ANNEXURE "H"

जयपुर विकास प्राधिकरण, जयपुर

(47) 100

कनक वृन्दावन से जयगढ़– नाहरगढ़ रोड़ पर डिजाईन, बिल्ट, फाईनेन्स, ऑपरेट, मेन्टैन एंव ट्रॉसफर (डी.बी.एफ.ओ.एम.टी.) के आधार पर रोप–वे का निर्माण

- जयपुर विकास प्रधिकरण की कार्यकारी समिति की 100वीं बैठक दिनांक 21.12.2005 में कनक वृन्दावन से जयगढ़ रोड़ तक बी.ओ.टी. के आधार पर रोप–वे के निर्माण के प्रस्ताव को स्वीकृत किया गया था। इस रोप–वे के निर्माण से पर्यटकों को पहाड़ो के मनोहारी दृश्यों के साथ–साथ नाहरगढ एवं जयगढ किलो को देखने की सुविधा मिलेगी, पर्यटकों के लिये नया आकर्षण होगा तथा मानसून के समय में वर्तमान मे बने सड़क मार्ग से आवागमन में होने वाली दुर्धटनाओं से राहत मिलेगी।
- इस रोप–वे का निर्माण कनक वृन्दावन से जयगढ़ रोड़ तक 1.50 कि.मी. लम्बाई में किया जाना प्रस्तावित है। प्रस्तावित रोप–वे की लोवर स्टेशन से अपर स्टेशन तक की ऊँचाई लगभग 200 मीटर है। इस कार्य के लिये फर्म को निर्माण हेतु केवल भूमि उपलब्ध कराई जावेगी। इस रोप–वे का डिजाईन व निर्माण तथा 30 वर्ष की अवधि तक संचालन व संधारण संबधित फर्म मैसर्स दामोदर रोप–वे कन्सट्रक्शन कम्पनी प्रा.लि. द्वारा किया जायेगा। इस परियोजना पर अनुमानित राशि रू 20.50 करोड़ के व्यय होने का अनुमान है।
- जिला कलेक्टर, जयपुर से दिनांक 10.01.2006 को अनुमति प्राप्त होने के उपरान्त मैसर्स दामोदर रोप–वे कन्सट्रक्शन कम्पनी प्रा.लि. को दिनांक 21.01.2006 को यह कार्य **डी.बी.एफ.ओ.एम.टी.** के आधार पर सम्पादित करने हेतु कार्यादेश दिया गया था।
- फर्म द्वारा उसे दिये जाने वाले लाईसेंस के एवज में Commercial Operation के दौरान प्रत्येक वर्ष के अंत में छः सीटर केबिन के लिये राशि रू 18.00 लाख का तथा रोप–वे के टिकिटों से विकय से प्राप्त होने वाली राशि का 10 प्रतिशत भाग का भुगतान तिमाही आधार पर 30 वर्ष के लाईसेन्स पीरियड तक प्राधिकरण को करना होगा।
- परियोजना के पूर्ण होने पर जयपुर शहर के पर्यटन को बढावा मिलेगा।
- पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा आयोजित राष्ट्रीय वन्य जीव मण्डल (एन.बी.डब्लू.एल) की 21वीं स्टेण्डिक कमेटी की बैठक दिनांक 24.01.2011 में उक्त रोप–वे परियोजना को कैफेटेरिया के क्षेत्र को हटाते हुए 1.51 हैक्टेयर वन भूमि पर निर्माण हेतु सैद्धान्तिक स्वीकृति इस शर्त पर प्रदान की गई थी कि यूजर एजेन्सी नियमानुसार माननीय उच्चतम न्यायालय की स्वीकृति प्राप्त करें।
- माननीय सर्वोच्च न्यायालय ने दिनांक 21.02.2012 को प्रस्तावित रोपवे की एप्लीकेशन को Accept तथा निस्तारण करते हुये यह निर्देश दिये कि पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा आयोजित राष्ट्रीय वन्य जीव मण्डल (एन.बी.डब्लू.एल) की 21वीं स्टेण्डिग कमेटी की बैठक दिनांक 24.01.2011 की अनुशंषा एवं स्वीकृति के तहत यूजर ऐजेन्सी फॉरेस्ट कन्जरवेशन एक्ट 1980 के तहत रोप वे के कार्य के लिये अनापत्ति पत्र प्राप्त करने हेतु वन विभाग में आवेदन करें।
- तदानुसार निर्धारित प्रॉफार्मा में वन विभाग में रोप वे निर्माण के लिए अनापत्ति पत्र प्राप्त करने हेतु वन विभाग में आवेदन किया जा रहा है।

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अधिशाषी अभियन्ता (पी.डी.सी.-1)
जयपुर विकास प्राधिकरण
जयपुर

अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

ANNEXURE - "H"

(98) 101

PROJECT REPORT

FOR
PASSENGER ROPEWAY
FROM KANAK VRINDAVAN
TO JAIGARH FORT
AT JAIPUR

Damodar Ropeways & Infra Ltd.
Kolkata

छायाप्रति प्राप्त की

अधिशाषी अभियन्ता (रिंग रोड)
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जयपुर विकास प्राधिकरण
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INTRODUCTION

Rajasthan

Rajasthan state is located in north-west of India with international border on the West by Pakistan. The other sides are surrounded by Punjab, Haryana, Delhi, Uttarpradesh, Madhya Pradesh & Gujarat. The capital is Jaipur. Other large cities are Ajmer, Jodhpur, Bikaner, Kota, Pushkar, Mount-Abu, Chittorgarh and Udaipur. In the West of the state is the Thar (India) desert, which is sparsely inhabited by pastoral nomads.

Rajasthan has a total area of 343000 Sq. Kms. which is divided by Aravalli Hill range, one of the oldest mountain rages of the world, which run from north-east to south west for about 700 Km. It is the backbone of the sate and divides it into two regions with totally different geographical features.

Geologically many areas in Rajasthan are older than the Himalayas, therefore, it is obvious that the civilization came to Rajasthan much before it come to India. It was in the mid of the sixth century that the brave Rajputs, warrior par excellence, came to dominate the region and wrote the most glorious chapters in the history of Rajasthan with their blood and blade.

The panoramic outlook of the state is simply mesmerizing, with lofty hills of Aravali's one of the oldest mountain ranges of the world and the golden sand dunes of the Great Indian Desert- the only desert of the sub-continent. It is an incredible destination for the outdoor-tourist-take a safari on horses, camels, elephants or even in jeeps. No other region in the country is a conglomeration of so many paradoxes. It is a land of superlatives; everything over here is breathtakingly beautiful, impressive and fascinating! The state is well connected with other parts of the country and can be easily approached from Delhi and Bombay. Fast trains, direct bus and air connections make travel easy and comfortable.

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जयपुर विकास प्राधिकरण
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अधिशाषी अभियन्ता (पी.डी.सी)
जयपुर विकास प्राधिकरण
जयपुर

Jaipur

The Jaipur is the picturesque capital of Rajasthan, it is colour washed pink – the colour associated with hospitality in Rajput culture.

Built in 1727 A.D. by Maharaja Sawai Jai Singh H. Jaipur displays a remarkable harmony and architectural splendour. The ancient heart of the Pink City still beats in its fairy-tale palaces, rugged fortresses perched on barren hills and broad avenues that dot the entire city. The only planned city of its time, Jaipur is encircled by a formidable wall.

A young Bengali architect, Vidyadhar Bhattacharya formalized the city's plans in a grid system.

The city was laid with great precision. It could also be called the first planned city of the country. The roads were quite wide and intersected at right angles, the entire city being divided into rectangular blocks and surrounded by a peripheral wall with huge gates guarding it. The market places were named after the commodity which was predominantly sold or manufactured there.

Jaipur "the pinkcity" is already known all over the world for its forts, folk treasures, palaces, fairs, art and handicrafts. Varied landscapes, historical monuments, lakes, Aravali hills with its rugged terrain and greenery offers attractive sites to the tourists.

Jaigarh Fort

Jaigarh Fort is located on the top of the hill, by the name of Cheel ka Teela [Hill of Eagles]. Jaigarh Fort is also known as the 'Victory Fort', located at a comfortable distance of 15 kms from

(To) 704

Jaipur, Jaigarh Fort is considered as one of the spectacular forts in India. This Fort is on top of the Hill, while Amber Fort is below this.

The highlight of the tour of Jaigarh Fort is definitely the Jaivana, which is the world's largest cannon on wheels. It was built in Jaigarh's foundry in the year 1720.

Kanak Vrindavan Valley

Kanak Vrindavan Valley is an exotic place in the desert lands of Jaipur, Kanak Vrindavan is situated in the bottom of Nahargarh hills adjoining the Amber Fort, on Jaipur-Amber Road. According to past records, the beautiful green valley was labeled as Kanak Vrindavan Valley by Maharaja Sawai Jai Singh, almost 280-years ago. The valley seemed like a mythological Vrindavan [Land of Lord Krishna] to the King, consequently he installed an idol of Shri Govind Deoji in the complex.

Kanak Valley is also believed to be the blessed place where holy water from several rivers was gathered to carry out the Ashwamedh Yajna. Govind Deoji Temple, with its beautiful and delicate carvings, spreads a holy aura of spirituality all over the valley. The temple looks marvelous with its chhatris, lattice and mirror work. "Garba Griha" is the seat of the lord, which is engraved with exotic 'panni' work.

Kanak valley is encircled by Aravalli ranges and looks amazing from all the three forts of Jaipur.

Jaipur Development Authority [JDA] intends to install a passenger ropeway from Kanak Vrindan to near Jaigarh Fort. So JDA had floated an enquiry for selection of an investor for construction and operation of the above ropeway project on Build, Own & Operate [BOOT] basis.

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For DAMODAR ROPEWAYS & INFRA LTD.

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जयपुर

(102) 105

M/s. Damodar Ropeways & Infra Limited (DRIL) [formerly Damodar Ropeways & Construction Company Private Limited] along with its Consortium Members submitted the offer. JDA had received offers from different companies and they had chosen DRCC who are specialized in aerial ropeway construction, operation & maintenance and have wide experience in the field in India.

SYSTEM

Based on detailed analysis of advantage and constraints of different ropeway systems and keeping the length and the terrain in mind for the hourly capacity we have offered a Monocable Detachable System being the most appropriate for the passenger ropeway both from technical as well as economical point of view.

SYSTEM DESCIPTION

Monocable Detachable Grip, Cabin Ride System.

An endless hauling rope supports and hauls the cabins. The hauling rope would be supported by a group of rubber lined sheaves which shall be mounted on articulated beams supported on trestles located along the alignment of the ropeway.

Cabins are suspended from the hauling rope at equal spacing to suit the hourly capacity of the ropeway. The panels of cabins should be made of fibre glass of aesthetic design for a seating capacity of 6 passengers in each cabin. The cabins are semi-enclosed to provide excellent travel comfort with protection from of weather.

The System is designed for 800 PPH capacity initially and equipped for 350 PPH. छायाप्रति प्रमाणित

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जयपुर विकास प्राधिकरण
जयपुर

A cabin arriving at the terminal station moves under station roller battery and gets disengaged from hauling rope at the unlocking ramp. The cabin, free from rope, moves on upgraded station rail, slows down to deboarding zone. A station operator unlocks the cabin door and opens it for passengers to deboard.

After the passengers get down, the operator closes the door and pushes the cabin round the back loop of station. A second operator at the boarding zone on the outgoing side opens the door and allows the passengers to board. He then pushes the cabin to a Spacer where the cabin waits and gets released at a pre-determined time interval to maintain uniform spacing of cabins on line.

After release from Spacer, the cabin moves on a down graded rail, picks up speed and gets locked with the moving hauling rope at locking ramp to begin its journey for the other terminal station.

The cycle is also repeated at the other terminal station.

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जयपुर विकास प्राधिकरण
जयपुर

छायाप्रति प्रमाणित

अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

LIST OF PLANT & EQUIPMENT AND SPECIFICATION

LIST OF PLANT & EQUIPMENT

Tentative list of Plant & Equipment for smooth and trouble free operation of the plant.

I.	**Haulage Rope**	:	42 mm dia 6/19 seale rope.
II.	Intermediate trestle completes with cathead and ladder of with steelwork construction.	:	Approx 10 Nos. (as required after final design shall be provided)
III.	Rope supporting trestle mounts comprising of Sheaves, their support beams and pedestals.	:	2 sets per trestle
IV.	Drive Terminal Station complete with required mechanical equipments and support structures of steelwork construction.	:	1 Set
V.	Tension Terminal Station completes with required mechanical equipment equipments and support structures of steel work construction.	:	1 Set
VI.	Ropeway Drive Equipments comprising of Drive Sheave, Speed Reduction Units, Electric Motor, Braking Device etc.	:	1 Set
VII.	Ropeway Tensioning equipment comprising of Return Sheave, Tension Gear, Trolley and Counter Weight, Tension Rope etc.	:	1 Set
VIII.	Ropeway cabin complete with Carriage (Grip)	:	44 Nos. for designed capacity and 22 Nos. for equipped capacity (with 2 extra for both as per NIT)
IX.	Telecommunication equipment comprising of Telephone and Transmission wires.	:	1 Set at each Station
X	Diesel Generator	:	1 set
XI.	Auxiliary drive with Diesel Engine for emergency	:	1 set
XII.	Rescue system	:	1 set

Note : The above data may be changed after detail design.

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छायाप्रति प्रमाणित

अधिशाषी अभियन्ता (पी.डी.सी.-I)
जयपुर विकास प्राधिकरण
जयपुर

अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

(Tes/108)

SYSTEM SPECIFICATION

I. **General**

All design, Manufacture/Construction will be as per the latest version of Indian Code of practice [IS : 5229 and relevant Codes].

II. **Driving Gear**

One set of Driving Unit of modern design and construction comprising of :-

a) Heavy main driving sheave of suitable dia of close-grained Cast Iron/Cast Steel/M.S. fabricated construction with special Aluminium/Rubber Liner.

b) Alloy steel driving sheave shaft provided with heavy roller bearing mountings.

c) One set of Open Gear of suitable rating with matching pinion, alternatively a Special helical Gear Unit.

d) Specially enclosed high speed reduction Gear with machine cut teeth and steel shafting running in heavy ball or roller bearing mountings.

e) One set of Electro-hydraulic thrustor operated brake.

f) One set of weight operated thrustor released brake.

g) One set of Jaw Clutch with manually operated lever for engagement with diesel engine.

h) Main drive Motor with power feed and control devices.

h) Suitable rated Diesel Engine for auxiliary drive of the plant in the event of failure of the electrical system.

The drive unit is rated for continuous operation and shall conform to the requirements under worst condition of load.

III **Tension Gear**

One set of mechanical parts for the automatic tension of the main rope comprising of Return-cum-Tension sheave of cast iron/cast steel/fabricated steel construction mounted on ball or roller journal and thrust bearings, trolley mounted on rollers, track for trolley, extra flexible tension ropes, rope sheave, axles and bearings, mild steel tension weight cage and concrete counter weight.

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अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
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अधिशाषी अभियन्ता (पी.डी.सी.-1)
जयपुर विकास प्राधिकरण
जयपुर

IV **Trestle Mounts**

Necessary pair or Quadruple or Hexa or Octa mounts consisting of special wheels with synthetic rubber/nylon liner of suitable diameter fitted with grease packed ball bearings. The wheels shall be supported on built-up steel double beams which, in turn, shall be pivotally mounted on a special pedestal.

V **Station Mountings**

All necessary mounts and single wheel fitted with ball bearings for use on the stations.

VI **Cabin**

6 Seater Cabins shall be semi-closed and made of tubular or rolled steel section in welded construction. Exterior & Interior surface are covered by F.R.P. or aluminium sheet. Cabin hangers are made of rolled steel section carefully welded by jigs and fixtures to avoid distortion. Cage/Cabin are suspended from the hanger through hinged or rubber-padded supports.

VII **Grip**

Grip mechanism of Cabin is designed to guarantee proper rope gripping under most unfavourable combinations of circumstances during Ropeway operations. Clamping pressure of grip on the rope is designed to resist sliding motion due to spring pressure and self-weight of cabin on maximum slope with factor of safety as per ISI code. Each grip is equipped with twin jaw or single jaw for rope clamping as per code requirement.

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For DAMODAR ROPEWAYS & INFRA LTD.
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जयपुर

अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

VIII **Wire Rope**

Rope selection is based on accepted norms of Ropeway engineering practice, available standards, manufacturer's code of practice and our experience in designing similar passenger ropeway. Tentative the rope selected in this case is -

42 mm dia Rope 6 x 19 seale construction, FMC

ROPE DIA WILL BE FINALLY AS REQUIRED UNDER I.S. CODE DURING FINAL DESIGNING.

IX **Auxiliary Drive**

To operate the drive at slow speed in case of failure of the main power supply or any defect in the Drive Motor, a Diesel Engine is provided. The engine is envisaged to operate the system for start periods in condition like power failure etc. to evacuate all the passengers from the line.

X **Tower**

The Tower would be constructed of steel & would be either tubular or lattice structure.

XI **Generator Set**

Diesel Generator has been provided for taking the entire ropeway drive load and also for the lighting & ancillary loads.

XII **Steel Work**

All steelwork is made of rolled steel sections of IS 2062 Grade-A bolted or welded Fabrication, and are in accordance with latest Indian Standards. Structures shall include all supports, bracings, service platform, ladders etc. wherever necessary.

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For variable speed of the Ropeway, we have considered DC Drive/AC VVVF Drive as prime mover.

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अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

अधिशाषी अभियन्ता (पी.डी.सी–1)
जयपुर विकास प्राधिकरण
जयपुर

Electrical system comprises of :-

a) Electric Motor of adequate rating suitable for 415V, 3 phase, 50Hz.

b) Thyristor/Frequency Controller unit of reputed make for stepless speed control of the system fitted with digital display unit indicating amperage, frequency, motor rpm etc.

c) Motor Control Centre equipped with incoming ACB, switch fuse unit, push button switches & indicating lamp, meters etc.

d) Local push button stations for emergency stoppages.

e) PVC insulated, PVC seathed, armoured, aluminium conductor power cables and copper conductor multicore control cables.

f) Earthing equipments.

g) Lighting Arrestors

XIII Civil Work

Civil work conforms to respective Indian Standards. Grade of concrete to be M-15 or M-20 nominal. Only HYSD Bars are to be used as reinforcement as per IS : 1786. Ingredients are mixed by hand or mechanical mixer in volumetric proportion only or design mix as applicable at site & as per design parameters.

XIV Rescue Arrangement :

The Ropeway system would be provided with a rescue arrangement to enable the passengers being evacuated in case of an extreme emergency where cabin are stopped on line.

Ladder rescue can generally be adopted for cabins which are stranded close to the ground. Here a light but strong aluminum ladder with a hook at the top is placed in position next to the cabin. An attendant stabilizes the ladder from below while another attendant goes up to open the door and help the passengers to come down.

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जयपुर

Rope Rescue System involves a winch and lowering rope. A small hand winch is clamped to the nearest tower, uphill from the stranded cabin. One attendant climbs the tower and then he "rolls" down to the cabin by means of a carriage which is restrained by a rope attached to the hand winch. Once the attendant reaches the cabin he views the restraining rope through a set of rollers pre-fitted to the cabin. A safety harness is now attached to the end of the rope and individual passengers are lowered to the ground by means of the harness, rope and winch.

As mentioned elsewhere the Auxiliary Drive with diesel engine enables the passengers to be evacuated in the event of power failure.

XV **Safety Provision** :

Safety provisions in general is provided in accordance with relevant IS specifications. In this connection provision has been made for safe removal of stranded passengers on line from cabins to ground in case of a breakdown.

Following are provided:

i) Diesel engine with independent drive, so that the ropeway system can be operated at reduced speed to bring stranded cabins to the terminal stations in case of failure of electrical power supply or main motor. A full capacity DG set to continue normal operation in case of main power supply disruption.

ii) Line safety is ensured by the provision of :
   a) Rope derailment detectors
   b) Rope catchers
   c) Adequate rope gauge to ensure appropriate clearance even under the worst conditions of lateral swing of cabins as per the relevant codes.

iii) Speed Control and stopping of ropeway, if the speed exceeds set limiting speed.

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जयपुर विकास प्राधिकरण
जयपुर

iv) Anemometer is provided at an appropriate place for wind speed indication with warning and ultimate shutdown capability in case of wind speed exceeding set limit.

v) Provision of limit switches at line trestles and stations to stop ropeway in case of emergency.

The safety devices, electrical equipment design and its safety margin, are all as per IS specifications.

XVI **Painting**

All equipments and structures are coated with two coat of red oxide primar followed by a coat of synthetic enamel paint.

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छायाप्रति प्रमाणित

अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

TECHNICAL PARAMETER

CAPACITY	=>	800 PPH (D); 350 PPH Eqp.
SPEED	=>	3.0 M per second
LENGTH (Between Drive & Return Sheave Centre)	=>	1494 M
LEVEL DIFFERENCE (Between Terminals)	=>	200 M
TIME INTERVAL (EQP)	=>	61.71 Second.
TIME INTERVAL (DES)	=>	27.00 Second.
ROPE	=>	42 mm dia, 6x19 (S), 1770 N/mm2, PPFC.
NO. OF CABIN (in Line & Station) Equipped	=>	22[with 2 extra]
NO. OF CABIN (in Line & Station) Designed	=>	44[with 2 extra]
MOTOR	=>	125 Kw DC
CABIN CAPACITY	=>	6 seater
POWER SUPPLY AT STATIONS	=>	415V ± 10%, 3ph, 50 Hz

Note : The above data may be changed after detail design.

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जयपुर

छायाप्रति प्रमाणित

अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

(H2) 115

PROJECT COMPLETION PERIOD

Estimated Completion Period is 15 to 18 months, subject to availability of land as well as statutory clearance, financial closure and Force Majeure Conditions

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जयपुर विकास प्राधिकरण
जयपुर

छायाप्रति प्रमाणित

अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
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Implementation Schedule

Important Activities of the Project	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Soil Investigation and Survey																
Design & Engineering																
Procurement																
Civil Engineering																
Fabrication																
Erection																
Testing & Commissioning																

Subject to availability of Land as well as statutory clearance, Force Majeure Conditions and Financial Closure

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जयपुर

(114) 117

DETAILS OF OTHER FACILITIES AND UTILITIES

a) The following auxiliary facilities are planned at lower station.

i) Cabin movement area

ii) Queue area

iii) Ticket Office, Control Room etc.

iv) Waiting hall

v) Cabin Parking Rail

vi) Curio shops and other passenger / tourist amenities / amusements for tourists attraction as well as future development.

vii) Restaurant & Cafe [Waste Management follow as per Forest & Environmental Rules]

viii) Toilet (Ladies & Gents)

ix) DG set room

x) Open Car Park

xi) Workshop

xii) Beautification and Garden

Note: Curio Shops/Restaurant total control by us, outside hawkers will not be allowed inside ropeway boundary area.

b) The following auxiliary facilities are planned at upper station.

i) Cabin movement area

ii) Queue area

iii) Ticket Office, Control Room etc.

iv) Waiting hall

v) Toilets (Ladies & Gents)

vi) Drinking Water Facility

vii) Open Car parking space

viii) Plantation & Horticulture etc.

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जयपुर विकास प्राधिकरण
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c) The following utilities are planned:

Diesel Generator set with changeover switch,

Portable fire extinguisher

Telephone and intercom system etc.

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जयपुर विकास प्राधिकरण
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(116) 119

REQUIREMENT OF LAND

The total land is provided by the JDA for the proposed ropeway along with other amenities. Details are given below.

S. No.	Particulars	Village	Khasra No.	Area of Land
A.	**Land belongs to JDA and hand over**			
1.	**Lower Station** (Near Kanak Vrindavan – 3 Acre)	Amer	=	12141 Sqm
2.	Right of way along the ropeway from lower station to boundary of forest land.	Amer	= 130 X 9 =	1170 Sqm
	Total of 'A'			**13311 Sqm or 1.33 Hac.**
B.	**Land belongs to Forest Deptt.**			
1.	**Upper Station** (Near Junction of Nahargarh and Jaigarh Fort Road)	Amer	5606 =	2957 Sqm
2.	Right of way along the ropeway alignment from boundary of forest land to upper station.	Amer	5606 80 X 9 =	720 Sqm
			5609 470X 9 =	4230 Sqm
			5604 150 X 9 =	1350 Sqm
			5611 375 X 9 =	3375 Sqm
			5612 252 X 9 =	2268 Sqm
	(This area shall be kept free as the rope-way is going overhead but shall not be used for construction. Construction shall be done only where the intermediate towers are required.)			
3.	Motorable approach road to upper station.	Amer	5606 20 X 10 =	200 Sqm
	Total of 'B' (land required for diversion from forest department, which has already been sanctioned by the Wild Life, Department of Ministry of Environment & Forest, New Delhi)			**15100 Sqm or 1.51 Hac**

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अधिशाषी अभियन्ता (पी.डी.सी–1)
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जयपुर विकास प्राधिकरण
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OPERATION AND MAINTENANCE PLAN.

Trial run for 30-minutes at normal operational speed and check the performance and safety system before it is opened to the public. It is intended to operate the ropeway from 10 A.M. to 6 P.M. (depending on requirement) in between some times will be utilized for cleaning, inspection and routine maintenance of the system. We understand that there is a restriction in operation beyond this period as it's a Sanctuary. The number of working days in a year considered is 320 days to meet the traffic as required. The typical operational procedure is as follows:

A cabin arriving at the terminal station moves under the decelerating tires and gets disengaged from the rope at the unlocking ramp. The cabin, free from rope, moves on station rail and stops for disembarking. The cabin door opens automatically to allow the passengers to disembark. The cabin is moved to the embarking area where the new passengers get in. The door closes automatically.

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अधिशाषी अभियन्ता (रिंग रोड)
जयपुर विकास प्राधिकरण
जयपुर

(118) 121

ESTIMATED PROJECT COST

DETAILS OF PROJECT COST	Rs. in Lakhs
Land & Site Development	40.00
Construction and Other Civil works	280.00
Equipment & Technology	1380.00
Miscellaneous Fixed Assets	53.00
Preoperative expenses	50.00
Contingency	80.00
Margin Money for Working Capital	30.00
Interest During Construction	137.00
TOTAL	**2050.00**

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जयपुर विकास प्राधिकरण
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PROJECT COST & VIABILITY

Cost estimate for the proposed system have been worked out based on present market prices of Plant and Equipment, construction material and labour cost. Project cost has two components, the cost of Ropeway itself and the cost to provide passenger amenities. Jaipur is historical and heritage place in Rajasthan. Huge crowd visits this place [domestic & foreign] every year. Reasonable arrangement therefore, in the form of passenger waiting hall, car parking area, restaurant, toilet etc. has to be provided. Estimated project cost is Rs.2050.00 lacs approx. Promotor's contribution to the project shall be around Rs.820.00 lakh assuming the debit equity ratio of 1:1.5. The borrowing from the bank / financial institution shall be Rs.1230.00 lakh.

The data on approximate number of visitors visiting at Jaipur was collected from various sources. It is assumed that approx. 4.0 lacs visitor shall be using the ropeway in the first year and traffic shall increase @ 5% every year.

Initial tickets rate is kept at Rs.100/-. Increase in the ticket @ Rs.20/- every two year is considered to meet annual escalation in cost.

Expenses

The operating expenses in the first year is estimated as Rs.134.0 lacs. This includes the cost of electricity, manpower cost, insurance, spares, tools & tackles, administrative and other expenses. No tax on ticket is considered. It is expected that the cost of operation shall escalate @ 4% for first 4 year and 5th year onwards @ 6% every year.

We have to pay Royalty @ 10% of revenue to JDA besides a fixed amount of Rs.18.0 lakh per annum.

Interest @ 14% is assumed on the borrowed capital.

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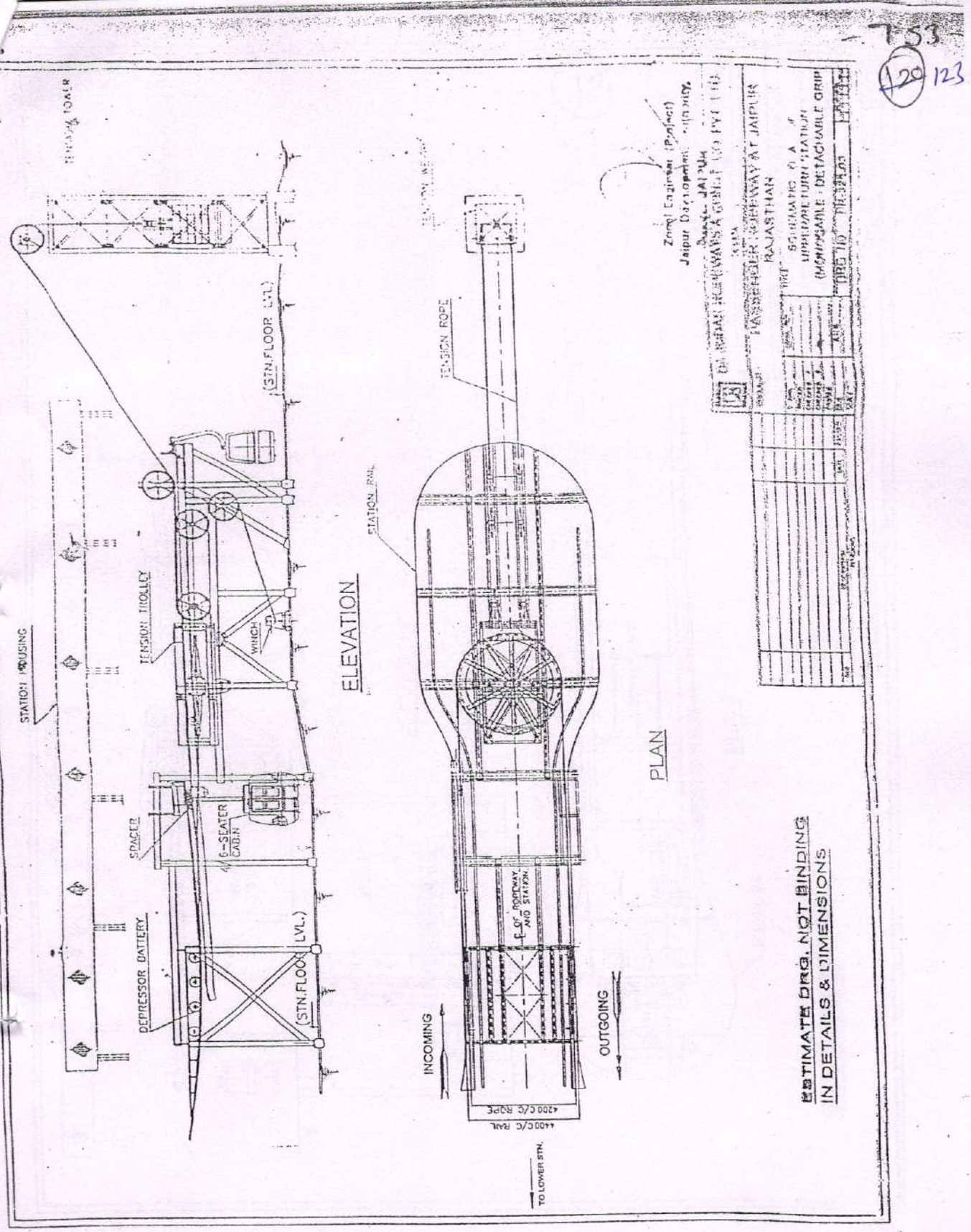

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(12)

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