ADDENDUM to the REQUEST FOR PROPOSALS

DESIGN ENGINEERING FOR PULSE GONDOLA AT EAGLECREST SKI AREA
(C3) RFP E22-333

ADDENDUM NO.: **ONE**

CURRENT DEADLINE FOR PROPOSALS:
June 17, 2022

PREVIOUS ADDENDA: **NONE**

ISSUED BY: City and Borough of Juneau
ENGINEERING DEPARTMENT
155 South Seward Street
Juneau, Alaska 99801

PREVIOUS DEADLINE FOR PROPOSALS:
June 10, 2022

DATE ADDENDUM ISSUED: **June 3, 2022**

The following items of the contract are modified as herein indicated. This addendum has been issued and is posted online. Please refer to the CBJ Engineering Public Purchase webpage at: https://www.publicpurchase.com/gems/juneau,ak/buyer/public/home

INFORMATIONAL ATTACHMENTS:

- Technical Memorandum – Galsterberg Gondola Inspection and Observation (6 pages).
- Gondola corridor location map and ground profile (1 page).

CHANGES TO THE RFP:

Item No. 1: DEADLINE FOR PROPOSALS

Change the date of the Deadline for Proposals ***from*** June 10, 2022, ***to*** June 17, 2022. Time remains the same.

Item No. 2: ARTICLE 1.2 – SCOPE OF SERVICES

Delete the bulleted list of services in Article 1.2 and ***replace*** with the following:
(The changes to the original scope of services are in bold)

"Engineering services may include but are not limited to the following:

- Refine lift profile using the owner's preferred lift location corridor as a starting point
- Determine design profile
- Complete foundation design, including any geotechnical investigations, for all terminals, mid-station and towers
- Design top and bottom terminals
- Design all-new mid-station (original Austrian installation did not have a mid-station)
- Design towers
- **Design protective enclosures for lift terminals and mid-station**
- **Design for new "Summit House" at top terminal**

- ~~**Electrical/communications design necessary for operation of all core functions of the Gondola**~~
- **Design electrical/communications utilities to base, mid and top terminal**
- **Provide performance specifications for the lift control system(s) and motor control system**
- Identification of long lead items required that could delay construction of the lift
- Electrical certification for the lift
- Ensure lift design meets current ANSI B77.1 and current state of Alaska and industry standards
- Provide on-site visits as required during construction
- Perform an as-built inspection and facilitate the load test.
- Provide a comprehensive Operations and Maintenance Manual for the lift.
- Provide suggested spare parts list
- Provide assistance and/or services for permitting as requested by owner."

Receipt of this addendum must be acknowledged or your proposal may be considered non-responsive. Acknowledge the addendum in the submitted proposal.

By: Caleb Comas
Caleb Comas
Contract Administrator

SCJ ALLIANCE
ENGINEERING SPECIALTIES GROUP

TECHNICAL MEMORANDUM

TO:	Dave Scanlan, General Manager, Eaglecrest Ski Area
FROM:	James K Bunch, Senior Consultant
DATE:	May 31, 2022
PROJECT:	Juneau / Eaglecrest – Gondola Inspection Services
SUBJECT:	Galsterberg Gondola Inspection and Observations

1 Project Description

The Galsterberg gondola near Pruggern, Austria is planned to be removed from service and sold as used equipment. As part of due diligence for the purchase, the City and Borough of Juneau (CBJ) has requested that SCJ Alliance (SCJ) provide inspection services at the gondola system near Pruggern. James K Bunch, Senior Consultant with SCJ has visited the Galsterberg site and reviewed the system prior to the dismantle process. During this visit, Mr. Bunch was accompanied by Dave Scanlan, General Manager of Eaglecrest, and Alan Steffert, CBJ Engineering Dept. At the site, the inspection team coordinated with Mario Müller, Pro-Alpin, and Zrinko Amerl, Banff Rail Co. On the second day at Galsterberg, the inspection team was introduced to engineers Miron Kosmač, Director, and Bor Kosmač, Manager of Elcon. Elcon is the automation company proposed by Mario to provide the replacement control system for the relocation.

The inspection involved observation of the terminals and line machinery, review of the documents, and discussions with the Galsterberg system manager, Sepp. The system was observed to be operating normally carrying passengers for skiing. All systems were observed including the evacuation power unit. The evacuation power unit was not used to operate the lift during this visit, but the manager and records show it is operated weekly.

Operational records were observed, and the documents associated with the installation and certification were reviewed.

The intent of this inspection is to determine the suitability of the Galsterberg system for relocation to Eaglecrest Ski Area owned by CBJ. The inspection is an audible and visual observation of the system to verify preservation of the original design integrity and the requirements of the Scope of Work as stated in the contract between SCJ and CBJ. Items found deficient or in noncompliance will be noted. The inspection did not include disassembly of components or procedures that require special tools.

Weather during the inspection was clear and sunny. Temperatures were 40-50 F.

2 Specific Deficiencies

Specific Deficiencies noted herein reflect noted items that do not conform to the ANSI B77.1-2017 Standard. Conformance to the Standard will be required when the lift is relocated to the Eaglecrest site. Operational requirements of the Standard were not considered for this report but will be required for normal operation at the relocated site.

No effort was made to review the signage as the signage requirements and language are different under the B77.1 Standard. In general, the controls and electrical systems were not reviewed because the entire electrical and control system will need to be installed as new to meet the Standard. The electrical system in Austria is 50 Hz AC, compared with the standard in North America of 60 Hz. Electric motors will run 20% faster at the higher frequency. That will require the replacement of some motors that may run too fast or require too much power. Alternatively, the installation of frequency converters for some motors may be necessary. At higher speeds, the motors may not be rated for the required power.

2.1 Lower Terminal

1. 4.1.2.6.3 Rollback Device. No rollback device is installed on the system.
2. 4.1.2.6.4 Drive Train Backstop. No drive train backstop is installed on the system.

If the system is equipped with torque proving on start, no drive train backstop is required. The system is very near the design condition where it will not roll back or forward, due to the friction in the system. More detailed analysis of the final design profile is required to determine the total system friction.

3. 4.1.1.4 a) The lower terminal is not designed for ADA accessibility.

The Standard does not specifically require ADA accessibility, but US laws do. The Standard requires consideration of ADA access during location design. The installation will need to consider the range of winter and summer passengers anticipated and provide appropriate access. Ramp access is available at the upper terminal.

4. F.4.8.2 Evacuation Power Unit fuel tank is a “Base tank” under the diesel engine and does not have exterior vent piping.

The fuel tank will require vent piping in accordance with F.4.8.

5. F.6.5 Machine room does not have fire detection.

The machine room below the bullwheel is required to have a fire detection system to cause an alarm at the operator station.

2.2 Line Equipment

1. 4.1.3.3.2 g) No rope position detection devices are installed.

The entire control logic system must be replaced including tower wiring. No wiring or devices are currently available to detect rope position. The control installer will need to develop switch mounting designs and wiring consideration.

2. 4.1.3.1 Towers are not identified with successive numbers.

New numbers will be assigned to the new tower locations and existing numbers will not be used.

2.3 Upper Terminal

No specific deficiencies noted.

2.4 Records Keeping and Procedures

1. 4.1.6.1 Operational Manual. The existing operational documents are in the German language.
2. 4.1.6.1 Maintenance Manual. The existing maintenance documents are in the German language.

Existing manufacturer recommended procedures will need to be translated by a technical translation service. Standing Operational Procedures will need to be developed to coordinate with the procedures at Eaglecrest.

3. Foundation design for the lower terminal rails was not found in the documents.

The original design documents were reviewed and appear to be thorough and complete, except for the lower terminal foundation connections to the moving terminal. A more thorough review of the foundation documents will be required when they are scanned for transmit. The foundation for the lower terminal will need to be a different design than the existing due to the grade and soil conditions anticipated at the new location. Structural design of the entire system will need to consider the wind, ice, and earthquake requirements at the Eaglecrest site.

3 System Observations

3.1 General Condition

In general, the gondola system appears in good condition. The system ran without incident for the 2 days we observed. The panel meter shows 28,500 hours of operation. The staff indicated that they operate about 1000 hours per year. Maintenance of the machine has been detailed and consistent. Nearly all of the exposed metal is treated with galvanize and shows little corrosion. The galvanize is in good condition and the bolts that were noted were in good condition. Nearly all of the bolted connections were noted to have lock nuts. Many of the bolts appeared to be newer.

3.2 Line Equipment

The haul rope is 32 years old with 28,500 hours. The rope has been inspected regularly and has not been rejected, but the rope is near the end of life. It is recommended to purchase a new haul rope for the reinstallation.

Some of the towers are numbered in groups, that is 1a/b, 6a/b/c, 7a/b, 8a/b, and 11a/b. The Standard requires "…Successive numbers…" and the groups are not recognized in the Standard. Due to the grouping, there are actually 17 individual towers in the existing system. Each of the terminals has two towers leading out of the terminal. Depending on the final profile, two terminal towers may not be necessary at the new location. There are 13 available line towers. It is anticipated that with the proposed mid-station. Additional towers will be required. Eaglecrest should plan to finalize the profile location and design prior to shipment of the components or be prepared to purchase additional towers and line machinery after the design profile is finalized.

The towers and sheave assemblies were noted and compared to the existing profile design. The component list matched in the documents. The profile design will also need to be finalized to determine the list of sheave components required prior to shipment.

Line machinery is generally original equipment with appropriate maintenance on sheave replacement. The pulse nature of the design means the machinery is not subjected to continuous heavy loads, but the heavy cabin groups cause periodic high limit loading on the line equipment. The assembly bearings and bushings should be inspected in detail and refurbished as necessary prior to installation.

3.3 Cabins

Cabins are in sound condition. Doors were noted to be smooth and regular with good closure. The local staff noted that the doors require the most maintenance work on the system. That is generally true in transit systems with doors. The doors get the most operation and tend to be handled by the passengers, and as a result require the most maintenance. The hangers are in reasonable condition and

are a double style. That is required for the weight of the cabin. The cabins, grips, and hangers will need to be NDT inspected prior to installation. The NDT requirements will need to be translated. There is some denting on the tower side wall of the cabins due to ski boots hitting the aluminum wall. The dents are not structural and only visible with side lighting. Considering the age of 32 years they are in good condition.

The cabin windows are very scratched and hazy. The windows should all be replaced for installation as a "New" system. For summer viewing visitors, clear windows are necessary. Special protection should be provided to prevent damage from winter skis and boards. According to Mario, it may be possible to have the cabins renovated in Austria or Switzerland prior to shipment. The only established cabin renovation business in North America is in Colorado. It will probably be cost effective to have it done in Austria prior to shipment. Eaglecrest should plan to determine the color scheme and graphics prior to the renovation. It is possible to apply graphic skins to the surface and many shops in the US are available. A color scheme could be applied later. The graphics could be changed later if desired. Based on experience with similar cabins, for operation in the summer, it is recommended to maintain a "Bright white" color to minimize the solar absorption.

The system has 12 cabins in 6 groups of 2. The cabins are currently numbered in groups, e.g., 1.1, 1.2, 2.1, 2.2, etc. That is not a widespread practice in the US. The cabins are required to be identified with numbers, but the order and style is not specified. The numbering can be determined by Eaglecrest.

The cabins are specified at 15 passengers. When we rode with the inspection team there were some other people in the cabin. There were a total of 11 people with 2 seated. With the seat folded, it would have been very crowded with 15 persons. Skiers that want to get to the top will crowd in but for summer operation probably 10 or fewer passengers is better. The jump seat accommodates 2 persons. Most will need to stand.

3.4 Drive Machinery

The system is a typical ski lift drive with a DC motor into a planetary gearbox and long shaft up to the bullwheel above. The original motor had a failure and was replaced in 2013 with a used rebuilt ABB motor. The motor has about 9000 hours since major maintenance. DC motors typically require major maintenance on the order of 5,000-10,000 hours. It is recommended to have the motor inspected, cleaned, and maintenance performed prior to installation.

The Gearbox is by Kienast and original equipment. It was rebuilt in 2009 at about 17,000 hours and currently has about 12,000 hours since rebuild. Lift drive gearboxes typically require major maintenance on the order of 15,000-25,000 hours. It is recommended to have the gearbox renovated prior to installation. The brand name Kienast is familiar to this observer, but a web search does not reveal a current manufacturer location. It is recommended to obtain service recommendations from Pro-Alpin on this gearbox. Recent gearbox inspection records indicate that the oil in service in the gearbox is not the recommended lubricant. The box will be shipped without oil. CBJ should take care to use an acceptable lubricant in the gearbox.

The system is fitted with an Evacuation Power Unit with a diesel engine and hydrostatic drive direct to the bullwheel. According to Galsterberg staff, the operating speed is about 0.8 m/s, which is typical for direct drive power units. In order to comply with the Standard, the lift will need to operate at more than 0.7 m/s. No hour meter was noted on this power unit, but EPU systems rarely experience enough operating hours to wear out. The system started and ran well during the inspection. Records indicate the auxiliary drive system has been operated weekly during the operating season. During the relocation process, the engine and hydrostatic system will sit idle without oil for more than a year. Care must be taken in shipping, storage, and installation to maintain the system clean and free of contaminants.

Hydrostatic systems are very sensitive to contamination. Proper system operation will need to be verified with full load condition. It is recommended that the system be operated for an extended period during acceptance testing to verify performance with load conditions for uphill, downhill, and summer operating temperatures.

The auxiliary engine fuel tank will require venting to the outside. It is not known if the base tank has secondary leak containment, or if the containment complies with the Alaska fuel storage rules. It is recommended that CBJ contact a local fuel supplier to verify the requirements.

The drive machinery is below the rope level. A fire detection system will be required the machinery area to alarm to the attendant station in case of fire.

3.5 System components

The original equipment manufacturer is no longer in business. The system is currently being supported by Doppelmayr for service and parts. It is anticipated that Doppelmayr will continue to support the system when relocated to Eaglecrest through the Pro-Alpin company and Doppelmayr.

According to CBJ staff, the planned relocation is intended to include a mid-station. The existing system does not have a mid-station and certain special components will be required to install a mid-station for this system. It is recommended that the special consideration be given to the design requirements to install a mid-station with this system.

3.6 System Life

There are several levels of obsolescence in typical ropeway systems. Economic or practical obsolescence is reached when the system no longer provides the level of service that was intended. When a competitor down the road has a better system and takes market share, or the capacity demand is greater than the system can provide, the system is no longer practical. Technical obsolescence is reached when the components and spare parts are no longer available or difficult to buy. Functional obsolescence is reached when the system is not able to continue operating without service interruptions or it is not providing the level of service required. Electrical and electronic components are typically aging in 10 years and obsolete in about 20 years. Mechanical and electrical components can be replaced and upgraded as they age. Some systems continue to operate beyond 50 years, but they are typically functionally obsolete.

The system at Galsterberg was put into service in 1990. It has served that area for 32 years. It is being replaced with a detachable gondola in order to increase the capacity and help the area grow. Assuming the recommendations noted in this report are followed, most of the major moving parts in the system will be renovated or replaced prior to installation at Eaglecrest. The life of the system will then be determined by ongoing maintenance operations, and the service requirements of the area.

3.7 Maintenance Cost

The maintenance costs of the system are difficult for the inspector to determine. A major component will be labor cost and the labor cost for CBJ and Eaglecrest are unknown. The cost of long-term major component maintenance is strongly dependent on the whether or not the rebuild/refurbish recommendations presented here are followed. The cost of spare parts is dependent on the market conditions, import costs, foreign exchange rates, and the parts supply cost through the anticipated supplier, Pro-Alpin.

The hours of service between major maintenance activities is typical of ropeway systems observed in recent years. The actual hours of operation is dependent on the operating plan and utilization at the Eaglecrest location. If the summer operation for cruise ship passengers is successful, summer operation

will be at least 1000 hours annual. With winter operations, the operating hours can be expected to be at least double the hours experienced at the Galsterberg location.

The technical staff at Galsterberg indicated that the cabin doors required the most labor for maintenance of the system. CBJ should be prepared to maintain a significant supply of cabin door parts to be sure to provide reliable service with the system.

4 Recommendations

The system at Galsterberg was installed in 1990 and is currently 32 years old. According to the hour meter, it has about 28,500 hours of operation. Certain upgrades will be required in order to conform to the B77.1 -2017 Standard. In addition, certain upgrades are recommended to provide reliable service at Eaglecrest.

4.1 A new logic control system conforming to B77l.1, Annex J. Required.

4.2 Rope position monitoring as part of the new logic control. Required.

4.3 Rollback device on the bullwheel. Required. (Depends on the final profile loading. The system may not be overhauling per B77.1, Table 4-5)

4.4 Ventilation of the fuel tank according to F.4.8. Required.

4.5 Fire detection system for the machine room. Required.

4.6 Tower numbering. Required.

4.7 Operation manual in English. Required.

4.8 Maintenance manual in English. Required.

4.9 NDT inspection of grips, hangers, and cabins. Procedures for NDT inspection in English. Required.

4.10 New haul rope conforming to the ANSI B77.1 Standard. Recommended.

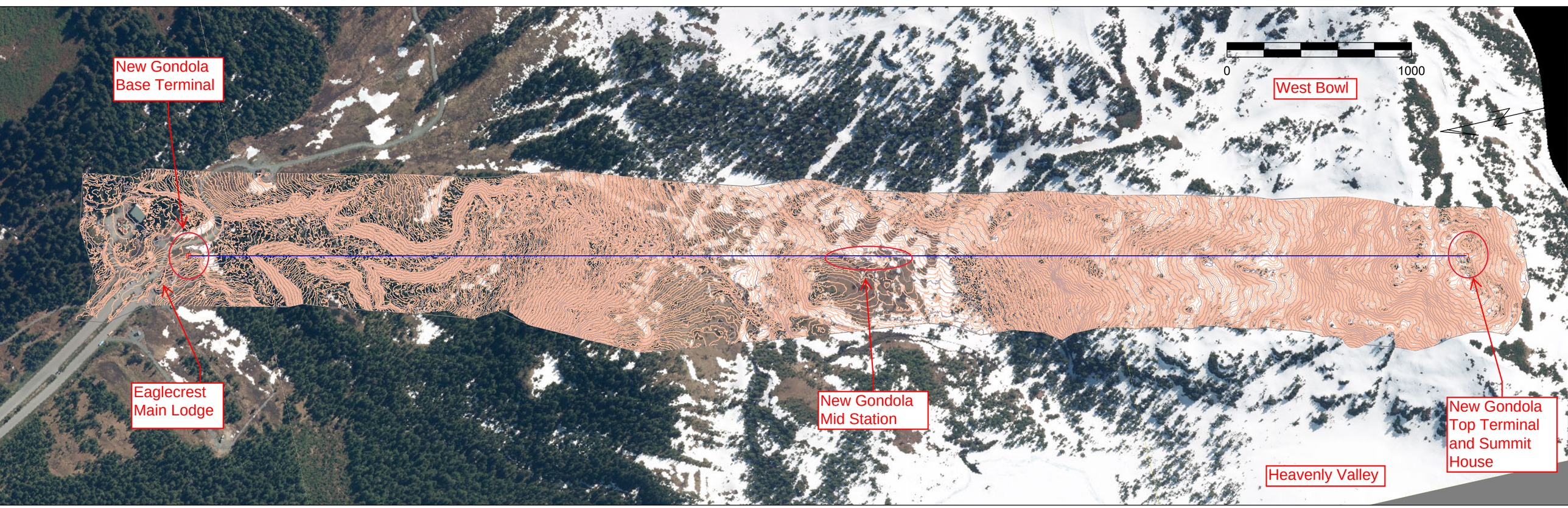
4.11 A new DC-SCR drive system integrated into the control logic system. Recommended.

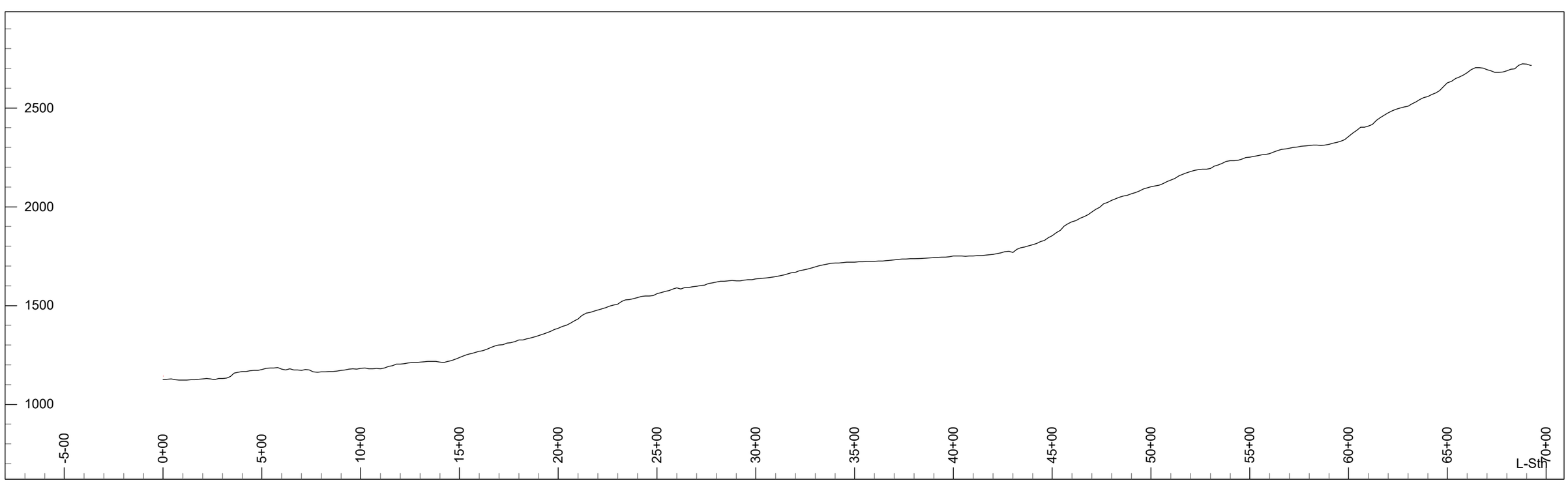
4.12 Major shop maintenance on the DC motor. Recommended.

4.13 Major shop maintenance on the gearbox. Recommended.

4.14 Major renovation on the cabins including window replacement, paint, new graphics, and communication systems. Recommended.

4.15 Review and refurbishment of all line machinery bushings and bearings while the system is disassembled and on the ground. Recommended.


New Gondola
Base Terminal
Eaglecrest
Main Lodge
New Gondola
Mid Station
New Gondola
Top Terminal
and Summit
House
0
1000
West Bowl
Heavenly Valley


2500
2000
1500
1000
-5-00
0+00
5+00
10+00
15+00
20+00
25+00
30+00
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