



**Wadaagsan Company**




**BID NO GS 001/2021/22**

**CONTRACT DOCUMENT**

**for**

**PROVISION OF SERVICES TO UNDERTAKE A  
BATHYMETRIC SURVEY AND MARINE  
GEOTECHNICAL INVESTIGATION AT THE  
GARACAD SEA PORT, PUNTLAND, SOMALIA.**

<b>ISSUED BY</b>		<b>COMPILED BY</b>
<b>PROJECT MANAGER WADAAGSAN COMPANY GARACAD PUNTLAND SOMALIA</b>		<b>INGEROP INTERNATIONAL CONSULTANTS IN ASSOCIATION WITH RENDEL</b> 

November 2021

<b>NAME OF BIDDER</b>	
<b>EMAIL ADDRESS OF BIDDER</b>	

**WADAAGSAN COMPANY**

**GARACAD SEAPORT**

**CONTRACT GS001/2021/22**

**PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA**

**BID NOTICE AND INVITATION TO BID**

The Wadaagsan Company LLC is pleased to invite sealed bids from local and overseas bidders for a Bathymetric Survey and Marine Geotechnical Investigation at the Garacad Sea Port, Puntland, Somalia as more fully described in the bidding document.

The scope of works includes inter-alia:

A. Survey works: -

- Bathymetric survey of the approaches to new Garacad port , the entrance and navigation channel and the port basin

B. Geotechnical investigations: -

- Drilling of marine boreholes
- In-situ and laboratory tests

Qualification requirements

- The bidder shall demonstrate that it has the equipment and tools
- The Bidder shall demonstrate that it meets experience as prime contractor in a minimum of two contracts of works of a nature and complexity equivalent to the Works over a period of five years.
- Other qualifying criteria mentioned in the bid document.

**Expressions of interest**

Expressions of interest to participate in the bids should be made to the email addresses noted below on or before 23 December 2021

Bidding documents will be made available electronically and interested eligible bidders may request them from:

Wadaagsan Company Project Management Team

Garacad Port

Ismael Ali - [ismael.ali@garacadseaport.com](mailto:ismael.ali@garacadseaport.com)

Mohammed Fasiuddin - [mohammed.fasiuddin@garacadseaport.com](mailto:mohammed.fasiuddin@garacadseaport.com)

**Pre- Bid Meeting**

A pre-bid virtual briefing meeting is scheduled for **Thursday 13 January 2022 at 10.00 East African Time (EAT)**.

A link for joining the virtual meeting link will be sent to bidders who have drawn bid documents.

**Submission of bids**

Bids must be submitted in accordance with the Instruction to Bidders through the given email addresses and with Subject Title: "CONTRACT GS001/2021/22, PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA" and should be addressed to Wadaagsan Company LLC, Garacad Sea Port, Garacad, Puntland, Somalia

**Deadline for the submission of bids**

Bids are to be submitted through the following email addresses on or before **Thursday, 27 January 2022 at 14.00 EAT**:

[info@garacadseaport.com](mailto:info@garacadseaport.com),

[mohammed.fasiuddin@garacadseaport.com](mailto:mohammed.fasiuddin@garacadseaport.com),

[ismael.ali@garacadseaport.com](mailto:ismael.ali@garacadseaport.com)

and copied to:

[said.faadi@garacadseaport.com](mailto:said.faadi@garacadseaport.com)

Bids will be opened on the same day at 14.15 EAT in the presence of bidders or their representatives who choose to attend.

Bids received after the specified closing date and time will not be considered.

The Wadaagsan Company LLC reserves the right to accept or reject any bid.

The CEO  
Wadaagsan Company LLC  
Garacad Sea Port  
Garacad  
Tel: +252907552253  
Email: [info@garacadseaport.com](mailto:info@garacadseaport.com)

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## DETAILS OF BIDDER

<b>Name of Company or Partnership / Joint Venture / Consortium or Individual /Sole Proprietor</b>	
<b>Trading as (if different from above)</b>	
<b>Company registration number (if applicable)</b>	
<b>Postal address</b>	
<b>Physical address (Chosen domicilium citandi et)</b>	
<b>Contact details of the person duly authorised to represent the bidder</b>	Name: Mr/Ms _____ (Name & Surname)  Telephone:( ____ ) _____  Cellular Telephone: _____  E-mail address: _____

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## **BID INSTRUCTIONS**

### **1. BID DOCUMENTS**

Bid documents are obtainable from the Employer on request by email.

### **2. CHECKING OF BID DOCUMENTS**

Before submitting a bid the Bidder shall check the numbering of the pages in the bid documents against the index and if any pages or drawings are found to be missing or if any part of the documents or drawings is illegible or indistinct or if the documents contain any ambiguous descriptions or obvious errors, he shall immediately notify the Employer. The Employer will not be liable in any way for any claims arising through neglect of the Bidder to comply with these requirements.

### **3. SUFFICIENCY OF BID**

The Bidder shall satisfy itself before bidding as to the correctness and sufficiency of the bid for the Works and of the rates and prices stated in the priced Schedule of Quantities which rates and prices shall cover all his obligations under the Contract, and everything necessary for the proper completion and, where specified, defects correction of the Works.

### **4. SUBMISSION OF BID**

#### **4.1 Completion and Submission of Bid Document**

All bids shall be submitted on the Form of Offer incorporated into this document. The Form of Offer shall not be detached from this document.

The complete document including the set of drawings with all schedules, forms and annexures duly completed and signed shall be submitted to the place and bid before the closing date and time, as described in the bid notice. The bidders time for completion shall be clearly stated on the Appendix to the Form of Offer .

Proof of posting the bid will not be accepted as proof of delivery of the bid to the appropriate place for the receipt thereof.

**All bids shall be submitted through above given Email Addresses.**

Any bid which is delivered to an address other than the one stipulated in the bid notice will not be accepted, except in the case of telegraphic bids which comply with the applicable conditions.

#### **4.2 Incomplete Bids**

Bids may be rejected in the event of bids containing additional items not included in the original documents or in the event of conditional or incomplete offers and irregularities of any nature contained in the Form of Offer, or in the completed Schedule of Quantities.

#### **4.3 Validity of Bids**

Each bid, whether it be for a part or for the whole of the project shall remain valid for the period stated in the Appendix to the Form of Offer.

#### **4.4 Opening of Bids**

The Employer will open the bids in public shortly after the closing time of the bid. The name of each bidder, the total bid price and the contract completion period of all bids received will be announced to all bidders present at the opening of bids.

### **5. WITHDRAWAL OF BIDS**

A Bidder may, without incurring any liability, withdraw his bid provided written advice to that effect reaches the Employer before the time fixed in the bid notice for the receipt of bids.

In the event of the bid being withdrawn after the time for the receipt of bids, or if when notified that his bid has been accepted, the Bidder fails to provide the specified surety and to sign the Contract within the time specified or such extended period as the Employer may have allowed, or if the bidder fails to execute the service in terms of his bid,

he shall be liable for any additional expense incurred by reason of the Employer having to accept any less favourable bid.

#### **6. CLAIMS ARISING AFTER THE SUBMISSION OF BIDS**

No claim for any extras arising out of any doubt or obscurity as to the true intent and meaning of anything shown on the drawings and/or described in this bid document shall be entertained after the submission of any bid, and the Bidder shall be deemed to have:

- a) Inspected the drawings and read and fully understood this bid document.
- b) Visited the site of the proposed works before bidding and carefully examined existing conditions, the means of access to the site, the conditions under which the work is to be done, the installation and use of plant and other material, scaffolding requirements, protective measures and the handling and storage of materials and acquainted himself with any limitations or restrictions that may be imposed by the municipal or other authorities in regard to access and transport of materials and plant to and from the site.
- c) Requested clarification of the actual requirements of anything shown on or contained in the bid documents, the exact meaning or interpretation of which is not or might not be clearly intelligible to the bidder.

#### **7. SURETIES**

No performance sureties for the due performance, observance and fulfilment of this Contract will be required.

#### **8. AUTHORITY TO SIGN DOCUMENTS**

The Bidder shall provide proof that the bid was signed by an authorised person and shall duly complete Annexure A in this regard. Failure to duly complete this Statement may subject the bid to prejudice or rejection.

#### **9. BID BRIEFING**

A pre-bid virtual briefing meeting will take place in lieu of a physical site inspection. The Employers Project Management Team and the Engineers Resident Engineer will be available to brief bidders on the bidding requirement and scope as well as respond to any queries.

Bidders may request clarification of the bid documents, if necessary, by notifying the Employer not later than 7 calendar days before the bid closing date closing time stated in the Bid Notice and Invitation to Bid.

Only those bids submitted by bidders who attended the virtual briefing meeting will be declared responsive.

#### **10. ISSUE NOTICES**

The Employer undertakes, if necessary, to issue notices that may amend or amplify the bid documents to each bidder during the period from the date the bid documents are available up until 7 calendar days before the bid closing date.

Notwithstanding any requests for confirmation of receipt of notices issued, the bidder shall be deemed to have received such notices if the Employer can show proof of transmission thereof via electronic mail, facsimile or registered post.

#### **11. ACCEPTANCE OR REJECTION OF BIDS**

The Employer does not bind himself to accept the lowest, or any, bid and reserves the right to accept any bid.

No reason for the acceptance or rejection of any bid will be given.

#### **12. NON-DISCLOSURE**

The Employer undertakes to not disclose to bidders, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of bid offers and recommendations for the award of a contract, until after the award of the contract to the successful bidder.

#### **13. RISK ANALYSIS**

Notwithstanding compliance with regard to any requirements of the bid, the Employer will perform a risk analysis in respect of the following:

- a) reasonableness of the financial offer
- b) reasonableness of unit rates and prices
- c) the bidder's ability to fulfil its obligations in terms of the bid document, that is, that the bidder can demonstrate that he/she possesses the necessary professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, capacity, experience, reputation, personnel to perform the contract, etc.

No bidder will be recommended for an award unless the bidder has demonstrated to the satisfaction of the Employer that he/she has the resources and skills required.

#### **14. FINANCIAL INVESTIGATION**

Bidders must be prepared to furnish the following documentation at own cost within seven (7) days of being called upon to do so:

- (i) Audited financial statements for the past three financial years plus a certified financial statement covering the period from the end of the last financial year to date. If audited statements are not readily available provisional certified statements must be submitted. Such certified statements must be accompanied by:
  - A resolution of the board of directors authorising the signatory to certify such statements;
  - An extract of the relevant memorandum and article(s) of association from which it is clear that the company is empowered to issue such statement.
- (ii) In the event of the company's contractual obligations being guaranteed by another company or other companies, the following must be furnished:
  - A resolution of the board of directors of the backing company/companies granting authority for such guarantee.
  - An extract from the relevant memorandum and article(s) of association of the backing company/companies from which it is clear that the company/companies is/are empowered to issue such guarantee.
  - Details of the relevant guarantee, i.e. period of validity, to what extent guaranteed, the source of funds and the precise nature of the company's obligations.
  - Audited financial statements in respect of the backing company/companies on the same basis as set out in paragraph (i) above.
- (iii) A list of all major shareholders indicating the percentage shareholding of each.
- (iv) Cash-flow details reflecting anticipated receipts and expenditure during the contract period, in respect of:
  - a) the specific contract, and
  - b) all other contracts

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**FORM OF OFFER AND ACCEPTANCE**

**PART A (TO BE FILLED IN BY TENDERER):**

1 **Required Details** (Please provide applicable details in full):

<b>Name of Bidding Entity*</b> ("the bidder")	
<b>Trading as</b> (if different from above)	

**AND WHO IS** represented herein by: (full names of signatory) \_\_\_\_\_

duly authorised to act on behalf of the bidder in his capacity as: (title/ designation) \_\_\_\_\_

**HEREBY AGREES THAT** by signing the Form of Offer and Acceptance, the bidder:

1. confirms that it has examined the documents listed in the Index (including Schedules and Annexures) and has accepted all the Conditions of Tender;
2. confirms that it has received and incorporated any and all notices issued to bidders issued by Wadaagsan Company LLC;
3. confirms that it has satisfied itself as to the correctness and validity of the bid offer; that the price(s) and rate(s) offered cover all the goods and/or services specified in the bid documents; that the price(s) and rate(s) cover all its obligations and accepts that any mistakes regarding price(s), rate(s) and calculations will be at its own risk;
4. offers to supply all or any of the goods and/or render all or any of the services described in the bid document to Wadaagsan Company LLC in accordance with the:
  - 4.1. terms and conditions stipulated in this bid document;
  - 4.2. specifications stipulated in this bid document; and
  - 4.3. at the prices as set out in the Price Schedule.
5. accepts full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on it in terms of the Contract.

\_\_\_\_\_  
Signature(s)

\_\_\_\_\_  
Print name(s):  
On behalf of the bidder (duly authorised)

\_\_\_\_\_  
Date

# Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

**CONTRACT GS001/2021/22: PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA**

The bidder, identified in the offer signature block, has examined the documents listed in the bid data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of bid.

By the representative of the bidder, deemed to be duly authorized, signing this part of this form of offer and acceptance, the bidder offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

**THE OFFERED TOTAL OF THE PRICES IS:**

USD. .... (in words);

..... (in figures)

This offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the bidder before the end of the period of validity stated in the bid data, whereupon the bidder becomes the party named as the Contractor in the conditions of contract identified in the contract data.

Signature(s) .....

Name(s) .....

Capacity .....

**for the bidder**

(Name and .....

address of

organization) .....

Name and

signature

of witness .....

Date .....

# Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the bidder's offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the bidder's offer shall form an agreement between the Employer and the bidder upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract are contained in:

- Part 1: Agreements and contract data (which includes this agreement)
- Part 2: Pricing data
- Part 3: Scope of work
- Part 4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the bid data and any addenda thereto as listed in the bid schedules as well as any changes to the terms of the offer agreed by the bidder and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The bidder shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the bidder receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the bidder (now Contractor) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Signature(s) .....

Name(s) .....

Capacity .....

**for the**

**Employer** .....

.....

.....

.....

Name and .....

signature

of witness

Date .....

.....

**APPENDIX TO FORM OF OFFER**

Address of Employer                   Wadaagsan Company LLC  
  Iftin Plaza  
  Galkayo  
  Puntland  
  SOMALIA

e-mail                                       info@garacadseaport.com/[ismael.ali@garacadseaport.com](mailto:ismael.ali@garacadseaport.com)/[said.faadi@garacadseaport.com](mailto:said.faadi@garacadseaport.com)

Mobile number                         00252907798742/002529075552253/00252907759242

Name and Address of Project Manager                   Mohammed Fasiuddin  
  Wadaagsan Company LLC  
  Project Manager Office  
  Garacad Sea Port  
  Gara'ad  
  Puntland, Somalia

e-mail                                       mohammed.fasiuddin@garacadseaport.com

Mobile number                         00252906936602

Address, telephone and facsimile number of Contractor \*\*  
.....  
.....

Time to complete the Works\*\*                         To be stated..... (calendar days)

Advance payments                         The Employer shall not pay any Advance Payment

Delay damages                             0,1% of the Contract Price for each day delay up to a maximum of 5% of the Contract Price

Programme to be furnished             At time of bid and updated 14 days from Letter of Acceptance.

Period of validity of bid                 **60 days**

Date .....                                 Signature .....

  on behalf of .....

NOTES :

**\*\* Tenderer to enter relevant information and data**

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**PRICE SCHEDULE**

**Pricing Assumptions**

1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
2. The rates, sums and prices in the Pricing Schedule are to be fully inclusive prices for the work described under the several items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Conditions of Contract, as well as overhead charges and profit.
3. Importing or exporting of any material, plant, machinery, equipment or any other delivery of the goods related to the Work shall be the responsibility of the Contractor including clearance through customs. Any custom duties, custom fees or custom taxes that may arise due to importing and exporting activities shall be borne by the Contractor.
4. Where this Contract requires detailed drawings, designs or other information to be provided, and no rates or prices are included in the bill specifically for such matters, then the Contractor is deemed to have allowed for all costs associated with such requirements within the tendered rates and Prices in the Pricing Schedule.
5. An item against which no Price is entered will be treated as covered by other Prices or rates in the Pricing Schedule . If a number of items are grouped together for pricing purposes, this will be treated as a single lump sum.
6. The quantities contained in the Pricing Schedule may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the Project Manager at each assessment date will be used for determining payments due and not the quantities given in the Pricing Schedule .
7. The short descriptions of the items of payment given in the Pricing Schedule are only for the purposes of identifying the items. More detail regarding the extent of the work entailed under each item is provided in the Scope of Works.
8. For the purpose of the Pricing Schedule , the following words shall have the meanings hereby assigned to them:
  - Unit:** The unit of measurement for each item of work.
  - Quantity:** The number of units of work for each item.
  - Rate:** The agreed payment per unit of measurement.
  - Amount:** The product of the quantity and the agreed rate for an item.
  - Sum:** An agreed lump sum payment amount for an item, the extent of which is described in the Scope of Work, but the quantity of work which is not measured in any units
9. All rates and prices offered shall price in United States Dollar (USD).
10. Rates and prices shall not be subject to adjustments for changes in cost and shall remain fixed for the duration of the Contract.

Item	Description	Unit	Qty	Rate	Amount USD
<b>1</b>	<b>General Items and Provisional Services</b>				
1.1	Establish offices and stores for the Contractor at site	sum	1		
1.2	Mobilise and establish on site rotary core drilling plant and all necessary ancillary equipment (jack up platforms etc) to site to undertake overwater investigation to meet the contract and specification requirements	sum	1		
1.3	Professional attendance to meet the contract and specification requirements	sum	1		
1.4	Set out the location at each exploratory hole or point	sum	1		
1.5	Establish the location and elevation (X, Y, Z) of the ground / sea bed at each 'as-built' exploratory hole or point	sum	1		
1.6	Health and Safety documentation and Safety Risk Assessment	sum	1		
1.7	Provision of water supply for the field works	sum	1		
1.8	Photography to meet the contract and specification requirements	sum	1		
1.9	One master copy of Factual Ground Investigation Report (electronic and hard copy)	sum	1		
1.10	Additional copy of Ground Investigation Report (Factual)	nr	Rate Only		
1.11	Digital field/engineering logs	sum	1		
1.12	Digital laboratory test data	sum	1		
1.13	Provision of Insurances for the ground investigation works	sum	1		
1.14	Provision of Performance Bond	sum	1		
<b>TOTAL CARRIED TO SUMMARY</b>					

Item	Description	Unit	Qty	Rate	Amount USD
2	<b>Geotechnical Work</b>				
2	<b>Rotary drilling with core recovery</b>				
2.1	Move rotary drilling plant and equipment to the site of each exploratory drillhole and set up on jack-up platform	nr	9		
2.2	Set-up jack-up platform at each borehole location	nr	9		
2.3	Standing time for rotary drilling plant, equipment and crew	nr	9		
2.4	Rotary drill in all materials to obtain cores of the specified diameter between 0 and 20m depth	m	180		
2.5	Use of semi-rigid core liner	m	180		
2.6	Backfill rotary drillhole with cement/bentonite grout or bentonite pellets - as specified		180		
2.7	Provision of core boxes to be retained by client	sum	1		
2.8	Provision of biodegradable polymer (drilling fluid)	sum	1		
2.9	Disposal of drilling supernatant flush returns (contained in the recirculation tanks) to landfill by tanker where on site disposal is not permitted. <b>Note tanker delivery dockets to be retained by the Contractor.</b>	sum	1		
2.10	Disposal of excess or surplus inert arisings from rotary drilling operations (where standpipe or piezometer is not installed)	sum	1		
	<b>Samples for geotechnical analysis</b>				
2.11	Small disturbed samples (not less than 1.0 kg)	nr	25		
2.12	Bulk disturbed samples (10-25 kg) shall be taken of each soil type and where no sample is recovered with an SPT	nr	25		
	<b>In situ testing</b>				
2.13	Standard penetration test in rotary core borehole as specified depth to 20m	nr	120		
<b>TOTAL CARRIED TO SUMMARY</b>					

Item	Description	Unit	Qty	Rate	Amount USD
3	<b>Geotechnical laboratory testing</b>				
3.1	Moisture content	nr	10		
3.2	Liquid limit, plastic limit and plasticity index	nr	10		
3.3	Particle size distribution by wet sieving	nr	10		
3.4	Particle size distribution by dry sieving	nr	10		
3.5	Sedimentation by pipette	nr	10		
3.6	Sedimentation by hydrometer	nr	10		
3.7	One-dimensional consolidation properties, test period 5 days	nr	10		
3.8	Shear strength of a single 300 mm x 300 mm square specimen by direct shear, test duration not exceeding 1 day	nr	9		
3.9	Undrained strength of a single 100 mm diameter specimen in triaxial compression without the measurement of pore pressure	nr	10		
3.10	Consolidated undrained triaxial compression test with measurement of pore pressure single-stage or multi-stage test using 100mm diameter specimen, test duration not exceeding 4 days per specimen	nr	10		
3.11	Natural water content of rock core sample	nr	20		
3.12	Porosity/density using saturation and buoyancy	nr	Rate Only		
3.13	Uniaxial compressive strength of rock core sample	nr	10		
3.14	Uniaxial compressive strength with measurement of Young's Modulus and Poisson's Ratio of rock core sample	nr	10		
3.15	Point Load Strength Index on rock core (axial or diametral)	nr	Rate Only		
3.16	Point load strength index on irregular lump rock sample (set of ten individual determinations)	nr	Rate Only		
3.17	Organic matter content	nr	9		
3.18	Acid soluble sulphate content of soil sample	nr	9		
3.19	Water soluble sulphate content of soil sample (2;1 water / soil extract)	nr	9		
3.20	Total sulphur content of soil sample	nr	9		
3.21	Carbonate content of soil sample	nr	9		
3.22	Sulphate content of groundwater sample	nr	9		
3.23	Carbonate content of groundwater sample	nr	9		
<b>Total carried forward</b>					
<b>Total brought forward</b>					

Item	Description	Unit	Qty	Rate	Amount USD
3.24	Chloride content of groundwater sample	nr	9		
3.25	Water soluble sulphate content of rock core sample	nr	9		
3.26.	Acid soluble sulphate content of rock core sample (2:1 extract)	nr	9		
3.27	Total sulphur content of rock core sample	nr	9		
3.28	pH value	nr	18		
<b>TOTAL CARRIED TO SUMMARY</b>					
<b>4</b>	<b>Bathymetric Survey</b>				

Item	Description	Unit	Qty	Rate	Amount USD
4.1	Mobilization	sum	1		
4.2	Hydrographic Survey	ha	1448,8		
4.3	Prepare and submit a Survey Contractor Report	nr	3		
<b>TOTAL CARRIED TO SUMMARY</b>					

WADAAGSAN COMPANY

GARACAD SEAPORT

CONTRACT GS001/2021/22

PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA

**PRICE SCHEDULE SUMMARY**

<b>Section</b>	<b>Description</b>	<b>Amount USD</b>
1	Preliminary and General	
2	Geotechnical Investigations	
3	Geotechnical Laboratory Testing	
4	Bathymetric Survey	
<b>TOTAL OF SCHEDULED ITEMS</b>		
<b>CONTINGENCIES:</b> Allow the sum of (10%) of the above total of scheduled items for Contingencies to be spent as the Project Manager may direct and to be deducted in whole or in part if not required		
<b>TOTAL CARRIED TO : Form of Offer and Acceptance</b>		

**WADAAGSAN COMPANY**

**GARACAD SEAPORT**

**CONTRACT GS001/2021/22**

**PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA**

**GENERAL CONDITIONS OF CONTRACT**

**1. DEFINITIONS AND INTERPRETATIONS**

- 1.1. In this Contract, unless the context requires otherwise, the following words and phrases shall have the following meanings :
- a. "Award Date" means the date of the award of the Contract by the Employer to the Contractor;
  - b. "Contract" means the documents listed in the Employer's acceptance letter, including these Conditions. In case of discrepancy between these Conditions and other documents forming part of the Contract, these Conditions shall prevail unless otherwise agreed in writing;
  - c. "Contract Price" means the price or prices payable to the Contractor by the Employer or to the Employer by the Contractor under the Contract for the full and proper performance by the Contractor of his part of the Contract as determined under the provisions of the Contract.
  - d. "Contractor" means the person appointed by the Employer for the performance of the Services (including any individuals or successors);
  - e. "Contractor's Representative" means a competent person appointed by the Contractor to be his representative in relation to the performance of the Contract who will receive and act on any directions given by the Contract Manager;
  - f. "Project Manager" means the official of the Employer, or other person employed in that capacity, appointed by the Employer to act on its behalf for the purpose of managing the Contract;
  - g. "day" means calendar day, unless otherwise defined;
  - h. "Employer" or "Authority" means the Wadaagsan Company LLC and such persons authorised to act on its behalf;
  - i. "Employer's Property" means anything issued or otherwise provided in connection with the Contract by or on behalf of the Employer or its representatives;
  - j. "Engineer" means the firm Ingerop International Consultants (Pty) Ltd. which has been appointed by the Employer to act as the Engineer for the purposes of the Contract;
  - k. "Key Personnel" means any person who, in the Employer's opinion, is fundamental to the performance of the Contract;
  - l. "Letter of Acceptance" means the written communication by the Employer to the Contractor recording the acceptance by the Employer of the Contractor's Bid;
  - m. "Letter of Completion" means the written communication by the Employer to the Contractor recording the completion of the Contract;
  - n. any reference to a "person" shall as the context may require, be construed as a reference to any individual, firm, company, corporation, Government Employer, Agency or any association or partnership (whether or not having a separate legal personality);
  - o. "Premises" means the premises occupied, owned or leased by the Employer or as described in the Contract;
  - p. "Programme" means any programme or timetable agreed by the parties to the Contract which regulates or specifies the period or periods for the performance of the Contract or any part of them, together with any activity's ancillary to the performance of the Contract or the preparation and submission of reports;
  - q. "Work" means all work detailed in the Contract which the Contractor is required to carry out under the Contract;
- 1.2. Unless the context requires otherwise, the singular shall include the plural and vice versa, and the masculine shall include the feminine and vice versa;
- 1.3. The headings are inserted for convenience only and shall not affect the interpretation of the Contract.
- 1.4. Reference to any legislative and statutory requirement or similar instrument shall be deemed to include reference to any subsequent amendment to them.

**2. DURATION OF THE CONTRACT**

Subject to the Employer's rights of termination under these conditions, the Contract shall be in force from the Award Date and the work shall be provided throughout the duration of the Contract in accordance with the dates and timetables specified in the Programme, or until the issue by the Employer of the Letter of Completion;

**3. DUTY OF CARE**

The Contractor shall perform the Work with all reasonable skill, care and diligence and in accordance with the Contract and any legislative and statutory requirements.

**4. DISCLOSURE OF INFORMATION**

The Employer reserves the general right to disclose information about this Contract, unless otherwise agreed in writing subject to the requirements of any legislation.

**5. ROYALTIES AND LICENCE FEES.**

The Contractor shall ensure that all royalties, licence fees or similar expenses in respect of all intellectual property used in connection with the Contract, have been paid and are included within the Contract Price. The Contractor shall indemnify the Employer from and against all claims and proceedings, which may be made or brought against the Employer and any damages, costs and expenses incurred by the Employer in respect of such supply or use.

**6. DRAWINGS, SPECIFICATION, SOFTWARE, DESIGNS AND OTHER DATA.**

Any drawings, specification, software, designs or other data (including working documents, maps and photographs) completed or provided in connection with the Contract shall become or, as the case may be, remain the property of the Employer and be delivered up to the Employer on completion or termination of the Contract. Where the Employer has agreed to accept modern storage media, drawings and other documents shall be supplied by the Contractor in an agreed form.

**7. CONTRACTOR'S PERFORMANCE**

7.1 The Contractor shall properly manage and monitor the Work and immediately inform the Contract Manager if any aspect of the Contract is not being or is unable to be performed.

7.2 The Contractor shall provide all the necessary facilities, materials and any other equipment, and personnel of appropriate qualifications and experience to undertake the Work. All personnel deployed on work relating to the Contract shall have appropriate qualifications and competence, be properly managed and supervised and in these and any other respects be acceptable to the Employer. If the Employer gives the Contractor notice that any person is to be removed from involvement in the Work, the Contractor shall take immediate steps to comply with such notice. The decision of the Employer regarding the Contractor's personnel shall be final and conclusive.

7.3 The Contractor shall :

- a. give the Employer, if so requested, full particulars of all persons who are or may be at any time employed on the Contract;
- b. comply with any rules, regulations and any safety and security instructions from the Employer, including completion of any additional clearance procedures required by the Employer, and return of any passes as required.

7.4 The Contractor shall take all reasonable steps to avoid changes to any of the staff designated in the Contract as Key Personnel. The Contractor shall give at least 28 days' notice to the Employer of any proposals to change Key Personnel and Clause 7.1 shall apply to the proposed replacement personnel.

7.5 Unless otherwise agreed by the Employer, neither the Contractor nor any of his employees or agents shall carry out any business or trading activity within the confines of the Premises and no advertisement, sign or notice of any description shall be exhibited without prior approval, in writing, from the Employer.

7.6 The Contractor shall exercise due care and propriety when dealing with third parties in connection with the Contractor and ensure that no commitments are entered into (unless expressly required under the Contract), without the Employer's prior written consent.

7.7 Nothing in the Contract shall be construed as creating a partnership, a contract of employment or a relationship of principal and agent between the Employer and the Contractor.

**8. MEETINGS AND REPORTS**

- 8.1 The Contractor shall attend all meetings arranged by the Employer for the discussion of matters connected with the performance of the Work.
- 8.2 Without prejudice to the submission of reports as specified under the Contract, the contractor shall render any additional reports as to the progress of the Services at such time or times, and in such form as the Employer may reasonably require.

**9. INSPECTIONS**

During the course of the Contract the Employer shall have the power to inspect and examine any of the Work at any reasonable time. Where the Work is being performed on any other site, the Employer shall on giving reasonable notice to the Contractor be entitled to inspect and examine such Work. The Contractor shall provide free of charge all such facilities as the Employer may reasonably require for such inspection and examination. In the Condition, Work includes planning or preliminary work for the Work.

**10. INSURANCE**

- 10.1 The Contractor shall effect and maintain insurance necessary to cover the Contractor and all his sub-contractors or consultants for the risks under the Contract and for the avoidance of doubt all the risks as defined in Clause 11 (Loss or Damage).
- 10.2 Without detracting from the generality of Clause 10.1 the Contractor shall have in place adequate :
  - a) General Public Liability Insurance,
  - b) Property, Plant and Equipment Insurance,
  - c) Fully Comprehensive Motor Vehicle Insurance,
- 10.3 The Contractor shall, whenever required by the Employer, produce to the Employer certificates signed on behalf of the Contractor's and his sub-contractor's and consultants' insurers, stating that insurance complying with the requirements set out in Clauses 10.1 and 10.2 and 10.3 above (where applicable) is in force and the period for which it has been taken out.
- 10.4 The Employer shall furthermore at all times be entitled to approve the insurer and the terms attaching to the respective insurance policies; and periodically, as it deems fit, to inspect, review and require the Contractor/Operator to amend the terms attaching to the policies without incurring any obligation or liabilities as a consequence thereof.
- 10.5 If, for whatever reason, the Contractor fails to maintain the insurance described in this Condition or without the approval of the Employer obtains a different policy of insurance from that which he notified to the Employer at the time when he submitted his bid, the Employer may make alternative arrangements necessary to protect his interests and recover the cost from the Contractor or deal with the matter in accordance with the provisions of Clause 17 relating to breach of contract.
- 10.6 The terms of any insurance or the amount of cover shall not relieve the Contractor or his sub-contractors or consultants of any liabilities under the Contract, their sub-contracts or their terms of commission.

**11. LOSS OR DAMAGE**

- 11.1 This condition applies to any loss or damage which arises out of or is in any way connected with the performance of the Contract.
- 11.2 The Contractor shall, without delay and at his own expense, replace or make good to the satisfaction of the Employer, or if the Employer requires, compensate the Employer, for any loss or damage.
- 11.3 The Contractor shall indemnify the Employer against all claims made, or proceedings brought, against the Employer in respect of any loss or damage and against all costs and expenses reasonably incurred in dealing with or in settling such claims or proceedings.
- 11.4 The Employer shall notify the Contractor as soon as possible of any claim made, or proceedings brought against the Employer in respect of any loss or damage.
- 11.5 If the Contractor shows that any loss or damage:-
  - (a) was not caused nor contributed to by his neglect or default, or by that of his servants, agents or sub-contractors or by any circumstances outside his or their control, he shall be under no liability under this condition;
  - (b) was in part the responsibility of any other person (not being his servant, agent or sub-contractor), the Contractor's liability under this condition shall not extend to the share in the responsibility attributed to the neglect or default of that person.
- 11.6 In this condition loss or damage includes:-
  - (a) loss or damage to property;

- (b) personal injury, sickness and death
- (c) loss of profit or loss of use;
- (d) any other loss

**12. ALTERATION OF REQUIREMENT**

The Employer reserves the right to alter the requirements of the Contract should this at any time become necessary. In the event of any alteration of the contractual requirement, payment under the Contract shall be subject to fair and reasonable adjustment to be agreed between the Employer and the Contractor and recorded in writing.

**13. INVOICES AND PAYMENT**

- 13.1 Where the Contract requires payment by the Employer to the Contractor the Contractor shall submit an invoice to the Employer as specified in the Contract or within 28 days of the completion of the Work quoting the Contract number.
- 13.2 The Contractor shall submit with the invoice, such records as the Employer may reasonably require including, but not limited to, details of containers transported or any other documents which would enable the Employer to verify the information and the amounts referred to in that invoice.
- 13.3 The Contractor shall provide the name and address of his bank, the account name and number, the bank sort code and any other details, in whatever format the Employer may require.
- 13.4 The Employer shall pay the Contractor in respect of the satisfactory performance of the Work in accordance with the Contract.
- 13.5 Except where otherwise provided in the Contract, the amount payable to the Contractor for the performance of the Work shall be inclusive of all costs of staff, facilities, equipment, materials and all other expenses whatsoever incurred by the Contractor in discharging his obligations under the Contract.
- 13.6 The Employer shall pay the Contractor within 35 days of the receipt of a valid invoice, provided that the Employer is satisfied that the Work for which the invoice relates has been performed fully in accordance with the Contract.

**14. ADJUSTMENTS FOR CHANGES IN COST**

Unit prices in the Price Schedule and the amounts payable to the Contractor shall not be adjusted for rises or falls in the cost of labour, Goods, machinery, equipment, other inputs and any other expense/cost relevant to the Works. No adjustment shall be applied to the Work, the Unit Price is deemed to have included amounts to cover the contingency of other rises and falls in costs valued on the basis of cost or current prices.

**15. ASSIGNMENT, SUB-CONTRACTORS AND SUPPLIERS**

- 15.1 The Contractor shall not sub-contract or transfer, assign, charge, or otherwise dispose of the Contract or any part of it without the prior written consent of the Employer.
- 15.2 The Contractor shall ensure that any sub-contractor complies with the terms and Conditions of the Contract, so far as they are applicable. Any sub-contract shall not relieve the Contractor of his obligations under the Contract.
- 15.3 Where the Contractor enters into a contract with a supplier or sub-contractor for the purpose of performing the Contract or any part of it, he shall cause a term to be included in such contract which requires payment to be made by the Contractor to the supplier or sub-contractor within a specified period not exceeding 30 days from receipt of a valid invoice as defined by the Contract requirements.

**16. DELAY DAMAGES (DELAY PENALTY)**

In case the Contractor is not able to complete the Work described in the Contract within the stated Time of Completion, the Employer shall be entitled to payment of Delay Damages by the Contractor in the amount of 0.1% of the Contract Price for each day of delay. Total amount of delay damage shall not exceed 5% of the Accepted Contract Price.

**17. BREACH OF CONTRACT**

- 17.1 Where in the opinion of the Employer the Contractor has breached any of the provisions of this agreement or has failed to perform the whole or any part of the Work with the standard of skill, care and diligence which a competent and suitably qualified person performing the same Work could reasonably be expected to exercise, or in accordance with the Contract (including the Programme), the Employer may give the Contractor a notice specifying the way in which his performance falls short of the requirements of the Contract, is unsatisfactory or the conditions of contract have been breached.

- 17.2 Where the Contractor has been notified of a failure or breach in accordance with Condition 17.1 the Employer may request from the Contractor that within 7 days, at his own expense and as specified by the Employer, he re-schedules and performs the Work to the Employer's satisfaction including where necessary, the correction or re-execution of any Work already carried out
- 17.3 Without prejudice to any other power of termination, the Employer may terminate the Contract without notice, for any of the following reasons:-
- (a) the failure by the Contractor to comply within the specified time with a notice given under Clauses 17.1 and 17.2;
  - (b) the Contractor ceases or proposes to cease to carry on his business;
  - (c) there is a change of control in the business, and the Employer has not agreed in advance in writing to the particular change of control, save that in this event the Employer shall give one month's notice in writing to the Contractor.
  - (d) the estate of the Contractor is sequestrated (provisionally or finally), or if the Contractor publishes a notice of surrender of his estate as insolvent, or if the Contractor being a company or a close corporation goes to liquidation (provisionally or finally), or if the Contractor enters into a compromise with the general body of his creditors, or if the Contractor has an execution levied on his goods.
  - (e) the Contractor abandons or repudiates the Contract.

**18. CONSEQUENCES OF TERMINATION**

- 18.1 Where the Contract is terminated under Clause 17 (Breach of Contract), the following provisions shall apply:
- (a) any sum due or accruing from the Employer to the Contractor may be withheld or reduced by such amount as the Employer in either case considers reasonable and appropriate in the circumstances;
  - (b) the Employer may make all arrangements which are in his view necessary to procure the orderly completion of the Work including the letting of another contract or contracts;
  - (c) where the total costs reasonably and properly incurred by the Employer by reason of such arrangements exceed the amount that would have been payable to the Contractor for the completion of the Work, the excess shall be recoverable from the Contractor and the Employer reserves the right to recover such excess by set-off against any amount withheld by the Employer under Clause 18.1 (a) or as otherwise provided for elsewhere in the Contract.
- 18.2 Without prejudice to Clause 18.1, where the Contract is terminated under Clause 17.3(c) the Contractor shall have the right to claim from the Employer reimbursement of all reasonable costs necessarily and properly incurred by him in relation to the orderly cessation of the Services, including any commitments, liabilities or expenditure which are reasonably and properly incurred, and would otherwise represent an unavoidable loss by the Contractor by reason of the termination of the Contract. For the avoidance of doubt the Employer will not indemnify the Contractor against loss of profit. The Employer shall not in any case be liable to pay under the provisions of this Condition any sum which, when taken together with any sums paid or due or becoming due to the Contractor under the contract, shall exceed the total Contract price.
- 18.3 Where the Contract is terminated under Clause 17 (Breach of Contract) the Employer may, during any notice period :-
- (a) direct the Contractor, where the Work has not been commenced, to refrain from commencing such Work or where the Work has been commenced, to cease work immediately;
  - (a) direct the Contractor to complete in accordance with the contract all or any of the Work, or any part or component thereof, which shall be paid at the agreed Contract Price or, where no agreement exists, a fair and reasonable price.

**19. FORCE MAJEURE**

- 19.1 Notwithstanding the provisions of Clauses 16 and 17, the Contractor shall not be liable for forfeiture of its performance security, damages, or termination for default if, and to the extent that, his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.
- 19.2 If a force majeure situation arises, the Contractor shall notify the Employer promptly, in writing, of such condition and the cause thereof. Unless otherwise directed by the Employer in writing, the Contractor shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

**20. INSOLVENCY OF THE CONTRACTOR**

20.1 The Employer may at any time terminate the contract by giving written notice to the Contractor if the Contractor becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Contractor, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Employer.

**21. SETTLEMENT OF DISPUTES**

21.1 If any dispute or difference of any kind whatsoever, with the exception of termination in terms of Clause 20.1, arises between the Employer purchaser and the Contractor in connection with or arising out of the contract, the parties shall make every effort to resolve such dispute or difference amicably, by mutual consultation.

21.2 Should the parties fail to resolve any dispute by way of mutual consultation, either party shall be entitled to refer the matter for mediation before an independent and impartial person appointed by both parties. Such referral shall be done by either party giving written notice to the other of its intention to commence with mediation. No mediation may be commenced unless such notice is given to the other party.

21.3 Irrespective whether the mediation resolves the dispute, the parties shall bear their own costs concerning the mediation and share the costs of the mediator and related costs equally.

21.4 The mediator shall agree the procedures, representation and dates for the mediation process with the parties. The mediator may meet the parties together or individually to enable a settlement.

21.5 Where the parties reach settlement of the dispute or any part thereof, the mediator shall record such agreement and on signing thereof by the parties the agreement shall be final and binding.

21.6 Save for reference to any portion of any settlement or decision which has been agreed to be final and binding on the parties, no reference shall be made by or on behalf of either party in any subsequent court proceedings, to any outcome of an amicable settlement by mutual consultation, or the fact that any particular evidence was given, or to any submission, statement or admission made in the course of amicable settlement by mutual consultation or mediation.

**22. LIMITATION OF LIABILITY**

22.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 5:

- (a) the Contractor shall not be liable to the Employer, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay penalties and/or damages to the Employer; and
- (b) the aggregate liability of the Contractor to the Employer, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

**23. SERVING OF NOTICES**

Any notice, request, consent, approvals or other communications made between the Parties pursuant to the Contract shall be in writing and forwarded to the addresses specified in the contract and may be given as set out hereunder and shall be deemed to have been received when:

- a) hand delivered – on the working day of delivery
- b) sent by registered mail – five (5) working days after mailing
- c) sent by email or telefax – one (1) working day after transmission

**24. LAW**

The Contract shall be governed by and interpreted in accordance with the law of the Federal Republic of Somalia and Puntland State of Somalia.

**25. PERMITS**

In relation to the execution of the Works, the Employer shall provide all permits, permissions, licenses and/or approvals etc. as required/applicable by the Laws/the Authority and shall assume payment of all related taxes, duties and fees. The Contractor shall be responsible to comply with the conditions of obtained permits, permissions, licenses and/or approvals.

**WADAAGSAN COMPANY****GARACAD SEAPORT****CONTRACT GS001/2021/22****PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA****SCOPE OF WORK AND SPECIFICATIONS****1. INTRODUCTION**

Wadaagsan Company LLC (WC), the developer of Gara'ad Commercial and Fishing Port, is an investment Corporation based in Puntland State of Somalia. WC represents a strong shareholder base with extensive expertise and capabilities in the construction and infrastructure development industry. The company is currently engaged in constructing a modern port in the region to develop specialized marine services, logistical facilities and port operations skill and expertise. The port construction project has commenced and is in its 2<sup>nd</sup> year of construction.

The Gara'ad Commercial and Fishing Port project aims to turn the economic tide for Somalia's eastern and central regions using its excellent strategic location and rich natural resources to its fullest advantage. This integrated infrastructural project particularly aims to stimulate livestock export, fisheries, mining, transportation, importation of food and bulk commodities, and providing container handling and transshipment services. Specifically, the Port construction and its transit corridor aims to achieve:

- Establishing a modern port at the strategic town of Gara'ad which will serve the central Somalia regions and eastern Ethiopia and, thereby enhance the export of livestock from these regions to other countries, making the livestock industry more profitable and the residents self-sufficient.
- Provide easy access to food imports from the outside world. This will allow food to be less expensive and thereby enhance food security in the region which is plagued by droughts and famine.
- Provide easy access to other materials such as construction materials and materials for development of different sectors such as agriculture and transport leading to the development of the region.
- Ease cargo congestion in other ports in the country by allowing some of the imports and exports services to be handled at proposed Gara'ad Commercial and Fishing Port.
- Contribute to the development of economic relations, trade and transport communications between Central Somalia and Eastern Ethiopia

Within this context, as part of the development of the port a bathymetric underwater survey of the port basin and approach channel needs to be executed for registration at the Hydrographic Office, UK, and a geotechnical investigation for the construction of Berths C and D is required

Works are intended to be outsourced to an eligible Contractor having proper experience in this field and preferably in the region.

This document defines the technical and nontechnical aspects of this work for bidding purposes.

**2. EXTENT OF THE WORKS**

The work under this contract consists inter alia of the following items of work as shown on the Drawings or as directed by the Project Manager.

- (a) Mobilisation to site
- (b) Establish benchmarks
- (c) Undertake geotechnical investigations for existing and new berths
- (d) Undertake laboratory testing of samples
- (e) Interpret the results of the investigations

- (f) Prepare a Geotechnical Report
- (g) Undertake a bathymetric survey of the survey of the port basin and approach channel for registration at the Hydrographic Office, UK.
- (h) Prepare a Survey Report
- (i) Demobilise

### 3. PROJECT LOCATION

Gara'ad is located on the east coast of Puntland, 480 km South of Bossaso and 700 km Northeast of Mogadishu, capital city of Somalia. The port will be a leading investment for sustainable development of the region, mainly attributed to cargos in container, dry bulk and livestock industry.

The client's anticipated capacity of the port is 3,500,000 tons per year – actual throughput for the port will depend upon the materials to be handled, the import and export percentages and - based on the quays, storage yard, equipment and the dwell time. The position and length of the breakwater is designed to ensure the required tranquillity conditions to reach the estimated capacity. The alignment of the breakwater also provides a flexibility for future extension project to increase the capacity. Dimensional design allows the port to serve for target vessels for handling operations.

### 4. DRAWINGS

The following drawing is issued with this bid document and will form part of the Contract Documents.

Drg No. 3400/100                      Geotechnical Investigations Location Schedule

### 5. ATTENDANCE ON SUBCONTRACTORS

Approval given in terms of subcontracting shall not relieve the Contractor of any responsibility, duty or obligation imposed upon him by the Contract, and the Contractor shall in particular be and remain solely liable and responsible for all acts, omissions, negligence or breaches of contract on the part of the assignee or any of his employees, and for all acts, omissions or negligence of any Sub- Contractor or any of his employees.

### 6. PARTICULAR SPECIFICATIONS

The following particular specifications shall apply to this contract and are Annexed to the Scope of Work

- 7. SPECIFICATIONS FOR BATHYMETRIC SURVEYS
- 8. SPECIFICATION FOR GEOTECHNICAL INVESTIGATION

### 7. FACILITIES TO BE PROVIDED BY THE CONTRACTOR

The Contractor shall provide, maintain and remove his own facilities to the satisfaction of the Project Managare. The Contractor shall provide the area around his office, stores and sheds (i.e. the "Camp") with adequate security fences to ensure that unauthorised persons do not enter the camp area and security personnel should he deem it necessary.

The tendered sums for as scheduled by the Contractor, whether grouped or individually, shall include all costs for the installation, maintenance and removal of the fencing as specified, in addition to all other facilities specified and as required by the Contractor for his own purposes.

The Contractor shall provide his own accommodation and ablution facilities for his staff.

The Contractor shall be responsible for arranging his own communication services and shall be responsible for all costs relating thereto.

### 8. LABORATORY FACILITIES

The Contractor shall provide and allow for his own facilities, apparatus and procedures for the testing of materials and the process control testing of materials and workmanship in order to ensure compliance with the requirements of the Specifications.

## **9. CONSTRUCTION PROGRAMME AND METHODS**

The programme to be submitted by the Contractor in terms of the General Conditions of Contract shall be in the form of a bar chart with a horizontal time scale and shall clearly show all significant activities, the duration of all activities, the interdependencies (if any) of activities and the critical path of the overall programme, clearly related to the items or groups of items in the Pricing Schedule and shall ideally be drawn up using a commercially available computer programme. The programme shall take account of and include

- a) all locally recognised days of rest
- b) Known physical conditions or artificial obstructions

Due to the weather limitations when working in the sea, the Contractor shall ensure that his program is suitably flexible to ensure that work can continue within the program.

The Contractor shall be deemed to take into account all normal weather conditions when preparing his bid and he shall not be entitled for extra payment by the reason of the occurrence or effect of normal climatic conditions deemed to include normal rainfall and associated wet conditions and materials, strong winds, extremes of temperature and seasonal and semi-diurnal tidal conditions or any other meteorological phenomena occurring during normal seasons in Puntland, Somalia.

## **10. WORKING HOURS**

Normal Working Hours shall be between 08:00 Hours to 17:00 Hours, Sunday to Thursday.

Work on other days or at other times shall only be allowed after agreement of the Employer and written approval has been granted by the Project Manager.

## **11. KEY PERSONNEL**

The Contractor is deemed to have in making his offer, all personnel available to perform the works entirely in the contracted time and cost.

The Bidder shall state, in the format of a schedule, the posts for which he shall consider key personnel for the Site of Works. The Contractor, once formally requested by the Project Manager, shall make available the contact details of all the key personnel on site.

The Project Manager and his duly appointed representative will be the key contacts on site.

## **12. SAFETY AND SECURITY**

The Contractor shall be responsible for the safety and security of his personnel, materials on site and the works in general at all times. The Contractor shall therefore acquaint himself with the current situation in the areas and shall provide all security measures as he deems necessary to comply with the requirements of this clause.

## **13. HEALTH AND SAFETY**

The Contractor shall be responsible for the health, safety and welfare at work of his employees including those of his subcontractors and of all other persons on the Site.

The Contractor is to note that the entire area is a construction site for the development of breakwaters and berths.

### **13.1. Health - The Bidder shall submit a copy of his Safety Policy document with his bid. The Contractor's responsibilities shall include:**

- a) measures to avoid health risks in connection with the use, handling, storage and transportation of harmful substances, including cement powder;
- b) provision and maintenance of safe and properly illuminated Contractor's Equipment;
- c) provision and maintenance of safe access to all places on the Site;
- d) establishment of safe and well illuminated system of working;
- e) provision of protective clothing and equipment;

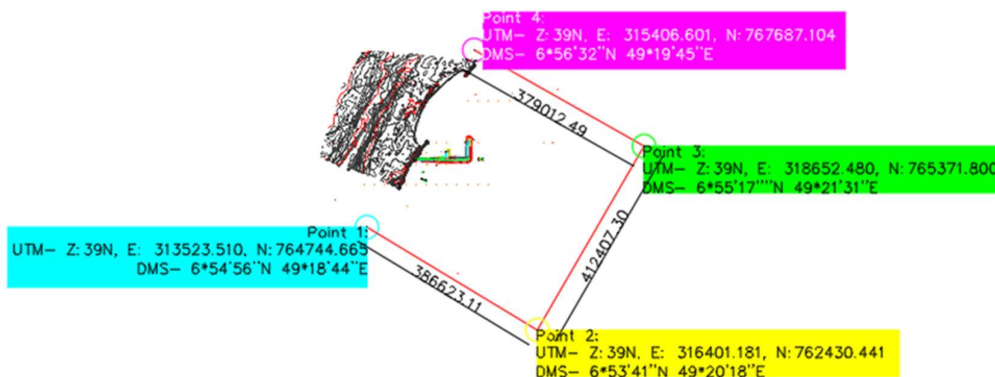
- f) appointment of a Safety Officer who shall have specific knowledge of safety regulations and have had experience of safety precautions on similar works and who shall advise the Contractor on all aspects of safety and health on Site;
  - g) reporting details of any accident to the Project Manager as soon as possible after its occurrence.
- 13.2.** Safety - First Aid Facilities - The Contractor shall provide and maintain a first aid station at the area of main operations on the Site for the use of the Contractor's personnel.
- 13.3.** Fire Protection - The Contractor shall comply with the regulations of the Project Manager and take all necessary precautions throughout the execution and completion of the Works when storing fuel on site to prevent an outbreak of fire and or pollution of the sea.
- 13.4.** The Safety Officer shall be on site at all times and all directions given by the Project Manager to the Safety Officer shall be deemed to be the Project Managers Instructions and shall be complied with promptly without additional cost to the contract. The Project Manager shall be empowered to suspend work on the Site should he consider these conditions are not being observed, and no claim arising from such a suspension will be allowed.
- 13.5.** The Contractor shall ensure that the general public is at all times protected from the operations of the contract.

## 14. SPECIFICATIONS FOR BATHYMETRIC SURVEYS

The Sub-contractor shall submit all records of surveys to the Employer.

### 14.1. Extent and Frequency of Surveys

The Contractor shall make a survey in the presence of Employer and take soundings over the whole of the marine project area and to cover the extent defined by the coordinates in the table below (approximately 3.5km x 3.5km) and see figure 14.1 below.



Boundary Coordinates:					
	Degree-Minute-Second			UTM Coordinates (m)	
	Z	Easting	Northing	East	North
Point 1	39N	49°18'44"	6°54'56"	313523.510	764744.665
Point 2	39N	49°20'18"	6°53'41"	316401.181	762430.441
Point 3	39N	49°21'31"	6°55'17"	318652.480	765371.800
Point 4	39N	49°19'45"	6°56'32"	315406.601	767687.104

**Figure 14 1 Approximate extent of Bathymetric survey and coordinate table**

Precise marine investigations must be carried out to determine the actual sea-bottom at intermediate proximity of the existing terminal, in particular the position of the future jetty and possible dredged areas.

### 14.2. Method of Survey

The Contractor shall arrange for surveys to be carried out by experienced surveyors. Curricula Vitae shall be submitted to the Employers Project Manager for approval.

The Contractor shall install and maintain a multi-user electronic positioning system DGPS (Differential Global Positioning System). The Contractor shall use a DGPS positioning system with RTK and an echo sounder with a wave compensator for correction of the water level variations.

The operation of the echo sounding equipment shall be carried out by experienced hydrographic surveyors and all equipment, personnel etc. required for sounding and survey operations both hydrographic and topographic shall be supplied by the Contractor.

The method of carrying out the surveys and soundings shall be to the consent of the Employers Project Manager . The Contractor shall provide an accurate record of water levels at the Site for use in connection with sounding surveys to the Employer's Project Manager satisfaction.

All soundings shall be carried out by means of a recording trace multi-beam echo sounder operating at the appropriate frequency with sufficient sensitivity to permit measurement of the seabed levels, and any loose material that might be present above it. Sounding equipment shall operate with an accuracy of 1% of the indicated depth or 100 mm whichever is greater, and shall have the following facilities:

- Adjustment for water level variations and draught of vessel,

- Compensation for water temperature and salinity,
- Selectable recorder chart speeds.

Before commencement of surveys and soundings, the Contractor shall conduct trials and obtain the Employer's Project Manager approval of the equipment and methods to be used.

The echo sounder shall be calibrated by means of the bar check method at the beginning and completion of each day's survey or more frequently if required by the Employer's Project Manager. Calibration shall take place in the same area of water in which the soundings are to be made. A bar, which shall be of an approved type, shall be lowered in steps of 1.0 metre between the anticipated shallowest sounding level and the deepest level possible that can be reached with the bar.

No echo soundings shall be taken in water depths less than those recommended by the manufacturer of the equipment used. For these levels a calibrated pole or chain with an approved bearing foot shall be used.

In addition to echo sounding check soundings shall be made by chain as directed by the Employer's Project Manager.

Through all its survey the Contractor must provide the following equipment (or equivalent):

- a boat capable of browsing the area of the study,
- a positioning system with centimetre precision in the horizontal plane allowing to override the constraints of tide measuring and compensation,
- a navigation system with recording,
- a dynamic attitude unit in order to record all the boat movements (roll, pitch, heave),
- a sounding system able to operate in shallow water: this system can be mounted on a perch; in which case the positioning system will directly be fixed above it; the operator will be able to investigate all the area;
- a land based total station
- acquiring software for real-time data recording and processing of all parameters,

***The Employer has purchased a tug, which will be on site before the end of 2021. The bidder should ascertain during the bidding period the suitability of the vessel to be used for the geotechnical investigations and bathymetric survey.***

#### **14.2.1. Accuracy**

The accuracy of the soundings shall be as follows:

- a) In plan  $\pm 2,000$  mm in any direction.
- b) In elevation  $\pm 100$  mm.

Those values may be revised if the presence of underwater features is a hazard to the navigation.

Secure survey control points shall be established at the start of the Contract, at locations agreed with the Employer's Project Manager which are clear of the areas of dredging and reclamation and protected throughout the duration of the Contract.

#### **14.2.2. Sounding Plate Checks.**

Surveys will also be subject to mechanical check by sounding plate on the seabed. The sounding plate will be in the form of a 15 mm thick, 300 mm diameter circular steel disc perforated with 16 no. 20 mm diameter holes (1 hole at the plate centre, 5 holes with equidistant spacing at 50 mm radius, and 10 holes with equidistant spacing at 100 mm radius). Sounding plate checks will be carried out at similar intervals to the bar checks and as agreed with the Employer's Project Manager.

#### **14.2.3. Survey Grid**

All surveys are to be referenced to WGS4-UTM-39N. The required overlap between adjacent parallel surveys runs shall be not be less than 5m for all surveys. The depth contours shall be drawn at 0.5m intervals, and 0.3m intervals

where slopes are greater than 1 in 10 (vertical to the horizontal) or as directed. Where the echo sounding traces indicate slopes steeper than 1 in 4 and/or a vertical step in excess of 0.5m, the plotting interval may be reduced further, allowing the contours to be drawn accurately. The minimum overlap for survey runs running at different angles shall be 25m.

#### **14.3. Drawings of Surveys**

Immediately following completion of each survey, the Contractor shall prepare drawings on which shall be recorded the results of the survey in the form of plans and sections. After the results plotted on each drawing have been checked and verified the Sub-contractor and the Employer's Project Manager shall sign and date each agreed drawing. The Final Survey Drawings shall be provided prior to Provisional Turnover and included in the As-Built drawings of the Works.

All drawings made by the Contractor for the purpose of recording information obtained from the surveys shall be prepared with suitable scales to suit plans and sections and these shall be acceptable to the Employer's Project Manager .

Copies of each agreed drawing shall be submitted to the Employer's Project Manager and a hard copy and electronic copy of each of the drawings of the initial and final surveys shall be submitted to the Employer on the completion of the Works.

#### **14.4. Tide Gauge**

The Contractor shall provide install maintain and operate an automatic tide recording gauge of an approved type in an approved position.

#### **14.5. Deliverables**

The Contractor shall provide:

- All sounding points (raw data) plus singular points (wrecks, etc.).
- Cross-shore bathymetric profiles (perpendicular to the jetty) with 25 m spacing,
- At least three long-shore bathymetric profiles (parallel to the berths).

The measurements and all the parameters required to perform their reduction to the desired chart datum with the required precision will be gathered by automatic systems through the whole survey.

The processing of bathymetric survey data has several parts:

- the removal of erroneous data,
- the reduction of gathered data to chart datum through integration of the different corrections factors (tidal gauge, position of the vessel...),
- the preparation of the requested final results.

The Contractor shall provide a Survey Contractor Report within 15 days from the completion date of the survey, including:

- (1) Methodology and description of the survey means
- (2) Detailed description of survey operation
- (3) Complete results (in DWG maps and numerical points .xls and .txt and hard format) analysis and interpretation
- (4) Mapping results, DWG format in 1/10,000 and 1/25,000 scale.
- (5) On the drawings/maps, include a legend that describes symbols, abbreviations, and/or graphics, and a graphic scale and north arrow.
- (6) The Contractor shall complete the checklist form in Appendix A



**Extent of Bathymetric Survey**

# APPENDIX A

## CHECKLIST

Survey Start Date	
Survey End Date	
Primary Bathymetric Instrument Type, Make & Model	
Primary Navigation Type	
Horizontal Datum	
Coordinate type	
Projection (if applicable)	
Vertical Datum	
Reduction of Sounding to Datum Method	
Resolution of Gridded output	
Gridding Method (Shoal bias preferred)	
Has the data been interpolated in any way? (Y/N) If Y, please give details	
Format of XYZ file  (e.g. E, N, lon, lat, depths or heights.)	
Intellectual Property Rights, Principal Ownership	
<b>Sounding plots</b>	
If data is rendered as a sounding plot or sheet (CAD, pdf, tif or similar) please add the following information	
Scale of plot	
Sounding label bias	
Sounding label spacing	
Sounding label position datum (ie – which part of the printed digit represents the true position of the depth?)	
Has the data been interpolated in any way? (Y/N)	
<b>Please note that sounding plots/sheets should include a clearly labelled graticule in order to ensure that we are able to validate the positioning of the data.</b>	

**Additional items**

Please fill in all these items where known. These will help to evaluate the data. Where the answer is not known, please put "Not known". Where item is not applicable or relevant to the survey, please put "n/a".

**Survey details**

Survey Title	
Commissioning Organisation	
Survey Company / Collecting Organisation	
Name of Main Survey Vessel	
Principle Purpose for Collection of Data	
Classification / Protective Marking	
Contact for Survey Queries	

**Data details**

Survey Standard	
Survey Category / IHO Order Achieved	
Processing Software and Version Used	
Unresolved Problems or Other Notable Data Issues	
Wreck Data to Follow in Full RoS / H525?	
Additional Comments:	

## 15. SPECIFICATION FOR GEOTECHNICAL INVESTIGATION

### 15.1. Background

The marine works of this project comprise the construction of two berths, the small berth comprising quays A and B and the main berth comprising berths C and D. These berths are composed of the following elements:

- Connecting causeway between shore and the main berth
- Concrete blockwork walls
- Rock revetment structures and Concrete Armour units and concrete crown wall for wave protection.

The purpose of this document is to outline the minimum requirements for the Geotechnical investigations to be undertaken for project.

### 15.2. References

#### 15.2.1. American Society for Testing and Materials (ASTM)

ASTM C1580	Standard Test methods for Water-Soluble Sulfate in Soil
ASTM D1140	Standard Test Methods for Determining the Amount of Material Finer than 75- $\mu\text{m}$ (No.200) Sieve in Soils by Washing
ASTM D422	Standard Test Method for Particle-Size Analysis of Soils
ASTM D854	Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
ASTM D1293	Standard Test methods for pH of Water
ASTM D1557	Standard Test methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> (27,000KN-m/m <sup>3</sup> ))
ASTM D1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils
ASTM D1587	Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes
ASTM D1883	Standard Test Method for CBR (California Bearing Ratio) of Laboratory- Compacted Soils
ASTM D2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
ASTM D2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
ASTM D2216	Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D2434	Standard Test Methods for Permeability of Granular Soils (Constant Head)
ASTM D2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
ASTM D2487	Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488	Standard Practice for Description and Identification of Soils (Visual- Manual Procedure)
ASTM D2850	Standard Test Method for Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils
ASTM D2938	Standard Test Methods for Unconfined Compressive Strength of Intact Rock Core Specimens
ASTM D2974	Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM D3080	Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions
ASTM D3148	Standard Test Method for Elastic Moduli of Intact Rock Core Specimens in Uniaxial Compression

ASTM D4318	Standard Test methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4220	Standard Practices for Preserving and Transporting Soil Samples
ASTM D4253	Standard Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
ASTM D4254	Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM D4373	Standard Test Method for Rapid Determination of Carbonate Content of Soils
ASTM D4542	Standard Test Method for Pore Water Extraction and Determination of the Soluble Salt Content of Soils by Refractometer
ASTM D4546	Standard Test Methods for One-Dimensional Swell or Settlement Potential of Cohesive Soils
ASTM D4750	Standard Test Method for Determining Subsurface Liquid Levels in a Borehole Monitoring Well (Observation Well)
ASTM D5079	Standard Practices for Preserving and Transporting Rock Core Samples
ASTM D5434	Standard Guide for Field Logging of Subsurface Explorations of Soil and Rock
ASTM D5731	Standard Test Method for Determination of the Point Load Strength Index of Rock and Application to Rock Strength Classifications
ASTM D6032	Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Core
ASTM D7012	Standard Test Method for Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperatures
ASTM E100	Standard Specification for ASTM Hydrometers
ASTM G51	Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing
ASTM G57	Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method
ASTM G162	Standard Practice for Conducting and Evaluating Laboratory Corrosions Tests in Soils

**15.2.2. British Standard (BS) & International Standards**

BS1377 Parts 1 to 9 inclusive (current versions)	Methods of Test for Soils for Civil Engineering Purposes
BS EN ISO 22475-1:2006	Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution
BS EN ISO 14688-1:2018:	Geotechnical investigation and testing. Identification and classification of soil. Principles for a classification.
BS EN ISO 14688-2:2018	Geotechnical investigation and testing. Identification and classification of soil. Principles for a classification
BS5930:2015	Code of practice for ground investigations (+A1:2020)
ISRM "Blue Book"	The Complete ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 1974-2006", Edited by R. Ulusay and J.A. Hudson.
ISRM "The Orange Book"	The ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 2007-2014", edited by Prof. R. Ulusay

**15.3. Survey and Setting Out**

Contractor shall conduct surveys to determine appropriate locations and elevations of investigation location from benchmarks on the property.

Contractor shall preserve and maintain all existing benchmarks and reference points on the property established by Employer. Should the Contractor, during execution of the fieldwork, destroy or remove any benchmarks or reference points established by Employer, they shall be re-established by Contractor at his cost.

Contractor shall undertake a final as built survey (position / co-ordinates and elevation) of all investigations points and report the as built survey on appropriately scaled drawing showing the general arrangement of the proposed scheme layout. Position / co-ordinates and elevations shall be measured to 200mm and 50mm precision respectively, unless otherwise specified.

#### **15.4. General - Soil & Rock Drilling and Sampling**

Contractor shall perform soil drilling and sampling by following the requirements established in this Specification.

Contractor's drilling location plan and quantities shall be reviewed and approved by Employer.

Boring shall be made with rotary core drilling equipment of a size and type designed to recover rock and soil cores of 63.5 to 85 millimetres in diameter.

Contractor shall record the groundwater level in the boreholes at the start of each working day.

Sufficient colour photographs to show the condition of the whole of the site prior to the start of investigation works and an analogous set of photographs on completion of the investigation and the nature of the arisings from percussion boreholes.

All rotary cores shall be photographed prior to splitting the core for logging or sampling.

The colour pictures shall be taken of all cores and samples, with colour, grey and metric scales.

Photographs should be of at High Resolution and shall include a suitable scale and reference board which includes the project name, exploratory hole location, date and depth.

The Contractor shall provide site specific risk assessments and method statements at least 1 week prior to site works commencing

#### **15.5. Ground Investigation Scope**

The scope of works (total) is detailed in Section 5.6 and comprises the following:

- Provide safe working access to exploratory hole positions.
- Provide and maintain all vessels and floating plant on the works sufficient, proper and efficient life-saving apparatus.
- Provide all facilities and equipment without limitation necessary for the proper performance of the works. This responsibility shall include clearance, off-loading and handling of all equipment and materials
- 8 No. rotary core drilling.
- In-situ standard penetration testing (SPT)
- In-situ standard penetration testing (SPT) and geophysical survey in the offshore survey.
- Geotechnical laboratory testing
- Soil and rock core sampling for geotechnical testing purposes
- Factual reporting

The Contractor shall consider that the geotechnical laboratory testing is required for foundation design, chemical testing is required for aggressiveness to concrete and contamination assessment. The laboratory testing will be scheduled by the Employer in conjunction with the Contractor.

#### **15.6. Geotechnical Laboratory Testing**

Laboratory tests shall be performed by Contractor in accordance with the specified testing procedures given in Section 5.2. Alternatives to these procedures may be used only if the alternatives are submitted with the proposal and accepted by Employer. Alternative procedures shall be submitted in sufficient detail to permit evaluation of their suitability or applicability.

Samples to be tested in the laboratory shall be proposed by the Contractor within 48 hours of completion of each boring/test pit on the basis of the field logs for approval by the Employer. Laboratory testing shall be concurrent with

the drilling and sampling program. The actual numbers and types of tests to be performed may differ from those listed, depending upon the results of the drilling and sampling program.

Each laboratory test shall conform to the standards or specifications given in Section 5.2. Representative samples shall be subjected to following laboratory tests to determine engineering properties of the soils and rocks. Contractor may recommend additional types of tests to be performed based upon his experience and the conditions encountered during the field investigation. Contractor's testing plan shall be reviewed and approved by Employer before proceeding with laboratory testing.

- 1) Classification testing of samples
- 2) Liquid limit, plastic limit and plasticity index of soil.
- 3) Standard Test Methods for Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperatures.
- 4) Standard Test Methods for Unconfined Compressive Strength of Intact Rock Core Specimens.
- 5) Determination of Point Load Strength Index
- 6) Direct shear (shear box) test of granular soils
- 7) Unconsolidated Undrained Triaxial of cohesive soils
- 8) Consolidated undrained Triaxial of cohesive soils
- 9) Natural moisture content of soil and rock samples
- 10) Particle Size Distribution by sedimentation/wet sieving
- 11) Consolidation test. Of cohesive soils
- 12) Determination of water-soluble sulphates and water-soluble chlorides in soils / rocks.
- 13) Determination of pH value
- 14) Bulk and Dry Density

The Contractor is to propose a suitable geotechnical laboratory for the works.

**15.7. Schedule of Exploratory holes**

Exploratory Hole No.	Exploratory Hole Type	Location	Scheduled Depth (m)	Remarks
BH 01R	Rotary Core	Refer to Drawing No 3400/100	20	SPT as specified Core recovery, disturbed and intact sample to be taken and laboratory tests to be performed as specified. Depth quoted is from sea bed level.
BH 02R	Rotary Core	Refer to Drawing No 3400/100	20	
BH 03R	Rotary Core	Refer to Drawing No 3400/100	20	
BH 04R	Rotary Core	Refer to Drawing No 3400/100	20	
BH 05R	Rotary Core	Refer to Drawing No 3400/100	20	
BH 06R	Rotary Core	Refer to Drawing No 3400/100	20	
BH 07R	Rotary Core	Refer to Drawing No 3400/100	20	
BH 08R	Rotary Core	Refer to Drawing No 3400/100	20	
BH 09R	Rotary Core	Refer to Drawing No 3400/100	20	

### **15.8. Site Supervision**

The Contractor shall provide full time experienced professional attendance during the Site Operations for the supervision of all site activities, loggings, samplings, taking photographs and providing daily records and preliminary logs (except where daily records are for activities carried out by boring operatives).

The Contractor shall provide sufficient experienced supervisors for the works to ensure that the works are properly and expeditiously executed.

The geotechnical investigation shall be performed by an experienced offshore soil survey Contractor under the direction of a qualified geotechnical Consultant.

The Contractor's field personnel will be fully conversant with and experienced in the operation of all types of used equipment.

The Contractor is to provide an experienced Ground Engineer/Geologist, with at least 5 years' experience of site investigation works of a comparable nature, to supervise all site activities. The Ground Engineer must be on site during all times whilst intrusive works are underway in order to supervise the investigation activities and to undertake or supervise logging of exploratory holes, taking of samples and in-situ tests, taking of photographic records and the completion of daily records / field notes.

**The Contractor shall provide names, contact details, CV's and evidence of relevant certification for all site personnel for approval by the Employer.**

### **15.9. Rotary Coring Requirements**

The Contractor shall provide all facilities and equipment without limitation necessary for the proper performance of the works. This responsibility shall include clearance, off-loading and handling of all equipment and materials.

The Contractor will provide any equipment to carry out the in-situ works (jack up platform, drills, measuring devices,) and the laboratory tests described in the following sections, taking into account the constraint of marine works and the island context of the project area.

The Contractor will provide all tools, equipment and spare parts, measuring devices for the location of the boreholes, site facilities, transportation facilities, such as the landing and boarding on the jack up platform.

The Contractor must detail and describe the jack up platform, particularly:

- The minimum and maximal draught during work,
- The maximal conditions of the wave and wind during work and displacement,
- Work efficiency

Core samples shall be retrieved for rock layers by double or triple tube core barrel. The sampled cores shall be stored in the core boxes and colour photos of the cores shall be taken and attached to the Factual Report. TCR, SCR, RQD, fracture index and detailed descriptions of rocks shall be indicated on the boring logs.

Cores shall be stored in sufficient sized wooden box, labelled, oriented in a controlled manner for photograph records.

The Contractor shall provide all buoys and other markers for the indication of all submerged work and mooring together with all navigation lights, warning lights and markers required on the vessels and floating plant all to the requirements of the competent authorities.

The Contractor shall ensure the rotary core drilling equipment is appropriately selected to maximise the core recovery of the highest quality and obtain geotechnical properties of sediment (on the upper part) and rock by penetrating rock 5m. The proposed core barrel assembly and type (i.e. double / triple) is to be agreed with the Employer.

Total core recovery shall not be less than 90% recovery.

The Contractor shall ensure the length of the first run not to exceed 1.0m in length and the lengths of subsequent drills runs shall not exceed 2.0m. The Contractor shall ensure that the core barrel is removed from the drillhole as often as is required to obtain the best possible core recovery.

Drilling shall be performed with great care and in such a way as to ensure the stability of the borehole wall (casing will be used when necessary), the recovery of truly representative samples of the various strata, and also that all changes in stratum are observed.

Core drilling will be carried out by rotational method with appropriate mud drilling fluid. The initial diameter will have to be chosen by the Contractor; the final core diameter shall be as stated in Section 5.4.

Drilling equipment must be able to perform offshore drill hole to a depth of 20 m below the seabed.

The undisturbed samples should have a minimum working length of 750 mm.

In granular soil layers, appropriate sampler will be used, in order to obtain representative samples for laboratory tests (without change in the granularity of the soil), SPT samples (considered as disturbed samples) will be mainly used for identification tests.

In the clayey layers, core drilling will be carried out by rotational method. Appropriate thin wall sampler shall be used for the recovery of undisturbed samples for laboratory tests. The Contractor shall define the initial borehole diameter, in a manner to allow the undisturbed sampling in clayey layer with sufficient diameter for representative laboratory tests (taking account of the minimum core diameter).

All soil samples will be conditioned and labelled. The label will indicate the project, borehole, depth and date of extraction. On the site, the samples will be stored in a special place sheltered from sun and rain.

If the rock substratum is not encountered, a number of about 50 undisturbed soil samples is estimated for the survey.

Each rock sample will be fully described using standard classification, then stored. A representative portion of each core and selected samples will be taken, sealed in wax and transported to the laboratory for tests.

All samples will be examined, described and labelled. Labels will include borehole number, sample number, sample depth and date. The examination will be carried out at the laboratory.

#### **15.10. Core Logging**

The box shall be identified by site locality, borehole number, core box number, depth and date.

The core obtained from each drill hole shall be carefully extracted from the core barrel and immediately placed in correct order in properly constructed core boxes and identified. The cores have to be handled carefully, in order to prevent deformation or breaking.

Each core drilling must be the subject of a detailed section of the layers crossed, according to British Standards, i.e. BS EN ISO 14688 and BS EN ISO 14689, (or alternatively the relevant ASTM Standards listed in Section 2) with an indication of the recovery rate values and the values of the RQD (Rocks Quality Designation).

#### **15.11. Core sub-samples for laboratory testing**

The Contractor must ensure the disturbance in the samples is minimised in order to allow both physical and mechanical identification tests to be carried out. The samples will allow a precise geological and geotechnical description of each of the layers and the calculation of the recovery rate

For undisturbed samples, the samples shall be extracted only at laboratory. Both ends of each undisturbed sample shall be cleaned, disposing of debris and remoulded materials both ends will be examined by a qualified geologist and the geotechnical description reported on the sample list and on the preliminary (site) borehole log, where after both ends shall be sealed with molten wax. All these operations shall take place without delay.

For the rock samples obtained, the Contractor shall ensure that each sample will be fully described using as per British or ASTM standards set out in Section 5.2, then stored. A representative portion of each core and selected samples will be taken, sealed in wax and transported to the laboratory for tests.

The intact samples must be such that the various geotechnical formations encountered over the entire height of the borehole must be tested in the laboratory.

#### **15.12. Standard Penetration Testing**

Standard Penetration Tests shall be conducted with SPT Auto Trip Hammer to the requirements of British or ASTM standards.

SPT tests (Standard Penetration Test) will be conducted according in conformity of the British Standards. The first SPT shall be taken at 0.5m, the next 1.0m deeper, thereafter at 1.0m intervals to 5.0m depth below ground level. Then at 1.5m depth intervals / between core runs.

The number of blows for the first, second and third penetration of 15 cm will be recorded and systemically presented in standard reporting and borehole logs.

If the number of blows for the first, second or third 15 cm would exceed 50, the precise penetration depth for 50 blows will be measured (with a precision of 0.1 cm) and reported.

For each SPT test, a colour picture of the opened split spoon shall be taken, with the indication of borehole number, depth and SPT-N value. These colour photos will be presented in an appendix of the Report.

SPT type penetration tests will have to be carried out in core samples to obtain a set of mechanical parameters for soft soils.

#### **15.13. Frequency of soil sampling**

In granular soil layers, appropriate sampler will be used, in order to obtain representative samples for laboratory tests (without change in the granularity of the soil), SPT samples (considered as disturbed samples) will be mainly used for identification tests.

Samples shall be taken as follows:

- a) Granular surface cover if present
- b) At 0.5m and 1m depth
- c) Thereafter at 1m intervals to 5m, thereafter at 2m intervals
- d) At each change in soil type or consistency

Undisturbed samples shall be recovered every 3 m and also at each change of the soil nature (at least one undisturbed sample in each layer or sublayer per borehole

#### **15.14. Sealing of Boreholes**

Boreholes shall be backfilled with soil cement or grout except as otherwise directed by Employer. Contractor shall propose mix design for Employer approval. Boreholes shall not be backfilled until the final 24 hours groundwater measurement has been made and Employer has given his approval for the backfilling.

#### **15.15. Borehole Engineering Logs**

All boreholes shall be logged by a geotechnical engineer or geologist with a tertiary qualification in engineering or geology and appropriate experience in this type of work.

The graph or log shall be forwarded to Employer not later than the day following completion of each sounding or boring. The graph, log, report shall be in neat and legible form with relevant laboratory results added including but not limited to: moisture content, Atterberg limits, classification corrections based on sieve analysis, pocket penetrometer, torvane, and unconfined compressive strength.

Information to be included in the log shall include, but not necessarily limited to the following:

- (1) Name of Contractor, Driller and Superintendent
- (2) Rig identification name and number
- (3) Name of Supervising Engineer
- (4) Identification of Project
- (5) Date and time of start and completion of boring, weather when borehole was drilled

- (6) Number and survey location of borehole
- (7) Elevation of ground surface with respect to reference datum, water depth, and state of tide, as applicable
- (8) Depth to different strata and to each sample and those elevation
- (9) Depth to groundwater and contributory factors
- (10) Inclination from vertical and direction of hole if applicable
- (11) Type of sample, its depth and sample identification designation
- (12) Amount recovered for soil samples
- (13) Where standard penetration samples are taken, the SPT-N values for each sample.
- (14) Description of each soil sample and soil stratum per the Unified Soil Classification System.
- (15) Description of joints conditions: joints spacing and other pertinent comments (infilling, roughness, aperture...)
- (16) Description of each rock sample and rock stratum as per ASTM or British Standards and ISRM procedures.
- (17) Total Core Recovery, Solid Core Recovery and Rock Quality Destination (RQD) for each core run, presented numerically and graphically
- (18) Depth at which drilling fluid was lost, if such loss occurs, amount of loss and range of depth over which the loss occurred
- (19) Description of all equipment used in performing the investigation and pertinent data regarding obtaining of samples and field tests such as weight of hammer, height of hammer fall used, hammer identification number, sized and type of samplers, standard penetration blow counts on sampler, etc.
- (20) Pertinent comments by a logger covering any special conditions, obstructions and/or difficulties encountered
- (21) Drilling time versus depth.
- (22) Diameter and length of all casing used in each borehole.
- (23) Depth of occurrence of gas if encountered, water loss if observed.

#### **15.16. Factual Report**

Factual Report shall include, but not be limited to;

- An introduction including a description of the site and proposed facilities.
- A summary of findings based on the investigation
- A general description of the regional geology, site surface conditions and topography.
- A description of site geology including geologic maps and cross sections which show boundaries of soil deposits and rock outcrops, location of visible geologic irregularities, and the dip and strike of geologic features.
- A description of the stratigraphy including type and properties of soil/rock in each stratum, ground water elevations and expected variations, and details of any underground obstruction.
- Discussion of any particular subsurface problems.
- A description of the field investigation undertaken including sampling procedures and methods used together with graphs analogs of all boreholes.
- Complete boring, test pit logs showing boring or test pit number, date of start and completion, ground surface elevation, ground water level, and standard penetration resistance N values.
- A description of the laboratory tests performed tabulated test results including graphs, etc. reported in accordance with the relevant standards (ASTM, BS, etc.).
- A plan locating all borehole coordinates relative to the proposed scheme.
- Any other information collected in this investigation program.
- Test pit logs, sketches, and photos; colour photos of rock cores

# ANNEXURES

WADAAGSAN COMPANY

GARACAD SEAPORT

CONTRACT GS001/2021/22

PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA

## ANNEXURE A : AUTHORITY TO SIGN DOCUMENTS

Signatories for companies must establish their authority to sign the Form of Offer on behalf of their company by attaching to this form a copy of the relevant resolution of the board of directors duly signed and dated.

An example is shown as follows:

"By resolution of the board of directors passed at a meeting held on ..... 20...., Mr..... has been duly authorised to sign all documents in connection with the bid for Contract No ..... and any contract which may arise therefrom on behalf of

(Block Capitals) .....

.....  
Signed on behalf of

.....  
in his capacity as

.....  
Date

.....  
Signature of signatory

**WADAAGSAN COMPANY**

**GARACAD SEAPORT**

**CONTRACT GS001/2021/22**

**PROVISION OF SERVICES TO UNDERTAKE A BATHYMETRIC SURVEY AND MARINE GEOTECHNICAL INVESTIGATION AT THE GARACAD SEA PORT, PUNTLAND, SOMALIA**

**ANNEXURE B : SCHEDULE OF WORK EXPERIENCE OF BIDDER**

The bidder shall insert in the spaces provided (or separately attached to this page) below a list of similar completed contracts awarded to him and those currently being undertaken.

EMPLOYER (NAME, TEL No.)	CONSULTING ENGINEER (NAME, TEL No. AND email.)	NATURE OF WORK	VALUE OF WORK USD(m)	COMPLETION DATE
<b>COMPLETED CONTRACTS</b>				
<b>CURRENT CONTRACTS</b>				

Number of sheets appended by the bidder to this Schedule ..... (If nil, enter NIL).

**SIGNED ON BEHALF OF BIDDER:** .....

WADAAGSAN COMPANY

GARACAD SEAPORT

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## ANNEXURE C : DETAILS OF QUALIFICATIONS AND EXPERIENCE OF STAFF

Bidders shall set out in the schedule hereunder details of the listed staff's experience in work of a similar nature to that for which their Tender is submitted.

The **Project Manager** is the person to whom the Contractor has assigned the responsibility of decision making on all matters regarding the contract and who is the single channel of contractual communication with the Employer or his Agent. The project manager shall have experience in ??. **A CV must be attached showing the Project Manager's experience.**

The **Geotechnical Engineer** shall have experience in ??. **A CV must be attached showing the Geotechnical Engineers experience.**

The **Surveyor** shall have experience in bathymetric surveys. **A CV must be attached showing the Surveyors Engineers experience.**

PROJECT MANAGER		NAME: .....			
		TERTIARY EDUCATION .....			
CONTRACT & CLIENT	NATURE OF WORK	POSITION HELD	VALUE OF WORK	YEAR COMPLETED	DURATION OF EXPERIENCE
<b>TOTAL YEARS EXPERIENCE FOR COMPARABLE PROJECT/S:</b>					

<b>GEOTECHNICAL ENGINEER</b>		<b>NAME:</b> .....			
		<b>TERTIARY EDUCATION</b> .....			
<b>CONTRACT &amp; CLIENT</b>	<b>NATURE OF WORK</b>	<b>POSITION HELD</b>	<b>VALUE OF WORK</b>	<b>YEAR COMPLETED</b>	<b>DURATION OF EXPERIENCE</b>
<b>TOTAL YEARS EXPERIENCE FOR COMPARABLE PROJECT/S:</b>					

<b>SURVEYOR</b>		<b>NAME:</b> .....			
		<b>TERTIARY EDUCATION</b> .....			
<b>CONTRACT &amp; CLIENT</b>	<b>NATURE OF WORK</b>	<b>POSITION HELD</b>	<b>VALUE OF WORK</b>	<b>YEAR COMPLETED</b>	<b>DURATION OF EXPERIENCE</b>
<b>TOTAL YEARS EXPERIENCE FOR COMPARABLE PROJECT/S:</b>					

Number of sheets appended by the bidder to this Schedule ..... (If nil, enter NIL).

**SIGNED ON BEHALF OF THE BIDDER:** .....

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**WADAAGSAN COMPANY**

**GARACAD SEAPORT**

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## **ANNEXURE D : SCHEDULE OF EQUIPMENT**

The bidder shall state below what equipment will be available for this Contract. The bidder shall differentiate, if applicable, between equipment immediately available and further equipment will be acquired or hired for the work should he be awarded the Contract.

### **GEOTECHNICAL AND SURVEY EQUIPMENT IMMEDIATELY**

DESCRIPTION, SIZE, CAPACITY	NUMBER

**EQUIPMENT THAT WILL BE ACQUIRED OR HIRED**

(State details of delivery arrangements)

DESCRIPTION, SIZE, CAPACITY	NUMBER

Number of sheets appended by the bidder to this Schedule ..... (If nil, enter NIL).

**SIGNED ON BEHALF OF BIDDER:** .....

**WADAAGSAN COMPANY**

**GARACAD SEAPORT**

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## **ANNEXURE E : HEALTH AND SAFETY PLAN**

Bidders are referred to the requirements of Clause 13.1 in the Scope of Work and shall append the required draft Health and Safety Plan to this Schedule.

Number of sheets appended by the bidder to this Schedule ..... (If nil, enter NIL).

|

**WADAAGSAN COMPANY**

**GARACAD SEAPORT**

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## **ANNEXURE F : PRELIMINARY PROGRAMME**

The bidder shall attach a preliminary programme, to this schedule.

This programme shall be in the form of a bar chart (Gantt chart) or similar acceptable time/activity form reflecting the proposed sequence and tempo of the various activities comprising the work for this contract. The programme shall also indicate the point where the bidder intends to commence work operations and the direction in which the work will proceed. The working hours shall be indicated.

The bidder shall also take into account the additional requirements stated in the Scope of Works when drawing up the programme.

**Details of the preliminary programme shall be appended to this Schedule.**

Number of sheets appended by the bidder to this Schedule ..... (If nil, enter NIL).

**SIGNED ON BEHALF OF BIDDER:** .....