.00	32.30	25,840.00
5.02	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	Sqm	1.00	800.00	12.10	9,680.00
5.04 B	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects.	Cum	1.00	105.00	7374.00	7,74,270.00
5.2	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom. (on DBM)	Sqm	1.00	1600.00	12.10	19,360.00
5.09(i)	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A and B seal coats	Sqm	1.00	800.00	63.20	50,560.00
	<b>Carriage of Materials</b>					-
	a) Bitumen - Lead (200) Km	MT	1	11.85	2568.60	30,432.13
	b) Stone metal- Lead (100)km	m3	1	235.95	2390.60	5,64,068.05
	c) Stone chips-Lead (40 Km)	m3	1	219.20	1081.20	2,36,996.34
	d) Stone dust-Lead (40 km)	m3	1	49.00	1081.20	52,978.80
	e) Brick -lead (08 km)	per 1000 no	1	160.00	1965.60	3,14,496.00
	<b>S. Total (in Rs.for 1 no. bridge)</b>					<b>42,10,259.88</b>
	<b>S. Total (in Rs.for 4 nos bridge)</b>					<b>1,68,41,039.52</b>