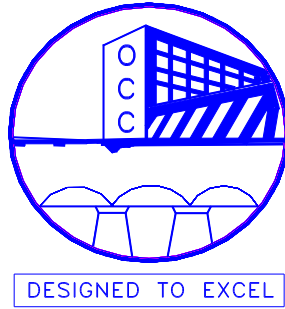


**ODISHA CONSTRUCTION CORPORATION LTD.**  
(A GOVERNMENT OF ODISHA UNDERTAKING)  
**CENTRAL WORKSHOP,**  
**RASULGARH,**  
**BHUBANESWAR – 751010 (ODISHA)**



**TENDER DOCUMENT**  
**(TWO BID SYSTEM)**

**Tender call notice No. OCC/CWS/PROC./PRPSP-02/66/18-19 dated**  
**26.12.2018**

**TENDER DOCUMENT (PART-I)**

**TECHNO COMMERCIAL BID**  
**FOR**

**DESIGN, MANUFACTURE, SUPPLY, ERECTION, TESTING &**  
**COMMISSIONING OF PASSENGER ROPEWAY AT PATALI**  
**SHRIKSHETRA, SUBARNAPUR DISTRICT, ODISHA**

(This tender document contains 143 (One hundred forty three) sheets including this cover page)

---

Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
Bhubaneswar – 751010 (Odisha) Page 1

**ODISHA CONSTRUCTION CORPORATION LTD.**  
**(A GOVERNMENT OF ODISHA UNDERTAKING)**  
**CENTRAL WORKSHOP,**  
**RASULGARH,**  
**BHUBANESWAR – 751010 (ODISHA)**

**Tender call notice No. OCC/CWS/PROC./PRPSP-02/66/18-19 dated 26.12.2018**

**Tender for the work “design, manufacture, supply, erection, testing & commissioning of passenger ropeway at Patali Shrikshetra, Subarnapur district, Odisha”**

Sealed tenders in conformity with terms, conditions and technical specifications in tender document are invited from reputed Passenger Ropeway manufacturers only for “Design, Manufacture, Supply, Erection, Testing, Commissioning of Passenger Ropeway at Patali Shrikshetra, Subarnapur District of Odisha”. For details of tender Call Notice, please visit our website **odishaconstruction.com** or Government of Odisha website **odishagov.nic.in**. The last date of submission of tender is up to **03:00PM on 02.02.2019** and the tender will be opened on the same day at **04:00PM**.

**Sd/-**  
**General Manager(M)**  
**Central Workshop,**  
**Rasulgarh**

---

Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
Bhubaneswar – 751010 (Odisha) Page 2

## TENDER LETTER

To,

Sub : **Design, Manufacture, Supply, Erection, Testing & Commissioning of Passenger Ropeway at Patali Shrikshetra, Subarnapur District of Odisha**

Dear Sir,

1.0 Western Odisha Development Council (WODC) is the administrative set up established by the Government of Odisha. The Council was particularly established by bring development in the Western Odisha region. WODC prepares appropriate long and short term plans and programmes for the removal of development and imbalances between different districts within the council area keeping in view the overall levels of development of the western parts of Odisha.

WODC has decided to install Passenger Ropeway at Patali Shri Kshetra near Kotsamalai village under Ullunda Block of Subarnapur district to carry pilgrims which will be a help to the devotees to reach the temple quickly and comfortably to offer their puja particularly for children, aged and handicapped devotees.

In this connection WODC has given full responsibility and financial allocation to the Odisha Construction Company Limited, for construction of the Passenger Ropeway at Patali Shree Kshetra. WODC has appointed M/s. Odhisha Construction Company Limited, Bhubaneswar (OCCL) as Tendering Authority for "Design, Manufacture, Supply, Erection, Testing & Commissioning of Passenger Ropeway at Patali Shrikshetra, Subarnapur District of Odisha.

2.0 One set of tender documents comprising the following is enclosed herewith.

### **BID DOCUMENT (PART – I)**

Section – I	:	Instructions to Bidders
Section – II	:	General Conditions of Contract
Section – III	:	Special Conditions of Contract
Section – IV	:	Technical Specifications.
Section-V	:	Technical Drawing

### **BID DOCUMENT (PART – II)**

Price Bid

3.0 You are requested to peruse the instructions contained in the above documents and submit your tender within the due date and time as mentioned in the Tender Notice duly signed on each page along with the requisite credentials.

4.0 All correspondence and Tenders shall be addressed to the General Manager(Mech), Central Workshop, Odisha Construction Corporation Ltd., (Government of Odisha Undertaking), Rasulgarh, Bhubaneswar-751 010 (Odisha).

5.0 The tender No, and subject must appear on all correspondence and documents

General Manager (Mech)  
Central Workshop  
Odisha Construction Corporation Limited

---

Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
Bhubaneswar – 751010 (Odisha) Page 3

## CHECK LIST

**Sub:- Construction of Passenger Ropeway Project at Patali Shrikshetra, Subarnapur district, Odisha**

The contractor is required to fill this Check List himself and annex the certificate as per the Annexure mentioned in this Check List.

Sl. No	Particulars and Clause reference	Submitted/ not submitted	Placed at Annexure No.	Remarks if any
1.	Tender document Vol I duly signed by the bidder on each page as per clause 3.2.1 (d).			
2.	List of Passenger/Material Ropeway works completed as per <b>Proforma -1</b>			
3.	Solvency Certificate as per <b>Proforma -2</b>			
4.	Certificate for availability of Staff/ Manpower as per <b>Proforma -3</b>			
5.	Certificate for availability of Machinery/ Equipment as per <b>Proforma -4</b>			
6.	Affidavit for past contractual performances <b>as per Proforma-5</b> As per Clause 4.3 of Instructions to Tenderers.			
7.	Data of Joint Venture as per <b>Proforma – 6 , Proforma - 7</b> and Joint venture Agreement			
8.	Letter of Submission as per <b>Proforma-8</b>			
9.	Acceptance Letter as per <b>Proforma-9</b>			
10.	Affidavit for Proprietorship / Partnership Deed/ Memorandum and Articles of Association. As per Clause 4.2(b) of Instructions to Tenderers			
11.	Written Power of Attorney as per <b>Proforma - 13</b> against Clause 4.2 (c) of instructions of Tenderers (Signature of attorney holder should be attested on the document)			
12.	Conceptual drawings as per Technical Specification			
13.	Power of attorney from the Lead member appointing designated person as per <b>Proforma - 14</b> against clause 4.0 (c) & (d) of instruction to tenderers			

Signature of tenderer or his/their power of attorney holder with date, full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
Bhubaneswar – 751010 (Odisha) Page 4

# C O N T E N T

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Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

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Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
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## INSTRUCTIONS TO BIDDERS

### 1.0 Description of Work

OCCL invites sealed tenders for Design, Manufacture, Supply, Erection, Testing & Commissioning of a 150 PPH capacity Monocable Jig-back Passenger Ropeway on turnkey basis at Patali Shrikshetra, Subarnapur District of Odisha.

### 2.0 Tender Document

2.1 The work shall be carried out according to the conditions stipulated in the following set of tender documents along with Addendum/Corrigendum issued, if any:

a) Price Bid

2.1.1 In addition to the above, the OPWD Specifications latest with up-to-date correction slips will also be applicable.

2.2.1 The tender document may be downloaded from OCCL website [www.odishaconstruction.com](http://www.odishaconstruction.com) or Govt. of Odisha website [www.odishagov.nic.in](http://www.odishagov.nic.in) and non-refundable cost of tender document amounting to Rs 11200/- (Rupees eleven thousand two hundred) only inclusive of CGST @ 6% & SGST @ 6% in shape of Account Payee Demand Draft drawn on any nationalized/scheduled bank payable at Bhubaneswar only in favour of Odisha Construction Corporation Ltd.- Project Account may be deposited along with the tender. OCCL will not be responsible for missing of any page while downloading.

2.2.2 There is no provision of direct sale of Tender Document in this office.

2.2.3 Tender documents downloaded from OCCL website [www.odishaconstruction.com](http://www.odishaconstruction.com), shall be considered valid for participating in the tender process. In such case the tenderer shall deposit cost of tender document as prescribed in para 2.2.1. During the scrutiny of downloaded tender document, if any modification/correction etc is noticed as compared to the original documents posted on the website, the bid submitted by such a tenderer is liable to be rejected.

2.3 The cost of the tender documents is non-refundable and the tender form is non-transferable.

2.4 **The completion period for the work is 24 (Twenty four) calendar months in all respect, from the date of issue of letter of award/letter of Intent. Letter of Award/ Letter of Intent can only be issued after getting administrative approval from the WODC, getting minimum 40% advance payment from WODC and after obtaining clearance from parent department like Forest(DFO), WESCO, PH & Revenue/ local administrator whichever is later.**

### 3.0 Eligibility and Qualification Requirements

The offer of only those applicants will be considered who would satisfy the following conditions:-

- a) The Bidding Company (Indigenous/ Overseas) must have been registered in its entire entity as a ropeway construction Company.
- b) The Bidding Company must have successfully installed minimum three numbers of Passenger Ropeway in last Ten Years in India. If necessary, the Installations may be inspected by us. Certificate towards successful completion / other relevant matter from the respective Client / concerned Authority or any evidence in support of credential should be submitted.
- c) The Bidding Company in its own name should have an average Annual Financial Turnover of Rs.7.0 crore per year in last Five Years preceding from the date of this Tender Notice and should submit the attested copies of Audited Balance Sheet along with Profit & Loss Statement and Auditor's Report duly certified by the Bidder and Chartered Accountant.
- d) The Bidding Company will submit a Solvency Certificate for minimum of Rs.5.0 crore from the schedule Bank in India issued not earlier than 6 months preceding from the last date of tender.
- e) History of bidder Company for non-failure/ non-fatal accident in any ropeway works awarded / executed or during operation and maintenance period.
- f) The bidder company must have GST registration certificate and will submit the last updated GST payment slip.
- g) The bidder company will submit the PAN details.

### 4.0 Authority to Sign

- a) If the Applicant is an individual, he should sign above his full type written name and current address
- b) If the Applicant is a proprietary firm, the Proprietor should sign above his full type written name and the full name of his firm with its current address.
- c) If the Applicant is a firm in partnership, the documents should be signed by all partners of the firm above their full type written names and current addresses. Alternatively the documents should be signed by a partner holding Power of Attorney for the firm in the format at Proforma - 14.
- d) If the Applicant is a limited Company, or a corporation, the Documents shall be signed by a duly authorized person holding Power of Attorney for signing the documents in the format at Proforma -14.



- 4.1 To be eligible to qualify for Award of the Contract, the bidders are required to submit the following documents in support of their fulfillment of the qualification requirements given in Para 4.2 to 4.6 below.
- 4.2 The Bidders should submit the following documents (in addition to other documents, required as per other clauses): -
- a)
    - i) Letter of Submission of Tender as per **Proforma-8**
    - ii) Earnest Money in proper form as per **Clause 7.0**
    - iii) Letter of Acceptance as per **Proforma - 9.**
  - b) Attested Copies of Affidavit for Sole Proprietorship / Partnership Deed / Memorandum and Articles of Association along with the details pertaining to place of registration, principal place of business of the firm etc.
  - c) Written Power of Attorney of the Signatory of the Tender on behalf of the Bidder. The signature of the person for signing the tender document should be attested in the power of Attorney.
  - d) The set of Tender Document is required to be submitted duly signed on each page as token of having read the conditions.
- 4.3 Even though the Bidders meet the above qualifying criteria, they are liable to be disqualified, if
- a) They have made misleading or false representation in the forms, statements and attachments submitted in proof of the qualification requirements.
  - b) They are not registered in its entire entity as Ropeway Company and does not have working experience and expertise in setting up passenger ropeway plant.
  - c) They have records of poor performance such as abandoning the work, not properly completing the contract, litigation history or financial failures etc.
  - d) Their ropeway plant met with fatal accident, which was being operated and maintained by them.
  - e) Their business banned by any Central/State Govt. Department/Public Sector Undertakings or Enterprises of Central/State Govt.
  - f) Not submitted all the supporting documents or not furnished the relevant details as per the prescribed form at **Proforma-5.**

A declaration to the above should be submitted on the non-judicial stamp paper of Rs.20/- duly attested by Notary/Magistrate as per format given in **Proforma-5.**

- 4.4 If photo copies / attested copies of any documents mentioned above, are being submitted by the Bidder, these should be attested by the bidders and that these documents are still required to be submitted even if these have been submitted earlier by the Bidder along with any other tender or for pre-qualification tender.
- 4.5 In case of failure to submit the required document along with the Bid, same submitted by Bidder is liable to be rejected. The Bidder has to attach all the documents and mention the Annexures at which the relevant document is enclosed.
- 4.6 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they conceal any information required to be furnished as per the tender conditions or make misleading or false representations in the forms, statements, and attachments submitted in proof of the Qualifications Requirements.

## 5.0 **Site Visit**

- 5.1 The bidder is advised to visit and examine the site of works and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into the Contract. The costs of any such visits shall be entirely at the bidder's own expense. The bidders are requested to satisfy themselves regarding availability of water, requirement of electricity, nature and location of work, confirmation of the ground character, quality and quantity of the materials, the character of equipment and logistic facilities needed preliminary to and during the progress of the works, law and order situation, hindrances and/or the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the contract. The contractor will be fully responsible for considering the financial effect of any or all of the above factors at his rates. No compensation will be given on account of ignorance of any of the factors during execution of the works.

## 6.0 **Queries during Tendering Period**

If any case of doubt or queries comes, the bidder may submit queries in writing in the office of the General Manager, Mechanical, Central Workshop during office hours before submission of tender documents.

## 7.0 **Earnest Money**

- 7.1 The bidders are required to deposit the **Earnest Money deposit @1%** of total quoted value along with their Bid for this particular work. The Earnest Money must only be made in Crossed Demand Draft or Pay order in favour of **“Odisha Construction Corporation Ltd.-Project Account” payable at Bhubaneswar drawn on any Nationalised / Scheduled Bank in India or in the form of Bank Guarantee from any Nationalised / Scheduled Bank in India in accordance with Proforma - 11.**

- 7.2 Earnest Money will not be accepted in any form other than those mentioned in Clause 7.1 above.
- 7.3 The Price Bid of the bidder who has not submitted the Earnest Money along with the First envelope in accordance with Clause 7.1 above shall not be opened and the tender will be rejected by OCCL.
- 7.4 The Earnest Money of the unsuccessful bidders will be discharged/returned within 30 days after the Award of the Contract to the successful bidder. The Earnest Money of the successful bidder may be returned by OCCL after receipt of Performance Guarantee from them.
- 7.5 No interest shall be paid on the Earnest Money.

#### 8.1 **Validity**

- 8.2 Tenders shall remain valid and open for acceptance for a period of **6 months from the date of opening of tenders**. Should the bidder fail to keep the tender open for acceptance as stated above or if the bidder withdraws his tender before the expiry of the said period or makes any modifications in the terms and conditions of the tender which are not acceptable then OCCL without prejudice to any other right or remedy shall be at liberty to forfeit his Earnest Money.
- 8.3 In exceptional circumstances, prior to expiry of the original validity period, OCCL may request the bidders for a specified extension in the period of validity. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Earnest Money. A bidder agreeing to the request will neither be required nor be permitted to modify his tender.

#### 9.0 **Rates and Prices**

- 9.1 The prices quoted by the Bidder shall be in INR (Indian Rupee) and fixed for the contemplated completion period and shall not be subject to any escalation due to any account in this period. Prices shall also remain firm in case of variation of quantities, change in location of terminals within limits specified in Section IV (Technical Specifications) and actual completion period. The Price will be excluded of all Taxes & Duties as applicable for this project.

In no case the vendor/contractor can claim price escalation.

If the work be delayed by:

- i. Force Majeure, or
- ii. Abnormally bad weather or
- iii. Serious loss or damage by fire or
- iv. Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- v. Any other cause which, in the absolute discretion of the competent authority/CONSULTANT is beyond the contractor's control.

- vi. Delay on the part of the other contractors or tradesman engaged by Engineer-in-Charge in executing work not forming part of the contract then upon the happening of any such event causing delay, the contractor shall immediately give notice thereof in writing to the Engineer-in-charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-charge to proceed with the works.
- 9.2 The Contract shall cover the entire scope of works described in General Conditions of Contract, Special Conditions of Contract and Technical Specifications of Bid which includes supply and erection of all equipment for completing the respective part in full and testing and commissioning the same for Performance and Guarantee and rendering it operational to the satisfaction of the Owner/Engineer.
- 9.3 The proposal shall include all special tools, tackles and attachments required for the operation and maintenance of the equipment in each equipment package. The Bidder shall indicate all the above items in the Technical Bid in the form of a schedule giving therein the description and the quantity of each item. The lump sum price to be quoted by the Bidder shall include prices of those tools and tackles.
- 9.4 In addition, the Bidder shall provide a complete list of mandatory recommended spare parts for three years operation of all the equipment covered under this proposal. Such list will also indicate the lump sum prices, to be given in the price bid. The prices of these spare parts shall be on firm price basis.
- 9.5 All spares shall be warranted to be new and in accordance with the Contract documents and be free from defects in design, material and workmanship **for a period of 12 (Twelve) months** from the date of commissioning. In case of failure or non-conformance to specifications, the Contractor shall replace them free of cost to the Owner excluding wears & tears.
- 9.6 The bidder should quote their rates in figures as well as in words. **In case of discrepancy between the unit rates quoted in figures and in words, the unit rates quoted in words shall prevail.**
- 9.7 The amount for each item should be worked out and the requisite totals given. In case of discrepancy between the unit rate and the total amount derived from multiplication of unit rate and the quantity, the unit rate as quoted will govern and the total amount will be corrected.
- 9.8 All rates shall be quoted only on the proper form of the tender and each page of the Bill of Quantities shall be signed. Any cutting or over-writing shall be initialed.
- 9.9 **While quoting the rates the word "Only" should be written closely, following the amount and it should not be written in the next line.**
- 9.10 Under Section 194-C of the Income Tax Act, 1961 deduction of Income Tax will be made for sums paid for carrying out the work under this contract as per the prevailing rate.

9.11 The bidder/s shall not increase his/their rate in case of negotiations. OCCL negotiations shall not amount to cancellation or withdrawal of original offer and rates originally quoted will be binding on the bidder/s.

9.12 **The Bidder/s shall submit an analysis of rates for each item as per BOQ if called upon to do so.**

## 10.0 **Submission of Tenders**

10.1 Tenders complete in all respects shall be received in the Registered Office of the General Manager(Mech), Central Workshop, Odisha Construction Corporation Ltd., (Government Of Odisha Undertaking), Rasulgarh, Bhubaneswar-751010 (Odisha) **upto 03:00 PM Hours on 02.02.2019**

10.2 The bidders shall seal the tender in Two envelopes duly marking the envelopes as under:-

a. **First Envelope** shall be marked "**Techno-Commercial Bid**" along with the following details over the envelope.

- i. EMD for Rs \_\_\_\_\_
- ii. Tender for " \_\_\_\_\_ (Name of work) \_\_\_\_\_ "
- iii. Reference No. " \_\_\_\_\_ (Tender No.) \_\_\_\_\_ "
- iv. Project " \_\_\_\_\_ (Name of Project) \_\_\_\_\_ "
- v. The words: "Do not open before \_\_\_\_\_ (Time and Date) \_\_\_\_\_ "
- vi Name and address of the Bidder " \_\_\_\_\_ "

b **Second Envelope** marked as "**Price Bid**" for:

- i. Tender for " \_\_\_\_\_ (Name of work) \_\_\_\_\_ "
- ii. Reference No. " \_\_\_\_\_ (Tender No.) \_\_\_\_\_ "
- iii. Project " \_\_\_\_\_ (Name of Project) \_\_\_\_\_ "
- iv. Name and address of the Bidder " \_\_\_\_\_ ."

10.3 The bidder shall seal both the envelopes in an outer envelope duly marked as

**"Techno-Commercial and Price Bid"** for -----  
----- (Name of Work), TenderNo.----- and  
words "Do not open before ----- (Time and  
Date) -----".

The outer envelope shall be addressed to the OCCL at the following address:-

**The General Manager(Mech),  
Central Workshop,  
Odisha Construction Corporation Ltd.,  
(Government of Odisha Undertaking)  
Regd. Office : Rasulgarh,  
Bhubaneswar-751 010 (Odisha)**

- 10.4 No tender shall be accepted, unless it is properly sealed.
- 10.5 Any tender received by the OCCL after the deadline for submission of the tenders prescribed by OCCL in the Tender Notice, will be rejected and returned unopened to the bidder. Any tender for which Earnest Money is received after the dead line for the submission of tender prescribed by OCCL in the Tender Notice, will be rejected and returned unopened to the bidder.
- 11.0 **Opening of Tenders**
- 11.1 The first packet (First envelope) shall contain the **Techno-Commercial Bid, Earnest Money Deposit** and **all the Pre-Qualification Documents** required as per **Clause 3 "Eligibility & Qualification Requirements"** of Instructions to Bidders of Tender Document.
- 11.2 The Second Packet shall contain only the **Price Bid** duly sealed and clearly marked in bold letters as "**Price Bid**".
- 11.3 The first Packet shall be opened on **02.02.2019 at 16.00 Hours in the presence of Bidders, who will participate in this tender, if so they desire.**
- 11.4 The successful bidder on opening the technical bidder will be requested for submit Power Point presentation for the quoted project at the venue to be intimated to them through mail/Post.
- 11.5 The Second Packet comprising the Price bid of only those bidders, who have qualified in the technical bid, shall be opened after pre-qualification of the bidders. The date of opening of Price Bid document shall be intimated to the pre-qualified bidders through mail / post after due verification of Technical bid. The price bid of the bidders who have not qualified in the technical bid shall be returned unopened.
- 12.0 **Process to be confidential**
- 12.1 After the public opening of tenders, the information relating to the examination, clarifications, evaluation and comparison of tenders and recommendations concerning the award of contract will not be disclosed to the bidders or other persons not officially concerned with such process until the award of the contract to the successful bidder has been announced.
- 12.2 Any effort by the bidder to influence OCCL personnel or representatives on matters related to the tenders under study in the process of examination, clarification, evaluation and comparison of tenders and in decisions concerning award of contract, may result in rejection of his tender.

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Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

**General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
Bhubaneswar – 751010 (Odisha)** Page 14

### 13.0 Evaluation of Tenders

- 13.1 The tenders will be evaluated in accordance with the criteria given in clause 3 above.
- 13.2 Tenders containing any condition including conditional rebate/rebates are liable to be rejected (conditional tender will be rejected).
- 13.3 **The tenders submitted by the bidders who do not meet the Qualifications Requirements stipulated in the Tender Documents or whose Price Bids or rates which are valid for a period less than validity period from the date of opening of tenders, will be rejected. Earnest money of the tenders containing the above mentioned restricted validity of Price Bids or rates is liable to be forfeited.**
- 13.4 Canvassing in connection with tender are strictly prohibited and the tenders submitted by the bidders who resort to canvassing will be liable to rejection.
- 13.5 **For evaluation purpose all the prices shall be converted in Indian Rupee, if foreign currency involved with exchange rate applicable on the day of opening of Price Bid**

### 14.0 Award of Contract

- 14.1 OCCL will award the contract to the bidder who meets the eligibility criteria for qualification mentioned in Clause 3 above and who has offered the lowest Evaluated Bid Price provided further that the bidder has the capability and resources to carry out the contract effectively. The tender of the bidders, who have not been found to meet the qualification criteria on the basis of the documents submitted to OCCL, will be rejected.
- 14.2 Prior to the expiry of the period of Bid validity prescribed by OCCL, the OCCL will notify the successful bidder by mail / fax to be confirmed in writing by Registered letter that his tender has been accepted. This letter hereinafter called the Letter of Award shall constitute the formation of contract. **Letter of Award/ Letter of Intent can only be awarded after getting administrative approval from the WODC, getting minimum 40% advance payment from WODC and after obtaining clearance from parent department like Forest(DFO), WESCO, PH & Revenue/ local administrator whichever is later.**
- 14.3 On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Engineer-in-charge shall be communicated to the Engineer-in-charge.
- 14.4 The bidder whose tender is accepted shall be required to submit stamp papers of appropriate value in his name for payment of stamp duty as per the provision of Indian Stamp Act within 10 days of the date of issue of Letter of Award and shall be required to appear at the office of the OCCL in person, or through a duly authorised representative to execute the contract agreement within 15 days after receipt of the notice for signing the Contract Agreement. No payments shall be released to the Contractor until the agreement is signed. Failure to do so shall also constitute a breach of the agreement effected by the acceptance of the tender in which case the Letter of Award for the contract can also be cancelled and the Earnest Money accompanying the tender is also liable to be forfeited by the OCCL.

**14.5 OCCL will sign the contract with the successful bidder**

14.6 Time is the essence of the contract. In order to complete the work within the schedule time, the bidder is required to submit a detailed PERT/CPM/BAR Chart for various activities indicating the time of services required for the same within 15 days of issue of Letter of Award and get it approved from Engineer-in-charge/ Consultant. The Engineer-in-charge shall have the power to change the PERT/CPM/BAR chart submitted by the Contractor as per the requirement of the work before approval. The approved PERT/CPM/BAR chart shall be binding on the contractor. An Implementation schedule for the project dictating the scheduling for major activities is placed at Proforma-16 for adherence. The Clause No 3 (Compensation for delay- Clauses of Contract) & 6 (Time and extension for delay- Clauses of Contract) of General Conditions of Contract should be properly read by the bidders before submitting the tender.

**15.0 Court's Jurisdiction**

Any suit or application, arising out of any dispute or difference on account of this tender or any matter in relation to the Award of the contract or for the enforcement of Arbitration clause under the Contract, shall be filed in a Competent Court at **Bhubaneswar, India** only and no other court of any other District of the country shall have any jurisdiction in the matter. **It is to be noted that in all cases, if any, OCCL should be made as First Respondent.**

**16.0 Secrecy of Contract Documents**

The Contract is confidential and must be strictly confined to the Contractor's own use (except so far as confidential disclosure to sub-contractors or suppliers if necessary) and for the purpose of the contract.

**17.0 General**

17.1 The contractor's operations and proceeding in connection with the works shall at all times be conducted during the continuance of contract in accordance with the laws, ordinance, rules and regulations for the time being in force and the contractors shall further observe and comply with the bye laws and regulations of the Government of India and State Government and of Municipal and other authorities having jurisdiction over area involved in connection with the works or site and over operations such as those as carried out by the contractor(s) and shall give all notices required by such bye-laws and regulations. The hospital and medical regulations in force for the time being shall also be complied with by the contractor/contractors and his/their workmen.

17.2 No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in any Department of the Government of India is allowed to work as a Contractor for a period of two years immediately after his retirement from Government service without the previous permission of the Government of India. This contract is liable to be cancelled if either the Contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.



17.3 Should a contractor have a relative employed in Managerial capacity in OCCL or in the case of partnership firm or company incorporated under the Indian Company Law, should a partner or relative of the partner or a shareholder be employed in responsible capacity in the OCCL, the authority inviting tenders shall be informed of the fact at the time of submission of tenders, failing which the tender may be rejected. If such fact is suppressed at the time of tendering and comes to light at any time after the acceptance of tender the contract may be rescinded.

17.4 Site is available with owner for construction. Site for execution of the work will be made available as soon as the work is awarded.

**18.0 Unbalanced bids and Additional Performance Guarantee**

When L1 offer is less than 90% of the justified cost/market rate analysis cost the bid should be treated as unbalanced. The workability of the rates should be assessed. For this purpose, the L1 bidder shall be advised to produce detailed price analysis for any or all items on price bid to demonstrate the inherent consistency of those prices with the construction methods and schedule proposed. If on evaluation, the rate/price analysis is not found to be satisfactory, the L1 bidder should be asked to furnish additional performance guarantee to the extent the total quoted cost is lower than 90% of justified cost/market rate analysis cost. The period, Performa etc shall be as per clause 1(A) of General Condition of Contract.

**19. Clarification of Bidding Documents.**

19.1 A prospective bidder requiring any clarification of the bidding documents, drawings, specifications, etc may notify at the following address in writing or by e-mail / fax before submission of the tender.

**The General Manager,  
Odisha Construction Corporation Ltd. (Government of Odisha Undertaking)  
Central Workshop, Rasulgarh, Bhubaneswar-751010 (Odisha)**

**Phone : 0674 – 2580106,**

**Fax : 0674 – 2587321,**

**Email Id : [gmocclcws@yahoo.co.in](mailto:gmocclcws@yahoo.co.in), [theooccltd@odishaconstruction.com](mailto:theooccltd@odishaconstruction.com)**

**20.0 Amendment to Bidding Documents**

20.1 At any time prior to the last date for submission of bids, the OWNER or the Engineer on his behalf may for any reason modify the bidding documents by an amendment.

20.2 The amendment in the form of an addendum / corrigendum will be uploaded in our official website.

## LIST OF PASSENGER ROPEWAY PROJECT COMPLETED

S.No	Clients Name Address & Contact No.	Scope of Work	Agreement/ Letter of Award No.	Contract Value (Rs In Lacs)		Location	Date of Start	Date of Completion	
				Awarded	Actual			As per LOA	Actual

## RECORD OF PASSENGER ROPEWAY OPERATION &amp; MAINTENANCE

S.No	Clients Name Address & Contact No.	Location	Type of Ropeway	Brief Technical Details of Ropeway	Date of Commissioning	Date of Commencement of Operation & Maintenance	Performance Record & Remarks

This is to certify that ropeways operated & maintained by self have not met with any fatal accident.

## SEAL AND SIGNATURE OF THE BIDDER

Note:

1. In support of having completed above works attach self attested copies of the completion certificate from the owner/client indicating the name of work, the description of work done by the bidder, date of start, date of completion, value of contract and value of material supplied free of cost by client.
2. Information must be furnished for works carried out by the bidder in his own name as a prime contractor or proportionate share as member of a joint Venture. In the latter case details of contract value including extent of financial participation by partners in that work should be furnished.

Signature of tenderer or his/their power of attorney holder with date, full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
Bhubaneswar – 751010 (Odisha) Page 18

**SOLVENCY CERTIFICATE**

(On the letter head of Bank)

This is to certify that to the best of our knowledge and information, M/s \_\_\_\_\_  
\_\_\_\_\_ having their registered office at \_\_\_\_\_  
\_\_\_\_\_ a customer of our bank is a reputed Company with a  
good financial standing and can be treated as solvent to the extent of Rs. \_\_\_\_\_  
\_\_\_\_\_.

This certificate is issued without any guarantee or risk and responsibility on the Bank or any  
of its officers

Sd/-

**Name of the Bank/Branch Name,  
address &**

**Seal of the Bank/Branch**

**CERTIFICATE CONFIRMING THE AVAILABILITY OF STAFF/MANPOWER**

This is to certify that I/We shall deploy the essential staff/manpower as specified in the tender, if I/We am/are awarded the work of \_\_\_\_\_ (name of work) as per the details indicated below I/We agree that the staff/manpower indicated below is the minimum essential for the project execution and in addition to these, other staff/manpower necessary to complete the work successfully and in time, shall also be deployed by me/us.

Position	Name	Years of Experience (general)	Years of Experience in Proposed Position (Ropeway)

**SEAL AND SIGNATURE OF THE BIDDER**

---

Signature of tenderer or his/their power of attorney holder with date, full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
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**CERTIFICATE CONFIRMING THE AVAILABILITY OF MACHINERY AND EQUIPMENT**

This is to certify that I/We shall deploy the essential machinery and equipment as specified in the tender, if I/We am/are awarded the work of \_\_\_\_\_ (name of work) as per the details indicated below. I/We agree that the equipment indicated below is the minimum essential for the project execution and in addition to these, other machinery and equipment necessary to complete the work successfully and in time, shall also be deployed by me/us

Item of Equipment	Make and Age (Years)	Condition (new, good, poor)	Owned

**SEAL AND SIGNATURE OF THE BIDDER**

---

Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
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**PROFORMA FOR SUBMISSION OF PAST CONTRACTUAL PERFORMANCE**

(Affidavit on non-judicial stamp paper of Rs 20/- duly attested by Notary/Magistrate)

This is to certify that We, M/s \_\_\_\_\_ ,  
in submission of this offer,

- i) Have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements;
- ii) Do not have records of poor performance such as abandoning the work, not properly completing the contract, litigation history, financial failures or fatal accident in self operated ropeway plants etc.
- iii) Business has never been banned with us by any Central/State Govt. Departments/Public Sector Undertakings or Enterprises of Central/State Govt.
- iv) Have submitted all the supporting documents and furnished the relevant details as per the prescribed format.
- v) The information and documents submitted with the tender by me/us are correct and I/we am/are fully responsible for the correctness of the information and documents submitted by me/us.

**SIGNATURE AND SEAL OF THE BIDDER**

---

Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

General Manager(Mech.) ,OCCL,  
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**DATA REQUIREMENT REGARDING CONSORTIUM/JOINT VENTURE PROPOSED**

Information pertaining to consortium/Joint venture proposed to be engaged by BIDDER. Generally such information shall include the following but not limited to:

- a) Joint Venture/Consortium Agreement in case of Consortium/Joint venture bidder
- b) Authorisation of One partner as Lead Partner (Proforma 7)
- c) Extent of participation of each firm with detailed break up of work to be executed by him/them
- c) Technical background of joint venture/partner/consortium firms proposed
- d) Experience on Passenger Ropeway job
- e) Financial background of each partner
- f) Organizational set up
- g) Other relevant details which emphasizes suitability of the concerned parties for the job to be performed by them towards execution of the contract.

**SEAL & SIGNATURE OF THE LEADER BIDDER**

**FORMAT FOR POWER OF ATTORNEY FOR APPOINTING THE LEAD MEMBER**  
[On Requisite Stamp Paper]

KNOW ALL MEN by these presents that we, [name of the company], a company incorporated under, having its Registered Office at [Address of the Company] (Hereinafter referred to as Company)

WHEREAS the Company along with \_\_\_\_\_ and \_\_\_\_\_ (give name and registered office address) is forming a joint venture/ consortium to submit a Technical and Financial Bid in response to the Tender for the \_\_\_\_\_ (Name of Work) \_\_\_\_\_ issued by OCC Ltd and is desirous of appointing an attorney for the purpose thereof.

Whereas the Company deems it expedient to appoint M/s \_\_\_\_\_ (name of Company, registered office address) as the Attorney of the Company.

NOW KNOW YE ALL BY THESE PRESENTS, that \_\_\_\_\_ [name of company] do hereby nominate, constitute and appoint [name the lead member of company] as its true and lawful Attorney to do and execute all or any of the following acts, deeds and things for the Company in its name and on its behalf, that is to say:

- a. To act as the Lead Member of the Joint Venture/ Consortium for the Purposes of the Project.
- b. In such capacity, to act as the Company's official representative for submitting the Technical and Financial bid for the Project and other relevant documents in connection therewith.
- c. To sign all papers for bids, offers, Project documents, necessary documents, papers, applications, representations and correspondence necessary and proper for the purpose aforesaid;
- d. To tender documents, receive and make inquiries, make the necessary corrections and clarifications to the Project documents, as may be necessary
- e. To sign and execute contracts relating to the Project including variation and modification thereto
- f. To represent the Company at meetings, discussions, negotiations and presentations with Owner, Competent Authorities and other Project related entities;
- g. To receive notices, instructions and information for and on behalf of the Company;
- h. To execute the Contract Agreement for and on behalf of the company
- i. To do all such acts, deeds and things in the name and on behalf of the Company as necessary for the purpose aforesaid.

AND the Company hereby covenant with the said Attorney to ratify and confirm all and whatever the attorney may lawfully do or cause to be done by virtue of these presents.



IN WITNESS WHEREOF the Company puts its hand and seal to this Power of Attorney on this [day, month & year]

The common seal of [name of the company] was here unto affixed pursuant to a resolution passed at the meeting of Committee of Directors held on \_\_\_ day \_\_\_\_\_ of, (Year) \_\_\_ \_\_\_\_\_ in the presence of [name & designation of the person] and countersigned by [name & designation of the person] of the company of [name of the company]

The common seal of [name of the company) [Name & designation of the person]

**LETTER OF SUBMISSION OF TENDER  
(To be typed by Contractor on his letter head)**

From:

To:

Name of the Work: \_\_\_\_\_

Ref: Tender No. \_\_\_\_\_

Dear Sirs,

- 1 Having examined the Drawings, Conditions of Contract, Specifications, incorporated in the tender document for the execution of the above named works, and having visited and examined the site of the said works, I/We the undersigned, offer to execute, complete and maintain the whole of the said works in conformity with the said drawings, conditions of contract, specifications, Bill of Quantities/Price bid etc. for the sum as indicated in the Bill of Quantities/Price bid or such other sum as may be ascertained in accordance with the said conditions.
- 2 Should this tender be accepted I/we undertake to commence the work within 10 (Ten) days of issue of the Letter of Acceptance for the work and further undertake to complete and deliver the whole of the works comprised in the contract within 24 (Twenty-four) calendar months from the date of issue of Letter of Acceptance/ Letter of Award or handover clear project land and receipt of all statutory clearances whichever is later.
- 3 I/We agree to abide by this tender for a period of 6 months from the date of opening of the bid/or such extended period as may be mutually agreed as prescribed in clause 7.0 of the Instruction to Bidders and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
4. A sum of Rs. \_\_\_\_\_ towards earnest money in the form of \_\_\_\_\_ in terms of clause 7.0 of the Instructions to bidders, is enclosed herewith.
5. Unless and until an agreement is prepared and executed, this tender together with your written acceptance thereof, shall constitute a binding Contract between us.
6. We understand that you are not bound to accept the lowest or any tender you may receive.
7. Name of the partners of the firm authorized to sign  
\_\_\_\_\_  
\_\_\_\_\_

**or**

Name of person having power of attorney to sign the contract (Certified true copy of the Power of Attorney should be attached)

**8. Correspondence address of Contractor:-**

(The bidder should write his address and other details below at which the correspondence shall be made regarding this tender. In case of any change in the address provided below contractor has to inform OCCL immediately).

- a) Correspondence Address: \_\_\_\_\_
- b) Telephone No (along with STD Code): \_\_\_\_\_
- c) Fax/Email ID: \_\_\_\_\_
- d) Name of Contact Person: \_\_\_\_\_

All the correspondence shall be made by OCCL at the above provided address / phone / Fax numbers only.

Yours faithfully,

**SIGNATURE(S) OF THE BIDDER(S)**

Permanent address \_\_\_\_\_

Local address \_\_\_\_\_

Note: The Bidder is to fill up the blanks in the above form before signing and submitting the tender.

**ACCEPTANCE LETTER****(To be typed by Contractor on his letter head)**

Dated. \_\_\_\_\_

To. \_\_\_\_\_

\_\_\_\_\_

Sir,

Sub: **No-counter Conditional Acceptance of Tender Conditions**

Ref : Tender No \_\_\_\_\_

Name of the work: \_\_\_\_\_

1. I have read and examined all the conditions in the tender document for the work of Passenger Ropeway System at Patali Shrikeshetra, Subarnapur District, Odisha and we hereby unconditionally accept the tender conditions in entirety for the above work.
2. **I/We hereby submit our tender and undertake to keep our tender valid for a period of 6 (Six) months from the date of opening of tender.**
3. I/We undertake to execute the above items strictly in accordance with the requirements and particulars/specifications stipulated in the tender documents.
4. I/we hereby further undertake that during the said period:-I/we shall not vary/alter or revoke my/our tender during the validity period of tender. I/we have quoted for the complete tender.
5. I/we undertake to abide by the terms and conditions as stipulated in your tender documents and as amended thereafter.
6. I/we have not enclosed any conditions/deviations to conditions of tender in the Price Bid.
7. I/we agree that in case of any condition found to be quoted by us in the Price bid my/our tender will be rejected and my/our earnest money is liable to be forfeited.
8. This undertaking is in consideration of OCCL agreeing to open my tender, consider and evaluate the same for the purpose of award of work in terms of provisions of tender documents. Should this tender be accepted, I/we also agree to abide by, fulfill, and comply with all the terms, conditions and provisions of the above mentioned tender documents.

I hereby submit Earnest Money deposit of Rs. \_\_\_\_\_ through Bank Draft/Pay Order No. \_\_\_\_\_.

Signature along with Seal of the company

(Duly authorised to sign the Tender on behalf of the Contractor)

Name \_\_\_\_\_

Designation \_\_\_\_\_

Name of the Company \_\_\_\_\_

Date & Postal address \_\_\_\_\_  
\_\_\_\_\_

WITNESS

Signature \_\_\_\_\_

Date \_\_\_\_\_

Name and address

Telephone No.

Fax No./ Email ID:

**CONTRACT AGREEMENT  
FOR CONSTRUCTION OF PASSENGER ROPEWAY SYSTEM AT  
PATALI SHRIKSHETRA, ODISHA**

CONTRACT AGREEMENT FOR THE WORK OF \_\_\_\_\_  
dated \_\_\_\_\_ (day) \_\_\_\_\_ (month) \_\_\_\_\_ (year) \_\_\_\_\_  
\_\_\_\_\_ (in words) between M/s \_\_\_\_\_,  
having registered office at \_\_\_\_\_  
\_\_\_\_\_

hereinafter called the "CONTRACTOR" (which term shall unless excluded by or repugnant to the subject or context include its successors and permitted assignees) of the one part and the Odisha Construction Corporation Ltd., Bhubaneswar having Central office at Bhubaneswar, India, acting through its Managing Director and includes his successors and assigns, hereinafter called "Owner".

WHEREAS the Owner is desirous that certain works should be executed viz. Construction of a Passenger Ropeway at Patali Shrikeshetra, Subarnapur District, Odisha on turnkey basis and has by Letter of Acceptance dated \_\_\_\_\_ accepted a tender submitted by the contractor for the execution & completion of such works.

Now THIS AGREEMENT WITNESSETH as follows:

1. In this agreement words and expressions shall have the same meaning as are respectively assigned to them in the conditions of contract hereinafter referred to.
2. The following documents in conjunction with Addendum/ Corrigendum to Tender Documents shall be deemed to form and be read and construed as part of the agreement viz:
  - a) This Form of Agreement.
  - b) The Letter of Acceptance.
  - c) The Priced Bid (Vol. 2).
  - d) The Technical Specifications.( Vol 1)
  - e) Tender Drawings.
  - f) The Special Conditions of Contract (Vol. 1)
  - g) The General Conditions of Contract (Vol. 1)
  - h) The Instructions to Bidders (Vol. 1)
3. The aforesaid documents shall be taken as complementary and mutually explanatory of one another, but in the case of ambiguities or discrepancies, shall take precedence in the order set out above.

4. In consideration of the payment to be made by the Owner to the contractor as hereinafter mentioned, the contractor hereby covenants with the Owner to execute, complete and maintain the works in conformity in all respects within the provisions of the contract.
5. The Owner thereby covenants to pay to the contractor in consideration of the execution, completion of the works at contract price at the time and in the manner prescribed by the contract.
6. The several parts of the agreement has been read and fully understood.

In WITNESS whereof the parties hereto have caused their respective common seals to be hereinto affixed (or have herewith set their respective hands and seals) the day and year first above written.

SIGNED, SEALED AND DELIVERED BY

For and on behalf of  
OWNER

For and on behalf of  
CONTRACTOR

Signature  
Name  
Designation

Signature  
Name  
Designation

Witness

1. Signature  
Name  
Address

Signature  
Name  
Address

2. Signature  
Name  
Address

Signature  
Name  
Address

**FORM OF BANK GUARANTEE TOWARDS SECURITY DEPOSIT**

(ON NON -JUDICIAL PAPER OF APAROPRIATE VALUE IN THE  
NAME OF THE BANK)

To:

The Managing Director,  
Odisha Construction Corporation Ltd.,  
(Government Of Odisha Undertaking)  
Regd. Office : Unit-VIII, Gopabandhu Nagar,  
Bhubaneswar-751 012

Name of the work: \_\_\_\_\_

Dear Sir(s)

1. In consideration of Odisha Construction Corporation Ltd.. (Hereinafter called OCC) representing through its The Managing Director having the Central Office at Bhubaneswar, Odisha, India having agreed to exempt M/s. \_\_\_\_\_ hereinafter called "the said Contractor(s)" from the demand, under the terms and conditions of an agreement No. \_\_\_\_\_ dated \_\_\_\_\_ made between OCC, Bhubaneswar and the Contractor for \_\_\_\_\_ (name of work) (hereinafter called "the said agreement"), of security deposit for the due fulfillment by the said Contractor(s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. \_\_\_\_\_ only, we (hereinafter referred to as the bank) at the request of M/s. \_\_\_\_\_ (Contractor(s)) do hereby undertake to pay to the OCC an amount not exceeding Rs. \_\_\_\_\_ only against any loss or damage caused to or suffered or would be caused to or suffered by the OCC by reason of any breach by the said Contractor(s) of any of the terms & conditions contained in the said agreement.
2. We, \_\_\_\_\_ do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the OCC stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the OCC by reason of breach by the said contractor(s) of any of the terms & conditions contained in the said agreement or by reason of the contractor(s) failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only).
3. We, undertake to pay to the OCC any money so demanded notwithstanding any dispute or dispute raised by the contractor(s)/ Supplier(s) in any suit or proceeding pending before any court or Tribunal relating thereto our liability under this present being absolute and unequivocal.
4. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under the contractor(s)/supplier(s)/shall have no claim against us for making such payment.

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Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

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General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
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5. We, \_\_\_\_\_ (name of the bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the OCC under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till The Managing Director, OCC., certified that the terms and conditions of the said agreement have fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee is made on us in writing on or before \_\_\_\_\_, we shall be discharged from all liability under this guarantee thereafter.

6. We, \_\_\_\_\_ (name of the bank) further agree with the OCC that the OCC shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the OCC against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the OCC or any indulgence by the OCC to the said contractor(s) or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

7. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s) /Supplier(s).

8. We, \_\_\_\_\_ (name of the bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the OCC in writing.

9. Notwithstanding anything contained herein above our liability under this guarantee shall:

- a. be limited to a sum of Rs. \_\_\_\_\_ only).
- b. stand completely discharged and all your rights under this guarantee shall stand extinguished if no claim or demand made upon us in writing on or before \_\_\_\_\_.

For \_\_\_\_\_

(indicate the name of bank)

Bank Guarantee No. \_\_\_\_\_

Date \_\_\_\_\_

**INDEMNITY BOND**

Name of the work- (On Non-Judicial Stamp paper of appropriate value)

KNOW all men by these presents that I/we \_\_\_\_\_ (Name of Contractor with address) \_\_\_\_\_ do hereby execute Indemnity Bond in favour of \_\_\_\_\_

(1) Odisha Construction Corporation Ltd.(OCC), Bhubaneswar, Odisha

THIS DEED WITNESSETH AS FOLLOWS:

I/we \_\_\_\_\_ (Name of Contractor) hereby do indemnify and save harmless OCC, Bhubaneswar from:

- 1) Any third party claims, civil or criminal complaints/liabilities site mishaps and other accidents or disputes and/or damages occurring or arising out of any mishaps at the site due to faulty work, negligence, faulty construction and/or for violating any law, rules and regulations in force, for the time being while executing/executed civil, electrical & mechanical works by me/us.
- 2) Any damages, loss or expenses due to or resulting from any negligence or breach of duty on the part of me/us or any sub contractors/s if any, servants or agents.
- 3) Any claims by an employee of mine/ours or of sub-contractors if any, under the workman compensation act and employers' Liability act,1939 or any other law rules and regulations in force for the time being and any acts replacing and/or amending the same or any of the same as may be in force at the time and under any law in respect of injuries to persons or property arising out of and in the course of execution of the contract work and/or arising out of and in the course of employment of any workman/employee.
- 4) Any act or omission of mine/ours or sub-contractor/s if any, our/their servants or agent which may involve any loss, damage, liability, civil or criminal action.

IN WITNESS WHEREOF THE \_\_\_\_\_

HAS SET HIS/THEIR HANDS ON THIS DAY OF \_\_\_\_\_

SIGNED AND DELIVERED BY THE AFORESAID \_\_\_\_\_

IN THE PRESENCE OF WITNESS:

1 \_\_\_\_\_

2 \_\_\_\_\_

**FORMAT FOR POWER OF ATTORNEY FROM THE LEAD MEMBER  
APPOINTING DESIGNATED PERSON  
[On Requisite Stamp Paper]**

KNOW ALL MEN by these presents that we, [Name of the company], a company incorporated under the Companies Act, \_ \_ \_ \_ \_ , having its Registered Office at [Address of the Company] \_ \_ \_ \_ \_ (hereinafter referred to as Company):

WHEREAS the Company has been authorized by \_ \_ \_ \_ \_ and \_ \_ \_ \_ \_ (give names and registered office addresses), vide its respective Power of Attorney, to act as the Lead Member of the Consortium/ Joint Venture bidding for the Project.

WHEREAS in response to the tender for \_ \_ \_ \_ \_ (Name of Work) \_ \_ \_ \_ \_ , the Company is submitting a Technical and Financial Bid on behalf of the Consortium/ Joint Venture for the Design, Finance, Construction, Operation and Maintenance of the \_ \_ \_ \_ \_ (Name of Work) to the \_ \_ \_ \_ \_ (Client) and is desirous of appointing an attorney for the purpose thereof.

Whereas the Company deems it expedient to appoint Mr. \_ \_ \_ \_ \_ son of \_ \_ \_ \_ \_ resident of \_ \_ \_ \_ \_ , holding the post of \_ \_ \_ \_ \_ as the Attorney of the Company.

NOW KNOW YE ALL BY THESE PRESENTS, that \_ \_ \_ \_ \_ [name of the lead member company] do hereby nominate, constitute and appoint [name & designation of the person] as its true and lawful Attorney so long as he is in the employment of the Company to do and execute all or any of the following acts, deeds and things for the Company in its name and on its behalf, that is to say:

- a. To act as the Company's official representative for submitting the Technical and Financial Bid for the said Project and other relevant documents in connection therewith.
- b. To sign all papers for all bids, offers, project documents, necessary documents, papers, applications, representations and correspondence necessary and proper for the purpose aforesaid;
- c. To tender documents, receive and make inquiries, make the necessary corrections and clarifications to the Project documents, as may be necessary
- d. To sign and execute contracts relating to the Project, including variation and modification thereto
- e. To do all such acts, deeds and things in the name on behalf of the company as necessary for the purpose aforesaid.

The common seal of [name of the company] was here unto affixed pursuant to a resolution passed at the meeting of Committee of Directors held on \_ \_ \_ \_ \_ day \_ \_ \_ \_ \_ of \_ \_ \_ \_ \_ , in the presence of [name & designation of the person] and countersigned by [name & designation of the person] of the company of [name of the company]

The common seal of [name of the company]

[Name & designation of the person]

**FORMAT FOR POWER OF ATTORNEY TO AUTHORISED SIGNATORY  
POWER OF ATTORNEY**

(To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant Stamp Act. The stamp paper to be in the name of the firm/company who is issuing the Power of Attorney).

We, M/s \_\_\_\_\_ (name of the firm/company with address of the registered office) hereby constitute, appoint and authorize Mr / Ms \_\_\_\_\_ (name and residential address) who is presently employed with us and holding the position of \_\_\_\_\_ as our attorney, to do in our name and on our behalf all or any of the acts, deeds or things necessary or incidental to our bid for the work \_\_\_\_\_ (name of work) including signing and submission of applicable proposals, participating in the meetings, responding to queries, submission of information / documents and generally to represent us in all the dealings with OCCL or any other Government/Agency or any person, in connection with the works until culmination of the process of bidding till the Contract Agreement is entered into with OCCL and thereafter till the expiry of the Contract Agreement.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

(Add in the case of a Consortium/Joint Venture)

Our firm is a Member / Lead Member of the Consortium of \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.

Dated this the Day of \_\_\_\_\_

(Signature and name of authorized signatory)

(Signature and name in block letters of all the remaining partners of the firm, Signatory for the Company)

Signature of the Power of Attorney Holder

**Witness 1:**

**Name:**

**Address:**

**Occupation:**

**Witness 2:**

**Name:**

**Address:**

**Occupation:**

**FORM OF BANK GUARANTEE TOWARDS BID SECURITY**

(ON NON -JUDICIAL PAPER OF APAROPRIATE VALUE IN THE NAME OF THE BANK)

To:  
The Managing Director  
Odisha Construction Corporation Limited  
Rasulgarh, Bhubaneswar

Name of the work: \_\_\_\_\_

Dear Sir(s)

1. Know all men by these present that we \_\_\_\_\_ (Name of Bank) of India, having our registered office at \_\_\_\_\_ (hereinafter called "The Bank") are bound unto Odisha Construction Corporation Limited (hereinafter called OCCL) representing through its The Managing Director having Central Office at Unit-VIII, Gopabandhu Nagar, at Bhubaneswar, Odisha, India in sum of Rs. \_\_\_\_\_ for which payment well and truly to be made to OCCL , the Bank bind himself, his successors and assigns by these presents.
2. Whereas \_\_\_\_\_ ( Name of Tenderer) (hereinafter called " The Tenderer") has submitted his tender against No \_\_\_\_\_ for construction of a Passenger Ropeway at Patali Shree Keshetra, Subarnapur District, Odisha (hereinafter called "The Tender").
3. Whereas the Tenderer is required to furnish a Bank Guarantee for the sum of Rs \_\_\_\_\_ (Amount in figures and words) as EMD/Bid Security against the tenderer offer's as aforesaid.
4. And Whereas \_\_\_\_\_(Name of Bank) have, at the request of Tenderer, agreed to give this guarantee as hereinafter contained.

We further agree as follows:

- (i) That OCCL may without affecting this guarantee grant time or other indulgence to or negotiate further with the tenderer in regard to the conditions contained in the said tender and thereby modify these conditions or add thereto any further conditions as may be mutually agreed upon between OCCL and the Tenderer.
- (ii) That the guarantee herein before contained shall not be affected by any change in constitution of our Bank or in the constitution of the Tenderer.
- (iii) That this guarantee commences from the date hereof and shall remain in force till:
  - a. The Tenderer, in case his tender is accepted by the Employer, executes a formal agreement after furnishing the performance Security on Scheduled Commercial Banks or

- b. Fifty six days after the date of validity or the extended date of validity of the Tender, as the case may be; whichever is earlier.
- (iv) That the expression "The Tenderer" and "The Bank" herein used shall, unless such an(interpretation is repugnant to the subject or context, include their respective successors and assigns.

THE CONDITIONS of this obligation are:

- (i) if the Tenderer withdraws his Tender during the period of Tender validity specified in the Form of Tender, or
- (ii) if the Tenderer refuses to accept the corrections of errors in his Tender, or
- (iii) if the Tenderer having been notified of the acceptance of his Tender by the Employer during the period of tender validity:
  - a. fails or refuse to furnish the Performance Security and/or
  - b. fails or refuses to enter into a Contract within the time limit specified in the tender

5. We, \_\_\_\_\_ do hereby undertake to pay to OCCL up to the amount upon receipt of his first written demand, without the OCCL having to substantiate his demand provided that in his demand OCCL will note that the amount claimed by him is due to him owing to the occurrence of any one or more of the conditions (i), (ii), (iii) a or (iii) b mentioned above, specifying the occurred condition or conditions.

Signature of Authorized official of the Bank

For \_\_\_\_\_

(indicate the name of bank)

Bank Guarantee No. \_\_\_\_\_

Date \_\_\_\_\_

**IMPLEMENTATION SCHEDULE FOR PROJECT**

<b>Sl. No.</b>	<b>Activities</b>	<b>Time Period (in months)</b>
1	Date of Start	D
2	Survey & Geotech	D+1
3	Profile drawing	D+2
4	Detailed Design, Drawings & calculation of Civil, Mechanical & Electricals	D+4
5	Foundation of Lower Terminal Station (LTS), Upper Terminal station (UTS) & Towers	D+10
6	Supplies of all Structural, Mechanical & Electrical	D+14
7	Completion of LTS , UTS civil work & erection of tower	D+18
8	Erection of All mechanical & Electrical items	D+22
9	Testing & Commissioning	D+24

**(\*) D = Date of issuance of Letter of Intent (LOI)**

**PERFORMANCE GUARANTEE**

To,  
 The Managing Director  
 Odisha Construction Corporation Limited  
 Bhubaneswar

Dear Sir,

M/s \_\_\_\_\_ have taken tender for the work of \_\_\_\_\_ at the tender condition of contract provide that the contractor shall pay a sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) as security deposit as performance guarantee in the form therein mentioned. The form of payment of security deposit include guarantee executed by Scheduled Bank, undertaking full responsibility indemnify **OCCL** in case of default. The said \_\_\_\_\_ has approached us and at their request and in consideration of their promises we Bank of \_\_\_\_\_ having its head office \_\_\_\_\_ at have agreed to give such guarantee as hereinafter mentioned.

1. We, \_\_\_\_\_ hereby agreed and undertake that if in your opinion any default is made by \_\_\_\_\_ in performing any of the terms and or conditions of the agreement or if in your opinion he commits any breach of the contract or there is any demand by you against M/s \_\_\_\_\_ then on notice to us by you we will on demand and without reference to M/s \_\_\_\_\_ immediately pay to you, in any manner in which you may direct, the said amount of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) or such portion thereof as may be demanded by you not exceeding the said sum and as you may be from time to time required. Our liability to pay is not dependent or conditional on your proceeding against the contractor and we shall be liable to pay the aforesaid amount as and when demanded by you merely on a claim being raised by you and even before any legal proceedings are taken against the contractor.

2. You will have full liberty without reference to us and without effecting this guarantee, postpone for any time or from time to time the exercise of the powers and rights conferred on you under the contract with the said M/s. \_\_\_\_\_ and to endorse or to forbear from endorsing any power or rights or by reason of time being given to the said M/s \_\_\_\_\_ which under law relating to the sureties would but for the provisions have the effect releasing us.

3. The guarantee herein contained shall not be determined or affected by the liquidation or winding up, dissolution or charge of constitution or insolvency of the said M/s \_\_\_\_\_ but shall in all respects and for all purpose be binding and operative until payment of all money due to you in respect of such liability or liabilities.

4. Our liability under this guarantee is restricted to Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only). Our guarantee shall remain in force until \_\_\_\_\_ unless a suit or action to enforce a claim under Guarantee is filed against us within six months from \_\_\_\_\_ (which is date of expiry of guarantee) all your rights under the said guarantee shall be forfeited and we shall be relieved and discharged from all liabilities thereunder.

Signature of tenderer or his/their  
 power of attorney holder with date,  
 full name, designation and official seal

General Manager(Mech.) ,OCCL,  
 Central Workshop, Rasulgarh,  
 Bhubaneswar – 751010 (Odisha) Page 40



5. We have power to issue this guarantee in your favour under memorandum and articles of association and the undersigned has full power to do under the power of attorney dated \_\_\_\_\_ granted to him by the Bank. NOTSWITHSTANDING ANYTHING herein before contained, OUR liability under the guarantee is restricted to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only).

Our guarantee shall remain in force until dated unless a suit or action to enforce a claim under the guarantee is filed against us within six months from the expiry date, all your rights under said guarantee shall be forfeited and we shall be released and discharged from all liabilities, thereunder.

FOR BANK OF

\_\_\_\_\_  
Chief Manager and Constituted Attorney

Dated: \_\_\_\_\_

**GENERAL POWER OF ATTORNEY**

To all to whom these presents shall come,. We, M/s \_\_\_\_\_  
 \_\_\_\_\_ and others, represented by its  
 Managing Partner, \_\_\_\_\_ son of Sh. \_\_\_\_\_  
 \_\_\_\_\_ aged about \_\_\_\_\_ residing at \_\_\_\_\_  
 \_\_\_\_\_ send greetings:-

Whereas our firm has been allotted works by \_\_\_\_\_ In  
 the execution of work \_\_\_\_\_  
 \_\_\_\_\_

Whereas we M/s \_\_\_\_\_  
 \_\_\_\_\_ have authorized \_\_\_\_\_  
 \_\_\_\_\_ aged \_\_\_\_\_ son of \_\_\_\_\_  
 resident of \_\_\_\_\_ to execute the said works  
 and for that purpose are desirous to appoint, nominate and constitute Shri \_\_\_\_\_  
 \_\_\_\_\_ to do the following acts, things and deeds in our name and  
 on our behalf, that is to say:-

1. To act as our Official representative for the works under execution in terms of the work orders, to sign and execute agreements, work orders.
2. To receive stores materials for the execution of works, from \_\_\_\_\_
3. To submit every month and to take or cause to be taken the requisite measurements for the purpose of having the same verified and to sign the Measurement Books in token of acceptance of the measurements made by the officers/officials and recording if any, his protest to the measurements and recoveries and the other and to submit claims thereof.
4. And to receive payments by cheque and also in cash and pass valid receipts to **OCCL**, in respect of the work executed by the Company.
5. And to authorise delegate powers for any specific purposes i.e. to draw stores, sign measurement books etc., on behalf of the firm during his absence or when he could not attend personally.

And we hereby agree to ratify and confirm all the acts, deeds and things done by him lawfully in connection with the work and the above acts, deeds and things done by the said attorney \_\_\_\_\_ shall be deemed to have been done by the firm.

In Witness hereof, I \_\_\_\_\_ Managing Director  
M/s \_\_\_\_\_ as authorised in the partnership  
deed, have executed these presents and common seal of the firm has been affixed on this \_\_\_\_\_  
\_\_\_\_\_ day of \_\_\_\_\_ .

Witness: 1. \_\_\_\_\_  
2. \_\_\_\_\_

Specimen signature of General Power of Attorney Holder

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

## GENERAL CONDITIONS OF CONTRACT

### DEFINITIONS:

1. The "**Contract**" means the documents forming the tender and acceptance thereof and the formal agreement executed between **OCCL** (OWNER) and the contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Owner and all these documents taken together shall be deemed to form one contract and shall be complementary to one another.
2. In the contract the following expressions shall, unless the context otherwise requires, have the meanings hereby respectively assigned to them.
  - a) The **Employer/Owner** shall mean Odisha Construction Corporation Limited, Bhubaneswar (**OCCL**) who is the **Employer/Owner** for the works.
  - b) '**Consultant**' shall mean the Firm/Organization appointed by Odisha Construction Corporation Ltd.(OCCL), Bhubaneswar for the work. Consultant shall act for and on behalf of OCCL.
  - c) The '**Contractor**' shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal representatives of such individual or the persons composing such firm or company or the successors of such firm or company and the permitted assignees of such individual or firm or firms or company.
  - d) The expression '**Works**' or '**Work**' shall unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent and whether original, altered, substituted or additional.
  - e) The '**Site**' shall mean the land and/or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
  - f) The '**Owner/'Engineer**' means the Managing Director/ General Manager (Mech./Civil)/Senior Manager (Mech./Civil)/Manager(Mech./Civil)/Asst. Manager(Mech./Civil), OCCL who shall be in-charge of execution of the work.
  - g) '**Competent Authority / Accepting Authority**' shall mean the authority in CONSULTANT duly authorized to act as such by OWNER for and on behalf of OCCL or authority in OCCL.
  - h) '**Excepted Risk**' are risks due to riots (other than those on account of contractor's employees), war (whether declared or not), invasion, act of foreign enemies, hostilities, Civil war, rebellions, revolution, insurrection, military or usurped power, any acts of Government damages from aircraft, acts of God such as earthquake, lightning and unprecedented floods, avalanche and other causes over which the contractor has no control and accepted as such by the Accepting Authority.

- i) **'Tendered Value'** means the value of the entire work as stipulated in the letter of award.
- j) **'Contract Value'** means the value of the entire work as stipulated in the Letter of Award subject to such additions thereto or deductions there from as may be made under the provision hereinafter contained.
- k) **'Specifications'** means the specifications referred to in the Tender and any modifications thereof or additions thereto as may from time to time be furnished or approved in writing by the Owner.
- l) **'Market Rate'** shall be the rate as decided by the Owner on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage to cover all overheads and profits.
- m) **'Schedule(s)'** referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard schedule of rates of the government with the amendments thereto issued up to the date of receipt of the tender
- n) **'Drawings'** means the drawings referred to in the contract and any modification of such drawings approved in writing by the Owner and such other drawings as may from time to time be furnished or approved in writing by the Owner.
- o) **'Month'** shall means the English Calendar month
- p) **'Commissioning'** shall mean pressing into the service for use of the installation plant(s), equipment(s), on any other section or sub - Section of pertaining to the work of the contractor i.e. total ropeway system after successful testing and trial runs up to the satisfaction of Engineer/ Owner for safe operation and use by public.
- q) **'Commercial Operation'** shall mean the successful operation of a system or sub-systems for revenue earning purpose.

Where the context so requires, words imparting the singular only also include the plural and vice-versa. Any reference to masculine gender shall whenever required include feminine gender and vice-versa.

## CLAUSES OF CONTRACT

### CLAUSE 1 : Guarantee

#### CLAUSE 1(A) : Initial Security Deposit-

The contractor shall provide OWNER with an Initial Security Deposit for the due and faithful performance of the contract for a sum equal to 2% (Two percent) of the accepted tendered amount. After receipt of full ISD, the EMD received along with the tender would be returned. If the bidder desires, so the EMD can be converted to ISD & the balance amount of ISD need to be deposited by the successful bidder. If the bidder does not deposit such ISD within the stipulated time, EMD would be forfeited and agreement cancelled with encashment of BG submitted against mobilization advance.

Such guarantee shall be in the form of a Bank Guarantee from any Scheduled Bank in India on the format already agreed upon. The bank guarantee shall be furnished within 15 days from the date of Letter of Award and shall be valid till completion of the Defect Liability / Guarantee period.

### CLAUSE 2 SECURITY DEPOSIT

The Contractor shall permit the Owner / Client at the time of making any payment to him for work done under the Contract to deduct an amount of 5% of the gross amount of each running bill as a Security Deposit and this Deposit / Retention amount may be withdrawn when it becomes Rs.10.00 lakh same can be withdrawn against submission of equivalent amount of Bank Guarantee issued by a Scheduled Commercial Bank. The Security Deposit / Bank Guarantee will be released after the guarantee period of the project.

### CLAUSE 3: Compensation for delay

3.1 If the contractor fails to maintain the required progress in terms of Clause 5 or to complete the work and clear the site on or before the contract or extended date of completion, without justification in support of the cause of delay, he may be called upon without prejudice to any other right or remedy available under the law to OWNER on account of such breach, to pay as compensation an amount calculated at the rates stipulated below or such smaller amount as the competent authority in OWNER (whose decision in writing shall be final and binding) may decide on the amount of contract value of the work for every completed day/week (as applicable) that the progress remains below that specified in Clause 6 or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified. The decision of Owner shall be final and binding on the contractor under this clause.

Completion period (as @ 0.50% of the contract value per month originally stipulated) exceeding of delay to be computed on per day basis 3 months provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 5% of the contract value of the work on the contract value of items of work for which separate period of completion is originally given.

3.2 The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other Contract with Owner.

#### **CLAUSE 4: When Contract can be Determined**

4.1 Subject to other provisions contained in this clause the Owner may without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date for completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases: -

- a) If the Contractor, without reasonable cause, fail to commence the work within 10-days of the date of issue of LOA or has been suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Owner (which shall be final and binding) he will be unable to secure completion of the work by the date for completion or extension thereof and continues to do so after a notice in writing of 15 (Fifteen) days from the Owner.
- b) If the Contractor persistently neglects to carry out his obligations under the Contract and/or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 15 (Fifteen) days after a notice in writing is given to him in that behalf by the Owner.
- c) If the contractor having been given by the Owner a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or other-wise improper or unworkman- like manner shall omit to comply with the requirements of such notice for a period of Fifteen days thereafter.
- d) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.
- e) If the contractor shall offer or give or agree to give to any person in OWNER service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for OWNER;
- f) If the contractor shall enter into a contract with OWNER in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Accepting Authority/Owner;
- g) If the contractor shall obtain a contract with OWNER as a result of wrong tendering or other non-bonafide methods of competitive tendering or by submitting wrong and misleading information and documents about their qualification;

- h) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport to do so, or if any application be made under any insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors;
- i) If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Accepting Authority.

4.2 When the contractor has made him liable for action under any of the cases aforesaid, OWNER shall have powers:

- a) To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Owner shall be conclusive evidence). Upon such determination or rescission the Earnest Money Deposit and/or Financial guarantee for performance recoverable under the Contract shall be liable to be forfeited and shall be absolutely at the disposal of OWNER.
- b) To employ labour paid by OWNER and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Owner shall be final and conclusive) against the contractor and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it has been carried out by the contractor under the terms of his contract. The certificate of the Owner as to the value of the work done shall be final and conclusive against the contractor provided always that action under the sub clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the OWNER are less than the amount payable to the contractor at his agreement rates, the difference shall be paid to the contractor.
- c) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be unexecuted out of his hands and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Owner shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by OWNER under this contract or on any other account whatsoever or from his security deposit or the proceeds of sales thereof or a sufficient part thereof as the case may be. If the expenses incurred by OWNER are less than the amount payable to the Contractor at his agreement rates, the difference shall be paid to the Contractor.



d) Any excess expenditure incurred or to be incurred by OWNER in completing the works or part of the works or the excess loss or damages suffered or any may be suffered by OWNER as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to OWNER in law be recovered from any moneys due to the contractor on any account and if such money is not sufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days. If the contractor shall fail to pay the required sum within the aforesaid period of 30 days the Owner shall have the right to sell any or all of the contractor's unused materials, constructional plants, implements, temporary buildings, etc and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance outstanding from the contractor it shall be recovered in accordance with the provision of the contract.

4.3 In the event of anyone or more of the above courses being adopted by the Owner, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of contract. And in case action is taken under any of the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof, or actually performed under this contract unless and until the Owner has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

**CLAUSE 5: Contractor liable to pay compensation, even if action not taken under Clause 4.**

5.1 In any case in which any of the powers conferred upon the Engineer-in-Charge by Clause 3 thereof shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any further case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding one the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof, belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and the binding on the contractor, otherwise the Engineer-in-Charge by notice in writing may order the contractor or his clerk of the works, foreman or other authorised agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) and in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his risk in all respects and the certificate of the Engineer-in-Charge as to the expense of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

## **CLAUSE 6 Time and Extension for Delay**

- 6.1 The time allowed for execution of the Works as specified in the Notice Inviting Tender, shall be the essence of the Contract. The execution of the works shall commence from the 10<sup>th</sup> day of issue of Letter of Award of the work to the contractor. The date of commencement of work refers to date of receipt of Forest, Environment & other Clearance or handing over of site without any encumbrances, whichever is later. If the Contractor commits default in commencing the execution of the work within 10 days of the date of issuance of written orders to commence the work/issue of Letter of Award, OWNER shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.
- 6.2 Within 15 days of the date of issue of the Letter of Commencement/Letter of Acceptance/Letter of Award, the Contractor shall submit a Time and Progress Chart and get it approved by CONSULTANT/ ENGINEER-IN-CHARGE. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Owner and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete 1/8th of the whole of work before 1/4th of the whole time allowed in the contract has elapsed, 3/8th of the work before one half of such time has elapsed and 3/4th of the work before 3/4th of such time has elapsed.
- 6.3 If the works be delayed by:
- i) Force Majeure, or
  - ii) Abnormally bad weather, or
  - iii) Serious loss or damage by fire, or
  - iv) Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
  - v) Any other cause which, in the absolute discretion of the competent authority/ CONSULTANT is beyond the Contractor's control
  - vi) Delay on the part of other contractors or tradesman engaged by Engineer- in-charge in executing work not forming part of the contract then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Owner but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Owner to proceed with the works.
- 6.4 Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

- 6.5 In any such case the competent authority in OWNER may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the contractor by OWNER in writing within 3 months of date of receipt of such request. Non-accepting by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the OWNER without prejudice to any other right/remedy available to OWNER and this shall be binding on the contractor.

#### **CLAUSE 7: Measurements of Work Done**

- 7.1 Owner shall, except as otherwise provided, ascertain and determine by measurement the value in accordance with contract of work done. All measurements of all items having financial value shall be entered in Measurement Book and/or level field book so that a complete record is obtained of all works performed under the contract.

All measurements and levels shall be taken jointly by the Owner or his authorised representative and by the contractor or his authorised representative from time to time during the progress of the work and such measurements shall be signed and dated by the Owner and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.

- 7.2 If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in- Charge or his representative, the Owner and the Department shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorised representative does not remain present at the time of such measurements after the contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Owner or his representative shall be deemed to be accepted by the Contractor.

The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method or measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method or measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.

- 7.3 The contractor shall give not less than seven days' notice to the Owner or his authorised representative in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Owner or his authorised representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Owner's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Owner or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

- 7.4 It is also a term of this contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

**CLAUSE NO.8 : Payment on intermediate certificate / running bills to be regarded as advance.**

- 8.1 The interim or running account bills shall be submitted by the contractor for the work executed on the basis of such record measurements on the format of CONSULTANT in triplicate on or before the date of every month fixed for the same by the Owner. The Owner shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. In the event of the failure of the contractor to submit the bills. Owner shall prepare or cause to be prepared such bill in which event no claims whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be considered entitled by way of interim payment at such rates as decided by the Owner. The admissible amount shall be paid by OWNER within 30 days after the day of the presentation of the bill by the contractor to the Owner along with the account of dismantled materials, if any.
- 8.2 All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Owner relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Owner under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.
- 8.3 Pending consideration of extension of date of completion, interim payments shall continue to be made as herein provided without prejudice to the right of the department to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.
- 8.4 Whenever, there is likely hood of delay in recording detailed measurements for making a running payment, the Owner in his sole discretion on the basis of a certificate from the Manager/Assistant Manager to the effect that the work has been completed up to the level in question make interim advance payments without detailed measurements for work done (other than foundations, items to be covered under finishing items) upto limited level (including sunshade etc.) and slab level, for each floor working out at 75% of the assessed value. The advance payments so allowed shall be adjusted in the subsequent interim bill by taking detailed measurements thereof. The interim bill shall be generally

paid monthly as long as the progress is as per schedule. More than one payment can also be made if the progress is more than the required stipulated progress of work as per the schedule. However, the decision of the Owner in this regard will be final & binding.

## **CLAUSE 9: Completion Certificate and Completion Plans**

9.1 Within ten days of the completion of the work, the contractor shall give notice of such completion to the Owner and within thirty days of the receipt of such notice the Owner shall inspect the work and if there is no defect in the work shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects(a)to be rectified by the contractor and/or(b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution thereof, and not until the work shall have been measured by the Owner. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Owner may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realised by the sale thereof.

### **Clause 9A Contractor to Keep Site Clean**

9A.1 During execution of works, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows, etc. shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Owner shall have the right to get this work done at the cost of the contractor either departmentally or through any other agency. Before taking such action, the Owner shall give ten days notice in writing to the contractor.

## **CLAUSE 10: Payment of final Bill**

10.1 The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Owner whichever is earlier. Further claims shall neither be made by the contractor nor admissible for payment after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Owner, will, as far as possible be made within 3 months, the period being reckoned from the date of receipt of the bill by the Owner, complete with account of materials issued by the Department and dismantled materials:

## **Clause 10A Payment of Contractor's Bills to Banks**

10A.1 Payments due to the contractor may, if so desired by him, be made to his bank instead of direct to him provided that the contractor furnishes to the OWNER (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by OWNER or his signature on the bill or other claim preferred against OWNER before settlement by the Owner of the account or claim by payment to the bank. While the receipt given by such banks shall constitute a full and sufficient discharge for the payment, the contractor, shall wherever possible present his bills duly receipted and discharged through his bankers.

Nothing herein contained shall operate to create in favour of the bank any rights or equities vis-a-vis OWNER.

## **CLAUSE 11 Materials supplied by OWNER**

The OWNER will not supply or procure for the Contractor materials of any description including cement and steel and the contractor shall make his own arrangements thereof at his own cost.

## **CLAUSE 12: Payment of Advances and Recovery**

### **(i) Mobilization Advance**

Mobilization advance not exceeding 20% of the tendered value may be given, if requested by the contractor in writing within 15 days of the order to commence the work. In such a case the contractor shall execute a Bank Guarantee Bond from Nationalized/Scheduled bank as specified by the OWNER for the full amount of such advance to be released.

### **(ii) Interest & Recovery**

The mobilization advance in (i) above shall bear no interest and recovery of such sums advance shall be made by the deduction from the contractor's bill commencing after first 10% at the gross value of works executed and paid, on pro-rata percentage basis to the gross value of work billed in such a way that the entire advance is recovered by the time 90% of the gross value of contract is executed.

(iii) If the circumstances are considered reasonable by the OWNER, the period mentioned in sub clause (ii) above for request by the contractor in writing for grant of mobilization advance may be extended in the discretion of the OWNER.

(iv) The said bank guarantee for advance shall be made for the full amount and valid for the contract period plus 3 months, and be kept renewed from time to time to cover the balance amount and likely period of complete recovery.

## **CLAUSE 13 Dismantled Material Owner property**

13.1 The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as OWNER's property and such materials shall be disposed off to the best advantage of OWNER according to the instructions in writing issued by the Owner.

**CLAUSE 14 Work to be executed in Accordance with Specifications, Drawings, Orders etc.**

- 14.1 The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Owner and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Central Public Works Department or in any Bureau of India Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.
- 14.2 The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

**CLAUSE 15 Deviations/Variations Extent and Pricing**

**15A The Owner shall have power:-**

- (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and
- (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Owner and such alterations omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work and nothing extra shall be admissible.
- 15.4 For buildings and compound walls work up to plinth level or 1.2 meters (4 feet) above ground level whichever is lower excluding items of flooring and D.P.C. but including base concrete below the floors.
- 15.5 For abutments, piers, retaining walls of culverts and bridges, walls of water reservoirs the bed of floor level.
- 15.6 For retaining walls where floor level is not determined 1.2 meters above the average ground level or bed level.
- 15.7 For Roads all items of excavation and filling including treatment of sub-base.

15.8 Any operation incidental to or necessarily has to be in contemplation of tenderer while filing tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.

#### **CLAUSE 16 Foreclosure of Contract due to Abandonment or Reduction in Scope of Work**

16.1 If at any time after acceptance of the tender OWNER shall decide to abandon or reduce the scope of the work for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the Owner shall give notice in writing to that effect to the Contractor and the Contractor shall act accordingly in the matter. The Owner shall compensate the work already done and committed by the Contractor.

16.2 The Contractor shall be paid full amount as per agreed billing schedule for works executed at site and, in addition, a reasonable amount as certified by the Owner which decision shall be final and binding on the Contractor, for the items hereunder mentioned which could not be utilized on the work to the full extent in view of the foreclosure:

16.3 Any expenditure incurred on preliminary site work, e.g. survey, Geotech investigation, design, temporary access roads, temporary labour huts, staff quarters and site office, storage accommodation and water storage accommodation and water storage tanks.

#### **CLAUSE 17: CANCELLATION OF CONTRACT IN FULL OR PART**

If contractor:

- (i) At any time makes default in proceeding with the works or any part of the work with the due diligence and continues to do so after 3(Three) consecutive notices in writing of 15 days gap in each from the Engineer; or
- (ii) commits default to complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 30 days after a notice in writing is given to him in that behalf by the Engineer; or
- (iii) fails to complete the works or items of work within date of completion, on or before the date(s) of completion, and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer; or
- (iv) shall offer or give or agree to give to any person in OWNER service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any action relation to the obtaining or execution of this or any other Contract for OWNER; or
- (v) shall enter into the Contract with OWNER in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the General Manager, CONSULTANT, or
- (vi) shall obtain a Contract with OWNER as a result of wrong tendering or other non-bona fide methods of Competitive Tendering; or



- (vii) being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than the voluntary liquidation for the purpose of amalgamation or reconstruction) - under

any insolvency act for the time being in force or make any conveyance or of his assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or

- (viii) being a company, shall pass a resolution or the court shall made an order, for the winding up of the company, or a receiver or manager on behalf of the debenture, holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or

- (ix) assigns, transfer, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Competent Authority.

The Competent Authority may, without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to OWNER, by a notice in writing to cancel the contract as whole or only such items of work in default from the Contract.

The Owner shall on such cancellation by the Competent Authority have powers to-

- (a) take possession of the site and any materials, constructional plant, implements, stores etc thereon; and/or

- (b) Carry out the incomplete work by any means at risk and cost of the contractor.

On cancellation of the Contract in full or in part, the Owner shall determine what amount, if any, is recoverable from the contractor for completion of the work or part of the work or in case the works or part of the works is not to be completed, the loss or damage suffered by OWNER. In determining the amount, credit shall be given to the contractor for the value of the work executed by him up to the time of cancellation, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor.

Any excess expenditure incurred or to be incurred by OWNER in completing the works or part of the works or the excess loss or damages suffered or may be suffered by OWNER as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to OWNER in law be recovered from any moneys due to the contractor on any account, and if such money are not sufficient the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor shall fail to pay the required sum within the aforesaid period of 30 days the OWNER shall have the right to sell any or all of the contractor's unused materials, constructional plants, implements, temporary buildings, etc. and apply the proceeds of

sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance outstanding from the contractor it shall be recovered in accordance with the provision of the contract.

Any sums in excess of the amounts due to OWNER and unsold materials, constructional plant, etc. shall be returned to the contractor, provided always that if cost or anticipated cost of completion by OWNER of the works or part of the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the contractor.

## **CLAUSE 18 Suspension of Work**

- i) The contractor shall, on receipt of the order in writing of the Owner (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for such time and in such manner as the Owner may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons.
- a) On account of any default on the part of the Contractor, or
  - b) For proper execution of the works or part thereof for reasons other than the default of the contractor; or
  - c) For safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Owner.

- ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:
- a) The contractor shall be entitled to an extension of time equal to the period of every such suspension plus 25% for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part. No compensation whatsoever shall be paid on this account.

## **CLAUSE 19 Action in case work not done as per specifications**

- 19.1 All works under or in course of execution or executed in pursuance of the contract shall at all times be open and accessible to the inspection and supervision of the Owner, his authorised subordinates in charge of the work and all the superior officers, officer of the Quality Control Organisation of the Department and of the Chief Technical Examiner's Office, and the contractor shall, at all times, during the usual working hour and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.
- 19.2 If it shall appear to the Owner or his authorised subordinates in-charge of the work or to the General Manager in charge of Quality Control or his subordinate officers or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided

by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within six months of the completion of the work from the Owner specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Owner in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default.

- 19.3 In such case the Owner may not accept the item of work at the rates applicable under the contract but may accept such item at reduced rates as the Competent Authority may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Owner to be conveyed in writing in respect of the same will be final and binding on the contractor.

#### **CLAUSE 20 Contractor liable for Damages, defects during maintenance period**

- 20.1 Defect Liability Period shall be 12 (twelve) months from the date of Commission of the Ropeway.
- 20.2 If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road curb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wire, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work **within Twelve months** after commissioning or otherwise of its completion shall have been given by the Owner as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Owner cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his Financial guarantee for performance or the proceeds of sale thereof or of a sufficient portion thereof. Financial guarantee for performance of the contractor shall not be refunded before the expiry of **Twelve months** after commissioning or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.
- 20.3 In case the contractor fails to take aforesaid action within 15 days the OWNER shall have right to get the defective portion of work rectified or re-done at the risk and cost of the contractor and recover the amount from Financial guarantee for performance of the contractor. The determination of amount shall be final and binding on the contractor but it shall not exceed 5% of the contract value.

## **CLAUSE 21 Work not to be sublet. Action in case of in solvency**

The contract shall not be assigned or sublet without the written approval of the Owner. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any public officer or person in the employ of OWNER in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Owner on behalf of OWNER shall have power to adopt any of the courses specified in Clause 3 hereof as he may deem best suited to the interest of OWNER and in the event of any of these courses being adopted the consequences specified in the said Clause 3 shall ensue.

## **CLAUSE 22 Execution of the work**

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Owner who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

## **CLAUSE 23 Settlements of Disputes by Arbitration**

All questions and disputes of any kind whatsoever between the parties hereto arising out of or in connection with the contract or execution of the works, whether during the execution of the works or after cancellation, termination, determination, completion of abandonment or any dispute which cannot be settled by mutual discussion, the same will be settled by arbitration. One Arbitrator shall be appointed by each party and these two Arbitrators shall appoint an Umpire as provided under conciliation and Arbitration Ordinance, 1996.

The Jurisdiction of the Tender shall be the State of Odisha with the High Court at Cuttack.

## **CLAUSE 24 Contractor to indemnify Govt. against Patent Rights**

The contractor shall fully indemnify and keep indemnified OWNER against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against OWNER in respect of any such matters as aforesaid the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify OWNER if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Owner in this behalf.

## **CLAUSE 25 Lump sum Provisions in Tender**

When the estimate on which a tender is made includes lumpsum in respect of parts of the work, the contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the Owner

payable of measurement, the OWNER may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Owner shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of the clause.

#### **CLAUSE 26 Action where no Specification are specified**

In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there is no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers specifications, if not available then as per District Specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Owner.

#### **CLAUSE 27 Water Supply**

Water will be supplied to the contractor by the WODC subject to the following conditions:-

- a) During the execution of the project it will be the sole responsibility of the vendor/contractor to arrange temporary water connection at his own arrangement. Whereas prior to one month from trail run/load testing permanent water supply shall be given by WODC to the site. In case of already existing water point at site, the vendor/contractor may avail water supply to execute the work of ropeway with cost of all required additional equipments and permission from the line departments at his own cost.
- b) The OWNER does not guarantee to supply and or maintain uninterrupted supply of water and it will be incumbent on the contractor(s) to make alternative arrangements for water at his/their own cost. In the event of any temporary break down in the water supply, the contractor shall arrange water on his own, so that the progress of his/their work is not held up for want of water. No claim of damage or refund of water charges will be entertained on account of such break down.

#### **CLAUSE 28 Alternate water arrangements**

- i) Where there is no piped water supply arrangement and the water is taken by the contractor from the wells or hand pump constructed by the OWNER no charge shall be recovered from the contractor on that account. The contractor shall, however, draw water at such hours of the day that it does not interfere with the normal use for which the hand pumps and wells are intended. He will also be responsible for all damage and abnormal repairs arising out of his use, the cost of which shall be recoverable from him. The Owner shall be the final authority to determine the cost recoverable from the contractor on this account and his decision shall be binding on the contractor.
- ii) The contractor shall be allowed to construct temporary wells in OWNER land for taking water for construction purposes only after he has got permission of the Owner in writing. No charges shall be recovered from the contractor on this account, but the contractor shall be required to provide necessary safety arrangements to avoid any accidents or damage to adjacent buildings, roads and service lines. He shall be responsible for any accidents or damages caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

### **CLAUSE 29 Electricity supply**

Electricity will be supplied by the contractor/ Vendor for execution of the work at site. In case of already existing power line, the contractor may take power for the work installing required equipments at his own cost along with approval from the line department.

### **CLAUSE 30 Levy/Taxes**

All taxes and duties in accordance with the Laws / Rules / Regulations laid down by Central or State Government will be extra to be paid by the Owner at actual.

After submission of Bid if any new tax, levy & duty is imposed or increased in existing tax, levy duty by the State / Central Government the same shall be paid by the Owner at actual.

### **CLAUSE 31 If relation working in OWNER then the Contractor not allowed tendering**

The contractor shall not be permitted to tender for works in Owner in any case of his near relative is posted as an officer in any capacity in Owner. He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any officer in the Owner. Any breach of this condition by the contractor would render his contract liable to be terminated.

NOTE: By the term "near relatives" is meant wife, husband, parents and grand parents, children and grand children, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws.

### **CLAUSE 32 No Gazetted Engineer to work as Contractor within two years of retirement**

No engineer of gazetted rank or other gazetted officer employed in engineering or administrative duties in an engineering department of the Government of India shall work as a contractor or employee of a contractor for a period of two years after his retirement from government service without the previous permission of Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Government of India as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

### **CLAUSE 33 Compensation during warlike situations**

The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation upto the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged

or destroyed but not already measured and paid for, the compensation shall be assessed by the Competent Authority. The contractor shall be paid for the damages/destruction suffered and for the restoring of the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The Certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.

Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations (a) Unless the contractor had taken all such precautions against air raid as are deemed necessary by the A.R.P. Officer or the Engineer-in-Charge (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.

In the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Competent Authority.

#### **CLAUSE 34 Termination of Contract on death of Contractor**

34.1 Without prejudice to any of the rights or remedies under this contract if the contractor dies, OWNER shall have the option of terminating the contract without compensation to the contractor.

#### **CLAUSE 35 Release of Final Bill after labour clearance**

36.1 Final bill of the work shall not be released till the contractor produces a clearance certificate from the Labour Officer. As soon as the work is virtually completed the contractor shall apply for the clearance certificate to the Labour Officer under the intimation to the OWNER. The OWNER, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the payment on the final bill will be released if otherwise due.

#### **CLAUSE 36 Model Rules for the Protection of Health and Sanitary arrangements for workers.**

37.1 Model Rules for the protection of Health and Sanitary arrangements for workers employed by Central PWD/State PWD or its contractor's and CPWD/State PWD contractor's Labour Regulations with re-enactment and modification shall mutatis-mutandis apply to the OWNER with adoption that :

- a) Any difference to the aforesaid Rules and Regulations shall be deemed to be a reference to the Regulations of OWNER.
- b) Any reference to the CPWD/State PWD shall be deemed to be a reference to the OWNER.

#### **SAFETY CODE**

1. Suitable scaffolds should be provided for workmen for all works that cannot safely done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal and 1 vertical).

2. Scaffolding of staging more than 3.6 m (12 ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and other secured at least 90 cm (3 ft.) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
3. Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12 ft.) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.
4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm. (3 ft.).
5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 ft.) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11 1/2") for ladder unto and including 3 m. (10 ft.) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm. (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of very suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceeding to any such person or which may with the consent of the contractor be paid to compensate any claim by any such person.
6. Excavation and Trenching - All trenches 1.2 m (4 ft) or more in depth, shall at all times be supplied with at least one ladder for each 30 m (100 ft.) in length or fraction thereof.

Ladder shall extend from bottom of the trench to at least 90 cm (3 ft) above the surface of the ground. The sides of the trenches which are 1.5 m (5 ft.) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m (5 ft.) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

7. Demolition - Before any demolition work is commenced and also during the progress of the work:
  - i) All roads and open areas adjacent to the work site shall either be closed or suitably protected.
  - ii) No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.



iii) All practical steps shall be taken to prevent danger to persons employed from risk or fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

8. All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned. The following safety equipment shall invariably provide:

i) Workers employed on mixing asphalted materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to be eyes shall be provided with protective goggles.

iii) Those engaged in welding works shall be provided with welder's protective eye shields.

iv) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

v) When workers are employed in sewers and manholes, which are in active use, the contractors shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public. In addition, the contractor shall ensure that the following safety measure is adhered to:

a) Entry for workers into the line shall not be allowed except under supervision of the Engineer in charge/ Consultant.

b) At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.

c) Before entry presence of Toxic gases should be tested by inserting wet lead acetate paper which changes color in the presence of such gases and gives indication of their presence.

d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.

e) Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

f) The area should be barricaded or cordoned of by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.

- h) The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
  - i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer- in-charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.
  - j) Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
  - k) Air-blowers should be used for flow of fresh air through the manholes. Whenever called for portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.
  - l) The workers engaged for cleaning the manholes/sewers should be properly trained before allowing working in the manhole.
  - m) The workers shall be provided with gumboots or non-sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
  - n) Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.
  - o) If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
  - p) The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.
- vi) The contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 years are employed on the work of lead painting, the following precaution should be taken:-
- a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
  - b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.
  - c) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.

9. An additional clause (viii) (i) of Central Public Works Department Safety Code (iv) the contractor shall not employ women and men below the age of 18 yrs. On the work of painting with product containing lead in any form. Wherever men above the age of 18 years are employed on the work of lead painting, the following principles must be observed for such use:
- i) White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.
  - ii) Measures shall be taken, wherever required in order to prevent danger arising from the application of paint in the form of spray.
  - iii) Measures shall be taken, wherever predictable, to prevent danger arising out of from the dust caused by dry rubbing down and scraping.
  - iv) Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
  - v) Overall shall be worn by working painters during the whole of working period.
  - vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.
  - vii) Case of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority of **OWNER**
  - viii) **OWNER** may require, when necessary medical examination of workers.
  - ix) Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.
10. When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.
11. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions:-
- i) a) These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order. b) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength, and free from patent defects.
  - ii) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to operator.
  - iii) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall plainly marked with the safe working load.  
In case of hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

- iv) In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-Charge. As regard contractors machine the contractors shall notify the safe working load of the machine to the Engineer-in-Charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.
12. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum of the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.
13. All scaffolds, ladders and other safety devices mentioned on described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near place of work.
14. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the Contractor.
15. To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.
16. Notwithstanding the above clauses from (1) to (15), there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

## **MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS EMPLOYED BY ITS CONTRACTORS**

### **1. APPLICATION**

These Rules shall apply to all buildings and constructions works in charge of **OWNER** in which twenty (20) more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contract work is in progress.

### **2. DEFINITION**

Work place means a place where twenty (20) or more workers are ordinarily employed in connection with construction work on any day during the period during which the contract work is in progress.

### **3. FIRST-AID FACILITIES**

- i) At every work place there shall be provided and maintained, so as to be easily accessible during working hours, first-aid boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.

ii) The first-aid box shall be distinctly marked with a red cross on white background and shall contain the following equipment:-

a) For work places in which the contract labour employed does not exceed 50 -

Each first aid box shall contain the following equipment:-

- 6 small sterilized dressings.
- 4 medium size sterilized dressings
- 3 large size sterilized dressings.
- 3 large sterilized burn dressings
- 1 (30 ml) bottle containing a two per cent alcoholic solution of iodine.
- 1 (30 ml) bottle containing salvolatile having the dose and mode of administration indicated on the label.
- 1 snake-bite lancet 1 (30 gms) bottle of potassium permanganate crystals.
- 1 pair scissors.
- 1 copy of the first-aid leaflet issued by the Director General, Factor Advise Service and Labour Institutes, Government of India.
- 1 bottle containing 100 tablets (each of 5 gms) of aspirin.
- Ointment for burns.
- A bottle of suitable surgical antiseptic solution.

b) For work places in which the contract labour exceed 50. Each first aid box shall contain the following equipments:-

1. 12 small sterilized dressings.
2. 6 medium size sterilized dressings.
3. 6 large size sterilized dressings.
4. 6 large size sterilized burn dressings.
5. 6 (15 gms) packets sterilized cotton wool.
6. 1 (60 ml) bottle containing a two per cent alcoholic solution of iodine.
7. 1 (60 ml) bottle containing salvolatile having the does and mode of administration indicated on the label.
8. 1 rolls of adhesive plaster.
9. 1 snake-bite lancet.
10. 1 (30 gms) bottle of potassium permanganate crystals.
11. 1 pair scissors.
12. 1 copy of the first-aid leaflet issued by the Director General, Factor Advise Service and Labour Institutes, Government of India.
13. 1 bottle containing 100 tablets (each of 5 Gms) of aspirin.
14. Ointment for burns.
15. A bottle of suitable surgical antiseptic solution.

iii) Adequate arrangements shall be made for immediate recoupmnt of the equipment when necessary.

iv) Nothing except the prescribed contents shall be kept in the First-aid box.

v) The First-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

vi) A person in charge of the First-aid box shall be a person trained in First-aid treatment, in the work places where the number of contract labour employed is 150 or more.

vii) In work places where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance from the works First-aid posts shall be established and run by a trained compounder. The compounder shall be on duty and shall be available at all labours when the workers are at work.

- viii) When work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or persons suddenly taken ill to the nearest hospital.

#### **4. DRINKING WATER**

- i) In every work place there shall be provided and maintained suitable places easily accessible to labour, a sufficient supply of cold water fit for drinking.
- ii) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.
- iii) Every water supply or storage shall be at a distance of not less than 50 ft. from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and water proof.
- iv) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

#### **5. WASHING FACILITIES**

- i) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.
- ii) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.  
Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

#### **6. LATRINES AND URINALS**

- i) Latrines shall be provided in every work place on the following scale namely:-
- a) Where female are employed there shall be at least one latrine for every 25 females.
- b) Where males are employed there shall be at least one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females or females as the case may be up to the first 100 and one for every 50 thereafter.

- ii) Every latrine shall be under cover and so partitioned off as to secure privacy and shall have a proper door and fastenings.
- iii) Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat resisting non absorbent materials and shall be cement washed inside and outside at least once a year. Latrines shall not be of a standard lower than bore hole system.

- iv) a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women only" as the case may be.  
b) The notice shall also bear the figure of a man or of a woman, as the case may be.
- v) There shall be at least one urinal for male workers upto 50 and one for female workers up to 50 employed at a time provided that where the number of male or female workmen, as the case may be exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females up to the first 500 and one for every 100 or part thereafter.
- vi) a) The latrines and urinals shall be adequately lighted and shall be maintained in clean and sanitary conditions at all times.  
b) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of Public Health Authorities.
- vii) Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.
- viii) Disposal of excreta: - Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of suitable incinerator. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm. Layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn to manure).
- ix) The contractor shall at his own expense, carry out all instructions issued to him by the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the contractors workmen of any charges which may be levied by Municipal or Cantonment Authority for execution of such on his behalf..

## **7. PROVISION OF SHELTER DURING REST**

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 meters (10 ft.) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq.m. (6 sft.) per head.

Provided that the Engineer-in-Charge may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

## **8. CRECHES**

- i) At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under at the age of 6 years. One room shall be used as a play-room for the children and other as their bedroom. The rooms shall be constructed with specification as per clause 19H (ii) a, b & c.

- ii) The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provisions of sweepers to keep the place clean.
- iii) The contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the bedroom.
- iv) The contractor shall provide one ayah to look after the children in the creche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.
- v) The use of the rooms earmarked as creches shall be restricted to children, their attendants and mothers of the children.

## 9. CANTEENS

- (i) In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more is ordinarily employed, an adequate canteen shall be provided by the contractor for the use of such contract labour.
  - ii) The canteen shall be maintained by the contractor in an efficient manner.
  - iii) The canteen shall consist of at least a dining hall, kitchen store room pantry and washing places separately for workers and utensils.
  - iv) The canteen shall be sufficient lighted at all times when any person has access to it.
  - v) The floor shall be made of smooth and impervious materials and inside wall shall be lime washed or colour washed at least once in each year.
  - vi) The premise of the canteen shall be maintained in a clean and sanitary condition.
  - vii) Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.
  - viii) Suitable arrangements shall be made for the collection and disposal of garbage.
  - ix) The dining hall shall accommodate at a time 30 per cent of the contract labour working at a time.
  - x) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs shall not be less than one square meter (10 sft) per diner to be accommodated as prescribed in Sub Rule 9.
- xi)
  - a) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number.
  - b) Washing places for women shall be separate and screened to secure privacy.
- xii) Sufficient tables stools, chair or benches shall be available for the number of diners to be accommodated as prescribed in sub Rule-9.
- xiii)
  - a) (1) There shall be provided and maintained sufficient utensils, crockery, furniture and any other equipment necessary for the efficient running of the canteen.



- (2) The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.
- b)
  - (1) Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.
  - (2) A service counter, if provided, shall have top of smooth and impervious material.
  - (3) Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipments.
- xiv) The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.
- xv) The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No Profit, No Loss' and shall be conspicuously displayed in the canteen.
- xvi) In arriving at the price of foodstuffs, and other article served in the canteen, the following items shall not be taken into consideration as expenditure namely:
  - a) The rent of land and building,
  - b) The depreciation and maintenance charges for the building and equipments provided for the canteen.
  - c) The cost of purchase, repairs and replacements of equipment including furniture, crockery, cutlery and utensils.
  - d) The water charges and other charges incurred for lighting and ventilation.
- e) The interest and amounts spent on the provision and maintenance of equipments provided for the canteen.
- xvii) The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

## **10. ANTI-MALARIAL PRECAUTIONS**

The contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-Charge including the filling up of any borrow pits which may have been dug by him.

11. The above rules shall be incorporated in the contracts and in notices inviting tenders and shall form an integral part of the contracts.

## **12. AMENDMENTS**

Government may, from time to time, add to or amend these rules and issue directions - it may consider necessary for the purpose of removing any difficulty which may arise in the administration thereof.

## CONTRACTOR'S LABOUR REGULATIONS

### 1. SHORT TITLE

These regulations may be called the **OWNER** Contractors Labour Regulations.

### 2. DEFINITIONS

**Workman means** any person employed by **OWNER** or its contractor directly or indirectly through a subcontractor with or without the knowledge of **OWNER** to do any skilled, semiskilled or unskilled manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment are expressed or implied but does not include any person :-

- a) Who is employed mainly in a managerial or administrative capacity: or
  - b) Who being employed in a supervisory capacity draws wages exceeding five hundred rupees per mensem or exercises either by the nature of the duties attached to the office or by reason of powers vested in him, functions mainly of managerial nature : or
  - c) Who is an out worker that is to say, person to whom any article or materials are given out by or on behalf of the principal employers to be made up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of the trade or business of the principal employers and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal employer.
- ii) **Fair Wages** means wages whether for time or piece work fixed and notified under the provisions of the Minimum Wages Act from time to time.
  - iii) **Contractors** shall include every person who undertakes to produce a given result other than a mere supply of goods or articles of manufacture through contract labour or who supplies contract labour for any work and includes a sub-contractor.
  - iv) **Wages** shall have the same meaning as defined in the Payment of Wages Act.
3. i) Normally working hours of an adult employee should not exceed 9 hours a day and in case of child 4 1/2 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.
  - ii) When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week, he shall be paid over time for the extra hours put in by him at double the ordinary rate of wages. Children shall not be made to work extra hours.
  - iii)a) Every worker shall be given a weekly holiday normally on a Sunday in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time irrespective of whether such worker is governed by the Minimum Wages Act or not.
  - b) Where the minimum wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.

- c) Where a contractor is permitted by the Engineer-in-Chief to allow a worker to work on a normal weekly holiday, he shall grant a substituted holiday to him for the whole day on one of the five days immediately before or after the normal weekly holiday and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

#### 4. **DISPLAY OF NOTICE REGARDING WAGES ETC.**

The Contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clear and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers giving the minimum rates of wages fixed under the Minimum Wages Act, the actual wages being paid, the hours of work for which such wage are earned, wages period, dates of payments of wages and other relevant information as per Appendix 'III'.

#### 5 **PAYMENT OF WAGES**

- i) The contractor shall fix wages periods in respect of which wages shall be payable.
- ii) No wage period shall exceed one month.
- iii) The wages of every person employed as contract labour in an establishment or by a contractor where less than one thousand such persons are employed shall be paid before their expiry of seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.
- iv) Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.
- v) All payment of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made from within 48 hours of the last working day.
- vi) Wages due to every worker shall be paid to him direct or to other person authorised by him on his behalf.
- vii) All wages shall be paid in current coin or currency or in both.
- viii) Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.
- ix) A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Chief under acknowledgment. It shall be the duty of the contractor to ensure the disbursement of wages in the presence of any other authorized representative of the Engineer-in-Charge who will be required to be present at the place and time of disbursement of wages by the contractor to workmen.

- xi) The contractor shall obtain from any authorized representative of the Engineer-in-Chief as the case may be, a certificate under his signature at the end of the entries in the register of Wages" or the "Wage-cum-Muster Roll" as the case may be in the following form :

"Certified that the amount shown in column No.....has been paid to the workman concerned in my presence on..... at

## 6. FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES

- (i) The wages of a worker shall be paid to him without any deduction of any kind except the following:-

- a) Fines.
- b) Deductions for the absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.
- c) Deduction for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money or any other deduction which he is required to account, where such damage or loss is directly attributable to his neglect or default.
- d) Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.
- e) Any other deduction which the Central Government may from time to time allow.

- (ii) No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved by the Chief Labour Commissioner.

Note: An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-I.

- (iii) No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

## 7. LABOUR RECORDS

- (i) The contractor shall maintain a **Register of persons employed** on work on contract in Form XIII of the CL (R&A) Central Rules 1971 (Appendix-IV).

The contractor shall maintain a **Muster Roll** register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (R&A) Rules 1971 (Appendix-V).

- (iii) The contractor shall maintain a **Wage Register** in respect of all workmen employed by him on the work under contract in Form XVII of the CL (R&A) Rules 1971 (Appendix-VI).

- (iv) **Register of accident - The** contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:
- (a) Full particulars of the labourers who met with accident,
  - (b) Rate of wages,
  - (c) Sex,
  - (d) Age,
  - (e) Nature of accident and cause of accident,
  - (f) Time and date of accident,
  - (g) Date and time when admitted in Hospital,
  - (i) Period of treatment and result of treatment,
  - (j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.
  - (k) Claim required to be paid under Workmen's Compensation Act,
  - (l) Date of payment of compensation,
  - (m) Amount paid with details of the person to whom the same was paid.
  - (n) Authority by whom the compensation was assessed, and
  - (o) Remarks.
- (v) The contractor shall maintain a **Register of Fines** in the Form XII of the CL (R&A) Rules 1971 (Appendix-XI).
- The contractor shall display in a good condition and in a conspicuous place of work the approved list of acts and omissions for which fines can be imposed (Appendix-X).
- (vi) The contractor shall maintain a **Register of deductions** for damage or loss in Form XX of the CL (R&A) rules 1971 (Appendix-XII).
- The contractor shall maintain a **Register of Advances** in Form XXIII of the CL (R&A) rules 1971 (Appendix-XI II).
- (viii) The contractor shall maintain a **Register of Overtime** in Form XXIII of the CL (R&A) rules 1971 (Appendix-XIV).

## 8. ATTENDANCE CARD-CUM-WAGE SLIP

- (i) The contractor shall issue an **Attendance card-cum-wage slip** to each workman employed by him in the specimen form at (Appendix- VII).
- (ii) The card shall be valid for each wage period.
- (iii) The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.
- (iv) The card shall remain in possession of the worker during the wage period under reference.
- (v) The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.
- (vi) The contractor shall obtain the signature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

## 9. EMPLOYMENT CARD

The Contractor shall issue an **Employment Card** in Form XIV of the CL (R&A) Central Rules 1971 to each worker within three days of the employment of the worker (Appendix-VIII).

## 10. SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a **service certificate** in Form XV of the CL(R&A) Central rules 1971 (Appendix-IX).

## 11. PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 & 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in-Charge or Labour Officer or any other officers authorised by the Ministry of Urban Development in this behalf.

## 12. POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY

The Labour Officer or any person authorised by Central Government on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and the Provisions of these Regulations. He shall investigate into any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

## 13. REPORT OF LABOUR OFFICER

The Labour Officer or other persons authorised as aforesaid shall submit a report of result of his investigation or enquiry to the **OWNER** indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case an appeal is made by the contractor under Clause 12 of these regulations, actual payment to labourers will be made by the **OWNER** after given his decision on such appeal.

- (i) The **OWNER** shall arrange payments to the labour concerned within 45 days from the receipt of the report from the Labour Officer.

## 14. APPEAL AGAINST THE DECISION OF LABOUR OFFICER

Any person aggrieved by the decision and recommendations of the Labour Officer or other person so authorised may appeal against such decision to the **OWNER** within 30 days from the date of decision, forwarding simultaneously a copy of his appeal to the **OWNER** but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

## 15. PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER

- (i) A workman shall be entitled to be represented in any investigation or enquiry under these regulations by:

- (a) An officer of a registered trade union of which he is a member.

- (b) An officer of a federation of trade unions to which the trade union referred to in clause (a) is affiliated.
  - (c) Where the employer is not a member of any registered trade union, by an officer of a registered trade union, connected with the industry in which the worker is employer or by any other workman employed in the industry in which the worker is employed.
- ii) An employer shall be entitled to be represented in any investigation or enquiry under these regulations by:
- (a) An officer of an association of employers of which hi is a member.  
An officer of a federation of associations of employers to which association referred to in clause (a) is affiliated.
  - (b) Where the employer is not a member of any association of employers, by an officer of association of employer connected with the industry in which the employer is engaged or by any other employer engaged in the industry in which the employer is engaged.
- iii) No party shall be entitled to be represented by a legal practitioner in any investigation or enquiry under these regulations.

## **16. INSPECTION OF BOOKS AND SLIPS**

The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorised by the Government on his behalf.

## **17. SUBMISSIONS OF RETURNS**

The contractor shall submit periodical returns as may be specified from time to time.

## **18. AMENDMENTS**

The Central Government may from time to time add to or amend the regulations and on any question as to the application/interpretation or effect of those regulations the decision of the **OWNER** shall be final.

**REGISTER OF MATERNITY BENEFITS**

(Clause 19F of the Condition of Contract) Name and

Name and Address of the Contractor(s) \_\_\_\_\_

Name and location of the work: \_\_\_\_\_

Name of the Employee	Father's / Husband's Name	Nature of Employment	Period of Actual Appointment	Date on which notice of confinement given
1	2	3	4	5

**Date on which Maternity Leave Commenced and Ended**

Date of Miscarriage	In Case of Delivery		In case of Miscarriage	
	Commenced	Ended	Commenced	Ended
6	7	8	9	10

**Leave lay paid to Employee**

In case of Delivery		In case of Miscarriage		Remarks
Rate of Leave Pay	Amount Paid	Rate of Leave Pay	Amount Paid	Remarks
11	12	13	14	15



**SPECIMEN FORM OF THE REGISTER REGARDING  
MATERNITY BENEFIT ADMISSIBLE TO THE CONTRACTOR'S  
LABOUR**

Name of the work		Name of the Contractor	
1	Name of the woman and her husband's name		
2	Designation		
3	Date of appointment		
4	Date with months & years in which she is employed		
5	Date of discharge/dismissal if any		
6	Date of production of certificates in respect of pregnancy		
7	Date on which the woman informs about the expected delivery		
8	Date of delivery/miscarriage/death		
9	Date of production of certificate in respect of delivery/miscarriage		
10	Date with the amount of Maternity/death benefit paid in Advance of expected delivery.		
11	Date with the amount of subsequent payment of maternity benefit		
12	Name of the person nominated by the woman to receive the payment of the maternity benefit of after her death		
13	If the woman dies, the date of her death, the name of the person to whom maternity benefit amount was paid, the month thereof and the date of payment. Signature of the contractor authenticating entries in the register.		
14	Remarks column for the use of Inspecting Officer.		

## LABOUR BOARD

Name of Contractor	
Address of Contractor	
Name and address of Principal Employer	
Name of Labour Enforcement Officer	
Address of Labour Enforcement Officer	
Date	

Sl. No.	Category	Minimum Wage Fixed	Actual Paid	Wage	Number Present	Remarks

Weekly holiday	
Wage period	
Date of payment of wages	
Working hours	
Rest Interval	

**REGISTER OF WORKMEN BY CONTRACTOR**

Name and address of Contractor	
Name and address of Establishment in / under which contract is carried on	
Name and Location of Work	
Name and Address of Principal Employer	

S No	Name and Signature of Worker	Age and Sex	Father's / Husband's Name	Nature of Employment / Designation	Permanent Home address of Workmen	Local Address	Date of commencement of Employment	Signature or Thumb Impression of Workmen	Date of Termination of Employment	Reasons for Termination	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

## Form XVI [Schedule 78 (2) (a)]

## SPECIMEN PROFORMA MUSTER ROLL

Name and address of Contractor			
Name and address of Establishment in / under which contract is carried on			
Name and Location of Work			
Name and Address of Principal Employer		For the month or Fortnight	

Sl No	Name of Workman	Father's / Husband's Name	Sex	Date			Remarks		
				1	2	3		4	5
1	2	3	4						

## Form XVI [Schedule 78 (2)(d)]

## SPECIMEN PROFORMA FOR REGISTER OF WAGES

Name and address of Contractor			
Name and address of Establishment in / under which contract is carried on			
Name of work and Location of Work		Is carried on	
Name and Address of Principal Employer		Wage Period : Monthly/ Fortnightly	

SI No	Name of Workman	SI No in the Register of Workman	Designation and Nature of work done	No of days worked	Units of work done	Daily rate of Wages / Piece rate	Basic Wages	Dearness Allowance	Overtime	Other Cash Payment ( nature of payment to be indicated)	Total	Deductions if any (indicate nature)	Net Amount Paid	Signature or Thumb Impression of Workman	Initial of Contractor or his representative
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

General Manager(Mech.) ,OCCL,  
Central Workshop, Rasulgarh,  
Bhubaneswar – 751010 (Odisha) Page 85

**SPECIMEN PROFORMA FOR WAGE CARD**

Name and Address of Contractor		Date of Issue	
Nature and Location of Work		Designation	
Name of Workman		Month / Fortnight	
Rate of Wages			

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Morning \_\_\_\_\_ Rate \_\_\_\_\_  
 Evening \_\_\_\_\_ Amount \_\_\_\_\_  
 Initial \_\_\_\_\_

Received from \_\_\_\_\_ the sum of Rs. \_\_\_\_\_ on account of my wages.  
 Signature \_\_\_\_\_

*This card is valid for month from the date of issue*

**Form XIX[See Rule 78(2)9b)]**

**SPECIMEN PROFORMA FOR WAGES SLIP**

Name and Address of Contractor \_\_\_\_\_

Name and Father's / Husband's name of workman \_\_\_\_\_

Name and location of the work \_\_\_\_\_

For the week/fortnight/month ending \_\_\_\_\_

Number of days worked \_\_\_\_\_

Number of units worked in case piece rate workers \_\_\_\_\_

Rate of daily wages / Piece rate \_\_\_\_\_

Amount of Overtime wages \_\_\_\_\_

Gross wages payable \_\_\_\_\_

Deduction, if any \_\_\_\_\_

Net Amount of wages aid \_\_\_\_\_

\_\_\_\_\_ Initials of the contractor or his representative

**FORM XIV  
(See Rule 76)**

**SPECIMEN PROFORMA FOR EMPLOYMENT CARD**

Name and Address of Contractor	
Name and address of establishment in / under which contract is carried on	
Name of work and location of work	
Name and address of principal employer	
Number of days worked	
SI No in the register of workman employed	
Nature of employment / designation	
Wage rate (with particulars of unit in case of piece work)	
Wage period	
Tenure of employment	
Remarks	

\_\_\_\_\_  
Signature of Contractor

**Form XV  
(See Rule 77)**

**SPECIMEN PROFORMA FOR SERVICE CERTIFICATE**

Name and Address of establishment in/under which contract is carried on	
Nature and Location of Work	
Name and Address of Principal Employer	
Name and address of workman	
Age or date of birth	
Identification works	
Father's/Husband's name	

SI No	Total Period for which Employed		Nature of Work Done	Rate of Wage (with particulars of unit in case of pieces work)	Remarks
	From	To			
1	2	3	4	5	6



## LIST OF ACT & OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule 5(d) of the Contractor's Labour Regulations to be displayed prominently at the site of work in both English and local language.

- Willful insubordination or disobedience, whether alone or in combination with other.
- Theft, fraud or dishonesty in connection with the contractors beside a business or property of the Employer.
- Taking or giving bribes or any illegal gratifications.
- Habitual late attendance.
- Drunkenness fighting, riotous or disorderly or indifferent behavior.
- Habitual negligence.
- Smoking near or around the area where combustible or other materials are locked.
- Habitual indiscipline.
- Causing damage to work in the progress or to property of the Employer or of the Contractor. Sleeping on duty.
- Malingering or slowing done work.
- Giving of false information regarding name, age, father's name etc.
- Habitual loss of wage cards supplied by the employers.
- Un authorized use of employer's property of manufacture or making of unauthorized articles at the work place.
- Bad workmanship in construction and maintenance be skilled workers which is not approved by the Deptt. and for which the contractors are compelled to undertake rectifications.
- Making false complains and/or misleading statements.
- Engaging on trade within the premises of the establishment.
- Any unauthorized divulgence of business affairs of the employers.
- Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the employer.
- Holding meeting inside the premises without previous sanction of the employers.
- Threatening or intimidating any workmen or employer during the working hours within the premises.

## Form XIII [Schedule 78 (2) (d)]

## SPECIMEN PROFORMA FOR REGISTER OF FINES

Name and Address of Contractor

Name and Address of establishment in/under  
which contract is carried on

Nature and location of work

Name and address of Principal Employer

SI No	Name of Workman	Father's / Husband's Name	Designation and Nature of Employment	Act / Occasion for which fine imposed	Date of Offence	Whether workman showed cause against fine	Name of the person in whose presence explanation was heard	Wage period and wages payable	Amount of fine imposed	Date of which fine realized	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

## REGISTER OF DEDUCTION FOR DAMAGE OR LOGS

Name and Address of Contractor

Name and Address of establishment in/under  
which contract is carried on

Nature and location of work

Name and address of Principal Employer

SI No	Name of Workman	Father's / Husband's Name	Designation and Nature of Employment	Particulars of Damage or loss	Date of Damage or Loss	Whether workman showed cause against deductions	Name of the person in whose presence employee's explanation was heard	Amount of Deduction Imposed	No of Installments	Date of Recovery		Remarks
										First Installment	Last Installment	
1	2	3	4	5	6	7	8	9	10	11	12	13

## REGISTER OF ADVANCES

Name and Address of Contractor

Name and Address of establishment in/under  
which contract is carried on

Nature and location of work

Name and address of Principal Employer

SI. No.	Name	Father's/ Husband's Name	Nature of employment/ Designation	Wage period and wages payable	Date of amount of advance	Purpose (s) for which advance made	No. of installments by which advance to	Date & amount of each installment repaid	Date on which last installment was repaid	Remarks
1	2	3	4	5	6	7	8	9	10	11

**REGISTER OF OVERTIME**

Name and Address of Contractor

Name and Address of establishment in/under which contact is carried on

Nature and location of work

Name and address of Principal Employer

1	2	3	4	5	6	7	8	9	10	11	12
Sl. No.	Name of workman	Father's/ Husband's name	Sex	Designation/ nature of employment	Date on which	Total over time worked or production in case of piece rate	Normal rate of wages	Over time rate of wages	Over time of earnings	Rate on which overtime	Remarks

# SPECIAL CONDITIONS OF CONTRACT

Where the provisions of the Special Terms and Conditions are at variance with General Conditions of Contract, the provisions of Special Conditions shall prevail.

## ARTICLE 1 - CONTRACTOR'S OBLIGATIONS

### 1.1 Contract Price

1.1.1 The contract price is for providing Ropeway System on turn-key basis as per the Scope of Work and Technical Specifications

1.1.2 Contractor shall execute the work in strict conformity with the provisions of the contract DOCUMENT and with such explanatory detailed drawings and specifications as may be approved from time to time by the OWNER/Consultant, based on general and or detailed design and engineering carried out by CONTRACTOR in line with requirements as per CONTRACT DOCUMENT.

1.1.3 The CONTRACTOR shall be responsible for ensuring that work throughout are executed in the most substantial, proper and workmanlike manner with the quality of material and workmanship in strict accordance with Contract, drawings and specifications and as per sound engineering, industrial practices, and complete the work within the stipulated time period.

Pre Delivery Inspection of materials/ equipments shall be conducted by the OCCL/Consultant, appointed by OCCL for the work, at manufacturer works. At least 15 days notice should be given by the Contractor so as to conduct the PDI.

1.1.4 Contractor is responsible for all activities direct or through their associate or in other form specified in tender. The following activities shall be performed by the Contractor and the methodology of same should be explained in their technical proposal clearly defining the role of contractor/ associate for these activities.

- Survey and Geotechnical investigation.
- Design and drawing
- Supply of all equipment, tools & tackles as per Technical Specifications.
- Payment of GST or any other taxes on any account in terms of clauses 30 of General Conditions of Contract
- Transportation of machinery up to site including insurance.
- Civil works at site

- Erection of all structural, equipment, rope etc
- Supply of Maintenance spares, for three years trouble-free operation of the Ropeway systems
- Provision of O&M manuals
- Final painting
- Supply of Fire protection and fire prevention devices
- Basic passenger amenities at both stations comprising of minimum 2 wash room, and purified drinking water outlet.
- Permanent Electricity supply at both stations before final trial and testing
- Trial run & commissioning

## **1.2 Time of completion**

1.2.1 Time is the essence of contract. The Passenger Ropeway system shall be completed in all respects, commissioned and made ready for operation and opening for use within specified time as given in Instructions to Bidders.

## **1.3 Contract Performance & Clearances from Govt.**

1.3.1 Contractor shall be responsible for the total PERFORMANCE for satisfactory functioning of the system, considering the design parameters given in the scope and technical specifications of the tender documents.

1.3.2 It is well understood that all the standards, recommendations, specifications, regulations and codes effective at the date of submission of BID shall be followed and taken into account.

1.3.3 The Contractor shall arrange all equipment, materials and manpower required for successful completion of the contract within the prices stipulated in the financial bid, and also within the stipulated time.

1.3.4 All statutory clearances from various authorities like Environment, Pollution Control Board etc. Forest, PWD etc shall be arranged by the OWNER / WODC. Necessary information / data shall be furnished by the Contractor.

## **1.4 Designs and Drawings**

1.4.1 The Contractor shall carry out detailed design for various plants and works covered in the Contract Document. Three sets of such detailed designs along with referred codes, standards and practices, calculations, computer runs and other details shall be furnished to Engineer for scrutiny and approval and convey his observations and comments upon receipt of which Contractor

shall promptly cause to get these implemented and resubmit the design for approval at no extra cost. All the Design/Drawings etc will be in English language. The approval of ENGINEER does not absolve the Contractor from its responsibility of providing safe, methodically engineered ropeway plant.

#### **1.5 Contractor's Office at Site**

The contractor shall provide and maintain an office at the site with modern communication like telephone, fax, E-mail etc for his Engineer and staff and such office shall be open at all reasonable hours to receive instructions, notices or other communications.

#### **1.6 Material/ Labour/ Equipments not to be supplied by Engineer/Owner**

1.6.1 The ENGINEER/OWNER shall not be responsible for supply of any material, labour, equipment, tools and plants etc. for safe and successful completion and commissioning of the complete system operation.

1.6.2 The contractor needs to furnish the details of technical staffs with experience and details of machinery to be deployed at site of work for successful completion of the project

#### **1.7 Limitation of Engineer's/Owner's Responsibility**

1.7.1 ENGINEER's / OWNER's liability shall be solely limited to as defined in ENGINEER's / OWNER's responsibilities, conditions of contract and Scope of Work and ENGINEER / OWNER shall in no way be responsible or liable for any other liability or obligation arising out of contractual relations or arrangements with third parties.



## ARTICLE 2 - OWNER'S OBLIGATIONS AND RESPONSIBILITIES

- 2.1 OWNER shall be responsible for following activities:
- a. Owner shall obtain all Statutory Clearances like Forest, Environmental, and Pollution etc. for the execution of project at its own cost.
  - b. OWNER shall provide necessary permission for carrying out the survey in public and private premises, in inhabited and prohibited areas, etc. including issue of notification, if any, under relevant sections of the Land Acquisition Act, or any other Act or Instructions of the Government of India or State Government.
  - c. Land acquisition by the OWNER for all land required for the execution of the Project free from all encumbrances.
  - d. OWNER may provide land for site office, workshop, and workers' hutment's at the location near the work site, if available as mutually agreed upon, at nominal rental basis. Otherwise, the Contractor would have to make their own arrangement.
  - e. In case any compensation is required to be paid for cutting crops, gardens, forests or for any other reasons arising out of the construction and or survey operations, the same shall be paid by the OWNER
  - f. OWNER will perform his obligations such as make necessary payments in reasonable time agreed between OWNER and CONTRACTOR.
  - g. OWNER shall arrange the shifting of electric line, telephone line etc infringing the ropeway alignment
  - h. OWNER shall make all the payments to the contractor directly, on certification by the Engineer.

## **ARTICLE 3 - ENGINEER'S OBLIGATIONS AND RESPONSIBILITIES**

### **3.2 Powers, duties and responsibilities of ENGINEER.**

3.2.1 ENGINEER will act on behalf of OWNER to:

- a. Approve route alignment and location of terminal stations.
- b. Approve design and drawings pertaining to the present contract.
- c. Inspect and test equipment and materials at site and at manufacturer's works and furnish the detail of results for clarification of the OWNER.
- d. Supervise the construction of installation, including civil works, supply, execution and installation of equipment.
- e. Field management and coordination of work to ensure the works are carried out by different agencies with time schedule.
- f. Serve notices as provided hereinafter and give all necessary instructions to the person nominated for that purpose by the Contractor.
- g. Carry out together with contractor the tests and performance tests as provided in relevant articles and furnish the detail of results to the OWNER.
- h. Assistance in commissioning for issue of Completion Certificate and issue of Final Certificates as provided in the relevant articles.
- i. Certify the quality and measurement of the work to effect the payments of work bill(s).
- j. Certification / Approved to Contractors Bill for payment

#### **ARTICLES 4 - GUARANTEES FOR THE EQUIPMENT AND WORK**

- 4.1 The gearbox provided shall provide direct transmission to drive bull wheel. The gear box should have efficiency over 90% and be guaranteed for 5000 hours of operation or minimum of 30 months from the date of supply or 12 months from the date of commissioning whichever is earlier.
- 4.2 The haul rope shall be guaranteed for 6000 hours operation or minimum of 3 years from the date of commissioning whichever is earlier. The Contractor shall be responsible for ensuring 2/3 of tension trolley movement at the end of warranty period, prior to release of final payment. The contract will shorten the rope if needed for free of cost before completion of warranty period.
- 4.3 The items manufactured & supplied by Contractor shall be guaranteed against faulty workmanship and material for a period of 12 calendar months from the date of commissioning or 30 months from the date of dispatch of Major equipment.
- 4.4 The cost of replacement of defective parts during guarantee period as well service shall be borne by the Contractor.

## **ARTICLES 5 - ACCESS TO SITE**

- 5.1 The ENGINEER/ OWNER shall not be responsible for providing additional roads, tracks, strengthening of bridges etc. for safe and successful completion and commissioning of the complete system. The Contractor shall use the existing road system as per the Law, Rules and Regulations of the Government in force, seeking permissions as necessary.

## **ARTICLE 6 - HANDING OVER OF SYSTEM**

- 6.1 The Contractor first complete all works satisfactorily as per the Scope of the Work and commission the ropeway system after carrying out all adjustments/settings of the plant, equipment and ropeway system as a whole. Before handing over the system, a full load (Dummy load) demonstration run of the complete ropeway system meeting the design parameters including safety needs to be conducted for seven working days with eight hours operation daily.
- 6.2 These seven days full load trial runs per day 8 hours along with the issue of Completion Certificate by the ENGINEER would be considered as the basis of the taking over of the Ropeway System by the OWNER.
- 6.3 The Contractor remains responsible for supply and engineering of safe and robust ropeway system.

## **ARTICLE 7 - INSURANCE**

- 7.1 The contractor shall arrange, secure and maintain insurance as may be necessary and for all such amounts to protect his risks as detailed herein. The form and the limit of such insurance as defined herein together with the underwritten thereof in such case shall be as acceptable to the OWNER.
- 7.2 However, irrespective of such acceptance, the responsibility to maintain adequate insurance coverage on comprehensive all risks basis at all times during the period of contract shall be of the contractor. The contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations. Any loss or damage to the equipment during handling, transporting, storage and erection, till such time work is taken over by OWNER shall be to the account of preferring all claims and make good for the damage or loss by way of repairs and/or replacement of the portion of the works damaged or lost. The transfer of title shall, not in any way relieve the contractor of the above responsibilities during the period of the contract.
- 7.3 The contractor shall provide the OWNER with a copy of all insurance policies and documents taken out by him in pursuance of the contract. Such copies of documents shall be submitted to OWNER immediately after such insurance coverage. The contractor shall also inform the OWNER in writing at least twenty (20) days in advance regarding the expiry/cancellation and/or change in any of such documents and insurance revalidation/ renewal etc. as may be necessary well in time. The risks that are to be covered under the insurance shall include but not be limited, to the loss or damage in transit, theft, pilferage, riot, civil commotion, whether conditions, accidents of all kinds, fire etc. The scope of such insurance shall cover the entire value of the work from time to time. All costs on account of insurance liabilities covered under the contract will be on contractor's account and will be included in contract price, however, the OWNER may from time to time during the tendency of the contract, ask the contractor in writing to limit the insurance coverage risks and in such a case the parties to the contract will agree for a mutual settlement for reduction in contract price to the extent of reduced premium accounts.
- 7.4 **INSURANCE FOR STAFF**
- 7.5 The contractor shall insure all his staff and workers/labour working at site against injury, loss of life etc. and no claims of compensation will be entertained by the OWNER in this regard. Contractor shall indemnify the OWNER against all such above claims by his staff.
- 7.6 If the contractor fails to complete the work and clear the site for any particular phase on or before the stipulated completion time of that respective stage or extended period of completion, he shall without prejudice to any other right or remedy of OWNER on account of such breach, pay as agreed compensation amount calculated on the basis of General Conditions of Contract.

7.7 The contractor shall maintain in perfect condition all works executed till the completion of the entire work allotted to him. When phased handing-over is contemplated the provisions mentioned above will apply to each phase.

#### 7.8 Professional Indemnity Insurance

The design involved is in the scope of contractor. To cover the design fault, the contractor shall maintain a Professional Indemnity Policy on behalf of his designers for the period of five years after commissioning of ropeway. The policy shall cover the followings;

- i) Product liability covers including machinery breakdown outside of guarantee cover of the manufacturer.
- ii) Professional indemnity against design, commissioning, testing and maintenance activities.
- iii) The professional indemnity policy issued by a reputed Insurance Company should mention the Client as the beneficiary and covers all sums which the insured professionals become legally liable to pay as damages to third party in respect of any error and/or omission on his/her part committed whilst rendering professional service.
- iv) Legal cost and expenses incurred in defense of the case, with the prior consent of the insurance company, are also payable, subject to the overall limit of indemnity selected.

Only civil liability claims are covered. Any liability arising out of any criminal act or act committed in violation of any law or ordinance is not covered.

The value of Tenedere's professional indemnity insurance shall be as under :

i)	Value of Tenedere's professional indemnity insurance Value of sum	Rs. 50 lacs
ii).	Amount of Third party insurance for any one incident with number of incident unlimited	Rs. 5.00 lacs

## **ARTICLE 8 - PERMISSION OF BLASTING MATERIAL**

- 8.1 Successful bidder will arrange permission for rock blasting and supply the blasting materials, if required for foundation work of Towers and terminal station at his own cost with permission from concerned authorities.



# TECHNICAL SPECIFICATIONS

## 1.0 LOCATION

Patali Shreekshetra is one of the significant historical site as well as holy shrines. It is located at the Trikut Hill at Kotsamalai in the Birmaharajpur Subdivision of Subarnapur District. The proposed project land is surrounding of Chitrakut hill range.

## 2.0 SCOPE OF WORK

2.01 This is a turnkey work for design, supply, erection, testing and commissioning of the **indigenous Passenger** Ropeway System in single section. The ropeway alignment will be between Down Hill and a point near Patali Shrikshetra Gumpha. The alignment is shown in enclosed drawing No.**L/PATALISHREEKSHETRA/SURVEY/01**

2.02 The ropeway system used in the alignment would be Mono-cable Jigback Gondola 4-Seater cabin system. The broad technical specifications of the proposed ropeway will be described later.

- The Plan & Longitudinal section drawing of the alignment is enclosed at the back of this chapter.
- All interested bidders are requested to visit
- Visit site and see for themselves the terrain and logistics (particularly approach to different locations, taking carriage of construction materials & equipments to individual locations etc) of the alignment.
- Bidder before submitting the bid must consider the cost of the following:
  - Suitable transportation system/methods for transportation of heavier material from works to ropeway location/terminals
  - Making approaches, if any, to all work locations, wherever possible.

2.03 The job would be based on the General Conditions of Contract, Special Conditions of Contract and Scope of Work as broadly defined in the respective sections of Bid Document No.1. The broad scope of work as defined in the following paragraphs is indicative but not limited to the following only and the Contractor shall carry out all the items of work for the successful completion and commissioning of the above ropeway system.

### BROAD SCOPE OF WORK

- (i) Final location survey, soil investigation, system design and detailed engineering.
- (ii) Fabrication, supply of all plants, materials, equipment and all safeties according to the specifications and design.

- (iii) Execution of all Civil Engineering works i.e terminal stations, trestles etc. including its slope protection work, if required, excluding Passenger Amenities which will be provided by the Owner.
- (iv) Supply of Control system consisting Frequency controlled AC/DC drive with built in PLCs.
- (v) Installation and erection of all plants and equipment for the system.
- (vi) Provide internal and external electrification of the terminals including fixtures and lamps.
- (vii) Necessary fire extinguishers as per local regulations need to be provided in the terminal stations.
- (viii) Installation of Two independent mode of communication for operation, efficient and safe functioning of the ropeway system.
- (ix) Testing and commissioning.
- (x) Supply of Maintenance spares, tools & tackles for three years trouble-free operation of the Ropeway systems **(un-priced list to be furnished in Technical Bid)**.
- (xi) Supply of 3 copies of Operation and Maintenance Manual along with one complete set of reproducible G.A drawings and assembly drawings in Auto CAD in CD for the ropeway system in English only.
- (xii) Guarantee Performance of the ropeway system for 12 months from the date of commissioning.
- (xiii) Basic passenger amenities at both stations comprising of minimum 2 wash room, and purified drinking water outlet.
- (xiv) Permanent Electricity supply at both stations before final trial and testing
- (xv) Before handing over of the system, the contractor shall carry out Mock drill for Rescue operation to be adopted at any stage in case of requirement and train the user agency at site in this regard.

2.04 The installation of above ropeway systems shall be executed according to the recommendations of Indian Standards. The latest recommendations/specifications shall apply.

### 3.0 ROPEWAY SYSTEM AND CAPACITY

Ropeway system will be Mono Cable Jigback Gondola System with design capacity of 150 persons per hour capacity. The ropeway when installed should be capable of minimum 8 hours of operation per day and for 340 days annually.

### 4.0 SYSTEM DESCRIPTION AND BROAD DESIGN & SPECIFICATION

S. No	ITEM	Parameters
1	System	Fixed Grip Mono-cable Jig back Gondola system
2	Design Capacity, Persons Per Hour (PPH)	150 @ max speed
3	Line speed, m/sec	0.0 - 4.0
4	Horizontal distance, m	534
5	Vertical rise, m	175
6	Inclined length, m	601
7	Cabin capacity, seater	4
8	Alignment	Straight
9	No of cabins	2 groups of 3 Nos. cabins in each group
10	Total no. of cabins	6
11	Type of cabin	Automatic door locking system with sensor arrangement. Additional two nos. of cabin shall be kept on standby.
12	Rope	36mm, 6x19S Right Hand Langs Lay, PP Core, 1770 N/mm <sup>2</sup> Grade
13	Location of Tension system	Upper Station
14	Type of Tension System	Hydraulic
15	Location of Drive gears	Lower Station
16	Main drive motor, KW	75
17	Engine drive for emergency, HP	20, Automotive engine with integral Clutch
18	Line Rescue System	Vertical by ladder, safety belt and Independent arrangement
19	Stand by D.G. set @ Lower station, KVA	150KVA
20	Stand by D.G. set @ Upper station for station lighting, KVA	5 KVA

**Note:**

- a. The above parameters are only for the guidance of bidder. The details of the specification to be quoted shall be the prerogative of the bidder but the Alignment, Ropeway System, Capacity, & Specifications as per Cl. 2.0, 3.0, 8.0 & 9.0 needs to be adhered to. Location of Drive/Tensioning arrangement is indicative and bidder may change as per their design. The design of ropeway shall be done on the basis of parameter of Earthquake **Zone**.
- b. Bidder to submit the following in Technical part:
  - I. Broad technical specifications of the system offered
  - II. Time cycle calculations confirming the system capacity,
- c. The values for ropeway length and ground levels are approximate. Length and level difference between stations may vary by + 5% during the detailed design.
- d. In accordance with the scope of work and bidder's own assessment of site condition, the bidder shall quote their best offer. **Site visit of the bidder before submission of bid, therefore is very important as bidders are expected to obtain their own information.**
- e. All components of the ropeway system & other equipment shall be designed for trouble free operation in actual climatic conditions prevalent at site.
- f. It may be noted that this is a turnkey contract including design as per the scope of work. The bidder may consider adjustment/variation in the terminal locations so that these are located at the most appropriate locations within the limits of variations mentioned in (c) above subject to the approval of the OWNER. In case of any deviation in aerial distance, level distance, enhancement of height with Height N – width of civil foundation, any additional length of retaining wall, in any changes on civil work will be found no additional payment will be made to the vendor/contractor. It is the sole responsibility of the contractor to execute the work as per the site condition demands and as per the drawing approved by the high power committee of the OCCL. In no case any price escalation will be allowed.

## **5.0 DESIGN PARAMETERS**

- 5.1 All the station structures and trestles shall be designed supplied and constructed to withstand the effects of wind, earthquake, temperature variations, geo technical conditions etc. prevalent at the site.  
**INTERCHANGEABILITY OF ALL PARTS TO BE MAINTAINED.**

- 5.2 For the above, Indian Codes would be considered as guidelines. Some of the main design parameters to be considered are given below:

**Climatic features**

For the design of structures, a temperature variation from (+) 12 deg. C to (+) 45 deg. C has been considered.

**Humidity**

Variation in humidity level from 30% to 97% has been considered for the system design.

**Wind Pressure**

Wind pressure shall be as per the relevant Indian Standard i.e. installation should not be in operation above 60 km per hour winds.

**Seismic Factors**

All the structure shall be designed as per the provisions of the IS Codes as applicable for Seismic Zone taking into account the seismic coefficient and related importance factor.

5.3 **Geology**

It would be necessary for specific geo-technical investigations to be carried out to ensure proper foundation design at the location of important locations, like stations, trestles etc.

**6.0 REQUIRED SPECIFICATIONS (Plant & Equipments)**

- 6.1 The guiding Technical specification shall be as follows;

6.1.1 Station Equipment

The Lower terminal station and Upper terminal station shall house the drive & return arrangement, control room and ticketing booths with 3 meters of Q rails.

6.1.2 Drive / Return bull wheel

This shall have required diameter sheave which shall be manufactured out of fabricated structural steel-/cast steel.

Suitable track for disc type emergency BRAKE should be provided on drive bull wheel during the fabrication

Sheave should be properly stress relieved after fabrication. All machining to be done, after welding.

Rope groove of Drive and Return Bull Wheels should be fitted with rubber liner.

## **INTERCHANGEABILITY OF ALL PARTS TO BE MAINTAINED**

### **6.1.3 Main Driving Arrangement**

The drive unit is proposed at Lower Terminal point. This shall comprise of 1 no., 75 KW DC/AC motor or as Calculated and proven by the ropeway company for design capacity. The main gearbox shall be a suitably rated Bevel Helical unit with horizontal input shaft and a vertical output shaft that gives drives directly to the drive sheave. The input shaft is connected through a brake drum coupling and weight operated thruster /pneumatic actuator released brake (service brake) to main prime mover.

A disc / calliper brake need to be provided on the rim of the drive sheave. This comes in operation automatically when:

- a. Normal stop/Emergency stop push button is pressed. In case of normal stop, the brake is actuated after some time delay.
- b. The ropeway speed exceeds the limit of set speed.
- c. The tripping of drive motor due to actuation of security devices (limit switches) located at line, station, tension trolley and tension weight.
- d. The wind speed exceeding set operating speed.
- e. In case of power failure.

### **6.1.4 Hauling rope Tension Gear**

This shall comprise of drive/return sheave mounted on rollers with hydraulic or monolithic weight. The sheave is allowed to move on its rollers over a length of track to take up stretch in the hauling rope and variation in hauling rope length resulting from the movement of carrier along the line. The weight ensures that a known tension is applied to the hauling rope at all times.

### **6.1.5 Line Sheave**

#### **Body**

Should be made of CAST IRON / Aluminum to B S 1452, Grade -12. Item should be free from casting defects like non-metallic inclusion, void, crack etc. Tapering on the bore shall not be permitted. Interchangeability to be maintained.

#### **Cover**

Should be made of MS to IS: 2062/ Aluminum. To be machined all over. Interchangeability to be maintained.

Rope groove  
Should be fitted with rubber liner.

#### 6.1.6 Hanger & Cabins

The cabins should be have 4 seat capacity with auto lock door closing facility and carrier is suspended from the forged grip through a hanger made of steel. The bidder will also provide one maintenance cabin made out of steel tubular structure with wire mesh for maintenance of tower and assemblies thereon.

#### 6.1.7 Haul Rope

The haulage rope shall be 36mm, 6x19S Right Hand Langs Lay, PP Core, 1770 N/mm<sup>2</sup> Grade or as calculated by the ropeway company and proven; should conform to relevant Specification. Factor of safety will be as per relevant standard.

### 6.2 Control System

6.2.1 The ropeway shall operate at variable speed by means of DC/AC electrical motor and the chopper control /VVVF drive system. Frequency controlled AC drives should be suitable for regenerative braking. The chopper control /VVVF drive system should be maintained at **minimum** 0.85 p.f at different load condition by providing power factor correction system. The DC/AC motors shall be of SDPD / TEFX construction and should be suitable for operating and duty conditions.

The drive shall have the capacity to handle most unfavorable design load condition considering loaded cabins on steepest slope on one direction and empty cabins on the reverse direction and starting at this condition.

There will be smooth controlled start and stop of the ropeway. Different sensors, safety devices feedback element and annunciation should be provided.

Necessary safety devices and emergency stop push button stations should be provided to make the system complete safe. The safety will not be only ensured at Lower stations but will also be ensured at Upper stations and Line. The main drive motors will be tripped automatically tripped in case of activation any safety switch at Line or at stations.

AC/DC drive should be provided with forward/ reverse operation, speed variation (auto and manual) and inching facilities. The bidder shall provide details in the bid.

Accessibility for the maintenance of all structures & equipment shall be provided. . The bidder shall provide details in the bid.

Copy of software for running PLC/VVFD should be provided after installation of control panel.

The different provisions & other necessary features not limited to followings shall be provided:

- i) Contactors/HRC fuses in the incoming side of Main drive.
- ii) All the field inputs, Lower & Upper station faults shall be deployed on main control desk.
- iii) Common resetting for all faults on main control desk and indication on panel.
- iv) Cabin location on line to be shown on panel.
- v) Cut off values for acceleration/ de-acceleration to be programmed and fixed.
- vii) DG supply indication on main panel & control desk.
- viii) Tripping circuit in case of over speed of wind and wind indicator.
- ix) Fuse blocks in all panels.
- x) DC meters for measuring DC voltage & DC circuit.
- xi) IO (input output) list of panel
- xii) Continuous monitoring of ratio of rpm between motor and drive bull wheel
- xiii) Prevention of roll back
- xiv) Pre determined slow down of system due to de acceleration
- xv) System starts when both stations are in ready mode
- xvi) Additional PLC card in the system for any changes in future to be incorporated.
- xvii) All necessary "Line Surge Arrestor Modules" to be provided to shield the PLC and other capital components of the panel.

6.2.2 Technical specification for some of the electrical works is given at Annexure-IV-2.

### 6.3 Protection

Other standard protections, such as, electrical protection for LT, lightning protection, earthing etc. shall be provided. Terminal stations, DG set, Drive needs to be earthed independently. Towers to be earthed as necessary, to ensure recommended earth resistance.



## 6.4 Safety Requirements

All safety controls at line and stations will be there as per relevant Indian standard. Wind speed monitoring system will be there, although Indian standard does not warrant for such safety. This shall also include:

### a) Operational Safeties

- i) Over speeding.
- ii) Availability of service and emergency brakes.
- iii) Provision of adequate number of emergency stop buttons at various important locations.
- iv) Limiting the movement tensioning devices by provision of limit switches.
- v) Limiting the maximum movement of cabin in stations
- vi) When power supply is cut off.

### b) Electrical and Fire Protection

- i) Lightning (separate earthing for electronic component shall be provided for its safety).
- ii) Earthing( at stations as well as on each trestle)
- iii) Adequate protection for LT equipments.

a. The fire protection system shall be provided at all the stations as per local fire regulations and as required in the IS specification.

## 6.5 Communication

One land line telephone system shall be provided for communication with each station. The system basically consists of wall mounted sets (1 no. for each station) and followed by wire connection between the stations.

The wireless system (4 nos. handsets) will be provided to communicate while maintenance / rescue operation on line and for other reasons, when communication through telephone system will not be possible. Permission for using the sets will be arranged by OWNER.

Requisite intercom system (multi channel) with provision to external telephone shall be installed at Lower & Upper station of each ropeway sections for communication between two stations & operating and security personnel.

## 6.6 Communication Cable

All communication and control signals should be drawn through a multi core communication cable from Lower to Upper station to carry trip and annunciation signals. This can be suspended from catenary wire and supported on ropeway steel structures. The cable should be compatible to bring all the information to main Control desk. This should be of the following types:

- > Control/ instrumentation cable (min. 0.75 Sqmm size) with minimum no. of pairs capable of bringing all the field inputs individually, Lower / Upper station faults to the control panel or as required to ensure all communications indicated above and keeping at least 3 pairs as standby. This should be overall and individual sheathed cable for communication purpose.
- > Telephone cables should be of min. 0.5 mm dia outdoor aerial.

## 6.7 Ropeway Clearance

The profile design of the ropeway shall take into consideration clearances specified in the ropeway codes.

## 6.8 Power Supply

The power supply of 415V + 10% with frequency of 50 cycles + 3% will be made available by the Contractor at both Terminal Location prior to one month from trail run/load testing.

## 7.0 SPECIFICATIONS - CIVIL WORKS

### 7.1 General Specifications

The design, material and workmanship for civil, structural shall conform to latest Indian Standards, Central Public Works Department Specifications.

### 7.2 Details of Civil Works

7.2.1 The civil works will essentially consists of station building, trestles, pressure frame, hold down and equipment foundation. Both Ropeway Stations will be minimalistic design and structural shed only to cover the ropeway equipment. There will be no additional passenger amenities.

7.2.2 The main activities regarding civil works to be done are detailed below:

- a. Detailed field survey of alignment given for construction.
- b. Fixing of final locations of stations and trestles on the ground.

- c. Requisite geo-technical investigation as per IS codes at tower and terminal locations to determine design parameters for the foundations against super-imposed loads.
- d. Detailed designs and drawings for foundations and structures for trestles, tension tower, pressure frame (PF) if any, hold down (HD) if any, stations etc.
- e. Civil works for tension tower, trestles & stations including any special precautionary measures required for slope protection.
- f. Fabrication and erection of towers and all structures as per relevant specification of steel etc.
- g. Works for completion of stations and other structures, including of roofing and side cladding of stations.

### 7.3 Land for Station Building and Housing (Lower and Upper)

Sl. No.	Location	Area Required
1	Lower Terminal point	600 sq.m
2	Upper Terminal point	400 sq.m

Note : Bidders to indicate area, size and layout as required as per their concept.

The operating floor at each station will have an operation floor made of RCC or graded slab as may be required. The floor will be covered with anti skid tiles of good quality.

#### **Trusses & Structural Members**

The clear height of underside of roof truss from station floor level will be as per design specification. Steel work made of standard rolled M.S. sections conforming to IS 2062. M.S. galvanized bolts are provided for stations and station housing structural. Bolts and Nuts shall conform to IS 1364, 3757, 6623 and 6649.

#### **Roofing Panel**

MS Tubular truss portal with subtle square fluted steel roof cladding to cover the ropeway equipment station floor. The steel base material of sheet shall be manufactured from 0.45 mm (nominal) base metal thickness with minimum 550 MPa Yield Strength. The sheets shall have a hot dip metallic Aluminum-Zinc alloy coating of Aluminum (55%) & Zinc (45 %) with total mass coating of 150 gms/sq.mt on both sides as Zinalume AZ150 or equivalent coating as per AS 1397.

The coated sheets shall be factory painted and oven-baked conforming to AS/NZS 2728 type 3- 4, the total coating thickness of 35  $\mu$ m (nominal) of Colorbond steel quality paint system of (preferences Tata Blue Scope/ Jindal /

Donbo steel make, comprising of nominal 20 | m exterior coat on top surface and nominal 5 | m reverse coat on back surface over nominal 5 mm primer coat on both surfaces of approved colour shade. The sheet shall have brand marking of the manufacturer giving product details on the back of the sheet at every 1 m c/c for confirming genuinity of the material. The sheet shall have 1000 mm (nominal) effective cover width, nominal min. 28 mm deep ribs with subtle square fluting in the five pans at nominal 200-220 mm centre to centre. The end rib shall be designed for anti-capillary action, to avoid any seepage of water through the lateral overlap.

Wall flashing and trims (gable, corner, framed opening, accessories, etc.) are manufactured from same color, finish and thickness as wall panels (or manufacturer's recommendation).

Roof flashing and trims (parapet flashing, transition trims, expansion joint trims and ridge caps) are manufactured from same color, finish and thickness as roof panels.

The steel sheet shall be fastened with min. 40 |xm zinc coated or min. 20 ixm Zinc-Tin alloy coated, Hex head, self-drilling screw as class 3 fasteners of approved make (Buildex or equivalent) with EPDM washer on each crest of sheets for connecting with purlin (or as per design) perpendicular to the sheeting and in the centre of the corrugation or rib. The fastener size shall be calculated as per the design requirement.

Note:

The housing details must adhere to:

- a. The roof structural supports shall not be used for integration of load from the system.
- b. RCC foundations and columns to support RCC slab at operating level.
- c. The station machinery, such as, mechanical parts of the driving gear, electrical equipment, ropes and cabins shall not be source of danger to the ropeways personnel.

#### **7.4 Operators Cabin and Maintenance Workshop at Drive station**

At the drive station one operators' cabin should be provided within the station housing which should be designed to provide unimpeded view of operations.

The floor of the maintenance workshop shall be laid over compacted gravel and sand finished with 40 mm cement concrete IPS floor. Adequate number of standard doors (steel) and windows (steel) needs to be placed.

## **7.5 Fabrication of Structures**

### **7.5.1 Trestle**

- a. Lattice construction and made of standard rolled mild steel sections and plates to IS 2062. H.T. bolts are provided for trestles. The Contractor is also free to provide Tubular Towers.
- b. Each tower to be provided with ladder and hoop of standard size for easy movement of maintenance staff with tools.

### **7.5.2 Cross Arm & Trestle head**

- a. Cross Arm construction made of made of mild steel sections and plates. H.T. bolts are provided for trestles.
- b. Pedestal bearing plates for saddles should not be of less than 10mm thickness.

### **7.5.3 Structure for tension trolley**

- a. The track for tension trolley movement must be in straight line without any bend.
- b. The structure holding the tension trolley should not show any sag in between during the movement of trolley.

### **7.5.4 Welding**

- a. All welds shall be free from defects like, blowholes, slag inclusions, crack etc. Joints connected by fillet welds shall conform to IS 816 and 823. Fillet welds larger than 8mm shall be made with two or more passes. Covered electrodes shall conform to IS 814.
- b. Butt welds shall be done so as to secure sound metal and complete fusion throughout the entire cross section and shall be terminated at the ends of a joint in a manner that ensures the soundness. All but weld should prefer double "V" penetration
- c. The authorized person of the OWNER, according to standard procedures laid down in the relevant Indian Standards shall may do inspection of welds.

### **7.5.5 Specification of Steel Works**

All fabricated steel structural work should be in accordance with IS 800 and IS 9595. The tolerance of fabricated structure should be in accordance with IS 7215 unless specified otherwise.

- a. Holes on structural members should be drilled.
- b. H Bolts for structural member and for all type of towers.
- c. Assembly and erection: To ensure that structures are in correct places and level, arrangement should be made to thoroughly brace and guy the structures temporarily at all stages of erection.

**7.6 Weather Protection**

- i) Galvanized Structure:  
All line towers, HD, PF, tension tower their bolts and fixtures, mounted mechanicals and platforms and any other exposed structures on the line shall be galvanized and chromate to a minimum thickness of 65 microns. The hanger shall also be galvanized and phosphated / chomated as per relevant Indian Standard.

**All exposed members of the system should be hot dipped galvanizing.**

- ii) Painted Structure :  
The surface of steelwork (Columns, trusses & purlins) for station housing to be painted after abrasive hand cleaning (ST2) and thoroughly cleaned of all loose, mill scale, rust, dust etc. Two coats of Red Oxide Zinc phosphate primer shall normally be applied and left to dry before commencement of erection to give dry film thickness of 75±5 microns per coat with successive one final coat of enamel paint with dry film thickness of 65±5 microns shall be applied. All Grips must be painted with Aluminum paint.

**7.7 Make**

Bidders must indicate the MAKE of all bought out items they would like to use. Make of some of the major equipment like motor, diesel engine, alternator etc. are given below.

Item	Make
Diesel Engine	Kirloskar/Greaves/Cummings/ Caterpillar / Mahindra / TATA
Gear Box	David Brown/ Elecon/FMG/Nord/Shanti Gear/ NAW/ Premier Transmission
Motor	KEC/ Crompton Greaves/Bharat Bijlee/ GEC/ Brown Boveri/Siemens
Alternator Pneumatic Cylinder	Stamford / Kirloskar / AVK / Crompton Festo/ Schrader/ Janetics
Fire Extinguisher	FIREX / MINIMAX / STEE LAGE / Equivalent
Control system	Siemens/Allan Bradley or their system houses/ ABB / L&T / Equivalent
Thruster / UVVF Drive	ABB/L&T/SIEMENS/CONTROL TECHNIC/ TELEMECHNIQUE

Brakes	UMI / Bharat
Limit Switches	L&T / Schneider / Siemens / Tata Honey bell / Telemehcnique
Haul Rope	UMI/Bharat
Steel materials	TATA / SAIL / Jindal / or as per IS 2062
Electric Cable (XLPE/PVC)	CCI / Universal / Asian / Polycab / Ajanta Universal / Skytone / KEI
Air circuit breaker	L&T/C-power/GE-power/Siemens
MCB	Hager/GE/MDS
Protection relays	GE Power/AVK-SEGC/L&T
Structural members	SAIL/TISCO/ Jindal/ Standard Manufacturers as per IS codes
Fasteners	UBRAKO
MS/GI Pipe	J INDAL/TATA/NAGARJUNA
Wireless sets	Punwire, Motorola, Kenwood
Air Circuit Breaker	L&T (C-power)/ GE Power/ Siemens
Capacitor / APFCR	L&T/ Alstom / Asian/ Ducati
1.1KV XPLE/PVC Cables	CCI / Asian / Universal
1.1KV Cables Joints	Raychem
Cable Glands / Cable Lugs	Dowels
Metering	L&T / AE / Kappa
Instrument Transformer	AE / Kappa/ Control & Switchgear
Indicating Lights, Selector switch	L&T/ Rishab / C&S/ Slazer
Switch Push button, etc Molded Case Circuit Breaker	L & T / ABB / GE Power

For any other make, OWNER approval is required.

In addition to the above, bidder to indicate MAKES of all electrical components like capacitors, instruments, transformer, metering, cable glands/lugs, indicating lights/selector switch, protection relays, main/Sub LT/capacitor panels, battery, battery charger, etc

#### 7.8 RELEVANT CODES

IS: 2062	Weldable structural steel
IS: 8500	Weldable structural steel (Medium and High strength quantity)
IS : 269	Ordinary and low heat Portland cement
IS : 456	Code of practice for plain and reinforced concrete
IS : 732	Code of practice for electrical wiring installations (system voltage not exceeding 650 volts)
IS : 800	Code of practice for use of structural steel in general building construction
IS : 802	Code of practice for use of structural in latticed tower
IS : 875	Code of practice for structural safety of buildings, loading standards
IS: 1786	High strength deformed steel bars and wires for concrete

	reinforcement
IS: 432	Mild steel bars conforming
IS: 1888	Method of load test on soils
IS: 1893	Criteria for earthquake resistant design of structure
IS: 2309	Code of practice for protection of buildings and allied structures against lightening
IS: 3043	Code of track for earthing
IS: 7649	Glossary of terms used in connection with aerial ropeways and cableways.
IS: 1237	Cement concrete flooring tiles
IS: 1983	National building code of India 1983 with Amendment No. 1 to NNBC of India 1983
IS: 2064	Code of practice for selection, installation and maintenance of sanitary appliances.
IS: 2065	Code of practice for water supply in buildings.
IS: 7205	Safety code for erection structures, steelwork.
IS: 8989	Safety code for erection of concrete framed structures.
IS :1172	Code of basic requirement for water supply drainage and sanitation.
IS: 9595	Recommendations for Metal Arc Welding of carbon and carbon manganese steels
IS : 822	Code of procedure of inspection of welds
IS: 9706	Aerial ropeways for transportation of material
IS: 5245	Method of splicing of wire ropes.
IS: 1364	Precision and semi-precision hexagonal bolts, screws, nuts and lock nuts
IS: 1648	Code of Practice for fire safety of buildings.
IS: 7861 (Part II)	Code of Practice for extreme water concreting
IS: 1915	Code of Practice for steel bridge.

## 8.0 Approvals

Approval for all make of equipment and final design pertaining to complete system offered in respect of civil, mechanical & electrical etc. shall be obtained from Owner. The successful contractor needs to follow the specification given from cl. 7.0 to 8.0 of Technical Specification. Any changes deemed to be necessary for upgrading the quality without any deletion of specification will also require the approval of Owner.

## 9.0 Testing & Commissioning

General norms for carrying out commissioning shall be checked in line with the commissioning format enclosed pleased at Annexure – A. Some more addition within the purview of tender requirement may be incorporated depending upon the site condition.



## **10.0 TECHNICAL SPECIFICATIONS FOR ELECTRICAL WORKS**

### **BROAD SYSTEM DESCRIPTION**

Design of electrical installation shall be carried out based on national electrical code (NEC) relevant IS: codes and as per rules and regulation of Indian Electricity rules requirement of the local electricity supply Authority and conforming to CPWD specifications.

### **APPLICABLE STANDARDS:**

The work shall be performed in accordance with the technical specification as set forth in this document and listed in the schedule of rates.

Works shall be carried out in the best workmanship manner in conformity with these specification/codes of practices of the Indian standards institution. In case of any contradictions, stipulations under these specifications shall govern.

In addition the work shall also conform to the requirements of latest editions/ amendments of the following;

- Indian electricity rules and acts framed there under.
- Fire insurance regulations
- Regulations lay down by the chief electrical inspector of the state.
- Any other regulations laid down by the local authorities.
- Relevant codes of practice and standards published by the Indian standards institution.
- CPWD/OPWD specifications for electrical works (Internal & External)

Following Standards as amended up to date shall be followed.

Air Circuit Breaker	IS:13947- (Part-I & II)- 1993
Moulded Case Circuit Breaker	IS:13947- (Part-II)-1993
1.1 KV cables-XLPE	IS:7098 (Part-I)
LT Panels	IS:8623 & IS: 375
Capacitor Panels	IS:2834
Diesel Generating Sets	IS:4722
Battery Charger	IS:1651
Current Transformer	IS:2705-1992
Potential Transformer	IS:3156-1992
Earthing	IS:3043

### **GUARANTEE**

The contractor shall guarantee the installation for a period of 12 months from the date of issue of completion certificate. Any damage or defect that may arise in the

works after of issue of completion certificate which is connected in any way with the equipment or fittings supplied by the contractor or his workmanship shall be rectified or replaced by the contractor at his own expense as decided by the Engineer -In - Charge.

## **BATTERY CHARGER WITH BATTERIES**

### **BATTERIES:-**

The Battery shall be Lead acid stationery type with Plane or Tubular positive plates 24 volts consisting of 12 cells of 2 V each, 180 AH each with capacity @ 10 hours rate of discharge to and voltage of 1.85 volt per cell supplied complete with inter cell connectors acid level indication floats dry charger conforming to IS: 1651 double row two tier execution arranged in wooden stand and insulators with following accessories:-

1	Syringe type hydrometer	1 No
2	Spanner	1 No
3	Acid resistive funnel	1 No
4	Acid resistant jug of two pints capacity	1 No
5	Rubber syringe	1 No
6	Connectors from battery of charger	1 No
7	Voltmeter (-3.0+3V) with lead	1 No

Electrolyte shall be filled as per manufacturer's instructions inter row connections shall be made with lead Charging discharging and recharging cycles of batteries shall be carried out under supervision of the Engineer in charge. Suitable device for discharging shall be provided by the contractor free of cost.

### **BATTERY CHARGER:**

The Battery Charger shall be natural air cooled, solid state type with full wave, fully controlled, bridge configuration. The Charger shall be provided with automatic voltage regulation, current limiting circuitry, smoothing filter circuit and soft start feature. The voltage control shall be stepless, smooth and continuous. It shall be self protecting against all AC and DC transients and steady state abnormal current and voltages. The Charger AC input and DC output shall be electrically isolated from each other and also from panel ground. Isolation shall also be provided between power and control circuits. Self contained battery charger with housing suitable for 24 volts 180 AH with incoming supply 230 V.A.C. floating supply voltage 2.18 V per cell. The Charger Panel shall be made of sheet metal of thickness not less than 2mm and shall conform to Protection IP: 44. Switches, meters, relays, etc. shall be flush mounted on the front of the panel. The Charger shall be designed for continuous output of 10 A complete with following accessories:

1. A.C. input toggle switch with fuse.
2. Pilot lamp to indicate AC mains ON
3. Variac for step less DC output.
4. Double wound impregnated naturally air cooled single phase transformer.

5.
  - a) Ballast choke to give trickle charge.
  - b) Float cum boost charger.
6. Single phase full wave bridge connected silicon rectifier stack.
7. Moving coil ammeter and voltmeter of D.C. output.
8. D.C. fuses.

## **CAPACITORS**

Power factor correction capacitors shall conform in all respects to IS 2834- 1964. The capacitors shall be suitable for 3 phase 500 V Hz. And shall be available in units of 25 & 50 KVAR size to form a bank of capacitors of desired capacity. All these units shall be connected in parallel by means of solid aluminum bus bars of adequate current carrying capacity. Each capacitor bank shall be provided with a terminal chamber and cable gland suitable for PVC insulated aluminum conductor armoured cables. Two separate earthing terminals shall be provided for earth connection for each bank.

Capacitor of 500 V shall be suitably rated in series with 189 Hz Harmonic block reactor to offer requisite rating of 25 & 50 KVAR at 433 Volts. Capacitor so chosen shall be able to suppress the harmonics generated in the system due to various utilities viz. computers, drives and fluorescent lamps etc. and shall avoid resultant unbalancing of load.

The capacitor bank shall be subject to routine tests as specified in relevant Indian standards and the test certificate shall be furnished the capacitor shall be suitable for indoor use up to ambient temperature of + 50 & - 20 degree C. The permissible over loads shall be as given below.

- Voltage overload shall be 10% for continuous operation and 15% for 6 hours in 24 hours cycle
- Current overload 15% for continuous and 50% for 6 hours in 24 hours cycles
- Overload 30% for continuous and 45% for 6 hours in 24 hours cycle.

The capacitor banks shall be floor-mounting type. Capacitors shall be of aluminum foil and craft paper hermetically sealed in sturdy corrosion -proof sheet steel 2mm thick containers and impregnated with non-inflammable synthetic liquid. Every element of each capacitor unit shall be provided with its own built in silvered fuse .The capacitor shall have suitable discharge device to reduce the residual voltage from crest value of the rated voltage to 50V or less within one minute after capacitor is disconnected from the source of supply. The loss factor of capacitor shall not exceed permissible value as per BIS. The capacitors shall with stand voltage of 2500 V AC supply for 1 minute. The insulation resistance between capacitor terminals and containers when test voltage of 500 V is applied shall not be less than 50 Mega Ohms.

The capacitor control panel shall general comprise of the following;-

- a. Automatic power factor correction relay time relay.

- b. Step controller with reversing motor.
- c. Time delay and no volt relays.
- d. Protection fuses.
- e. Contractor for individual capacitors of suitable rating.
- f. Change over switch for either automatic operation or manual operation with push control.
- g. C. T.'s with ammeter and selector switch
- h. Voltmeter with selector switch.

Above shall be housed in sheet steel enclosure cubical type free standing front operated with lockable doors. The panel shall be fabricated from CRCA sheet steel of 1.6mm thick and shall be folded and braced as necessary to provide a support for all components. Joints of any kind in sheet steel shall be seam welded. Panel shall have IP42 or more protection and to be equipped with necessary heat dissipation arrangement. It shall be totally enclosed design completely dust tight and vermin proof. Neoprene gaskets between all adjacent units and beneath all covers shall be used for the purpose.

#### **L.T. PANEL**

The L.T. cubical panel boards shall be metal enclosed, floor mounted, free standing type suitable for operation on 433 V, 3 phase, 4 wire 50 Hz system with a system fault level with stand of 35 MVA for 1 second conforming to IP42 or more. The L.T. panel should be readily extensible on both sides by addition of electrical sections after removal of the end covers. The L.T. panel board shall be in single tier formation for the incoming feeders and two tier formation for the outgoing feeders. The height of the switchboard shall not exceed 2250mm including the height of the base frame. However the operating height shall not exceed 1800 mm.

The incoming circuit breakers shall be provided with 96sqmm Ammeter with selector switch, metering CT's, 1 No. voltmeter 96 x 96mm with selector switch and control fuses, indicating lamps for ON/OFF/TRIP and phase indication, 1 No. IDMTL release with two over current release elements with 50 to 100% over current setting and 1 No. earth fault release with 5 to 6 times setting. The incoming circuit breaker feeders shall be suitable for bus duct entry. Indicating lamps will be suitable for 24 V DC and will be provided with suitable series resistors and translucent lamp covers. CT's shall be of cast resin type as per IS-2795, control wiring shall be carried out with 1.5sq mm stranded copper wire for potential circuits and 2.5 sq. mm for current circuits. The control wires shall be of PVC 660/1100 V grade. All circuit wires shall be terminated on control block of Elmex or equivalent make of 600 V grade.

The equipment shall be designed for operation in high ambient temperature and high humidity tropical atmosphere. The entire LT panel shall be factory assembled conforming to IS-8623. In order to provide access for cable termination hinged door shall be provided at the rear of the panel. Bus duct entry, cable entry and terminals shall be provided in the switchboard to suit the number and size of aluminum conductor cable as specified in the schematic diagram. Generous cabling space shall be provided with the position of the cable gland and terminal such that the cables can

be easily and safely terminated. An aluminum earth bus bar with two earthing cable eyes shall be provided for connection to the main earth. The earth bar shall run throughout the length of the switchboard.

All sheets steel material used in the construction of the switchboard should be 1.6 mm thick CRCA sheets and have undergone a rigorous rust proofing process comprising alkaline de-greasing, de-scaling in dilute sulphuric acid and recognized Phosphating process. Painting process with powder coating will only be acceptable. Shade will be RL-7035 or as approved by Engineer-in-charge. Touch up paint shall however to applied before handing over of the installation after completing the job at site. Danger notice plates shall be provided at suitable locations. Necessary lifting hooks/angles shall be provided in each panel as required, which shall be removed after the installation of the switchboard and plugs shall be provided in place of the hooks to block the holes. The L.T. panel shall be constructed only of materials capable of withstanding the mechanical, electrical and turmoil stresses as well as the effect of humidity, which are likely to be encountered during the normal service.

While designing the panel, multitier formation of breakers should be considered except ACB'S, which will be mounted only in single tier formation. Each vertical section shall comprise:

- a) A front framed structure of rolled/folded sheet steel of minimum 2mm thickness rigidly bolted together. This structure shall house the components contributing to the major weight of the equipment such as circuit breakers, main horizontal bus bars and vertical risers and other front mounted accessories. The structure shall be mounted on rigid base frame. The design shall ensure that the weight of the components is adequately supported with out deformation or loss of alignment during transit or during operation.
- b) Rear cable housing shall be provided for power control cable terminations. The design shall ensure generous availability of space for ease of installation and maintenance for cabling and adequate safety for working in one vertical section with out coming into accidental contact with live parts in an adjacent section.
- c) Front, rear door and top plates fitted with high quality neoprene gaskets with fasteners designed to ensure proper compression of the gaskets. When covers are provided in place of doors generous overlap shall be assured between sheet steel surfaces with closely spaced fasteners to preclude the entry of dust. Doors and covers shall be minimum 1.6mm thick sheet steel. Sheet steel/ hylam shrouds and partitions shall be of minimum 1mm thickness. All sheet steel work forming the exterior of the switchboard shall be smoothly finished, leveled and free from burrs etc. the corners should be rounded. The apparatus and circuits in the panel shall be so arranged as to facilitate their operation and maintenance and at the same time ensure necessary degree of safety. Switchgears forming part of the power control centers shall have to following minimum clearances.

- i) Between phases -25 mm
- ii) Between phase and neutral -25 mm

- iii) Between phase and earth -25 mm
- iv) Between neutral and earth -19 mm

When for any reason the above clearances are not available, suitable insulation shall be provided. The clearances shall be maintained during normal service conditions.

All insulating material used in the construction of the equipment shall be of non hygroscopic material designed to withstand the effects of high humidity, high temperature tropical ambient service conditions. Metallic/insulated barriers shall be provided between adjacent vertical sections in the front i.e. to isolate one circuit breaker compartment in one vertical section from another circuit breaker compartment in another section.

All doors and covers providing access to live power equipment shall be provided with tool operated fasteners and or suitable door interlock to prevent un-authorized operation. Galvanic isolation shall be provided between power & control circuit chambers.

The bus bars shall be of high conductivity aluminum of alloy of E-91E grade of IS 5082 and designed current rating of 1.0A/sqmm. The temperature rise calculation for bus bars shall be as per IS 8623. All electrical equipment's shall also be designed for ambient temperature of 45 degree & R.H - 90% and should meet temp. rise requirements as per IS-8623. The main phase bus bars shall have the same continuous current rating throughout the length of the LT panel and the neutral bus bars shall have a current rating of at least 60% of the phase bus bars. Zinc chromate treated bolts and nuts along with suitable spring washers shall be provided at all bus bars joints. Bus bars for the termination of outgoing cables should be extended in a manner to facilitate ease of termination.

The bus bars shall be supported on fiberglass reinforced polyester (sheet molding compound, insulators placed at sufficiently close intervals to prevent the bus bars sag and to effectively with stand the electrodynamic stresses occurring in the event of a short circuit. All bus bars and vertical risers shall be colour coded for identification.

The switchboards shall be routine tested in the presence of Engineer-in-charge at the manufacturer works as per IS-8623 1977.

**ACB:**

The air circuit breakers shall be fully electrically draw out type 4P and shall be of compact and robust design with static release protections for over load (adjustable) short circuit (adjustable) and ground fault using analog electronic circuit and shall comply with the requirement of IS-2516. It should be possible to operate all breakers electrically and manually. Similarity electrical as well as mechanical interlocking should be possible. Spring charging motor will be suitable for operation on 220V AC. Manual spring charging should also be possible.

The operating mechanism of the circuit breakers should be such that it is at all times free to open immediately after the trip coil is energized. Mechanical operation

indicators shall be provided to show open and close position of the circuit breaker. Anti-pumping feature shall also be provided on the circuit breakers. The circuit breaker shall have the following distinct positions:

- a) Service position with both the main as well as the control contact connected.
- b) Test position with the main power contacts disconnected and the control contacts connected.
- c) Isolated position with both communications disconnected.
- d) Disconnection in fully withdrawn position.

It shall be possible to achieve the service and test positions with the door of the board closed. Mechanical positions indicators shall be provided in the service and test positions of the breaker.

Both the powers as well as the control contacts of the circuit breaker shall be draw out type. The frame of the circuit breaker shall be positively earthed by means of a draw out type copper scraping earth connection.

The circuit breaker compartment doors shall be so inter locked with circuit breaker that it will not be possible to open the door with the circuit breaker in 'ON' position. However, it should be possible to defeat door interlock by authorized maintenance personnel. Suitable racking interlock should be provided to prevent racking out in closed position. A rating error preventor shall be provided to ensure that only breaker of correct rating after usual maintenance is back fitted in the designated grade.

It shall not be possible for the circuit breaker to be drawn out from the service position/pushed in into service position with the breaker 'ON' condition. A suitable stopper mechanism should be provided on the draw out mechanism to ensure that when the breaker is being pulled out, it does not fall down.

#### **MCCB:**

MCCB's shall be CPR1 certified. They shall be quick make quick break and trip free mechanism. All the MCCB'S shall be provided with horizontal operation with rotary operated front switches. Contacts shall be of silver alloy to have longer life. Tripping system of MCCB's shall be of thermal magnetic type release. Tripping mechanism should be made as such to avoid single phasing.

#### **SWITCH BOARD - CUBICAL TYPE**

The switch board shall be metal clad, totally enclosed, single front, floor mounted, cubical type for use on 433 volts 3 phase, 50 cycles system with a specified fault level. The switch board shall be made up of the requisite vertical sections, which when coupled together shall form continuous dead front switch boards of dust and vermin proof construction. The panels shall be fully compartmentalized and shall be arranged in multi-tier-formation and shall be of rigid bolted construction with C.R.C.A sheet steel of not less than 16 SWG thick. The doors covers, barriers, etc., shall be made of 16SWG thick sheet steel. A base channel of minimum 75mm x 75mm x

5mm thickness shall be provided at the bottom. At the least 250mm space shall be provided above channel (i.e. 325mm for floor) in which no switch gear shall be fixed.

All panels and cover shall be properly fitted in square with the frame. Holes in the panel shall be correctly provided and tapped into on adequate thickness of metal or provided with nuts, for convenient fixing of screws. Self-threading screws shall not be used in the fabrication of the panels. All doors shall be provided with Neoprene gaskets. Each vertical panel structure shall contain a cable way alloy of adequate width with provision for suitable cable supports. The cable compartment shall have hinged door. There shall be a separate gland plate for each cable entry so that there will be no dislocation of already wired circuits when new feeders are added. The entire switch board shall be factory assembled conforming to IS: 8623 and shall be made in the works of the switch gear manufacturer of approved make. The contractor shall get shop drawings approved before undertaking manufacture of switch boards.

The units shall be arranged in their formation to provide a compact switch board having a pleasing appearance. Steel sheet hinged lockable doors shall be duly interlocked with fuse switch unit to prevent opening of the panel when the switch is in 'ON' position. Safety interlocks shall be provided also.

MCCB's used shall be CPRI certified. They shall be quick make quick break and trip free mechanism. All the MCCB'S shall be provided with horizontal operation with rotary operated front switches. Tripping system of MCCB's shall be thermal magnetic type. Tripping mechanism should be as such to avoid single phasing.

The bus bars shall be positioned at top or on side. The bus bars shall be air insulated and made of high conductivity. High strength aluminum alloy of current density not less than 1.0 AMP/sq.m. complying with the requirements of class E91E of IS: 5082 designed and shall have uniform cross section throughout the length. colour coding of bus bar shall be achieved through heat shrinkable sleeves.

The bus bars shall be held by specifically polyester glass molding (SMC) at sufficiently close intervals to prevent bus bar sag and to effectively withstand electromagnetic stresses in the event of a short circuit. All the bus bars and risers shall be fully insulated with PVC sleeving with necessary colour coding. High tensile bolts and spring washers shall be provided at all bus bar joints. Vertical bus bars for outgoing compartments shall run the full height of the panel to cater to all combinations to modules in sections.

All indicating instruments shall be of the flush mounting industrial pattern, conforming to the requirement of IS: 1248, indicating lamps shall be the neon type. Separate compartment shall be provided for accommodating instruments, indicating lamps, control contractors and fuses etc. These shall be accessible for testing and maintenance without any danger of accidental contact with line parts of the circuit breakers, S.F. units, bus bar and connections.

Horizontal wire way with screwed cover shall be provided at the top to take inter connecting control wiring between different vertical section. Control wiring shall be of



copper conductor and shall be colour coded for easy identification of circuits. This should be of not less section than 2.5sq. mm. Not more than two connections shall be made off any one terminal.

All cable shall be neatly bunched and shall be secured to wiring cradles. All outgoing cables shall be fitted with identification ferrules at each end. Circuit diagram showing the arrangement of circuits shall be pasted on the inside of the panel door and covered with transparent plastic sheet. Knockout holes of appropriate size and number shall be provided with panel in conformity with the location of incoming and outgoing cables/conduits. Facility shall be provided for termination of cables from both above and below the panel. Where cables enter from below, cable glands shall be fitted at the bottom and arranged in tiers to facilitate making connections to the upper and lower unit. Clamps shall be provided to support the weight of the cables. Aluminum flat of suitable size with two earthing cable eyes shall be provided for connections to main earth. The earth bar shall run within the base frame.

All CRCA steel material used in the construction of the switch board should have undergone rigorous rust proofing process comprising alkaline degreasing, de-scaling in dilute sulphuric acid and recognized phosphating process. Painting of the steel work shall be through powder coating with approved shade- RL -7035.

Engraved plastic labels shall be provided indicating the feeder details. Danger notice plate shall be provided as per I.E. rules adequate provision shall be made for escape of hot gases by providing louvers. The louvers shall be located as to direct the hot gases away from the operating personnel and shall be covered with a perforated sheet having less than 1mmdia. Perforations shall prevent entry of vermin. All nuts, bolts and washers shall be cadmium plated. Each panel in, section shall be provided with voltmeter 0-500 volts with 3 way on and off selector, switch, ammeter of appropriate range with selector switch as per the bill of material in the tender.

#### **CABLE TRAYS:**

Cable trays shall be ladder type fabricated out of mild steel/ slotted angles and flats of required width as per design. Bends shall be prefabricated the cable tray shall be primed and painted with shade RL-7035. Suitable provision shall be made where a tray crosses expansion joints. The width of the tray shall allow for a suitable separation between cables the design shall allow for adequate bending reduces for the sizes of cables.

The tray shall be suspended from the concrete slab by means of approved steel hangers spaced at a distance of not more than 1000cms. Suitable bushes shall be provided where cables pass through apertures in the tray. Cable must securely fix to the tray with fasteners .In routing, necessary barriers and spacing shall be maintained for cables of different voltages in case they lie side by side. Telephone cables shall cross the power cables only at about right angle and these two shall not run in close proximity. Full details of the tray shall be approved by the site engineer before fabrication. Earth continuity shall be maintained between each section of

cable tray and each total run of tray shall be effectively bonded to the nearest earth continuity conductor .All nuts and bolts used shall be of galvanized steel.

### **L.T. XLPE CABLE**

L.T. XLPE CABLE shall be of aluminum conductor XLPE insulated, PVC sheathed steel strip armored construction conforming to IS- 7098 (part I & part II) of 1100 volts grade. The aluminum conductors shall be stranded for sizes above 16sq mm and sector shaped standard conductors shall be used for heavy sizes. As far as possible, cables shall be supplied in drums. Cables supplied shall bear manufacturer's identification marks at regular intervals.

### **CABLE WORK**

#### **CABLE WORK IN UNDER GROUND**

While laying underground cables care should be taken so that any underground structure such as water pipes, sewerage lines, etc. are not damaged. Any telephone of other cable coming in the way shall be properly protected as per instructions of Architect/. All cable routes shall be carefully measured and cable cut to the required lengths leaving sufficient length for the final connection of the cable. All cable trenches entering sub- stations plants etc. shall be effectively sealed after installation of cables to avoid entry of water.

The L.T. cables shall be laid not less than 75 cm below ground level in a trench 35cm wide minimum .The depth of the trenches shall be uniform throughout. A bed of 17 cm dry sand shall be load before he cable is laid.

When the cable is properly straightened and laid in the trench, it should be covered all around 8mm thick layer of sand. Approved cable indicators shall be fixed at suitable distances along the route of the cable.

Unless otherwise specified the cables shall be protected by second class bricks of not less than 22.5x 10.0x7 cm or stone tiles placed on sides and top of the cable to form a channel throughout the length.

Spun reinforced concrete pipes shall be provided for all road crossings. The top surface of pipe shall be at minimum depth of 90cm from the ground level when laid under the roads/ pavements.

Filling of trenches shall be done after sand cushioning and laying of tiles is carried out to the satisfaction of Engineer-in-charge. Where road/ lawns have been cut or stones displaced, the same shall be repaired at no extra cost.

#### **LAYING OF CABLES OVER DUCTS / WALL/ TRAYS**

Cable ducts should be of such dimension that the cables laid in it do not touch one another .If found necessary the cable shall be fixed with clamps on the walls of the duct. Cables shall be laid on the walls/on the trays as required using suitable clamping/ fixing arrangement as required. Cables shall be neatly arranged on the

trays in such manner that crises crossing is avoided and final take off to switch gear is easily facilitated.

All cables will be identified close to their termination point by cable number as per circuit schedule. Cable numbers will be punched on 2mm thick aluminum strips and securely fastened to the cable. In case of control cables all covers shall be identified by their wire numbers by means of PVC ferrules. For trip circuit identification additional red ferrules are to be used only in the switch gear / control panels, cables shall be supported so as to prevent appreciable sagging. In general distance between supports shall not be greater than 600mm for horizontal run and 750mm for vertical run.

### **CABLE TERMINATIONS**

Cable leads shall be terminated at the equipment terminals by means of crimp type connectors. Crimping shall be done by hydraulically operated tools and conduction jelly shall be applied. On the conductor Insulation of the leads should be removed immediately before the crimping. Conductor surface shall be cleaned and shall not be left open for long, prior to crimping to prevent oxidation. Control cables of single strand cables may be directly terminated on to the terminals. Straight through joint if required, shall be made by rising epoxy resin cold setting compound. Compression brass cable gland wherever used shall be of correct size for cable and terminations. No oversize cable glands shall be used. The gland must grip the armor of the cable firmly, so that in the event of ground movement no undue stress is transferred to the cable conductors. The gland must establish good electrical contact between cable armor, lead sheath and body of switcher. Identification ferrules indication the circuit shall be used for incoming and outgoing cables. Wherever a cable passes through basement, G. I. pipes shall be used and sealed for water proofing.

### **TESTING OF CABLES**

After laying and jointing work is completed, a high voltage test as per IS/CPWD code should be applied to all cables to ensure that they have not been damaged during or after the laying operation and that there is no fault in the jointing. Cable for use on low and medium voltage system (1.1 KV grade) should with stand for 15 minutes a pressure of 3000 volts DC applied between conductors and also between each conductor and sheaths .In the absence of "Pressure testing facility" it is sufficient to test for one minute with a 1000 volts insulation tester. In case, the test results are unsatisfactory the cost of all repairs and replacement and relaying will be made good by the contractor. Nothing extra shall be payable for conducting high potential test.

### **EARTHING**

All electrical equipment is to be earthed by connecting two earth tapes from the frame of the equipment to an earth ring. Earth ring will be connected to several earth electrodes. The cable armour will not be used for earthing and shall be earthed through the cable glands. Earthing shall be in conformity with provision of rules 32, 61, 62, 67, & 68 of Indian Electricity rules 1956 and as per IS- 3043-1986.

The following in particular shall be earthed:-

- a. D.G. set neutrals.

- b. LT panels
- c. Non-current carrying metallic parts of electrical equipment such as switch gear, panel boards, motor control centers, distribution boards, and cable trays.
- d. Generator & motor frames.

The earth connections shall be properly made. A small copper loop to bridge the top cover of the transformer and the tank shall be provided to avoid earth fault current passing through fastened bolts, when there is a lightning surge, high voltage surge or failure of bushings.

The shop drawings for earthing system shall be prepared by the contractor and be got approved by Engineer-in-charge. All earth electrodes shall be driven to a depth sufficient to reach permanently / moist soil. Their location shall be marked and approval taken from engineer - in charge before excavation for the same. The earth electrodes shall be tested for earth resistance by means of a standard earth test ohms meter. All tests shall take place during the dry months, preferably after protected dry spell. The resistance between earthing system and the general mass of earth shall not be greater than 1.0 ohms.

The earth loop resistance to any point in the electrical system shall not be in excess of 1.0 ohms in order to ensure satisfactory operation of protective devices.

All earthing conductors shall be of high conductivity, copper or GI and shall be protected against mechanical damage. The cross-sectional area of earth conductors shall be smaller than half that of the largest current carrying conductor. However the contractor shall use the sizes specified in the bill of quantities of the tender.

The earthing electrode shall consist of tinned copper plate (60cm x 60 cm x 3 mm) G. I. Plate (60 cm x 60 cm x 6 mm) shall be used for body earthing. The plate electrode shall be buried in ground with its face vertical and top not less than 4.5 m below G. L. The earth plate shall be buried in the ground below the permanent moisture level. The plate shall be filled with charcoal dust and common salt filling extending 15 cm around it on all sides. There shall be a 20mm dia medium class G. L. pipes running from top of the plate up to the ground level for watering pipe. The top of the pipe shall be provided with a funnel and a GL mesh screen of watering the earthing. This will be used in a masonry sump with cement plastering not less than 30-cm square and 30 cm deep. A.M.S. frame heavy duty with hinged cover and locking arrangement shall be suitably provided over the sump. The earthing lead from electrode onwards shall be suitably protected from mechanical injury by GL pipe. The portion of this protection pipe with in ground shall be buried at least 30 cm deep (to be increased to 60 cm in case of road crossing and pavements). The portion with in the building shall be recessed in walls and floors to adequate depth. In the case of plate earth electrode the earthing lead shall be securely noted to the plate with two bolts, nuts, check nuts and washers. All materials used for connection the earth lead with electrode shall be GI in case of GI plate earth electrodes and of tinned brass in case of tinned copper plate electrode.

Main earth bus shall be taken from the LT. Switch board to earth electrodes. The electrical resistance of earthing conductors shall be low enough to permit passage of

fault current necessary to operate fuse or circuit breaker and shall not exceed 2 ohms.

### **PLATE EARTHING**

The earthing electrode shall consist of GI plate or tinned copper plate of specified size and works shall be carried out as per IS: 3043-1983.

The electrical resistance of earthing conductors shall be low enough to permit passage of fault current necessary to operate the fuse or circuit breaker and shall not exceed 1 ohm.

### **PIPE EARTHING**

The earthing electrode shall consist of GI pipe of 40 mm dia. and 4.5m length B-class Pipe and works shall be carried out as per IS:3043-The distance between two earthing stations shall be at the least 2m.

### **LIST OF APPROVED MAKES OF MATERIAL AND MANUFACTURER**

1.	Air Circuit Breaker	L&T (C-power)/ GE Power/ Siemens
2.	Capacitor / APFCR	L&T/ Alstom / Asian/ Ducati
3.	1.1KV XPLE/PVC Cables	CCI / Asian / Universal
4.	1.1KV Cables Joints	Raychem
	Cable Glands / Cable Lugs	Dowels
5.	Metering	L&T / AE / Kappa
6.	Instrument Transformer	AE / Kappa/ Control & Switchgear
7.	Indicating Lights, Selector switch	L&T/ Rishab / C&S/ Slazer
	Switch Push button, etc	
8.	Moulded Case Circuit Breaker	L & T / ABB / GE Power
9.	Protection Relays	GE Power / AVK-SEGC / L & T
10.	MCB	Hager / GE/ MDS
11.	Main/Sub LT/Capacitor Panels	As approved by Engineer-in Charge
12.	Battery	Exide
13.	Battery Charger	Logicstat/ Chabbi Electricals
14.	PLC	Allan Braidley/SIEMENS/Asea
15.	Diesel Engine	Cummins/Caterpillar
16.	Alternator	Stamford / AVK / Kirloskar
17.	MS/ GI Pipe	TATA/ JINDAL (Hissar)
18.	Acoustic Insulation	Owenscorning/Loydes/UP Twiga
19.	Thyristor	SIEMENS/Telemehcnique/ABB

**NOTE:** Above makes of equipment are approved subject to their meeting the specifications. The contractor however shall seek approval of specific make from Engineer In charge before commencing the work. The decision of Engineer in Charge shall be final & binding on the contractor in this respect.

## DATA SHEET

The following technical particulars shall be furnished by the contractor while submitting the tender.

### **1.0 L.T. Panel switchgear**

- 1.1 Make
- 1.2 Type and nos.  
Service  
Enclosure Material Protection class
- 1.3 System Voltage  
Phase  
Frequency  
System ground
- 1.4 Rated current at 50 degree C  
Busbar  
Circuit breaker Earth busbar
- 1.5 Short circuit rating  
Interrupting capacity  
Short time current rating for 3 second
- 1.6 Insulation level
- 1.7 AC/ DC power supply  
Control voltage  
Service voltage

### **2.0 Circuit Breaker**

- 2.1 Make
- 2.2 Duty cycle and fault level
- 2.3 Breaker current  
AC symmetrical  
AC Asymmetrical
- 2.4 Making current
- 2.5 Operation time  
Break time  
Make time
- 2.6 Auxiliary voltage  
Closing  
Tripping  
Spring charging

### **3.0 D .G. Set**

- 3.1 Make & catalogue reference
- 3.2 Alternator
- 3.3 Diesel engine
- 3.4 Capacity at site conditions after deration
- 3.5 Weight (Kg), Over all dimension
- 3.6 No. of cylinders
- 3.7 Cylinders bore & stroke
- 3.8 Fuel consumption at various loads (liters / hr)
- 3.9 Lube oil consumption at full load (liters / hr)
- 3.10 Voltage

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Signature of tenderer or his/their  
power of attorney holder with date,  
full name, designation and official seal

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- 3.11 Frequency
- 3.12 P.F.
- 3.13 Method of starting Over load Harmonics control

**4.0 BATTERY & BATTERY CHARGER**

- 4.1 Make
- 4.2 Battery
- 4.3 Application
- 4.4 Ambient temp.
  - Maximum
  - Minimum
- 4.5 Type
- 4.6 Nos. of Cells per Battery
- 4.7 Battery nominal voltage
- 4.8 Ten hour rating to 1.85 volt / Cell at 27c.
- 4.9 Proposed Method of working
  - Float charging (normal)
  - Equalising Charge (Occasional)
  - Boost charging
- 4.10 Intermediate tapping
- 4.11 Mounting
- 4.12 Terminal Connection

**5.0 PLC**

- 5.1 Make
- 5.2 General Enclosure Material
  - Type
  - Protection
  - Paint & Shade
- 5.3 Make
- 5.4 Function:
  - Manual mode
- 5.5 Programmable logic control System

**Annexure - A**

**Commissioning Format**

<b>1.</b>	<b>Ropeway Operation</b>		
a.	Proof of Design carry capacity 150 pph No of cabins Ropeway Speed Travel Time Passenger Loading and Unloading Time Total Time per trip		
b.	Proof of Commission carry capacity 150 pph No of cabins Ropeway Speed Travel Time Passenger Loading and Unloading Time Total Time per trip		
2.	Tests conducted with empty ropeway only with main electric motor putting into operation of the installation (normal speed)		
a.	Current drawn		
b.	Voltage drawn		
c.	Normal stopping of the installation [Safety Brake]		
	Stopping time of the installation		
	Stopping distance		
	@ of de- acceleration		
d.	Emergency stopping of the installation		
	Stopping time of the installation		
	Stopping distance		
	@ of de- acceleration		
e.	Time delay of the emergency brake		
f.	Check the effect of one brake individually by physically keeping one brake open		
	Stopping time		
	Stopping distance		
	@ of de- acceleration		
g.	Correct functioning of all safeties including line safety		
h.	Time required for completion of cabins to travel from Lower Terminal to Upper Terminal and vice versa		
3.	Test conducted with cabins loaded in all combination and note the characteristics from ('2a' to '2h') above.		
4.	Test conducted with cabins loaded 100% on uphill & empty in downhill and note the characteristics from ('2a' to '2g') above.		
	System Capacity		
	<b>Test to control regenerative force -</b> Downhill trolley 100% loaded and uphill trolley empty.		
	<b>Schedule of verifications of the various elements of the installation</b>		



	<ul style="list-style-type: none"> <li>• Earthing pit resistance check</li> <li>• Telephone and communication principle</li> <li>• Restarting is impossible if the faulty safety device is not manually 'reset'</li> <li>• Derailment detection devices on towers</li> <li>• Motor unit safety device</li> <li>• Tension unit / anchorage safety device</li> <li>• Control desk and monitoring accessories</li> <li>• Correct functioning of the electrical equipment</li> <li>• Wind speed indicator</li> </ul>		
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## **TENDER DOCUMENT (PART-II)**

**PRICE BID**

**FOR**

**DESIGN, MANUFACTURE, SUPPLY, ERECTION, TESTING &  
COMMISSIONING OF PASSENGER ROPEWAY AT PATALI  
SHRIKSHETRA, SUBARNAPUR DISTRICT, ODISHA**

# **PRICE BID**

## **General Information**

1.1 The scope of work of bidder for quoting the Price Bid shall be as per clause 1.1.4 of SCC, which is reiterated below:

- a) Survey and Geotechnical investigation.
- b) Design and drawing
- c) Supply of all equipment, tools & tackles as per Technical Specifications.
- d) Transportation of machinery upto site including insurance. e) Civil works at site
- f) Erection of all structural, equipment, rope etc
- g) Supply of Maintenance Spares, for three years trouble-free operation of the Ropeway systems
- h) Provision of O&M manuals
- i) Supply of Fire protection and fire prevention devices
- J) Basic passenger amenities at both stations comprising of minimum 2 wash room, and purified drinking water outlet.
- k) Permanent Electricity supply at both stations before final trial and testing
- l) Trial run & commissioning

### **Note :**

1. Bidder shall fill rates against all the sub items of item No. 1 (1.1 to 1.17), as described in the Price Bid. Items, against which no price is entered or entered 'NIL' will not be paid extra when executed and shall be deemed to be covered by the prices quoted in other Items.
2. This is a Turnkey Project. Bidder should quote for complete job. The Employer / Owner's / Engineers responsibility shall be limited to the Articles of SCC.
3. Bidder to note that the Stages of Payment shall be as per Attachment PB - 1, subject to minimum or maximum percentage (in different categories) indicated therein. ,
4. Cost against Item 1.16 shall be considered as Gross Value of Contract and to be taken for comparison.
5. The quoted price shall be excluding all Taxes & Duties as per Clause 30 of General Condition of Contract

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**PROPOSAL SHEET**

**PRICE BID**

<b>ITEM NO.</b>	<b>DESCRIPTION OF WORK</b>	<b>AMOUNT IN RUPEES IN FIGURES</b>	<b>AMOUNT IN RUPEES IN WORDS</b>
<b>1.</b>	Complete engineering, design, supply, erection, testing and commissioning of a Monocable Jigback Gondola Passenger Ropeway system on turnkey basis in single section based on the General Conditions of Contract. Special condition of Contract and Scope of Work as given in Technical specifications as broadly defined for passenger ropeway in Tender Notice No. <b>OCC/CWS/PROC./PRPSP-02/66/18-19 dated 26.12.2018</b> This will comprise of the following:		
<b>1.1</b>	Survey of the ropeway alignment and soil engineering		
<b>1.2</b>	Design & Drawing		
<b>1.3</b>	Clearing of the alignment and final grading of the station areas as required by the design		
<b>1.4</b>	Access to station locations and tower foundations, installation & operation of temporary ropeway or other arrangement		
<b>1.5</b>	Preparation of labor hut (temporary of prefab type) construction staging & assembly.		
<b>1.6</b>	Construction of all civil engineering works of station building (Bottom station, Top station, Intermediate station, if any) for station equipment as well as loading and unloading platforms/ ramps, foundations for towers, and other essential requirements as per clause 9 of Technical Specification including protection works of tower / foundation / station (if required)		
<b>1.7</b>	Supply of all towers including maintenance platform and ladder and station structural etc.,		
<b>1.8</b>	Supply of following		
<b>a</b>	Drive unit including disc brake, base frame etc		
<b>b</b>	Station U line equipment including Rope, Grips. Hanger, Cabin etc.		
<b>c</b>	Tensioning System (Hydraulic)		
<b>d</b>	Electrical control & other works including Cable trenches for underground control cable as per requirement and Lightning Protection		

ITEM NO.	DESCRIPTION OF WORK	AMOUNT IN RUPEES IN FIGURES	AMOUNT IN RUPEES IN WORDS
e	Special tools and tackles		
1.8.1	Transport and insurance from the place of supplier / Manufacturer etc to site and to the final location of erection / installation by trucks, manually, temporary ropeway etc.		
1.9	Installation of the ropeway equipment in all respect including rope splicing / shortening, if necessary		
1.10	Trial run & Commissioning		
1.11	Provide O&M manuals and training to user agency for operation and maintenance		
1.12	Final painting of the ropeway as per requirement of Technical Specifications		
1.13	Supply of Fire protection and fire prevention devices and equipment according to the applicable regulations.		
1.14	Supply of Maintenance spares for three years trouble free operation.		
1.15	Any other item required to be done to complete the turnkey job		
1.16	Supply of Permanent Electricity connection to the Ropeway Stations (both) from the State electricity dept. inclusive of all peripherals such as poles, cables, wires, transformers, circuit breakers and ancillary spares as required along with all statutory deposits for dedicated power supply and approval from Line department.		
1.17	Total of sub-item nos. 1.1 to 1.16 (In Indian Rupees)		

**Note:** Cost against item 1.17 shall be considered as Gross value of Contract and to be taken for comparison.

**STAGES OF PAYMENT**

<b>Sl. No.</b>	<b>DESCRIPTION OF WORK</b>	<b>Percentage of Billing amount</b>
1.	Mobilization advance to be paid as (It will be adjust on pro rata basis	Maximum 20% of gross value of contract on signing of contract.
2.	On submission of Detailed calculation, Design & Drawing of the ropeway	Maximum 15% of gross value of contract.
3.	On Completion of Construction of Civil Engineering works of station, tower etc.	Maximum 25% of gross value of contract.
4.	On Receipt of all electro mechanical parts, structural I tower including maintenance platform & station structural, roofing material, tools and tackles, wire rope, earthling, lightening protection, etc. at Site in accordance with Bill of Material.	Maximum 40% of gross value of contract.
5.	Against Erection in all respect of structural for station & tower, equipment, ropes including splicing as certified by consultant.	Minimum 10% of gross value of contract
6.	Trial run & Commissioning and handing of the project to the Owner	Minimum 10% of gross value of contract

**NOTE**

- Mobilization advance is payable against Bank Guarantee of equivalent amount, valid upto the recovery of advance amount.
- 10% entire advance is recovered by the time 90% of the gross value of the contract is executed (on pro rata basis of different stages of payment till the 90% of the gross value of contract value is met).
- Bidder shall submit the detailed billing schedule for various activities/ works immediately after signing of Contract Agreement for approval by the owner/consultant, within the overall ceiling percentages specified above. The owner/consultant may modify the billing schedule at their sole discretion while according the approval.