



**भारत सरकार
GOVERNMENT OF INDIA**

**जल संसाधन नदी विकास0 एव गंगा संरक्षण मंत्रालय
MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT
AND GANGA REJUVENATION**

**केंद्रिय जल आयोग
CENTRAL WATER COMMISSION**

e-Tender Document

For

**"Topographical Survey for Irrigation Schemes in
East Singhbhum & West Singhbhum district of Jharkhand "**

**e-TENDER No.: 102/NIT/2018/486-89 Dated 05.03.2018
LAST DATE OF SUBMISSION: 27.03.2018 (Up to 17:00 hrs.)
BID OPENING DATE: 28.03.2018 (At 11:00 hrs.)**

Certified that this tender document contains 63 nos pages

यमुना बेसिन संगठन, नई दिल्ली

YAMUNA BASIN ORGANISATION, NEW DELHI

योजना परिमण्डल, फरीदाबाद

PLANNING CIRCLE, FARIDABAD

योजना एवम अन्वेषण मण्डल, फरीदाबाद

PLANNING & INVESTIGATION DIVISION, FARIDABAD

March, 2018

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Government of India
Central Water Commission
Planning & Investigation Division, Faridabad

Notice Inviting e-Tender

On behalf of the President of India, Executive Engineer, Planning & Investigation Division, Central Water Commission, **Faridabad** invites sealed item rate Bid(s), from eligible Bidder(s) for the following work:

Name of work	Topographical Survey for Irrigation Schemes in Jharkhand.
Estimated Cost	Rs.66,30,000/- (Sixty six lakh thirty thousand) only
Earnest Money	Rs. 1,36,000/- (One lakh thirty six thousand) only
Security Deposit	5 % of tendered and accepted value of work
Performance Guarantee	5 % of tendered and accepted value of work
Contract Period	120 Days
Cost of Tender Document	1000/-

e-Tender is available on TCIL website URL <https://www.tcil-india-electronictender.com>, www.cwc.gov.in and www.eprocure.gov.in from 09.03.2018(20:00 hrs) to 25.03.2018 (upto17:00hrs)

1.0 Qualification Criteria that the Firms should fulfil, includes:

- i. Should be a Government Registered Firm / Agency having worked for railways, CPWD, MES, PSU or any other Govt. department for similar work.
- ii. The firm should have satisfactorily executed *Topographical Survey through field survey with close contour intervals* for a Government Department / Agency/ PSU as principal Bidder
- iii. Established Ground Control Points (GCPs) by Total Station & Survey of India GTS Control at least **5 (five)**.
- iv. Minimum Topographical survey by Total Station of **100 sqkm**.
- v. Should have sufficient experienced professionals, Engineers, Surveyors, GIS experts etc.
- vi. Should possess documentary evidence of owning/ having hired/leased minimum **3 nos** Total Station and leveling instruments etc. required to complete the assignment.
- vii. The average annual turnover of the firm should be at least **Rs.6800000/- (Sixty eight lakh) only** for last three years and should not have incurred any loss for more than 1 year. In this context, the audited balance sheet may be appended

- 2.0 Verification of Details:** Executive Engineer, Planning & Investigation Division, Central Water Commission, Faridabad reserves right to verify the particulars furnished by the Bidder independently. If any information furnished by the Bidder is found to be incorrect at any stage, his / her Earnest Money Deposit / Performance Guarantee/ security deposit shall be forfeited and he / she shall be debarred from tendering for the works of CWC in future.
- 3.0 Agreement:** Agreement shall be drawn with the successful bidder on prescribed Form No CPWD 8. The bidder shall quote their rates as per terms and conditions of the said form, which shall form part of the agreement.
- 4.0 Period of Contract:** The duration of the Contract shall be **120 days**.
- 5.0 Availability of Work Place:** The details regarding work place are enclosed.
- 6.0 Visit to Work Place by:** Bidder(s) are encouraged to inspect and examine the workplace and its surroundings and satisfy / apprise themselves as to the nature of the work, the means of access and in general, shall obtain themselves all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender and rates, before submitting their Bid(s). A bidder shall be deemed to have full knowledge of the workplace whether he/ she inspects the site or not and no extra payment / compensation consequent upon any misunderstanding /miss interoperation or otherwise shall be allowed.
- The bidder shall be responsible for arranging and maintaining all materials, tools & plants, access, facilities for his personnel and all other services required for executing the work at his/her own cost unless it is specifically mentioned in the contract documents.
- 7.0 Acceptance of Tender:** Competent authority does not bind him / her to accept the lowest or any other tender and reserves right to accept or reject any or all of the Bid(s) received without assigning any reason. Competent authority also reserves the right of accepting the whole or any part of the tender and the bidder shall be bound to perform the same at the quoted rate.
- 8.0** Bid(s), in which the prescribed conditions are not fulfilled or are incomplete in any respect, are liable to be rejected.
- 9.0** Canvassing whether directly or indirectly, in connection with tender is strictly prohibited and the tender submitted by a Bidder who resorts to canvassing is liable to rejection.
- 10.0** Bidders whose near relatives are Divisional Accountant or Engineering Officers between the grades of Chief Engineer and Junior Engineer (both inclusive) in the Central Water

Commission (CWC) will not be allowed to tender for works in the respective Regional office responsible for award and execution of contract is the one where the near relative is working. For this purpose, a near relative shall mean father, mother, wife/husband, son(s), daughter(s), brother(s), sister(s).

11.0 No Engineer or any other official employed in Engineering or Administrative duties in the Engineering Department of the Government of India is allowed to work in the CWC either as Bidder or as employee of a Bidder for a period of one year after his retirement from Government service unless he has obtained prior permission of Government of India to do so. Even after enlistment, if either the Bidder or any of his employees is found to be a person who had not obtained the prior permission of Government of India as aforesaid, the Contract shall be cancelled.

12.0 ISO 9001:2008 Certification (**desirable but not compulsory**).

13.0 **Signing of Contract Agreement:** The successful Bidder/Bidder on acceptance of his/her tender by the authority shall deposit **5%** of agreement cost as **Performance Guarantee** in the form of Demand Draft/FDR/Bank Guarantee issued by Nationalized Bank within **7 days** from the date of issue of letter of acceptance and sign contract agreement with Executive Engineer, Planning & Investigation Division, CWC, Faridabad consisting of:-

- a) The 'Notice Inviting e-Tender', all the documents including Instructions to Bidder(s), *General Conditions of Contract*, *Special Conditions of Contract*, *Description of Work* forming the tender as issued at the time of invitation of tender and acceptance thereof together with all correspondence leading thereto.
- b) Standard CPWD Form-8: Item Rate Bid(s) & Contract for Works.

-sd-

Executive Engineer

Copy for information to:

1. Chief Engineer, YBO, CWC, New Delhi.
2. Superintending Engineer, Planning Circle, CWC, Faridabad.
3. A.A.O., P&I Division, CWC, Faridabad.
4. Sub Divisional Engineer, Planning & Investigation Sub Division, Jamshedpur.

TENDER APPLICATION

I/We have read and examined the Notice Inviting e-Tender, scope of work requirements, specifications applicable, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

We agree to keep the tender open for **ninety (90) days** from the date of opening of tender (Price Bid) thereof and not to make any modifications in its terms and conditions.

The EMD amount has been deposited with the Executive Engineer, Planning & Investigation Division, CWC Faridabad in the form of Deposit at call receipt of a Scheduled Bank/Fixed Deposit Receipt of Scheduled Bank / Demand Draft of a Scheduled Bank as Earnest Money Deposit. If I/we fail to furnish the prescribed performance guarantee within prescribed period, I/we agree that the said Executive Engineer, Planning & Investigation Division, CWC Faridabad or his successors in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely, further if I/we fail to commence the work as specified, I/we agree that Executive Engineer, Planning & Investigation Division, CWC Faridabad or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein Further, I/we agree that in case of forfeiture of earnest money of both EMD and PG as aforesaid, I/we shall be debarred for participation in the re- tendering process of the work.

I/we hereby declare that I/we shall treat the tender documents, drawings and other records connected with the work as secret/confidential documents and shall not communicate information derived there-from to any person other than a person to whom I/we am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated:

Signature of Bidder

Postal Address

Phone Nos.

e-TENDER DATA SHEET

ORGANIZATION:	YBO,CWC, New Delhi
CIRCLE:	Planning Circle, CWC, Faridabad
DIVISION:	Planning & Investigation Division, CWC Faridabad
SUB-DIVISION:	Planning & Investigation Sub Division, CWC, Jamshedpur
Name of Purchaser:	President of India through, Executive Engineer, Planning & Investigation Division, CWC, Faridabad
Officer inviting e-tender	Executive Engineer, Planning & Investigation Division, CWC, Faridabad
General Directions:	Executive Engineer, Planning & Investigation Division, CWC, Faridabad
Description of Work:	Topographical Survey for Irrigation Schemes in East Singhbhum & West Singhbhum district of Jharkhand.
Schedule of Dates	As per Nle-T
PART-I	
Technical Bid :	
Tender Details and Instructions to Bidder(s)	As per Part A
General Conditions of Contract	As per Part B
Special Conditions of Contract	As per Part C
Description of Work	As per Part D
PART –II	
Financial Bid:	
Commercial Tender	As per Part E

e-TENDER KEY EVENTS SHEET

1	Tender inviting authority Designation/Address	Executive Engineer, Planning & Investigation Division, CWC, Faridabad
2	Mode of submission of e-tender	TCIL Website https://www.tcil-india-electronictender.com
3	Addressee which EMD & documents to be submitted	Executive Engineer, Planning & Investigation Division, CWC, H.No 1064, NH-IV, NIT, Faridabad-121001 (Haryana)
4	Job requirement	As per tender documents
5	Language(s) in which items to be Printed	English
6	Validity of Tender	Ninety (90) days
7	Issuance of tender	09.03.2018
8	Cost of Tender	Rs. 1000/-
9	Last date & Time for submission of tender	27.03.2018 upto 1700 hrs
10	EMD amount payable	Rs. 1,36,000/- (One lakh thirty six thousand) only
11	Date, time and place of private Online tender opening Event	O/O Executive Engineer, Planning & Investigation Division, CWC , H.No 1064, NH-IV, NIT, Faridabad-121001 (Haryana) On 28.03.2018 (1100 hrs)
12	Date, time and place for Pre-Bid Meeting Event	19.03.2018 at 1100 hrs O/O CE YBO, CWC, Kalindi Bhawan, New Delhi for participation please confirm before coming for final venue
13	Performance guarantee	5% of tender and excepted value of work
14	Security deposit	5% of tender and excepted value of work
15	Contact No/ E-mail	Mob:9968545206, email: pi-cwc@nic.in

PART A: TENDER DETAILS & INSTRUCTIONS TO BIDDER(S)

A.1, General:

Before submitting the tender the bidder must ensure that he/she has understood the exact requirement of the Purchaser. In case of any discrepancy or ambiguity felt by the bidder in the scope of work and the desired deliverable functionality from the work, it is mandatory to raise the clarification in writing or by email by the bidder and in turn get that clarified from the purchaser. Last Date for receipt of questions shall be one days before the close of sale of the tender documents. In case no such clarification required by the bidder, it will be considered that all the requirements of the purchaser are understood by the bidder and no communications will be entertained or done by the Purchaser at any stage of work after the opening of the Bid(s).

A.2. Tender Documents

1. The contents of the tender documents as listed below shall be read in conjunction with any addenda issued thereof. All the components of the Bid(s) shall be considered as a single tender document:

Part A: Tender Details and Instructions

Part B: General Conditions of Contract

Part C: Special Conditions of Contract

Part D: Description of Work

Part E: Financial Bid

Earnest Money Deposit (EMD): EMD amounting to Rs. 136,000/- (One lakh thirty six thousand) only shall be deposited only in the prescribed form of Crossed Bank Draft/ FDR of Scheduled Bank, in favor of Executive Engineer, Planning & Investigation Division, CWC, Faridabad. EMD of the unsuccessful bidder shall be returned in original after finalization of the contract with the successful bidder. EMD of the successful bidder shall be a part of the Security Deposit and shall be returned after satisfactory completion of the work. EMD of successful bidder can be forfeited in case of withdrawal of tender before the finalization of the tender evaluation or for not entering into the contract.

2. The tender Documents are available at TCIL website URL <https://www.tcil-india-electronictender.com>, <https://eprocure.gov.in> and www.cwc.nic.in. Bidder who has downloaded the tender from aforesaid websites shall not tamper/modify the tender form including downloaded price bid template in any manner. In case the same is found to be tampered/modified in any manner, the Bid(s) will be completely rejected and their EMD would be forfeited. **Intending bidder are advised to visit these websites at least 3 days prior to closing date of submission of tender for any corrigendum / amendment.**

3. The Bids shall be submitted online only at TCIL website URL <https://tcil-india-electronictender.com>. Bidder(s) are also advised to follow the instructions provided in the "Instruction to the Bidders/ Bidder(s) for the e-submission of the bids online through TCIL portal. The tender notice is also available at www.eprocure.gov.in and www.cwc.gov.in
4. Applicant Bidder must provide Demand Draft for Rs 1000/- (Rupees One thousand only) in favor of Executive Engineer, Planning & Investigation Division, CWC, Faridabad obtained from any Nationalized/Scheduled Bank with their application/downloaded Bid(s) as the cost of tender forms/ documents. All applicable bank charges shall be borne by the applicant and he/she shall not have any claim what so ever on this account on the department. In the case of re-tendering, the firms which have submitted the DD in earlier calls will require submitting DD along with their tender/application in subsequent calls also. Tender not accompanied with the cost of tender documents is liable to be rejected.
5. Not more than one tender shall be submitted by one Bidder or Bidders having a business relationship. Under no circumstances will father and his son(s) or other close relations who have business relationship with one another (i.e. when one or more partner(s)/director(s) are common) be allowed to tender for the same contract as separate competitors. A breach of this condition will render the Bidder(s) of the parties liable to rejection at any stage.
6. Only one bidder having one or more partner companies/firms registered under partnership deed, will submit their bid, however, one or more partner companies/firms should fulfill the eligibility criteria of the bidder.
7. Bids received online at TCIL website URL <https://tcil-india-electronictender.com> will be Opened as per date/time as mentioned in the Tender Key Event Sheet (at page no. 6).

A.3.SUBMISSION OF BIDS DOCUMENTS ONLINE:

1. The following documents are to be furnished online for the Technical Bid part by the Bidder(s) along with bid as per the tender document:
 - a. Signed and scanned copy of valid registration certificate, experience certificates of similar works for at least 5 years, PAN.
 - b. Signed and scanned copy of previous three years Income-tax return & audited balance Sheet of last three years and GST registration certificate.
 - c. Signed and scanned true copy of undertaking of not being blacklisted by any government department.
 - d. Signed and scanned true copies of Annexure - IV to V, duly filled along with documentary proofs.
2. The following documents are to be furnished online for the Financial Bid along as per the tender document:
 - a. Signed and scanned bid template as per the tender documents.
3. The Financial bid will be opened along with the Technical Bid.
4. **The bidder has to submit following documents in hard copy in a sealed envelope in**

office before last date and time of opening of tender otherwise the bid will not be considered for opening.

- i. Earnest Money Deposit in original.
 - ii. Demand Draft towards the cost of tender document in original.
 - iii. Pass Phrase for Technical & Financial bid (composite bid) in separate sealed envelopes.
5. The Bidder shall be required to deposit an amount equal to **5%** of the contract value of the work as Performance Guarantee in the form of Treasury Challan receipt & accepted at Call receipt of a scheduled bank/Fixed Deposit receipt of a scheduled bank/Demand Draft of a scheduled bank issued in favor of the Executive Engineer, Planning & Investigation Division, CWC, Faridabad payable at SBI, Faridabad Branch, within **7 days** of the issue of letter of acceptance. This period can be further extended by the **Engineer-in-Charge** up to a maximum period of prescribed number of days on written request of the Bidder. Security deposit is liable to be deducted from the running bill @ **5%** till total amount of security deposit and performance guarantee achieves 10% of the contract value.
6. Bid(s) received without requisite Bid Security (EMD) will be summarily rejected.
7. Canvassing whether directly or indirectly, in connection with Bid(s) is strictly prohibited and Bid(s) submitted by the Bidders who resort to canvassing will be liable to rejection.
8. The competent authority on behalf of President of India reserves right of accepting the whole or any part of the tender and the bidder shall be bound to perform the same at the rate quoted.
9. Bidders whose near relatives are Divisional Accountant or Engineering Officers between the grades of Chief Engineer and Junior Engineer (both inclusive) in the Central Water Commission (CWC) will not be allowed to tender for works in the respective Regional office responsible for award and execution of contract is the one where the near relative is working. For this purpose, a near relative shall mean father, mother, wife/husband, son(s), daughter(s), brother(s), sister(s).
10. No Engineer or any other official employed in Engineering or Administrative duties in the Engineering Department of the Government of India is allowed to work in the CWC either as Bidder or as employee of a Bidder for a period of one year after his retirement from Government service unless he has obtained prior permission of Government of India to do so. Even after enlistment, if either the Bidder or any of his employees is found to be a person who had not obtained the prior permission of Government of India as aforesaid, the Contract shall be cancelled.
11. The time allowed for carrying out the work will be **120 days** from the date of issue of letter of acceptance of tender/work order or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.

A.4. BID OPENING AND EVALUATION

1. All the items and services mentioned in the tender should be quoted by the bidder
 - a) Bidder(s) offering only a part of the solution shall be considered as conditional and unresponsive and will be rejected.
 - b) The Bidder(s) should specifically note that they are not expected to stipulate any condition in their tender and further if any such condition is included such tenders are liable to be out rightly rejected treating the same as a conditional tender.
 - c) Bid(s) with Defective EMD or without EMD shall be summarily rejected and their tenders shall not be considered for further evaluation.
2. The Bid(s) will be opened in following sequence:
 - First – Envelope No. 1 containing EMD& cost of tender documents.
 - Second –Technical Bid and Financial Bid (composite bid).

3. EVALUATION and Comparison of Bids:

The all received bids will be evaluated and compare that have been determined to be substantially responsive based upon the technical strength of the bidder, the qualification & experience of the staff deployed, the turnover of the company, the nature of the projects executed of the similar type etc. The bidder shall be awarded points for each criteria/sub criteria as mentioned below. The financial bid shall also be opened on the same day.

- a. The Bidder has to provide inputs/information to meet the evaluation criteria as given below. Sufficient data / documents need to be enclosed for technical evaluation. Details in respect of turnover, experience, understanding of scope of work, manpower, etc. as per evaluation criteria has to be provided in the Technical Bid part.

Sl. No	Technical Evaluation	Points
1	Establishing Ground Control Points (GCPs) by Total Station& Sol GTS <ul style="list-style-type: none">• 5 to 10 stations• 11 to 20 stations• > 20 stations	15 18 20
2	Topographical Survey by Total Station <ul style="list-style-type: none">• 100-150 Sqkm• 151 to 200 Sqkm• > 200 sqkm	15 18 20

3	Work plan and strategies responding to scope of work and timely completion <ul style="list-style-type: none"> • Deputing 3 survey teams • Deputing 4 to 6 survey teams 	10 20
4	Qualification and competence of the staff for the assignment	
4.1	Engineers (Degree holder in Civil Engineering with minimum 10 years of experience in S&I work of water resources projects) for over all supervision: <ul style="list-style-type: none"> • Minimum - 1 	10
4.2	Surveyor (Minimum Diploma in Civil Engineering): <ul style="list-style-type: none"> • 3 to 5 surveyors • 6 to 10 surveyors 	5 10
4.3	Auto CAD & GIS expert: <ul style="list-style-type: none"> • 1 to 2 • 3 to 4 	5 10
6	<ul style="list-style-type: none"> • Instruments/Equipment's (not more than two years old) • 3 to 5 sets of Total Station • 6 to 8 sets of Total Station 	5 10

Total 100

- b. Firms obtaining Technical score greater than 65 points will only be considered for evaluation.
- c. The responsive bids will take into account technical factors, in addition to cost factors. An Evaluated Bid Score (B) will be calculated for each responsive bid using the following formula, which permits a comprehensive assessment of the bid price and the technical merits of each bid:

$$B \equiv \frac{C_{low}}{C} X + \frac{T}{T_{high}} (1 - X)$$

Where,

C= Evaluated Bid Price

C low = the lowest of all Evaluated Bid Prices among responsive bids

T= the total Technical Score awarded to the bid

Thigh = the Technical Score achieved by the bid that was scored highest among all responsive bids

X= weight for the Price will be 30%

- d. The bid with the highest Evaluated Bid Score (B) among responsive bids shall be termed the Lowest Evaluated Bid and is eligible for Contract award, provided the Bidder was prequalified and/or it was found to be qualified to perform the Contract in accordance
- e. The Purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected Bidder(s) or any obligations to inform Bidder(s) on the ground of the Purchaser's action.

A.5 Award of Work

1. The notification of award of work to the successful bidder shall constitute the formation of Contract. The successful bidder shall sign for the contract form given by the Purchaser within **7 days** of notification of award.
2. For the purpose of this tender the contract document with the successful bidder shall comprise of Nle-T, Tender Detail (part A to part E) and all Correspondences during the tendering/work process.
3. The Performance Guarantee shall be **@ 5%** of the tendered and accepted value and shall be submitted in the form of Demand Draft/ FDR/ CDR/ Bank Guarantee as per the format given by the Purchaser favoring the Executive Engineer, Planning & Investigation Division, CWC, Faridabad payable at Faridabad at the time of signing of contract.
4. Security Deposit inclusive of the sum already deposited as earnest money shall be **@ 5%** of tendered value and the same shall be deducted **@ 5 %** of the gross amount of the bill from each running bill of the Bidder. No interest shall be payable on the security deposit.

PART B: GENERAL CONDITIONS OF CONTRACT

B.1. DEFINITIONS & INTERPRETATIONS

Applicable Law means the law and any other instructions having the force of law in India, as they may be issued and in force from time to time.

Assignment / job means the work to be performed by the Bidder pursuant to the Contract to produce and deliver the required works and deliverables as specified in this Tender Document.

Central Water Commission "CWC" means the organization headed by Chairman CWC with headquarters at New Delhi and the subordinate offices all over India,

Contract means the agreement reached by the Purchaser and the Bidder for the purpose of the work mentioned in this document. All documents, letters, correspondences exchanged for this work shall be the part of the contract. For interpretations the contract shall be construed in totality.

Contract Price The cost of works and Services identified in the Bidder proposal are included in the Contract Price in their entirety. This will include such additions/ deductions made under variation order.

Bidder is the agency of the successful bidder with whom the purchaser enters into a contract for the work detailed in this document.

Day means calendar day.

Engineer-in-charge is the authorized representative of the Purchaser to manage the work progress, work quality and performance of this contract generally Executive Engineer, Planning & Investigation Division, CWC, Faridabad.

Employer means Central Water Commission who has invited the bids and with which the selected bidder signs the Contract for carrying out the jobs as per the terms and conditions of the contract.

Execution Period is the period during which the Bidder is liable to provide all work to the entire satisfaction of the Engineer-in Charge.

Government means the Government of India.

Non- Responsive tender any tender not meeting all the requirements mentioned in the tender document.

Notices shall be deemed to include any approvals, consents, Instructions, certificates and clarifications to be given under this contract.

Works/AOI means *Topographical Survey at given work place.*

Purchaser is the President of India through The Executive Engineer, Planning & Investigation Division, CWC, Faridabad.

Project specific information means such part of the Instructions to Bidder, used to reflect specific project and assignment conditions.

Personnel mean professionals and support staff provided by the Bidder

Bidder means any eligible firm participating in this tender process.

Work means all the activities related to the scope of the works detailed in this tender.

B.2. Scope of the work

The scope of work system constitutes completion of all the works and services for completing Topographical Survey for Irrigation Schemes in Jharkhand and preparation of maps as required. The ancillary requirements required for the fulfillment of the work shall be supplied by the Bidder free of cost within the scope of the work.

S. No.	Description	Area to covered/Extent surveys	be of	Scale		Contour interval	Remarks
				Horizontal	Vertical		
1	River Surveys						
	(a) L-Section	(i) Upstream					
		L-section upto MWL + 5m or to a point upto which the back water effect is likely to extent from the axis of the structure, whichever is less. In case of any head works situated upstream within MWL +5m or the farthest point affected by back water, L-section to be taken up to the head works.		1:10,000	1:100		Leveling at 10 m interval along the fair weather deep channel. Following items shall be indicated on L-section (i) Date of survey of the particular reach and water level on that day. (ii) Deep pools and rapids including their bed, bed levels, rock outcrops, etc. (iii) Maximum Historical observed HFL

S. No.	Description	Area to be covered/Extent of surveys	Scale		Contour interval	Remarks
		(li) Downstream, 10 Km from the axis of the structure or upto nearest headwork whichever is less	1:10,000	1:100		-do-
	(b) X- Section	(l)Upstream X-Section @ 200m interval upto MWL+5m or 1 km on either side of the firm bank whichever is less and for a distance of 2 km from the axis of the structure and thereafter at one km interval corresponding to the length of the L-Section.	1:2,000	1:100		Levelling at 5 m or less intervals. Following items shall be shown on the X-section. a. Date of survey and water level on that day. b. Minimum water level c. Maximum historical/observed HFL. d. Rapids and Rock outcrops etc.
		(ii) Downstream X-Section @ 200m interval upto historical /observed HFL + 1m on either side of firm bank for distance of 2 to 5 kms from the axis of the structure depending upon the meandering nature of the river	1:2,000	1:100		-do-
		(iii) Along the axis of the structure	1:1,000	1:100	-	-do-
2	Reservoir	Contour plan covering an area upto an elevation of MLW+5 m	1:2,000 to 1:10,000 (Depending on the total area)	-	1 or 2 or 3 m	Contour interval for slope less than 10 to horizontal –1m or less slope 10 to 30-2m and slope more than 30 - 3m
3	Dam and Dyke	Topographic plan of the site with contours, Covering the area upto 4 H on upstream and downstream of the axis OR a minimum of 250 m on the upstream and 500 m on the downstream of the axis, and	1:1,000	-	1-3 m	Contour intervals as per item 2 above. Levelling to be at least at 10 m grids.

S. No.	Description	Area to be covered/Extent of surveys	Scale	Contour interval	Remarks
		extending upto MWL+2H where H is the height of dam (tail channel area shall be adequately covered).			
4	Barrage/Weir	Topographic plan with counters of the site covering an area upto 1 km on either side of the firm bank and 100 m from the upstream/downstream tip of the guide bunds, parallel to the flow (tail channel area shall be adequately covered).	1:2,000	-	0.5 to 1m Leveling to be at least at 10 m grids or less depending on the slope of the land.
5	Canal and water conductor system	(i) L-section (ii) Cross-section at 50 m interval (iii) Strip counter plan covering 150 m on either side of the Centre line of the canal or depending upon the requirement whichever is more.	1:2,000 1:2,000 1:1,000	1:1,000 1:1,000 -	0.5 Levelling at 5 m or less interval. Levelling at 5 m or less interval. Levelling as per item 4 above.
6	Canal structures	(i) Grid plan with contours of the site to cover an area upto 300 m on either side of the centre line of the canal – 100 m downstream of the point of exit of water and 100 m upstream of the point of water intel.	1:2,000	-	0.5 Levelling as per item 4 above.
		(ii) Cross-section of the drain along the centre line of the canal. (iii) Drainage surveys for upstream and downstream of the centre line of the canal for adequate length as required for hydraulic calculations; for plan Longitudinal & Cross-	1:2,000 1:10,000 1:2,000	1:100 - 1:100	- Bed Level/Bank Level and FSL of the canal and max HFL of drain to be indicated on the cross section. Refer item 1 also - Do -

S. No.	Description	Area to be covered/Extent of surveys	Scale		Contour interval	Remarks
		sections				
7	Command area survey including survey for drainage system	(i) Contour plan of the area	1:10,000	-	0.5 m	
(a) Plains and plateau OFD works		1:2,000	-	0.1 m	Block leveling on 50m or less grid basis, contours interval depending upon the steepness of the country. Marshy land/depressions, if any to be shown in the plain.	
(b)Hilly terrains OFD works		1:1000 or 1:500	-	0.2m	-do-	

B.3. Documents of Contract

All the documents shall be considered as correlative, complementary and mutually explanatory. The contract shall be read as a whole for the interpretations. All correspondences, notices etc. shall form a part of the contract.

B.4. Interpretations

Language: Shall be English only for the purpose of this contract.

Context: The singular and plural shall be interchangeable as per the context of the contract.

Heading: The headings and clauses shall be interpreted as A 1, 1 at where A is the part of the document, 1 may be the main heading and A will be the sub heading. The heading shall not limit, after or affect the meaning of this contract.

B.5. Bidder's responsibilities and Obligations:

1. The Bidder will abide by the job safety, insurance, customs and immigration measures prevalent and laws in force and will be liable for indemnification of the Purchaser from all demands or responsibilities arising from accidents or loss of life, the cause of which is the **Bidder's** negligence. The **Bidder** will pay all indemnities arising from such incidents and will not hold the Purchaser responsible or obligated.
2. The Bidder is responsible for and obligated to conduct all contracted activities with due care and diligence, in accordance with the Contract and using state-of-the-art methods and economic principles and exercising all reasonable means to achieve the performance specified in the Contract.
3. The Bidder is obliged to work closely with the Purchaser and act within its own authority and abide by directives that are consistent with the terms of the Contract. The Bidder is responsible for managing the activities of its personnel and will hold itself responsible for any

misdemeanor.

4. Bidder shall submit fortnightly progress report to Engineer-In-Charge which will be reviewed and progress discussed with the competent authority to meet the completion targets.

B.6. Purchaser's responsibilities

1. The purchaser will ensure accuracy of all information and/or data to be supplied by the purchaser to the Bidder, except when otherwise expressly stated in the contract.
2. The Purchaser will provide timely provision of all the resources, space and facilities and information for decision making that are necessary to execute this contract.

B.7. Commencement and Operation

The time for commencement of work will start from the date of award of contract.

B.8. Programme of work

1. Immediately after signing of the contract the Bidder shall designate representative who will work closely with the Engineer-in-charge for the execution of the work.
2. The Bidder's representative is obliged to work closely with the Engineer-in charge and abide by the directives issued to him that are consistent with the terms of the contract. The Bidder's representative will be responsible for managing the activities of its personnel.
3. The successful Bidder must submit the details of manpower, equipment details and the **Work-Plan** which includes details of manpower, equipment's to be deployed for these works and details of input required from the department along with time schedule before entering into the agreement and the plan has to be approved by the competent authority.
4. The bidder has to submit the description of how the work will be executed and the timeline for completing all the activities had to be made available in the form of Bar Chart.
5. The bidder has to indicate the expected input from the department including the timeline.

B.9. Confidentiality

1. The Bidder shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification or information furnished by or on behalf of the Purchaser in connection herewith, to any person other than a person employed by the Bidder in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.
2. Any document, other than the Contract itself, shall remain the property of the Purchaser.
3. The Bidder shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in this document except for purpose of performing the Contract.
4. The Purchaser shall not, without the Bidder's prior written consent, disclose any

documents, data or other information furnished by the Bidder in connection with the Contract, and clearly identified in advance by the Bidder as being confidential, to parties not directly involved in the project(s) covered by the Contract.

B.10. Care of the Property

1. The Bidder shall be responsible for the care of the equipment and departmental property entrusted by the employer to carry out the work. The Bidder shall be responsible for any loss or damage to the system caused by the Bidder in the course of work. The Purchaser will have the right to make good the losses by adjusting the same in the money due to the Bidder.

B.11. Loss of Property

1. The Bidder shall indemnify and hold harmless the Purchaser and its employees from any losses, liabilities and costs resulting from the death, personal injury or loss/damage to the property, loss to the system not yet accepted operationally.

B.12. Force Majeure

1. For the purposes of this Clause, "Force Majeure" will mean an event beyond the control of the Bidder and not involving the Bidder's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, heavy rainfall, floods, epidemics, quarantine restrictions, and freight embargoes.
2. If a Force Majeure situation arises, the Bidder shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Bidder shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force Majeure event.
3. If an event of Force Majeure continues for a period of sixty (60) days or more, the parties may by mutual agreement, terminate the Contract without either party incurring any further liabilities towards the other with respect to the Contract, other than to effect payment for Products already delivered or Services already performed.
4. No claim or increased costs be entertained attributable to the Force Majeure.
5. Force Majeure shall not include
 - a) any event which is caused by the negligence or intentional action of a or agents or employees, or
 - b) any event which a diligent party could reasonably have been expected to both
 - (i) take into account at the time of the conclusion of this Contract, and
 - (ii) avoid or overcome in the carrying out of its obligations hereunder

6. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

B.13. No Breach of Contract

The failure of a party to fulfill any of its obligations hereunder shall not be considered to be a breach or default under this contract in so far as such inability arises from an event of Force Majeure, provided that the party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of the contract.

B.14. Measures to be taken

- 1 A party affected by an event of Force Majeure shall take all reasonable measures to remove such party's inability to fulfill its obligations hereunder with a minimum of delay.
- 2 A party affected by an event of Force Majeure shall notify the other party of such event as soon as possible, and in any event not later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give notice of the restoration of normal conditions as soon as possible.
- 3 The parties shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

B.15. Extension of Time

Any period within which a party shall, pursuant to this Contract, complete any action or task, shall be extended for an equal to the time during which such party was unable to perform such action as a result of Force Majeure. Any extension if required other than Force Majeure will be discussed with Purchaser and the final decision will be conveyed which will be final and binding upon the Bidder. The time extension required has to be estimated by the Bidder in consultation with Engineer-in-charge and has to apply for at least 15days in advance.

B.16. Consultations

Not later than thirty (30) days after the Bidders, as a result of an event of Force Majeure, have become unable to perform a material portion of the Services, the Parties shall consult with each other with a view to agreeing on appropriate measures to be taken in the circumstances.

B.17. Contract Price

The prices specified in the contract agreement shall be firm inclusive of all taxes, duties, octroi etc. **excluding Goods and Service Tax (GST)**. Firstly GST will be paid by contractor to Government which shall be reimburse to them by producing GST paid receipts on prevailing rates. Rate on quoted rate and fixed with no adjustment to be made to the contract price except as otherwise

provided in this contract during the execution period. The contract prices are fixed for the term of the contract and no escalation shall be paid in any manner.

B.1 8. Terms of Payment

- a. The Purchaser, on the recommendation of the Engineer-in-charge, shall order the payments as per the schedule given in the tender document.
- b. All the interim payment certificates can be modified, or corrected by any subsequent interim or by the final certificate issued by the Engineer-in-charge.
- c. Any money recoverable from the Bidder shall be adjusted in the final bill.
- d. The payment shall be made for the amount after deducting any taxes required to be deducted at source as applicable e.g. work contract tax, income tax except service tax. However GST will be reimbursed extra at prevailing rate on quoted rate.

B.19. Taxes and Duties

All the existing and new taxes, levies, octroi, custom and other charges levied on the goods rendered by the Bidder shall be borne by the Bidder only within the quoted rates except GST which shall also be paid by Bidder to Government subsequently reimbursed to them on producing GST paid receipts. Income tax shall be deducted at source as per the prevailing Government of India rules from time to time.

B. 20. Advances

No advance payment is payable under the contract.

B.20. Variations, Alterations and Deviations

All variations, alteration or deviations shall be duly authorized by the Purchaser.

B.21. Extra Items

The extra items specifically mentioned as extra work initially in the contract document or any other work not specified but required to be done as a part of this work shall be taken by the Bidder as Extra Items. Unless specifically mentioned in the tender document, the decision of Purchaser as to what constitutes as extra items, will be final and binding. The rates for all these items of work shall be mutually decided at the prevalent market rates. All such items shall be billed separately. Provisional payments may be made and actual balance payments shall be presented by the Bidder in the form of Claims.

B.22. Claims

All the balance payments for the varied or extra items of works as above shall be settled separately as Claims and payable in the Final Bill.

B.23. Release of Claims

After completion of work and after three weeks of final payment it will be construed that the Bidder has no claims arising out of this contract.

B.24. Observance of Law

1. The contract shall be construed and operated as an Indian contract and as per Indian laws applicable from time to time.
2. The parties to the contract shall protect and indemnify each other against all claims or liabilities arising from the action of violation of all such laws.
3. Bidder shall observe all the labour and mercantile laws related to this work and indemnify the Purchaser in all respects for any consequences of the violation/lapses of the labour/mercantile laws.

B.25. Termination of Contract

A. For Purchaser's convenience

The Purchaser can terminate the contract at any time by giving a notice of 15 days to the Bidder. The Bidder shall have no claim to any payment for the compensation or otherwise whatsoever on account of any profit or advantage which might have been derived on the manpower or other resources derived for this work.

B. For Bidder's Default

- a. The Purchaser without prejudice to any other rights or remedies it may possess, may terminate the contract if the Bidder,
 - i. Being an individual, or if a firm, any partner thereof, shall at any time be adjudged insolvent or have a receiving order or order for administration of his Estate made against him or shall take any proceedings for liquidation or composition (other than voluntary liquidation for the purpose of amalgamation or reconstructions) under any insolvency Act for time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors, or
 - ii. has defied at least two previous instructions of the Engineer-in-charge regarding quality of service, or
 - iii. has furnished any false document, or
 - iv. at any time makes default in proceeding with the works with due diligence and continues to do so after a notice in writing of 7 days from Purchaser, or
 - v. has abandoned or repudiated the contract and neglects his obligations under this contract and commits default in complying with any of the terms and conditions of the Contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Purchaser, or
 - vi. fails to complete the works or items of the Work with individual dates of completion, on or before the date(s) of completion, and does not complete them within the period specified in a notice given in writing in that behalf by the Owner, or

- vii. shall offer, or gives or agrees to give to any person in Department service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or having done or forborne to do any act in relation to the obtaining or execution of this or any other Contract for the Department, or
 - viii. shall enter into any contract with the Department in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and terms of payment thereof have previously disclosed in writing to the Accepting Authority/Engineer-in-Charge, or
 - ix. shall obtain a Contract from the Department as a result of ring tendering or other non-bonafide methods of competitive tendering, or
 - x. being a company, shall pass a resolution or the court shall make an order for the liquidation of its affairs, or a receiver or manager or behalf of debenture holders shall be appointed or circumstances shall arise which entitle the Court or debenture holders a receiver or manager, or shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 years; or
 - xi. assigns, transfers, sublets (engagement of labour on a piece work basis or of labour with the materials not being incorporated in the work, shall not be deemed to be subletting) or attempts to assign, transfer or sublet the entire works or any portion thereof without the prior written approval of the Accepting Authority. The Accepting Authority may without prejudice to any other right to remedy which shall have accrued or shall accrue thereafter t the Department by written notice cancel the contract as a whole or only such items of the work in default from the Contract.
- b. The Purchaser may without prejudice to any other right, issue a notice for termination of the contract on the recommendations of Engineer-in- charge stating the nature of default and requiring the remedy for the same. Failure of the Bidder to carry out a specified work for 14 calendar days may be sufficient grounds for termination of the contract by the purchaser.

B.25.1 – On the Termination of the contract in full or in part the Competent Authority shall determine what amount, if any, is recoverable from the Bidder for completion of works or part of the works, or in case the Works or part of the Works is not completed the loss or damage suffered by the Department in determining the amount, credit shall be given to the Bidder for the value of the work executed by him up to the time of cancellation, the value of Bidders materials taken over and incorporated in the work, and use tools & tackles and machinery belonging to the Bidder. The Plant & machinery and materials etc. deployed at site by the Bidder for the works shall be in the custody of Engineer-in-Charge or his representative.

B.25.2 – Any excess expenditure incurred or to be incurred by the Department in completing the works or part of the works or the excess loss or damages suffered or may be suffered by the Department as aforesaid after allowing such credit shall be recovered from any money due to Bidder on any account, and if such money is not sufficient, the Bidder shall be called upon in writing to pay the same within 30 days.

B.25.3 – If the Bidder shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the Bidder's unused materials, tools & equipment, implements, temporary building etc. and apply the proceeds of sale thereof towards satisfaction of any sum due from the Bidder under the Contract and if thereafter there by any balance outstanding from the Bidder' it shall be recovered in accordance with the provisions of the Contract.

B.25.4 – Any sum in excess of the amounts due to the Department and unsold materials, constructional plant, etc. shall be returned to the Bidder, provided always that its cost or anticipated cost of completion by the department of the Works or part of the work is less than the amount which the Bidder would have been paid had he completed the works or part of works, such benefit shall not accrue to the Bidder.

B.26. Suspension of work

The work shall be deemed to have been suspended if

- I. It is provided for in the contract.
- II. Necessary for the proper execution of work as decided by the Engineer-in-charge. The Bidder shall not be entitled for any extra payment for the period of suspension of work. If the suspension of work continues for more than 14 days, the purchaser may, at his discretion, terminate the contract as provided in this contract.

B.27. Notices

Notwithstanding anything stated otherwise, all notices of this contract shall be in writing through registered mail, speed post, personal or courier deliveries. The transmission by electronic data exchange (fax, email) shall be reconfirmed in writing. Any change in the address etc. shall be communicated within 7 days to other party.

B.28. Disputes

The decision of the Purchaser shall be final regarding the quality and progress of work; the other aspects arising out of the work shall only be referred as Disputes. The Bidder may address its intention with evidences for the settlement of disputes in writing to the Purchaser. The work shall not stop, unless agreed mutually or ordered by the arbitrator(s).

B.29. Settlement of Disputes

The settlement of all the disputes of any kind arising out of this contract shall be first through a Mediator which will be CE, YBO, CWC, New Delhi and only after dissatisfaction with that, the Arbitrator shall be appointed by CWC as per Arbitration & Conciliation Act 1996.

B.30. Subcontracting of the Work

- a. The sub-contracting of the entire project work is not allowed. Further, the Bidder will be solely responsible for the whole work and all of the conditions of the project.

PART C: SPECIAL CONDITIONS OF CONTRACT

In addition, to General Conditions of Contract, the following Special terms and conditions shall also be part of the tender documents/contract and will be binding on both the parties of the Contract, Wherever any clause of the Special terms & conditions is contradictory of the General conditions, clause of the Special terms & conditions shall be taken as have been issued in suppression of the General terms & conditions.

C.1 TIME FRAME

All the works including submission of final report shall be completed within a period of **120 days** from the date of award of works including the period of mobilization. Time is the essence of the contract and damages as per clause C.10 shall be payable

C.2 PROGRESS REPORT

The Bidder will be required to submit the fortnightly progress report of all the activities in hard as well as soft copies which shall be as follows. The expected progress is as indicated below:

SI No	Time Schedule	Progress
1	First month	20%
2	Second month	50%
3	Third month	80 %
4	Forth month Ist fortnight	100 % and Draft Final Deliverable
5	Fourth month IInd fortnight	Final Deliverable

C3 Additional Information to the Bidder

Location maps of AOI are attached with the contract document showing tentative location of the project area. The Bidder has to submit to the purchaser the schedule of completion of the work with respect to the schedule of completion in the form of bar charts, tabular formats, and the work methodology to complete the work in the specified period of time as per the deliverable

The schedules are to be reviewed fortnightly by Purchaser to ensure that the completion date will be met or to institute corrective steps (at no extra cost to the employer) to adhere to the completion dates.

The whole works must be proceeded with within such sections and at such times and in such order and manner as described in these specifications and as directed by the Engineer-in-Charge. No extra payment or relaxation in the rates will be permitted on account of this.

The Bidder shall prepare daily progress details giving works executed, No. of personal deployed and other remarks and get it signed by the Site-in-Charge.

The Bidder should furnish to the Purchaser Office with fortnightly progress reports in duplicate on the Saturday of every fortnight in the following format:

Item of work	Schedule for week		Actual progress		%age of work completed for each item	Reasons for shortfall, if any,	Steps taken to make up the shortfall	Manpower deployed	Instrument in use
	Current Fortnight	Cumulative	Current Fortnight	Cumulative					

C.4 REVIEW MEETINGS

The Bidder will be required to attend regular meetings at their own cost with SE, PC CWC, Faridabad or Purchaser at Faridabad at a time interval to be agreed upon to discuss matters relevant to the project and to monitor progress.

C.5 FINAL ACCEPTANCE OF DELIVERABLES

A satisfactory completion or inspection certificate to conform to the Technical Specifications laid down in the Tender Document will be issued by the Competent Authority.

The Competent Authority will check any deliverable by the Bidder for accuracy, consistency and completeness before final Acceptance. Competent Authority's decision regarding the quality of work and its acceptability shall be final and binding on the Bidders.

C.6 PAYMENT SCHEDULE

- a. No advance payment is payable in this tender.
- b. Payment shall be made according to the following schedule:
 - i) 50% payment of each item will be made after completion & submission of the particular item at the required target date.
 - ii) 25% payment of the same item will be made after verification of the particular item by the client.
 - iii) Remaining 25% will be made in the final bill after the final approval & acceptance of drawings/reports by the Competent Authority In charge of the project.

- c. Payment to the Bidder will be made based on actual quantities of work completed at the approved rates.
- d. The Bidder shall submit all bills (in Duplicate) to the EXECUTIVE ENGINEER, Planning & Investigation Division, CWC, Faridabad
- e. The Performance Guarantee amount will be released after satisfactory completion and acceptance of works by Competent Authority or after six months of completion of work whichever is later. No interest shall be payable by the employer for sum deposited as Performance Guarantee.
- f. Any tax as applicable shall be deducted at source from the bill.

C.7 WARRANTY PERIOD

All works and the deliverables shall be warranted for a period of six months beyond the final bill payment for any work error, display error etc. All errors shall be rectified by the Bidder at its own cost.

C.8 PROPERTY RIGHTS

All property or intellectual material, generated out of this work contract shall be the sole property (material right and copy right) of the CWC.

C .9 Work Programme:

The Bidder shall furnish within seven days of issue of Letter of Award (LOA) full particular of his programme of field/ home office activity proposed for execution of the contract. Programme should cover intermittent milestones and list of submittals corresponding to each milestone for approval.

C .10 Liquidated Damages for delay

- a. The time stipulated in the contract as per progress report shall be deemed to be the essence of the contract. In the event the Bidder fails to adhere to the time specified in the progress report of the 'Contract', or approved extended time then the Bidder shall pay to the Purchaser liquidated damages for such default and not as penalty as follows.
- b. In the event of any delay corresponding to each milestone as specified in clause C.2, L.D. at the rate of **1.0 %** of the remaining part of the contract value of the work **per week of delay or part** thereof shall be levied subject to a ceiling of **10% of the** total contract value of the work.

- c. The owner may without prejudice to any other method of recovery deduct the amount of liquidated damages from any money in his/their hands due or become due to the Bidder either under this or under any other contract.
- d. The payment or deduction of such liquidated damages shall not relieve the Bidder from his/their obligation to complete the works or from any other of his /their obligations and liabilities under the contract.
- e. If the decision regarding the reasons for delay is required to be analyzed and the same can only be determined after completion of the work or if the issue is likely to enter into dispute or requires in-depth study to fix the responsibility for the delay, then extension of time will be granted to the Bidder subject to levy of LD and the amount equivalent to the maximum levy of LD leviable shall be withheld from the running bills at the stage where the balance payment may not be able to cover the LD and other obligations as per the provisions of the Contract.

C.11. Safety Standard / First Aid Box

Notwithstanding the Bidder's obligation to comply with the requirement of the safety manual/ Norms applicable the Bidder's attention is particularly drawn on the following requirements specified;

- a) The Bidder shall be responsible for providing and maintaining a first aid station at the site at his/her own cost for emergency treatment of his employees
- b) Emergency treatment shall include carrying of emergency patient until transfer to a permanent hospital or other place of treatment.

C.1 2. Statutory rules and regulation of India:

The Bidder should be well concerned with such statutory rules, regulations as may be prevalent in project territory and Bidder shall indemnify and keep the CWC free from and against such liability.

C .13 Observance of Employees State Insurance Act 1948 and PF act 1952.

The Bidder shall observe all the provisions of the Employees State Insurance Act, 1948 and the Employees Provident Fund Act, 1952 duly amended from time to time where ever applicable and shall pay the contribution/subscription in accordance with the said act in respect of the employees with the said company engaged by it for the survey work.

C.14. FORECLOSURE OF CONTRACT IN FULL OR IN PART DUE TO ABANDONMENT OR REDUCTION IN SCOPE OF WORK

- 1. If at any time after acceptance of the tender the Purchaser shall decide to abandon or reduce the scope of the work for any reason whatsoever and hence not require the whole or any part of the Works to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the Bidder and the Bidder shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from the

execution of the works in full but which he did not derive in consequence of the foreclosure of whole or part of the works.

2. The Bidder shall be paid at Contract rates full amount of work executed at site and any other amount as admissible under contract

C.15 URGENT WORKS:

If any Urgent Work (in respect whereof the decision of the Competent Authority shall be final and binding) becomes necessary and the Bidder is unable or unwilling at once to carry it out, the Engineer-in-Charge may by his own or other work people carry it out as he may consider necessary. If the Urgent work shall be such as the Bidder is liable under the Contract to carry out at his expenses all expenses incurred on it by the Department shall be recoverable from the Bidder and be adjusted or set off against any sum payable to him.

PART D GENERAL SCOPE OF WORK

D.1 Scope of Work:

All the works shall be carried out in accordance with the detailed specifications hereinafter described. In case, the specifications of any work are not given herein, the work shall be carried out in all respects in accordance with I.S. specifications, Guidelines issued by CWC regarding for preparation of DPR of Irrigation & Multipurpose Projects and the instructions of the Engineer-in-Charge given from time to time. These specifications shall be read and construed along with the conditions of the contract. The envisaged quantum of work at each project site can be increased or decreased as and when the work proceeds.

D.2 TECHNICAL SPECIFICATIONS

1. GENERAL

- a. The scope of the bid is as mentioned in D.1 GENERAL SCOPE OF WORK
- b. These services would cover, in general, grid survey, strip survey, transfer of Bench Mark etc. as indicated in this document and as directed by EIC and within the stipulated time period.
- c. Surveys shall be based on and/or referred to a basic grid of datum points, triangulation points and benchmarks adjacent to the nearest available location in the project area. This grid shall be the sole basis of reference for all survey work and measurement.
- d. All surveys and drawing work shall conform to the standard practices and as per BIS and Survey of India Specification.
- e. Horizontal control stations for topographical survey shall be established by total stations.
- f. All survey work is to be done with the help of latest equipments such as Total station etc.
- g. All relevant geomorphic, geographical and manmade elements including various permanent features in the near vicinity shall be marked giving standard legend.
- h. The specifications for the contour lines shall be generated in colour and every fifth contour line shall be an index contour and shall be distinguished using a heavier line style for easy identification. Symbol Library of SOI may be referred for their depiction. Digital contour lines passing over building, trees and other artificial structures above ground shall not be broken. Contours shall be edited for proper registration with streams, after the streams have been captured.

2. MATERIAL AND INSTRUMENTS

- a. The Bidder shall provide, maintain and operate suitable and appropriate equipment, instruments materials and auxiliary equipment commensurate with the various tasks and precision requirements of the survey works both topographical and hydrographical.
- b. Type and accuracy of the survey equipments to be used by the Bidder shall correspond to the nature of surveys in conformity with standards practices.
- c. All equipment including Total Station, Auto Level etc., instruments, materials and auxiliary equipment shall be in perfect operational condition. Prior to the start of survey

activities, equipment, instruments etc. shall be checked as to their proper functioning and accuracy.

- d. The Calibration certificates of instruments shall be submitted to the Purchaser before the start of the work.
- e. Instruments and equipment which have depreciated from use, damage or accidents to a degree making them unfit for further use at the site, shall be removed from the site and replaced immediately.
- f. The number of sets of instruments shall be sufficient to meet the requirements of the time schedule. Delay of start of surveys caused by insufficient quantity and quality of survey equipment including provision of professional staff shall be the Bidder's responsibility.

3. EXECUTION

a. General

- i) For the execution of the survey work the Bidder shall employ and provide experienced professionals and auxiliary staff. All survey and measurement work shall be recorded properly.
- ii) The Bidder shall provide, maintain, adjust when necessary and operate the required survey and auxiliary equipments for the performance of the works.
- iii) All survey and measurement activities shall be recorded in maps and field books as directed. The production of drawings and maps on Auto Cad/Arc GIS shall be deemed to be part of the works.
- iv) The Purchaser shall have the right to check work performance, accuracy, all survey results, measurements and calculations to see that they conform to the client's requirements.
- v) The Bidder shall keep & maintain records of all field surveys and measurements, the related computations and calculations, manuscripts, plans, drawings and maps in a professional and approved manner and shall make them available to the client whenever desired.
- vi) If, in the opinion of the Purchaser, deficiencies and/ or inaccuracies in field and office work have been found, such work shall be repeated and make good to the satisfaction of the client at the Bidder's expense.
- vii) The Bidder shall be solely responsible for accuracy of survey maps and drawings.
- viii) The Bidder will strictly comply with all the provisions of the Forest Conservation Act 1980. Under no circumstances any tree should be cut or destroyed in the vicinity of the project area. Adequate fuel should be supplied to the labourers so as to prevent them for damaging the forest. Necessary approval from the concerned department (if required) for carrying out survey work may be taken by the Bidder and Employer shall assist in getting such approval.
- ix) The Bidder shall be responsible to take all precautions to ensure safety of the public and his own personnel. Further, Bidder will also be required to take following insurances at his own cost.
 - Third party liability insurance.
 - Worker's compensation insurance in respect of Bidder's personnel.

- Any other insurance for public & Bidder's personnel in accordance with the relevant provisions of the applicable law.
- x) The agency shall comply with the provisions of the following acts:
 - Contract Labour (Regulation & Abolition) Act 1970
 - Employees Provident Fund Act, 1952
 - Minimum Wages Act, 1948 (Amended)
 - Employer's Liability Act, 1938 (Amended)
 - Industrial Employment Act, 1946 (Amended)
 - Personnel Injuries (Compensation Insurance) Act, 1963 (Amended)
- xi) The Bidder shall not employ any labour below 18 years.
- xii) In case, the rate of the progress of the work is not commensurate with the rate of progress for completing the work within the stipulated time frame, then balance quantum of work which cannot be completed can be withdrawn from the concerned agency and can be awarded to other agency whom purchaser considers fit to carry out the work.
- xiii) If there is any dispute the same will be amicably settled by the Executive Engineer in consultation with Superintending Engineer, Planning Circle, Central Water Commission, Faridabad failing which it will be referred to Chief Engineer for his arbitration. The decision of Chief Engineer, Yamuna Basin Organization, Central Water Commission, New Delhi will be final and binding on both the parties. However, in case of any court case after resorting to all other avenues, the jurisdiction of court case will be that of New Delhi.

b. Reference Marks and Bench Marks

- i. Bench Marks shall be established by double Leveling method. Bench mark leveling shall be carried out with great accuracy and care within permissible limits. If the error is greater than permissible, re-Leveling shall be carried out.
- ii. In addition to the permanent bench marks to be constructed as specified in Scope of Works, the Bidder shall establish at his own cost, at suitable points, reference lines and temporary bench marks as may be necessary. The Bidder shall remain responsible for the sufficiency and accuracy of all his bench marks and reference lines. He shall take precautions to see that the lines, point and bench marks fixed by and other government agencies are not disturbed by his work and shall make good for any such damage.
- iii. The Bidder shall establish sufficient number of bench marks along the periphery of the project area and also on permanent structures like roads, canals, temples, bridges, culverts, wells and other important buildings etc. coming in route of the survey. BM no. and RL is to be painted / engraved on all such BMs.

4. Verification of Survey Grid

The basic survey grid shall be verified by the Bidder and all coordinates and elevations as shown on the survey maps shall be based on the basic survey grid.

The Bidder shall record all calculations, control surveys, setting out and check surveying in a suitable permanent form for verification, which shall be available to the employer on request at all times. The Bidder shall supply two (2) copies of all such calculations to the employer on his request.

5. Extension of Basic Grid

The datum points shall be of permanent nature and shall be constructed as directed by the EIC or as per standards. The datum points, reference monuments, & benchmarks shall be protected & maintained.

The Bidder shall keep records of all survey activities such as sketches; field books calculations etc. for the entire duration. The Bidder shall upon request of the purchaser put at their disposal all records and documentation or provide copies thereof or their convenience. All survey drawings shall be prepared in AutoCAD 2016 or higher version/Arc GIS software.

6. DIGITISATION OF MAPS

The contour plan of AOI shall be on scale as directed and at required contour interval as directed. Also refer scope of work.

The data base is to be prepared with the use of either suitable software compatible with CAD software.

All the drawings shall be submitted in A3 size subject to changes as per design office requirements.

7. MEASUREMENTS AND PAYMENTS

- a. The Bidder shall submit to the Purchaser at the end of each month, a written statement of interim account showing the cumulative sum to which he considers himself eligible for payment along with all the relevant documents.
It will be the Bidder's responsibility to get the work done by them verified by purchaser.
- b. On receipt of the Bidder's statement referred to as above, Purchaser or his authorized representative shall verify the payment due to the Bidder to the extent considered justified after taking into cognizance:
- c. The estimated value of the survey works executed and checked by the Purchaser's representative up to the end of each month.
- d. The total amount certified on previous interim payment certificate.
- e. Deductions, if any.
- f. In the event of stoppage of work due to unavoidable reasons on part of the employer, the payment will be made for the quantity of work completed up to that date only.

- g. In case the Purchaser withdraws a part of the work, then the same will stand withdrawn from the item of works of the concerned surveying agencies.
- h. In case the Purchaser modifies the distribution of quantum of work of various items in various constituencies, then quantum of various items of the concerned agencies will also change accordingly. In case of reduction of Scope of Work to any agency, no claim can be made by concerned agencies and only the quantity of actual work done and the unit rate will govern the payment to be made to any agency.
- i. All the payment due to a survey agency will be on the basis of actual work done and the unit rate. No extra payment will be made on any account.

8. PREPARATION OF DRAWINGS

All the drawings shall be submitted in A3 size subject to changes as per design office requirements. The scales of the map shall be as mentioned in the deliverables in scope of work.

9. SUBMISSIONS

All survey data and corresponding topographical maps as and when completed in respect of any item of work shall be submitted in duplicate to the Purchaser for reference and use. All the drawings/ maps shall be AUTOCAD/Arc GIS compatible.

10. The Bidder shall submit:

- a. Detailed work programme & plan for carrying out the survey before commencement of work.
- b. All field survey data related to contour Leveling for verification
- c. Two hard copies of each draft survey map as and when complete.
- d. Six hard copies of final drawings (colored prints wherein red for manmade features, brown for contours ,blue for water bodies and rest in black shall be indicated)
- e. Two soft copies of aforesaid final maps / drawings and field survey data in a compact disc.
- f. Original survey field book(s) and Total Station output.
- g. All drawings shall be in A3 size
- h. A brief report giving scope, methodology, instruments used, Bench-marks, control points connected for survey work.

11. Confidentiality

- a. The Bidder shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification or information furnished by or on behalf of the Purchaser in connection herewith, to any person other than a person employed by the Bidder in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

- b. Any document, other than the Contract itself, shall remain the property of the Purchaser.
- c. The Bidder shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in this document except for purpose of performing the Contract.

3D/2D Topographic Survey Specifications

SN	Items	Specifications
1	Topographic Plan	<p>1. Preparation of Topographic Plan</p> <p>This activity will include 3D/2D digitization of all the features (natural and manmade) e.g. existing roads, extension of settlements, change in land use pattern, change in water bodies, etc., and capturing new features e.g. new roads / railways, net settlements etc., The scale of topographic map will be standard.</p> <p>The topographic map consisting of all the features shall be prepared in AutoCAD environment as one drawing and in blocks of suitable length along the alignment as may be decided during the execution of work. There will be separate layer for each feature. While drawing features, the precautions mentioned below needs to be adopted.</p> <ol style="list-style-type: none"> There should not be topographical errors. Consistency should be maintained for symbology and attributes of features. Consistency should be maintained for File naming conventions. There should not be any missing feature. The entire data should have the required positional accuracy All the linear features need to be captured at the center of the perceived casing. All Point features should be captures as point feature at the centroid of the backdrop polygon. Contours (smooth) generated shall be overlaid as a separate layer.

**Report on the Joint visit of Geological Survey of India, Central Water Commission and CSMRS
to the proposed dam sites in East and West Singhbhum district, Jharkhand
between 19.02.2018 and 22.02.2018**

A joint inspection visit of Geological Survey of India and CSMRS with the Central Water Commission has been carried out between 19.02.2018 and 22.02.2018 to evaluate the feasibility of the dam sites in East and West Singhbhum district, Jharkhand. Dr Timir Baran Ghoshal, Director, GSI, S/Shri Ram Jeet Verma, Superintending Engineer, Planning Circle, Faridabad, Vishal Garg, Executive Engineer, P&I Division, Faridabad, S. C. Sachdeva, SDE and Vijay Pant, JE from P&I Sub Division, Jamshedpur, Maneesh Jaishwal, DD, Hydrology and Arun Pratap Singh, AD, CMDD (NW&S) of the Central Water Commission, Shri Mahabir Dixit, Sc 'E' from CSMRS were present during the site visit.

Details of the visit to proposed reservoir sites are enumerated below:

1. Bhagabandi reservoir site across Joy Khal (Lat: 22° 24' 34.6", Long: 86° 23' 53.3")

The dam site is located in the downstream of the junction of Kashibera nala and Gara nala (tributary of Subarnarekha river), at upstream of Bhagabandi village in Dumariya block, East Singhbhum district, Jharkhand as shown in Survey of India toposheet No. 73 J/7. During the visit elevation near to proposed Dam Site at various location were observed and it was concluded that FRL of the Dam may be kept at 150m to avoid submergence of a newly constructed Model school on the right bank of the river and nearby villages. The bed level at site was observed to be ~138m. Considering the average sedimentation rate of 1.3mm per year (Source – Balpahari Dam, project Vol- I, Chap 3, pg 10) and reservoir life 75 years, the MDDL can be fixed at ~141m.

At 150m FRL the storage capacity likely to be meet the water requirement for the command. From the site visit and physical examination of the site, it is observed that sufficient amount of course and fine aggregate for concrete and material for the earthen embankment adjacent to the site is available. Therefore, at this site ~13m high Earthen Dam with concrete Spillway is proposed with FRL at ~150m and MDDL at ~141m. The river bed is steep and it is flowing almost southwest to northeast; both the banks are about 5to 6m high. At the axis, major portion of the river bed and the banks are covered with hard and competent quartzite. It is suggested that the concrete Spillway may be placed on the rock in the river section. It is expected that competent rock will be available at the major portion of

the river section and at shallow depth in both the abutments. The earthen section on both the banks may be placed on the weathered rocks mass. Prima facie, the site is suitable for construction of a concrete cum earth fill dam. However few dykes will be required at different places. The present bridge and the road in the upstream of the proposed site will be submerged and needs to be shifted at appropriate location. The suitable location for shifting of the existing bridge is ~250 m upstream of the existing road bridge near village Baradih and Harabera. Villages which will be benefitted through the scheme are Baradih, Narshingbahal, Manda, Bhagabandi, Jambani, Patasal and Kumrasol.

The engineering details indicated above are tentative. Hence; detail Topographical study (on 1:1000 scale at 0.5m contour interval) and Hydrological study (establishing G&D site at the existing road bridge) by CWC at above site may be taken up to finalize alignment of the dam axis and various other project components. Geological study/mapping shall be carried out by GSI after finalization of the Topographical survey. Detailed material survey is proposed to be carried out by CSMRS.

S/Shri. B. N. Singh, Junior Engineer (Mob 8544131129), Dilip Kumar Singh Junior Engineer and Vyash Kumar Pandit, Junior Engineer, Water Resources Department, Jharkhand were also accompanied the visiting team.



Bhagabandhi Project Site

2. Ramibandh site across Joy Khal (Lat: 22° 24' 22.8", Long: 86° 23' 51.7")

The proposed Ramibandh site approximately 800m upstream of proposed Bhagabandi reservoir site was jointly visited by the above team on 20.02.2018 and elevation by GPS were taken at few locations. It is found that this site will come under the submergence area of the proposed

Bhagabandi Reservoir scheme as shown in Survey of India toposheet No. 73 J/7. As such, this site is techno-economically not feasible for construction of any storage scheme.

S/Shri. B. N. Singh, Junior Engineer (Mob 8544131129), Dilip Kumar Singh Junior Engineer and Vyash Kumar Pandit, Junior Engineer, Water Resources Department, Jharkhand also accompanied the visiting team.

3. Derang Dam site across Derangnala (Lat: 22° 29' 39.8", Long: 86° 32' 23.5")

The proposed Derang site on Derang Nala (tributary of Subarnarekha river), at Derang village in Ghatsila block, East Singhbhum district, Jharkhand as shown in Survey of India toposheet No. 73 J/10 and 73 J/11, was jointly visited by the above team on 20.02.2018 and elevation at few locations were observed. From the preliminary survey, it is observed that catchment area is ~3Sqkm at the proposed site and at present terrain profile is almost flat, it is being used for agriculture purpose. The main course of the nala is hardly 7m wide. At proposed site, for Dam height ~10m, the length of Dam will be more than one km. Furthermore at the site, rocks will be available at considerable depth (>5m) and water availability is also very less. Considering the tentative size of the Dam required, vis a vis water availability the project at present will not be techno-economically feasible for construction of any storage scheme.

However, there is Chandil right bank canal (under construction) upstream of the proposed site which can cater to the need of the near by command area of the Derang reservoir scheme in villages Baghashal, Kasodih, Kisigara, Bangakara and Beribari.

The WRD, Jharkhand may verify the command of the existing/ under construction Chandil right bank canal for providing irrigation to the proposed Derang command.

Shri Ganesh Paul (Mobile No : 7739222512) of Derang village representative also accompanied the team.



Derang Project Site

4. Jagannathpur Reservoir Scheme across Deo Nala (Lat 22° 14' 44.7", Long 85° 39' 17")

The proposed Jagannathpur Reservoir Scheme site on Deo River (tributary of Karo river which further meeting Koel River) near Mongra village in Jagannathpur block, West Singhbhoom district, Jharkhand as shown in Survey of India toposheet No. 73 F/11 and 73 F/12, was jointly visited by the above team on 21.02.2018. The site is located nearly 750m upstream of the existing road bridge over Deo River near Mogra village and around 10m downstream of the existing weir over the Deo river. At this site the river is flowing from south to north and the river bed level is ~386m and elevation at both the banks goes up to ~ 405. Ground elevations at different locations (bridges on the Deo and Mongra nalas) along the road in the upstream of the axis have been checked and found to vary between 402-412m. Hence the FRL of the dam has been kept at ~ 400m to optimize the submergence area and the water requirement. Considering the average sedimentation rate of 1.3mm per year (Source – Balpahari Dam, project Vol- I, Chap 3, pg 10) and reservoir life 75 years, the MDDL can be fixed at ~392m. From the site visit and physical examination of the site it is observed that sufficient amount of course and fine aggregate for concrete and material for the earthen embankment adjacent to the site is available. Therefore, at this site ~14 m high Earthen Dam with concrete Spillway is proposed with FRL at 400 m and MDDL at 392m.

Along the axis one branch channel (channel bed level ~392 m) of the Deo nala is present on the right bank. The river bed is steep and both the banks are about 6 to 8 m high. At the axis rocks are exposed on the river bed as well as at the branch channel. It is expected that the rocks will be available at shallow depth (2-4m) along the proposed axis . It is suggested that the concrete Spillway may be placed on the rock in the main channel. The earthen section on both the banks and the side channel may be placed on the weathered rocks mass. Prima facie, the site is suitable for construction of a concrete cum earth fill dam. However few dykes will be required at different places.

Deopsi, Mongra, Chhotapasi, Balyadih, Mahotisi, Kundiya Sai and Hesopi villages will be benefitted through the scheme.

The engineering details indicated above are tentative. Hence; detail Topographical study (on 1:2000 scale at 1m contour interval) of the command area and reservoir area (upto EL 405 m) and Hydrological study (G&D site can be established at existing road bridge near Mongra Village) by CWC at above site may be taken up to finalize alignment of the dam axis and various other components. However, the dam body area may be surveyed on 1:1000 scale with 0.5 m contour interval. Geological study/mapping shall be carried out by GSI after finalization of the Topographical survey. Detailed construction material survey and soil properties analysis is proposed to be carried out by CSMRS.

S/Shri. Neelam Sanjeev Minz, AE/SDO (Mob 9693444514), Govind Ram, Junior Engineer (Mob 9570128986), Ashok Das, Junior Engineer (Mob 790384460), Shakti Ravidas, Junior Engineer (Mob 9608385803) and Binay Kumar, Junior Engineer (Mob 7739503133), Water Resources Department, Jharkhand, also were also present during the above visit.



Existing weir across Deo River at the proposed dam site

5. Chatra Kocha Reservoir Scheme (Dam site at Chatra Nala Lat 22° 40' 02.8", Long 86° 37' 32.23")

The proposed Chatra Reservoir Scheme site on Chatra Nala (tributary of Singduba nala which further meets Kharsoti Nadi a tributary of Subarnarekha River) near Mahatam village in Ghatshila block, East Singhbhum district, Jharkhand as shown in Survey of India toposheet No. 73 J/10, was jointly visited by the above team on 22.02.2018. Presently villagers have connected a pipe line i.e. PVC pipe of size 5" diameter, taking off from hill intake, actually a very small stream originating from spring in the upstream, at 22° 40' 05.7"N, 86° 37' 35.6"E of ~186m elevation, this bolted pipeline is carrying water to the village for drinking as well as irrigation purpose. At this location, the river is flowing through a gorge section and quartzites/phyllitic quartzite are exposed in the river bed and both the banks.

The team combed the nearby area, observed the elevations at different locations and found three options given below for consideration to construct the dam to cater to the irrigation requirement:

OPTION-1:

The dam is proposed at 22° 40' 02.8"N, 86° 37' 32.23"E of ~186m river bed elevation. At this location the proposed FRL for concrete dam (of ~40m length) is ~210m and MDDL is ~188m, which, will cater to the irrigation & drinking water requirement of the area. Reservoir area is likely to be in a narrow valley where average width of the nala is 20-25m providing less storage.

OPTION-2:

About 800m upstream of the site-1, near the border of Jharkhand and West Bengal, again there is a suitable site at 22° 40.219'0"N, 86° 37.619'E of ~208m river bed elevation. At this location Chatra nala is flat having width 150-200m which will provide good storage. The FRL for earthen dam (of 200m length) with concrete spillway is proposed to be ~220m and MDDL is ~210m. This will cater to the irrigation and drinking water requirement and may generate some power also by making a small power house (with 30m head approximately) at 800m downstream. However, reservoir storage will be

largely in West Bengal which, may require addressing the inter-state issue, although this option appears to be more beneficial.

OPTION -3:

At ~ 500m downstream of the gorge section, there is another suitable site at **22° 39.92”N, 86° 37.39’E** of ~173m bed level of nala.. The FRL for earthen dam (of ~850m length) with concrete spill way is proposed to be ~185m and MDDL is ~175m. This will cater to the irrigation & drinking water requirement. However, submergence of some cultivated land is to be looked after. At this location rocks are expected to be available at shallow depth. From the site visit and physical examination of the site it is observed that sufficient amount of course and fine aggregate for concrete and material for the earthen embankment adjacent to the site is available. Mahatam, Katsol, Asna, Paharpur and Luyamoriya villages will be benefitted through the scheme.

The engineering details indicated above are tentative. Hence; detail Topographical study (on 1:2000 scale at 1m contour interval in hilly terrain for option 1&2 and on 1:1000 scale at 0.5 contour interval in semi hilly terrain) of the command area and reservoir area (upto EL ~215 for option 1 and EL 222 m for option 2 and upto EL 187m for option 3) and Hydrological study by CWC at above site may be taken up to finalize alignment of the dam axis and various other components. However, the dam body area may be surveyed on 1:1000 scale with 0.5 m contour interval. Geological study/mapping shall be carried out by GSI after finalization of the Topographical survey. Detailed construction material survey and soil properties analysis is proposed to be carried out by CSMRS.

Shri Daleep Kumar Sinha, Junior Engineer, (Mob 9122481228) from WRD, Jharkhand also accompanied the team.



Chatra Reservoir Site Option-1



Chatra Reservoir Site Option-2



Chatra Reservoir Site Option-3

6. Kharswati Reservoir Scheme (Dam site at Kharsoti Nala Lat $22^{\circ} 41' 00''$, Long $86^{\circ} 35' 47.5''$)

The proposed Kharswati Reservoir Scheme site on Kharsoti Nadi (tributary of Subarnarekha River) near village Jambad in Ghatshila block, East Singhbhum district, Jharkhand as shown in Survey of India toposheet No. 73 J/10, was jointly visited by the above team on 22.02.2018. The dam was proposed at $22^{\circ} 41' 00''\text{N}$, $86^{\circ} 35' 47.5''\text{E}$. of $\sim 161\text{m}$ river bed elevation. At this location the proposed FRL for earthen dam (of 150m length) with concrete spillway is $\sim 175\text{m}$ and MDDL is 163m , which, will cater to the irrigation requirement of the area. The river bed is steep and it is flowing from north to south in a sinuous course; both the banks are about 3 to 5m high. At the axis, phyllitic quartzite/phyllite are exposed on the river bed, where as rock will be available at shallow depth on both the abutments.

Approximately 2 km upstream of the proposed dam site, Amlasol and Kankrajhor villages of West Bengal state are located. The elevation of bed level of the small nala meeting with main

Kharswati nala is ~177m near Amlasol village and ~178m of the main nala near Kankrajhor village. The reservoir storage area will lie in both Jharkhand and West Bengal states. However, the submergence will be mostly remains in West Bengal. After detailed topographical survey the dam site and the FRL of the dam will be finalized to restrict the submergence in Jharkhand only. Jambad, Kanimahuli, Burudih, Kendrapasi, Batam and Chakam villages in Jharkhand will be benefitted through the scheme. From the site visit and physical examination of the site it is observed that sufficient amount of course and fine aggregate for concrete and material for the earthen embankment adjacent to the site is available.

The engineering details indicated above are tentative. Hence; detail Topographical study (on 1:2000 scale at 1m contour interval) of the command area and reservoir area (upto EL 180) and Hydrological study by CWC at above site may be taken up to finalize alignment of the dam axis and various other components. However, the dam body area may be surveyed on 1:1000 scale with 0.5 m contour interval Geological study/mapping shall be carried out by GSI after finalization of the Topographical survey. Detailed construction material survey and soil properties analysis is proposed to be carried out by CSMRS.

Shri Daleep Kumar Sinha, Junior Engineer, (Mob 9122481228) from WRD, Jharkhand also accompanied the team.



Kharswati Reservoir Site

7. Bamni Reservoir Scheme (Dam site at Bamni Nala Lat 22°57' 46.9", Long 86°09' 37.5")

The proposed Bamni Reservoir Scheme site on Bamni Nala (tributary of Subarnarekha River) near village Rupadih in Chandil block, East Singhbhoom district, Jharkhand as shown in Survey of India toposheet No. 73 J/1, was jointly visited by the above team on 22.02.2018. The dam is proposed at 22° 57' 46.9"N, 86° 09' 37.5"E where the river bed elevation is ~207m. At this location the proposed FRL for earthen dam (of 700m length) with concrete spillway is ~215m and MDDL ~208m; the stored water will be sufficient to cater the irrigation requirement of the area. The river bed is steep and it is flowing from west to east in a sinuous course; both the banks are about 3 to 5m high. At the axis, phyllitic quartzite/quartzite are exposed on the river bed, where as rock will be available at shallow depth on both the banks. From the site visit and physical examination of the site it is observed that sufficient amount of coarse and fine aggregate for concrete and material for the earthen embankment adjacent to the site is available. Bamni, Rupadih, Kodamdih, Mulldih, Hakasara, Nimdih and Dungridih villages will be benefitted through this scheme.

The engineering details indicated above are tentative. Hence; detail Topographical study (on 1:2000 scale at 1 m contour interval) of the command area and reservoir area (upto EL 215) and Hydrological study (G&D site can be established at existing road bridge near Kharidih and Tanatola Village) by CWC at above site may be taken up to finalize alignment of the dam axis and various other components. However, the dam body area may be surveyed on 1:1000 scale with 0.5 m contour interval Geological study/mapping shall be carried out by GSI after finalization of the Topographical survey. Detailed construction material survey and soil properties analysis is proposed to be carried out by CSMRS.

Shri P.P. Shukla, Junior Engineer (Mob 7007842614) from WRD, Jharkhand accompanied the team.



Bamni Reservoir Site

(Timir Baran Ghoshal)
Director, GSI, Kolkata

(Ram Jeet Verma)
Superintending Engineer
Planning Circle, CWC,
Faridabad

(Vishal Garg)
Executive Engineer
P&I Division, CWC, Faridabad

(Manish Jaishwal)
Deputy Director
DSR, CWC, New Delhi

(Arun Pratap Singh)
Assistant Director
CMDD, CWC, New Delhi

(Mahabir Dixit)
Sc E
CSMRS, New Delhi

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ANNEXURE-III

PART E FINANCIAL BID

E1. Special instructions to the Bidder(s) for Filling up rates:

- a. All prices should be in Indian Rupee.
- b. The bidder must quote total output price inclusive of all taxes etc. excluding GST.
- b. No additional charges on any account shall be payable by the purchaser on account of the duties, taxes, transportation, packing, boarding, lodging, insurance etc.
- c. Care should be taken to write the rates in figures as well as in words and the amounts in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of discrepancy between figures and words, ***the amount mentioned in words shall prevail. In case of discrepancy in Totaling of unit rates, the unit rates shall prevail.***
- d. Prices for each item shall be furnished in the **proper format only** as given below and no subheadings shall be allowed. Any correction, overwriting etc. should be countersigned.
- e. No deviation in the payment terms mentioned above is permissible in the tender. If a bidder does not explicitly agree with the payment terms mentioned above, the tender shall be rejected as non-responsive.
- f. The bidder should quote for all the items mentioned in the Schedule of Quantity. The Bidder(s) not quoting for all the items are liable to be rejected.
- g. The quoted rates shall remain valid for the complete operation time of the work.
- h. Abnormally High or Abnormally low rates shall be summarily rejected.

SCHEDULE OF QUANTITIES

NAME OF WORK: Topographical Survey for Irrigation Schemes in East Singhbhum & West Singhbhum district of Jharkhand.

Sl. No.	Description of Work	Qty.	Unit	Rate (Rs.)	Amount (Rs.)	
					Figure	Words
1	Double leveling survey work for establishment of bench marks					
a)	Double leveling survey work by close traverse	90	Km			
2	River Survey					
a)	X-section survey of River & major drains	150	Nos			
b)	L-Section of River & major drains	65	Km			
c)	Establishing (T-Type)TBM at 1 km interval along L-section	65	Nos			
3	Reservoir Survey	19	Sq.km			
4	Contour survey for Command area/ Canal alignment	11.5	Sq.km			
Total inclusive all Taxes, levies etc. exclusive GST Rs.						

Amount in words (Rupees)

Note:

1. The quantities mentioned against each item are tentative and may vary significantly. The Purchaser is at liberty to change the quantities during the course of actual survey. Only actual quantities of work done will form basis of the payments to be made.
2. The quoted price shall be written both in figures and words and should be inclusive of all services and taxes except GST which shall be reimbursed on production of GST paid receipts.
3. All the survey work should be connected to GTS bench marks.
4. The Bill of quantities is to be read and executed in conjunction with para B.2 of Scope of work on Page 15, Visit report given in Annexure II & Annexure III and the direction of Engineer-in-Charge.
5. The quantities indicated are approximate only and are liable to change. If the quantities vary by more 30% then the rates will be finalised on the basis of actual analysis for respective item.

Signature of Bidder

Name and Stamp

DECLARATION BY THE BIDDER

1. I/we confirm that the general specifications and special conditions appended in the tender documents have been fully examined and full cognizance taken thereof in arriving at the total amount and tendered sums contained therein.
2. I hereby accept all the terms and conditions of the tender.
3. It is certified that we have not been black listed by any of the departments registration of which is valid for this work.
4. I/we warrant that the output supplied by us shall be in full conformity of the specification/output required by this tender. This warranty shall remain enforced / valid during inspection/acceptance of the output and shall expire six months after the final acceptance of the output by Purchaser.
5. I/we also warrant that I/we shall handover all the data/records and shall maintain total confidentiality of this work.

SIGNATURE OF BIDDER

(Office Seal)

1. Authorized Signatory
2. Name of the Bidder
3. Address
3. Phone No.
4. Fax No.
5. E-mail Address
6. Web site address if any

ANNEXURE-IV**LIST OF ENGINEERS / TECHNICANS TO BE DEPLOYED SPECIFICALLY FOR THE WORK**

Sl. No.	Name	Years with the firm	Designation with the firm	Qualification	Years of Experience & Nature of experience	Contact no. & e-mail Id

ANNEXURE-V**LIST OF EQUIPMENTS/ INSTRUMENTS/HARDWARE/SOFTWARE ETC
TO BE DEPLOYED SPECIFICALLY FOR THE WORK**

Sl. No.	Item	Year of procurement	Technical Specifications	Qty	Whether meeting the present requirement	Remarks

FORM OF PERFORMANCE SECURITY / BANK GUARANTEE BOND

In consideration of the President of India (hereinafter called the government) having agreed under the terms and conditions of the proposed Agreement made between Executive Engineer,, CWC, and [hereinafter called the said Bidder(s)*] for the *Topographical Survey for Irrigation Schemes in Jharkhand* (hereinafter called the said agreement) having agreed to production of a irrevocable Bank Guarantee for Rs.(Rupees only) as a performance guarantee from the Bidder(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We (Indicate the name of the Bank) (herein after referred to as the Bank) hereby undertake to pay to the government on amount not exceeding Rs. (Rupees Only) on demand by the Government.

2. We (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Bidder(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees only).

3. We, the said Bank further undertake to pay to the Govt. any money so demanded notwithstanding any dispute or disputes raised by the Bidder(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this Bond shall be valid discharge of our liability for payment there under and the Bidder(s) shall have no claim against us for making such payment.

4. We, (indicate the name of Bank) further agree that the guarantee herein contained shall remain in full force and a fact during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Govt. under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till Executive Engineer,, CWC, on behalf of the Govt. certified that the terms and conditions of the said Agreement have been fully and properly carried out by the said Bidder(s) and accordingly discharges this guarantee.

5. We, (indicate the name of Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary only of the terms and conditions of the said

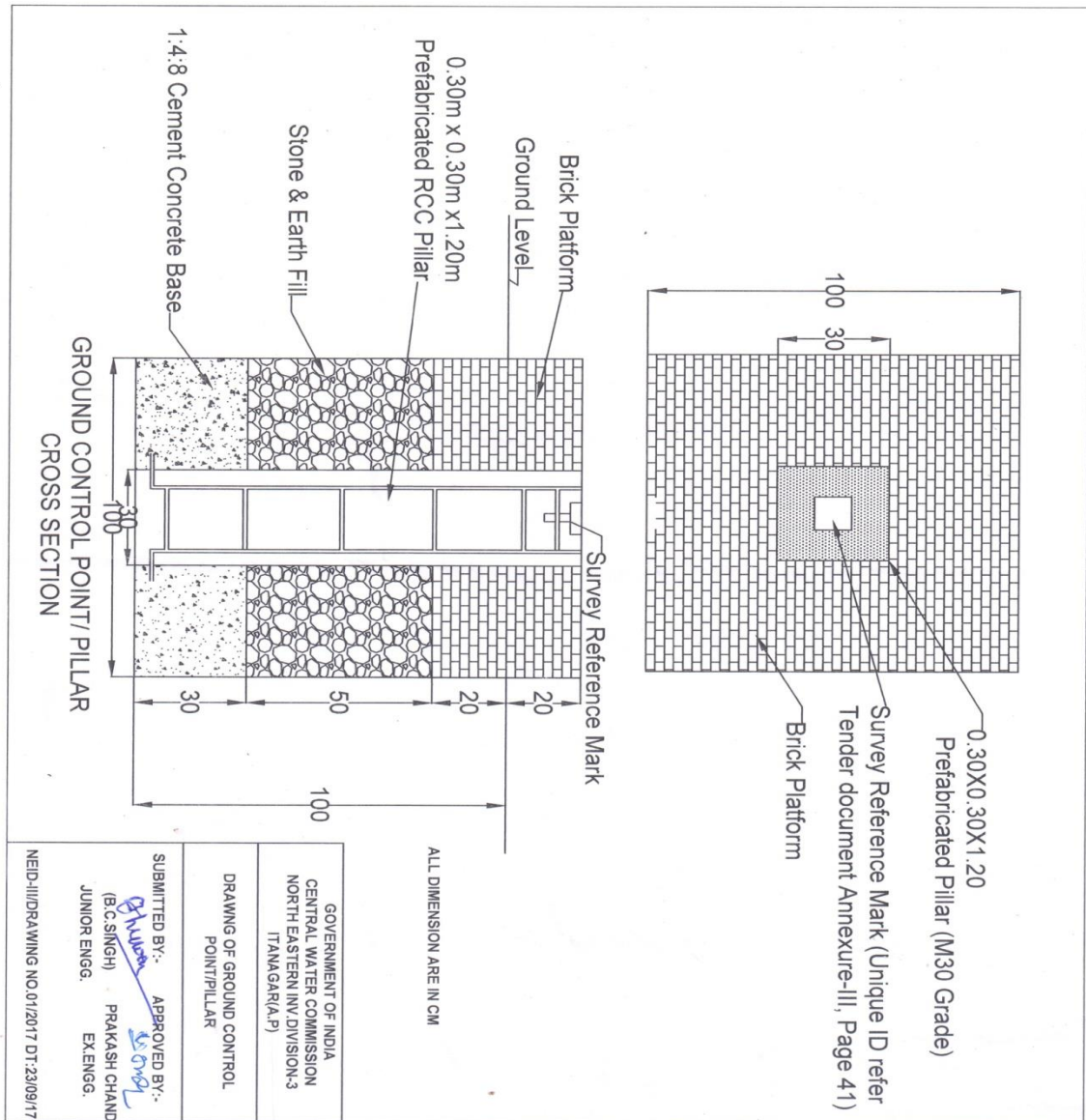
Agreement or to extend time of performance by the said Bidder(s) from time to time or postpone for any time or from time to time any of the powers exercisable by the Govt. against the said Bidder(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Bidder(s) or for any forbearance, act of omission on the part of the Govt. or any indulgence by the Govt. to the said Bidder(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the Constitution of the Bank or the Bidder(s).

7. We, _____ (indicate the name of Bank) lastly Undertake not to revoke this guarantee except with the previous consent of the Govt. in writing.

8. This guarantee shall be valid up to _____ unless extended on demand by Govt. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. _____ (Rupees _____) only and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged. Dated the _____ day of _____ for _____ (Indicating the name of Bank).

DRAWING OF GROUND CONTROL POINT

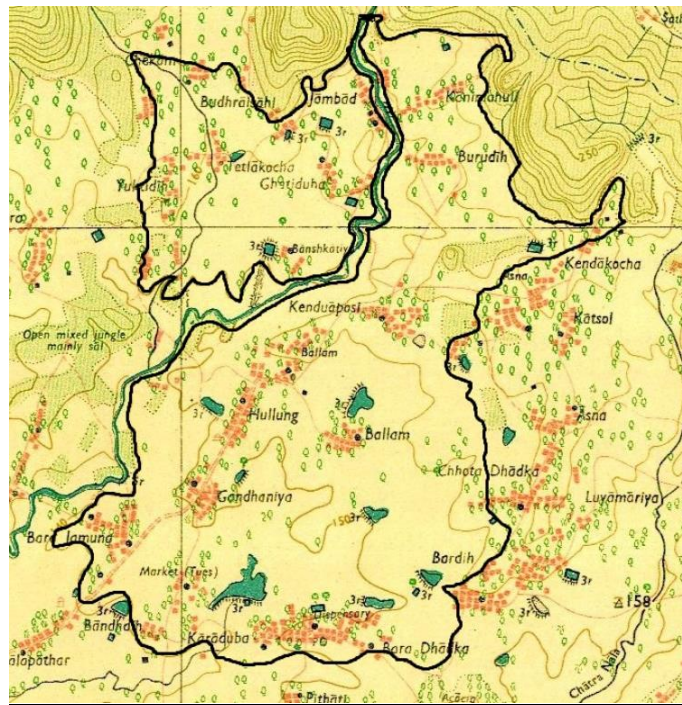


BAMNI

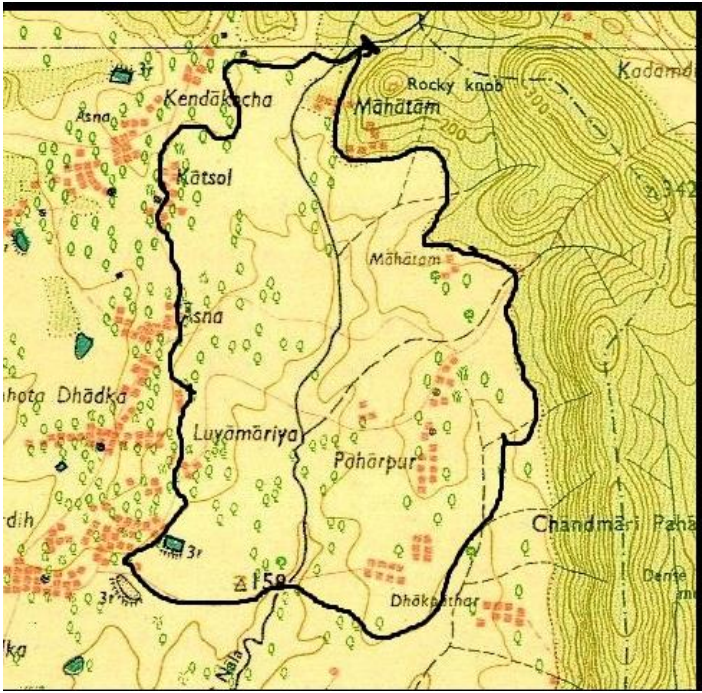


RAMIBANDH
(Merged WITH Bhaghabandi)

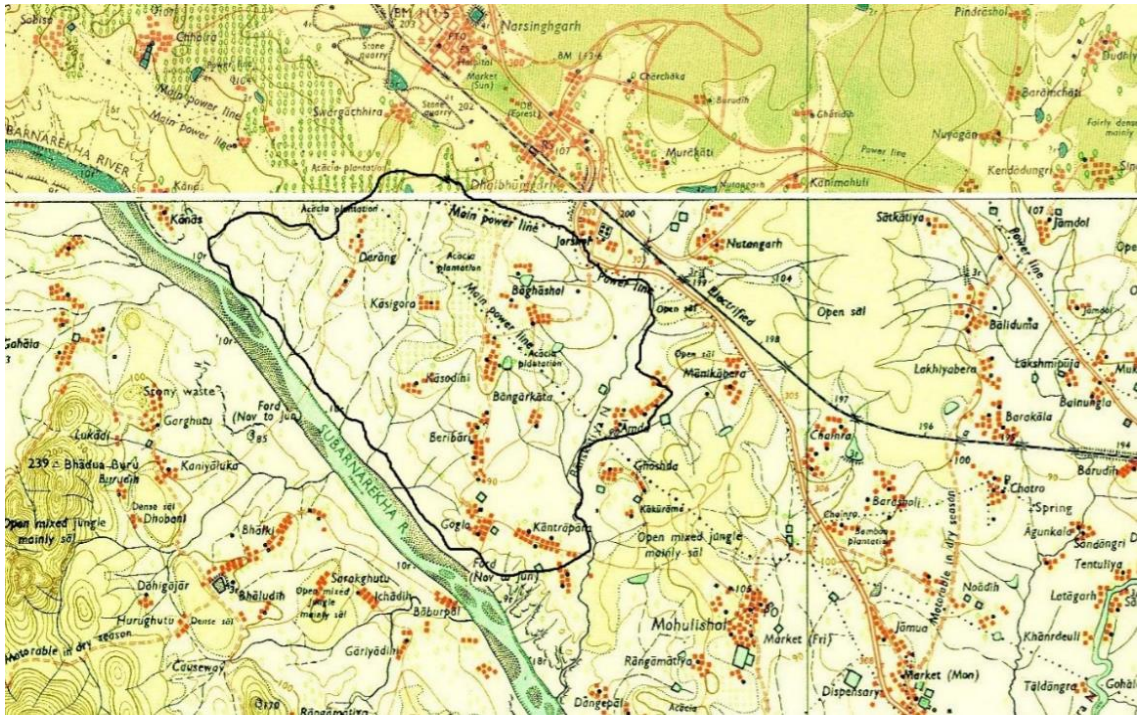
KHARSWATI



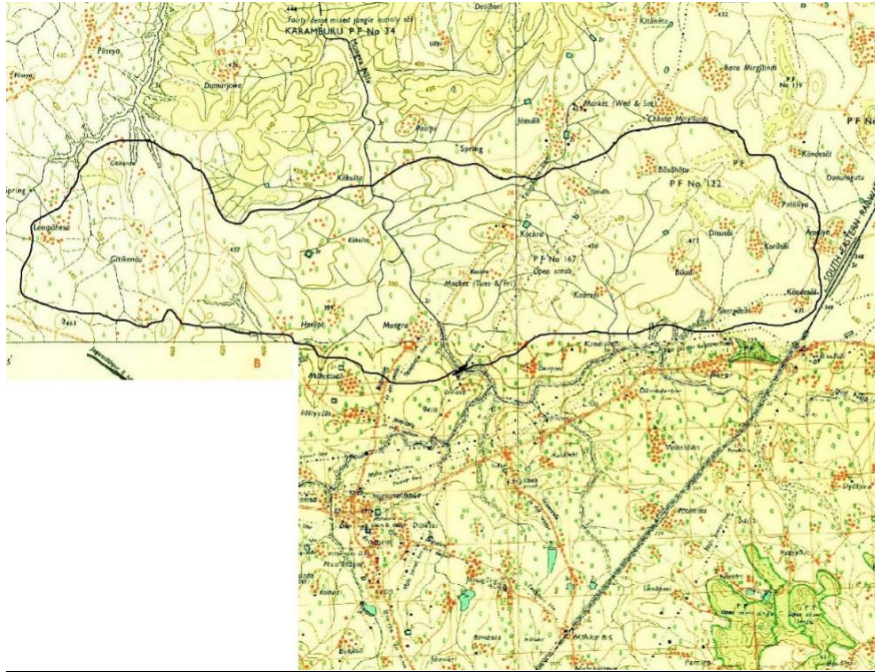
CHHATRA KOCHHA



DERANG



JAGANNATHPUR



Details of sites

Sl No.	Name of Site	Lat/Long at Axis point	River/Stream	Approx CCA (Sq.km)	Structure proposed
1.	Bamni (Block Nimdih, District East Singhbhum)	22°57'46.9"N 86°09'37.5"E	Bamni river	26	Check Dam
2.	Bhagabandi (Block Dumariya, District East Singhbhum)	22°24'34"N 86°23'53"E	JaiNala (Jou Khal)	33	Check Dam
3.	Ramibandh (Block Dumariya, District East Singhbhum)	22°24'22.8"N 86°23'51.7"E	JaiNala (Jou Khal)	5	Check Dam
4.	Kharswati (Block Ghatshila, District East Singhbhum)	22°41'0.10"N 86°35'47.5"E	Kharswati stream	38	Check Dam
5.	Chhatra Kochha (Block Ghatshila, District East Singhbhum)	22°40'5.7"N 86°37'35.6"E	Chhatra	2	Check Dam
6.	Derang (Block Musabani, District East Singhbhum)	22°29'39.8"N 86°32'23.5"E	Derang Nala	89	Check Dam
7.	Jagannathpur (Block Jagannathpur District West Singhbhum)	22°14'44.7"N 85°39'17.5"E	Deon Nala	16	Check Dam

Estimated quantities per site

Sl. No.	Particulars of works	Qty							Total Quantity	Unit
	name of site	Bamni	Bhagabandi	Ramibandh	Kharsoti	Chhatra	Derang	Jagannathpur		
1	Double Levelling survey work									
a)	Double Levelling survey work by close traverse	20	23	0	25	6	0	16	90	Km
2	River Survey									
a)	X-Section survey of River & major drains	30	30	0	30	30	0	30	150	Nos
b)	L-Section of river and major drains	15	15	0	15	5	0	15	65	Km
c)	Establishing (T-Type) TBM at 1 km interval along L-Section	15	15	0	15	5	0	15	65	Nos
3	Reservoir Survey	4	6	0	6	0	0	3	19	Sq.km
4	Contour survey for Command area/Canal alignment	26	33	0	38	2	0	16	11.5	Sq.km