Government of West Bengal
Irrigation & Waterways Directorate
Office of the Executive Engineer-I
Damodar Canal Division, Court Compound, Purba Bardhaman, Pin- 713101
PHONE NO. – 0342-2662496, FAX NO. -0342-2550166 , Email:-eedcdiwdwb@gmail.com

Notice Inviting Expression of Interest (EoI) No.: 04(EoI)/ EE-I/D.C.D / 2025-26

Memo No. 90 Date – **09/01/2026**

Sealed EoI in prescribed proforma are hereby invited by the **Executive Engineer-I, Damodar Canal Division, Court Compound, Purba Bardhaman** on behalf of the Governor of West Bengal forthe "LIST OF WORKS" given in the Last page from Bonafied Agencies / Organization, Contractors & General order suppliers having credential (from the Govt. Of West Bengal/ Central Govt / PSU /Other State Govt. Departments / Engineering Wings of GoI / Ircon / RVNL / NHPC, Autonomous body & other similar organizations) of execution of similar nature of work during the current year and the last 5 years from the date of publishing of EoI.

Eligibility criteria for participation in EoI: -

i) The prospective bidders shall have satisfactorily completed the works (completion certificate with Schedule and work order to be uploaded in support of credential) as a prime agency in any year during the last 3 (three) years prior to the date of issue of this Notice at least one single work order of similar nature under the authority of State/ Central Govt., State/Central Govt. undertaking/ Statutory Bodies constituted under the statute of the Central/ State Government.

ii) The intending bidders having valid licenses, PTPC& ITR, PAN, GST registration etc.

iii) The lowest bidder should get well acquainted with his assignment in details discussions with the **Executive Engineer-I, Damodar Canal Division, Court Compound, Purba Bardhaman** or his authorized representative to avoid submission of any incomplete details, which is liable to be rejected. The Engineer-in-charge reserves the right in this regard to reject any/all incomplete (in terms of requirement of the department) without assigning any reason thereof. The lowest bidder is liable to rectify any error/omission detected by the department at his own cost. No claim what so ever in this regard from the bidders will be entertained. The documents to be supplied both in hard. The decision of the Engineer-in-charge is final and binding.

Specifications

A. Traversing with Continuously Operating Reference Stations (CORS) of Survey of India (SOI)

1. Main specification of topography survey

To establish a high-accuracy horizontal control network by performing GNSS-supported traversing using SOI CORS as the reference framework, ensuring consistency with National Geodetic Datum (WGS-84) and suitable for engineering, mapping, and hydrographic applications.

2. Reference System

- CORS Network: Survey of India (SOI) CORS

- Datum: WGS-84 / ITRF (International Terrestrial Reference Frame)
- Projection: UTM / 45 N / Project-specific coordinate system
- Vertical Reference: Ellipsoidal height from GNSS

3. Equipment Specification

3.1 GNSS Equipment

- Dual-frequency / Multi-frequency GNSS receivers (L1/L2/L5)
- Multi-constellation support (GPS, GLONASS, Galileo, BeiDou)
- Compatible with SOI CORS NTRIP service
- RTK / Network RTK capable

3.2 Accessories

- Tripods, Tribrachs with optical / laser plummet
- Field controller with survey software
- Calibrated measuring tape, level staff

4. Survey Methodology

4.1 Establishment of Primary Control Points

- GNSS observations using SOI CORS Network RTK
- Minimum 2 independent fixes at each control point

Observation duration:

- RTK: minimum 3–5 minutes per point
- Static (if required): minimum 30–60 minutes
- Horizontal accuracy: ≤ ±20 mm
- Vertical accuracy: ≤ ±30 mm

4.2 Traverse Accuracy Standards

Parameter	Specification
Angular Misclosure	$\leq \pm(20\sqrt{n})$ seconds where n is angles measured
Linear Misclosure	1:10,000 or better
Positional Accuracy	±20 mm + 2 ppm
Height Accuracy	±25 mm

5. Data Processing & Adjustment

GNSS data processed using:

- SOI-approved GNSS processing software

Traverse adjustment:

- Least Squares Adjustment method

Coordinate transformation:

- From WGS-84 to Project Grid (if required)

Quality checks:

- Closure error
- Residual analysis
- Redundancy checks

6. Deliverables

6.1 Hard Copy

- Control point list with coordinates [X (Northing), Y(Easting), Z]
- Traverse computation sheets
- Adjustment report
- Location sketch & control diagram

6.2 Soft Copy

- GNSS observation & processing files

- Traverse adjustment files

Coordinate list in:

- Excel
- CSV
- CAD (DWG/DXF)
- Survey Report (PDF)

7. Standards & Guidelines
   - Survey of India (SOI) CORS User Guidelines
   - IS 5166 / IS 13346 (Survey standards)
   - National Map Policy & Geospatial Data Guidelines (India)
   - Project-specific technical specifications
8. Safety & Quality Assurance
   - Instrument calibration certificates
   - Daily field checks & logs
   - Proper monument protection
   - Backup of raw and processed data
9. Exclusions (if required)
   - Land acquisition / clearing
   - Permanent pillar construction (unless specified)
   - Legal boundary demarcation

B. Cross Section by using DGPS/RTK or ECO Sounder

1. Scope of Work-

- Taking cross-sections at 100 mtr interval covering river depth characteristics.
- Vertical control (accuracy ±0.1 m) & benchmark establishment (accuracy ±10 mm/km, tied to MSL-GTS).
- Horizontal control (accuracy ±20 mm/km) with shore markers.
- Mapping of special features (Ghats, water-intake structures, embankments, spurs, rock outcrops, shoals, hard clay banks, etc.).
- Water-level observations (gauge readings every ≤ 15 min; low-water height & time recorded).
- Deliverables: hard-copy charts, electromagnetic data, survey report.

2. Methodology- DGPS/RTK GNSS for horizontal & vertical positioning.

- Single-beam echo-sounder for depth (calibrated for water temperature & salinity).
- Water-level gauges installed at strategic locations.
- Post-processing in HYPACK / QINSy, generating XYZ point cloud, cross-section plots, and final report

3. Deliverables-

- Raw field data (DGPS logs, echo-sounder .sdf files).
- Processed XYZ point cloud & cross-section drawings (AutoCAD/DWG).
- Depth-characteristic tables (Excel).
- Final report and analysis.

4. Equipment –

- DGPS/RTK receiver (dual-frequency).
- Echo-sounder (single-beam).
- Water-level gauge / tide sensor.

- Survey boat with engine & mounting brackets.
- Laptop with HYPACK / QINSy software

C. Level Fly with Digital Level (DL)

1. Objective of Work

The objective of this work is to establish a high-precision vertical control network by carrying out precise differential leveling using a Digital Level (LEICA DNA03), suitable for engineering, infrastructure, hydrographic, and geodetic applications.

2. Reference Datum & Standards

- Vertical Datum: Mean Sea Level (MSL) / Project-specific benchmark
- Benchmarks Reference: GTS / SOI Benchmarks (where available)
- Leveling Standard: Survey of India (SOI) and IS standards

3. Equipment Specification

- Digital Level: LEICA DNA03 or equivalent (Accuracy ±0.3 mm per 1 km double run)
- Leveling Staff: Invar / Barcode staff with calibration certificate
- Accessories: Tripod, staff bubble, onboard memory, calibration certificates

4. Survey Methodology

- Reconnaissance, benchmark identification, double-run levelling, closed loops, equal BS & FS distances.

5. Accuracy Requirements

- Misclosure $\leq \pm 2.0\text{mm}\sqrt{\text{Km}}$ (Kilometer)
- Accuracy ±0.3 mm per km double run

6. Data Processing & Quality Control

- Least squares adjustment, misclosure checks, validation as per standards.

7. Deliverables

- Hard Copy: RL list, computation sheets, adjustment report.
- Soft Copy: Excel, CAD, PDF survey report.

TERMS & CONDITIONS :-

1) Intending bidders should apply for EoI papers in their respective Letter Heads enclosing with self-attested copies of latest Income Tax, valid PAN / GST / Trade License and P.Tax Challan issued by the appropriate authority, failing which the EoI will liable to be rejected.

2) EoI should be submitted for the work in sealed cover super scribing the name of the work on the envelope and addressed to the proper authority. Submission of EoI by post is not allowed.

3) Any suppression/ misrepresentation of fact will automatically debar the application from participation in any Tender/ EoI.

4) No EoI paper will be supplied by Post.

5) No EoI paper will be issued after expiry of date and time mentioned in the notice.

6) The bidders should quote their rate both in figures and in words on each item of work within the issued format which should be duly signed with stamp.

7) All corrections are to be attested under the dated signature of the Bidders.

8) All the pages of the EoI paper and the documents (Submitted as EoI documents) including schedule must be signed by authorized representative on the body of the documents with date and seal.

9) Conditional EoI, which does not fulfill any of the above conditions, and is incomplete in any respect, is liable to summery rejection.

10) Any letter or other instrument submitted separately in modification of sealed Bid may not beentertained.

11) The EoI accepting authority does not bind himself to accept the lowest Bid and reserves the right to reject any or all of the Bids received, with valid reason whatsoever to the intending Bidder.
12) The **Executive Engineer-I, Damodar Canal Division, Court Compound, Purba Bardhaman** shall be the Engineer-In-Charge in respect of the above EoI & all correspondence should be made with the Engineer-In-Charge regarding the above survey work.
13) Superintending Engineer, Damodar Irrigation Circle, I&WD, Kanainatsal, Purba Bardhaman / **Executive Engineer-I, Damodar Canal Division, Court Compound, Purba Bardhaman**, reserves the right to accept or reject the lowest or any other EoI without assigning any reason thereof.
14**) This EOI is only for collection of rate over different items of work as prescribed in schedule & not for issuance of any work order in this regard**.
15) The EoI is to be submitted in the prescribe proforma. Any incomplete EoI is liable to be rejected. The EoI in the prescribe proforma as above will be received in the office of the **Executive Engineer-I, Damodar Canal Division, Court Compound, Purba Bardhaman** as per following time schedule:

1) **Last date of receiving application for EoI paper**: 16.01.2026 upto 2.00 Pm
2) **Last date of issuing EoI paper**:19.01.2026 at 3.00 pm
3) **Last date of receiving EoI paper**: 20.01.2026 upto 2.00 pm
4) **Date of opening EoI paper**: 20.01.2026 after 3.00 pm

Sd/-
Executive Engineer-I,
Damodar Canal Division

Memo No. –90/1(25) Date: - **09/01/2026**

Copy forwarded for information and circulation to the:-

1. Chief Engineer (West), Irrigation & Waterways Dte. Kanainatsal, Purba Bardhaman.
2. Superintending Engineer, Damodar Irrigation Circle, Kanainatsal, Purba Bardhaman
3. Additional project Director-III, DPMU-I, WBMIFMP I & WD, Kanainatshal Purba Bardhaman.
4. Executive Engineer, Damodar Head Works Division
5. Executive Engineer I ,Lower Damodar Irrigation Division
6. Executive Engineer II, Lower Damodar Irrigation Division.
7. Executive Engineer, R.B.I Division
8. Executive Engineer, B.I Division
9. Executive Engineer, Asansol Irrigation Division
10. District Information Officer, Purba Bardhaman.
11. Deputy Secretary Vigilance Commission, Kolkata-91.
12. -21.All Sub Division Office of D.C. Division.
22. Estimating Section of D.C. Division.
23. Accounts Section of D.C. Division
24. Office Notice Board, D.C. Division
25. Office Notice Board, Damodar Irrigation Circle.

Sd/-
Executive Engineer-I,
Damodar Canal Division

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Irrigation & Waterways Directorate
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Sealed EoI is hereby invited by the Executive Engineer-I, **Damodar Canal Division, Court Compound, Purba Bardhaman, Pin- 713101** Irrigation &Waterways Directorate from the bonafied, reliable and resourceful agencies to ascertain unit rates **[budget quote]** as per below mentioned schedule of items in connection to the work "**Lidar Drone survey for a Detailed Topographic Survey & Hydrographic Survey using Echosounder for Natural drainage Channels under Damodar Canal Division.**".

Schedule of items

Sl. No	Description(Ref. Annex-I for Details)	Quantity	Unit	Quoted Rate(Including GST & Cess) Rs.	Amount
1	Construction of permanent Benchmark pillar @ 10 km. interval at defined location w.r.t. Ground control point(G.C.P)/Great trigonometrical survey(G.T.S.) Bench Mark (including flying of G.C.P/G.T.S. Bench Mark from nearest available locations up to different locations with the help of high precession instruments like DGPS/RTK/TOTAL STATION etc) as per following specification : Cast-in Situ/Precast RCC made benchmark pillar of size 0.30 m x 0.30 m x 1.5 m (0.60 m above G.L. & buried 0.90 m below & suitable P.C.C base finish) with cement concrete grade of 1:1.5:3 ,4 nos of vertical bars of 10 mm dia & stirrups of 8 mm dia @ 150 mm c/c ,including mild steel fixed plate a top (100 mm x100 mm x6 mm) inserted within concrete, including fixing on P.C.C. base (3ftx3ft) bounded with brick wall all side 300mm thick brick work for 0.6m height and inside portion fill up with sand including necessary painting, lettering, colouring as per enclosed drawing as per direction of EIC complete in all respect.	1	No		
2	"Conducting for Lidar Drone survey for a Detailed Topographic Survey to map forest/land coverage and analyze topography for land survey, ECO- SOUNDER for water body survey etc along with total geo-referencing(X-Y-Z) alignment and plotting on google earth/ArcGIS based map for taking cross sections at 100m interval, Long section of Drainage Channels/ Khals/Rivers (extending each cross section upto 50 m from toe of country side at both side banks) w.r.t. nearest known Ground control point(G.C.P)/Great trigonometrical survey(G.T.S.),including additional cross sections (both U/S & D/S) at the points of bridges, regulators, cross drain, inlets, tributaries, branch channels, drains, out channels from pump houses, important structures etc., including additional cross sections at	1	km		

	adjacent outfall point of these Drainage Channels/ Khals/Rivers into other river for 250 mtr U/S & 250m D/S of that outfall point and showing detailed topography plan of all permanent & temporarily features like roads, canal, bridges, park, culvert, boundary wall, Electric post, transformer etc. as available within the area, also including preparation of survey plan showing the location of topo point of FRL/G.L/Bed level/Berm Level/HFL/LWL/Free-board/Pond/depressions/road etc. with appropriate R.L. and open area/green area/total ground coverage/ nature of land for mentioning in the drawing with suitable scale, true north & relevant photographs etc. as per direction & satisfaction of E.I.C. complete in all respect. The cross section interval shall be fixed as & when required as per direction of E.I.C. Raw data for mathematical modelling with preparing all field data including Survey report & Drawings. Objectives 1. Covered1. High-resolution DEMs (AutoCAD). 2. DTMs & DSMs (AutoCAD). 3. Contour maps (0.5 m interval) + ground verification. 4. Orthophotos (georeferenced, LiDAR-integrated). 5. Detailed Forest Inventory Report. 6. Permanent benchmarks established & documented. 7. Deliverables: AutoCAD, XYZ, LAS, GeoTIFF, Mouza-map integration. 8. Water-logged zones surveyed by DGPS/Echosounder. <u>Methodology</u> - Flight Plan: side-lap, 120 m AGL → ~ 10 pts/m² density. - Equipment: - Topo-Drone LiDAR (R-LiDAR or Zen-Mapper). - Trimble R-980 / R-986 GNSS base-station. - DGPS + Single-beam Echosounder for water-logged patches. <u>- Processing:</u> - LiDAR point-cloud classification (ground, vegetation, buildings). - Generate DEM, DTM, DSM → export to AutoCAD DWG. - Contour generation (0.5 m interval). - Orthomosaic stitching (2 cm GSD). - Forest inventory using LiDAR height & density metrics. <u>- Control:</u> - 1 GCP per 5 sq km (RTK-fixed). Benchmarks tied to GTS/NGI datum (accuracy ± 5 mm vertical)				
3	Benchmark Connection for different location w.r.t known Bench Mark including flying of known Ground control point(G.C.P)/Great trigonometrical survey(G.T.S.) Bench Mark from nearest available locations up to different locations with the help of high percission instruments like DGPS/RTK/TOTAL STATION etc. and also providing necessary painting ,lettering etc as per direction of EIC complete in all respect. Note: The rate is inclusive of all charges like all materials, all type carriage upto site, all labours, painting, lettering etc as applicable to complete to work in all respect but the rate is exclusive of all taxes as	1	km		

	applicable. Note: [The rate is inclusive of all charges like all materials, all type carriage upto site, all labours, all concrete related items, painting, lettering etc as applicable to complete to work in all respect but the rate is exclusive of all taxes as applicable.]				
4	Submission of report comprising detail drawings, volume calculation of silt deposited (in excel format @ 100 m interval) in both soft copy (in .DWG/AutoCAD, Microsoft excel, Pdf & .KMZ/KML format & must be geo-referenced i.e (X-Y-Z) & hard copy (in the form of index map, topographic site plan, Contour plan, cross sections, long sections etc of Channels/ Khals/Rivers etc showing all important features with min suitable scale , true north and relevant photographs. All Survey raw data and total report in the form of soft copy in pen driver (at least 32GB memory) will also be submitted	1	set		
				Total:-	
In words-					

NOTES :-

i)The rates is only to ascertain unit rate for official purpose.

ii) No work order will be issued against this Budget Quote.

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Signature of Quotationer
(With Stamp).

Sd/-
Executive Engineer-I
Damodar Canal Division