



ରାଜ୍ୟାଭ୍ୟାନକୁଣ୍ଡା ଶୁର୍କ୍ଷାଶାସ୍ତ୍ରମାନ୍ଦ୍ରୀ

ROYAL GOVERNMENT OF BHUTAN
PHUENTSHOLING THROMDE
POST CODE 21101, POST BOX NO. 02, PELKHIL LAM



Procurement of Works

Bidding Document
for
Procurement
of

**Construction in the Omchhu River of counterfort
RCC flood walls, riverbank protection (including
increasing use of large rocks), check dams, scour
protection for cross drainages, footpaths &
cycling tracks along both riverbanks, and access
ramp. (“The Works”)**

Volume 2 – Price Bid

Issued on: 16/02/2026

Invitation for Bids No.: General/Circular/Notification (PT/ADB-CRORBP)/ 01975

OCB No: W-1

Employer: Phuentsholing Thromde

Country: Bhutan

Letter of Price Bid

-Note-

The Bidder must accomplish the Letter of Price Bid on its letterhead clearly showing the Bidder's complete name and address.

Date:

OCB No.:

Invitation for Bid No.:

To: [insert complete name of the Employer]

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We acknowledge that we have read and understand ADB's Anticorruption Policy (1998) and Integrity Principles and Guidelines (2015), both as amended from time to time.
- (c) We offer to execute in conformity with the Bidding Documents the following Works: [insert narrative]
- (d) The total price of our Bid, excluding any discounts offered in item (d) below is:

[amount of foreign currency in words], [amount in figures], and [amount of local currency in words], [amount in figures]

The total bid price from the Summary of Bill of Quantities for admeasurement contracts or Activity Schedule for lump sum contracts should be entered by the bidder inside this box. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the bid.

- (e) The discounts offered and the methodology for their application are as follows: [insert discounts and methodology for their application if any]
- (f) Our Bid shall be valid for a period of [insert bid validity period as specified in ITB 18.1 of the BDS] days starts from the date fixed for the bid submission deadline in accordance with ITB 22.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (g) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents.
- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award through the issuance of Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) At any time following submission of our Bid, we shall permit, and shall cause our Joint Venture partners, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract to permit ADB or its representative to inspect our site, assets, accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB. We understand that failure of this obligation may constitute obstructive practice that may result in debarment and/or contract termination.
- (k) Regardless of whether the contract will be awarded to us, we shall preserve all accounts, records and other documents related to bid submission for at least 3 years from the date of submission of the bid or the period prescribed in applicable law, whichever is longer.
- (l) If we are awarded the contract, we shall preserve all accounts, records and other documents related to the procurement and execution of the contract for at least 5 years after completing the works contemplated in the relevant contracts or the period prescribed in applicable law, whichever is longer.
- (m) We confirm and stand by our commitments and other declarations made in connection with the submission of our Letter of Technical Bid.
- (n) We certify on behalf of the Bidder, that the information provided in the bid has been fully reviewed, given in good faith, and to the best of our knowledge is true and complete. We understand that it is our obligation to inform the Employer of any changes to the information as and when it becomes known to us. We understand that any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the Bid or cancellation of the contract, if awarded; and may result in remedial actions, in accordance with ADB's Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines (2015, as amended from time to time).

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Bill of Quantities

[Admeasurement Contract]

A. Preamble to Bill of Quantities

A.1 General

1. The Bill of Quantities (BOQ) shall be read in conjunction with all parts of this entire Bidding Document; the Instructions to Bidders, General and Particular Conditions of Contract, Technical Specifications, Drawings, and supplementary information.
2. The cost of complying with all conditions, obligations and liabilities described in the Conditions of Contract and the Specifications and the BOQ including all overhead charges and profit and carrying out the Work as described shall be deemed to be spread over and included in the prices or sums stated by the Bidder in the BOQ.
3. The cost of complying with environmental laws and standards in carrying out Works by the Contractor and the monitoring and mitigation measures set forth in the Environmental Management Plan (EMP) shall be deemed to be spread over and included in the unit rates or sums of relevant items indicated in the BOQ.
4. The establishment of material testing and environmental monitoring laboratory, provision of required equipment, operation and maintenance of same with required technical and other personnel shall be deemed to be spread over and included in the unit rates or sums of relevant items indicated in the BOQ stated by the Bidder in the BOQ. If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no defect, the test shall be a Compensation Event.
5. The BOQ includes unit price items and provisional sum items. The quantities given in the BOQ for the unit price items are estimated and provisional, and are given to provide a common basis for bidding. They are not intended to be the maximum or minimum quantities for payment. The unit prices will be considered full compensation for those work items. The basis of payment will be the actual quantity of work carried out under the provisions of the Contract, measured and valued at the applicable rates and prices in the priced BOQ.
6. Provisional Sums means the sum designated in the BOQ for the execution of the work or the supply of goods, materials or services or for any other expenses the sum of which may be used in whole or part or not at all at the discretion of the Engineer.
7. The method and unit of measurement of completed work for payment shall be in accordance with the method described in the Specifications for each item or in the BOQ.
8. All items of work shall comply exactly with the Contract unless otherwise approved by the Engineer and the rates and sums provided in the BOQ shall be deemed to apply to the work as specified. If, for his own convenience, or reasons of availability, the Contractor proposes and the Engineer approves the use or provision of alternative items, materials or method of working, or equivalent or superior quality to those specified in the Contract, the rates and sums provided in the BOQ shall not in any case be increased as a result.

9. The quantities set out in the BOQ are provisional and cover the approximate scope of the works which is anticipated to be performed by the Contractor. The actual quantities used for final measurement purposes will be determined by the Engineer by measurement of the work completed by the Contractor.
10. Where, for his own purposes or due to his own default, the Contractor carries out the Works in such a manner that the quantity of any Item of work in particular component to be measured for payment purposes differs from that directed by the Engineer, then payment shall be made according to the lesser of the actual quantity and that directed. An excess quantity in one part of the component shall not, however, be allowed to offset a deficit elsewhere in the same component for measurement purposes.
11. Where the determination for payment purposes of the quantity of any Item of work depends upon the measurement of existing features or ground levels and the like, then prior to carrying out any operations which might affect such measurement, the Contractor shall first take such levels and measurement as the Engineer may direct and, after the Engineer has had the opportunity to check the same, they shall be certified as agreed by both the Engineer and the Contractor. In the event that the Contractor fails to observe the above procedure, the Engineer shall determine the quantity to be assumed for payment purposes using the best information available to him, and his decision in the matter shall be final.
12. Bidder shall visit and acquaint themselves with all existing conditions, weather pattern, the nature and extent of work to be done under this contract ascertaining the conditions governing access to the site, the extent of work and accordingly include for in their prices.
13. Where existing structures are to be demolished the rates and prices for demolition shall include for:
 - a) The activities prior to the demolition, including further surveys, investigations.
 - b) Providing adequate supports to the adjacent structures and the structure to be demolished, including the shoring, propping needling etc.
 - c) Removal of all debris as directed, and recovers the salvaged material.
 - d) Making good of all works disturbed or damaged.
 - e) Diverting or disconnecting any existing service lines which could be affected.
14. A rate shall not be entered against Provisional Sum items for which quantities are not provided.
15. The rates and prices in the priced BOQ shall, except as otherwise provided under the Contract, include all construction plant, equipment, labour, supervision, materials, transport, erection, maintenance, testing, insurance, overhead profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
16. A rate or price shall be entered against each item in the priced BOQ, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the BOQ.
17. The rates and prices entered in the BOQ shall be full compensation for completed work and shall have taken full account of all requirements and obligations covered by all parts of the contract, including but not limited to, the following, unless expressly stated otherwise:

- a) All setting out and survey works from established ground controls.
- b) Setting out from given ground controls, providing and maintaining of all survey markers, monuments etc.
- c) All additional site surveys, preparation of field amendment drawings, shop drawings.
- d) Mobilization and demobilization of labour, all construction plant; equipment.
- e) All access facilities and repairs to permanent access roads used by Contractor where required and maintenance of temporary roads and haul roads for borrow sites and quarries.
- f) Establishment, maintenance and removal of all temporary facilities (Contractor's and Engineer's) including offices, workshops, houses, labour camps construction and storage yards, laboratory facilities and equipment, transport for staff and labour etc.
- g) Labour and all costs in connection therewith, including but not limited to social charges or fringe benefits.
- h) The supply of material and goods, storage and costs in connection therewith including delivery to site and handling material within the site(s).
- i) Taking delivery of materials and goods supplied by others, unloading, and storage handling materials within site, and costs in connection therewith.
- j) Construction plant and equipment and all costs in connection therewith.
- k) Fixing, erecting and installing or placing of materials and goods in position, including auxiliary material.
- l) All temporary works required to execute the Works.
- m) Complying with any limitations and constraints on the use of the site(s) including coordinating with other Contractors, with regard to site(s) access, security etc., maintenance of access to households and other users, maintenance of existing roads, waterways etc.
- n) General obligations, liabilities and risks involved in the execution of the Works set forth or reasonably implied in the documents on which the tender is based.
- o) Overheads and profit.
- p) Waste of material.
- q) Rate for placement of materials associated with embankment construction shall include for haulage.
- r) Rate for excavation shall include for disposal of unsuitable material at approved locations including any support for excavation.
- s) Attendance and transport for surveys including provision of survey instruments, sampling and testing carried out by the Engineer.
- t) Performing all sampling and testing which are required to be carried out by the Contractor, and supplying results of such tests.
- u) Providing required material delivery certificates.
- v) Coordination with regulatory institutes and all stake holders.
- w) Safe disposal of all waste material.
- x) Attending to defects of the completed works during the Defects Liability Period.
- y) Complying with all requirements in Specifications and Conditions of Contract where separate items have not been provided.
- z) Complying with environmental regulations and mitigation.

18. The provision of As-Built Drawings and Quality Assurance reports as specified in the Contract and as directed by the Engineer. Payments will be certified on submission and acceptance of the required drawings and reports.
19. When computing volumes for excavation, embankment and borrow, the average end area method shall be applied and the intervals of sections, unless specified, shall be agreed by the Contractor and the Engineer as reasonably representing the shape.
20. Where BOQ items describe the replacement of existing equipment or components, including mechanical and electrical equipment, the equipment removed remains the property of the Employer, unless stated otherwise in the contract documents. The rates entered shall include for delivery of such equipment to the Employer or for disposal, if so directed by the Employer.
21. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced BOQ, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered or the related Items of Work.
22. For Lump Sum items, measurements for Interim Payment Certificate shall be based on percentage completion of such item of work or milestone as per the Contractor's proposed schedule of monthly payments, as approved by the Engineer.
23. Unit of Measurement: The unit of measurements described in the BOQ is metric units.

A.2 Correction of Arithmetic Errors

24. Arithmetical errors will be corrected by the Employer as follows:
 - (a) If there is a discrepancy between the unit rate and the total amount that is obtained by multiplying the unit rate and the quantity, the unit rate will prevail and the total amount shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit rate, in which case the total amount as quoted shall govern and the unit rate will be corrected;
 - (b) if there is an error in a total corresponding to the addition or subtraction of amounts or subtotals, as the case may be, the amounts or subtotals shall prevail and the total shall be corrected;
 - (c) if there is a discrepancy between the bid price in the summary of the bill of quantities and the bid amount in the Letter of Price Bid, the Bid price in the summary of Bill of quantities will prevail and the bid amount in the Letter of Price Bid will be corrected; and
 - (d) if there is a discrepancy between words and figures, the amount in words shall prevail.

A.3 Abbreviations used in the BOQ are as follows:

BOQ	Bill of Quantities
dia	diameter
GCC	General Conditions of Contract
ha	hectare
HD	High Density
hr	hour
kg	kilo gram
km	kilo metre
month	calendar month
m	metre
m^2	square metre
m^3	cubic metre
mm	millimetre
Nu	Ngultrum (Bhutanese currency)
PIU	Project Implementation Unit
PVC	Polyvinyl Chloride
RCC	Reinforced Cement Concrete
T	metric ton (1000 kg)

B. Day works Payments

1. Labour

1. Payment in respect of labour employed on a day work basis shall be made at the average daily wage rates (inclusive of contractor's overheads and profits) in construction as entered by the Bidder in the relevant BOQ. Payment shall be made on the basis of the actual time worked excluding travelling time.
2. The rates shall be deemed to include the costs of the Contractor's Site Supervisory and Administrative Staff (including supervising Foremen) and all other costs in respect to the employment of labour on a day work basis. Rates for types of labour not listed will be determined by the Engineer by reference to the listed rates.

2. Materials

3. Payment in respect of materials used in the execution of work on day work basis shall be the cost of the materials delivered to store or stockpiled on the site, including all overheads and profit. Rates should be entered by the Bidder in the relevant BOQ.
4. Rates shall be deemed to cover the costs of taking delivery and putting into store or stockpile, storage, overheads, profit and all other charges and costs in respect of the procurement and handing of such materials. Rates for other materials will be determined by the Engineer with reference to the listed rates entered in the BOQ.

3. Construction Plant and Equipment

5. Payment in respect of constructional plant deployed on a day work basis shall be made at the rates entered by the Bidder in the relevant BOQ. These rates shall be deemed to include all cost in respect of fuel and consumable stores, maintenance, operators and attendants, contractor's site supervisory and administrative staff, overheads, profit and all other charges and costs in respect of the deployment of constructional plant and equipment on a day work basis.
6. Payment shall be made on the basis of the actual time worked including such reasonable travelling time as the Engineer may allow, but excluding idle time (except under the orders of the Engineer) and time during which such constructional plant/ equipment is broken down or undergoing maintenance. Rates for other plant/ equipment will be determined by the Engineer with reference to the listed rates entered in the BOQ.

Bill of Quantities

OCB No: W-1

Cost Summary		
Section s	Description	Amount (Nu)
Section 1	GENERAL	
Section 2	CLEARING, GRUBBING AND REMOVALS	
Section 3	DISMANTELING AND STACKING FOR REUSE	
Section 4	EARTHWORKS	
Section 5	CONSTRUCTION OF RCC COUNTERFORT WALLS	
Section 6	BOULDER PROTECTION WORKS	
Section 7	CHECK DAMS	
Section 8	CONSTRUCTION OF ACCESS ROAD AND RAMPS	
Section 9	CROSS DRAINAGE WORKS	
Section 10	EMBANKMENT WORKS	
Section 11	MS RAILING	
Section 12	MISCELLANEOUS WORKS	
Section 13	WALKWAY AND CYCLING TRACK	
	TOTAL (Nu)	
	CONTINGENCIES 3% of TOTAL	
	GRAND TOTAL (Nu)	

ROYAL GOVERNMENT OF BHUTAN
PHUENTSHOLING THROMDE
CLIMATE-RESILIENT OMCHHU RIVER BASIN PROJECT
W-1 BOQ

Section 1		GENERAL				
Item No.	Description	Quantity	Unit	Unit rate (Nu)	Amount (Nu)	
1.1	Contractor's Requirements					
1.1a	Provision of contractor's site facilities complete including preparation of establishment areas, construction of temporary camps, yards, buildings, workshops, infrastructure and services and dismantling and removal of all facilities on completion of construction.	1	LS			
1.1b	Removal and disposal away from the river of debris, silt and other material brought in by the river during monsoon and making workforce ready after every monsoon.	36	month			
1.1c	Operation and maintenance of all contractor's site facilities complete, including supply of power, collection and disposal of wastewater and solid waste, provision of security, cleaning and maintenance/repair works.	36	month			

1.1d	Supply of new test equipment, establishing, operating and maintenance of material testing and environment monitoring laboratory complete including all equipments, personnel, materials, services and maintenance/repair works in accordance with the specifications. (Testing equipments shall be handed over to PT after completion of the project)	1	LS		
1.2	Other Requirements				
1.2a	Preparation and submission of final approved Contactor's Environmental Management Plan (Under CEMP)	1	LS		
1.2b	Provision of facilities and implementation of all measures required under the Health & Safety Plan (under CEMP)	36	month		
1.2c	Supply, erection and maintenance of sign boards as per specification directed by the engineer	5	no		
1.2d	Provision of all progress reports, coloured photos (8" x10") and video diary of construction works as per specification. Monthly submission of hard copy of the report (A4 size) 2 copies, along with the soft copies of photos and videos of the construction work	36	month		
1.2e	Provision of "As-built" drawings and Quality Assurance Reports	1	LS		
	Sub-total Section 1				

Section 2		CLEARING, GRUBBING AND REMOVALS							
Item No.	Description	No	Unit	Dimension			Quantity	Unit rate (Nu)	Amount (Nu)
				L	B	H			
2.1	Clearing and grubbing including uprooting of vegetations and trees of girth < 300 mm, disposal to the designated area.		Sq.m	840	4		3360.0		
2.2	Felling of trees including cutting of trunks and branches, removal of roots, stacking of serviceable materials and disposal of rubbish to the designated area								
2.2 a)	Girth 300 to 600mm		Each				25		
2.2 b)	Girth >600 upto 1200		Each				20		
Sub-total Section 2									

Section 3		DISMANTLING AND STACKING FOR REUSE							
Item No.	Description	No	Unit	Dimension			Quantity	Unit rate (Nu)	Amount (Nu)
				L	B	H			
3.1	Demolishing reinforced cement concrete, masonry and gabion walls where required, including stacking useful materials & disposal of rubbish within 5 km lead, in consultation with Engineer		cum				9600		
3.2	Breaking of PCC/RCC collapsed walls parts (lying along and all over the river bed) into approximately 1m x 1m size or smaller in size, stacking in appropriate place, and use below the backfilled or Gabion protected toe walls of RCC cantilever walls/RCC counterfort walls to act as river protection.		sqm				205.0		
Sub-total Section 3									

EARTHWORKS						
Section 4	Description	No	Unit	Quantity	Unit rate (Nu)	Amount (Nu)
	Right Bank					
	a) EXCAVATION					
4.1	Excavation for structures (RCC walls, RCC counterfort, masonry or gabion walls, culverts, headwall, apron, catchpits, channels) including levelling, dressing and hauling 50 m		Cum			
4.1.a	Excavation of all kinds of soils, both banks		Cum	99332.19		
4.1.b	Excavation of all kinds of rocks, both banks		Cum	24833.05		
	b) HAULING					
	Transportation and handling of excess excavated material beyond 50m lead					
4.2.a	beyond 50 m up to 500 m and deposit upto a level of 2m (both banks)		Cum	31041.31		
4.2.b	beyond 500 up to 1000 m and deposit to level of upto 2m (both banks)		Cum	18624.79		
4.2.c	Beyond 1000m(both banks)		Cum	12416.52		
	c) BACKFILL					
4.3.a	Backfilling of structures (RCC walls/RCC counterforts) with pervious (free draining) filter material in both banks		Cum	7304.04		
4.3.b	Backfilling behind RCC structures, trenches, sides of foundations incl masonry walls in layers < 200mm and ramming with suitable/selected material including all lead and lift in both banks			111119.9		
	Sub-total Section 4					

Section 5	CONSTRUCTION OF RCC COUNTERFORT WALLS									
	Item No.	Description	No	Unit	Dimension			Quantity	Unit rate (Nu)	Amount (Nu)
					L	B	H			
		STONE SOLING WORKS								
5.1		Providing and laying hand packed stone filling or soling with stones		Cum						
		Wall Types	# panel s							
	1.a		2		9.50	5.10	0.15	14.54		
	1.b		12		10.00	5.10	0.15	91.80		
	1.c		2		10.50	5.10	0.15	16.07		
	5.a		2		10.00	6.20	0.15	18.60		
	5.b		2		10.50	6.20	0.15	19.53		
	5.c		2		14.00	6.20	0.15	26.04		
	6.b		4		8.70	6.80	0.15	35.50		
	6.c		2		9.65	6.80	0.15	19.69		
	6.d		4		9.85	6.80	0.15	40.19		
	6.e		32		10.00	6.80	0.15	326.40		
	6.f		4		10.15	6.80	0.15	41.41		
	6.g		2		10.40	6.80	0.15	21.22		
	6.h		4		10.75	6.80	0.15	43.86		
	22.a		1		14.70	7.20	0.15	15.88		
	22.b		4		8.55	7.20	0.15	36.94		
	22.c		40		10.00	7.20	0.15	432.00		
	22.d		2		11.20	7.20	0.15	24.19		
	22.e		4		11.75	7.20	0.15	50.76		
	22.f		2		12.30	7.20	0.15	26.57		
	22.h		3		10.67	7.20	0.15	34.57		
	24.b		26		10.00	7.40	0.15	288.60		
	Total stone soling work on both banks			Cum				1624.33		

PCC WORKS								
5.2	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level, 1:2:4 (1 cement : 2 sand : 4 graded crushed rock 20 mm nominal size)		Cum					
	Wall types							
	1.a	2		9.50	5.10	0.10	9.69	
	1.b	12		10.00	5.10	0.10	61.20	
	1.c	2		10.50	5.10	0.10	10.71	
	5.a	2		10.00	6.20	0.10	12.40	
	5.b	2		10.50	6.20	0.10	13.02	
	5.c	2		14.00	6.20	0.10	17.36	
	6.b	4		8.70	6.80	0.10	23.66	
	6.c	2		9.65	6.80	0.10	13.12	
	6.d	4		9.85	6.80	0.10	26.79	
	6.e	32		10.00	6.80	0.10	217.60	
	6.f	4		10.15	6.80	0.10	27.61	
	6.g	2		10.40	6.80	0.10	14.14	
	6.h	4		10.75	6.80	0.10	29.24	
	22.a	1		14.70	7.20	0.10	10.58	
	22.b	4		8.55	7.20	0.10	24.62	
	22.c	40		10.00	7.20	0.10	288.00	
	22.d	2		11.20	7.20	0.10	16.13	
	22.e	4		11.75	7.20	0.10	33.84	
	22.f	2		12.30	7.20	0.10	17.71	
	22.g	0		10.00	7.20	0.10	0.00	
	22.h	3		10.67	7.20	0.10	23.05	
	24.b	26		10.00	7.40	0.10	192.40	
	Total PCC 1:2:4 works (both banks)						1082.89	

RCC WORKS								
5.3	Providing & laying in position reinforced cement concrete excluding the cost of centering, shuttering and reinforcement - all upto Plinth level 1:1:2 (1 cement : 1 sand : 2 graded crushed rock 20 mm nominal size)							
5.3.a	Shear Key							
	24.b	26	Cum	10.00	0.30	0.30	23.40	
	Total RCC 1:1:2 shear key works on both the banks					23.40		
5.3.b	Providing & laying in position reinforced cement concrete excluding the cost of centering, shuttering and reinforcement - all work upto plinth level		Cum					
	RCC Footing							
	1.a	2		9.50	4.80	0.80	72.96	
	1.b	12		10.00	4.80	0.80	460.80	
	1.c	2		10.50	4.80	0.80	80.64	
	5.a	2		10.00	5.90	1.20	141.60	
	5.b	2		10.50	5.90	1.20	148.68	
	5.c	2		14.00	5.90	1.20	198.24	
	6.b	4		8.70	6.50	1.40	316.68	
	6.c	2		9.65	6.50	1.40	175.63	
	6.d	4		9.85	6.50	1.40	358.54	
	6.e	32		10.00	6.50	1.40	2912.00	
	6.f	4		10.15	6.50	1.40	369.46	
	6.g	2		10.40	6.50	1.40	189.28	
	6.h	4		10.75	6.50	1.40	391.30	
	22.a	1		14.70	6.90	1.40	142.00	
	22.b	4		8.55	6.90	1.40	330.37	
	22.c	40		10.00	6.90	1.40	3864.00	
	22.d	2		11.20	6.90	1.40	216.38	

	22.e	4		11.75	6.90	1.40	454.02		
	22.f	2		12.30	6.90	1.40	237.64		
	22.h	3		10.67	6.90	1.40	309.22		
	24.b	26		10.00	7.10	1.60	2953.60		
	Total RCC footing 1:1:2 works on both the banks		Cum				14323.04		
5.3.c	Providing & laying in position reinforced cement concrete work in walls (any thickness) including attached pilasters buttresses, piers, abutments etc. upto floor five level excluding the cost of centering, shuttering and reinforcement. 1:1:2 (1 cement : 1 sand : 2 graded crushed rock 20 mm nominal size)		Cum						
	RCC Stem								
	1.a	2		9.50	0.39	7.00	51.87		
	1.b	12		10.00	0.39	7.00	327.60		
	1.c	2		10.50	0.39	7.00	57.33		
	5.a	2		10.00	0.49	8.60	84.28		
	5.b	2		10.50	0.49	8.60	88.49		
	5.c	2		14.00	0.49	8.60	117.99		
	6.b	4		8.70	0.54	9.40	176.64		
	6.c	2		9.65	0.54	9.40	97.97		
	6.d	4		9.85	0.54	9.40	199.99		
	6.e	32		10.00	0.54	9.40	1624.32		
	6.f	4		10.15	0.54	9.40	206.09		
	6.g	2		10.40	0.54	9.40	105.58		
	6.h	4		10.75	0.54	9.40	218.27		
	22.a	1		14.70	0.60	10.60	93.49		
	22.b	4		8.55	0.60	10.60	217.51		
	22.c	40		10.00	0.60	10.60	2544.00		
	22.d	2		11.20	0.60	10.60	142.46		
	22.e	4		11.75	0.60	10.60	298.92		
	22.f	2		12.30	0.60	10.60	156.46		
	22.h	3		10.67	0.60	10.60	203.58		
	24.b	26		10.00	0.63	11.40	1867.32		

	Total RCC stem 1:1:2 works on both the banks		Cum				8880.17		
5.3.d	Providing & laying in position reinforced cement concrete work in walls (any thickness) including attached pilasters buttresses, piers, abutments etc. upto floor five level excluding the cost of centering, shuttering and reinforcement. 1:1:2 (1 cement : 1 sand : 2 graded crushed rock 20 mm nominal size)		Cum						
	Front Contourforts			Tc	Tl	Hi			
	1.a	8		0.39	1.87	2.15	6.27		
	1.b	48		0.39	1.87	2.15	37.63		
	1.c	8		0.39	1.87	2.15	6.27		
	5.a	8		0.49	2.28	2.64	11.80		
	5.b	8		0.49	2.28	2.64	11.80		
	5.c	10		0.49	2.28	2.64	14.75		
	6.b	12		0.54	2.52	2.91	23.76		
	6.c	8		0.54	2.52	2.91	15.84		
	6.d	16		0.54	2.52	2.91	31.68		
	6.e	128		0.54	2.52	2.91	253.44		
	6.f	16		0.54	2.52	2.91	31.68		
	6.g	8		0.54	2.52	2.91	15.84		
	6.h	16		0.54	2.52	2.91	31.68		
	22.a	5		0.60	2.64	3.06	12.12		
	22.b	12		0.60	2.64	3.06	29.08		
	22.c	160		0.60	2.64	3.06	387.76		
	22.d	8		0.60	2.64	3.06	19.39		
	22.e	16		0.60	2.64	3.06	38.78		
	22.f	8		0.60	2.64	3.06	19.39		
	22.h	12		0.60	2.64	3.06	29.08		
	24.b	104		0.63	2.71	3.14	278.77		
	Total RCC front Counterforts 1:1:2 works on both the banks		Cum				1306.80		

5.3.e	Providing & laying in position reinforced cement concrete work in walls (any thickness) including attached pilasters buttresses, piers, abutments etc. upto floor five level excluding the cost of centering, shuttering and reinforcement. 1:1:2 (1 cement : 1 sand : 2 graded crushed rock 20 mm nominal size)		Cum					
Rear Contourforts								
1.a	8		0.39	2.54	7.00	27.74		
1.b	48		0.39	2.54	7.00	166.42		
1.c	8		0.39	2.54	7.00	27.74		
5.a	8		0.49	3.13	8.60	52.76		
5.b	8		0.49	3.13	8.60	52.76		
5.c	10		0.49	3.13	8.60	65.95		
6.a	0		0.54	3.45	9.40	0.00		
6.b	12		0.54	3.45	9.40	105.07		
6.c	8		0.54	3.45	9.40	70.05		
6.d	16		0.54	3.45	9.40	140.10		
6.e	128		0.54	3.45	9.40	1120.78		
6.f	16		0.54	3.45	9.40	140.10		
6.g	8		0.54	3.45	9.40	70.05		
6.h	16		0.54	3.45	9.40	140.10		
22.a	5		0.60	3.66	10.60	58.19		
22.b	12		0.60	3.66	10.60	139.67		
22.c	160		0.60	3.66	10.60	1862.21		
22.d	8		0.60	3.66	10.60	93.11		
22.e	16		0.60	3.66	10.60	186.22		
22.f	8		0.60	3.66	10.60	93.11		
22.h	12		0.60	3.66	10.60	139.67		
24.b	104		0.63	3.76	11.40	1404.22		
Total RCC rear CF 1:1:2 works on both the banks		Cum				6156.01		
STEEL REINFORCEMENT								

5.4	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500 MPa) for R.C.C work including cutting, bending, binding and placing in position complete.							
	Wall type	# walls	Kg	Qty of 1 wall				
	1.a	2		7564.42			15128.84	
	1.b	12		8208.79			98505.48	
	1.c	2		8458.37			16916.74	
	5.a	2		14555.62			29111.24	
	5.b	2		14983.79			29967.58	
	5.c	2		19331.11			38662.22	
	6.b	4		15899.83			63599.32	
	6.c	2		18066.78			36133.56	
	6.d	4		18248.25			72993.00	
	6.e	32		18457.55			590641.60	
	6.f	4		18595.02			74380.08	
	6.g	2		18905.36			37810.72	
	6.h	4		19312.51			77250.04	
	22.a	1		32415.43			32415.43	
	22.b	4		19638.45			78553.80	
	22.c	40		22834.33			913373.20	
	22.d	2		25396.24			50792.48	
	22.e	4		26142.75			104571.00	

	22.f	2		26907.4 8			53814.96		
	22.h	3		24693.3 3			74079.99		
	24.b	26		27922.4 8			725984.48		
	Total TMT bars for both banks in kg						3214685.7 6		

5.5	FORM WORKS							
5.5.a	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork for Shear Key		Square meters					
	Shear Key (Long side) Lx	No of wall	No	Length	Width			
	24.b	26	2.00	10.00	0.30	156.00		
	Shear Key (Short side) Ly	No of Wall	No of sides					
	24.b	26	2.00	0.30	0.30	4.68		
5.5.b	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork in footings		Square meters			7301.03		
5.5.c	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork in stem, heel and toe faces		Square meters			26787.78		
5.5.d	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal in front and rear counterforts of formwork		Square meters			31076.06		
5.6	Weep Holes							
	Providing and laying 110 mm dia HDPE pipe, pressure class 12PN as weep holes for the Counterfort Walls and shall be laid at a slope of 1 in 20 as per drawing.		m			1551.00		
5.7	Pumping out water caused by springs, river, seepage, broken water mains, drains, and alike. (Both Banks)		LS					
						Sub-total Section 5		

Section 6		BOULDER PROTECTION WORKS							
Item No.	Description	No	Unit	Dimension			Quantity	Unit rate (Nu)	Amount (Nu)
				L	B	H			
6.1	Construction of boulder pitching width equivalent to double the toe length and 1m height as per drawings. The sizes of boulders shall range from 500mm to 1000 mm.		cum						
	Wall Types								
	1.a	2.00		9.50	3.74	1.00	71.06		
	1.b	12.00		10.00	3.74	1.00	448.80		
	1.c	2.00		10.50	3.74	1.00	78.54		
	5.a	2.00		10.00	4.56	1.00	91.20		
	5.b	2.00		10.50	4.56	1.00	95.76		
	5.c	2.00		14.00	4.56	1.00	127.68		
	6.b	4.00		8.70	5.04	1.00	175.39		
	6.c	2.00		9.65	5.04	1.00	97.27		
	6.d	4.00		9.85	5.04	1.00	198.58		
	6.e	32.00		10.00	5.04	1.00	1612.80		
	6.f	4.00		10.15	5.04	1.00	204.62		
	6.g	2.00		10.40	5.04	1.00	104.83		
	6.h	4.00		10.75	5.04	1.00	216.72		
	22.a	1.00		14.70	5.28	1.00	77.62		
	22.b	4.00		8.55	5.28	1.00	180.58		
	22.c	40.00		10.00	5.28	1.00	2112.00		
	22.d	2.00		11.20	5.28	1.00	118.27		
	22.e	4.00		11.75	5.28	1.00	248.16		
	22.f	2.00		12.30	5.28	1.00	129.89		
	22.h	3.00		10.67	5.28	1.00	169.01		
	24.b	26.00		10.00	5.42	1.00	1409.20		
	Total of Boulder protections works		cum				7967.98		
								Sub-total Section 6	
Section 7	CHECK DAMS								

Item No.	Description	Chainage	Unit	Dimension			Quantity	Unit Rate (Nu)	Amount (Nu)
				L	B	H			
7.1	Excavation for structures (Check dams, Apron, Cutoff walls, Boulder pitching, masonry or gabion walls, headwall, catchpits, channels) including levelling, dressing and hauling upto 50 m distance		cum						
	All kinds of soil 80%						2329.52		
	All kinds of rocks 20%						582.38		
7.2	Pumping out water caused by springs, river, seepage, broken water mains, drains, and alike								
		310	each location				LS		
		510	Do-				LS		
		760	Do-				LS		
		850	Do-				LS		
7.3	Providing and laying Hand packed stone filling or soling		cum				197.15		
7.4	Providing and placing compact boulder pitching, boulder sizes varying from 250mm to 400m as extended apron both U/S & D/S of check dam as per drawing		cum				374.78		
7.5	Providing and laying in position Plain Cement Concrete (PCC of Grade M10), mix ratio: 1:3:6 (1 cement : 3 sand : 6 graded crushed stone 40mm nominal size) Excluding the cost of centering and shuttering.		cum				17.81		

7.6	Providing and laying in position plain cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets etc. upto floor five level, excluding the cost of centering and shuttering. 1:1.5:3 (1 cement : 1.5 sand : 3 graded crushed rock 20 mm nominal size)		cum				803.44	
7.7	Providing & laying in position reinforced cement concrete grade M25 1:1.5:3 (1 cement : 1 sand : 2 graded crushed rock 20 mm nominal size)excluding the cost of centering, shuttering and reinforcement - all upto Plinth level for check dam in apron and cutoff.		cum				323.78	
7.8	Providing & fixing centering and shuttering (formwork), including strutting, propping etc., and removal of formwork in walls, pilasters, buttresses, string course.		Square meter				3486.50	
7.9	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500 MPa) for R.C.C work including cutting, bending, binding and placing in position		kg				28973.29	
7.10	Backfilling behind RCC structures, trenches, sides of foundations, sides of boulder pitching incl masonry walls in layers < 200mm and ramming with suitable/selected material incl lead and lift		Cum				737.86	
Sub-total Section 7								

Section 8		CONSTRUCTION OF ACCESS ROAD AND RAMPS							
Item No.	Description	No	Unit	Dimension			Quantity	Unit rate (Nu)	Amount (Nu)
				L	B	H			
8.1	Excavation of road formation/trace/box cutting, with excavator including separate deposition of soil, rocks and stones within 50m for reuse (all kinds of soil and rock)		cum				917.88		
8.2	Preparation of sub grade with proper camber by excavating earth to depth equal to pavement thickness, consolidation with roller, disposal of surplus earth up to 50m		cum				73.43		
8.3	Providing and laying Granular sub-base course (GSB) to required degree of compaction with proper formation of cross fall using motor grader for laying and compacted to required density as per material gradation and aggregate quality specified .		cum				73.43		
8.4	Providing and laying hammer dressed stone masonry with hard stone (average volume 0.008 Cu.m) in cement concrete mortar 1:2:4 20mm aggregates (as retaining or breast wall at access road)		cum				472.05		
8.5	Construction of V-shaped concrete drain (1:1.5:3-1 cement : 1.5 sand : 3 graded crushed rock 20 mm nominal size) as per drawing including excavation, compaction of bed, levelling and disposal of surplus earth within 50m excluding the cost of centering and shuttering.		cum				16.78		

8.6	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork		Sqm				83.92		
8.7	Construction of Ramps								
8.7a	Providing and laying Hand packed stone filling or soling with stones		cum				90.00		
8.7b	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work up to plinth level, 1:1.5:3 (1 cement : 1.5 sand : 3 graded crushed rock 20 mm nominal size)		cum				20.00		
8.7c	Construction of RCC ramps with the shear key as scour protection in 1:1.5 :3 including earthworks but excluding the cost of formworks and TMT bars		cum				40.00		
8.7d	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork		Sqm				24.00		
8.8	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500 MPa) for R.C.C work including cutting, bending, binding and placing in position		Kg				4161.61		

8.9	Construction of gabion wall as per drawings with dry stone masonry (hammer dressed facing) including excavation of foundation in all types of soils , sides and backfilling, delivery of machine woven gabion mesh (Hexagonal mesh of size 100mm x 120mm with a minimum of doubly twisted) with GI wire 2.70mm dia, fixing of selvedged wire 3.4 mm dia, binding/lacing with 2.40mm dia [Protection for both bank wall]	Cum					24.00		
	Sub-total Section 8								
Section 9	CROSS DRAINAGE WORKS								
9.1	Excavation of trenches for structures HP culverts, catchpits, headwall, apron, masonry or gabion walls, chutes or channels including levelling, dressing and hauling within 50 m lead. All kinds of soil and rock (along both banks)		Cum				12375		
9.2	Providing and laying Hand packed stone filling or soling with stones for catch pits						8.56		
9.3	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level, 1:1.5:3 (1 cement : 1.5 sand : 3 graded crushed rock 20 mm nominal size)		Cum				8.56		
9.4	Providing and laying hammer dressed stone masonry wall with hard stone (average volume 0.008 Cu.m) in cement concrete mortar 1:2:4, 20mm aggregates		Cum				61.52		

9.5	Supply and place RCC hume pipe 900 dia class NP4 including collar at designated locations		m				246.50		
9.6	Backfilling behind structures, trenches, sides of foundations, HP culverts or masonry walls in layers< 200mm and ramming with suitable/selected material including lead and lift		Cum				459.46		
Sub-total Section 9									
SECTION 10	EMBANKMENT WORKS								
10.1	Construction of Embankment after preparing site with an approved material deposited at site from earth cutting or excavation by spreading materials and compaction of embankment to the required grade and slope, including watering, dressing of site by vibratory or other suitable roller: Both side embankment	2	Cum	840.00	5.00	2.50	21000.00		
	Sub-total embankment works								
Section 11	MS RAILING								
11.1	Provide and construct MS railing on the top of RCC Counterfort wall, both banks,including construction of RCC post, welding, cutting,placing of steel sections, synthetic red oxide primer in 2 coats and Synthetic enamel painting in two coats as per the design drawings		kg				1600.00		
	Sub-total section 11								

Section 12	MISCELLANEOUS WORKS							
12.1	STONE MASONRY WORKS							
12.1.a	Supply and place Random Rubble Masonry in MM 5 grade cement mortar in road side structures incl headwalls, wingwalls, catchpit, channels including excavation and backfilling as per code of practice.		Cum				132.00	
12.1.b	Providing & laying pointing on stone work with cement mortar 1:3, Flush pointing		Sqm				310.00	
12.1.c	Supply and place stone soling as directed by engineer		Cum				15.00	
12.1.d	Providing and laying dry hand packed rubble masonry hammer dressed (facing), with stones boulder of size exceeding 0.04 m ³ as per drawing and as directed by the Engineer.		Cum				25.00	
12.1.e	Plastering 20 mm thick of selected masonry and concrete structures including parapets in CM 1:3		Sqm				1167.00	
12.1.f	Providing Cement Primer and white washing with lime-new work-three coats for masonry parapets and headwalls including concrete kerbs		Sqm				316.00	
12.2	CONCRETE WORKS							
12.2.a	Supply and place concrete class M10 including necessary form works as directed by engineer		Cum				28.00	
12.2.b	Supply and place concrete class M20 as directed by engineer		Cum				56.00	

12.3 LINE DRAIN									
12.3.a	Construct lined L-shaped road side drain clear width 800 mm. with 150mm thick PCC M20: 300mm thick RRM in CM 1:3 hill side, including excavation, leveling , including necessary form works and disposal of surplus earth within 50m lead as per drawing.		m				75.00		
12.13.b	Planting of compensatory tree/shrub plantation on the banks and slopes as directed by the engineer	Provisional sum					100.00		
	Sub-total miscellaneous works								-
Section 13	WALKWAY AND CYCLING PATHS								
	Description	No	Unit	Dimension			Quantity	Unit rate (Nu)	Amount (Nu)
				L	B	H			
	Walkway and cycling paths								
13.1	Chainage: 210 - 1050								
a	Preparation of sub grade with proper camber by excavating earth to depth equal to pavement thickness, consolidation with roller, disposal of surplus earth up to 50m		cu.m				3059.75		
b	Consolidation of sub-grade with roller, and making good the undulation with earth and re-rolling the sub grade		sq.m				6119.50		
c	Providing and laying Hand packed stone filling or soiling with stones		cu.m				1529.88		

d	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:2:4 (1 cement : 2 sand : 4 graded crushed rock 20 mm nominal size)	cu.m				458.97		
e	Providing and laying factory made Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. All as per direction of Engineer. (Rectangular Paver Block 60mm Thick Ash Grey colour) (UPPER AND LOWER WALKWAY)	sq.m				4453.00		
f	Providing and laying factory made Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. All as per direction of Engineer-in-Charge. (Rectangular Paver Block 60mm Thick). For cycle track.	sq.m				1634.50		
Total of Sub-section 13								

Schedule of Daywork Rates: Labor

Item No.	Description	Unit	Nominal Quantity	Rate (In Nu.)	Amount (Nu.)
1	Blacksmith (metal worker)	day	150		
2	Mason Gd. 1	day	250		
3	Mason Gd. 2	day	65		
4	Work Supervisor	day	100		
5	Plant Operator Gd. 3	day	20		
6	Carpenter Gd. 2	day	175		
7	Labour - skilled	day	1,500		
8	Labour - un-skilled	day	1,500		
9	Labour - semi-skilled	day	2,000		
10	Electrician	day	15		
11	Mechanic	day	20		
12	Re-bar man	day	100		
13	Welder	day	20		
14	Driver for Dump truck	day	100		
15	Heavy Machinery Operator	day	20		
Total of Schedule of Daywork Rates: Labor					

Schedule of Daywork Rates: Materials

Item No.	Description	Unit	Nominal Quantity	Rate (In Nu.)	Amount (Nu.)
1	Cement	T	75		
2	Sand	cum	90		
3	Crushed Aggregate size upto 25 mm	cum	125		
4	Crushed Aggregate size upto 50 mm	cum	25		
5	Reinforcement bars & mesh	T	15		
6	HDPE Pipe - 110 mm dia - 6kg/cm ²	m	50		
7	Boulder	cum	75		
8	GI Double knotted mesh	sq. m.	750		
9	Ballies 75 to 125 mm dia	m	600		
10	Rough Sawn timber - Class B	cum	8		
Total of Schedule of Daywork Rates: Materials					

Schedule of Daywork Rates: Equipment

Item No.	Description	Unit	Nominal Quantity	Rate (In Nu.)	Amount (Nu.)
1	Concrete Mixer with weight batcher and 2 cement bags capacity	day	15		
2	Concrete Vibrator	day	30		
3	Water pump AVI Type	day	10		
4	Roller, CAT - CS551	day	10		
5	Dumper	day	15		
6	Tata Tipper 1612SE	day	60		
7	Tata Mini truck, 407	day	25		
8	Crane (KATO - KR 250)	day	10		
9	Excavator (CAT - 320)	day	12		
10	Backhoe Loader (Case 580 SuperM)	day	8		
11	Concrete pump	day	10		
12	Pneumatic Tyred Roller	day	17		
13	Tandem Vibratory Roller	day	14		
14	Water Tankers	day	15		
15	D. G. Set	day	20		
16	Dewatering Pumps	day	10		
17	Concrete breakers	day	14		
18	Compressor	day	10		
Total of Schedule of Daywork Rates: Equipment					