

Office of the Executive Engineer
West Bengal State Rural Development Agency (WBSRDA)
Murshidabad Division

Panchanantala•Berhampore• Murshidabad

Phone No: 03482-251040 & Fax No: 03482-251040 (E-mail ID- wb-mur@pmsgy.nic.in)

Memo No-568/MD/SRDA/NIQ

Dated- 31.10.2018

Notice Inviting Quotation No- 03 of 2018-2019.

DETAILED NOTICE INVITING OFFERS FROM CONSULTANTS FOR PREPARATION OF DETAILED PROJECT FOR BRIDGES (D.P.R) UNDER PMGSY IN MURSHIDABAD DISTRICT.

Sealed tenders are invited from the reputed consultants for survey, investigation and preparation of DPR of Bridges in this district at different blocks named below of Pradhan Mantri Gram Sadak Yojna in West Bengal as per details in the table given below-

Sl No	Package No	Block	Name of Road	Approx Length (In meter)
01	WB13-63	Nowda	Joulushpur More to Dakatipota	48
02	WB13-75	Bharatpur-I	Suniti to Mansurpur Idgah (Part-I)	16
03	WB13-93	Bhagowangola-I	Subarnamrigi to Chawkkanagar	36
04	WB13-202	Khargram	Khesor to Sundarpur	25
05	WB13-205	Bharatpur-I	Simulgachhi Salar Pakka Road to Rajarampur	36
06	WB13-207	Burwan	Jwagswara to Salpa	25

1. The bid documents can be purchase upto 4.00 pm on 12.11.2018 (Monday) from this office, of the undersigned on Payment of Rs-2000.00 (Rupees Two Thousand) Only for each Package by Demand Draft drawn on Nationalized/ Scheduled Bank in favour of Executive Engineer, WBSRDA, Murshidabad payable at Berhampore, Murshidabd. Bid documents may also be downloaded from the district website- www.murshidabad.gov.in.
2. Last date of receipt of completed offers is 14.11.2018 (Wednesday) upto 02.00 P.M. and technical will be opened on the same day at 03.00 P.M in presence of consultant(s)/ representative (s) who choose to be present. The Technical Evaluation will be done first and financial offers of only qualified bidders will be opened on 16.11.2018 (Friday) at 12.00 noon in the presence of consultant (s)/ representative(s) who choose to be present. The decision of the competent authority in regard to technical evaluation shall be final, bidding and conclusive.
3. Consultant shall have to take 100 mm dia exploratory bore at the four location two in center and two in other suitable location as per site condition in all types of strata as per IRC-78-1983 and section 2400 of specification.
4. Time allotted for completion of assignment is 01 (One) month.
5. Consultant will be allotted work as per his bidding capacity which shall be as under-
 - **Consultants who, in last 5 years, have successfully designed at least 05 bridges of above 25 meter length (Which has been constructed also) and have a minimum turnover of Rs- 50.00 lakhs in last 5 years.**
6. **Qualification criteria-** Consultants who, in last 05 years, have successfully designed at least 05 bridges of 25 meter length (which has been constructed also) and have minimum turnover of Rs- 50.00 lakhs from consultants will be eligible to participate in the tenders. For this purpose consultants will have to submit the certificate of the client indicating the year of construction of such of such bridges with audited Profit and Loss account and Balance Sheet.

Certificates issued by a Government department/undertaking only will be considered. For this purpose consultant should attach:-

- I. Certificate that DPR was preparation by consultant indicating name of Bridge, date of work order and date of completion of DPR.
- II. Copy of work order for preparation DPR.

With a summary thereof with the heading “Certificates in support of fulfilling qualifying criteria” failing which proposal may not be evaluated.

Consultant will have to submit with his audit P/L account and balance sheet a certificate from CA that turnover is from consultancy fees only.

7. Bidder has to submit affidavit duly notarized stating that:-

- I. Information furnished with the tender is true and correct to the best of my knowledge and belief. If any information is subsequently, even after award of work, is found to be incorrect, The Executive Engineer, WBSRDA, Murshidabad may forfeit EMD and debar from future tendering.**
- II. Turnover shown in the accounts is from consultancy fee only.**
- III. No relative is working as contractor or Employee of WBSRDA in the PIU in which tender is being submitted.**

Other condition may be seen in the tender documents on district website- www.murshidabad.gov.in.

Sd/-

**Executive Engineer
WBSRDA, Murshidabad Division.
Dated- 31.10.2018**

Memo No- 568/1(5)/MD/SRDA/NIQ

Copy forwarded for information to the-

1. Sabhadhipati, Murshidabad Zilla Parishad.
2. District Magistrate, Murshidabad.
3. Additional Executive Officer, Murshidabad Zilla Parishad.
4. DIO/DIA, NIC, Murshidabad with a request to publish the notice with bid document in the District Website.
5. Executive Engineer, WBSRDA, Jangipur Division.

Sd/-

**Executive Engineer
WBSRDA, Murshidabad Division.
Dated- 31.10.2018**

Memo No-568/1(6)/MD/SRDA/NIQ

Copy forwarded for information to the-

1. Joint secretary to the Govt. of West Bengal & Joint Chief Executive Officer, WBSRDA, Joint Administrative Building, Kolkata-106.
2. Additional Chief Executive Officer, WBSRDA, Joint Administrative Building, Kolkata-106.
3. Chief Engineer, P&RD Deptt, Govt of West Bengal, WBSRDA, Joint Administrative Building, Kolkata-106.
4. Shri D.K. Mondal, SE (HQ), P&RD Deptt, Govt of West Bengal, WBSRDA, Joint Administrative Building, Kolkata-106.
5. Shri N.C. Sikdar, SE (HQ), P&RD Deptt, Govt of West Bengal, WBSRDA, Joint Administrative Building, Kolkata-106.
6. Executive Engineer (HQ), P&RD Deptt, Govt of West Bengal, WBSRDA, Joint Administrative Building, Kolkata-106.

Sd/-

**Executive Engineer
WBSRDA, Murshidabad Division.**

TERMS OF REFERENCE (TOR)
SCOPE OF WORK FOR BRIDGE DPR PREPARATION

The consultant engaged for DPR Preparation for bridges shall be rendered the following services.

1) Survey work (Maps & Plan)

The survey comprises of the following

- a) Name of the channel/river, name of road, road code, location of the bridge (chainage of the road with corresponding Km.), block, police station and district. The latitude and longitude of the bridge site should also be furnished.
- b) The Long Section and Cross Section of the approach road for at least 500 m for both U/S AND D/S side should be surveyed.
- c) The consultant should prepared an Index Map drawn into a scale of 1 cm – 0.5 Km. (1:50,000) showing the catchment area at the site of the proposed bridge all topographical features including Bridge & hydraulic structures within 5 Km. u/s and d/s of the proposed site should be clearly mentioned with dimension.
- d) A site plan should be prepared to a suitable scale showing details of the site selected and the extent of which not less than 100m on u/s and d/s side. The extent of the boundary should be selected as per the catchment area of the bridges. The following table may be referred (Table 3.1 of SP-13-2004)

Catchment Area	Distance (u/s and d/s from bridge point)
1. Up to 3.0 Km ²	100m
2. From 3.0 Km ² to 15 Km ²	300m
3. Over 15 Km ²	500m

The site plan should comprises of the following

- i) Out lines of the banks
- ii) High Water Channels
- iii) Low Water channels
- iv) Direction of the flow at maximum discharge
- v) Location and alignment of the existing bridge crossing the stream.
- vi) Proposed alignment of the bridge preferably normal crossing the stream.
- vii) The locations of the long section & cross sections taken with section number
- viii) The plan of proposed approach road along with location/markings of long & cross section. The cross section of existing approach should be taken at 30m interval.

2) Collection of Hydrological data of the catchment :

All hydrological data should be collected in consultation with the local irrigation Sub-divisional office at the bridge site. The following data should be collected.

- a) Highest flood level with respect to the GTS as per record of irrigation Department.
- b) Ordinary flood level with respect to GTS as per I & WD record.
- c) Low water level with respect to GTS as per record of I & WD.
- d) Maximum velocity corresponding to highest flood discharge as per record of I & WD.

- e) The level of deepest Scour hole observed at site/maximum scour during highest flood discharge as per record of I & WD.
- f) Silt factor of bed material as per record of I & WD.
- g) The river long section data starting from upstream side from the extent of boundary demarcated in site plan upto the extent of downstream side along the approximate centre line of the river/channel.
- h) Longitudinal slop (Energy slop) i.e. the equivalent stream slop/statistical mean stream slope of the river or channel showing HFL, LWL and bed level at suitable interval.
- i) The c/s of the river/stream to be furnished at 30m interval for both upstream and downstream side upto the extent of the boundary located in site plan. The data related to the catchment should be furnished as follows.
- j) The slope of the catchment both longitudinal and cross slope.
- k) The fall in level from the extreme point to the bridge point.
- l) The nature of the catchment whether under forests or under cultivation. This parameter is essential for assuming approx. correct value of drainage co-efficient.

3) **Joint site Inspection of Consultant, SE & STA.**

On the basis of hydrological survey and irrigation & Waterway sub division data the design discharge at the bridge site shall be fixed up. The site shall be jointly inspected by SE and STA in presence of Consultant and Consultant shall note their (SE & STA) valuable instruction regarding the span fixation of the bridges. The following criteria shall be verified at site.

a) **Site Selection**

Normally selection of site for bridges guided by existing road alignment for minimize the land acquisition however the following point should be verified.

- The site should situated on a straight reach to stream, sufficiently downstream at the bends.
- The site should be sufficiently away from the confluence of large tributaries as to be beyond their disturbing influence.
- The site should have a well defined banks.
- The site shall make approach roads feasible on the straight.
- It should be properly verified whether the stream have a tendency to charge the course to ascertain proper protection work if required.
- The site should offer a normal crossing.

b) **Existing Drainage structure :**

If there is an existing structure than it should be carefully verified for maximum flood level mark, occurrence of afflux, the tendency of scour and development of scour hole, the likelihood of collection of brushwood during floods and if any other special features available which could be effect the design.

c) **Channel Condition**

The condition of channel should also verified carefully for obtaining data regarding the silt factor and rugosity co-efficient.

All the reports shall be noted during site inspection and which shall be included in the body of Preliminary Project Report after compiling the recommendation of SE & STA.

4) Preliminary Project Report

The consultant who will engage for DPR preparation shall submit the preliminary project report to the Superintending Engineer for obtaining approval prior to the waterway vetting. The Preliminary Project Report shall be comprises of the following.

- a) Connectivity requirement of the bridge along with the habitations benefited, topography of the site and surroundings, Social and economical aspect of the area, traffic survey data, PCU calculation, description of the channel, location of the bridge along with geo-referenced co-ordinate, condition of existing road, description of catchment and other relevant points connected with the preliminary design.
- b) Hydraulic calculation at the proposed bridge site for calculating the design discharge. The hydraulic calculation shall be made as per the following three steps.
 - i) Using the any one of the impirical formula as per Article 4 of IRC : SP-13-2004 suitable for the respective catchment. The catchment area should preferably be estimated from the Topo-sheet of G.S.I. In case of non availability of the topo sheet the catchment area shall be obtained from the record of respective Irrigation sub divisional office / by actual boundary determined by the consultant during survey work. In such cases the catchment area shall be verified by local irrigation sub division.
 - ii) Using the rational formula for peak run-off through the catchment as per Article 4, cl 4.7.9 of IRC:SP-13-2004.
 - iii) Using the method of conveyance factor and slop of the stream as per cl 5.5 of IRC:SP-13-2004.

The design discharge shall fixed up as per cl 6.2.1 of IRC:SP-13-2004. The design discharge should be prepared in consultation of local irrigation sub divisional office.

- c) On the basis of the design discharge calculation of Lacey's regime linear waterway shall be made. If the constriction of waterway is made than the amount of afflux generated should be calculated.
- d) A Preliminary scour calculation should be furnished in the PPR on the basis of silt factor obtained from the local irrigation sub division or as per IRC:78-2014. The design discharge should be enhanced as per recommendation of IRC:78-2014 depending upon the catchment area. The scour calculation must be made on the basis of restricted waterway.
- e) On the basis of span Arrangement adopted and other data calculated in PPR the General Arrangement Drawing shall be prepared. In GAD both long section/Elevation. Cross view, Plan should clearly mentioned. All important levels with RL should be clearly mentioned in GAD.
- f) A preliminary cost estimate should be provided in PPR.
- g) A preliminary Soil Investigation report with probable type of foundation proposed should furnished in PPR.

The consultant shall accord necessary approval for PPR & GAD from Concerned EE & SE prior to the submission for waterway vetting.

5) Vetting of Waterway

The consultant shall obtain the necessary approval of waterway of the bridge from the Central Design office of the Irrigation and Waterway Directorate-prior Preparation of the Detailed Project Report.

6) Soil Investigation

All the soil investigation work should be carried out as per guidelines laid down in Appendix-2 of IRC:SP-78-2014. The sub-surface exploration should be carried out in two stages.

- i) Preliminary Investigation**
- ii) Detailed Investigation.**

The preliminary investigation shall include the study of existing geological information, previous site reports, geological maps and surface geological examination. Based on the preliminary soil data the probable type of foundation recommendation should be made by the consultant in PPR.

Now based on the data obtained during preliminary investigations. The bridge site, type of structure with span arrangement and the location and type of foundation the schedule of detailed investigation shall be prepared. The exploration shall cover the entire length of the bridge as decided in approved GAD including a distance of Zone of influence at the end of the bridge i.e. about twice the depth below bed of the last main foundation to assess the effect of the approach embankment on the end foundations. The depth of exploration shall be carried out more than one and half times the width of foundation from the lowest level of the deep foundation. However where such investigations end in any unsuitable or questionable foundation material, the exploration shall be extended to a sufficient depth into firm and stable soils or to rock. Where the data made available by detailed exploration indicate appreciable variation, the additional holes shall be drilled as per guideline of Cl. 3.2.1 of IRC:78-2014 to provide a comprehensive guideline to the designer for the estimate of the following.

- (i) Engineering properties of soil / rock.**
- (ii) Location and extent of weak layers and cavities, if any, below the hard founding strata**
- (iii) The sub-surface geological condition such as type of soil / type of rock, structure of rock if presents i.e. folds, faults, fissures, shears, fractures, joints, dykes and subsidence due to mining or presence of cavities.**
- (iv) Ground water table.**
- (v) Artesian conditions, if any**
- (vi) Quality of water in contact with the foundations.**
- (vii) Depth and extent of scour. The capacity of the Deep foundation must be determined in corresponding to the anticipated scour depth. The skin friction incase of pile foundation and earth pressure of adjacent soil incase of well foundation must be neglected upto the maximum scour level.**
- (viii) Suitable foundation level.**
- (ix) Safe bearing capacity of founding structure, pile capacity / allowable pressure below well foundation.**
- (x) Probable settlement and differential settlement of proposed foundation.**
- (xi) Likely sinking and driving effort.**
- (xii) Construction difficulties may occur.**

All exploration work should be carried out as per cl. 6.3 of IRC:78-2014. The requirement of soil data to be furnished in the DPR shall be as per Table 1 under cl. 6.3.3 of IRC:78-2014.

The recommendation of foundation should be made as per guideline given in IRC:78-2014 with latest amendments.

7) **Detailed Project Report**

The detailed Project report shall comprises of the following:

- a) The Preliminary Project Report as approved by the Department
- b) Soil Investigation Report with recommendation of foundation type proposed.

c) **Design of Superstructure**

It is advisable to adopt superstructure as per standard drawing of MOST/SP-20 2002 as applicable.

- i. In case of total bridge length less than 60m the superstructure standard drawing should be adopted from SP-20-2002. The standard drawing for Multi-cell Box may be adopted upto total length of Bridge not exceeding 25m, subject to fulfilment to the condition for hydraulics and Soil parameter.
- ii. In case of bridge having total length exceeding 60m the standard drawing should be adopted as per MOST subject to the concurrence of Engineer-In-charge.

If it is found essential to design the superstructure then the following methodology to be adopted. All load calculation for superstructure should be made as per the guideline laid down in IRC:6-2014. The load calculation should comprise of the following loads for design of superstructure.

- Dead load of superstructure including railing/crash barrier
- Dead load of wearing coat.
- Imposed load (Live Load) for two lane of Class A or 70R tracked vehicle which ever produced the severer condition including impact.
- Live load on footpath for design of footway slab, if applicable.
- Wind load on superstructure applying Gust factor.
- Seismic load on superstructure with appropriate condition if applicable. The vertical seismic should also considered if applicable.
- Loading expected to occur during construction stage any other loading relevant to IRC:6-2014 for superstructure design.

The superstructure designed with R.C.C/P.S.C members shall only be accepted. Superstructure with steel/composite members shall not be allowed. The design of superstructure shall be made as per IRC:112-2011 including necessary reference made from IRC:P-105-2015.

The load analysis for different members should be submitted by either manually or by finite element analysis with Software only. If the analysis made with such Software Packages which are not available to the department then Consultant needs to provide necessary Software support for verification of DPR.

- d) The Sub-Structure shall be designed as per provision given in IRC:78-2014 including latest amendments. The following loads should be considered for substructure design as per IRC:6-2014.
 - i) Dead load from superstructure
 - ii) Dead load of Pier/Abutment Cap

- iii) Self Wt of pier and Abutment
- iv) Live load including impact upto 3.0m depth from deck.
- v) Horizontal load due to breaking
- vi) Vertical reaction due to breaking
- vii) Horizontal load due to temperature/shrinkage on bearing
- viii) Earth pressure load on Abutment
- ix) Live load surcharge loading on Abutment
- x) Force due to water current on pier and the same for Abutment due to all round scour condition.
- xi) Force due to bouncy on pier and Abutment for all round scour.
- xii) Seismic load on pier and Abutment if applicable. When seismic load considered the combination of seismic responses to be made as per IRC:6-2014 including vertical component if applicable.
- xiii) For bridges located in seismic Zone-IV and V hydro dynamic pressure and additional earth pressure behind Abutment needs to be considered as per IRC:6-2014.
- xiv) Wind load including Gust factor. The severer between wind and seismic needs to be considered in design.
- xv) Any other loading like to be occurred as per IRC:6-2014.

The Consultant require to submit the design of the following component.

- i) Design of bearing. If standard superstructure as per MOST is considered than bearing may also selected from standard Drawing.
- ii) Design of Pedestal
- iii) Design of Pier & Abutment Cap.
- iv) Design of Pier. The Pier selection should be checked under one side superstructure (dislodge condition) also.
- v) Design of Abutment
- vi) Design of Wing/Return wall
- vii) Design of Dirt wall
- viii) Design of Bracket as corbel.
- ix) Design of Bearing if applicable.
- x) Design of Retaing wall, if considered.

All Structural design should done in correspondence with IRC: 112-2011 with latest Amendment along with relevant IRCs Publications.

e) Design of foundation

The bridge foundation shall be designed as per provision laid down in IRC:78-2014, IRC:112-2011, IRC:45 as applicable with latest publication along with any other relevant IRC: publication. All loads considered for design of pier and Abutment should considered for foundation design.

f) Approach Road

The Consultant needs to submit the design of approach road on either side with a gradient not higher than 1 in 30. On the basis of traffic data obtained the consultant needs to submit the design of pavement section on the basis of CBR achieved after

compaction. The consultant needs to perform the CBR test from the sample collected during soil exploration from approach portion. The pavement section shall be designed as per SP:72-2015. If high embankment designed with side slope and sub bank than the global stability of the slope (Slip circle) should be shown in DPR. It is advisable to proposed approach road in such a way that will minimize the land width requirement. Reinforced earth may be used for reducing the bottom width of approach. The design of the reinforced earth as per relevant standard should be submitted under approach design.

The DPR should contain a detailed and Abstract cost estimate. The rates should be taken from latest PWD schedule for Road and Bridges including latest amendments and the final rate shall be achieved after detailed analysis.

The consultant shall bound to submit any other documents in DPR as directed by the Department both in hard copy and softcopy (Original file).

8) STA Vetting

The consultant shall obtain technical vetting of the proposed bridge DPR from State Technical Agency. The Consultant required to incorporate all the observations raised by the STA against the DPR submitted, before forwarding the same to NRIDA/MORD.

The Consultant shall prepare and submit the final GAD and R.C detail drawing of all components after incorporating the observations raised by the department. The corrected DPR and drawings including the detailed drawing for approach road shall be forwarded to NRIDA/MORD for approval.

9) Administrative Approval

The summary of the project will be placed before Empowered Committee for approval. It will be the responsibility of the Consultant to provide necessary Technical support to the department to obtain the necessary clearance. The Consultant shall assist the PIU to upload necessary data under the Bridge Module of OMMAS starting from the beginning up to the clearance stage. It will be the responsibility of the Consultant to incorporate all the observations as raised by NRIDA/MORD.

10) Preparation of Tender Documents :

The Consultant shall be responsible for preparation of the tender document for online tendering. The Consultant shall be responsible to prepare the technical bid comprising of

- i) Standard Bidding Document for bridge works.
- ii) Schedule of Quantity.

The Consultant shall be bound to prepare the Standard Bidding Document Comprises of the following

- a) The Notice Inviting tender for bridge works.
- b) Selection Criteria for the Bidders as directed by the Department
- c) Special Instruction to the bidders related to the works.
- d) Specifications of the works as per Schedule of items.
- e) Condition of Contract as directed by the Department.

- f) Format of Bank Solvency
- g) Format of Formal Agreement
- h) Format of Performance guarantee.

The Schedule of Quantity Shall be prepared on the basis of approved estimate. The financial bid i.e. BOQ should be prepared on the basis of Schedule of Quantities in specified template as furnished by the Department.

- 11) The Consultant will be responsible for periodic supervision of bridge during construction and provide the final stability certificate from an Expert at the end of Construction of bridge.

There should be proposal and estimate for by pass road during construction of Bridge.

Annexure - II

QUALIFICATION INFORMATION

SCHEDULE 'A'
STRUCTURE AND ORGANISATION
(Documentary proof to be enclosed wherever required)

Sl. No.	Description	:	
1.	Name of applicant with full address	:	
2.	Tel. No.	:	
3.	Fax No.	:	
4.	Email	:	
5.	Whether the firm is an individual, proprietary concern, a Registered Partnership firm or a Limited Company	:	
6.	Name and address of the Chief Executive or the person holding the Power of Attorney, if any.	:	
7.	(i) Place of Business. (ii) Date of Registration	:	
8.	Name of Bankers with full address.	:	
9.	Permanent Account Number (copy of PAN Card to be enclosed)	:	
10.	Copy of audited Balance Sheet of the last three financial years duly examined and certified by a Chartered Accountant.	:	
11.	Details of empanelment with any other SRRDA or Central/State government agency.	:	
12(i)(a)	Total Number of professionals in the organization	:	
	Management	:	
	Senior	:	
	Junior	:	

	Senior	:	
	Junior	:	
12(i)(c)	Other	:	
	Senior	:	
	Junior	:	
12(ii)(a)	Total Number of dedicated professionals proposed for PMGSY works	:	
	Management	:	
	Senior	:	
	Junior	:	
12(ii)(b)	Road/Bridge Engineers	:	
	Senior	:	
	Junior	:	
12(i)(c)	Other	:	
	Senior	:	
	Junior	:	

*Senior means more than 10 years of experience.

SCHEDULE 'B'

(Documentary proof to be enclosed wherever required)

1. Five Balance Sheet and turnover of last Five Financial years of the Company
2. Information in following format.

Financial Status

Sl. No.	Year	Value of Consultancy Contracts completed (Rs. In lakh)		Total
		Project Preparation	Design	

SCHEDULE 'C'

**Format for Experience of Firm in Preparing DPR
Details of work done during last five years**

Sl. No.	Name of Work	Length of road (Km.) bridge (m)	Nature and brief scope of consultancy services	Name of Client	Cost of consultancy contract (Rs. in Lakh)	Remarks

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SCHEDULE 'D'

1. Information about key personnel including surveyors, soil/material/hydrological investigation specialist.

Sl. No.	Field of Specialization	No. of Persons

Brief Profile of Key Personnel

1. Name :
2. Date of Birth :
3. Educational qualifications :
4. Membership of Professional Institutes :
5. Experience in the field of Road/Bridge Engineering :
6. Experience in preparation of DPRs for roads / Bridges
7. Since when employed in Company :

Annexure-III

QUALIFICATIONS OF KEY PERSONNEL

1.0 TEAM LEADER CUM SENIOR BRIDGE ENGINEER

The Team Leader will be on a full time basis throughout the period of the consultancy services. He will be overall in-charge of the DPR preparation of the Steel Bridges. He shall act as Representative of the consulting firm appointed by the Authority. His duties will involve overall superintendence over the Engineers and other experts of the consultancy. He will guide, monitor, supervise and control all the activities related to the DPR preparation. He will interact with the Engineers, STA and the other officials of the Authority (WBSRDA).

He should have the following qualification / experience.

(1) Essential Qualifications:

- (a) Graduate in Civil Engineering from recognized university.
- (b) Not more than 60 years of age.
- (c) Total Professional Experience of 15 years in handling Bridge Consultancy.
- (d) At least 5 years experience as Team Leader in preparation of DPRs of Steel Bridge projects.
- (e) He should have experience of design / design review of at least one major Bridge Project.

(2) Preferential Qualifications:

- (a) Post Graduate Degree in Construction Management/Bridge Engineering.
- (b) Supervised Highway Construction projects with flexible pavements.

2.0 MATERIAL ENGINEER cum GEOTECHNICAL ENGINEER

He will be responsible for supervising all the tests to be done in different stages of DPR preparation, besides ensuring that specified tests are done as per codal stipulations and as per the specifications

laid down in the contract. He will be coordinating and controlling the support personnel placed with him and will report to the Team Leader as and when required.

He should have the following qualification / experience.

(1) **Essential Qualifications:**

- (a) Graduate in Civil Engineering from recognized university.
- (b) Not more than 60 years of age.
- (c) Professional Experience of 12 years in Consultancy of Bridge & Highways.
- (d) Experience of at least 5 years in similar capacity in Consultancy of Bridge projects.
- (e) Experience as Material / Geotechnical Engineer in Construction/Construction Supervision of at least two Bridge projects.
- (f) Must be familiar with properties of road/bridge construction material, technical specifications and procedures of material tests and testing equipments.

(2) **Preferential Qualifications:**

- (a) Post Graduate Degree in Geo-Technical Engineering/Soil Mechanics and Foundation Engineering.

3.0 SENIOR QUANTITY SURVEYOR

He will be reporting to the Team Leader and give input as and when required during the work. He will provide necessary guidance to the Quantity Surveyor, and shall issue directions/procedures/formats of reporting to the Quantity Surveyor. He will act as a contract specialist also for the consultancy, even through the thrust of his responsibilities will be in the areas of quantity surveying, etc.

He should have the following qualification / experience.

(1) **Essential Qualifications:**

- (a) Graduate in Civil Engineering from recognized university.
- (b) Not more than 60 years of age.
- (c) Total Professional Experience of 15 years in handling Highway/Bridge project.
- (d) At least 10 years experience as Quantity Surveyor in Highway/Bridge project.
- (e) He should have handled as Quantity Surveyor in at least two Bridge projects.

(2) **Preferential Qualifications:**

- (a) Post Graduate Degree in Construction Management/Engineering/certificate course in management/certificate course in construction management/certificate course in contract management.

4.0 BRIDGE/STRUCTURAL ENGINEER

His duties will involve understanding the design provisions of both bridges/ROBs/flyovers and culverts, guiding and preparation of detailed project reports, rectifying any apparent mistakes in respect of them, checking and controlling the proper mix designs. He will work in close coordination with the Material Engineer and report of Team Leader. He will be responsible for minor modifications in design of bridges/culverts, whenever required during consultancy.

He should have the following qualification / experience.

(1) **Essential Qualifications:**

- (a) Graduate in Civil Engineering from recognized university.
- (b) Not more than 60 years of age.
- (c) Minimum 10 years experience in Detailed project Report of bridges and other structures.
- (d) Must be familiar with modern methods of construction of bridges/ROB/flyover involving RCC concrete, design standards, technical specifications and statistical Quality Control/Assurance procedures for construction of different component of bridges.
- (e) Experience in similar capacity in supervision of at least 2 Major Bridges.

(2) Preferential Qualifications:

- (a) Post Graduate Degree in Structural Engineering.
- (b) Experience in detailed project report preparation of major Bridges.

5.0 HIGHWAY ENGINEER cum PAVEMENT EXPERT

His duties will involve understanding the design provisions of approach road geometrics, pavement compositions, safety aspects and other road furniture, checking proper mix design. For this purpose, he will work in close coordination with the Material / Geotechnical Engineer and report to the Team Leader to effectively prepare the DPR. He will be responsible for minor modifications in design of road alignment / pavement construction, whenever required during consultancy

The candidate is expected to be thoroughly familiar with various standards/specifications, design and quality control etc. In addition he will be responsible for ensuring road safety during construction and maintenance period of the project.

He should have the following qualification / experience.

(1) Essential Qualifications:

- (a) Graduate in Civil Engineering from recognized university.
- (b) Not more than 60 years of age.
- (c) Minimum Professional Experience of 10 years in supervision of construction of Highway projects.
- (d) Should have handled at least two Highway construction Projects of length more than 5 km.

(2) Preferential Qualifications:

- (a) Post Graduate Degree in Transportation / Pavement Engineering.
- (b) Experience in preparation of DPR/FSR of Highway / Bridge projects.
- (c)

SUB-PROFESSIONALS

(A) Quality Surveyor :

(B) Survey Engineer

FORMAT FOR THE AFFIDAVIT

(NOTE: This affidavit should be on a non-judicial stamp paper of Rs.10/- and shall be attested by Magistrate/ Sub-Judge/ Notary Public)

I, (name of the authorized representative of the bidder) son/daughter of resident of (full address), aforesaid solemnly affirm and state as under:

- 1. I hereby certify that all the information furnished with the bid submitted online in response to notice inviting bid number date issued by (authority inviting bids) for..... (name and identification of work) are true and correct.**

- 2. *I hereby certify that I have been authorised by (the bidder) to sign on their behalf, the bid mentioned in paragraph 1 above.**

Deponent

Place:

Date:

*** not applicable if the bidder is an individual and is signing the bid on his own behalf.**