

**FABRICATION, INSTALLATION OF NEW PONTOON AND
REPAIR AND MAINTENANCE OF EXISTING PONTOON FOR
RORO/ROPAX FACILITY AT GHOGHA- GUJARAT.**

(DPA/RORO/2024, Dated:25/07/2024)

PART 3 – TECHNICAL DOCUMENTS

TENDER DOCUMENT

FOR

**FABRICATION, INSTALLATION OF NEW
PONTOON AND REPAIR AND
MAINTENANCE OF EXISTING PONTOON
FOR RORO/ROPAX FACILITY AT
GHOGHA- GUJARAT**

VOLUME I

GENERAL CONDITIONS AND SITE DATA



DEENDAYAL PORT AUTHORITY

ADMINISTRATIVE OFFICE BUILDING

POST BOX NO. 50

GANDHIDHAM (KUTCH)

GUJARAT – 370201



**FABRICATION, INSTALLATION OF NEW PONTOON AND
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1. GENERAL CONDITIONS RELATING TO SITE AND WORK

1.1 Contractor's Responsibility

The information supplied hereinafter and provided elsewhere is given in good faith, but the Contractor shall satisfy himself regarding the weather, wind, waves, tides, currents, geological ground and other conditions and no claim will be entertained due to inadequacy or any error in the information provided.

1.2 The Site

The existing Ghogha RoRo/Ropax terminal is located in the western coastline of Gulf of Khambhat just opposite Dahej. The RoRo/Ropax terminal is an independent terminal in an open sea condition.

1.3 Safety of Adjacent Structures to Works

In pursuance of the conditions of contract the contractor or his representative shall provide and erect to the approval of the Engineer's Representative such supports as may be required to protect efficiently all structures or works in the vicinity of working area or otherwise take such permanent measures to protect the structures or works. Any damage to the structures shall be made good by the contractor without delay as directed by the Engineer's Representative at his cost.

1.4 Use of local labourers

- 1.4.1 The contractors shall preferably engage only local labourers available for unskilled works.
- 1.4.2 The contractor shall make his own arrangement to obtain immigration, or any other approval required for his expatriate personnel. A fresh domicile certificate of individual issued from the concerned district authority with photograph affixed on to be produce on arrival at worksite for verification of his character and antecedents from the concerned police station.
- 1.4.3 The contractor shall submit the names of the workers employed by him to the Engineer's Representative. No workers, employees of Government department shall be employed by the contractor without production of discharge certificate from the department concerned.
- 1.4.4 The contractor shall make his own arrangement for transportation of HSD, Petrol, etc. required for this project.





1.5 Shipment and Landing Charges Customs Duty Etc.,

The contractor shall bear all expenses in connection with the shipment and landing of any plant, materials or other things imported or brought for the purpose of the contract. The rates quoted by the contractor shall also include the cost of customs duties, royalty charges, Excise duty, Sales Tax, import duties, Tolls, Quarry fees, etc. on any plant, materials or things imported into by him for the contract whether for permanent or temporary works. No claims will be entertained on this account.

1.6 Unauthorized Persons

No unauthorized persons will be allowed at the site. The contractor shall take steps to prevent trespass and prevent unauthorized persons from entering and / or being on the site. All the personnel will be required to wear their security passes as per the requirements of local authorities.

1.7 Fire Fighting Arrangements

The contractor may be subjected to periodic fire prevention inspections by local fire prevention authorities. Deficiency or unsafe condition shall be corrected at the cost of the contractor and the approval of the Engineer's Representative.

These fire prevention inspections will include but are not limited to the following:

- i) Proper handling, storage and disposal of combustible materials, liquids, and waste.
- ii) Work operations, which can create fire hazards.
- iii) Access to firefighting equipment.
- iv) Type, size, number and location fire extinguishers or other firefighting equipment.
- v) Inspection and maintenance of records for extinguishers.
- vi) Type, number, and location of containers for the removal of surplus materials and rubbish.
- vii) General housekeeping.

While carrying out alteration works inside the port area, the contractor shall isolate the zone under his occupation in consultation with the Engineer's Representative. Smoke from welding etc., should be kept to a minimum to ensure that false alarms are not raised.

1.8 First Aid Facilities

The contractor shall provide and maintain upon the work sufficient proper and efficient lifesaving appliances and first aid equipment to the approval of the Engineer's Representative and in accordance with the requirements of International Labour Organisation (I.L.O.) Convention No.62. The appliances and equipment shall be available for use at all times. For work carried out within the site area or in the vicinity of any wharf or quay, the contractor





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shall abide by all the provisions of the site Workers (Safety, Health, and Welfare) Scheme, 1961. The contractor's particular attention is drawn to the above said Regulation in respect of erection and maintenance of staging. Contractor shall indemnify the DPA from the cases booked by the Labour Enforcement Officer (L.E.O.) for his (contractor's) negligence.

The contractor shall at his own expense, provide adequate First aid services on the site including trained first aid staff during all working hours. The contractor shall also make necessary arrangements with a local hospital and with doctors so that his sick or injured persons may receive the best available medical treatment with a minimum billing at any hour of the day or night. For this purpose, he shall provide a suitably equipped ambulance.

1.9 Communication

Communications between parties which are referred to in the conditions are effective only when in writing or online mode. A notice shall be effective only when it is delivered (in terms of Indian Contract Act 1872).

1.10 Site Register

For the purpose of quick communication between the Engineer's Representative and the contractor, site register shall be maintained at site in the manner as described below:

Any communication, relating to the works may be conveyed through records in the Site Registers, such as communication from one party to the other shall be deemed to have been adequately served General Conditions of Contract. Each Site register shall have machine numbered pages in triplicate and shall be carefully maintained and preserved by the contractor and shall be kept in the office of the Engineer's Representative. Any instruction or order which the Engineer's Representative may like to issue to the contractor may be recorded by him in the Site Register and two copies thereof taken by him for his record.

1.11 Construction Records

1.11.1 Daily Progress reports

The Contractor shall record and submit to the Engineer's Representative daily, progress report for the preceding day showing up to date progress and progress during the previous day on all items of each section of the works in relation to and in consideration of the detailed CPM schedule. In addition, the Contractor shall submit on the second day of every fortnight, a detailed progress report giving the progress of the works during the preceding fortnight and also indicating the up-to-date progress of the work.





1.11.2 Progress Photographs

The Contractor shall submit (two copies one each for Engineer's Representative/ Employer) at monthly intervals or as otherwise directed sufficient number of progress photographs in colour with printed date taken, to cover all areas and stages of the Works spread over in previous month. The photographs shall be half plate size and shall be mounted in albums and suitably inscribed. Wherever necessary the Engineer's Representative or his Representative shall indicate the subject matter of the photographs.

The Engineer's Representative shall select required important photographs from those received each month for inclusion in the progress report to be submitted to Employer. The Contractor shall supply six 200x250mm size prints of each selected photographs suitably mounted, labelled and suitable for incorporation in the report. Alternately digital photos also may be supplied by Contractor. The cost of albums, developing to the required sizes etc shall be deemed to be included in the rates quoted in the tender.

1.11.3 Digital Films

The Contractor shall make Digital films of the works as it progresses. Duration of such digital films shall be about three hours. At the end of the Contract, the film shall be edited to make a digital recording with adequate commentary and sound effects of approximately three-hour duration. Two copies of the film in portable USB flash drive shall be handed over to the Engineer's Representative and Employer at the completion of the Works. All charges for making and editing of such video film shall be deemed to be included in the rates and prices quoted by the Contractor and shall not be paid for separately.

1.11.4 Submission of Information and Records

All reports, statements, returns, drawings, diagrams, programmes, etc., which the Contractor shall be required to submit during the progress of the Works to the Engineer's Representative or his Representative are to be furnished in triplicate unless otherwise directed.

1.11.5 As-Built Drawings

On completion of the Works the Contractor shall prepare and submit within 15 days a complete set of 'as-Built ' drawings in duplicate. The drawings shall give all the details showing the changes made with respect to the construction drawings (to be shown in cloud) in different colours / notations, the sections. Once approved by the Engineer's Representative the Contractor shall provide five sets of the drawings (hard copies) and two Auto-Cad (latest Version) copies of 'as-made' drawing.





1.11.6 Site Books

For the purpose of quick communication between the Engineer's Representative and the contractor, site books shall be maintained at site office /on dredger in the manner as described below:

Any communication relating to the works may be conveyed through records in the Site Books, such as communication from one party to the other shall be deemed to have been adequately served. Each site book shall have machine numbered pages in triplicate and shall be carefully maintained and preserved by the contractor and shall be kept in the Office of the Engineer's Representative. Any instruction or order which the Engineer's Representative may like to issue to the Contractor may be recorded by him in the Site Book and two copies thereof taken by him for his record.

1.12 License and Permits

The contractor shall make his own arrangements for obtaining all necessary licenses, permits etc., for his crafts and also for the procurement of any spares that he may require during the progress of the works. The contractor shall have an adequate supply of necessary spares from the very beginning to ensure that no serious delay or hold-up occurs in the execution of works.

1.13 Existing Services

The contractor's attention is drawn to the possibility that there might be existing underground or overhead services & service line i.e., within the site of the proposed works. It is the contractor's responsibility to work cautiously and carefully so that these are not damaged. Any damage to the services shall be repaired and restored immediately as directed by the Engineer's Representative without any extra cost. The contractor is required to ascertain and allow in his cost for any rerouting of the services that may be necessary for the due execution of the contract and any claim resulting from his failure to do so will not be admitted.

1.14 Maintaining Utility and Services

The contractor shall not damage, close or obstruct any utility areas, roads, traffic or other property until permits thereof have been obtained. If facilities are closed, obstructed, damaged or rendered unsafe by contractor's operation, the contractor shall, at his own cost, make such repairs and provide such temporary guards, lights and other signals or as necessary or required for safety and as will be acceptable to the Engineer's Representative and / or the Employer of the utility, highway, road or other property.





1.15 Facilities, Attendance Etc., on Nominated Sub - Contractors

The contractor shall allow for the provision of facilities, attendance etc., for the nominated sub-contractors.

These facilities, attendance etc., include:

- a) Storage facilities for plant and equipment and products and materials.
 - i) The contractor shall make his own arrangement for sanitary facilities for his employees and workmen engaged on this work by providing Sewage treatment Plant. Arrangements for storage of water should be done by the contractor at his own cost.
 - ii) The labourers engaged for the work should be provided with fuel by the contractor and cutting of trees shall not be permitted.
- b) Watching and lighting and protection of their work as necessary.
 - i) The contractor shall be responsible for the watch and ward and safety of the materials, Tools & Plant, Machineries. The contractor shall facilitate the inspection of cement godown by the Engineer's Representative at any time.

1.16 Limitation of Operations

The contractor shall refrain from entering the area of the site not allocated to him unless he obtains the prior written approval of the Engineer's Representative and appropriate authorities. Should the contractor wish to make use of any adjoining or property of offices or halls, he shall first obtain the written clearance / consent of the Engineer's Representative and then shall apply to the appropriate authority for permission to use the area. If such permission is granted, the contractor may make use of the area thus permitted to use, but on completion shall clear away and make good any damage at his own expense and pay all costs and charges in connection therewith.

The contractor shall be solely responsible to obtain required permits / authorization from other agencies / Departments for the due performance of the contract and delay if any arising thereof shall not be quoted as reason for extension of time and consequent additional cost.

The Contractor must comply with all operational procedures set forth by DPA Authorities as and when required at his own cost.

1.17 Work Programme for Areas with Restricted Access

- i) Work to be carried out inside the DPA shall be so programmed to ensure, that the time period required to carry out the entire activities is minimum. All advance preparations with regard to approvals, procurement of all materials, plant, personnel etc., shall be made to achieve the targets, this may call for working continuously or at unscheduled hours as directed and approved by the Engineer's Representative.
- ii) The contractor shall submit a detailed CPM / PERT chart showing detailed program and diagram in an approved form showing the estimated dates of commencement and





completion of the various parts of the temporary and permanent works, including anticipated dates and arrangements for delivery, erection etc. of materials for the various sections of the works.

- iii) The sequence in which the works are to be carried out shall be as approved by the Engineer's Representative. A program of work is to be submitted to the Engineer's Representative for review and approval and this must be periodically updated and modified as per actual progress of work to enable timely completion. The program should essentially show the key days for important operations and shall contain full and complete details. The contractor shall submit progress report regularly for the period of working as per the format specified by the Engineer's Representative showing up to date progress of all the important activities.

1.18 Stoppage of Works

Contractor may be instructed to stop the works from time to time due to security reason, movement of ships or any other reasons as per the instruction of DPA Authorities.

1.19 Noises and Dust Control

The contractor shall take all necessary precautions in reducing noise and dust caused by Plant to minimum acceptable level by means of mufflers, silencers, screens, and the like.

1.20 Working Condition

1.20.1 Access to the Site

The proposed work site is an independent facility, and the existing approach road shall be utilized to transport men and material to site or through floating crafts depending on the availability and the same shall be arranged by the contractor.

1.20.2 Port Requirement

The contractor shall obey orders and directions given by the Engineer's Representative or his authorized representative in the course of the discharge of his duties. The contractor shall cease work whenever and for as long as the Engineer's Representative may consider it essential to do so. It shall be noted that the contractor shall be given only time extension and shall not have any financial claims on account of the stoppage of work on such occasions.

1.20.3 Provision of materials, stores, equipment, and craft

The contractor shall be responsible for the provision of all materials, stores, equipment, and craft necessary for satisfactory execution and completion of the work.





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1.20.4 Wrecks and other obstructions

Unless the Engineer's Representative directs otherwise all wrecks and other objects encountered during the execution of work shall be lifted, removed, and disposed of by the contractor.

1.20.5 Interruptions of work and idle time charges

The contractor shall allow in his rates for any loss of working hours due to weather and shifting of plants and other equipment from one area to another area depending upon the traffic operations or for maintenance.

Any claim for idling of the contractor's plant and machinery or any other inputs shall not be entertained by the DPA for reasons whatsoever including non-availability of working area and therefore the contractor may consider all such events and submit their offer accordingly.

For the reasons stated or for any other reasons, no claim on idle time charges shall be entertained by the DPA.

1.20.6 Clearance of site on completion

- i) After completion of the contract the contractor shall remove at his own cost all chains, wires and any other equipment, plant or materials introduced by him.
- ii) After the completion of the work, the contractor should clear all the residual materials belonging to the contractor within 15 days and prior to the final bill payment.

1.20.7 Environmental Considerations

The contractor shall refrain from using plant, which makes excessive noise, particularly during the hours of darkness, which shall be limited to 45db (A) at a distance of 100 m from the working area and other plants.

The information furnished hereinafter and provided elsewhere is given in good faith, but the Contractor shall satisfy himself regarding the weather, tides, etc., and no claim will be entertained due to any error in the information supplied.





1.21 Site Condition

1.21.1 Chart Datum

The datum to which all the levels shall be referred to is the Chart Datum.

1.21.2 Tidal Information

The tidal variation for Ghogha is summarized in the table below. An additional 1.5m shall be added to the water levels to include the effect due to storm surge and global warming.

Tide levels

Description	Tidal Levels (above Chart Datum)
Highest Astronomical Tide (HAT)	10.94m
Mean High Water Springs (MHWS)	10.08m
Mean High Water Neaps (MHWN)	8.08m
Mean Low Water Neaps (MLWN)	5.79m
Mean Low Water Springs (MLWS)	1.02m
Lowest Astronomical Tide (LAT)	0.10m

1.21.3 Wind

The basic wind speeds for the region of Ghogha is summarized in the table below.

Wind speed

Description	Operating	Storm
Wind m/sec	20	50

1.21.4 Currents

The maximum surface current at Ghogha terminal location is noted to be 5.5 knots (2.827 m/sec) and generally flows towards the North along the depth contours. Since the terminal berthing line is oriented along the current flowing direction, the current will act perpendicular to the approach trestle.

As there is no information on the storm current, the same current is used in the calculation for operating (1 year) and storm (100 year) wave load calculations.

1.21.5 Waves

The wave height, period, and direction to be used in the calculation of wave induced loads on various structures at Ghogha is given in the table below.





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Wave Data

Description	Operating	Storm	Direction
Wave Height H_{\max} (m)	1.21	4.0	Towards Northeast
Wave Period T_z (Sec)	4.50	8.0	

The wave approach from open sea into the Gulf of Cambay as well as locally generated wind waves is shown in the figure below.



Wave approach angles to marine terminal at Ghogha

1.21.6 Temperature

Monthly mean high and low temperatures for Ghogha location have been summarized in the table below.

Mean monthly temperature.

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean daily Temperature Max °C	31.4	34.3	37.6	40.0	39.7	35.4	32.0	31.1	32.7	35.9	35.1	33.0
Mean daily Temperature Min °C	12.8	14.9	19.8	23.7	26.9	26.9	25.7	25.1	24.5	22.1	17.2	14.0





1.21.7 Visibility

Weather records for the Gulf of Cambay show that on average there are only 1.7 half days in any year when the visibility is less than 1km. The majority of this time is in the morning with only a minimal effect in the evening. Poor visibility could affect navigation, especially when ferries are crossing shipping lanes, although the extent of this is dependent on the navigation control systems that are used. Manoeuvring on and off the berth would not be delayed except in dense fog and cargo handling would not be delayed at all. Downtime due to lack of visibility is therefore minimal and we have allocated 0.5 day for each port.

1.21.8 Rainfall

Annual rainfall is concentrated with much of it falling during the monsoon period. Average monthly rainfall and occurrence of rainy days has been summarized in the table below.

Annual rainfall

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average rainfall in mm	1.2	0.3	1.6	1.8	17.0	154.2	332.8	228.3	207.7	55.7	1.2	0.1
No of rainy days	0.1	0.1	0.1	0.1	0.5	7.4	14.6	12.2	7.6	2.5	0.1	0.0

1.21.9 Bathymetry

Reports of the earlier bathymetric surveys carried out in the Navigational Channel are available for inspection in the office of the Engineer's Representative.

1.21.10 Diving Equipment

If instructed by the Engineer's Representative, the Contractor shall mobilize within 10 days from the date of issue of any such instruction, suitable plant, equipment, and personnel for diving and/or video inspection of the seabed as required by the Engineer. No extra payment shall be made on this account.





1.22 Temporary Works

The Contractor may, at his own expense, and subject to the approval of the Engineer's Representative and statutory authorities, construct offices, stores, workshop in the area allocated to him and remove the same as per the orders of the Engineer's Representative, on completion of the Contract. Whenever required the Contractor shall furnish such details of his temporary works as may be called for by the Engineer's Representative and the Contractor shall satisfy the Engineer's Representative as to their safety and efficiency.

The Engineer's Representative may direct those temporary works which he considers unsafe or inefficient to be removed and replaced in a satisfactory manner. The Contractor shall follow Engineer's Representative's directions/instructions, The Contractor shall maintain all the equipment and shall ensure that they are suitable for the work and maintained in such a manner to ensure their efficient working. The Engineer's Representative, may if he deems fit, direct the Contractor to remove from site any equipment which are not efficient and/or prejudicial to the quality of the work to be replaced by equipment to their satisfaction.

1.23 Contractor's working area

The Engineer's Representative shall allow the Contractor to use of Port Land for the purpose of setting up of his Site Office, workshop, storage and fabrication area etc. for a period not exceeding the duration of the project. This working area shall be available on an "as is where is" basis. Levelling, constructing approach roads, laying water and power lines, if required, shall be the responsibility of the Contractor.

The cost of all such works shall be deemed to have been included in the rates and prices quoted for the works and no extra payment shall be made on this account.

On completion of the Contract, Contractor shall remove all his temporary structures thereon from this area, level it and hand over the same back to the Employer in a neat and clean condition. Upon failure of the Contractor to comply with the same, the Employer shall get the work done at the cost of Contractor and debit the same from the Contractor's Final bill.

1.24 Returns of labour and equipment

The Contractor shall supply to the Engineer's Representative or his Representative, by noon every working week, a return of the men employed the previous day and of the work on which they were engaged, specifying also the numbers employed in each trade. He shall also supply monthly any other return which may be required as to the number of men and construction equipment employed and the nature and quantity of the work done.

1.25 Sanitary conveniences





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Sanitary conveniences for the use of persons employed on the Works shall be provided and maintained by the Contractor to the extent and in such a manner at all such places as shall be approved by the Engineer's Representative and the authority concerned, and all persons connected with the Works shall be obliged to use them exclusively. The Contractor shall make all temporary arrangements for the proper discharge of sewage and drainage from or in connection with the Works and shall maintain the same to the satisfaction of the Engineer's Representative and the authority concerned as long as they may be required.

1.26 Temporary fencing of contractor's area

The Contractor shall at his own expense erect and maintain in good condition temporary fences and gates along the boundaries of the area free of any rental charges.

The Contractor shall except when authorized by the Engineer's Representative, confine his men, materials and plant within the Site of which he is given possession. The Contractor shall not use any part of the Site for purposes not connected with the works unless prior written consent of the Engineer's Representative has been obtained. Access shall be made to such areas only by way of approved gateways. The Contractor shall maintain sufficient watchmen at site to the satisfaction of the Engineer's Representative and shall provide lights at night time to the fencing provided for the area.

1.27 Supply of Materials by the Contractor

It will be the responsibility of the Contractor to make timely procurement of all materials for both temporary and permanent works.

1.28 Existing Services

If the existing oil pipeline / power line / water pipeline and the approach road to the site is running across part of the area of the work site, it shall be arranged to be relocated / rerouted, if found necessary to realign or shift by the Contractor at extra cost as per CPWD schedule of rates applicable.

1.29 Taking over / handing over of the completed works

All the work until handed over to the Engineer's Representative shall stand at the risk of the contractor who shall be responsible to make good at his own cost. Contractor shall hand over the work in good order and conditions and in conformity in every respect with the requirements of the contract.





1.30 Availability of infrastructural facilities

1.30.1 Water Supply

The Employer will not provide water for construction purposes. The Contractor is required to make his own arrangements for supply of water for construction purposes. The Extra Water Charges & Sewerage Charges levied, if any, by the local authorities for use of water for construction purposes shall be paid by the Contractor and it will be deemed to have been covered in the rates quoted in the tender.

The Contractor shall be allowed to make use of the existing water supply system of the Port for his offices, stores, workshop, staff & labour accommodation on payment of charges as per the tariff of the Port. However, the storage of the water supplied shall be the responsibility of the Contractor.

The Contractor shall bear all the costs towards laying of any pipeline, providing storage tanks, pumps, water meters etc. to meet his requirements.

1.30.2 Power Supply

The Contractor shall be required to make its own arrangements for the provision of electric power from local authorities.

1.30.3 Telecommunications

The Contractor shall make his own arrangements for suitable telephone/internet connections / wireless communication system for intercommunication between base office, dredging spread and transport barges.

In addition, the Contractor shall provide a radio room at the Contractor's base office and adequate radio communication sets on the vessels, dredgers, survey and inspection boats, and shore control points. An adequate number of walkie-talkie sets are to be provided for key personnel to be contacted on VHF channel.

1.30.4 Bunkering and Water Supply Services for Contractor's craft

The Contractor shall make his own arrangements for bunkering and water supply for all his craft.



1.30.5 Welding or hot work

Welding/gas cutting/hot work near berths or any floating plant/vessels shall be done only with the prior permission of the Engineer's Representative and at such times and in locations as approved by him, subject to compliance with the conditions imposed.

1.31 Employment of Skilled Labour

During the execution of work the contractor shall employ only such persons who are careful, perfectly skilled and experienced in his field of work. The Engineer's Representative shall be at liberty to object and ask the contractor to remove from the work any person employed by the contractor for execution of work, in the opinion of Engineer's Representative, misconducts or he is found negligence in the proper performance of his duties as such persons shall not be again employed on the work without permission of Engineer's Representative.

1.32 Sub- Soil Conditions

The data and findings of the subsoil investigations carried out in the past are attached with the tender. This information is for the guidance of the contractors. The Employer does not accept any responsibility about its correctness or otherwise. The contractor is deemed to have reviewed and understood the soil conditions prior to submission of tender. No claim whatsoever will be entertained by Employer if the soil conditions indicated in the drawings are not in complete correspondence with those encountered during the course of execution of the works. Additional bore holes at the proposed locations shall be carried out by the contractor at his own cost during the execution of work. Pile termination levels will be fixed based on this new bore holes and contractor shall not claim any additional payment or extension of time if the termination levels differ from the ones shown in the tender drawings except as provided in the tender elsewhere.

1.33 Contractor to Submit Mooring Proposals

The contractor shall submit, every week, to the Engineer's Representative a statement showing the proposals for mooring the floating craft during the ensuing fortnight. The contractor shall also submit for approval to the Engineer's Representative his proposals for mooring his small craft and floating plant.

1.34 Navigable Channel to be Kept Free

Throughout the period of the contract, the contractor shall ensure that the work is carried out without causing any obstruction or interference to the normal traffic in the approach channel and basin as specified elsewhere in the contract agreement. The contractor's craft and personnel shall at all times adhere to the established rules of the port and comply with any directions in respect of navigation in the basin in waters that may be issued from time to time





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by the Engineer's Representative. The contractor shall also conform in every way to the requirements in respect of making, lighting and watching and structure, craft or equipment employed in the execution of the contract.

The contractor shall seek permission from the Port Authorities for all his floating crafts plying in the execution of this contract and no floating craft which has not been so registered shall be allowed to be employed in the execution of this contract. No exemption whatsoever shall be granted in this regard.

1.35 Survey and setting out.

The contractor shall at his expense's carryout all the necessary surveys, measurements and setting out of the works and shall for this purpose engage qualified and competent surveyors whose names and qualifications shall be submitted to the Engineer's Representative for his approval.

The contractor shall provide for the purpose of checking the survey and setting out to the Engineer's Representative. All the assistance, which he may require, the Surveyor shall be selected having appropriate experience and as far as possible the same Surveyor shall be provide throughout the contract period.

Before commencing any work at any location, the contractor shall give the Engineer's Representative not less than two days' notice of this intention to set out or give levels for any part of the works in order that arrangements may be made for inspection.

The contractor shall provide for the use of the Engineer's Representative and his nominee all necessary survey instruments and other equipment and all technicians, labour and attendants which the Engineer's Representative or his nominee may require for checking the setting out and making of the works.

The contractor shall always maintain in good working order during the period of contract the instruments provided by him for the proper setting of the works.

The contractor shall make available, at his own expense, any poles, pegs, staging, templates or profiles required by the Engineer's Representative or his representative for inspection and / or measurements of the works.

1.36 Works to be Kept Dry

If certain parts of the Works or Temporary works are liable to flooding at any stage, the Contractor shall be responsible for preventing such flooding and for promptly rectifying any damage to the works or Temporary works so occasioned by flooding.





1.37 Quality management / assurance

The Contractor shall document and operate the Quality Assurance System as approved by the Engineer/Employer.

In addition, the Contractor shall prepare a Quality Assurance Plan for the execution of the works. The plan shall be submitted within 21 days of receipt of the Letter of Acceptance. The Quality Assurance Plan shall be reviewed, updated and resubmitted for approval as necessary throughout the Contract period.

The Quality Assurance Plan shall specifically address:

- i. The procedures for maintaining the project quality requirements with respect to the use of subcontractors, vendors and suppliers;
- ii. The structure of all correspondence between the Contractor and the Engineer,

The Contractor shall cooperate with the Engineer's Representative and provide all the necessary works and records to enable the Engineer's Representative to assess the Contractors quality plan and associated procedures.

The Contractor shall not commence works until he has submitted to the Engineer's Representative a written statement of his proposed procedure for his own inspections of the items, recording such inspection and obtaining the Engineer's written approval thereof. Every statement shall identify the individuals on the Contractor's or sub-contractor's staff who are responsible for inspection, the stages at which inspection and tests are to be made and the detailed aspects to be verified or measured in each inspection. Each inspection shall be recorded.

The record shall identify the inspector, the place, the date and time when the inspection was completed, the section of the works inspected or part of the materials, and its state of completion. Reference shall be made to the relevant drawings and the specific aspects or properties which were checked or measured.

The record of inspection and tests shall be stored in an orderly fashion on the site by the Contractor until the issue of the Taking Over Certificate for whole of the works or such earlier times as Engineer's Representative may instruct, and Engineer's Representative shall have the right of access to them at all times.

After the issue of Taking Over Certificate for whole of the works or such earlier time as Engineer's Representative may instruct the Contractor to either dispose the records or deliver them as directed.





1.38 Environmental management plan for execution

The Contractor shall prepare an execution plan of the EMP and submit it for the approval by Engineer/Employer within 3 weeks of the receipt of Letter of Acceptance. The execution of the Environmental Management Plan (EMP) shall meet the following requirements:

- (i) The contractor shall refrain from using plant which makes excessive noise, particularly during the hours of darkness, which shall be limited to 65db (A) at a distance of 100 m from the dredging and other plants.
- (ii) In addition, the contractor shall at his cost make necessary noise control measures.
- (iii) All works shall be undertaken in such a way as to ensure that these operations do not deteriorate the surface water quality, which must be maintained within the prescribed standards. Water quality parameters viz. turbidity, dissolved oxygen, ammoniacal nitrogen and other nutrients in water should be measured at regular intervals to monitor water quality.
- (iv) Monitoring of the water quality parameters in the dredge areas and in dumping locations on weekly basis or as determined by Engineer.
- (v) Suspended sediment concentrations in mg/l concurrently with current measurements at frequency of once in a week during dredging period or as determined by the Engineer. The water samples shall be collected at surface, mid depth and 1 m. above sea bed by adopting the standard methods of collection of water samples.
- (vi) Dissolved Oxygen measurements
- (vii) Toxicity test on dredge material to determine the quality of heavy metals in accordance with approval methods and standards.
- (viii) Spillage of any mineral oil products shall be prevented and immediately mitigated in the exceptional occurrence of the spillage. The Floating barges shall comply with MARPOL Regulations as regards on board oil spillage equipment.
- (ix) The Contractor should take adequate anti-pollution measures and shall ensure that the dredging parameters are maintained well within the prescribed norms.
- (x) Maintain clean wharf to avoid garbage, leakage / spillage of dredged materials and other wastes.
- (xi) Maintain their project offices neat and tidy taking all precautions against land/ sea pollution.
- (xii) Setting up of Environment monitoring group.
- (xiii) Monitor various other parameters including land, air and water pollution in the working areas.

The EMP submitted by Contractor shall meet the stipulations as laid down by Ministry of Environment and Forests (MoEF), India.

The Contractor shall also abide by all the relevant environmental stipulations during the progress of the work.





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The Contractor shall submit the test results regularly to the Employer/Engineer's Representative for information and approval.

As the execution plan of the EMP is a management tool for the Contractor's use, it shall present in detail how these measures shall be operated, the resources required and the schedule of implementation. This plan should contain sections dealing with the individual environmental aspects.

The Contractor shall respect and obey the restrictions and safety rules as applicable and as imposed by the authorities concerned.

The detailed outline of the proposed EMP for execution shall be submitted in Schedule-N of the Tender.

The EMP of the Contractor shall be monitored through a reputed environmental agency approved by Engineer's Representative/Employer and Contractor shall be responsible to adhere to and satisfy all the requirements related to EMP. The cost to the EMP including monitoring through approved reputed environmental agency shall be borne by the Contractor.

On completion of the works, the Contractor shall demolish and remove from the Site all temporary structures leaving the area in clean and tidy condition to the approval of the Engineer/Employer.

No claim for extra payment or for extension of time in the removal of such items and the like will be entertained and the Contractor shall allow in his rates for all the cost of removing any items of the type or types listed above and the like which may be encountered in the course of the dredging which he is required to execute.

All oil and greasy wastes on board the "Contractor's Equipment", floating vessels, crafts, etc. shall be collected in containers and disposed away on land as directed by the Engineer's Representative and shall not be let into the sea. Before starting the Work, a scheme shall be worked out in consultation with the Engineer's Representative.

1.39 Relocation of Navigational Buoys

It is the responsibility of the Contractor to shift, place and reposition the existing navigational aids such as buoys laid for marking the Channel which are creating obstructions to the Contractor's dredging activities as per the instructions of Engineer. The Contractor shall take utmost care and precaution in shifting and repositioning of the navigational buoys at no extra cost. Damages, if any, during the course of repositioning shall be borne by the contractor.





1.40 General – Survey

The Contractor shall make suitable provisions for calibration of all survey equipment including the tide gauge whenever directed by the Engineer. Because of the extent of tidal range, the Contractor shall place special stress on the accurate reduction of sounded depths. The survey launch, survey equipment, automated survey system software etc. require the approval of the Engineer's Representative before being imported to Site. Software HYPACK/PDS 2000 should be used for survey purposes.

1.41 Data from Surveys

All raw data on recording paper and/or Compact Disc of echo sounder and tide gauge shall become property of the Employer after the surveys and drawings have been completed.

1.42 Breakdowns

The Contractor shall inform the Engineer's Representative forthwith of any breakdown, irregularities or otherwise, affecting the positioning of his dredger, vessels or other equipment. Delay incurred in the dredging operation due to malfunctioning of the Electronic Positioning System shall not be reimbursed under the Contract.

1.43 Fire-fighting arrangements

The contractor shall provide suitable arrangements for firefighting. For this purpose, he shall provide a requisite number of fire-extinguishers and an adequate number of buckets, some of which are to be always filled with sand and some with water. This equipment shall be provided at prominent and easily accessible places as directed by the Engineer's Representative and shall be properly maintained. If at any time during the currency of work, the firefighting services are carried out by the Employer, the same will be on chargeable basis.

The contractor may be subjected to periodic fire prevention inspections by local fire prevention authorities/Port Fire Department. Deficiency or unsafe condition shall be corrected at the cost of the contractor and the decision of the Engineer's Representative, and the Port Fire Department shall be binding on the Contractor.

These fire prevention inspections will include but are not limited to the following:

- (i) Proper handling, storage and disposal of combustible materials, liquids and waste.
- (ii) Work operations which can create fire hazards.
- (iii) Access to firefighting equipment.
- (iv) Type, size, number and location fire extinguishers or other firefighting equipment
- (v) Inspection and maintenance of records for extinguishers.





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- (vi) Type, number, and location of containers for the removal of surplus materials and rubbish.
- (vii) General housekeeping.

While carrying out alteration works inside the Port area, the contractor shall isolate the zone under his occupation in consultation with the Engineer's Representative. Smoke from welding etc. should be kept to a minimum to ensure that false alarms are not raised.

Welding/hot works in close proximity of berth during discharge cargo is prohibited and the fire safety regulations of the Port shall be strictly followed.

1.44 Assistance to the employer/ engineer

1.44.1 General

The Contractor shall render such assistance with facilities, labour, motor vehicles, boats, and materials as at any time may be required by the Employer/Engineer's Representative directly or indirectly, in connection with the works. The costs of such assistance shall be borne by the Contractor, if such assistance is intended by or provided for or specified in the Contract; if any assistance is required by the Employer/Engineer's Representative which is not so intended and not provided or not specified, then the cost of such assistance shall be borne by the Employer. The assistance to the Employer/Engineer's Representative includes, but not by way of limitation, the items in the following clauses.

The contractor shall provide the Engineer's Representative at all times during the contract period with sufficient and qualified personnel to assist the Engineer's Representative in his duties to carry out or check any work and / or measurement of works. The contractor is also to provide the Engineer's Representative with necessary survey instruments, computers, any gadgets, ladders, gangways etc., as directed for inspection or measurement of the works by the Engineer's Representative.

1.44.2 Facilities / Services provided by Contractor.

The contractor shall provide the following facilities for the exclusive use of Employer, Engineer's Representative, or their representatives at no extra cost to the Employer for their respective projects:

- a) Mobiles 8 Nos. with sim card and unlimited monthly charges for use of Employer's representatives.
- b) Furnished Air-Conditioned site office of at least two forty feet portacabins i.e., cabin for Engineer's Representative or Employer's staff along with one conference room with Executive tables, chairs for about 10 staffs including pantry arrangements.
- c) Xerox and scanning facility.
- d) VHF or equivalent communication facilities





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- e) 2 Nos Desk Computer and 2Nos Laptop (min 100 GB hard disk capacity) of latest generation including the licensed software (office 365 and Autocad) with 2 printers separately.

The facilities under Sr. No. (a) to (e) shall be returned back to the contractor after completion of the project.

1.44.3 Protective & safety items

The Contractor shall provide for the use of Employer/Engineer's Representative and his principals, employees and agents and such other persons as the Employer/Engineer's representative authorizes, the following protective items throughout the duration of the Works.

- Safety Boots (20 number- various sizes as agreed with the Engineer)
- Wellington Boots with Steel Toe caps (20 number- various sizes as agreed/required by the Engineer)
- Waterproof topcoats (20 number)
- Hard Hats (20 number)
- Life Jackets (20number)
- Gloves (20 number)
- Ear Protection (20 number)
- Hi-Visibility vests (20 number)
- Eye protection (20 number)
- Any other safety equipment as required by Engineer's Representative in connection with Contract.

1.44.4 Provision of Vehicle

The Contractor will have to provide two Air-Conditioned Vehicles (Innova /Tavera /Xylo/Ertiga) with driver throughout the contract period for the use of Employer / Engineer's Representative on a twenty-four hour basis. This vehicle will be used for the duties related to the works of this contract. Vehicle must be in very good condition and to the satisfaction of the Employer. Necessary fuel/oil/driver/maintenance etc. will have to be borne by the Contractor. During the contract period, in case the Contractor does not provide the Vehicle the employer will engage a vehicle and actual charges incurred by him will be recovered from the contractor's bill.

