

Centre for Industrial Consultancy and Sponsored Research (IC & SR)
IIT Madras
INVITATION FOR BID

For and on behalf of IC & SR, IIT Madras, sealed tenders are invited under for the following work being executed by IIT Madras:-

1)	Description:	Design of railway embankment along coastal line between Rameswaram to Dhanushkodi (Detailed scope of work as mentioned under Section-III)
2)	Specification No.	OEC/2019/005/PROJECT/RSUN
3)	Earnest Money Deposit:	75,000/-
4)	Last date for Submission of Bid:	12.09.2019 at 15.00 hrs.
5)	Date & Place of Opening of Tender (Techno commercial bid):	10.00 Hrs. IST on 13.09.2019 Rm.306, Third Floor, Department of Ocean Engineering, IIT Madras, Chennai 600036, Tamil Nadu If the due date happens to be a holiday, the tender will be received & opened on the next working day.
6)	Validity of offer:	60 days from the date of opening.
7)	Method of submission of tender:	Two cover system
8)	Clarification to be obtained from:	Prof. R.Sundaravadivelu Project Coordinator Department of Ocean Engineering IIT Madras, Chennai - 600 036 Tamil Nadu Phone no.: 044- 2257 5818/5819/4810 Email.: rsun@iitm.ac.in
9)	Cost of Tender specification	Nil
10)	Tender Inviting Authority:	Prof. R.Sundaravadivelu Project Coordinator Department of Ocean Engineering IIT Madras, Chennai - 600 036, Tamil Nadu.



Dr. R. SUNDARAVADIVELU,
Professor
Department of Ocean Engineering
Indian Institute of Technology Madras
Chennai - 600 036.

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SECTION -I
INSTRUCTION TO BIDDERS

1.1 General:

Separate sealed competitive bid under "Single cover system" is invited for the following works.

Design of railway embankment along coastal line between Rameswaram to Dhanushkodi

1.2 Scope of work:

The scope of the study shall include:

(Detailed scope of work as mentioned under Section-III)

1.2.1 Specification No : OEC/2019/005/PROJECT/RSUN

1.2.2 Cost of Tender Specification : Waived

1.3 EARNEST MONEY DEPOSIT (EMD) :

The EMD in the form of account payee DD for 75,000/- in favor of The Registrar – IIT Madras, payable at Chennai should be enclosed in the cover containing financial bid. Any offer not accompanied with the EMD shall be rejected summarily as non-responsive.

The EMD of the unsuccessful bidders shall be returned within 30 days of the end of the bid validity period. The same shall be forfeited, if the tenderers withdraw their offer after the opening during the bid validity period. The Institute shall not be liable for payment of any interest on EMD. EMD is exempted for Micro and Small Enterprises (MSE) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME).

1.4 Schedules for Receipt and Opening of Bid:

- a. Last date and time for receipt of bids : 15.00 Hrs. IST on 12.09.2019
- b. Date and time for opening of bids : 10.00 Hrs. IST on 13.09.2019

1.5 Submission of Tender:

Tender should be furnished in sealed cover, super-scribed as

DESIGN OF RAILWAY EMBANKMENT ALONG COASTAL LINE BETWEEN RAMESWARAM TO DHANUSHKODI

The offer should be addressed to:

Prof. R.Sundaravadivelu
The Project Coordinator
Department of Ocean Engineering
IIT Madras, Chennai - 600 036, Tamil Nadu

and if handed over in person, the same shall be handed over to **Room.no 306, Department of Ocean Engineering, IIT Madras** on or before the due date and time specified above.

1.5.1The Bidders have the option of sending the bid by Registered post, Courier or submitting the bid in person, so as to ensure that the bids are received in the specified office of the Purchaser, by the date and time indicated in the Sl.No.1.5 above. Bids submitted by Telex/ Fax/ Telegram/e-mail etc. will not be accepted.

1.6 Opening of Tender

The tenders will be opened at **Rm.306, Third Floor, Department of Ocean Engineering, IIT Madras** on the due date and time prescribed in the presence of such of those tenderers who may desire to be present. If the due date for tender opening happens to be a holiday, the tenders will be opened on the next working day.

The individuals attending the opening of tenders should be duly authorized by the participating firms in the tender.

If the tenderer has any doubt about the meaning of any portion of this specification, he may address the Tender Inviting authority which should reach at least one week before opening of this tender. Any clarification received after this date will not be entertained.

1.7 Tender Inviting Authority

Prof. R.Sundaravadivelu

Project Coordinator

Department of Ocean Engineering

IIT Madras, Chennai - 600 036, Tamil Nadu

SECTION – II

COMMERCIAL AND TECHNICAL CONDITIONS

2.1 GENERAL

The scope of services shall be as detailed in Section - III of this specification.

2.2 LOCATION

The project site is from Rameswaram to Dhanushkodi, India.

2.3 COMPLETENESS OF TENDER

The tender should be complete in all aspects. The tenderer shall furnish all relevant details called for in the specification with supporting documents wherever required for considerations by IC & SR. The tenders not containing the complete details as requested in the specification are liable for rejection.

2.4 PRICE

Tenderers shall quote FIRM Price only. Tenderers shall quote price separately for each item in the respective schedule as prescribed in the specification.

2.5 VALIDITY OF TENDER

Tenders should be valid for acceptance for a period of at least **Sixty (60) days** from the date of tender opening. In case any bidder quotes a lower validity period than that called for, his offer shall be liable for rejection. In exceptional circumstances, the purchaser may solicit the bidder's consent to an extension of the period of the validity. The request and response thereto shall be made in writing (including fax or telex).

2.6 PAYMENT TERMS:-

Payment will be made as per the following methods

Sl.No	Description	% Total Consultancy charges
1	Advance payment	20%
2	On submission and acceptance of draft report	60%
3	Final report duly accepted by Administrative Authority	20%

2.6.1 Payment will be made by Cheque / Bank transfer on any one of the commercial banks or their branches in India as may be decided by IC & SR from time to time. If the contractor requests for DD payment, Exchange Commission for issue of bank draft will be to the account of the consultant.

2.6.2 Offers agreeing to the above terms of payment will be preferred. IC & SR may reject the offers with other terms of payment.

2.7 Schedule of Submission of Report:

Submission of Draft report: 3 weeks from the date of award of work. Submission of Final Report: After Two (2) Weeks from the date of draft report submission.

2.8 Qualifying Criteria:

One similar nature of work executed in the last financial year at least to the value of Rs. 15.00 Lakhs.

2.8 FORCE MAJEURE

2.8.1 Neither the Contractor nor the Purchaser shall be considered in default in performance of its obligations hereunder if such performance is prevented or delayed for any causes beyond the reasonable control of the party affected, such as war, hostilities , revolution, riot, civil commotion, epidemic, major fires, explosions, floods, earthquakes or because of any law, order, proclamatory regulations or ordinance of Government or because of any act of God, provided notice in writing of such cause with necessary evidence that the obligation under the Contract is thereby affected or prevented or delayed, is given within 14 days from the happening of the event and in any case it is not possible to serve the notice within 14 days period, then within the shortest possible period without delay. In case the force majeure conditions prolong beyond a continuous period of 6 months, the Purchaser shall be entitled to decide the further course of action including revisions in the terms of Contract, if any.

2.8.2 As soon as the cause of Force Majeure has been removed, the party whose ability to perform its obligation has been affected shall notify the other party the actual delay occurred on account of such activities.

2.8.3 Although the time for completion of work shall be suitably extended (not exceeding the period during which the work was stopped on account of Force Majeure clause), such extension shall not result in any financial claim by the Contractor against the Purchaser or any account of such a delay for any other reason whatsoever.

2.9 TAXES

The price quoted shall be firm and shall be inclusive of all statutory levies and taxes including GST. Necessary income tax will be deducted at source on each bill as per the regulations in force. If the Institution is exempted from payment of income tax, the documentary evidence for the same has to be furnished.

2.10 JURISDICTION FOR LEGAL PROCEEDINGS

No suit or any proceedings in regard to any matter arising in any respect under this contract shall be instituted in a Court Save in the City Civil Court of Chennai or the Courts of Small Causes at Chennai. It is agreed that no other courts shall have jurisdiction to entertain any suit or proceedings even though part of the cause of action might arise within their jurisdiction. In case any part of cause of action arises within the jurisdiction of any of the courts in Tamil Nadu and not in the courts in the Chennai City, it is agreed to between the parties that such suits or proceedings shall be instituted in a court within Tamil Nadu and no other court outside Tamil Nadu shall have jurisdiction, even though any part of the cause of action might arise within the jurisdiction of such courts.

The bidders shall furnish an undertaking in a non-judicial stamp paper of value Rs.100/- agreeing to the above condition as per schedule furnished in Annexure-II.

2.11 ARBITRATION

Arbitration is not applicable to this contract.

2.12 SPECIAL CONDITIONS

The tenderers should clearly indicate their acceptance or otherwise to the following terms and conditions.

- Specific acceptance of Board's terms of payment.
- Board's terms of Liquidated damages for delay in completion of work.
- Validity of tender.

If no indication is given by the tenderer in his offer, it is presumed that the tenderer is agreeable to the terms and conditions of IC & SR mentioned in the specification.

All information in the bid shall be in ENGLISH only. All corrections, over typing etc. in the tender should be attested.

Tenderers are advised to post sufficiently early so as to ensure that the tenders reach this office in time. Tenders though posted in time but delayed in transit by post will not be considered, if received after the due date and time.

2.13 DEVIATIONS IN TENDER

Offers which conform to the specification without any deviation will be preferred. If the tenderer wants to deviate from any of the terms and conditions, the same shall be mentioned clearly.

2.14 IC & SR BOARD RESERVES THE RIGHT

- Not to accept the lowest or any tender.
- To reject any or all the tenders without assigning any reasons there of.
- To relax or waive any of the conditions stipulated in the tender specification as deemed necessary in the best interest of the project for good and sufficient reasons.
- To revise the quantum of works/completion period of work of any or all the items covered by this enquiry during the pendency of contract and to terminate the contract in between the agreed stipulated period.

2.15 EVALUATION AND COMPARISON OF TENDER OFFERS

- The evaluation of the Tender will be done as per IIT Madras guidelines IC & SR.
- The evaluation shall include contract value of works with applicable tax, etc.,
- In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

SECTION – III

TECHNICAL SPECIFICATION

SCOPE OF SERVICE

The following Investigation will be carried out along the coastal line between from Rameswaram to Dhanushkodi

1. Field survey.
2. Detailed Soil investigation.

Field survey Specification

- i) Trial pit (60 no) of 1x1x1m shall be carried out and visual inspection conducted to ascertain the type of soil below the proposed embankment

Detailed soil investigation Specification

- i) Soil investigation-20 number of bore holes shall be carried out for a depth up to (-) 15m or up to rock touch level.
- ii) Conducting field tests and collecting disturbed and undisturbed soil samples and rocks core samples from the exploratory bore holes
- iii) Conducting laboratory test on soil samples to enable classification of soil for obtaining engineering properties of soils and rock samples to assess the compressive strength of rocks.

Boring and In Situ Sampling

Boring minimum of 150mm nominal diameter boreholes through all types of soil including rock using shell and auger or other approved equipment below the existing ground level up to (-) 15.00m or up to rock (20 Nos.). The boring shall including conducting standard penetration test (SPT) at a regular depth interval of 1.5m, collection of split spoon samples or disturbed soil samples.

Laboratory Test for proposed and fill up soil (As per IS code)

- a) To carry out test for atterberg limits – Liquid limit & Plastic Limit.
- b) To carry out test for Natural moisture content in the Laboratory.
- c) wet and dry density at the laboratory.
- d) To carry out test specific gravity, void ratio.
- e) To carry out sieve analysis (grain size distribution (wet sieve analysis)).
- f) Proctor density and modified proctor density.
- g) Hydrometer Analysis

- h) Test on rock samples for density, porosity, water absorption and specific gravity.
- i) Point load test on rock sample
- j) Crushing strength on rock sample
- k) Unconfined compression test on selected undisturbed samples in the laboratory.
- l) Free Swell index.
- m) CBR (residual index), SPT/CPT, etc
- n) Height of Water Table.
- o) Soil (Sulphate, Chlorides, PH, Carbonate and Organic matter content).
- p) Water (Sulphate, Chlorides, PH, Carbonate and Organic matter content).
- q) Dynamic cone penetration
- r) Plate load test on five test pits

2. SCHEDULE OF FEES - I

3.2 SPECIFICATION NO:

Name of the Work: “Design of railway embankment along coastal line between Rameswaram to Dhanushkodi”.

Sl.No	Description	% Total Consultancy charges
1	Advance payment	20%
2	On submission and acceptance of draft report	60%
3	Final report duly accepted by Administrative Authority	20%

SIGNATURE :

NAME :

DESIGNATION :

DATE :

PLACE :

SEAL :

3. ANNEXURE-I

3.3 UNDERTAKING TOWARDS JURISDICTION FOR LEGAL PROCEEDINGS (NON JUDICIAL STAMP PAPER VALUE RS.100/-)

This undertaking executed at.....on this..... (Date)..... (Month) Two thousand and by M/sRegistered under Companies Act, 1956 having its registered office at hereinafter called the contractor (which expression shall where the context so admits mean and include its successors in office) and in favour of Indian Institute of Technology Madras, Chennai- 36. hereinafter called the purchaser (which expression shall where the context so admits means and includes its successors if Office and assigns).

WHEREAS a contract for the supply ofhas been awarded in favour of the contractor under the Purchase order No.....dated.....

AND WHEREAS in accordance with the terms of the above Purchase order, the contractor has to furnish un undertaking to the effect that no suit or any proceedings in regard to any matter arising in any respect under this contract shall be instituted in any matter in any respect under this contract shall be instituted in any court other than in the High court, Madras of District court at or Sub-court ator at the District Munsiff court at as the case may be.

IN CONSIDERATION of the Board having agreed to accept the undertaking the contractor hereby undertakes that no suit or any proceedings in regard to any matter arising in respect of this contract shall be instituted in any court, save in the High court, Madras or District court at.....or sub court at or at the District Munsiff court atas the case may be it is agreed that no other court shall have jurisdiction to entertain any suit or proceedings, even though, part of the cause of action might arise within their jurisdiction. In case any part of the cause of action might arise within the jurisdiction of any other Courts in Tamil Nadu and rest

within the jurisdiction of Courts outside the State of Tamil Nadu, then it is agreed to between the parties that such suits on proceedings shall be instituted in a court within the State of Tamil Nadu and no other Court outside the State of Tamil Nadu shall have jurisdiction.

IN WITNESS WHEREOF Thiru.....of
M/s hereby put his hand and seal for due observance of the
undertaking in the presence of the following witnesses.

Geotechnical Investigation for the Design of railway embankment along coastal line between Rameswaram to Dhanushkodi.

Specification & Scope of Work

- i) Mobilization & Demobilization all necessary equipment and personnel at site and including removing and taking away the equipment and clearing the site including all materials, labor, tools, fuel, etc., complete.
- ii) Setting out Boring Equipment's and Drilling for the below mentioned
 - (a) 20Nos, of deep bore hole up to (-) 15.00m. or up to rock touch level.**
Including shifting of plants from one points to another.
- iii) Conducting field tests and collecting disturbed and undisturbed soil samples and rocks core samples from the exploratory bore holes
- iv) Conducting laboratory test on soil samples to enable classification of soil for obtaining engineering properties of soils and rock samples to assess the compressive strength of rocks.
- v) Trial pit(60 no) of 1x1x1m shall be carried out and visual inspection conducted to ascertain the type of soil below the proposed embankment .

Detailed soil investigation Specification

- i) Soil investigation-20 number of bore holes shall be carried out for a depth up to (-) 15m or up to rock touch level.
- ii) Conducting field tests and collecting disturbed and undisturbed soil samples and rocks core samples from the exploratory bore holes
- iii) Conducting laboratory test on soil samples to enable classification of soil for obtaining engineering properties of soils and rock samples to assess the compressive strength of rocks.

Boring and In Situ Sampling

Boring minimum of 150mm nominal diameter boreholes through all types of soil including rock using shell and auger or other approved equipment below the existing ground level up to (-) 15.00m or up to rock (20 Nos.). The boring shall include conducting standard penetration test (SPT) at a regular depth interval of 1.5m, collection of split spoon samples or disturbed soil samples.

Laboratory Test for proposed and fill up soil (As per IS code)

- a) To carry out test for Atterberg limits – Liquid limit & Plastic Limit.


- b) To carry out test for Natural moisture content in the Laboratory.
- c) Wet and dry density at the laboratory.
- d) To carry out test specific gravity, void ratio.
- e) To carry out sieve analysis (grain size distribution (wet sieve analysis).
- f) Proctor density and modified proctor density.
- g) Hydrometer Analysis
- h) Test on rock samples for density, porosity, water absorption and specific gravity.
- i) Point load test on rock sample
- j) Crushing strength on rock sample
- k) Unconfined compression test on selected undisturbed samples in the laboratory.
- l) Free Swell index.
- m) CBR (residual index), SPT/CPT, etc
- n) Height of Water Table.
- o) Soil (Sulphate, Chlorides, PH, Carbonate and Organic matter content).
- p) Water (Sulphate, Chlorides, PH, Carbonate and Organic matter content).
- q) Dynamic cone penetration
- r) Plate load test on five test pits

Conducting relevant laboratory test results and submitting detailed report containing the field and laboratory test results all as per relevant specifications and as directed.

S.No	Description	Qty	Unit	Rate	Amount
1.	Trial pit of 1x1x1m shall be carried out and visual inspection conducted to ascertain the type of soil below the proposed embankment .	60 NOS			
	Grand total				

S.No	Description	Qty	Unit	Rate	Amount
1	Mobilization & Demobilization all necessary equipment and personnel at site and including removing and taking away the equipment and clearing the site including all materials, labor, tools, fuel, etc., complete.	1			
2	Boring minimum of 150mm nominal diameter boreholes through all types of soil including rock using shell and auger or other approved equipment.				
a	Deep Bore Hole – 20 Nos.				
i	0m to 10m	200	Mtr		
ii	10m to 15m	100	Mtr		
3.	Carry out the standard penetration test as per 2131 (latest revision) in boreholes as specified including supply of all tools, plant labor.	200	Nos		
4.	Collect water samples from bore holes as per specification transport the same laboratory.	20	Nos		
5.	Core drilling and collection of rock core samples from different depth and determination of CR Rod and rock classification with NX 110 at any depth (as per actual) for 1m length.	20	Nos		
6.	Laboratory Test (As per latest IS Code)				
a	Atterberg Limit – Liquid Limit & Plastic Limit	200	Nos		
b	Natural Moisture content	200	Nos		
c	Wet and dry density	200	Nos		
d	Specific gravity, void ratio	200	Nos		
e	Proctor density and modified proctor density	200	Nos		
f	CBR (residual index), SPT/CPT, etc.	200	Nos		
7	Particle size				
a	Sieve analysis	200	Nos		
b	Hydrometer analysis	60	Nos		
c	Free swell index	60	Nos		
8	Triaxial shear test				
a	Unconsolidated undrained on undisturbed samples	200	Nos		
b	Consolidated drained on sandy samples	200	Nos		
9	Consolidated undrained with pore pressure measurements	200	Nos		
10	Consolidation tests on undisturbed samples	200	Nos		

11	Unconfined compression tests on selected undisturbed samples in the Laboratory	200	Nos		
12	Direct Shear Test	200	Nos		
13	Tests on rock samples for density, porosity, water absorption, specific gravity (As per actual)		Nos		
14	Point Load test on rock sample (As per actual)		Nos		
15	Crushing strength on rock sample (As per actual)		Nos		
16	Uniaxial Compressive Strength	200	Nos		
17	Chemical analysis	200	Nos		
18	Soil (Sulphates, Chlorides, PH, Carbonate and organic matter content)	20	Nos		
19	Water (Sulphates, chloride PH, Carbonate, organic matter content and total salinity).	20	Nos		
20	Submit Investigation Reports, field logs and recommendation of a qualified foundation expert in 2 (two) copies.				
	Grand total				


Dr. R. SUNDARAVADIVELU,
 Professor
 Department of Ocean Engineering
 Indian Institute of Technology Madras
 Chennai - 600 036.

SCHEDULE OF TENDER

(A)Tender for the work:

CONDUCTION MARINE SOIL INVESTIGATION ALONG COASTAL LINE BETWEEN RAMESWARAM TO DHANUSHKODI

Notice Inviting Tender will be available for download through online from 16.00 hrs on 16-08-2019 through web site of IIT Madras / IC&SR.

To be submitted online by 12.30 hrs on 12-09-2018 in web site of IIT Madras/ IC&SR.

<i>Time schedule for floating the tender document for Soil investigation at Along Coastal Line Between Rameswaram To Dhanushkodi :</i>		
(i)	Floating of tender.	19.08.2018
(ii)	Pre-bid meeting.	30.08.2019 at 15.00 Hrs
(iii)	Minutes of meeting for Pre-Bid meeting.	03.09.2019 at 12.00 Hrs
(iv)	Last date for comments.	04.09.2019.
(v)	Final Reply to comments raised by bidders.	06.09.2018.
(vi)	Closing time for submission of bid.	12.09.2019 at 15:00 hrs.
(vii)	Opening of Bid.	13.09.2019 at 10:00 Hrs.
(viii)	Bid Evaluation and submission of comments based on submitted bids.	16.09.2019.
(ix)	Re-submission of missed over documents if applicable.	18.09.2019 at 15:00.
(x)	Technical Qualification of Bidders.	19.09.2019 at 10.00hrs
(xi)	Negotiation with L1 and finalizing the bid value.	20.09.2019 at 15:00 hrs.
(xii)	Award of work.	25.09.2019.
(xiii)	Signing of agreement.	27.09.2019.

Contractor's Mile Stone for Soil investigation.

<i>Contractor's Time schedule for Completion of Work :</i>		
(i)	Mobilization of all equipment by contractor shall be completed by	30.09.2019
(ii)	Soil Investigation shall be concluded on or before	10.10.2019
(iii)	Draft Report Shall be submitted on or before	15.10.2019
(iv)	Final Soil investigation report shall be submitted on or before	18.10.2019



**Prof: R. SUNDARAVADIVELU, FNAE
DEPARTMENT OF OCEAN ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY MADRAS**

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