



## NATIONAL INSTITUTE OF TECHNOLOGY SIKKIM

Ravangla Campus, Barfung, South Sikkim 737139

[www.nitsikkim.ac.in/](http://www.nitsikkim.ac.in/) (Ph): 03595-260042

Tender No: 01/NITS/CE/Lab Equipment/16-17/01

Date: 18.06.16

### SUPPLY OF EQUIPMENT FOR GEOTECHNICAL ENGINEERING LABORATORY

*(For Contracts value estimated to cost less than Rs.25lakhs)*

<b>Closing Data &amp; Time for submission of bid</b>	16.07.2016 (4 pm)
<b>Opening Date &amp; Time (Technical bid)</b>	17.07.2016 (2 pm )
<b>Bid to be submitted to</b>	<b>Faculty In-charge, Stores &amp; Purchase Activities (FISPA), National Institute of Technology Sikkim, Ravangla Campus, Barfung, South Sikkim, 737139</b>
<b>Place of opening of bid</b>	Conference Hall, National Institute of Technology Sikkim, Ravangla Campus, Barfung, South Sikkim, 737139
<b>Tender fee</b>	<b>Rs. 500</b> (non-refundable) in form of a Demand Draft drawn in favour of DIRECTOR, NIT Sikkim
<b>Earnest Money Deposit (EMD)</b>	For <b>Annexure- B RS.13250.00</b> <b>Annexure-C RS.12500.00</b> <b>Annexure-D RS.12000.00</b> <b>Annexure-E RS.14000.00</b> only in form of Demand Draft(s) drawn in favour of DIRECTOR, NIT Sikkim payable at Ravangla South Sikkim, and valid for a period of 45 days beyond the final bid validity period

### NOTICE INVITING LIMITED TENDER ENQUIRY.

National Institute of Technology (NIT) Sikkim, Ravangla, South Sikkim invites most competitive bid for following Lab equipment. The bid documents for technical bid and price bid separately should be sent directly to the undersigned under Sealed Cover marked "Tender Reference No., Date", and "The Due Date:

Sl. No.	Brief description of Equipment	Quantity	Place of Delivery	Installation required , if any
1	<i>Equipment for Geotechnical Engineering Laboratory for Civil Engineering Dept. (detailed specification attached at Annexures-B,C,D &amp; E,)</i>	As per Annexures B,C,D & E	NIT Sikkim	Partly Yes & Demonstration required

The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions herein. Noncompliance with specifications/ instructions in this document may disqualify the bidders from the tender process.

Sd/-

Faculty In-charge, Stores & Purchase Activities (FISPA),  
National Institute of Technology Sikkim

## Instructions to Bidders

The technical and financial bids should be quoted separately and put in different sealed envelopes marked “**Technical bid**” and “**Financial bid**” are to be put in separate envelopes, which should be properly sealed. EMD is to be paid for the respective part(s) or Annexure(s) separately. The EMD and Tender fee should be enclosed in the **technical bid** in the form of A/C payee DD in favours of “**Director, NIT Sikkim**”.

1. The financial bid should include the cost of main equipment/items and its accessories. If there is any separate cost for **installation, warranty extension** etc. that should be quoted separately.
2. The quotations shall be submitted in a sealed envelope duly marked “Tender reference no, Date and due date on the corner of the envelope.
3. The printed literature and catalogue/brochure giving full technical details should be included with the technical bid to verify the specifications quoted in the tender. The bidders should submit copies of suitable documents in support of their reputation, credentials and past performance. The rates should be quoted in figures (typed or printed) and cutting should be avoided. The final amount should be in figures as well as in words. If there are overwriting, they should be duly initialled, failing which the bids are liable to be rejected. No alternate price will be entertained in the quotation.
4. All tender documents should have to be sent through courier, speed post or registered post only or may be dropped in the tender box at NIT Sikkim.
5. Quotation received after the closing date/time will not be considered.
6. While sending rates, the firm shall give an undertaking to the effect that “*the terms/conditions mentioned in the inquiry letter/Tender Notice against which the rates are being given are acceptable to the firm.*” In case the firms do not give this undertaking, their rates will not be considered.
7. The supplier/firm must be either original equipment manufacturer (OEM) or authorized dealer/sole distributor of quoted items, the certificate to this effect must be attached.
8. The quantity shown against the item is tentative and may vary as per dynamic requirement of the Institute.
9. In the event of any dispute or difference(s) between the vender Institute (NIT Sikkim) and the vendor(s) arising out of non-supply of material or supplies not found according to specifications or any other cause whatsoever relating to the supply or purchase order before or after the supply has been executed, shall be referred to “The Director, NIT Sikkim”, Sikkim who may decide the matter himself.
10. All tenders in which any of the prescribed conditions is not fulfilled or any condition is put forth by the tenderer shall be summarily rejected.
11. If the successful bidder fails to supply the goods/equipment within stipulated time, then the EMD may be forfeited.
12. Successful bidder shall have to deposit PBG of 10% after the P.O. is endorsed to the suppliers.

**The technical and financial bids should be addressed to**

Faculty In-charge, Stores & Purchase Activities (FISPA)  
National Institute of Technology Sikkim  
Ravangla Campus, Barfung Block, South Sikkim 737139.  
Email: [purchaseoffice@nitsikkim.ac.in](mailto:purchaseoffice@nitsikkim.ac.in)

**The Technical bid will be opened on 15.07.2016.** The bidders or their authorized representative may also be present during the opening of the Technical Bid, if they desire so, at their own expenses.

**Price bids of only those bidders will be opened whose technical bids are found suitable by the committee appointed for the purpose.** Date and time of opening of price bids will be decided after the committee has evaluated technical bids. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before awarding the contract.

**General Terms and conditions:****Clarifications:**

In case the bidder requires any clarification regarding the specification/tender document, they are requested to contact Dr. Sarit Kumar Das (e-mail: [saritkdas@nitsikkim.ac.in](mailto:saritkdas@nitsikkim.ac.in)), Assistant Professor, or the undersigned, NIT Sikkim on or before 09.07.2016.

**Pre – Qualification Criteria:**

- a. Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed for items as required.
- b. ISO certified company shall be preferred.
- c. Bids for single or multiple of the parts (Annexure B/C/D/E) will be accepted. The Bids will be evaluated on part-to-part basis.
- d. The bidder must be a registered/authorised firm with VAT /CST registration clearly mentioning the scope of items authorised to supply from the registration authority.
- e. The bidder must have experience in similar supply to central universities, IITs, NITs etc. in the past.

**Prices:**

The Prices quoted should be inclusive of all taxes or duties, packing, forwarding, freight, insurance, delivery and commissioning etc. at destination site (NIT Sikkim, Ravangla, Sikkim). The rates shall be firm and final. Nothing extra shall be paid on any account. The bidder should add 1% on material cost as ECESS payable to Govt of Sikkim.

**Validity:**

The bid should be valid for acceptance for a period of 120 Days. The Bidders should be ready to extend the validity, if required.

**Delivery:**

The Equipment should be delivered and installed within the period as specified in the purchase order and be ready for use within 6 weeks of the issue of purchase order unless otherwise prescribed.

**Liquidated Damage:**

If the bidder fails to deliver and place all the Equipment or perform the service by the specified date, penalty at the rate of 1% per Month of the total order value subject to the maximum of 10% of total order value will be deducted.

**Warranty**

Bidders must give the comprehensive onsite warranty as required from the date of successful installation of Equipment against any manufacturing defects and also give the warranty declaration that *“everything to be supplied by us hereunder shall be free from all defects and faults in material, workmanship and shall be of the highest quality and material of the type ordered, shall be in full conformity with the specification and shall be complete enough to carry out the experiments, as specified in the tender document.”*

Any deviation in the material, and the specifications from the accepted terms may liable to be rejected and the bidders need to supply all the goods in the specified form to the satisfaction / specifications specified in the order / contract and demonstrate at the their own cost.

**BID PROPOSAL SHEET****Annexure A**

(ON THE LETTER HEAD OF THE BIDDER)

**To**

**Faculty In-charge, Stores & Purchase Activities (FISPA)  
National Institute of Technology Sikkim  
Ravangla Campus, Barfung Block, South Sikkim 737139.**

**Subject: "SUPPLY OF EQUIPMENT FOR GEOTECHNICAL ENGINEERING  
LABORATORY" at NIT Sikkim, Ravangla Campus Sikkim**

Dear Sir,

We, the undersigned Tenderers, having read and examined in detail the specifications as specified in this document in respect of Supply and Installation of **EQUIPMENT FOR GEOTECHNICAL ENGINEERING LABORATORY (Civil Engineering Dept.)** at NIT Sikkim, Ravangla Campus Sikkim do hereby propose to supply the required products and services.

<b>Tender No:</b>				
<b>Tender Fee : Submitted</b>		YES/NO (Please strike off whatever is not applicable)		
Amount	No (DD/Ch/BC)	Date of Issue	Name of Bank	Valid up to
	Demand Draft			
<b>EMD : Submitted (Item A)</b>		YES/NO (Please strike off whatever is not applicable)		
Amount	No (DD/Ch/BC)	Date of Issue	Name of Bank	Valid up to

(i) **BID PRICING:** We further declare that the prices stated in our proposal are in accordance with your Terms & Conditions in the bidding document. We further understand that the quantities as specified in this Tender may increase or decrease at the time of Award of Purchase Order as per the requirements of NIT Sikkim.

(ii) **QUALIFYING DATA:** We confirm that we satisfy the qualifying criteria and have attached the requisite documents as documentary proofs. In case you require any further information/documentary proof in this regard during evaluation of our bid, we agree to furnish the same in time to your satisfaction.

(iii) **CONTRACT PERFORMANCE SECURITY:** We hereby declare that in case the contract is awarded to us, we shall submit the performance Guarantee Bond in the form of Bank Guarantee for the amount mentioned at tender document of the total order value.

(v) **PAYMENT TERMS:** We hereby declare that in case the contract is awarded to us, we agree with payment terms specified in the tender documents.

(vi) **CERTIFICATE AND DECLARATION:**

a) I/We certify that no addition/modification/alteration has been made in the Original Tender Document. If at any stage addition /modification /alteration is noticed in the Original Document, I/We will abide by the terms and conditions contained in the original tender document, failing which NIT Sikkim reserves the right to reject the tender and/or cancel the contract

- b) It has been certified that all information provided in tender form is true and correct to the best of my knowledge and belief. We hereby declare that our proposal is made in good faith, without collusion or fraud. No forged /tampered document(s) are produced with tender form for gaining unlawful advantage. We understand that NIT Sikkim is authorized to make enquiry to establish the facts claimed and obtained confidential reports from clients.
- c) In case it is established that any information provided by us is false / misleading or in the circumstances where it is found that we have made any wrong claims. Further NIT Sikkim is also authorized to blacklist our firm/company/agency and debar us in participating in any tender/bid in future.
- d) I / We assure the Institute that neither I /We, nor any of my /our workers, will do any act which is improper / illegal during the execution in case the tender is awarded to us.
- e) I / We assure the Institute that I / We will NOT be outsourcing any work specified in the tender document, to any other firm.
- f) Neither I / We, nor anybody on my /our behalf will indulge in any corrupt activities /practices in my /our dealing with the Institute.
- g) Our Firm / Company / Agency is not been blacklisted or banned by any Govt. Department, PSU, University, Autonomous Institute or any other Govt. Organization.
- h) I/We certify that, I have understood all the terms & conditions as indicated in enquiry of the tender document, and hereby accept all the same completely.
- i) I/We, further certify that I/We, possess all the statutory /non-statutory registrations, permissions, approvals, etc., from the Competent Authority for providing the requisite services,
- j) We understand that you are not bound to accept the lowest or any bid you may receive.
- k) I/We hereby declare that this tender on acceptance communicated by you shall constitute a valid and binding contract between us.
- l) I/We certify that the submitted quotation is duly paginated and contains from page no. 1 to .....

Date:

Signature and Seal of the Manufacturer/Bidder

**Annexure B**

## Technical Compliance of Equipment

(In the letter head of the bidder)

<b>GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)</b>				
Item No	Instruments with specifications	Quantity needed	Compliance (Yes/No)	Quoted Model
1	Non-corrodible air-tight container (50 mm diameter and height 50mm)	40 NOS		
2	Density bottle of 50 ml with stopper having capillary hole	8 NOS		
3	Mercury	1 KG		
4	Filter Paper (100 mm dia and 150 mm dia)	1 Packet each		
5	Spatula ( LENGTH 150 mm)	4 NOS		
6	Spatula ( LENGTH 200 mm)	4 NOS		
7	Spatula ( LENGTH 300 mm)	6 NOS		
8	Volumetric flask with stopper capacity 1000ml ("Borosil")	5 NOS		
9	Volumetric flask with stopper capacity 500ml ("Borosil")	5 NOS		
10	Trowel as per IS 10086: 1982	8 NOS		
11	Thermometer(0-100°c)	5 NOS		
12	GI TRAY 300x300 mm <sup>2</sup>	8 NOS		
13	GI TRAY 450x600 mm <sup>2</sup>	6 NOS		
14	<b>Pycnometer as per IS 2386 (Part III)- 1963</b> with Glass Cone. Capacity 900ml. approx. having a metal conical screw top with a 6-mm diameter hole at its apex.	5 NOS		
15	<b>Pycnometer as per IS 2386 (Part III)- 1963</b> with Brass Cone. Capacity 900ml. approx. having a metal conical screw top with a 6-mm diameter hole at its apex.	5 NOS		
16	<b>Measuring graduated Cylinder of 1000ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
17	<b>Measuring graduated Cylinder of 500ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
18	<b>Measuring graduated Cylinder of 250ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
19	<b>Measuring graduated Cylinder of 100ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
20	Wash bottle 500 ml (Squeeze Bottle)	8 NOS		
21	<b>Electronic weighing machine (Digital) with NABL certificate.</b>	2 NOS		

	Capacity - 10kg L.C. – 0.1gm with Tare facility, In-built Battery Backup.			
22	<b>Electronic weighing machine (Digital) with NABL certificate.</b> Capacity - 1kg L.C. – 0.01gm with Tare facility, In-built Battery Backup.	2 NOS		
23	<b>Spring weighing machine (Digital) with NABL certificate</b> Capacity - 20kg L.C. – 0.5gm with Tare facility, In-built Battery Backup.	1 NO		
24	Wire brush	6 NOS		
25	<b>Desiccator Vacuum.</b> Plastic with transparent Top 300 mm	3 NOS		
26	<b>Electric Oven : Hot Air Oven:</b> Gravity convention type, thermostatically controlled double walled, inner made of Aluminium, outer of Mild Steel nicely hammeron spray-painted; in between wall heavily insulated with thick layer of glass wool, with double walled insulated door, temperature controlled by capillary type Thermostatic, temp. ranging from 50°C to 250°C . (can be set at 100 to 110°C). Fitted with motorized air circulation system & inner chamber of stainless steel with digital controller cum indicator. Inner chamber size should be of 600 mm x 600 mm x 900 mm.	1 NO		
27	<b>Motorised Sieve shaker with Built-in-digital timer for 20cm dia. sieves which should be able to carry up to 8 sieves of 150 mm. or 200 mm. diameter. The shaker shall be driven by a ¼ h.p motor.</b>	1 NO		
28	<b>Digital Stop watch</b> with least count 1/10 sec	5 NOS		
29	<b>SPEEDY MOISTURE TESTER (SUPER QUALITY) as per IS 2720 (Part 2)-1973:</b> Speedy Moisture Meter, Range 0-25% (Gauge Div.:0.5%) with digital weighing balance consisting of the following:- Calcium Carbide Reagent- <b>1 No.</b> Moisture gauge, 0.25 % to 0.5% - <b>1 No.</b> Steel Balls- <b>1 Set,</b> Scoop- <b>1 No,</b> Aluminium Dish- <b>1 No</b> and with all other necessary accessories.	5 SET		
30	<b>IS SEIVES: 20cm. dia. Sieves in Brass Frame with NABL Certificate, S.S.Mesh:-Size:- 5.6 mm, 4.75mm, 3.35mm, 2.8mm, 2.36mm, 1.70mm, 1.18 mm, 850 micn., 600micn., 425micn., 300micn., 150 micn., 90micn., 75micn. With as per I.S 460-1962.</b>	3 NOS EACH @ 14		
31	Pan and cover for 20cm. dia Sieves made of brass.	3 NOS Each		



32	<b>IS SIEVES: 30cm. dia. Sieves in G.I. Frame with NABL Certificate, S.S.Mesh:-Size:- 80mm, 63mm, 50mm, 40mm, 37.5mm, 31.5mm, 26.5mm, 25mm, 22.4mm, 20mm, 16mm, 13.2mm, 12.5mm, 11.2mm, 10mm, 6.3mm, 4.75mm, 3.35mm, 2.36mm With as per I.S 460-1962.</b>	2 NOS Each @ 19		
33	Pan and cover for 30cm. dia sieves made of G.I.	2 NOS Each		

We also confirm that the normal commercial warrantee/guarantee of \_\_\_\_\_ months shall apply to the offered goods.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
2. Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.

**Annexure C**

## Technical Compliance of Equipment

(In the letter head of the bidder)

GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)				
Item No	Instruments with specifications	Quantity needed	Compliance (Yes/No)	Quoted Model
01	<p><b>Pipette analysis test apparatus IS 2720 (Part 4)-1985:</b></p> <p>Glass tube 50mm diameter, 350 mm long marked at 500 ml volume</p> <ol style="list-style-type: none"> <li>1. Heavy brass funnel (diameter approx. 23 cm) on stand.</li> <li>2. Small 50 <math>\mu</math>m or 63 <math>\mu</math>m sieve (diameter 8 cm).</li> <li>3. 13 one litre glass sedimentation cylinders.</li> <li>4. 13 one litre glass beakers &amp; covering watch glasses.</li> <li>5. Suction pump.</li> <li>6. 13 one litre PVC bottles</li> <li>7. Two splash bottles</li> <li>8. Rubber policeman 3 cm</li> <li>9. 20ml pipetting device,</li> <li>10. 4x13 Stainless steel moisture tins and with all other necessary accessories.</li> </ol>	5 SET		
	<b>Atterberg's limits and indices</b>			
02	<p><b>(a) Shrinkage Limit test apparatus[IS 2720 (part VI)-1972 ]</b></p> <p>Porcelain evaporating Dish Shrinkage Dish Glass Cup Perspex plate with three metal prongs Perspex plate, plain Flexible Spatula Glass Cylinder 25 ml x 0.5ml And with all other necessary accessories.</p>	5 SET		
03	<p><b>(b) Plastic Limit test apparatus [IS 2720 (part V)-1985]</b></p> <p>The complete set consists of: Glass plate 20cm x 15cm having ground ends and one side frosted. Brass or stainless steel rod 3 mm dia. x 150 mm long, Flexible spatula. Porcelain basin And with all other necessary accessories.</p>	5 SET		
04	<p><b>(c) Liquid Limit test apparatus[IS 2720 (part V)-1985 ]</b></p> <p>Casagrande's apparatus with all necessary accessories (like grooving tool, Mixing dishes, spatula etc.)</p>	5 SET		

05	<p><b>Field density test by Sand replacement method [IS 2720 (Part XXVIII)- 1974] :</b> Sand pouring cylinder of 3 litre capacity, mounted above a pouring cone and separated by a shutter cover plate. Cylindrical calibrating container with an internal diameter of 100 mm and an internal depth of 150 mm fitted with a flange 50 mm wide and about 5 mm surrounding the open end. Metal tray with 300 mm square and 40 mm deep with a 100 mm diameter hole in the centre.</p>	5 SET		
06	<p><b>Field density test by Core cutter method [IS 2720 (part XXIX)-1975]:</b> Core cutter apparatus with dolley. Rammer for above with handle.</p>	5 SET		
07	<p><b>Permeability Apparatus as per IS 2720 (P-XXXVI)-1987: For Determination of coefficient of permeability by Constant head parameter &amp; variable head parameter.</b> Consisting of gunmetal / brass mould 100mm dia. x 127.3mm height x 1000ml volume with collar and Drainage base plate, drainage cap, Metallic clamping ring, two porous stone for base and cap. Dummy plate, set of three glass stand pipes approx. 6mm×10mm, and 20mm dia. mounted on a wooden board, length of 3 meter rubber connection tube with pinch cock. And also with 100 litre water tank having with an inlet port at the top, six outlets at the bottom with cocks, air inlet and water filling tube at the top. An arrangement to indicate the water level is also provided. And inlet port on top and with all other necessary accessories.</p>	1 SET		
08	<p><b>Compaction test apparatus(standard Proctor Test) as per IS 2720 (Part VII)- 1980-</b> Standard Proctor Compaction mould, 100mm dia x 127.3 mm high x 1000 c.c. volume with collar and base plate. Light compaction, made of Mild Steel. With Rammer 2.6 Kg. x 31 cm. controlled drop.</p>	5 SET		
09	<p><b>Compaction test apparatus(Modified Proctor Test) as per IS 2720 (Part VIII)-1983-</b> Modified Proctor compaction mould, 150mm dia x 127.3mm high x 2250 c.c. volume with collar and base plate. For Heavy Compaction, made of Mild Steel. With Rammer 4.89 Kg. x 45 cm. controlled drop.</p>	5 SET		

10	<p><b>Consolidation Apparatus as per IS 2720 (Part XV)-1965: Single gang complete with gunmetal cell and Dial gauge 0.002 mm.</b> The standard outfit comprises of a fixed ring type of consolidometer cell for testing specimens of 60mm dia. x 20mm thick. Suitable for varying sizes from 50mm. dia.to100mm dia. specimens.</p> <p><b>SPECIFICATION :</b>  Loading unit of maximum capacity 20 kg/cm<sup>2</sup> consisting of a loading yoke connected to a lever arm with a counter balancing adjustment and having a lever ratio of 1: 10, the whole assembly being mounted on a steel frame stand Fixed ring type of consolidometer (Oedometer) cell assembly for testing 60mm dia. × 20mm thick specimens comprising :</p> <ol style="list-style-type: none"> <li>1. Fixed ring for specimens 60mm dia. × 20mm. thick with a guide ring.</li> <li>2. Pair of porous stones for 60mm. dia. specimen.</li> <li>3. Pressure pad, perforated.</li> <li>4. Channelled base with water inlet.</li> <li>5. Gasket.</li> <li>6. Flanged water jacket.</li> </ol> <p>Set of weights to give a pressure of 10 kg/cm<sup>2</sup> on 60 mm. dia . specimens consists of the following weights:- 0.05 kg / cm<sup>2</sup> – <b>7 Nos.</b>, 0.1 kg / cm<sup>2</sup> – <b>5 Nos.</b>, 0.2 kg/cm<sup>2</sup> – <b>6 Nos.</b>, 0.5 kg/cm<sup>2</sup> – <b>6Nos.</b> and 1.0kg/cm<sup>2</sup> – <b>5 Nos</b> . Water reservoir with plastic tube, T connection and 2 pinch cocks. Dial gauge 0.002 mm. x 5mm travel with 40 mm. long extension piece.</p>	2 SET		
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We also confirm that the normal commercial warrantee/guarantee of \_\_\_\_\_ months shall apply to the offered goods.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
2. Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.

## Annexure D

## Technical Compliance of Equipment

(In the letter head of the bidder)

<b>GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)</b>				
Item No	Instruments with specifications	Quantity needed	Compliance (Yes/No)	Quoted Model
01	<p><b>California Bearing Ratio test apparatus [IS 2270 (Part XVI)-1987]:</b></p> <ol style="list-style-type: none"> <li>1. Cylindrical mould with inside dia. 150 mm and height 175 mm, provided with a detachable extension collar 50 mm height and a detachable perforated base plate 10 mm thick.</li> <li>2. Spacer disc 148 mm in dia. and 47.7 mm in height along with detachable handle.</li> <li>3. Metal rammers. Weight 2.6 kg with a drop of 310 mm and weight 4.89 kg a drop 450 mm.</li> <li>4. Weights. One annular metal weight and several slotted weights weighing 2.5 kg each, 147 mm in dia, with a central hole 53 mm in diameter.</li> <li>5. Loading machine. With a capacity of at least 5000 kg and equipped with a movable head or base that travels at an uniform rate of 1.25 mm/min. Complete with load indicating device.</li> <li>6. Metal penetration piston 50 mm dia and min of 100 mm in length.</li> <li>7. Two dial gauges reading to 0.01 mm.</li> <li>8. Proving ring capacity 50 KN with NABL certificate and with all other necessary accessories.</li> </ol>	1 SET		
02	EXTRA: Cylindrical mould for CBR test with inside dia 150 mm and height 175 mm, provided with a detachable extension collar 50 mm height and a detachable perforated base plate 10 mm thick.	1 SET		
03	EXTRA: Dial gauges reading to 0.01 mm	5 NOS		

04	<p><b>Direct Shear Apparatus, motorised 12 speeds ELECTRICALLY OPERATED as per IS 2720 (P-XIII)-1986.</b></p> <p>Loading Unit : It consists of a load frame with V-strips on which shear box housing rests, load yoke with direct and lever system for applying normal load to capacity of 8kg/cm<sup>2</sup> , fixture for proving ring, bracket for holding consolidation dial gauge and manually operated .lead screw for application of shear stress.</p> <p>Shear box assembly for square specimen, size 60mm. X 60mm. X 25mm. complete with-</p> <ul style="list-style-type: none"> <li>• Two halves of shear box with an adaptor fixed to the U-bracket of upper half of the box.</li> <li>• Plain gripper plates: 2Nos.</li> <li>• Perforated gripper plates: 2Nos.</li> <li>• Porous Stone : 2Nos.</li> <li>• Top loading Pad: 1No.</li> <li>• Base plate: 1No</li> <li>• Set of weight to give a normal stress of 3 kg/cm.sq. through lever as follows :</li> </ul> <table border="0" style="margin-left: 20px;"> <tr> <td>To give kg/cm.sq</td> <td>Qty.</td> </tr> <tr> <td>0.05</td> <td>4 Nos</td> </tr> <tr> <td>0.1</td> <td>1 No</td> </tr> <tr> <td>0.2</td> <td>1 No</td> </tr> <tr> <td>0.5</td> <td>3 Nos</td> </tr> <tr> <td>1.0</td> <td>1 No</td> </tr> </table> <ul style="list-style-type: none"> <li>• Specimen cutter for cutting 60mm. X 60mm. X 25mm. specimens</li> <li>•Proving Ring capacity 2.5 KN with NABL Certificate 1 No.</li> <li>•Dial Gauge 0-25 × 0.01mm 2 Nos and with all other necessary accessories.</li> </ul>	To give kg/cm.sq	Qty.	0.05	4 Nos	0.1	1 No	0.2	1 No	0.5	3 Nos	1.0	1 No	1 SET		
To give kg/cm.sq	Qty.															
0.05	4 Nos															
0.1	1 No															
0.2	1 No															
0.5	3 Nos															
1.0	1 No															
05	<p><b>Laboratory vane shear test apparatus motorised electrically operated rate of rotation is 1/ 60 r.p.m as per IS 2720 (Part XXX)-1980:</b></p> <p>Consists of a torque head adjustable in height by means of a lead screw rotated by a drive wheel to enable the vane to be lowered into the specimen. Rotation of the vane is operates a worm gear arrangement turning the upper end of a calibrated torsion spring vane dia rod dia, vane size &amp; vane height are as per IS specification. The vane shaft is attached through the hollow upper shaft to resettable pointer, which indicates the angle of torque on a dial graduated in degrees. The dial reading multiplied by spring factory gives the torque. A container for soil sample is also supplied, and a sampling tube of 38mm I.D. &amp; 150 mm long can also be used as container. With set of four springs, one each of approx 2kg cm, 6kg cm, and 8kg cm. Complete as above in a wooden carrying case with all other necessary accessories.</p>	1 SET														

We also confirm that the normal commercial warrantee/guarantee of \_\_\_\_\_ months shall apply to the offered goods.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
2. Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.

## Annexure E

**Technical Compliance of Equipment**

(In the letter head of the bidder)

GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)				
Item No	Instruments with specifications	Quantity needed	Compliance (Yes/No)	Quoted Model
01	<p><b>Triaxial shear test and Unconfined compressive strength test apparatus electrically operated as per IS 2720 (Part XI)-1993 &amp; IS 2720 (Part XII)-1981:</b></p> <p><b>Load Frame, Motorised, 30 speeds, 50 KN Triaxial Cell, Stationary Bushing, 38mm dia having Top loading pad, Perspex, 38 mm dia. 1 No.</b></p> <ul style="list-style-type: none"> <li>•Plain Perspex disc 38mm dia x 6 mm thick 1 pair.</li> <li>•Porous Stone 38mm dia x 6 mm thick. 1 pair.</li> <li>•Sheath stretcher for 38 mm dia specimen 1 No.</li> <li>•Two way split former for 38 mm dia specimen 1 No.</li> <li>•Rubber sheath for 38 mm dia specimen 12 Nos.</li> <li>•Drainage tube (short), 38 mm 4 Nos.</li> <li>•Drainage tube (long), 38 mm 4 Nos.</li> <li>•‘O’ rings for 38mm dia specimen 4 Nos.</li> <li>•Split Mould, 38mm dia 1 No.</li> <li>•Top loading pad 38mm (plain) 1 No.</li> <li>•proving ring 2.5 kN capacity with NABL certificate</li> </ul> <p><b>•Constant pressure system oil water type</b></p> <p><b>•Pore pressure apparatus having:-</b> Pressure Gauge Bourdon Tube type, Graduation : - 0.1 bar Divisions. (or -1 to +20 kg/cm<sup>2</sup>), Dia : 200 mm Manometer Glass U-Tube, measures low positive and negative pore pressure and helps to check zero error of pressure gauge. It is provided with a mercury trap. Null Indicator Perspex with mercury trap and a cursor to indicate the mercury level Burette, 50 ml for measurement of volume change in the soil specimen.</p> <ul style="list-style-type: none"> <li>•<b>Pressure Pump fitted with four Ball Valves.</b></li> <li>•<b>Copper Coil</b></li> <li>•<b>Water Reservoir</b></li> <li>•<b>Dial Gauge 25 mm travel, 0.01 mm least count</b></li> <li>•<b>Lateral Pressure Assembly capacity 10kg/cm<sup>2</sup> (Pressure Chamber with foot pump).</b></li> </ul>	1 SET		



02	<p><b>Universal soil sample extruder Electronic cum hand operated:</b></p> <ul style="list-style-type: none"> <li>• Power pack with quick release couplings.</li> <li>• Manual operation possible on power failure.</li> <li>• Ejects soil from sampling tubes and moulds upto 60 cm in length and 38 to 150 mm in diameter by a single operation.</li> <li>• Allows direct transfer of soil from field sampling tubes, Proctor and CBR moulds into 38 mm diameter tubes with minimal disturbance.</li> <li>• 50kN pushing force.</li> <li>• Electrical-cum-hand operated.</li> <li>• Built-in safety valve to prevent loading beyond 50kN.</li> <li>• Portable, with facility for floor mounting.</li> <li>• Lever for selecting up/down movement of piston.</li> <li>• Top-plate for holding upto 6 sampling tubes of 38 mm dia. Suitable for operation on 220 V, 50 Hz, single phase, AC supply. Equipment consisting of :- Adapter rings/Disk kit - Adapter rings and ejector discs for 38, 50, 75, 100 &amp; 150 mm dia sampling tubes or moulds, included. Sampling Tube, Unrelieved, 38 mm dia x 200 mm long -3 Pair.</li> </ul>	1 SET		
03	<p><b>Vibrating Table 1m x 1m as per IS 2514-1963 :</b> 1m x 1m for 16 moulds of 150mm cube having Proper compaction of cement concrete while casting specimens for compression testing is essential to achieve higher compressive strength. The table top is suitable to hold cube moulds and has stops along its edges to prevent moulds from sliding off the table during operation. The specially designed vibro motor for operating the vibratory. Suitable for operation on 220 V, 50 Hz, Single Phase, AC supply. Capacity 0.5 to 1 ton, the height of the table from the ground level shall be sufficient to allow for easy placing and removal of the moulds. Frequency of vibration for the table operating at its maximum load capacity shall be between 3000 to 6000 cycles per minute, The vibration acceleration of the table operating at its maximum load capacity shall not be less than four times the acceleration due to gravity. Minimum frequency of the table under the loaded state for determining this acceleration shall be not less than 3000 cycles per minute.</p>	1 NO		

We also confirm that the normal commercial warrantee/guarantee of \_\_\_\_\_ months shall apply to the offered goods.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
2. Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.

## ANNEXURE- B-1

**PRICE BID**

(ON THE LETTER HEAD OF THE BIDDER)

<b>GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)</b>				
<b>Item No</b>	<b>Instruments with specifications</b>	<b>Quantity needed</b>	<b>Compliance (Yes/No)</b>	<b>Quoted Model</b>
1	Non-corrodible air-tight container (50 mm diameter and height 50mm)	40 NOS		
2	Density bottle of 50 ml with stopper having capillary hole	8 NOS		
3	Mercury	1 KG		
4	Filter Paper (100 mm dia and 150 mm dia)	1 Packet each		
5	Spatula ( LENGTH 150 mm)	4 NOS		
6	Spatula ( LENGTH 200 mm)	4 NOS		
7	Spatula ( LENGTH 300 mm)	6 NOS		
8	Volumetric flask with stopper capacity 1000ml ("Borosil")	5 NOS		
9	Volumetric flask with stopper capacity 500ml ("Borosil")	5 NOS		
10	Trowel as per IS 10086: 1982	8 NOS		
11	Thermometer(0-100°c)	5 NOS		
12	GI TRAY 300x300 mm <sup>2</sup>	8 NOS		
13	GI TRAY 450x600 mm <sup>2</sup>	6 NOS		
14	<b>Pycnometer as per IS 2386 (Part III)- 1963</b> with Glass Cone. Capacity 900ml. approx. having a metal conical screw top with a 6-mm diameter hole at its apex.	5 NOS		
15	<b>Pycnometer as per IS 2386 (Part III)- 1963</b> with Brass Cone. Capacity 900ml. approx. having a metal conical screw top with a 6-mm diameter hole at its apex.	5 NOS		
16	<b>Measuring graduated Cylinder of 1000ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
17	<b>Measuring graduated Cylinder of 500ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
18	<b>Measuring graduated Cylinder of 250ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
19	<b>Measuring graduated Cylinder of 100ml capacity (Borosil) as per IS 2386 (Part III)- 1963</b>	5 NOS		
20	Wash bottle 500 ml (Squeeze Bottle)	8 NOS		

21	<b>Electronic weighing machine (Digital) with NABL certificate.</b> Capacity - 10kg L.C. – 0.1gm with Tare facility, In-built Battery Backup.	2 NOS		
22	<b>Electronic weighing machine (Digital) with NABL certificate.</b> Capacity - 1kg L.C. – 0.01gm with Tare facility, In-built Battery Backup.	2 NOS		
23	<b>Spring weighing machine (Digital) with NABL certificate</b> Capacity - 20kg L.C. – 0.5gm with Tare facility, In-built Battery Backup.	1 NO		
24	Wire brush	6 NOS		
25	<b>Dessicator Vacuum.</b> Plastic with transparent Top 300 mm	3 NOS		
26	<b>Electric Oven : Hot Air Oven:</b> Gravity convention type, thermostatically controlled double walled, inner made of Aluminium, outer of Mild Steel nicely hammerton spray-painted; in between wall heavily insulated with thick layer of glass wool, with double walled insulated door, temperature controlled by capillary type Thermostatic, temp. ranging from 50°C to 250°C . (can be set at 100 to 110°C). Fitted with motorized air circulation system & inner chamber of stainless steel with digital controller cum indicator. Inner chamber size should be of 600 mm x 600 mm x 900 mm.	1 NO		
27	<b>Motorised Sieve shaker with Built-in-digital timer for 20cm dia. sieves which should be able to carry up to 8 sieves of 150 mm. or 200 mm. diameter. The shaker shall be driven by a ¼ h.p motor.</b>	1 NO		
28	<b>Digital Stop watch</b> with least count 1/10 sec	5 NOS		
29	<b>SPEEDY MOISTURE TESTER (SUPER QUALITY) as per IS 2720 (Part 2)-1973:</b> Speedy Moisture Meter, Range 0-25% (Gauge Div.:0.5%) with digital weighing balance consisting of the following:- Calcium Carbide Reagent- <b>1 No.</b> Moisture gauge, 0.25 % to 0.5% - <b>1 No.</b> Steel Balls- <b>1 Set,</b> Scoop- <b>1 No,</b> Aluminium Dish- <b>1 No</b> and with all other necessary accessories.	5 SET		
30	<b>IS SEIVES: 20cm. dia. Sieves in Brass Frame with NABL Certificate, S.S.Mesh:-Size:- 5.6 mm, 4.75mm, 3.35mm, 2.8mm, 2.36mm, 1.70mm, 1.18 mm, 850 micn., 600micn., 425micn., 300micn., 150 micn., 90micn., 75micn. With as per I.S 460-1962.</b>	3 NOS EACH @ 14		

31	Pan and cover for 20cm. dia Sieves made of brass.	3 NOS Each		
32	<b>IS SIEVES: 30cm. dia. Sieves in G.I. Frame with NABL Certificate, S.S.Mesh:-Size:- 80mm, 63mm, 50mm, 40mm, 37.5mm, 31.5mm, 26.5mm, 25mm, 22.4mm, 20mm, 16mm, 13.2mm, 12.5mm, 11.2mm, 10mm, 6.3mm, 4.75mm, 3.35mm, 2.36mm With as per I.S 460-1962.</b>	2 NOS Each @ 19		
33	Pan and cover for 30cm. dia sieves made of G.I.	2 NOS Each		
	<b>Sub Total</b>			
	<b>Taxes (CST/VAT)</b>			
	<b>Environmental CESS 1%</b>			
	<b>Grand Total</b>			

We agree to supply the above goods/equipment in accordance with the technical specifications for a total contract price of Rs \_\_\_\_\_ (Pls specify the Item groups) \_\_\_\_\_ within the period specified in the Invitation for Quotations.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
2. Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.

## Annexure- C-1

**PRICE BID**

(In the letter head of the bidder)

<b>GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)</b>				
<b>Item No</b>	<b>Instruments with specifications</b>	<b>Quantity needed</b>	<b>Compliance (Yes/No)</b>	<b>Quoted Model</b>
01	<p><b>Pipette analysis test apparatus IS 2720 (Part 4)-1985:</b></p> <p>Glass tube 50mm diameter, 350 mm long marked at 500 ml volume</p> <ol style="list-style-type: none"> <li>1. Heavy brass funnel (diameter approx. 23 cm) on stand.</li> <li>2. Small 50 <math>\mu</math>m or 63 <math>\mu</math>m sieve (diameter 8 cm).</li> <li>3. 13 one litre glass sedimentation cylinders.</li> <li>4. 13 one litre glass beakers &amp; covering watch glasses.</li> <li>5. Suction pump.</li> <li>6. 13 one litre PVC bottles</li> <li>7. Two splash bottles</li> <li>8. Rubber policeman 3 cm</li> <li>9. 20ml pipetting device,</li> <li>10. 4x13 Stainless steel moisture tins and with all other necessary accessories.</li> </ol>	5 SET		
	<b>Atterberg's limits and indices</b>			
02	<p><b>(a) Shrinkage Limit test apparatus[IS 2720 (part VI)-1972 ]</b></p> <p>Porcelain evaporating Dish Shrinkage Dish Glass Cup Perspex plate with three metal prongs Perspex plate, plain Flexible Spatula Glass Cylinder 25 ml x 0.5ml And with all other necessary accessories.</p>	5 SET		
03	<p><b>(b) Plastic Limit test apparatus [IS 2720 (part V)-1985]</b></p> <p>The complete set consists of: Glass plate 20cm x 15cm having ground ends and one side frosted. Brass or stainless steel rod 3 mm dia. x 150 mm long, Flexible spatula. Porcelain basin And with all other necessary accessories.</p>	5 SET		
04	<p><b>(c) Liquid Limit test apparatus[IS 2720 (part V)-1985 ]</b></p> <p>Casagrande's apparatus with all necessary accessories (like grooving tool, Mixing dishes, spatula etc.)</p>	5 SET		

05	<p><b>Field density test by Sand replacement method [IS 2720 (Part XXVIII)- 1974] :</b> Sand pouring cylinder of 3 litre capacity, mounted above a pouring cone and separated by a shutter cover plate. Cylindrical calibrating container with an internal diameter of 100 mm and an internal depth of 150 mm fitted with a flange 50 mm wide and about 5 mm surrounding the open end. Metal tray with 300 mm square and 40 mm deep with a 100 mm diameter hole in the centre.</p>	5 SET		
06	<p><b>Field density test by Core cutter method [IS 2720 (part XXIX)-1975]:</b> Core cutter apparatus with dolley. Rammer for above with handle.</p>	5 SET		
07	<p><b>Permeability Apparatus as per IS 2720 (P-XXXVI)-1987: For Determination of coefficient of permeability by Constant head parameter &amp; variable head parameter.</b> Consisting of gunmetal / brass mould 100mm dia. x 127.3mm height x 1000ml volume with collar and Drainage base plate, drainage cap, Metallic clamping ring, two porous stone for base and cap. Dummy plate, set of three glass stand pipes approx. 6mm×10mm, and 20mm dia. mounted on a wooden board, length of 3 meter rubber connection tube with pinch cock. And also with 100 litre water tank having with an inlet port at the top, six outlets at the bottom with cocks, air inlet and water filling tube at the top. An arrangement to indicate the water level is also provided. And inlet port on top and with all other necessary accessories.</p>	1 SET		
08	<p><b>Compaction test apparatus(standard Proctor Test) as per IS 2720 (Part VII)- 1980-</b> Standard Proctor Compaction mould, 100mm dia x 127. 3 mm high x 1000 c.c. volume with collar and base plate. Light compaction, made of Mild Steel. With Rammer 2.6 Kg. x 31 cm. controlled drop.</p>	5 SET		
09	<p><b>Compaction test apparatus(Modified Proctor Test) as per IS 2720 (Part VIII)-1983-</b> Modified Proctor compaction mould, 150mm dia x 127.3mm high x 2250 c.c. volume with collar and base plate. For Heavy Compaction, made of Mild Steel. With Rammer 4.89 Kg. x 45 cm. controlled drop.</p>	5 SET		

10	<p><b>Consolidation Apparatus as per IS 2720 (Part XV)-1965: Single gang complete with gunmetal cell and Dial gauge 0.002 mm.</b> The standard outfit comprises of a fixed ring type of consolidometer cell for testing specimens of 60mm dia. x 20mm thick. Suitable for varying sizes from 50mm. dia.to100mm dia. specimens.</p> <p><b>SPECIFICATION :</b></p> <p>Loading unit of maximum capacity 20 kg/cm<sup>2</sup> consisting of a loading yoke connected to a lever arm with a counter balancing adjustment and having a lever ratio of 1: 10, the whole assembly being mounted on a steel frame stand Fixed ring type of consolidometer (Oedometer) cell assembly for testing 60mm dia. × 20mm thick specimens comprising :</p> <ol style="list-style-type: none"> <li>1. Fixed ring for specimens 60mm dia. × 20mm. thick with a guide ring.</li> <li>2. Pair of porous stones for 60mm. dia. specimen.</li> <li>3. Pressure pad, perforated.</li> <li>4. Channelled base with water inlet.</li> <li>5. Gasket.</li> <li>6. Flanged water jacket.</li> </ol> <p>Set of weights to give a pressure of 10 kg/cm<sup>2</sup> on 60 mm. dia . specimens consists of the following weights:- 0.05 kg / cm<sup>2</sup> – <b>7 Nos.</b>, 0.1 kg / cm<sup>2</sup> – <b>5 Nos.</b>, 0.2 kg/cm<sup>2</sup> – <b>6 Nos.</b>, 0.5 kg/cm<sup>2</sup> – <b>6Nos.</b> and 1.0kg/cm<sup>2</sup> – <b>5 Nos</b> . Water reservoir with plastic tube, T connection and 2 pinch cocks. Dial gauge 0.002 mm. x 5mm travel with 40 mm. long extension piece.</p>	2 SET		
	<b>Sub Total</b>			
	<b>Taxes (CST/VAT)</b>			
	<b>Environmental CESS 1%</b>			
	<b>Grand Total</b>			

We agree to supply the above goods/equipment in accordance with the technical specifications for a total contract price of Rs \_\_\_\_\_ (Pls specify the Item groups) \_\_\_\_\_ within the period specified in the Invitation for Quotations.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
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## Annexure- D-1

**PRICE BID**

(In the letter head of the bidder)

<b>GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)</b>				
<b>Item No</b>	<b>Instruments with specifications</b>	<b>Quantity needed</b>	<b>Compliance (Yes/No)</b>	<b>Quoted Model</b>
01	<p><b>California Bearing Ratio test apparatus [IS 2270 (Part XVI)-1987]:</b></p> <p>1. Cylindrical mould with inside dia. 150 mm and height 175 mm, provided with a detachable extension collar 50 mm height and a detachable perforated base plate 10 mm thick.</p> <p>2. Spacer disc 148 mm in dia. and 47.7 mm in height along with detachable handle.</p> <p>3. Metal rammers. Weight 2.6 kg with a drop of 310 mm and weight 4.89 kg a drop 450 mm.</p> <p>4. Weights. One annular metal weight and several slotted weights weighing 2.5 kg each, 147 mm in dia, with a central hole 53 mm in diameter.</p> <p>5. Loading machine. With a capacity of at least 5000 kg and equipped with a movable head or base that travels at an uniform rate of 1.25 mm/min. Complete with load indicating device.</p> <p>6. Metal penetration piston 50 mm dia and min of 100 mm in length.</p> <p>7. Two dial gauges reading to 0.01 mm.</p> <p>8. Proving ring capacity 50 KN with NABL certificate and with all other necessary accessories.</p>	1 SET		
02	EXTRA: Cylindrical mould for CBR test with inside dia 150 mm and height 175 mm, provided with a detachable extension collar 50 mm height and a detachable perforated base plate 10 mm thick.	1 SET		
03	EXTRA: Dial gauges reading to 0.01 mm	5 NOS		

04	<p><b>Direct Shear Apparatus, motorised 12 speeds ELECTRICALLY OPERATED as per IS 2720 (P-XIII)-1986.</b></p> <p>Loading Unit : It consists of a load frame with V-strips on which shear box housing rests, load yoke with direct and lever system for applying normal load to capacity of 8kg/cm<sup>2</sup> , fixture for proving ring, bracket for holding consolidation dial gauge and manually operated .lead screw for application of shear stress.</p> <p>Shear box assembly for square specimen, size 60mm. X 60mm. X 25mm. complete with-</p> <ul style="list-style-type: none"> <li>• Two halves of shear box with an adaptor fixed to the U-bracket of upper half of the box.</li> <li>• Plain gripper plates: 2Nos.</li> <li>• Perforated gripper plates: 2Nos.</li> <li>• Porous Stone : 2Nos.</li> <li>• Top loading Pad: 1No.</li> <li>• Base plate: 1No</li> <li>• Set of weight to give a normal stress of 3 kg/cm.sq. through lever as follows :</li> </ul> <table border="0" style="margin-left: 20px;"> <tr> <td>To give kg/cm.sq</td> <td>Qty.</td> </tr> <tr> <td>0.05</td> <td>4 Nos</td> </tr> <tr> <td>0.1</td> <td>1 No</td> </tr> <tr> <td>0.2</td> <td>1 No</td> </tr> <tr> <td>0.5</td> <td>3 Nos</td> </tr> <tr> <td>1.0</td> <td>1 No</td> </tr> </table> <ul style="list-style-type: none"> <li>• Specimen cutter for cutting 60mm. X 60mm. X 25mm. specimens</li> <li>•Proving Ring capacity 2.5 KN with NABL Certificate 1 No.</li> <li>•Dial Gauge 0-25 × 0.01mm 2 Nos and with all other necessary accessories.</li> </ul>	To give kg/cm.sq	Qty.	0.05	4 Nos	0.1	1 No	0.2	1 No	0.5	3 Nos	1.0	1 No	1 SET		
To give kg/cm.sq	Qty.															
0.05	4 Nos															
0.1	1 No															
0.2	1 No															
0.5	3 Nos															
1.0	1 No															
05	<p><b>Laboratory vane shear test apparatus motorised electrically operated rate of rotation is 1/ 60 r.p.m as per IS 2720 (Part XXX)-1980:</b></p> <p>Consists of a torque head adjustable in height by means of a lead screw rotated by a drive wheel to enable the vane to be lowered into the specimen. Rotation of the vane is operates a worm gear arrangement turning the upper end of a calibrated torsion spring vane dia. rod dia., vane size &amp; vane height are as per IS specification. The vane shaft is attached through the hollow upper shaft to resettable pointer, which indicates the angle of torque on a dial graduated in degrees. The dial reading multiplied by spring factory gives the torque. A container for soil sample is also supplied, and a sampling tube of 38mm I.D. &amp; 150 mm long can also be used as container. With set of four springs, one each of approx. 2kg cm, 6kg cm, and 8kg cm. Complete as above in a wooden carrying case with all other necessary accessories.</p>	1 SET														
	<b>Sub Total</b>															

	<b>Taxes (CST/VAT)</b>			
	<b>Environmental CESS 1%</b>			
	<b>Grand Total</b>			

We agree to supply the above goods/equipment in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_ (Please specify the Item groups) \_\_\_\_\_ within the period specified in the Invitation for Quotations.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
2. Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.

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## Annexure- E-1

**PRICE BID**

(In the letter head of the bidder)

GEOTECHNICAL ENGINEERING LABORATORY (CIVIL ENGG DEPTT.)				
Item No	Instruments with specifications	Quantity needed	Compliance (Yes/No)	Quoted Model
01	<p><b>Triaxial shear test and Unconfined compressive strength test apparatus electrically operated as per IS 2720 (Part XI)-1993 &amp; IS 2720 (Part XII)-1981:</b></p> <p><b>Load Frame, Motorised, 30 speeds, 50 KN Triaxial Cell, Stationary Bushing, 38mm dia having Top loading pad, Perspex, 38 mm dia. 1 No.</b></p> <ul style="list-style-type: none"> <li>•Plain Perspex disc 38mm dia x 6 mm thick 1 pair.</li> <li>•Porous Stone 38mm dia x 6 mm thick. 1 pair.</li> <li>•Sheath stretcher for 38 mm dia specimen 1 No.</li> <li>•Two way split former for 38 mm dia specimen 1 No.</li> <li>•Rubber sheath for 38 mm dia specimen 12 Nos.</li> <li>•Drainage tube (short), 38 mm 4 Nos.</li> <li>•Drainage tube (long), 38 mm 4 Nos.</li> <li>•‘O’ rings for 38mm dia specimen 4 Nos.</li> <li>•Split Mould, 38mm dia 1 No.</li> <li>•Top loading pad 38mm (plain) 1 No.</li> <li>•proving ring 2.5 kN capacity with NABL certificate</li> </ul> <p><b>•Constant pressure system oil water type</b></p> <p><b>•Pore pressure apparatus having:-</b> Pressure Gauge Bourdon Tube type, Graduation: - 0.1 bar Divisions. (or -1 to +20 kg/cm<sup>2</sup>), Dia : 200 mm Manometer Glass U-Tube, measures low positive and negative pore pressure and helps to check zero error of pressure gauge. It is provided with a mercury trap. Null Indicator Perspex with mercury trap and a cursor to indicate the mercury level Burette, 50 ml for measurement of volume change in the soil specimen.</p> <ul style="list-style-type: none"> <li>•<b>Pressure Pump fitted with four Ball Valves.</b></li> <li>•<b>Copper Coil</b></li> <li>•<b>Water Reservoir</b></li> <li>•<b>Dial Gauge 25 mm travel, 0.01 mm least count</b></li> <li>•<b>Lateral Pressure Assembly capacity 10kg/cm<sup>2</sup> (Pressure Chamber with foot pump).</b></li> </ul>	1 SET		

02	<p><b>Universal soil sample extruder Electronic cum hand operated:</b></p> <ul style="list-style-type: none"> <li>• Power pack with quick release couplings.</li> <li>• Manual operation possible on power failure.</li> <li>• Ejects soil from sampling tubes and moulds up to 60 cm inlength and 38 to 150 mm in diameter by a single operation.</li> <li>• Allows direct transfer of soil from field sampling tubes,Proctor and CBR moulds into 38 mm diameter tubeswith minimal disturbance.</li> <li>• 50kN pushing force.</li> <li>• Electrical-cum-hand operated.</li> <li>• Built-in safety valve to prevent loading beyond 50kN.</li> <li>• Portable, with facility for floor mounting.</li> <li>• Lever for selecting up/down movement of piston.</li> <li>• Top-plate for holding up to 6 sampling tubes of 38 mm dia. Suitable for operation on 220 V, 50 Hz, single phase, AC supply. Equipment consisting of:- Adapter rings/Disk kit - Adapter rings and ejector discs for 38, 50, 75, 100 &amp; 150 mm dia sampling tubes or moulds, included.Sampling Tube, Unrelieved, 38 mm dia x 200 mm long -3 Pair.</li> </ul>	1 SET		
03	<p><b>Vibrating Table 1m x 1m as per IS 2514-1963 :</b> 1m x 1m for 16 moulds of 150mm cube having Proper compaction of cement concrete while casting specimens for compression testing is essential to achieve higher compressive strength. The table top is suitable to hold cube moulds and has stops along its edges to prevent moulds from sliding off the table during operation. The specially designed <b>vibro</b> motor for operating the vibratory. Suitable for operation on 220 V, 50 Hz, Single Phase, AC supply. Capacity 0.5 to 1 ton, the height of the table from the ground level shall be sufficient to allow for easy placing and removal of the moulds. Frequency of vibration for the table operating at its maximum load capacity shall be between 3000 to 6000 cycles per minute, The vibration acceleration of the table operating at its maximum load capacity shall not be less than four times the acceleration due to gravity. Minimum frequency of the table under the loaded state for determining this acceleration shall be not less than 3000 cycles per minute.</p>	1 NO		
	<b>Sub Total</b>			
	<b>Taxes (CST/VAT)</b>			
	<b>Environmental CESS 1%</b>			
	<b>Grand Total</b>			

We agree to supply the above goods/equipment in accordance with the technical specifications for a total contract price of Rs \_\_\_\_\_ (Pls specify the Item groups) \_\_\_\_\_ within the period specified in the Invitation for Quotations.

Date:

Signature and Seal of the Manufacturer/Bidder

Note:

1. Preference will be given to ISO 9001-2000 to 2005 certified manufacture/supplier, who can ensure the manufacturing of the machine as per the required testing standards/tender specifications within the specified tolerance limit.
2. Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.

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**ANNEXURE- F****PROFORMA FOR DIRECT PAYMENT/TRANSFER TO BANK ACCOUNT BY NIT SIKKIM**

<b>Sl no.</b>	<b>Particulars</b>	<b>Information</b>
1	Firm (Beneficiary) Name	
2	Please enclose a cancelled cheque and copy of PAN card. Cancelled cheque & PAN card is to be submitted only once	
3	Complete Bank Account No. of the Firm [beneficiary]. [in case of change in bank account vendor should write to Account Office]	
4	Bank Name	
5	Bank Address	
6	IFSC Code no	
7	Mobile no (for SMS)	
8	Email ID (for information)	

We undertake that all information provided above is correct and NIT Sikkim will not be responsible in case of any error on the part of firm.

Note: This Performa shall be enclosed with price bid

**[Seal and Signature of the firm]**