



# **Boundary Bay Airport**

## **Project Brief**

for

Apron Rehabilitation and Guidance Markings

**CZBB Project 2601**

**For BCAAP Application**



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## 1 INTRODUCTION

### 1.1 PROJECT DESCRIPTION

This project will address areas on Apron 2 and specific Apron areas that have recently experienced cracking and spalling as well as upgrading the guidance and runway markings to meet TP 312 Fifth edition standards. Alpha Aviation is proposing to remove identified damaged concrete panels, excavate and repair any soft areas and replace them with new concrete panels as well as complete mastic crack repair on identified panels and runway areas. The upgraded paint marking configurations define flight school and itinerant aircraft movement areas, parking areas, pedestrian routes, runway markings, and ensure improved safety for larger mid-sized aircraft and jet traffic.

### 1.2 PROJECT RATIONAL AND PRELIMINARY DESIGN

CZBB is recognized as an important reliever for Vancouver International Airport and is experiencing rapid growth in larger business and charter aircraft traffic. CZBB is currently the 5<sup>th</sup> busiest airport in Canada. The upcoming FIFA event and other Vancouver events are expected to result in increased jet traffic visits to Boundary Bay Airport and its full service FBO.

Aprons at Boundary Bay Airport were built during the Second World War and are over 80 years old. Apron 1 and Apron 2 are the busiest locations on the airport with five flight schools operating daily. The CZBB aprons have been rehabilitated on a planned phased program in order minimize impact on flight school training programs as well as address critical areas, increase safety and reduce FOD as concrete failures emerge.

Major portions of Apron 1 and Apron 2 have been rehabilitated through previous projects using the attached design and specifications for panel replacement. (Appendix 1 Provides the Design and Specifications) This rehabilitation project delivers continued phased work on the airport aprons to manage pavement strength and control foreign object damage. New pedestrian walking locations are also established on the terminal apron to improve safety in accordance with an apron management plan. Aircraft guidance markings and runway markings have been designed to upgrade to TP 312 5th Edition Standards and meet all safety requirements. (Appendix 2 and 3)

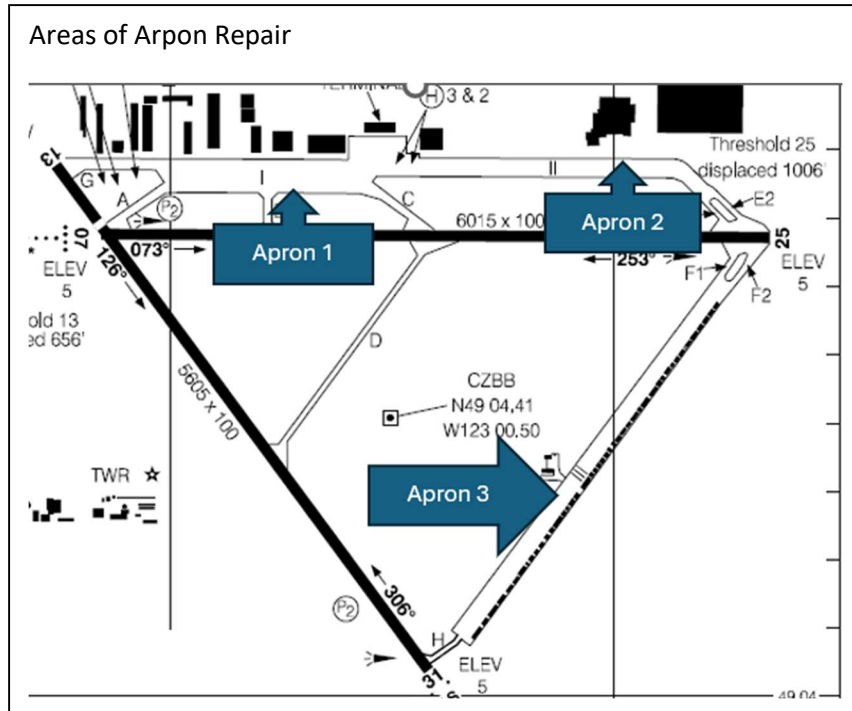
## 2 PROJECT LOCATIONS AND SCOPE

This project will rehabilitate Apron 2 with other specific locations on Apron 1, Apron 3 and Runway Areas that have recently experienced cracking and spalling as well as updating the guidance and safety markings for each of the apron areas and runways. The Contractor is to remove identified damaged concrete panels, excavate and repair any soft areas and replace with new concrete panels as well as complete mastic crack repair on identified remaining panels.

The project will take place on the apron areas of the airport which have controlled access and on runways that are under the direct control of Air Traffic Service provided by Nav Canada. A Plan of Construction Operations (PCO) approved by Transport Canada will guide the project. The Contractor will be responsible for identifying timing and working closely with Alpha Aviation operations staff to minimize impacts to the flying public. Alpha Aviation works closely with the five flight schools located at the airport and will work with the contractor to define new taxi routes for

aircraft around construction areas.

The chart below defines the three areas where Apron work will be performed.



The work will consist of four components as outlined below. It is recognized that there is overlap between each of the components and the selected firm will be required to manage the project to avoid duplications and ensure a cost-effective delivery of the project.

## 2.1 ENGINEERING AND CONSTRUCTION MANAGEMENT

The Construction/Engineering company will provide project management, scheduling, and construction engineering services. The companies have been prequalified through an open RFQ through BC Bid and will tender their fixed price proposals prior to construction. The company will be required to provide expertise in various engineering disciplines as well as technical expertise in pavement repairs, drainage and surveying requirements. The works will include:

1. Development of a construction management plan and specifications
2. Surveying, construction scheduling, supervision and as built drawings
3. Compliance with the Construction Plan of Operations and AVOP procedures
4. Demolition and off-site disposal of existing concrete slabs
5. Supply of subgrade materials and concrete
6. Compaction, concrete and base testing, and reporting
7. Resealing of joints and FOD control

8. Defining areas, planning, cleaning and supervision of mastic repairs
9. Scheduling mastic repair, surveying and painting to minimize operational impact
10. Supervision, surveying and delivery of guidance markings and painting

## 2.2 PANEL REPLACEMENT

The concrete panels which need to be replaced will be defined and measured as part of the construction management plan developed by the contractor and approved by Alpha Aviation. The concrete panels vary in size but are generally 6 meters by 24 meters, which are to be replaced with four 6-meter square panes to allow for expansion and contraction. It is planned to replace between 10 and 12 panels with this project with the final number identified as part of the construction management plan. The design is to follow the previous design used for panel replacements on Apron 1 and 2 which is attached as Appendix 1.

### Areas of Panel Replacement



## 2.3 MASTIC AND CRACK REPAIR

It is anticipated that the contractor will sub-contract with Sealtec or a similar firm to complete the mastic repair. The work will be completed on a cash allowance basis as the length, depth, and width of the repairs varies greatly. The contractor is expected to define the areas to be repaired to be approved by Alpha Aviation. The contractor will work closely with the sub-contractor to supervise the work and ensure all safety protocols are followed. The work is to be completed using the following specifications:

- To perform crack sealing to cracks and joints under 1" width – use hot applied Crafcro Roadsaver 211
- To perform crack sealing to cracks and joints over 1" width – use hot applied Crafcro Mastic One Sealing

Prior to applying either product, area needs to be treated with weed, wire wheeling or sandblasting of concrete cracks to remove treated weeds and dirt.

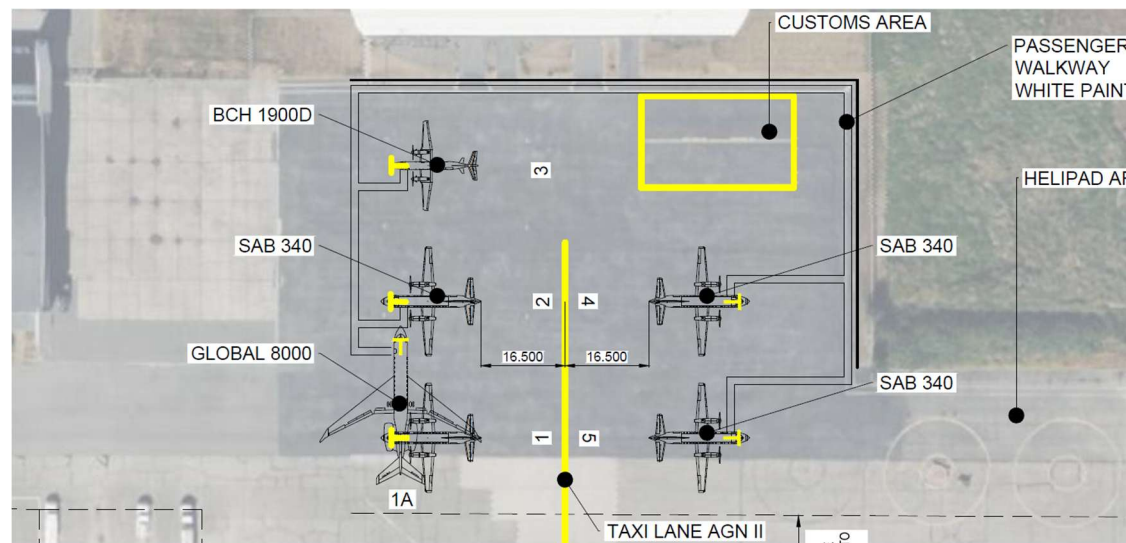
### Examples of Cracks to be Repaired



## 2.4 GUIDANCE MARKINGS AND LINE PAINTING

All paint markings on the apron and runway areas have faded over the last five years and will need to be repainted. Most of the taxi lines and runway markings will be in the same location but a new layout has been designed for the terminal apron area with defined “T” style parking locations as well as defined apron pedestrian walking areas. With the completion of the improvements to Runway 25 the upgrade of the apron guidance and runway markings is critically important to

### Apron Area Guidance Markings



ensure safety for the growing mid-sized aircraft traffic.

The design for all guidance markings is contained as Appendix #2 and #3.

## **3 AIRPORT CONSTRUCTION**

### **3.1 PLAN OF CONSTRUCTION OPERATIONS**

All airport construction is guided by an approved Plan of Construction Operations (PCO). Airport construction must comply with all standards contained in the Transport Canada Publication TP 312 5th Edition. Alpha Aviation prepares the Plan of Construction Operations to be approved by Transport Canada.

The PCO outlines the responsibilities of all parties involved in the project. It is also an integral part of the certification of the airport and outlines any variation from the approved Airport Operations Manual (AOM).

### **3.2 SAFETY FENCING**

Alpha Aviation provides construction fencing to separate aircraft and vehicle operations from construction areas. The contractor is expected to provide a schedule of construction areas planned and coordinate with Alpha Aviation for the provision of safety fencing. The contractor must provide an on-site supervisor that is passionate about safety and holds a current Airside Vehicle Operating Permit (AVOP) from Alpha Aviation. Alpha Aviation operations staff will oversee construction operations to ensure all FOD procedures as well as safety briefings are completed. Any communication with the Nav Canada Tower will be completed by Alpha Aviation operations staff.

## **4 ENVIRONMENTAL CONTROLS**

The City of Delta and Alpha Aviation have always considered the environmental best practices when making improvements at Boundary Bay Airport. During construction the following environmental best practices will be undertaken: ensure concrete forms are secure to protect watercourses from spillage, install storm water drain inserts in catch basins to prohibit debris from entering the drainage system, saw cut concrete with water to control silica dust and utilize a vacuum truck to prevent debris from entering the drainage system, and ensure that environmental spill kits are deployed for ready access.

There are several drainage channels from the apron that run through the airport infield. These channels are separated from Delta's irrigation system which supplies water to a significant part of Delta's farmland. During construction, the above-mentioned environmental best practices are put in place to ensure that there is proper sediment and erosion control.



## 5 BUDGET ESTIMATE

The project budget has been developed based on preliminary design estimates provided by our engineering design firms and previous construction and paint marking projects. The final concrete panels to be replaced, areas of mastic repair, and painting locations will be finalized after a review of the apron and runway areas in the spring of 2026 by Alpha Aviation. This will ensure all last-minute winter damage is considered. This package will be tendered by Alpha Aviation to the prequalified contractors on a fixed price basis.

This budget is to be the maximum expenditure on the improvements, and a final budget will be approved once the pre-qualified Engineering/Construction Company has tendered and been selected by Alpha Aviation to complete the individual components of the project. The selection of the contractor is based on a two-step process of pre-qualification followed by a tendered bid.

Project Management	\$ 70,000	
Apron Panel Replacement	\$330,000	
Mastic Crack Repair	\$160,000	
Guidance and Safety Markings	\$165,000	
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Total Estimated Project Cost	\$725,000	Note: Planned Maximum
Contingency 20%	\$145,000	Note: Managed by Alpha Aviation
Total Project with Contingency	\$870,000	Note: BCAAP Application

The contractor will be required to develop and submit a detailed construction management plan and finalized fixed price budget proposal for approval by Alpha Aviation prior to any construction.

## 6 APPENDICIES

### 6.1 APPENDIX 1-Design and Specification for Concrete Panel Replacement

### 6.2 APPENDIX 2-Design for Apron Guidance Markings

### 6.3 APPENDIX 3-Design for Runway Guidance Markings