S"FEEL AUTHORITY OFINDIA LIMITED
DURG APL R STEEI.PLANT
DESIGN DEPARTMENT

TECHNICAL SPECI FIXATION
FOR

ENHANCEMENT OFSI“ORAGE CAPACITY OFGROUND WATER RESERVOI R OF DtJRGAPUR STEEL PLANT

TECHNICAL SPECIFICATION NO: - DD/TS/2020-777

1. INTRODUCTION :

1.1. GROUND WATER RESERVOIR:

1.1.1. Durgapur Steel Plant is getting water for industrial purpose from DVC water supply canal, maintained by DVC. Water is lifted from the canal through a set of pumps installed at Canal Pump House and is stored in the Ground Water Reservoir (GWR). The resei'voir was put into operation in 1959 in order to reserve water drawn from canal and allow it for settling to reduce turbidity. Settled water is pumped to plant for industrial and domestic water through a set of pumps installed at Work Pump House. Since inception it is functioning satisfactorily and taking care of any fluctuation in supply/demand of water.

1.1.2. The reservoir was designed to hold total 1.925 Million Cubic metei (Mm3) of water, out of which 1.05 Mm3. was live storage capacity and 0.85 Mm3 was dead storage capacity. Due to topography of the bottom of the reservoir, large volume of water remains trapped in localized deep pockets and cannot be drawn below certain levels, This has formed the dead storage volume. Dead storage space is utilized for siltation and in case of extreme situation, part of this capacity can be utilised, though the quality of water at this level of reservoir deterioIates drastically.

1.1.3. As a result of continuous siltation due to settling of turbid river

water and decomposition of under-water vegetation at the bottom of water surface of the reservoir, storage capacity of the reservoir has reduced significantly. Even some ot' the areas have formed high land which remains exposed above top water level. Excavation of the high land areas of the reservoir was taken up in the year 2017- 18 and live storage capacity was restored by 0.24 Mm . Present live storage capacity is 1.0l5Mm and dead storage capacity is 0.720Mm

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1.1.4. For last few years it has been observed that supply of water through DVC canal has become erratic. Severe shortage of water in the canal in several occasions is putting DSP in a great risk of disruption in production. Frequency and duration of the disruption is increasing in each passing year.

1.1.5. To mitigate the risk of disruption in production due to shortage of water and to increase water security, it has become necessary to increase the water holding capacity of the reservoir. Accordingly it has been planned to increase the capacity by deepening of the reservoir. The report of the hydrographic survey conducted during yr.2017-18 indicated that highland area of approx. 1,33,077 sq.m is still there. Deepening of the highland area up to 6 fi. (1.829 mtr) will further increase the holding capacity of the reservoir by 2,43,000 cu.m. from present.

1.2. SCOPE OF WORK :

1.2.1. The scope of work will cover execution of underwater wet excavation for highland area of the reservoir deploying excavator mounted on pontoon which includes mobilisation- demobilisation of equipment, removal of floating hyacinth for ease of work, removal of trees, bushes in the highland areas inside the reservoir, disposal of excavated soil and vegetation etc. within the lead of 1000 mtr. front the embankment, execution of pre survey for initiating the work and post work survey for the volume measurement of the worl. m. m. m. y. u.p.and subsequent commissioning on ITEM RATE BASIS to make the reservoir operational and complete in all respects.

1.3. THE BRIEF OF SCOPE ARE AS FOLLOWS:

1.3.1. Under water wet excavation of the highland area of' the reservoir to achieve a depth of 1.829 mtr. (6'-00") from top water level i.e. RL. 72.542mtr (238'-00") by deploying excavators mounted on pontoon and immediate disposal of the excavated material to the designated area.

1.3.2. The job also includes mobilisation-demobilisation of equipment, pre and post work survey, removal of floating hyacinth for ease of work, removal of trees, bushes in the highland areas inside the reservoir, disposal of excavated soil and vegetation etc. up to a lead of 1 Km from the embankment.

1.3.3. Hydrographic survey (Pre & Post) to ascertain the topography of proposed highland area of the reservoir to calculate voliune from measurements.

1.3.4. Removal of any floating vegetation near the excavation area (which may cause hindrance to free movement of floating equipments).

1.3.5. Removal of trees, bushes etc. from the highland areas before commencing the excavation.

1.3.6. Erection of Jetties for evacuation of the excavated soil from the floating barges to be deployed for carrying the soil through barges to the nearby embankment where pontoon mounted excavator is working. Total distance to be covered by barges to reach the jetties may be as long as 1.0 km for some of the reservoir locations. After completion ofjob all the equipment are to be removed and make good the profile of the embankment as original.

1.3.7. All the equipments are to be removed and jetties are to be dismantled and removed from the site after completion of the job without any damage to the embankment so that the profile of the embankment could remain as original.

1.3.8. Submission of layout of the highland area of existing reservoir with pre-work levels at commencement of the work (The survey work should be done by the party in presence of the representative of EA.)

1.3.9. Submission of the final levels of the excavated area of the reservoir bed on completion of the excavation work.

1.3.10. Special notes:

1.3.10.1. The excavated soil has to be carried to designated jetties (to be

erected by the party as per direction of EA) and then subsequently to be disposed in such a way that adjacent hutments are not affected and embankments are not damaged. No movement of dumpers will be allowed along the embankment without consent of EA.

1.4. INSTRUCTION TO TENDER:

1.4.1. The reservoir bed should not be dredged below the specified levels. In case if it is more than level, such volume will not be considered.

1.4.2. The tenderer shall take all responsible precautions to prevent any nuisance or inconvenience to DSP and to general public and shall take effective measures against such nuisance/inconvenience as deemed fit at his cost including taking effective protection of the working area. Tenderer must visit the site to acquaint himself regarding carrying of the equipments to site of work through congested localities outside the area of DSP. Any dispute or inconvenience, if arises, regarding this matter has to be sorted out by the tenderer solely.

1.4.3. The silt and earth dredged from the reservoir bed including all rubbish and the excess quantity ot' emth excavated and other top vegetation etc. shall be transported to the designated location of disposal as per the direction of the EA As the proposed disposal area is having HT towers, adequate precautions are to be taken so that the foundations and structures in the area are not damaged in the process of disposal. Protection measures to prevent damage in

future shall also be done as per the instructions of EA Further in all the disposal areas damage to any existing structures should be guarded against and in case of any damage the same shall be rectified as per the instructions of the EA at the tendei'er's own cost. The existing drainage system in the area shall not be disturbed unless proper permission has been taken in this regard from the EA.

1.4.4. While quoting, the tenderer shall furnish the details of capacity. number & other parameters of all the equipment like pontoons. excavators, barges, pumps, and winches etc. going to be deployed by the tenderer.

1.4.5. Tenderer shall properly store all his materials to prevent damage due to rain, wind, direct exposure to sun etc. and also from theft, pilferage etc. He shall maintain a register in this respect and have stocks of the materials for at least three weeks normal consumption required by him for speedy execution of the works.

1.4.6. The tenderer shall make his own arrangement of all plant and equipment for his works. All materials, plants and equipment etc. once brought by the tenderer within the work site. are not to be taken away without the written permission of the EA. Also security and safe custody of the equipment and other accessories will be tenderer's responsibility.

1.4.7. During execution of the job, no damage of the DSP equipment and propeny will be allowed. However, if it happens, the tenderer will be liable to repair/replace the same at his own cost.

1.4.8. Working hours at site should be strictly from 6 am to 6pm including Sundays andholidays.

1.4.9. The tenderer shall submit along with the tender document a scheme showing and describing in details the pTOpnsed methodology they are going to adopt for the proposed work as outlined in the broad activity envisaged in the Scope of Work.

1.4.10. The tenderer strait make his own arrangements fpr a)l plants, equipment and materials

1.4.11. required for the work and transport them at his own cost wherever they ir .iy be required to be positioned for smooth and effective execution of the work. Any scheme required for this purpose which may involve other agencies must be draw'n out in detail and approval obtained from the EA before start ot the work. They should deploy sufficient number of plants, machines and equipment so that the time schedule specified for completion of the scheme are adhered to. They shall also arrange for boat or similar comrrninication means for inspection if required by the EA.

1.4.12. EA will designate the site for disposal of" dredged material to the tenderer prior to starting of work. The tenderer shall work out and present a scheme of disposal of dredged material and proper drainage in the area for approval of' EA. The scheme should be such as not to disturb or damage any of tlJe existing facilities in the area and the dredged material shall be stacked in a stable formation so as to avoid any sliding.

1.4.13. The tenderer shall tube proper care not to damage my existing stone/brick paving of the reservoir embankments and in case any

damaged occurred the same shall have to be rebuilt at his own cost. A suitable clear distance of 3.0 mtr. shalJ have to be maintained for this purpose from the base of the existing side. Below that the side wall shall be allowed to have its own original side slope. During pre- work survey'. tenderer must note the side slope of the embankment and maintain that slope.

1.4.14. The smooth flow of water in the reservoir shall be maintained and shall bc in no case disturbed so that the running of the plant and services connected to it are af'fected in any way.

1.4.15. The tenderer should assess and consider all site condition before quoting.

1.4.16. The tenderer may have to carry out works in close coordination with other agencies working in that area in such a manner as not to disturb the progress of other works. No claim will be entertained on account of lack of coordination and any loss dtte to the same.

1.4.17. DSP shall reserve the right to interrupt or otherwise alter the sequence of any one or more portions of work or item of execution of words if such interruption or alteTation is necessitated on account of any special requirement at site or change in the sequence of work deemed best by the EA in the interest of the execution for' sucressftil completion of the work.

1.4.18. All incidental items not specified but reasonably implicd/essential for successful completion of the work shall be provided by the tenderer at his cost.

1.4.19. J"he tenderer should also carefully giiaid against and' obsti uction to the nominal operation of the C'anal & Works Pump house

pumps.

1.4.20. the Ground Water Reserv’oir is a protected area. ’the tenderer shall obsei ve the seeurit} norms of CISF, DSP unh at the work site.

1.4.21. The tenderer shall submit a detail activity wise BAR CH ART within 15 days li om the date ot placement of order tor approval of FA. The tenderer shall submit the methodology for carrying out the entire u ork.

1.4.22. Before commencement r›1 work the iiiethodolopy to be followed b the successful tenderer shall have the approval of’ EA. In course of’ execution i1’ any change in methodology is needed for successful completion of the job w’ithin scheclule, such chanuc may be a]1o wed which should have the appro val of EA.

1.4.23. The materials arising o1’ the excax'ation acti›’ity should be reiTioved directly’ from the work area and dispatched to the designated area by suitable means. All weather access road to approach for the wtx k front are to be made b\’ the tenderer at his ou’n cost. In no case any’ existing road around the embankment are damaged due to leakage oi water sltH’ry etc. front the trippcrs, dumpers etc.

1.4.24. The tenderer shall depute qualified person as site in charge for day to day activit;

1.4.25. /supervision/exectition of work, recording measurement of w ork. receiving instructions from EA and other related important works as required for smooth & uninterrupted progress of ork at site.

1.4.26. Sufficient numbers of equipments are to be deployed for completing the work well within time. Sufficient numbers of ietties are to be erected for evacuation of t1 c excavatcd soil from the barges. While erecting the jetties extreme care to be taken against donate of the embankment. Any damage of' the eiiibankmcnt is to be repaired by the party immediately'

1.5. METHOD OF MEASUREMENT:

1.5.1. ‗The quantity of excavation will be solely based on the pre and post-work data/les'el of tlsc hydrographic survey. to be token by' the par ty in presence of EA.

1.6. IMPLEMENTATION PERIOD :

1.6.1. The duration of the w‹ii k will be 12(to elve) iiionths horn the effective date of contract. The et't'ective date of contract will be the date of handing ox'er the slte by Executix'e Authority of DSP.

1.7. SAFETY:

1.7.1. The tenderer shall Zollo all the safety rulcs as per rules and regulation of the CoNlpaisj.

1.7.1.1. The equipment to be deployed should hnx'e up to date 1- itness certificate in respcct ot' c-ngageineiN for the proposed work.

1.7.1.2. The tenderer shall display notice boards & adequate no. of caution boards. protecti› e fencing as required, adequate illumination, v'atchnian to pi'oteet and warn the public and guard the working area.

1.7.1.3. The job involves potential drowning hazards. So the tenderer should take necessary safely precautions to avoid drowning of the workers in deep water of GWR, snake bite etc. They must be provided with Life jacket. Also First Aid box should be readily available at the work site.

1.7.1.4. The tenderer shall have to provide a list of workers to be engaged well before the start the work. All the workers and supervisors must have the valid gate passes. Safety of' workers engaged by the Tenderer is entirely his responsibility.

1.7.1.5. As the area of' work is highly sensitive with respect to safety hazards, the tenderer must take proper work permit and other instructions from the EA.

1.7.1.6. The EA reserves the right to stop the work on the ground for violation of Safety Rules and tenderer shall be liable for penalties as per rules of the Company.

1.8. COMMISSIONING :

1.8.1. The facilities shall be deemed to be commissioned on fulfillment of the following:

1.8.1.1. Removal of required amount of silt from the reservoir, to be calculated by pre and post level measurement.

1.9. PERFORMANCE GUARANTEE:

1.9.1. Bidder shall have to demonstrate the following parameters as listed:

1.9.1.1. Achieving minimum 1.829 mtr f6 feet). depth of water from top water level of reservoir i.e. RL. 238'00" (72.542 mtr) throughout the

area of excavation of the reservoir.

1.9.1.2. (TABLE)

name	designatation	id
binaya	software developer	0000012

hmart	software developer	00000023
jack	software intern	000025
olly	software tester	000026

boo	mechanic	111111
legend	driver	222222
oggy	raider	333333

1.9.1.3. SCHEDULE OF WORK (to be read in conjiinction with Sct›pe of’ ''ork)

1.9.1.4. (TABLE)

Item	Description	Quantity’	Unit	Rate (Rs)	AiTlount (Rs.)
1	Under water wet excavation oi semi-solid silts/soils along with vcgetations from demarcated highland area by excax'ator mounted on pontoon and transportationof thc excavated materials by mechanical means to the embankment point and subsequent disposal lrorn the embankment pointtothedesignated location bysuitable means etc. within a lead o1 1000 meter. Thecost includes thecharges ofexcavator’ , boats/barges, pontoons etc. and the cost of mobilisation . demobilization, transportation .maintenance. ltiel , €›perators . labours and all other incidental charges all complete as per scope & specification and a›- directed by EA. The cost also includes pre. and post survey of the excav’ated area for calculating the v’olume of silt removed and removal of required amount of	24.000	CtiM		

	hyacinth for movement of flOilting equipisients for excavation work.			

*refered to www.chrome.com

1.9.1.5. (TABLE)
Traveling not only brings joy and adventure but also serves as an educational journey. Encountering historical landmarks and museums helps us connect with the past, offering insights into different civilizations and their contributions to modern society. It promotes empathy by allowing us to witness the challenges and triumphs of various communities firsthand. Moreover, travel can improve mental well-being, providing a break from the monotony of daily life and reducing stress. The skills developed while navigating unfamiliar environments, such as problem-solving and adaptability, are invaluable. Overall, travel enriches our lives by nurturing a global perspective and fostering personal growth.

Name	Designation	id
binaya	software developer	0001
hmart	software developer	0002

*refered link : www.youtube.com

*** End of clauses ***