

# **OFFICE OF THE SUPERINTENDING ENGINEER**

**Damodar Irrigation Circle,  
Irrigation & Waterways Directorate,  
Government of West Bengal,  
Kanainatsal, Purba Bardhaman**

**Notice Inviting “EXPRESSION OF INTEREST” from reputed  
construction firm to execute the following work in EPC mode.**

**Name of the work :-**

**“ Rehabilitation of the distressed Durgapur Barrage over river Damodar  
in the district of Bankura, West Bengal including assessment of piping by  
geotechnical investigation sealing of leakage by suitable concreting /  
grouting (underwater if required ) and strengthening of downstream  
floor by concreting, resetting of apron and ancillary repairing work.”**

**(EOI No. DIC/IW/C-EOI/2/17-18)**

**Superintending Engineer  
Damodor Irrigation Circle, Irrigation&Waterways Directorate-WB**

**OFFICE OF THE SUPERINTENDING ENGINEER**

**Damodar Irrigation Circle,  
Irrigation & Waterways Directorate,  
Government of West Bengal,  
Kanainatsal, Purba Bardhaman  
Phone : 0342-2645669, Fax : 0342-25440165,  
Email : sediciwdwb@gmail.com**

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**Memo No. : 2412**

**Date :15/09/2017**

**SECTION-1: NOTICE INVITING e- E.O.I.**

**e-EOI No. DIC/IW/C-EOI/2/17-18**

- 1) The superintending engineer, Damodor Irrigation Circle, Kanaiatsal (Irrigation & waterways Directorate-West Bengal), hereby, invites expression of interest proposals from experienced and reputed contractor to provide Methodology, specification, quantification and subsequent construction Services for the following work :-
- 2) Name of work: - Rehabilitation of the distressed Durgapur Barrage over river Damodar in the district of Bankura, West Bengal
- 3) **Project background** : - Durgapur barrage is an integral part of the multipurpose Damodar valley project which was constructed almost 60 years back . The barrage is 692 meter in length having 34 no's of equal bays including 10 no's under sluices, 5 no's each in each side .It's design flood discharge 15,574 cum. There are two canals off taking from both sides of the barrage to cater the Need of irrigation to 3.93 lakh hectare of agricultural area in 4 (four) district . With the passage of time some cracks have been developed in the downstream impervious floor and in the divide wall. In addition to that undermining has started at some stretches at the end of the downstream impervious floor. As a result some block protection work have also been dislodged. Sensing the urgency to restore the structural stability the design wing of Irrigation and Waterways Department , in consultation with Central Water Commission , Government of India , has conducted some scientific studies including subsoil investigation and prepare a plan of restoration and rehabilitation of the barrage structure .A copy of the drawing of such proposed rehabilitation work is enclosed.  
Since strengthening of distressed portion, sealing of leakages and resetting of dislodged apron are required to be done underwater in the majority of the proposed work, adopting a suitable construction methodology is of immense importance . Such work is to be carried out keeping the water level at upstream near to its pond level to ensure irrigation, industrial and municipal supplies.

The project comprises of the followings but not limited to :-

- a) Soil test to evaluate the present permeability, seepage pattern, exit gradient.
- b) Soil stabilization, if required keeping the seepage line same.
- c) Repairing of cracks on the dividers by grouting or any other method.

d) Grouting of all cracks in existing impervious floor by epoxy/cement mortar as per specification of specialized agency.

e) Grouting of all gaps in existing block protection to act as impervious floor.

f) To overlay concrete layer on existing impervious floor in downstream side and on existing protection block with a view to extend the length of the impervious floor.

g) Sheet piling to required depth as per design (based on conceptual drawing by central design office, Irrigation & Waterways Department- West Bengal) to prevent undermining / piping.

h) Laying new protection block over inverted filter (with geosynthetic membrane) depth and width as per design.

i) End protection by boulder pitching as per design.

j) Water head in upstream side to be maintained throughout the year to facilitate supply of water in neighboring area.

**K) It also includes all allied works like temporary sealing of leakage from sluice gates.**

- 6) **Period of execution** : 24 (twenty four) calendar months including monsoon.
- 7) **EOI documents** : The EOI comprise of Notice inviting "Expression of Interest", project Background broad scope of work, time schedule, instruction to Bidders and drawing. All the EOI documents can be downloaded from the departmental web portal i.e [www.wbiwd.gov.in](http://www.wbiwd.gov.in)
- 8) **Receipt of proposal** : All sealed proposals should be submitted to the office of superintending Engineer Damodar **Irrigation Circle, Kanainatshal, Burdwanor** to the office of the **Superintending engineer, IPC – I, 3<sup>rd</sup> Floor, Jalsampad Bhawan, Saltlake, Kolkata-700091** within **15 (Fifteen) days** of this notification.
- 9) For any queries and clarification, interested contenders may visit the site and may contact **S.E – DIC (Irrigation & Waterways Directorate-WB** at the address mentioned at para below.
- 10) Address for Communication: **Superintending engineer, DIC-(Irrigation & waterway Directorate)-WB Damoodor Irrigation Circle, Kanainatshal, Bardhaman.**
- 11) Interested bidders may consult the departmental web portal mentioned above regularly to see Corrigenda/Addenda which may be issued by Notice Inviting Authority from time to time prior to submission of the proposal as given in para 8.
- 12) Accepting authority reserves the right to accept/reject any or all proposals without assigning any reason thereof.

Sd/-  
Superintending Engineer  
DIC-I&WD-WB

**SECTION 2:  
INSTRUCTION TO BIDDER**

**A. GENERAL**

**1 Scope of Bid**

**1.1** Durgapur barrage is an integral part of the multipurpose Damodar valley project which was constructed almost 60 years back . The barrage is 692 meter in length having 34 no's of equal bays which includes 10 no's under sluices, 5 no's each in each side. It's design flood discharge 15,574Cum. There are two canals off taking from both sides of the barrage to cater the need of irrigation to 3.93 lakh hectares of agricultural area in 4 (four) district. With the passage of time some cracks have been developed in the downstream impervious floor and in the divide wall. In addition to that undermining has started at some stretches at the end of the downstream impervious floor. As a result some block protection works have also been dislodged. Sensing the urgency to restore the structural stability the design wing of Irrigation and Waterways Department, in consultation with Central Water Commission , Government of India , has conducted some scientific studies including subsoil investigation and prepare a plan of restoration and rehabilitation of the barrage structure. A copy of the drawing of such proposed rehabilitation work is enclosed.

Since strengthening of distressed portion, sealing of leakages and resetting of dislodged apron are required to be done underwater in the majority of the proposed work, adopting a suitable construction methodology is of immense importance. Such works are to be carried out keeping the water level at upstream near to its pond level to ensure irrigation, industrial and municipal supplies.

The interested construction companies will conduct site visit to have a real feel of actual site conditions followed by discussion with departmental engineers. After that the companies will suggest a suitable methodology of construction which inter alia may include specification of any special item which is not available in the departmental S.O.R as well as S.O.R. of P.W.D. They may also suggest any modification in the construction drawing supplied along with EOI document. Based on the inputs, suggestion received from bidders through EOI, the RFP (Request for Proposal) will be finalized.

The proposed project has following items to be executed for repair/renovation.

Sl. No.	Name of Structures	Description of work	Tentative quantity
1.	Existing Sluice gates	Leakages of all sluice gates are to be sealed temporarily to facilitate dewatering.	34 nos of varying size 9.70m,widthx 4.8m-5.70m deep
2.	Glacis in downstream side	Leakages if any to be checked, quantified and to be grouted with cement mortar/epoxy mortar(1.50m Thick existing RCC raft in slope)	15.00mx692.00m With slope.
3.	Friction blocks	Re fixing of all friction blocks in all 34 gates.	7 nos in each gate, 34 such gates.

4.	Checking and assessment of sheet pile condition with existing flow pattern	7.50m deep sheet pile at the <b>starting of existing</b> impervious floor and 9.50m deep sheet pile at the <b>end of existing</b> impervious floor	2 rows of sheet pile of 7.50m deep & 9.50m deep respectively for entire length of 692.00m
5.	Ascertaining reason of leakage in downstream protection block including reason of boiling and sand blowing	Existing stream line and proposed stream line after necessary preventive measures to be intimated.	
6.	Overlaying concrete in downstream side over existing impervious layer and protection block	400mm thick RCC as per drawing, over laying entire length of 692.00m including anchorage with existing raft of 1.50m thick to form a monolithic slab. Grouting of gaps of protection block by epoxy mortar/cement mortar as per specification.	692.00mx400mm, thick RCC slab, as shown in drg, to with stand-up trust.
7.	Laying graded ballast under new protection block	a) 1.20mx1.20mx1.20m concrete blocks placed at 100mm gaps in all sides laid over 1.20m graded ballast layer throughout length of barrage. b) 1.50mx1.50mx1.20m concrete block placed at 100mm gaps in all sides laid over 1.20m graded ballast layer throughout length of barrage.	i) 8.54mx692.00m approx. as shown in drawing. ii) 14.55mx 692.00m approx. as shown in drawing.
8	Sheet piling	New sheet piling as per design to have controlled stream line in location based on design calculation (by executor) in line with conceptual design by department.	
10	Consolidation of downstream soil	If suggested by bidder to bevetted by educational institutionwith approval of CWC	
11	Ascertaining reason of leakage at all leakage point including reason of boiling at points	By bidder with design calculation to be vetted by educational institution of national level.	

12	1800mm thick loose boulder apron	At the farthest end of launching apron	Approx. width 28.00m and width throughout length of barrage say 692.00m
13	Repairing cracks in all dividers.	Transverse cracks observed in almost all separators.	Gate 13 to Gate 34 major cracks observed. Rectification measures to be indicated with methodology of repair.
14	Under water Concreting	Methodology of underwater concreting to be indicated at downstream side where water head is constant all time 300mm to 500mm	Local drawdown methodology to be indicated with design calculation.
15	Filling of gaps of concrete blocks	Existing concrete blocks in launching apron to be filled by epoxy mortar/cement mortar to have impervious floor over the existing apron	Concrete blocks of size 1.20mx1.20mx1.20m and 15.0mx1.50mx1.20m deep concrete blocks with 100mm gap are placed throughout the entire length of 692.00m
16	Conceptual drawing with initial design	To be provided by CDO	

### 3. Qualification of the Bidder

Only the renowned construction firms fulfilling the following requirement may apply:-

- (a) Achieved a minimum average annual financial turnover amount Rs. **50crs** in last 5 financial years;

(b) Satisfactorily completed in the last 7 financial years, as a prime contractor or as joint venture, at least one similar work of value not less than amount of **Rs. 65.00 coresin** government / public sector at national level, having the following items in the scope of work

i)	Concrete in Jetty, Berth, Barrage, Bridge may be in under water.	10,000 cum
ii)	Rotary Drilling Works	2000 Rmt
iii)	Under water grouting with rehabilitation Works	500 MT
iv)	Sheet Piling	1500 Rmt

(c) Must demonstrate ownership of modern sheet pile driving equipment such as vibro-hammer, rotary drilling rig, grouting pump or other similar equipment. Copy of invoice duly attested by a chartered accountant, in support of ownership, must be submitted along with the bid.

#### 4. Documents to be submitted

(a) Completion certificates duly signed by client stating there in the broad scope of work , tendered amount, separately for the requirement as stated under 3 (b) .

(b) The firm shall submit audited balance sheet, profit & loss account and statement of turnover duly certified by the Chartered Accountant for the last 5 (Five) years ending on 31.03.2017.

5. Tender Inviting Authority reserves the right to consider acceptance of qualifying criteria of the proposal having minor deficiency from the prescribed limits if the situations so demands.

6 No bid fees or security is required during submission of EOI by the intending firm however the bidder will prepare their EOI at their own cost.

#### 7. Schedule of bidding

(a) Last date of submission of EOI and Submission of proposal consisting of methodology and specification:- 16.10.2017

(b) Meeting with departmental officers:-11.10.2017

(c) Site Visit:- Any convenient date before 11.10.2017.

Sd/-

Superintending Engineer  
DIC-I&WD-WB