Indian Institute of Technology, Kanpur
Department of Civil Engineering

Request for Proposal

Sl. No.	Name of Work	Bid Security	Last Date and Time for submission of tender	Date and Time for opening of Bid
1.	Design, manufacture, inspection, assembly, testing, packing, transportation and installation of the 2 Tonne (Metric) Capacity Mono rail Crane, Electric Wire rope Hoist with motorized trolley as per Scope of supply covered in Part-I and Technical specifications covered in Part-II of this document for National Aerosol Facility at IIT, Kanpur	Rs. 15,000	22.12.2017 upto 1700 Hrs **Revised 01.01.2018 upto 1700 Hrs** **Re-revised 17.01.2018 upto 1700 Hrs**	25.12.2017 at 1500 Hrs **Revised 02.01.208 at 1500 Hrs** **Re-revised 18.01.208 at 1500 Hrs**

The firms with at least three years relevant experience in above said work are eligible to participate. The proposal duly completed in all respect should be submitted in sealed cover duly marked, so as to reach undersigned on or before 1700hrs on 22.12.2017 (Revised up to 01.01.2018, **Re-revised upto 17.01.2018**). The tender document with eligibility criteria and other details may be downloaded from www.iitk.ac.in. The Institute reserves the right to accept or reject any offer or all the offers without assigning any reasons thereto.

No. CE/2017-18/0141, dated: 30.11.2017

Dr. S.N. Tripathi
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Indian Institute of Technology Kanpur
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ELECTRIC WIRE ROPE HOIST

TECHNICAL SPECIFICATIONS

1. INTRODUCTION:

The electrically operated wire rope mono rail hoist is required for material handling. The design of electric hoist shall be compact modular type, reliable and have proven quality. Only reputed manufacturers / suppliers of hoists shall quote.

2. SCOPE:

The scope of work includes design, manufacture, inspection, assembly, testing, packing, transportation and installation of the electric hoist at site as given below:

Sr. No.	Description	Qty.
1.	2 Tonne (Metric) Capacity Mono rail Electric Wire rope Hoist with motorized trolley	1 No.

The scope of work for contractor includes:

a) Preparation of design and fabrication drawings for hoist and getting it approved from the purchaser.
b) Procurement of construction materials and Fabrication of electric hoists.
c) Electrical Hoists shall comprise of following accessories and auxiliaries as specified herein for including but not limited to the following.
   - Motor operated trolley and accessories
   - Hoist frame, rope drum, wire rope, gear & gear boxes, motor, top & bottom block, sheaves, hooks etc.
   - Limit switches to prevent hook over travel, over hoisting/lowering, Traverse motion limit switches,
   - Pendant control station suspended from hoist and control panel.
   - Cable wiring terminating at operating floor and heavy duty switch fuse unit.
   - Festoon cables for feeding power to Hoist.
d) Testing (functional trials & load test) of electric hoists at supplier's works.
e) Painting.
f) Packing & safe transportation of the electric hoists at site.
g) Installation, commissioning and load testing of hoist at site.
   - **Reference drawings** : GA drawing of site attached

3. DESIGN SPECIFICATION FOR HOIST :

3.1	Type of hoist	Standard Electric hoist (with preferred 4/2 rope reeving) with suspended motorised trolley. (Though 4/2 Rope reeving system for the hoist is preferred, the other type of rope revving also will be considered if design not feasible for 4/2 reeving due to geometrical constraints (limited head room requirement)
3.2	Duty of the hoist	Class II Indoor As Per IS 3938
3.3	Capacity	2 Tonne (Metric)
3.4	Type of Suspension	Motorized trolley
3.5	Maximum height of Lift in Meters	~ 5.5 meters
3.6	Length of Travel	~24 meters
3.7	Desired hoisting speeds	Dual Speed • Main Speed- 3.5-4.0 m/min • Creep Speed- 0.4 to 0.7 m/min

3.8	Desired travel speeds (Trolley) *i.e.* Traversing speed	6 m/min
3.9	Type of Hook	Point Hook with Shank & Safety Latch as per IS-15560
3.10	Head Room (Distance between bottom of monorail & hook top most position)	≤ 500 mm * (Design shall be compact).
3.11	General Specification	• The hoist supplied should suit the requirement of the space as per attached GA drawing. • Motor for main hoist & trolley shall be one of the following make ABB/GEC/SIEMENS/ MARATHON/OEM it should have class-F insulation and S4 Duty, 40% CDF, 150 Starts/ hour; VFD compatibility. • VVVF drive for main hoist shall be one of the following make Siemens/ ABB/ Yaskawa. • Hoist will be provided with limit switch for hoist up & down motion, trolley limit switch (both side) & gravity limit switch. • Wire rope 6x36 or 6x37 construction as per IS of USHA Martin/OEM make. • Bearing of reputed make like SKF/FAG/NBC shall be used.
3.12	Method of operation	Push button pendant suspended at the bottom. (hang with suitable chain)
3.13	Speed Control Requirement	
	For hoist	Dual speed (4 m / min and 0.7 m /min) with Electro Magnetic fail safe AC brake with manual override arrangement) achieved by VVVF
	For trolley	Single speed (6 m/min) with Electro Magnetic fail safe AC brake
3.15	Electric Control panel	IP-55 degree of protection as per IS
3.16	Electric Supply to Power Circuit	400-440V, 3Ø, 50 Hz ± 5%, AC 4 wire
3.17	Electric Supply to Control Circuit	110V A.C., 50 Hz
3.18	Monorail size	ISMB 500 mm, Straight beam (*this is existing and installed at site*). Supplier to measure the physical dimensions of beam prior to manufacture of hoist and trolley.
3.19	Geometrical Constraint for size of the hoist	It shall be compact to the extent possible. Supplier to measure the physical dimensions at site prior to manufacture of hoist and trolley.

4. Applicable Standards:

For Standard Hoist, all materials used shall be of sound quality and shall conform to latest relevant standards as given below:

IS: 3938-1983	Specification for electric wire rope hoists.
IS: 2062	Hot Rolled Low medium and high Tensile Structural Steel.
IS: 2266	Steel Wire Ropes for General Engineering Purposes
IS: 807-2006	Design, erection and testing (structural portion) of cranes and

	hoists.-Code of Practice
IS: 15560	Point hook with Shank upto 160 tonne.
IS-1875	Carbon steel billets, blooms, slabs and bars for forgings
IS-1030	Carbon steel castings for general engineering purposes
IS-210	Grey iron castings - specification
IS: 325-1996	Three phase Induction Motors.
IS:4029	Guide for testing of three phase induction motors.
IS: 13947	Low-Voltage Switchgear and Control gear
IEC:60947	Low Voltage Switchgear and Control Gear
IS: 13703	Specification for low-voltage fuses for voltages not exceeding 1000 v ac or 1500 v dc
IS-1554	PVC insulated (Heavy duty) electric cables.

5. DESIGN REQUIREMENTS :

The hoist shall be as per latest IS-3938 & IS-807 and of class-II duty (In-door service) type, rigid and shall have adequate margins to give excellent performance, safety arrangements for preventing overloading, over stressing on hoist component. The hoist shall consists of hoist frame designed as per IS:807/IS:800, grooved rope drum driven through gears by electric motor, top & bottom blocks, wire rope and hook. The hoist design shall be modular construction for easy maintenance. All efforts shall be made to make the hoist as compact as possible. **The compactness of the hoist and headroom availability for hoist is one of the very important criteria for selection of the hoist. The bidder shall note this point while submitting the offer.** All equipment covered by this specification shall be designed and constructed in accordance with the codes and standards mentioned in this specification. Materials used for fabrication shall be new, tested quality and shall conform to the relevant specification. Materials/Electrical components shall be tested as per the approved QAP.

6. DESIGN REQUIREMENTS

6.1 DESIGN REQUIREMENTS FOR ELECTRIC HOISTS**: MECHANICAL**

(A). TROLLEY

Trolley is connected with heavy side plates conforming to IS: 2062. Wheels are to be mounted on trolley through suitable bearings. Trolley is to be designed as per IS: 807/IS: 800 for rated load. Some of the wheels (25%) shall be provided with power through motor and gear box. This will provide the motion to the hoist. All wheels shall be of forged steel (En-9 forged) or cast steel with hardness minimum 250 BHN and shall have tapered treads. They shall run parallel to the flanges of the I-beam.

(B). GEARS & GEAR BOX:

All gears shall be made of high grade heat treated alloy steel. Gears shall be forged and machined and shall not be of split type. In case of any other process of manufacturing by vendor in his standard design, same need approval of the purchaser. Sufficient lubrication shall be provided to the entire mechanism for silent and efficient operation. All gears in gear train shall be anti-friction bearing mounted. Gear box constructed with IS-2062 material shall be provided. Gear box shall be stress relieved and provided with a drain plug and level gauge (dip stick arrangement).

(C). BEARINGS:

All supported gears/shaft/wheels shall be mounted on the anti-friction ball/roller bearings. For wheels, bearings shall of spherical roller type and for hook block, thrust ball-bearings shall be used. The bearings shall be SKF/FAG only. The test certificate for the bearing from the manufacturer shall be provided.

(D). ROPE DRUM:

Rope drum shall be either fabricated or seamless pipe of required diameter and thickness to withstand the rated load. Drums shall have machined grooves of a proper size for the rope used. Grooving shall be of adequate length, to handle entire rope required to make the specified lift plus the two dead laps at each anchor point, without overlapping. Rope drum shall also have one spare groove left when the hook is at highest elevation. The allowable stress on rope drum should be as per IS:800/IS:807. In case of welded drum, same shall be stress relieved. The drum shall have dimensions to meet IS: 3938 (*in order to make hoist compact higher diameter drums may be used*). The revolution of rope drum shall be on self-aligning ball bearings, which ensures smooth running.

(E). ROPE GUIDE:

A rope guide completely encircling the drum shall be provided so that the rope shall be held in its grooves at all times and cannot get uncoiled even when the rope is unloaded.

Or

Any other suitable mean for rope guiding so that the verticality of the wire rope to be maintained within specified limits

(F). WIRE ROPE:

Wire ropes shall be extra flexible with well lubricated hemp core having six (6) strands of thirty-seven (37) or thirty-six (36) wires per strand of adequate strength as per the loading on the rope with a factor of safety as per relevant IS. The rope shall be fastened to the drum with an anchor having strength equal to that of the rope. Three such rope anchors shall be provided at spacing of 120º on circumference of rope drum at both ends of the rope. The rope fastening at the swinging end shall be aligned so as to prevent rope coming off its reeving. Reverse bends or cross bends and bird caging shall be avoided. The breaking loads for the hoist ropes shall not be less than the factor specified in IS 3938. Reeving system shall be equipped with a rigid rope guard that would keep the wire rope properly located in the grooves of the drum.

(G). SHEAVES

Sheaves and equalizing sheaves, if provided, shall be as per relevant IS and shall be designed for the rated load. The sheaves shall be equipped with anti-friction bearings. Grooves shall be machined to proper shape for the rope used. Maximum fleet angle from drum to lead sheave in the load block or in between individual sheaves shall not exceed the IS specified value except at highest elevation the fleet angle may increase slightly.

(H). RUNNER WHEELS:

The runner wheels shall be mounted on ball bearings. The trolley drive assembly shall be attached to one of the runner angles and can be adjusted to suit various joist sizes.

(I). TOP AND BOTTOM BLOCK ASSEMBLY:

These shall be fabricated from plates of required thickness. Head blocks assembly shall be designed to maintain a vertical load balance about the centre

of lift from load block. Material of construction shall be as per the relevant IS and shall be mentioned in the drawing. The load hook shall be forged steel and shall conform to IS:15560 and shall be supported on a thrust bearing, allowing the load to swivel freely. Provision shall be made to lock the swivelling of hook as & when required. Sheaves shall be provided with guards to retain the rope in position. Hooks shall be tested as per Approved QAP and test certificates shall be submitted to Purchaser

(J). FRAME:

The frame, which supports the load, shall consist of steel side plates and steel runner plates of adequate section. The gear train and electrical control gear shall be attached to the side plate and shall be housed inside separate fabricated steel covers. A gasket shall be provided between cover and side plate for oil sealing.

(K). LUBRICATION:

The gears and bearings shall run in oil bath. The positive constant splash lubrication to gears and bearings shall be ensured for faster heat dissipation, smoother operation and longer life. The provision shall be made for lubricating oil level indicator.

6.2 DESIGN REQUIREMENTS FOR ELECTRIC HOISTS: ELECTRICAL

(A). POWER SUPPLY ARRANGEMENT

Purchaser will provide 415V AC, 3Ø, 50Hz, 4-wire supply at a convenient location on operating floor from a switch fuse unit. Supplier's scope will commence from this point. Festoon type flexible cables (shall be of reputed make and subject to purchaser's approval) shall be used in travelling length of monorail. The cable shall be supported on hangers having rollers moving on I-beam. The cable shall be rubber (EPR) insulated copper conductor flexible cable (meeting the relevant IS). The electrical power supply to the hoists will be terminated to switch fuse unit located on the control panel of the hoist.

(B). MOTORS:

All motors shall conform to latest IS:325 & IS:12615 and either of Siemens, Marathon, ABB Make only. If the motor forms an integral part of the gear box and they are not manufactured by the above motor vendor, then other manufacturer's standard make may be acceptable subjected to Purchaser's approval. The motor for drives of the hoist as well as hoist shall comprise of totally enclosed, fan-cooled (IP55) squirrel cage induction motors suitable for operating on a 415V, 3-phase, 50Hz AC electrical supply and at an ambient temperature of 50°C. The hoisting motor shall be foot/flange mounted type, which shall makes it easy for dismantling, thereby simplifying repair, and reduce the maintenance cost. The motors used shall be class-F insulated, special hoist duty type (S4 duty) with 40%CDF, 150 Starts/ hour and suitable for frequent starting, reversing, braking and acceleration. The motors should be compatible for VVVF and operate satisfactorily onr voltage variation of ±10% & frequency variation of ±5%. The testing of motor for type & routine test shall be carried out. Test for noise and vibration measurement also shall be offered.

(C). HOIST BRAKE:

Hoist shall be provided with *Electromagnetic disc type brake*/*Electro hydraulic thruster type brakes* for hoisting and cross travel motion and built to arrest and hold safely the full load capacity of the hoist. The brake shall be of Fail-safe design. The brake, when applied, shall arrest the motion and sustain any load up to and including the maximum safe working load. The brake/torque rating shall

be minimum 150% for hoisting and 125% for cross travel, motor full load torque and shall be suitable for selected class of duty cycles. The brake shall be easily accessible for its setting. The brake shall be of reputed make like BCH/Speed-O-control / Electro-mag make only

(D). CONTROLS AND CONTROL SYSTEM:

The hoist motion control shall be through VVVF. The control panel of IP-55 degree of protection shall consists of contactors, VVVF, relays, single phase protection devices, transformer, rectifier and fuse etc. The control panel shall be provided on the hoist body itself with suitable dust and weatherproof cover. The control panel shall be easily accessible on hoist. All control equipment shall be suitable for operating on control voltage 110V AC to ensure safety to operator. A separate isolator switch shall be provided by supplier for the electric supply to control system and shall be of AC-24 duty. The stop, start and directional changes shall be accomplished by electro-magnetic contactors by push buttons operating a control circuit.

The power cabling of the hoist shall be of minimum 4mm^2 or adequate current rating, copper conductor, HRPVC insulated FRLS sheathed cable. The control cabling shall be carried out through 1.5mm^2 Cu conductor wires of 650V grade. Connecting cable from operating floor to Festoon junction box shall be armoured.

The panel shall be fabricated out of MS sheet, not less than 14-SWG thick cold rolled Sheet steel. Sheet steel stiffeners shall be provided wherever necessary. Cable gland plate shall be 10-SWG cold rolled sheets steel. Gland plates shall be supplied with in-drilled and all glands shall be of double compression type.

Panels shall be painted to aircraft gray shade. Hoist shall be provided with metallic tag plate with tag number engraved.

(E). CONTACTORS & OVERLOAD RELAYS:

All contactors, overload relays shall be of reputed make (Siemens/L&T/Schneider) and rated to permit 150 switching operations per hour. Overload relays with built in SPP (Single Phase Protection System) shall be considered for acceptance. Wherever designed, the reversing contactors shall be provided with electrical and mechanical interlocks between forward and reverse contactors. The contactors shall be provided with a three element, positive acting, ambient temperature compensated, time lagged, hand reset type thermal overload relays with adjustable setting to suit the rated motor current. Resetting of the relay shall be feasible from front door of the panel. The contactors shall be AC-4 duty only.

(F). FUSES:

All fuses shall be of the HRC cartridge type conforming to IS and Siemens/L&T make, mounted on plug-in type fuse bases. All accessible live connections shall be adequately shrouded and it shall be possible to change the fuses with the current alive, without the danger of contact with live metal.

(G). CABLES:

a) All cable shall be FRLS sheathed type of 1.1kV grade and control panel wiring shall be of HFFR (halogen free fire retardant) insulated and sheathed copper conductors for control circuit wiring.
b) Conductor corss-section of main power circuit cables shall be selected taking into consideration simultaneous operation of the hoist and trolley. The

minimum cross-section of copper conductor wire/cable for power and control circuit shall be 4mm^2 & 1.5 mm^2 respectively.

c) All cables shall be either of Apar, Finolex, RR Cable, Ploycab or CCI make only.

(H). LIMIT SWITCH:

The hoist shall be provided with limit switches for over-travel, over-lowering and over-hoisting. For hoisting, rotary as well as gravity type limit switch shall be provided. The Gravity limit switch shall be wired to cut-off the power to entire hoist. Also limit switches are to be provided for trolley movement in both sides of I-beam, to restrict the motion at both extreme ends.

(I). PENDENT PUSH BUTTON STATION

The hoist shall be designed to operate by hand operated push-button pendent station as per the requirement given in design specification. The push-button pendent shall be suspended along with steel link chain in order to avoid stretch on control pendent cable. Pendant push-button station is required at floor level, approximately 5meters of cable length may be considered for the same. Pendent shall have ON/OFF indicating lamps, Emergency push button, push buttons for motions, and power ON/OFF button. Emergency stop button shall be mushroom head type. In all cases the push button shall be spring loaded and shall return to off position when released. They shall be suitably interlocked such that the push buttons of two reverse motions (*e.g.* hoist up & down etc.) cannot be simultaneously operated.

The push button pendent and control cabinet shall be of light weight design.

(J). GROUNDING

All the current carrying components shall be earthed at two points.

(K). PAINTING:

All surfaces shall be cleaned thoroughly, preferably by sand blasting. All oils and greases shall be removed prior to painting. Two shop coats of primer shall be provided at the supplier's works followed up two final epoxy coats. The primer and final coats shall be as per the paint material approved by the purchaser.

7. INSPECTION AND TESTING

(i). Inspection to be carried out as per approved QAP. Supplier shall prepare QAP after placement of purchase order, for approval of purchaser, along with GA drawing of electrical hoist.

(ii). Manufacturing, fabrication, NDT and shop test procedures to be submitted for approval.

(iii). The purchaser's representative shall be given full access to the shop in which the equipment is being manufactured or tested and all test records shall be made available to purchaser. A final inspection will be done by the purchaser's representative before the dispatch of the equipment. Final tests of the complete units shall be carried out in the presence of the purchaser's representative.

(iv). The supplier shall provide the facility for inspection to ensure that quality of workmanship in his works and of his sub-contractor, compliances with drawings, identity and acceptability of all materials, parts and equipment. He shall conduct all tests required as per approved QAP to ensure that the equipment and material furnished conforms to the requirements of the approved QAP. All tests and test procedure proposed by the manufacturer shall be submitted to the Purchaser for his prior approval. The purchaser shall

be notified well in advance of the inspection requirement as per QAP, particularly for hold points/witness points.

All material used for manufacture of the equipment covered under this specification shall be of tested quality. Relevant test certificates shall be made available to the purchaser before the final shop inspection. In case the relevant correlating test certificates are not available, the supplier shall arrange to carry out the necessary tests required as per the QAP at his own cost. Parts found unsatisfactory as to workmanship or material, shall be removed by the contractor and replaced by parts which are satisfactory. No welding or repairs shall be carried out without prior permission of the purchaser. Performance test, load test and over load test shall be conducted in shop for hoist in accordance with relevant approved procedure.

8. PACKING

Hoist shall be packed in wooden boxes with electrical parts wrapped with polyethylene cover to protect from the rain. All the hoist drawings, operating and maintenance manuals, erection procedure shall be dispatched along with the hoist.

9. ERECTION & COMMISSIONING REQUIREMENTS

Prior to taking up the erection work, the electrical hoist vendor shall ensure that already erected items like mono rail etc. are in order and within the required tolerances. The vendor shall erect the electrical hoist, under this specification at the required elevations as shown in drawings & relevant standard specification.

The work shall include but not be limited to the following:

a). Taking delivery of the materials from purchaser's store.
b). Installation of hoist on mono rail.
c). Installation of T-track, hangers, cable trolleys and festoon cables.
d). Complete electrical connections from the existing Power Distribution Panel.
e). Testing and commissioning of the electrical hoist.
f). All necessary tools and tackles for this work including load for load testing of the electrical hoist shall be supplied by the vendor.
g). Adequate trained manpower should be deputed, so that to I-Beam Fixing (Required for installation of Cable Trailing trolley), Install the Crane control panel and commission the same within a period of 10 to 12 days, shall be deputed to Site.

10. SITE INSPECTION AND TESTING

(a) All necessary tests as per IS:3938 to prove that the electrical hoist meets requirements of this specification shall be carried out by the vendor. The necessary loads for carrying out full load and overload tests of the hoist at site shall be arranged by the vendor. A test report duly signed by the vendor's representative certifying that all the tests have been carried out at site as per the relevant specifications and test results meet all the requirements shall be provided.

(b) All relevant drawings such as panel wiring details, General Arrangement, and detailed drawing of gear box etc shall be provided before erection of the hoist.

(c) The panel wiring shall be wired & feruled as per drawing provided which is to be verified during site inspection.

11. COMMISSIONING

All pre commissioning checks shall be identified and carried out in the presence of purchaser's representative. All commissioning records shall be maintained and handed over to the purchaser after successful testing of the electrical hoist.

12. Warranty:

The supplier shall provide for One Year warranty, any number of breakdown maintenance calls in lieu of warranty and shall attend the same.

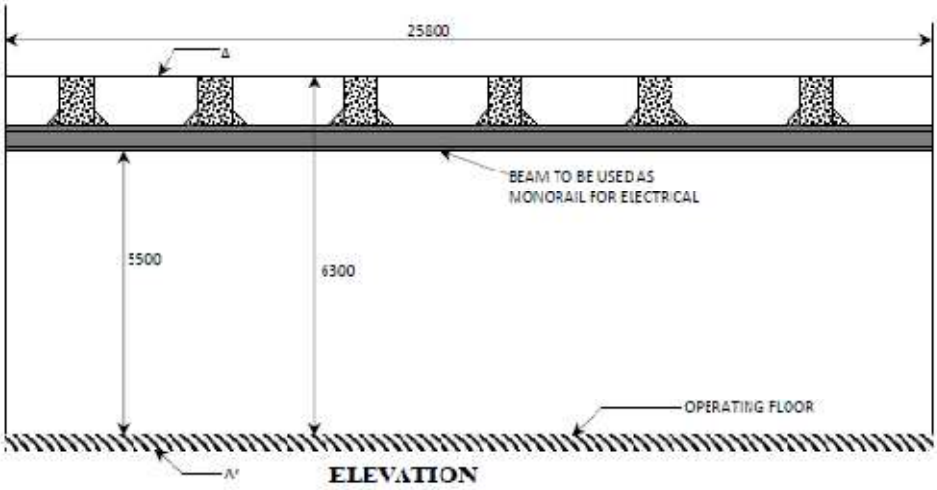
13. SPARES AND MAINTENANCE TOOLS:

a). SPARES: The quotation shall include necessary spares for 5-years trouble free service. The bidder shall indicate the list of spares with quantity for 5-years trouble free service. The cost of individual item shall be indicated clearly in the quotation.

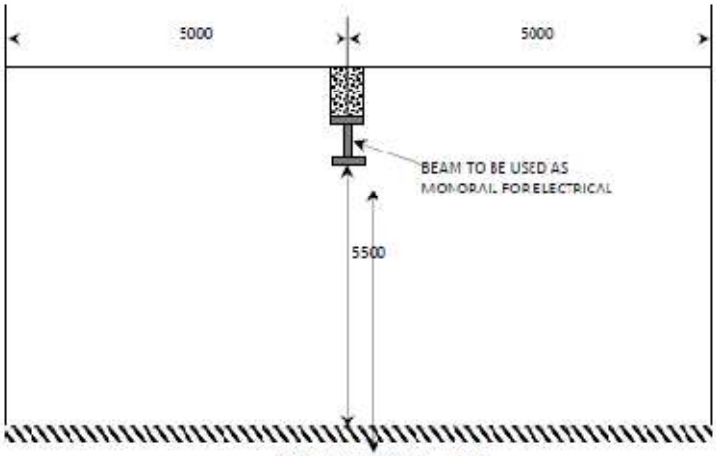
b). MAINTENANCE TOOLS: The quotation shall include the required maintenance tools for hoist to be provided.

14. SPECIAL FEATURES OF THE ELECTRIC HOIST:

Any special feature offered, shall be clearly indicated in the quotation. If bidder wants to point out deviations *if any* from above specifications, which stress on quality and service of the product shall be indicated clearly in the quotation.



ELEVATION

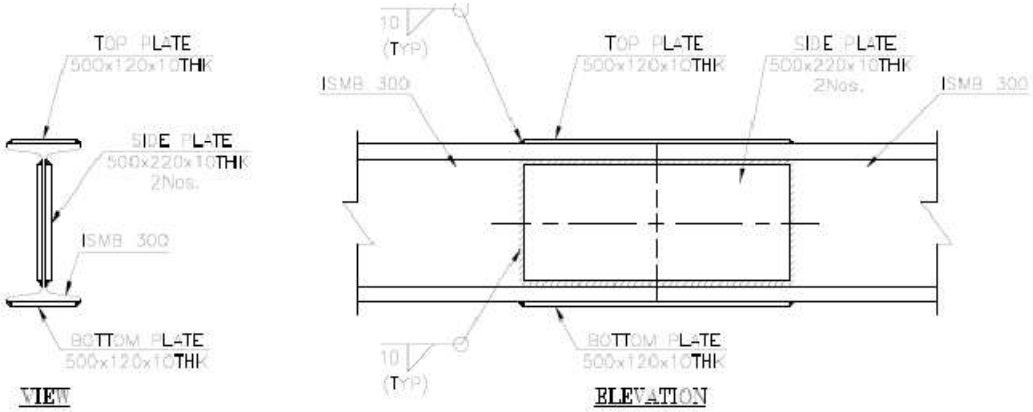


ELEVATION – AA'

Note:

Dimensions are not to scale

All Dimensions are in MM



GIRDER SPLICE DETAIL

General terms and conditions:

1. The Bidder shall bear all costs associated with the preparation and submission of its bid, and IIT, Kanpur (IITK) will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
2. It is in the bidder's interest to visit the site and understand the local conditions. IITK shall not be held responsible for any cost implications because of local conditions or for bidder not visiting site.
3. The bid prepared by the bidder and all correspondence and documents relating to the bid exchanged by the Bidder and IITK shall be written in English language.
4. Bidder is advised to note that the prices are to be quoted for the complete work as per the tender technical specification requirements and other site conditions.
5. The bid and all attached documents should be signed by the bidder as a token of acceptance.
6. IITK has to finalize its purchase within a limited time schedule. Therefore, it may not be feasible for IITK to seek clarifications in respect of incomplete offers. Prospective bidders are advised to ensure that their bids are complete in all respects and conform to IITK's terms, conditions and bid evaluation criteria of the tender. Bids not complying with IITK's requirement may be rejected without seeking any clarification.
7. Bidder has to sign a **Non-Disclosure Agreement** with IITK. Any technical document, drawings in the form of soft or hard copy shall not be disclosed to anybody outside the working team. All the hard copies shall be destroyed immediately after the use.
8. The bidder should **submit a declaration** to the effect that neither the bidder themselves, nor any of its allied concerns, partners or associates or directors or proprietors involved in any capacity, are currently serving any banning orders issued by IITK debarring them from carrying on business dealings with IITK.
9. Bidders should quote prices in Indian rupee only. Prices quoted in any other currency shall not be considered.
10. The **Bid shall be valid for acceptance for the period of 90 Days** and shall not be withdrawn on or after the opening of bids till the expiration of the validity period or any extension agreed thereof.
11. The earliest period by which the job can be executed in totality should be clearly stated in the quotation and such period should be strictly adhered to in the event of a work-order.
12. Bids qualified by vague and indefinite expressions such as "Subject to availability" etc. will not be considered.
13. The bid along with all technical details, appendices and copies of documents should be submitted to IITK. The Techno-Commercial bid shall contain all details.
14. In case the bidder needs to clarify and/or understand the full scope of his work before submitting the quotation, he may do so by prior appointment or by writing email to **Prof. S. N. Tripathi, CE Dept., IIT Kanpur** (e-mail id snt@iitk.ac.in).The Client will

respond by email to such requests and copies of the response (including an explanation of query but without identifying the source of enquiry) will be sent to all invited bidders who intend to submit the proposal, and also posted at Tenders link of IITK website (if found necessary).

15. The successful bidder shall be responsible for the correctness and accuracy of the drawings, documents and reports prepared by him. Approval of the drawings and documents by IITK/their representative shall not relieve him of his responsibility for correctness and accuracy of such drawings and documents. No compensation or extra payment shall be made by IITK for any correction or changes made in the execution work.

16. Bidders should ensure that they qualify for all the items of the Assignment. The bidders shall have experience and expertise in the scope of work as detailed in this tender.

17. A brief list of similar jobs executed, if any and the name of the organization for which the work was carried out should be furnished with the Bid. Copy of Completion Certificate may be furnished.

18. The acceptance of bids will rest with Director, IITK who does not bind himself to accept the lowest bid and reserves to himself the authority to reject any or all the bids received without assignment of any reason. Also, Director, IITK reserves to himself the right to accept the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.

Commercial terms & conditions:

1. A single-stage procedure will be adopted in evaluating the bids and there will not any separate weightage to the technical & financial components of the bid.

2. Technical and price bid should be submitted in a single envelope containing all the relevant details and documents. The bid should be submitted **on or before the due date as mentioned in the cover page to Prof. S. N. Tripathi**, Department of Civil Engineering, IIT-Kanpur, Kanpur-208016.

3. Price bid should clearly mention the detailed price break-up of scope of work as given in technical specifications and taxes separately for supply and installation jobs. **If the tax value differs for different items, these shall be mentioned separately.**

4. Technical evaluation will be based on the criteria detailed in the General Terms and Conditions. If required, evaluation of the bidder's resources would be undertaken by the client by visiting the bidder's premises.

5. IITK is partially/fully exempted from payment of customs/excise duty, if applicable. As the above statutory provisions are frequently reviewed by the Govt., the bidders are advised to check the latest position in their own interest and IITK will not bear any responsibility for any incorrect assessment of the statutory levies by any bidder.

6. Government of India's guidelines on **GST** shall be complied.

7. The Bid Security is required to protect the IITK against the risk of Bidder's conduct which would warrant the security's forfeiture. **The value of bid security is mentioned in the cover page.**

8. Central Government Departments and Central Public Sector Undertakings are exempted from payment of Bid Security. MSEs units (and not their dealers/distributors) who are themselves, manufacturer of the items/ provider of services, they intend to quote which are themselves registered with District Industry Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of MSME are also exempted from payment of Bid Security irrespective of monetary limit mentioned in their registration certificate provided they are registered for the Services they intend to quote.

9. The Bid Security shall be acceptable in the following form:

9.1 Bank Draft in favour '**REGISTRAR, IIT Kanpur**', payable at Kanpur.

10. The bidders shall submit Bank draft / Bank Guarantee from any scheduled bank incorporated in India.

11. IITK shall not be liable to pay any bank charges, commission or interest on the amount of Bid Security.

12. The Bid Security shall be forfeited by IITK in the following events:

    12.1 If Bid is withdrawn during the validity period or any extension thereof duly agreed by the Bidder.

    12.2 If Bid is varied or modified in a manner not acceptable to IITK during the validity period or any extension of the validity duly agreed by the Bidder.

    12.3 If a Bidder, having been notified of the acceptance of its bid, fails to furnish **Performance Bond Bank Guarantee (PBBG)** within 30 days of notification of such acceptance.

    12.4 In case at any stage of tendering process, it is established that bidder has submitted forged documents/certificates/information towards fulfillment of any of the tender/contract conditions.

13. The Bid Security of unsuccessful Bidders will be returned on finalization of the bid.

14. The Bid Security of successful bidder will be returned on receipt of **Performance Bond Bank Guarantee (PBBG). The validity of PBBG would cover the period starting from the acceptance of the contract to the end of the warranty period.**

15. If the contract is awarded, the bidder shall furnish the **Performance Bond Bank Guarantee (PBBG) for the value of 10% of the overall cost (excluding taxes) to IIT, Kanpur.** This PBBG will be released after the guarantee period is over by IITK based on the satisfactory performance of supplied system/item.

16. **80% funds (installation and commissioning cost excluded) may be released** after delivery of items and balance on completion of the scope of work. All the payments for installation & commissioning will be paid **only at the completion of the job.**

17. IITK shall make payments only through Electronic Payment mechanism (viz. NEFT/RTGS /ECS). A successful Bidder should invariably provide the required bank details as and when required by IITK.

General Notes to Bidder/Supplier:

1. **Pre-dispatch inspection at supplier's factory is needed. Post supply inspection is not permitted.**

2. The facility for pre-dispatch inspection / testing for the indented item shall be available with the supplier. Inspection of all the items ordered shall be carried in presence of purchaser's representative at the supplier's factory. The inspector shall approve the test results, after witnessing the test. This includes the tests for all the requirements mentioned in the indent specifications. Supplier shall provide all the inspection, testing facilities and test reports. Shipping clearance will be issued only after the satisfactory test results.

3. All the relevant catalogs, manufacturer's test certificates in standard format and Operation & Maintenance Manual shall be submitted along with the material.

4. The material shall conform strictly to the relevant specifications and standards.

5. The supplier shall submit a certificate for guarantee of the material/service against any defects **for 18 months from the date of supply or 12 months from the date of installation.**

6. The material shall be properly packed to avoid damage of any kind during transit. IITK is not responsible for any damage during transit. The safe door delivery at IITK is in the scope of supplier.

7. All the work mentioned in the tender document shall be executed at **National Aerosol Facility (NAF), IIT-Kanpur, Kanpur-208016, UP**.