

HEAVY ENGINEERING CORPORATION LIMITED

PROJECT DIVISION

LIMITED TENDER INQUIRY

Tender Inquiry No. HEC/Proj/NCL/KSL/2012-768

Dated: 11.02.12

Sub: Limited Tender Inquiry for Soil Investigation Report for Krishnashila CHP, NCL

We request you to submit your most competitive offer for the following items/services as per the given schedule.

INQUIRY SCHEDULE

Sl. No.	Description	Estimated Quantity	Terms and Conditions
1.	Soil Investigation as per enclosed documents and sketches for carrying out Bore-Holes, Collection and laboratory Testing of soil sample, Field Testing and Submission of Reports, etc complete and as directed by the engineer.	As per Drawing/Site requirements	As elaborated in Tender Document

Issue date of Tender : 11.02.2012
Submission date of Tender : 21.02.2012 upto 11:00 A.M.
Opening date of Tender : 21.02.2012 at 11:30 A.M.

TENDERS must be submitted in sealed cover with Tender No. and the Due date superscribed on it, failing which Tenders may be ignored.

Offers shall be submitted in two parts to the address of the undersigned.

EMD & Documents for Qualification and Technical Criteria to be submitted and sealed in a separate envelope superscribing **Part-I** on it. The **Price Bid** to be submitted and sealed in a separate envelope superscribed as **Part-II**.

- Enclosures: -**
1. Scope of Work (Page1 of 20 to Page8 of 20)
 2. Information & Instructions for Tenderer (Page9 of 20 to Page11 of 20)
 3. Additional Special Conditions of Contract (Page12 of 20 to Page19 of 20)
 4. Price Bid (Page20 of 20)
 5. Plot plan

Sd/-

A.K.Singh

Sr.D.G.M, (I/C)/C&S/ Project Division

Heavy Engineering Corporation Limited

HMBP ADMIN. BLDG.

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SCOPE OF WORK

The general scope of works has been elaborated as below:-

1.0 Sub-Soil Investigation:

The scope of work covered under sub soil investigation includes setting out, field investigation, laboratory testing and submission of soil investigation reports incorporating the observations made during the field investigation and the results of laboratory tests, analysis of all results, foundation recommendations with calculations and other related information along with necessary charts, curves and drawings. The investigation shall consist of sinking boreholes by approved method of boring, standard penetration tests and collection of disturbed and undisturbed soil samples, collection of water samples and conducting necessary laboratory tests at a recognized and approved soil laboratory. The work shall be carried out in conformity to relevant Indian Standards of latest revision.

2.0 TECHNICAL SPECIFICATION

2.1 BORING, SAMPLING AND IN-SITU TESTING

2.1.1 Scope of Investigation

- i) Sub soil investigation shall be carried out at the locations within the proposed plant area as given in the enclosed Drawing No.
 - Conducting Standard Penetration Test (SPT).
 - Collection of disturbed and undisturbed soil samples and water samples for laboratory testing.
 - Laboratory tests on disturbed/undisturbed soil samples:
 - Natural Moisture Content (NMC)
 - Sieve and hydrometer analyses
 - Atterberg limits & soil classification
 - Specific gravity
 - Bulk density and dry density
 - Unconfined compressive strength
 - Tri axial test
 - Consolidation analysis
 - Chemical analysis of soil and water samples for pH, sulphate, chloride and other organic content.
- ii) Boring in Rock
 - Following information regarding rock strata are required:
 - Geo-Technical characteristic
 - Depth of rock strata and its variation over site
 - Whether isolated boulder or massive rock formation
 - Extent and characters of weathered zone



- The structures of rock including bedding planes, faults, fissures, solution cavities etc.
- Properties of rock material like strength, geological formation etc.
- Quality and quantity of returning drill water
- Erodibility of rock to the extent possible
- Visual identification and laboratory testing shall be conducted to find out the quality and strength of the rock satisfying the relevant clause of IRC: 78-2000.
- The rock cores obtained shall be subjected to tests to get necessary data for design as follows:
- Visual identification for
 - Texture
 - Structure
 - Composition
 - Colour
 - Grain Size
 - Petrography
- Laboratory tests may be done for
 - Specific gravity
 - Porosity
 - Water absorption
 - Compressive strength

2.2 Location & Depth of Boreholes

Subsoil investigation shall be carried out at the locations (Min two numbers) of proposed area of site to find out the sub soil properties as per Drawing No.

Soil exploration depth shall satisfy the following requirements:

Depth as specified to a depth of 25 m or 3.0 M in rock whichever encountered earlier. If rock is encountered, depth of bore will be at least 3m inside the rock layer having total core recovery greater than 50%.

For each borehole, the depth of termination shall be determined after consultation and certification from the Engineer on the field bore log.

2.3 Boring in Overburden Soil

In case overburden soil deposit is found significantly it shall be carried out in accordance with the provisions of IS: 1892 with shell and auger equipment. The boreholes shall have a minimum diameter of 150 mm and be suitably lined throughout. The toe of the lining shall at no time be more than 1.0 m above the level to which the material has been removed from the borehole. Before taking any undisturbed samples or making any in-situ test, the lining shall be carried down to the bottom of the borehole.

Auger of proper size shall be used in soft to firm clays and silts to avoid suction. The use of shell shall only be restricted to very stiff to hard clays and sandy strata below water table.

No water shall be added while boring through cohesive soils and cohesion less soils above the water table. While boring through cohesion less soil below water table, water level in the casing shall always be maintained at or above the water table.

Boreholes shall be stabilized, whenever required, against caving in of the sides of the



borehole and heaving of the bottom of the hole, especially in cases where the hole is carried below the ground water level, by use of casing or by means of drilling fluids (mixtures of water and colloidal clays such as bentonite), or by other suitable methods.

The cutting brought up by the auger, shell or the cutting shoe of the split-spoon or undisturbed sampler shall be carefully examined and the soil description duly recorded after performing field identification tests. While sinking borehole, the Contractor shall carefully record the level at which subsoil water is first encountered. On completion of each borehole, the Contractor shall allow sufficient time for the ground water to come to a steady level and record the static subsoil water table. Method for determination of water level in a borehole shall be according to IS: 6935.

2.3.1 Disturbed Samples

Disturbed samples shall be taken from borehole cuttings, split spoon sampler and cutting edge of undisturbed sampler for classification tests at the site. The samples shall be taken at 1.5m interval or at every identifiable change of strata, whichever is met earlier to give a reliable record of the variations in the conditions of the soils. If required, the disturbed samples should be sent to the laboratory for testing or handed over to the Engineer in air-tight container for the purpose of record.

2.3.2 Undisturbed Samples

Undisturbed samples in cohesive soils shall be taken from the boreholes at 1.5m intervals alternate with SPT or at every identifiable change of strata whichever is met earlier. Sampling procedures and samplers for recovering undisturbed samples shall normally conform to IS: 2132 unless otherwise specified and directed by the Engineer.

In the case of cohesive deposits, undisturbed samples shall be collected by an open tube sampler or a piston sampler. The size of the sampler should be such that a sample having a minimum size of 100 mm diameter and 300 mm long can be recovered. The sampler shall be pushed strictly by hand or by jacking in soft to firm deposit and no hammering shall be allowed. Where this is not possible, the sampler shall be driven by the blows of a monkey having sufficient weight. Area ratio of all samplers shall be limited to 10% for soft to firm cohesive deposit and use of thick walled samplers shall be permitted in case of deposits having very high consistency, subject to the approval of the Engineer. Recovery ratio shall be observed and reported in the bore logs, for every sample. The samples shall be sealed, packed and properly labeled and transported to the laboratory as laid down in IS: 2132. The top and bottom of a sample must be indicated clearly on the sample tube to facilitate the laboratory testing in proper orientation as specified by the Engineer.

2.3.3 Standard Penetration Test

Standard penetration test shall be conducted in soils as per IS: 2131 at 1.5m intervals or at every identifiable change of strata, whichever is met earlier. The test shall be conducted after driving the casing to the bottom of the borehole and after cleaning it. N values both the field and corrected shall be reported.

2.4 Drilling in bed rock

Drilling into fresh/weathered rock strata shall be carried out using double tube core barrel of N_x size and diamond bits with water or bentonite slurry as drilling fluid run by a hydraulic feed machine. Minimum diameter of cores shall be 54 mm unless otherwise specified by the Engineer.

Each drill run shall not exceed 1.5m in length and the core barrel shall be removed from



the boreholes as often required to obtain the best possible core recovery. When any recovery is less than 80% from a drill run, the next drill run shall be reduced to 50% of the previous length, unless otherwise directed by the Engineer.

Core shall be removed from the core barrel either by splitting the inner tube or by extruding the core within the split inner liner. Core barrel shall be held horizontally whilst the core is extruded in the same direction as it entered the barrel. Extrusion shall be done without vibration and in a manner to prevent disturbance to the cores. Directly applied water pressure may be used to remove the cores.

The time required to drill through a certain depth, amount of core recovery, Rock Quality Designator (RQD), physical condition, length of pieces of core, joints, colour of water residue, loss of water during drilling, hydraulic pressure, weathering and evidence of disturbance and other effects as mentioned in section 2.0 shall be carefully noticed and entered in the drilling log. For guidance IS: 5313 shall be referred to. The data shall be presented in accordance with IS: 4464. Cores shall be stored properly in accordance with IS: 4078.

2.5 Despatch of Samples

Samples shall be despatched to the laboratory as soon as possible after being obtained and shall not be allowed to accumulate on Site. All the core boxes shall be delivered to the location directed by the Engineer at the cost of the Contractor.

2.6 Laboratory Tests

The engineer shall have the right of access to contractor's laboratory and/or any other laboratory where tests have been arranged to be carried out during the progress of this investigation. The contractor shall carry out the tests as listed out in the Schedule of Items, and/or as decided by the engineer, in laboratory. He shall furnish the name/s of laboratories where he proposes to have the tests carried out and have them approved by the Engineer.

Laboratory tests shall be carried out in consultation with the Engineer and as per relevant Indian Standard Codes. After completion of work, a list of all soil and rock core samples collected from each borehole shall be submitted to the Engineer with records of bore logs and in-situ tests in duplicate. Laboratory tests shall commence only after the schedule is approved by the Engineer.

2.6.1 Tests on Disturbed/Undisturbed Soil Samples

2.6.1.1 Preparation of Test Specimens

Preparation of test specimens for the various tests shall be carried out as per the procedures laid down in the various relevant IS Codes.

In case of soft to firm cohesive undisturbed soil samples, test samples for all types of shear tests shall be prepared strictly by hand trimming or soil lathe. Care shall be taken against bending of soil samples at the time of horizontal ejection of the samples from the sampling tubes. Samples shall be ejected from the sampling tubes preferably in the same direction of travel in which the samples entered the sampling tubes.

Similarly test specimens for consolidation tests shall also be prepared to the required size by hand trimming only and the ring of the consolidation apparatus shall be inserted by pressing gently with the hands and carefully removing the material around the ring. In no case the ring shall be forced into the soil. Great care shall be taken during the trimming of the sample from the top and the bottom of the ring. The test specimen shall be prepared in the same orientation as that of the actual strata so that the laboratory test load compresses



the soil in the same direction relative to the soil strata as the applied load in the field.

2.6.1.2 Index Property Tests

Laboratory tests shall be carried out in consultation with the Engineer and as per relevant parts of IS: 2720 to find out the following index properties:

- Natural Moisture Content
- Sieve and Hydrometer analyses
- Atterberg Limits & soil classification
- Specific gravity
- Bulk & Dry Density

The soil samples to be tested shall be selected by the Engineer.

2.6.1.3 Unconfined Compression Test

Unconfined compression test shall be carried out as per IS: 2720 (Part X). Each unconfined compression test shall comprise tests on a minimum of three soil specimens not less than 38 mm diameter and a height to diameter ratio of 2, together with the determination of natural moisture content and bulk densities. The water content of the specimen shall be taken from the failure zone of the specimen. The test results shall be observed and reported as per the standard practice. The tender shall quote in the bill of quantities for each unconfined compression test to include for all the above mentioned items.

2.6.1.4 Triaxial Test

Triaxial test shall be conducted on the undisturbed samples selected by the Engineer. The test shall be conducted as per IS: 2720 (relevant parts). The stress-strain diagrams as well as the Mohr circle envelopes shall be included in the report.

2.6.1.5 Consolidation Test

Consolidation test shall be conducted on undisturbed samples as per IS:2720 (Part XV) selected by the Engineer. The loading on the test specimens shall be applied in the following stages : 0, 0.1, 0.25, 0.5, 1.0, 2.0, 4.0, 8.0 kg/sq.cm. Unloading of the test specimens shall be done in suitable stages. The co-efficient of consolidation (C_v), the coefficient of volume decrease (m_v) and the coefficient of compressibility (C_c) shall be determined and reported.

2.6.2 Chemical Analysis

Chemical analysis of soil and water samples shall be carried out for pH value, sulphate, chloride and other organic content in 'ppm' and percentage.

2.7 Determination of Soil Absorption capacity:

2.7.1 Percolation Test

2.7.1.1 Percolation test should be conducted as described in paras 2.7.1.2 to 2.7.1.6 hereinafter to determine the permeability of the soil at any depth at which it is intended to dispose of the effluent.

2.7.1.2 A square or a circular hole with side width or diameter of 100 to 300 mm and vertical sides shall be dug or bored to the depth of the proposed absorption trench. The bottom and sides of the holes shall be carefully scratched in order to remove any smeared soil surface and to provide a natural soil interface into which water may percolate. All the loose material shall be removed from the hole and coarse sand or fine gravel shall be added for a depth of about 50 mm, to protect the bottom from scouring and sediment.

2.7.1.3 Water shall then be poured up to a minimum depth of 300 mm over the gravel. In order to ensure that the soil is given ample opportunity to swell and to approach the



condition it will be in, during the wettest season of the year, the percolation shall be determined 24 hours after the water is added. If the water remains in the test hole after the overnight swelling period, the depth shall be adjusted to 150 mm over the gravel. Then from fixed reference point the drop in water level shall be noted over a 30 minute period. This drop shall be used to calculate the percolation rate.

2.7.1.4 If no water remains in the hole, water shall be added to bring the depth of the water in the hole till it is 150 mm over the gravel. From a fixed reference point, the drop in water level shall be measured at 30 minutes intervals for 4 hours, re-filling 150 mm over the gravel as necessary. The drop that occurs during the final 30 minutes period shall be used to calculate the percolation rate. The drops during prior periods provide information for possible modification of the procedure to suit local circumstances.

2.7.1.5 In sandy soils or other porous soils in which the first 150 mm of water seeps away in less than 30 minutes after the overnight swelling period, the time interval between measurement shall be taken as 10 minutes and the test run for one hour. The drop that occurs during the final 10 minutes shall be used to calculate the percolation rate.

2.7.1.6 Percolation Rate – Based on the final drop, the percolation rate, that is, the time in minutes required for water to fall 25 mm, shall be calculated.

2.7.1.7 Determination of SBC for onward activity of design and execution work.

2.7.1.8 Any other test / work not covered above but required for successful completion of the Sub Soil Investigation works noted above.

2.8 Electrical Resistivity Test:

The electrical resistivity test should be carried out according to the guidelines of IS: 3043-1987 and IS: 1892-1979. The test is to be conducted by driving four metal spikes to serve as electrodes into the ground along a straight line at equal distance. Information about the horizontal and vertical variations in earth resistivity over the site under considerations shall be obtained from the above test. The soil resistivity shall be computed according to the guidelines of IS: 3043-1987.

2.9 REPORTS

2.9.1 Preliminary Report and Records

On completion of each borehole, three copies of a preliminary borehole log shall be submitted to the Engineer.

These preliminary bore logs shall show:

- i) Ground level referred to the GTS.
- ii) The locations of the boreholes on a plan.
- iii) The preliminary description of each stratum.
- iv) The thickness of each stratum with the boundaries referred to the GTS.
- v) The position, type and identification of each samples and in-situ test with reference to GTS.
- vi) Any in-situ test results available with reference to GTS.
- vii) The levels at which each separate ground water level is first encountered and at which it comes to rest (standing water level).

The tenderer shall submit with his tender a sample of the borehole log proforma he proposes to use.

2.9.2 Draft and Detailed Report

On completion of all field and laboratory testing, the contractor shall submit two copies



of draft report for the engineers review. The report shall include detailed bore logs, subsoil section, field test results laboratory observations and test results both in tabular as well as graphical form, practical and theoretical considerations for the interpretation of test results, the supporting calculations for the conclusions drawn etc.

The contractor's qualified geotechnical engineer shall visit the engineer's corporate office for a detailed discussion on the engineer's comments on his draft report. During the discussions, it shall be decided as to the modifications that need to be done in the draft report.

Thereafter, the contractor shall incorporate in his report the agreed modifications and after getting the amended draft report approved, 07 (seven) copies of the detailed final report shall be submitted along with the graphs, tables etc. An electronic (soft) copy of the final report in MS 'Word' and MS 'Excel format shall also be submitted in CD.

The detailed report shall include:

- A plan showing the position of all boreholes and test pits .
- A description of regional geology of the site.
- A description of the procedures of investigation and testing employed and list of equipments used.
- Detailed bore logs, subsoil sections, laboratory and field test results both in tabular as well as in graphical form, showing variations of each of the soil properties with depths in each borehole.
- A true cross section of all individual bore holes with reduced levels and coordinates showing the classification and thickness of individual stratum, position of ground water table, various in-situ tests conducted and samples collected at different depths and the rock stratum, if met with.
- Field and laboratory test results along with graphs and tables used for computation.
- Plot of SPT value (both field and corrected) with depth.
- The stress-strain diagrams as well as Mohr circle envelopes for unconfined compression tests, Triaxial tests and shear strength of rock sample.
- Modulus of elasticity for rock samples.
- 'e' vs log 'p', compression vs. log 't' or compression vs. 'square root t' plots depending upon the shape of the plot to determine the coefficient of consolidation ' C_v ' and time for 50% and 90% primary consolidation.
- Coefficient of volume decrease (m_v) and coefficients of permeability shall be determined and reported. Pre-consolidation pressure shall be determined for each test and shall be taken into consideration in recommending the anticipated settlement along with the time to achieve the same.
- Recommendation regarding the allowable bearing capacity of soil for suitable foundation.
- For deep foundation capacity of piles of different diameter along with the recommended founding level has to be mentioned. The horizontal capacity of pile shall also be recommended in the report if required.
- All necessary capacity and settlement calculations should be furnished in the appendix of the report.



- Recommendation regarding the type of cement to be used and any treatment to the concrete based on the chemical composition of soil and sub-soil water.
- Any other information of special significance encountered during the investigation and likely to have a bearing on the design and construction of foundations.
- Photographs of field and laboratory activities and all the core boxes may be included for reference in each copy of the report.

A draft copy of the detailed report shall be submitted to the Engineer for his approval and the final report shall be submitted thereafter in five copies.



INFORMATION AND INSTRUCTION FOR TENDER

1. **Site Visit:** The applicant is advised to visit site of work at his own cost and examine it and its surroundings to him and collect all information that he considers parameters for proper assessment of prospective assignment.
2. The applicant should sign each page of the tender papers on due examination of the same. Any Clarification if required, please feel free to contact us by E-mail or at our office on any working days from 9:00 A.M to 4:00 P.M before two days from the date of submission.
3. The tender should be typed written or filled in neatly. Overwriting should be avoided, correction to be made by neatly crossing, initialing, dating and rewriting.
4. Reference, information and certificates duly certified from the respective clients and capability of the contractor etc should be signed by the concerned Engineer In charge or his authorized representative.
5. A description of the procedures of investigation and testing employed and list of equipments used to be furnished along with tender for our due scrutiny.
6. The tenderer may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. Superfluous information to be avoided.
7. The qualifying document for carrying out similar works to be submitted along with E.M. in an envelope duly marked Part –I, with the technical part and price bid of works to be executed shall be submitted in separate sealed envelopes marked part-2 and subscribing Price-bid; which will be evaluated independently.
8. **Earnest Money**
 - (a) EM to be deposited in form of DD/BC amounting 15, 000/- (Fifteen thousand) in favour of Heavy Engineering Corporation Limited, SBI Hatia.
 - (b) Offers without EM will be summarily rejected; unless waived/exempted by prevailing Govt. guidelines or by the competent authority of the corporation. A written proof should be enclosed as may be applicable.
 - (c) If the value of deposited EM is found less than 2% of awarded cost, the contractor have to deposit the balance amount to make them 2% or the same shall be adjusted from his 1st R/A bill. Similarly any excess amount above 2% of the awarded value



may be refunded to such contractor on his written request. The decision of department in his regard shall be final and binding.

(d) EM of unsuccessful bidders will be refunded on their request only after finalization of the contract.

(e) EM of successful bidders shall be converted into security deposit and the balance S.D. shall be deducted proportionally from their progressive bills to make it 10% or as may be applicable, as per HEC's works and services manual.

9. QUALIFICATION CRITERIA. (PART-I)

Must have executed similar works of 5.0 Lakhs in last three years and have technical capability to complete the work within 20 days. A list of equipments, technical staff, surveyors/engineers etc. to be enclosed for scrutiny.

10. The department, however reserves the right to restrict the list of qualified contractors to any number deemed suitably by it ; and also reserves the right to accept or reject any application to annual the qualification process and reject all application at any time, without assigning any reason or incurring any liabilities to the tenderers.

11. Even though an applicant may satisfy the above requirements, he would be liable to disqualification if he has;

- a) Made misleading or false representation or deliberately suppressed the information in the form of statements and enclosures required for qualifying document.
- b) Record of poor performance such as abandoning work, not properly completing the contract or financial failures/ weakness etc.

12. After evaluation of qualifying criteria (Part-I), the qualified bidder or his representative will be allowed to participate in the opening of the price bid (Part-2), for which the opening of price bid will be intimated by E-mail/Fax/Telephone. The price- bid of unqualified bidder will remain unopened /returned /destroyed before or after finalization of the contract.

13. Price-Bid-The quoted rates should be for total works excluding the cost of spares & materials and shall provide the complete cost towards power, fuel, tools, tackles, levis, taxes, transportation, layout, repairs, rectification, etc. with contractor overhead and profit etc. complete. Most competitive and realistic price bid to be furnished in prescribed Bill



of Quantities based on prevailing market rates and labour in the area. In case of irrelevant rates the bidder may be asked to substantiate the same as per prevailing market rates, failing which or in case discrepancy the offer will be either rejected and/or loaded as twice of maximum quoted rates among all the bidders or as derived by the department. The decision of the department will be final and binding. The rates should be quoted both in figure and words. In case of difference between the two, former will prevail. The price shall remain firm during entire period of contract.

14. Award Criteria

- (a) The offers shall be technically and commercially loaded in respect of various factors to bring all Tenderers at comparable level. The decision of the department shall be final and binding.
- (b) The department reserves the right without being liable for any damages or obligation to inform the applicant to :
 - i) Amend the scope and value of contract to this applicant.
 - ii) Reject any or all the applications without assigning any reason, thereof.
 - iii) The department is not bound to accept lowest Tenderer.
 - iv) May split the works between two or more Tenderers.
 - v) Offers should be valid for 90 days. Validity period may be extended for another 30days if required: from the date of opening of the tender.



ADDITIONAL SPECIAL CONDITIONS OF THE CONTRACT

1.1 INTENT OF SPECIFICATION

As mentioned under scope of works.

1.2 COMPLETION TIME

Soil report in 07(Seven) sets to be submitted accordingly within a week time. So, total completion time shall be reckoned after 7th Day from issue of LOI and to be completed in all respect within 30 Days with a grace period of 10 Days, excluding the time consumed in finalizing layout and approval of the same.

1.3 IDLE LABOUR CHARGES

No idle labour charge and cost arising out of any such circumstances, what so ever, shall be paid to the Contractor.

1.4 LIQUIDATED DAMAGES

If the contractor fails to complete the work in time during the contract period or any part thereof, the recovery equivalent required to one half percent (0.5%) of the contract price per week or part thereof for the period of delays subject to a maximum of 10% of the contract price shall be charged without prejudice to any HEC's right and other provisions of the contract.

1.5 WORK DONE AT RISK AND COST

At any time, if the progress of work is not found satisfactory, H.E.C. shall have the right either to withdraw the balance work or part thereof and shall get the same done at Contractor's risk and cost after giving an advance notice of 7 days to the contractor. In such a situation no compensation whatever shall be payable to the contractor. The security deposit whatsoever deducted would be adjusted against the excess cost incurred over the balance contract value.

1.6 INSURANCE SCHEME

Employee state insurance scheme under employees state insurance Act-1948, insurance cover for construction labour at site shall be taken by the contractor. It shall be the contractor's responsibility to take registration with labour authorities as per state/central



act. The contractor shall complete all the formalities including labour insurance, registration with labour authorities within 2 weeks of receipt of work order.

1.7 TAXES AND DUTIES

- a) Income Tax shall be deducted from all payments as per the prevailing rules.
- b) VAT/ Sales tax and any statutory levies etc. shall be borne by the contractor except Service tax which will be reimbursed as on actual on submission of the same to statutory body and copy of the same submitted to HEC .

1.8 SAFETY

Contractor at all times shall observe the safety precautions and relevant security regulations promulgated from time to time by HEC/ or Govt. authority immediately after award of work.

1.9 LABOUR DEPLOYMENT

The contractor shall employ his labour based on available fronts and available materials from time to time. No claim whatsoever, for idle labour on any account will be entertained.

1.10 LABOUR RETURN

The contractor shall submit weekly/ fortnight statement of labour employed by him in the proformas as directed by purchaser or labour officers of State Govt.

1.11 ACCOMODATION AND OTHER FACILITIES

Contractor will arrange accommodation and other facilities including travelling and Vehicles for local movement etc. at their own cost for the labour engaged by him / themselves.

1.12 EXTRA ITEMS

Method of arriving at the rate for any extra item of work due to any addition, alteration/ substitution etc. shall be according to prevailing HEC practice. Expenditure incurred towards cost of materials and labour for extra items will be reimbursed on submission of documentary evidence duly certified by Engineer I/c. However such reimbursement shall not be made where such extra items are similar to the item/items already available in the contract.



1.13 RESPONSIBILITIES OF CONTRACTORS

During the entire period of contract, contractor should ensure either he or in his absence, his authorized representative is always available at work site as well as on telephone to receive day to day verbal/written instructions from Engineer of the employer/ consignee, to undertake any particular maintenance work or any other instructions deemed necessary by the Engineer. The following shall be the responsibilities of contractor:–

- a). The contractor will have the obligation to pay the wage/ salary to various categories of its workers/ employee as per latest State Government's minimum wage circular.
- b). Contactor also will have to pay CPF to all categories of workers/ employee employed by him as per prevailing rules.
- c). The contractor is to provide all required safety measures for safe working environment and supply all safety appliances to the workers as per the nature of the work and directive of the executive agency.
- d). The workers engaged should be covered under Group Insurance Scheme.
- e). The contractor should have valid labour license for engagement of labourer at work site and a copy of the same to be submitted along with the contract.
- f). The contractor shall furnish account of all the materials issued to him by the corporation. The material supplied should not be used for any other purpose other than for which it has been issued.
- g). All the equipment / goods if issued to carry-out the work be used as per the ' Use Instruction' and to be returned to the executing agency / issuing authority in good condition.(condition in which they were issued, allowing normal wear and tear).
- h). Contractor shall use optimum energy and shall take special attention to avoid wastage and misuse of power / energy / water.
- i). The contractor to adopt such process / method of work that generates minimum environmental pollution.
- j). The contractor will be required to sign an agreement and the contractor will be guided by HEC's / SAIL's General Terms & Condition of works Contract.



1.14 DUPLICATE/TRIPPLICATE ORDER BOOK

For issuing site instructions the contractor, shall maintain duplicate/triplicate order books with page/pages numbered. All written site instructions shall be given on this book which shall be signed by the contractor or his authorized person in token of his acceptance of the same. One carbon copy of the instructions shall be handed over to the contractor for his taking necessary action record. The said order Book will be deposited in the department after completion of the works.

1.15 OFFLOADING PROCEDURE

The works or any part of works cannot be offloaded to any sub-contractor without the prior permission of the Engineer I/c of HEC. The contractors are bound to abide by the order of Engineer before deployment of such agency / agencies.

2.0 SPECIFICATION FOR QUALITY OF WORKMANSHIP

Specifications for the quality of Workmanship and also for the quality of work are given in corresponding sections of these specifications in the contract between HEC& Krishnashila/NCL and or on the working drawing and shall be of the best standard. Unless otherwise specified all workmanship shall conform to the specifications and drawing supplied. Any item not covered by these shall confirm to the HEC specification of works or as directed by the Engineer.

3.0 SOIL INVESTIGATION EQUIPMENTS

All soil investigation machineries and Equipments (for soil test) shall have to be arranged by the contractors.

4.0 SURVEY ENGINEER / SUPERVISOR

Qualified and experienced Engineer / skilled supervisor of trade capable to handle soil investigation work to be deployed by the contractor. The contractor should furnish the list of such technical staff/officers along with the tender submission and ensure the presence of the same as and when required at site after the completion of the soil investigation work.



NOTES:-

- The scope of works is to be read with drawings, General and special conditions of contracts and other supplementary documents and contractor shall be deemed to have examined the drawings and to have acquainted himself with the detailed description of the work to be done and the site condition for the way in which they are to be carried out and with the site of work.
- The work shall be carried out as per drawings, specifications and description of item noted under scope of works.
- Unless specifically mentioned otherwise in the contract the tenderer shall quote for finished items and shall provide for the complete cost towards tools, tackles, materials, levies, taxes, transport, layout, rectifications, revenue expenses, contingencies, overheads, profit and all incidental items not specifically mentioned but reasonably employed and necessary to complete the works according to the contract.
- The tender to be submitted only in original set of tender document. In case of loss of original set of documents the contractor should collect a second set and submit as tender.
- Tender papers shall be issued only after ascertaining from the contractors their experience and expertise in the specialized field concerned.
- Since the contract period is only for 30 Days, no escalation for labours shall be entertained.
- The Engineer In-charge has power to make any alterations in or additions to the original specifications, drawings and designs and the instruction that may appear to him to be necessary or advisable during the progress of work, and the contractor shall be liable to carry out the work accordingly and any additional work shall be carried out by the contractor on the same conditions in all respects on which they agreed to do the main work and at the rate workout as per HEC's norms.
- The contractor shall familiarize himself with the site and it shall be the responsibility of the contractor to ensure safe working without hindrance to the consignee and shall obtain necessary gate pass etc. from the Krishnashila/NCL for entrance of men and material. HEC will give an authorization letter for the same.



LABOUR LAWS TO BE COMPLIED WITH BY THE CONTRACTOR

1. The contractor shall undertake to be bound by all the provisions of the contract labour (Regulation and Abolition) Act. 1975 and the Contract labour (Regulation and Abolition) Rules, 1975 in respect of Employee of contract labour.
2. The contractor should apply for and obtain necessary labour license/Registration Certification from the labour licensing authority as per state/central Acts, before the commencement of the work.
3. The contractor shall not employ in connection with the work any person who has not completed 18 years of age.

The contractor shall comply with the following major laws applicable to establishments engaged in building and other construction works:-

- a) Workman Compensation Act 1923: Compensation in case of injury by accidental arising out of or during the course of employment.
- b) Payment of Gratuity act 1972: gratuity payable to an employee on satisfaction of certain condition of separation of an employee has completed 5 five years or more on death of at the rate of 15days wages for every completed year f service. The act applicable to all establishments employing 10 or more employee.
- c) Employee P.F and Miscellaneous Provision Act 1952: monthly contribution of the employer plus worker at stipulated rate. The benefit payable under the act :
 - Person to family on retirement or death as the case may be.
 - Deposit link insurance on the death in harness of the work.
 - Payment of P.F. accumulation on retirement / death.
- d) Maternity Benefit Act 1951.
- e) Contract labour (Regulation & Abolition) Act 1970: Certain welfare measures to be provided by the contractor to contract labour and in case the contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The act applicable to establishments or contractor of Principal Employer if the employ 20 or more contracts labour.
- f) Minimum wage Act 1948:
- g) Payment of wage Act 1936: It lays down by what date the wage are to be paid and what deduction can be made from the wage of the workers.



- h) Equal Remuneration Act 1979: equal wages for work of equal nature to male and female.
 - i) Payment of Bonus Act 1965: applicable to all establishments employing 10 or more employee. The act provides for payment of annual bonus subject to a minimum of 8.33% of wage and maximum of 20% of wage to employees drawing Rs. 3500 per month or less.
 - j) Industrial Dispute Act 1947.
 - k) Industrial employment's (Standing Orders) Act 1946.
 - l) Trade Union Act 1926
 - m) Child Labour (Prohibition & Regulation) Act 1986
 - n) Inter- State Migrant Workman's (Regulation of Employee condition of Service) Act 1979.
 - o) The building and other construction workers (Regulation of Employment and condition of services) Act 1996 and Cess Act of 1996.
 - p) Factories Act 1948.
4. The contractor shall at his expense comply with or cause to be complied with Model Rules for labour welfare or rules framed by Govt. from time to time for the protection of the life and for making sanitary arrangement for workers employed.
 5. The contractor shall at his own expense arrange for the safety provision in respect of all labour employed and shall provide all facilities in connection their with.
 6. The contractor shall comply with and be bound by the sub-contract labour regulations.
 7. The contractor shall submit necessary documentary evidence as requested by HEC.
 8. The contractor will maintain all necessary records/ registrations laws and shall produce them for inspection by HEC/State Govt. authorities as and when required.
 9. The contractor shall regularly deposit the CPF of all contract labour either directly to CPF Commissioner, or may deposit to the Trustee Provident Fund, HEC. This is pre-requisite for making payment against R/A Bills.
 10. Any disputes arising between HEC & the Contractor will be settled within the jurisdiction of Ranchi only.



PAYMENT TERMS AND CONDITIONS

1. On Completion of site activities and collection of soil samples (within 10 Days) = 20%
2. On Submission of comprehensive soil investigation report (within 14 Days) = 40%
3. On approval of Soil investigation report by client (NCL) or their consultant = 30%
4. S.D. shall be released after successful completion of the civil foundation works of entire plant or on issuance of certificate for the successful completion of soil investigation works, whichever is earlier = 10%

Note: All the above payments shall be made on Pro-rata basis on completion of works and submission of bills by the contractor and duly processed by the department, within a reasonable time.



HEAVY ENGINEERING CORPORATION LIMITED

PROJECT DIVISION

Price Bid

The price to be offered on Lump sum basis based on entire scope of the works and terms & conditions of this tender.

Lump sum Price = Rupees in Figure

(In Words)

Signature of Contractor

Duly sealed (with complete address)

