

TENDER SPECIFICATION

SI No	Tender Specification Number	Unit Number & Project
1	BHE/PW/PUR/UKT/ELE/1406023	1X500 MW, GSECL, UKAI

FOR

Design, Engineering, Supply, Erection & Commissioning of Elevator for GSECL UKAI, TPS, Unit
#6, Gujarat

VOLUME – II & III

CONSISTING OF:

- Volume-II A : Special Conditions of Contract
- Volume-II B : Technical Conditions of Contract
- Volume III : List of Schedules



Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Power Sector - Western Region
345-Kingsway, Nagpur-440001

1406023

SPECIAL CONDITIONS OF CONTRACT (SCC)

VOLUME-II A

Bharat Heavy Electricals Limited



SPECIAL CONDITIONS OF CONTRACT (SCC)

These conditions shall be read and construed along with General Conditions of Contract enclosed along with the tender Enquiry. In case of any conflict or inconsistency the condition given in SCC shall prevail over GCC.

1.	Project name	1*500 MW Ukai Thermal Power Station Unit No.6, Dist. Tapi, Ukai (Gujarat)
2.	Consignee address	Construction Manager (BHEL site office) Gujarat State Electricity Corp. Ltd. 1*500 MW Ukai Thermal Power Station Unit No.6, Dist. Tapi, Ukai (Gujarat.)
3.	BHEL site office address	The Construction Manager (BHEL site office) 1*500 MW Ukai Thermal Power Station Unit No.6, Dist. Tapi,Ukai Gujarat.
4.	Mode of Dispatch	By Road on door delivery & freight Pre-paid basis
5.	Road Permit Required	Yes
6.	Prior Despatch Intimation to BHEL site Office & underwriters	Yes, one set consisting of LR/RR copy, Packing list/ Challan indicating the items dispatched (with their weights) & letter informing the underwriters about the value of consignment & dispatch details to be sent to: a) BHEL site office b) Insurance co.
7.	Transit Insurance Policy No. Underwriters	Following shall be required to be intimated to underwriter: c) Policy no. d) Consignment details e) Value in INR f) From where to where g) Date of dispatch h) Consignee name 930000/21/14/02/00000012 The New India Assurance Co. Ltd, Large Corporate Office, 301, RG City Centre, LSC, Block B, Lawrence Road, New Delhi – 110 035.
8.	Customer CST & VAT nos	CST TIN No.:24690201429 VAT TIN No.:24190201429
9.	Unloading at site	<ul style="list-style-type: none"> • BHEL site office for supply packages • By vendor for turnkey i.e. supply & erection & commissioning packages
10.	Storage at site	<ul style="list-style-type: none"> • BHEL site office for supply packages • By vendor for turnkey i.e. supply & erection & commissioning packages

SPECIAL CONDITIONS OF CONTRACT (SCC)

11.	Movement of material within site	<ul style="list-style-type: none"> • BHEL site office for supply packages • By vendor for turnkey i.e. supply & erection & commissioning packages
12.	Document required for vendor payment	<p>For customer billing by PSWR the supplier shall provide the following documents to MM:</p> <ol style="list-style-type: none"> a. Supplier invoice -1 copy b. Consignee copy LR.(consignor/lorry copy not required) c. Packing list indicating Quantity /gross weight/net weight against each item dispatched-8 copies d. BHEL MDCC-8 COPIES e. Any other document, if required, shall be intimated later.
13.	Material Receipt Certificate	Responsibility to obtain MRC from site for Turnkey i.e. supply & E & C packages shall be of the turnkey/ contractor. Only for supply packages BHEL/PSWR will arrange MRC, however supplier/contractor shall provide support for verification of material at site if required.
14.	Commissioning spares	The commissioning spares shall be properly packed separately in separate box and each spare shall be properly tagged giving details i.e. dispatch (to match the description given in the packing slip) to facilitate their proper identification. One copy of Packing list must be put inside the box.
15.	Mandatory spares (if applicable)	The mandatory spares shall be properly packed separately in separate box indicating mandatory spares in bold letters & each spare shall be properly tagged giving details i.e. item number of the equipment in line with the Ultimate Customer Contract & number per item (to match the description given in the packing slip) to facilitate their identification given in the packing slip) to M/s GIPCL. One copy of packing list must be put inside the box along with manufacturing drawing no. Reference, Catalogue reference etc.
16.	A. Taxes & Duties & Nature of Project for availing Concessional Custom Duty (For domestic bidder).	<p>All bidders to note that this is a Non Mega (Negotiated) PROJECT & Essentially Certificate issued by GSECL through BHEL for the items identified by PSWR(PUR) at enquiry stage (limited to CIF content indicated by you in P.O) for availing concessional custom duty for imported contents under project import regulations .The bidder to get confirmation from PEM(MM) at enquiry stage if CIF is available for their supply/ items/ systems/ package If CIF is confirmed by PSWR-PUR as not available at enquiry stage than bidder to quote their prices as DOMESTIC. The list of imported items, quantity, CIF value & foreign currency along with origin of country supplying raw material etc., shall be indicated in price bid. The list will be later on as reference list for getting the essentially certificate from customer M/s GSECL for the project. Please note that no request later at contract execution stage shall be entertained by BHEL/PSWR for additional item/additional CIF other than the original bid.</p> <p>Vendor shall be solely responsible for arranging the foreign exchange released for any material, component & bought out items that may be required to be imported & no foreign exchange will be paid by BHEL. Any increase or decrease in exchange rate shall be borne by vendor/supplier.</p> <p>Therefore, it is the sole responsibility of the bidder to obtain custom</p>

SPECIAL CONDITIONS OF CONTRACT (SCC)

		<ul style="list-style-type: none"> ➤ As original tax invoice of vendors are to be furnished to nodal unit for assessment/VAT audit purposes, extra copy of original invoice is required to be submitted by vendors for retaining with PSWR bank payment voucher. ➤ Original tax invoice along with extra copy of Original tax invoice in line with respective state VAT law shall be essential document to be submitted by vendor for claiming payment. ➤ Vendor shall also furnish a certificate/statement/document as prescribed under applicable state VAT law. Please note that some of the state requires additional certificate/documents e.g. Haryana requires certificate in form C-4 in addition to original tax invoice. ➤ Please note that reimbursement/payment of VAT shall be subject to furnishing of vat complaint tax invoice and other certificate /document as per applicable state VAT law. ➤ Tax invoice must shoe vat rate & vat amount separately and in no case all inclusive prices is to be shown in the tax invoice since input credit is not admissible in case VAT is not indicated separately. ➤ In case vendor is unable to furnish vat complaint tax invoices & other certificate/document, VAT shall not be reimbursed by BHEL.
17.	<p>A. Inspection Agency (Domestic Supplies)</p> <p>B. Inspection Agency (Imported supplies)</p>	<p>BHEL/customer</p> <p>Vendor shall give inspection call in line with approved QP to regional “BHEL –COS-WEB SITE” with a copy of inspection call to BHEL /PSWR for arranging customer /GSECL participation with an advance notice of 15-20 days for participation in inspection/joint inspection on the proposed date. The MDCC shall be issued by GSECL based on the BHEL –CQS report or joint inspection report of BHEL CQS & customer. The MDCC in original shall be attached by vendors for their payment from BHEL.</p> <p>In case of imported supplies the test certificates & inspection reports duly accepted by the foreign supplier inspection agency shall be submitted in 5 sets to BHEL/PEM, Noida. The above inspection reports & test certificates shall be reviewed by PEM/engineering in line with the technical specifications & approved data sheets and then sent to customer for customer clearance.</p> <p>The dispatch clearance by customer shall be given to the foreign supplier or their representatives in India after acceptance of above test certificates by ultimate customer.</p>
18.	Construction Power & water to turnkey suppliers	<p>Construction Power: BHEL shall provide construction to vendors FREE OF COST at one point. Further arrangement shall be carried out by vendor himself.</p> <p>Construction water: Construction water tapping by vendor from existing intake canal or from existing water supply line shall be permitted free of</p>

SPECIAL CONDITIONS OF CONTRACT (SCC)

		charges on request.
19.	Final Drawings/Documents Submission	Final Drawing/Documents to be submitted shall be as per Technical specifications otherwise will be intimated during kick-off meeting

TECHNICAL CONDITIONS OF CONTRACT (TCC)

**GUJARAT STATE ELECTRICITY CORPORATION LTD.
1X500 MW, GSECL, UKAI THERMAL POWER STATION
(Extension Unit #6)**

VOLUME – II B & III

**TECHNICAL SPECIFICATION
FOR
Design, Engineering, Supply, Erection & Commissioning of Elevator for GSECL
UKAI, TPS, Unit #6, Gujarat**

SPECIFICATION NO.: PE-TS-294-502-A001



Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Power Sector - Western Region
345-Kingsway, Nagpur-440001

TECHNICAL CONDITIONS OF CONTRACT (TCC)

1.0 Introduction

Passenger elevator shall be provided for access to various operating floors/platform in TG building FOR 1X500 MW Ukai TPS Project to facilitate movement of operating and maintenance personnel.


2.0 Scope of equipment supply and services

2.0.1 Design, Engineering, Manufacturing, Inspection & Testing at manufacturer's works or at their sub-vendor's works, Painting at manufacturer's or at their sub vendor's works ,duly packed for transportation to site, delivery to site, storage and handling at site, Erection & Commissioning, carry out trial run and Acceptance /functional test at site & final painting of Panoramic type machine room less Passenger Elevator (13 Passengers capacity) for 1 x500 MW UKAI STPP are listed below:-


Sl no	Building	No of elevators	Capacity	No. of landings	Total rise	Type	Speed
1	TG Hall	1 Nos	884 Kg(13 Passenger)	0.0m,17.0m	17 M	Panoramic type (glass doors) Passenger elevator with simplex operation	1.0 m/s

2.0.2 Elevator shall include but shall not be limited to the following:-

1. Elevator car with SS 304, 1.5 mm thick hair line finish panel on counter weight and trailing cable side. There are separate entry and exit door as per attached sketch. Entry door shall open at 0.00 m elevation only. Exit door shall open at 17.0 m Elevations – Turbine Hall Operating Floor. Both entry and exit car and landing doors shall be of glass panel. One side car panel (other than counter weight and trailing cable side) shall be glass panel for **scenic view**. The quality of glass panel for car door, landing door and side panel shall be of highest grade from safety point of view and should meet the best standard.
2. Flooring for all passenger type elevators shall be vitrified ceramic tile of matt finish.
3. Guide rails for car and counterweights.
4. Counterweight.
5. Brakes shall be DCEM type/Suitable for MRL elevator duty.
6. Spring buffer for car and counterweight.
7. Driving arrangement including motor sheaves etc.
8. All electrical equipment including power cable, control cable, controller panel, safety devices including push buttons, limit switches, safety switches, indicators etc.


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- 9) Isolating Switch
- 10) Car ceiling of SS-304 with thickness (min.) 1.5 mm.
- 11) Car operating panel, digital control, car position indicator at all floors, luminous hall buttons, auto door operating mechanism, alarm bell, car light & car fan.
- 12) Intercom connection.
- 13) Ropes for hoisting.
- 14) Circuit breaker, switch fuse unit etc. for terminating the power supply cable, other power/control and trailing cabling and equipment earthing.
- 15) Ladder in pits.
- 16) Emergency light with rechargeable battery.
- 17) All fixing materials require fixing rails, brackets, equipment including nuts and bolts.
- 19) Facia plates (750 mm minimum) & sill angels.
- 20) Full length infra-red Curtain safety feature in door along with pressure limiter as an extra mechanical safety.
- 21) ELCB if required as per statutory requirement.
- 22) Any other equipment required to meet the requirement of local statutory and regulatory body and prevailing lift etc.
- 23) Car lighting, recessed fluorescent light fittings for illumination level of 100 lux on car floor.
- 24) Floor announcement cum music system to be provided.
- 25) Three (3) sided SS- mirror finish hand railing at suitable height.
- 26) Maintenance tools and tackles.
- 27) Minor civil work required during installation of elevator.
- 28) Automatic rescue device with battery drive - Modern advanced electronic drive system of rescuing passenger trapped in an elevator shall be provided.
- 29). Emergency safety devices - The lift shall be provided with safety device attached to the lift car frame and placed beneath the car & shall be capable of

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stopping and sustaining the lift car up at governor tripping speed with full rated load in car.

- 30). All steel embedment for fixing landing doors / indicators etc. to the elevator well shaft and fascia plate shall be supplied by the bidder
- 31). Guide rails complete with supporting brackets for the car and counter weights.
- 32). Elevator drive machines complete with electric PMS motor, suspension ropes, buffers for the cars and the counter weights and other drives and control mechanism. All foundation anchor bolts, sleeves, anchoring steels and any item required to complete the job satisfactorily shall be provided by the bidder. The bidder shall also provide for the grouting of anchor bolts, sleeves, anchoring steel etc. and other anchorages.
- 33). Any other steel works as well as all other accessories / components not specified in the technical specification but necessary for making the elevator complete.
- 34). All minor building works including the supply of steel items, associated with installations of equipments, hoist way, hoist way door, frames and elevator pit, shall form part of bidder's scope of supply, BHEL provide the elevator well complete with foundation and structural (steel) work around the lift well.
- 35). All Equipment's / facilities needed for erection commissioning of elevator shall be in bidder's scope.
- 36). Bidder to note that all LT Power cables (Fixed power and control cables etc), Trailing cable and instrument / signal cable for elevator shall be in bidder's scope as per electrical specification. Trailing cable shall be FRLS type (with strain bearing member). Detailed cable specification shall be as per cable specification attached in electrical portion specification.
- 37). Bidder shall include scaffoldings along with whitewash inside shaft required in their scope of work.
- 39) Car lighting in elevator shaft, pit as per electrical specification
- 40) Functional Guarantee test shall be carried out at site for over speed test and over load test, travel and hoist speed checks as per IS 14665 (Latest).
- 41). Preparation of all necessary drawings / data sheets / documents / calculations as required for obtaining necessary local administration permits / approval from statutory authority and make arrangements for inspection and tests required thereby for necessary approval on behalf of the customer. Fees as required for obtaining approval from statutory bodies shall also be included in the scope of work of the bidder.

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- 42) Elevator shall be provided with AC VVVF type drive control system.

NOTES:

- 1) Design of elevator and safety requirements shall be in accordance to IS 14665 (all five parts).
- 2) Make of various bought out items & QAP shall subject to approval of BHEL/Customer during detail contract stage.
- 3) Bidder shall provide all required spares during E & C without any commercial implication.
- 4) Car frame and structure (guide brackets, supports etc.) and other equipment shall be painted with epoxy based paint for elevator.
- 5) Protection class for motor shall be min IP 41 and main control panel shall be min IP 21 and elevator control shall be VVVF type. Push buttons, Car operating Panel, Landing Operating Panel, landing door motor and other equipment shall be IP-54.
- 6) Factor of safety for rope shall be 12 (min).
- 8) Motor shall be min. S4/S5 duty with thermal class 130 (B) or better insulation.
- 9) Full length infra-red Curtain safety feature in door along with pressure limiter as an additional mechanical safety.
- 10) Bidder shall comply to the quality requirements as enclosed with specification. Quality plan shall be submitted by the successful bidder for approval during detail engineering.
- 11) Bidder shall provide equipment as per requirements indicated in this specification, statutory and regulatory requirements, and prevailing local lift act requirements.
- 12) Bidder shall confirm that supply, installation and commissioning of elevator shall be completed within project schedule as indicated elsewhere from placement of intent / letter of intent.

3.0 SCOPE OF SERVICES

Scope of services will broadly include the followings:-

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- 1) Complete erection, testing and commissioning including all testing and commissioning materials, consumables and other tools and tackles required for erection of complete elevator package.
- 2) Painting of all equipments / items within the battery limit.
- 3) Unloading, storage, handling and transportation at site for all items of elevator.
- 4) Minor civil work
- 5) Necessary consumables and instrumentation as required for inspection and testing at works as well as at site including pre-commissioning activities, if any, shall be arranged by the successful bidder at their own cost.
- 6) Functional Test.
- 7) Preparation of civil input drawings including elevator pit, shaft etc.
- 8) Any other service as required for making the installation complete in all respect and satisfactory erection and commissioning of the system.
- 9) Relevant requirements as per GTR, GCC, ECC & SCC.

4.0 Exclusion


- 1) Complete civil works for hoist way.
- 2) Power supply cable (AC 415 V, 3 Phase, 3 wire 50 Hz). Further cabling (all cables including power, control and instrumentation) shall be provided by the bidder.
- 3) Electrical exclusion as per separate scope sheet attached in the specification.

5.0 Controls

The control shall be variable voltage and variable frequency type and shall provide smooth and constant acceleration and retardation under all conditions of operation. Suitable control panels shall be provided. The lift will be automatically stopped by upper and lower terminal switches. The elevators will have an emergency stop switch, limit switches and other safety devices according to statutory rule

6.0 Cables and wirings

The cables used in the elevator installations shall conform to the latest edition of IS 4289. All wiring / cabling between the equipments in the lift drive arrangement and that between the car and equipment in the lift well and at the landing shall be wired in HDP conduits / galvanised steel conduits to be supplied by the bidder. Alternatively, armoured cables may be used. However, bidder shall refer detailed specification of cables / wirings elsewhere in the specification.

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7.0 Earthing

The elevator structures and all electrical equipments, including metal conduits shall be effectively earthed with the earth conductors provided.


8.0 DESIGN CRITERIA

The design criteria and equipment specification will be as follows:

- i) The rated speed will be one (1) m/sec. Proper allowance will be made for impact and wear and the factor of safety for rope shall not be less than twelve (12) or as per IS 14665 (all parts). The suspension wire rope will conform to IS-14665 or approved equivalent international standard.
- ii) The lift will be providing with automatic travelling device which will take care of overrun and under run of the car and rope stretch that the car floor is within 6.0 mm from the landing level at the floors while in operation.
- iii) The lift will be equipped with upper and lower terminal switches arranged to stop the car automatically within the limit of the top car clearance and bottom run-by, from the any normal operating speed.
- iv) The elevator shall be provided with AC VVVF type drive control system.


9.0 Other Technical Requirements

- 1) Characteristic curves of all motors shall be furnished by the bidder during detail engineering stage for approval showing torque, speed, current and voltage.
- 2) Electrical requirements shall be as per requirements enclosed elsewhere in the specification.
- 3) C&I requirements shall be as per requirements enclosed in the specification.
- 4) Bidder shall procure all items from BHEL / customer approved sub vendor only.
- 5) Complete elevator installation shall be in accordance with the requirements of concerned approving authority.
- 6) Minor civil and structural works shall be carried out by the bidder if required at site for which no additional commercial implication shall be entertained by BHEL.
- 7) In case of any contradictory requirement amongst the various clauses within the specification and clarifications not having been sought by the bidders, the most stringent requirement as per interpretation of BHEL's engineer shall be final and

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binding on the bidder for which BHEL will not entertain any commercial implication.

- 8) Data sheets of various items shall be prepared by the bidder and shall be submitted to BHEL for approval after placement of order and any changes required by BHEL for the same shall be incorporated and adhered by the bidder without any commercial implications.
- 9) GA drawing indicating design data, material of construction etc. shall be prepared by the bidder during detail engineering stage based on specification / contractual requirement and there should be no commercial implication on account of finalization of the drawings and documents.
- 10) O & M manual shall be furnished to BHEL for approval during detailed engineering stage.
- 11) Field quality plan / quality assurance plan / check list shall be prepared by the bidder for each item of elevator and shall be submitted to BHEL for approval after placement of order and any changes required by BHEL for the same shall be incorporated and adhered by the bidder without any commercial implications.
- 12) All possible efforts shall be made by the bidder to get the approval of drawings and documents from BHEL at the earliest and the documents prepared / generated by them or their sub-vendors shall be checked by their competent authority before submission to BHEL.
- 13) Revision made by the bidder in any drawings and documents shall be highlighted by indicating the no. of revisions in a triangle without fail so that the minimum time is required by BHEL to review the drawings and documents.
- 14) Bidder to note that all the drawings shall be prepared in Auto Cad - 2010 version and required number of hardcopies and soft copies shall be furnished to BHEL during detailed engineering stage. Exact requirement of number of hard copies and soft copies of all drawings and documents as required by BHEL shall be informed to the successful bidder during detail engineering stage and bidder to furnish the same for which no additional cost shall be entertained.
- 16) Civil works will be provided by BHEL. Hence, bidder has to furnish the civil inputs in time. Bidder has to carry out the rectification in the civil works in the event of any changes in the civil input data furnished by them or delay in submission of input data by them. Bidder to furnish the civil foundation drawing along with the loading data for approval during detailed engineering stage showing / indicating the followings :-
 - a) Scope of work by BHEL and bidder shall be indicated with different legend or in the form of note.

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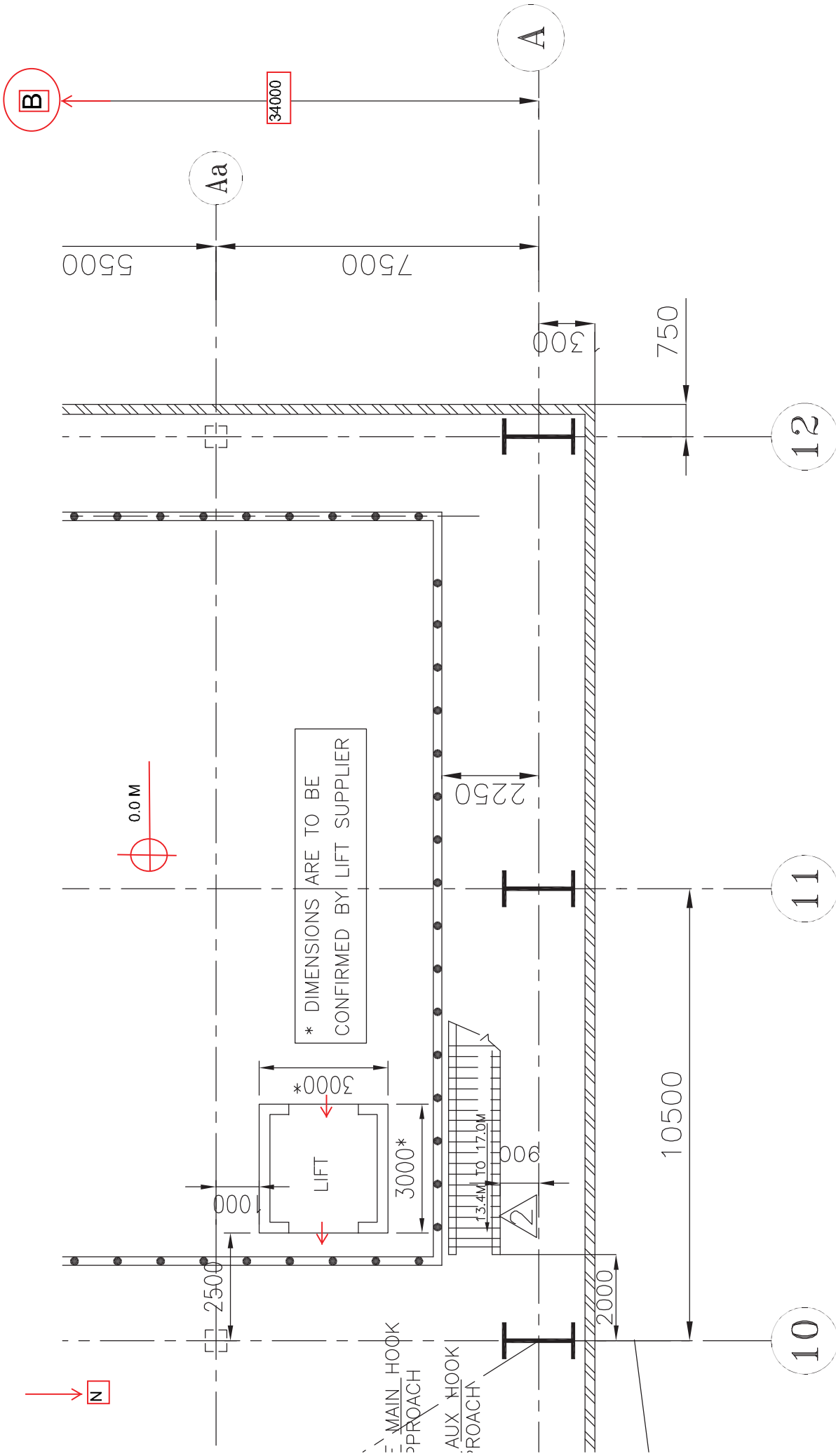
- b) Recommended locations of earthing pads.
- c) Civil loads along with detailed calculation of loading
- d) Details of pockets / cut outs as required for anchor bolts.

ELECTRICAL SCOPE BETWEEN BHEL AND VENDOR

PROJECT: 1X500 MW UKAI TPP. UNIT#6.

PACKAGE: ELEVATORS

<u>S.NO</u>	<u>ITEM NO.</u>	<u>DETAILS</u>	<u>SCOPE SUPPLY</u>	<u>SCOPE E&C</u>	<u>REMARKS</u>
1	I	4 15V Local Starter Panels	Vendor	Vendor	BHEL will provide two supply feeders.
2	II	L.T Power cables, flexible/trailing cables, ordinary control cables, screened control cables and special purpose cables (if required) between equipment supplied by vendor.	Vendor	Vendor	
3	III	Cabling including required cable trays and accessories, supporting system for cable trays.	Vendor	Vendor	
4	IV	Motors	Vendor	Vendor	
5	V	Equipment earthing	Vendor	Vendor	At two points on equipment.
6	VI	Cable glands and lugs for equipment supplied by vendor	Vendor	Vendor	



* DIMENSIONS ARE TO BE CONFIRMED BY LIFT SUPPLIER

UKAI 1X500 MW
 SKETCH FOR SUGGESTIVE LIFT LOCATION IN UNLOADING BAY
 SKETCH_294_100_M0050

BRIEF SPECIFICATION

REQUIRED FOR : M/s BHEL.
GUJARAT ELECTRICITY BOARD
TO BE INSTALLED AT : UKAI

Description	
Type of Elevator	Panoramic
Quantity of Lifts	1
1. Type of Lift	ACVVVF GEARLESS/EQUIVALENT GEARLESS
2. Use of Lift	Passengers
3. Lift Duty	
1) Rated Capacity (Kg)	884
2) Rated Speed (M/Min)	60
3) Opening/Storey	2/2
4. Operating System	Simplex Full Collective/EQUIVALENT
5. Door Opening Type	2 Panel Centre opening-Through type two separate entry exit door required
6. Machine Room Location	MRL
7. Dimensions (mm)	Tentative to be finalized after discussion with PEM
1) Door Size (W x H)	900 x 2100
2) Car Inside (W x D)	1600 x 1350
3) Hoist way (W x D)	2500 x 2300
4) Overhead	4800
5) Pit Depth	1600
6) Travel	17000
8. Hall Finishes / Fixtures	
1) Landing Door - Ground Floor - Typical Floors	Glass Panel Glass Panel
2) Jamb - Ground Floor - Typical Floors	Stainless steel Hairline finish Stainless steel hairline
3) Hall Position Indicator & Button	Standard
4) Sill	Extruded Aluminum
9. Car Finishes	
1) Car Door	Glass Panel
2) Side wall	One side half Glass- Other Side Stainless steel
3) Rear wall	Glass door SS Hairline
4) Ceiling	Hand rail on both side
5) Flooring	Standard Vitrified tile
6) Entrance Column/Transom	Stainless steel Hairline
7) Illumination	Fluorescent Lamp
8) Car Position Indicator & C.O.P	Luminous push button
9) Sill	Extruded Aluminum
10. Buffer Type	Spring

11. Outstanding Features for Higher Efficiency	Nuisance Call Cancellation Automatic Cut-Off of Lighting and Ventilation during Stand-by. Attendant Operation Arrival Car Chime
12. Outstanding Features for Increased Safety	Overload Detector Emergency Light Communication System: Intercom Micro Scan, Door Nudging
13. Reference Rules and Regulations	Bombay Lift Act

Floor announcing system, automatic rescue device, full length infra-red curtain with pressure limiter, rest other requirement will be as per BHEL Technical specification.