PREPARED FOR:
TOWN OF CANMORE

CANMORE (ALPINE) HELIPORT

HELIPORT RESURFACING

TOWN OF CANMORE

HELIPORT RESURFACING

TOWN OF CANMORE

REVISION 1

PROJECT NO.: 231-01538-00
CLIENT REF:
DATE: JUNE 27, 2023

WSP
100 COMMERCE VALLEY DRIVE WEST
THORNHILL, ONTARIO, CANADA
L3T 0A1
PHONE: 289-982-4544

WSP.COM

REVISION HISTORY

FIRST ISSUE				
June 28, 2023	Issued for PCO Review to Transport Canada			
Prepared by	Reviewed by	Approved By		
Arben Durmishaj, Sr. Aviation Planner	Julius Ueckermann, Sr. Aviation Planner John Gibbons, Sr. Project Manager	Alberto Ruiz, Sr. National Director - Transportation Systems		

TABLE OF CONTENTS

FIGURES

APPENDICES

LEXICON/ACCRONYM

Term	Definition
Aeronautical ground light	Means any light specially provided as an aid to air navigation, other than a light displayed on an aircraft.
Air taxiway	Means a defined obstruction-free corridor in which helicopters hover-taxi above the surface of the ground.
Approach	Means a manoeuvre commencing with the final descent with the intention to land resulting in the arrival of a helicopter at a heliport or an aerodrome but not including the completion of the flight by the contact with the surface.
Approach/departure path	Means an area consisting of a quadrilateral area on the surface of the earth lying directly below the approach/take-off surface.
Heliport Parking Area	Means that part of a heliport, intended to accommodate the loading and unloading of passengers and cargo, the refuelling, servicing, maintenance and parking of helicopter.
Certifying authority	Means the Regional Director of Civil Aviation, Transport Canada.
Consultant (the)	Representative from the owner of the project. The word Engineer is also used.
Decision point	Means the point used in determining take-off performance from which, a power unit failure occurring at this point, either a rejected take-off may be made or a take-off safely continued.
Elevated/rooftop heliport	Means a heliport elevated more than 75 cm above the normal elevation of the ground.
Emergency landing area	Means an area where an unavoidable landing or ditching may take place with a reasonable expectancy of no injuries to persons or damage to property on the surface.
Engineer (the)	Representative from the owner of the project. The word Consultant is also used.
ETA	Estimated Time of Arrival (related to helicopter).
FATO	Final Approach and Takeoff
Flightpath	A flightpath for a heliport is the designated route or trajectory that a helicopter must follow when taking off, landing, or moving within the heliport airspace
FOD	Foreign Object Damage. Used to designate any foreign object that could cause damages to aircraft.
Ground effect	Means the flying or hovering of a helicopter near the ground or other solid surface that improves the helicopter's flight capability as a result of the cushion of denser air built up between the surface and the helicopter by the air displaced downwards by the lifting rotor(s). (effet de sol)
Helicopter clearway	Means a defined rectangular area on the ground, water, building or other supporting structure selected, or prepared as an area over which a helicopter may accelerate and achieve a specific height.
Helicopter parking position	Means a part of the apron designated for the touchdown and parking of helicopters that have taxied from a FATO, runway or another part of the aerodrome.
HOM	Heliport Operations Manual
HOP	Heliport Operation Personnel
Heliport elevation	Means the elevation of the highest point of each FATO.
Heliport geometric centre	Means the mean of the latitudes of the northernmost FATO edge and southernmost FATO edge and the mean of the longitudes of the easternmost FATO edge and westernmost FATO edge.
Heliport reference point	Means the designated point or points on a heliport located at or near the geometric centre of the FATO or the centroid of multiple FATOs that establishes the locus of the radius or radii of the outer surface that is established by a zoning regulation.
Hospital-on-call	Hospital-on-call from the Canmore Health Facility.

ICAO	International Civil Aviation Organization: A specialized agency of the United Nations, the objective of which is to develop the principles and techniques of international air navigation and to foster planning and development of international civil air transport. http://www.icao.org
Non-instrument FATO	Means a FATO intended for the operation of helicopters under visual meteorological conditions (VMC).
Obstacle	means an object that could have an adverse effect on the safe operation of aircraft in flight or on the ground.
Overall length	Means the maximum length of a helicopter, including rotor(s), measured through the fore and aft centre line of the helicopter.
P.C.O.	Plan of Construction Operations. The present document.
Rejected take-off area	Means a defined rectangular area on the ground abutting the FATO area prepared as an area in which an aircraft can be stopped in the case of a rejected take-off.
Restricted Area:	Means an area at an aerodrome that is designated by a sign as an area to which access is restricted to persons authorized by the Heliport manager .
Rotor downwash	Means the volume of air displaced downwards by the lifting rotors which, when it strikes the ground or other solid surface, causes a turbulent outflow from beneath the helicopter.
Safety area	Means a defined area surrounding the FATO which is kept free of obstacles other than objects required for navigation purposes.
Surface level heliport	Means a heliport located on the ground or a floating heliport located on the water.
TC	Transport Canada
TLOF	Touchdown and Lift-Off area is a designated load bearing area of a heliport intended for use by helicopters for takeoff and landing. the TLOF shall be large enough to contain a circle of diameter of at least 2 times the longer of the length or width of the undercarriage of the largest helicopter for which the heliport is certified, or based on the Helicopter Manual.

1 INTRODUCTION

1.1 BACKGROUND

The Town of Canmore is the owner of the Heliport, which is operated by Alpine Helicopters Inc. The Town of Canmore aims to reconstruct the heliport's TLOF/FATO paved area and update its markings scope include:

- Removal of asphalt layer of existing TLOF/FATO.
- Replace the existing asphalt layer of the TLOF/FATO.
- Paint markings for TLOF/FATO.

1.2 THE HELIPORT ENVIRONMENT

1. The heliport operational environment is dynamic and involves various stakeholders including: Town of Canmore, Alpine Helicopters Inc, Transport Canada and NAV CANADA. In addition, the heliport environment is highly regulated in the interest of public safety. As such, any deviations from standard operating procedures are carefully considered and subject to detailed review and input from the stakeholders and regulators.
2. This proposed construction project is considered very important to the Town of Canmore to improve the TLOF/FATO paved area while ensuring the continued viability and safe operation of the facility. It is recognized that construction will temporarily impact the “normal” operation of the facility and will require temporary operational mitigations. The cooperation of all parties including the contractor will be paramount in successfully carrying out this project.

1.3 PURPOSE OF THE PLAN OF CONSTRUCTION OPERATIONS

1. The primary purpose of the Plan of Construction Operations (PCO) is to provide a notification of deviation from the certification standards and the Heliport Operations Manual (HOM) that are published for the Canmore (Alpine) Heliport (the Operator). The PCO is a statement of the approved operational procedures to be employed to maintain the certification criteria of the Heliport during the implementation of the construction project. The Heliport Operator will be required to file this PCO with the HOM and NOTAM while the project is in progress. Any changes during the construction of this plan must be communicated to Transport Canada and amendments posted to the HOM by the Heliport Operator.
2. The secondary purpose of the Plan of Construction Operations (PCO) is to formulate in advance, the coordination required to implement this construction project with minimal interruption and conflict with Heliport operations and to ensure that Heliport security and flight safety are not compromised by the construction operations.
3. The third purpose of the plan is to inform all Heliport users, Transport Canada and NAV CANADA of the project, so that they may plan for, and mitigate, any potential implications that the project may have on their operations. Additionally, the PCO is an important document to summarize the information and requirements gathered through consultations with the stakeholders of the Heliport

2 WORK ZONES AND SCHEDULE

2.1 GENERAL

1. The project will be in one work zone:
   - Work Zone 1 – TLOF/FATO paved area
2. Preliminary construction start date is 25th of September 2023, and preliminary completion date is 13th of October for the Project and shall be confirmed prior to construction. All construction shall be completed around the scheduled flights.
3. The following outlines the restrictions associated with each of the proposed Work Zone 1 including preliminary durations.

2.2 FLIGHT SCHEDULE

Flight operations at the heliport occur every day of the week and cater a variety of operations: tourism, commercial, and rescue.

For tourism purposes, operations are scheduled between 8:30 and 17:00 every day, with the frequency typically peaking in the summer season with as many as thirty-five (35) flights arriving and 35 flights departing daily.

Commercial flights operate from dawn to dusk, with an average of about ten (10) flights arriving and 10 flights departing each day.

Rescue operations are based on 911 dispatch calls. While the frequency can vary depending on daily emergencies, rescue flights typically range from at least one to more than five (5) per day arriving and 5 flights departing.

2.3 EMERGENCY FLIGHTS

The heliport will remain open for emergency helicopter flights, with 30 minutes prior notice required.

In the case of an emergency flight, the contractor will have 20 minutes to clear Work Zone 1 from any equipment, debris, or any other construction materials.

2.4 WORK ZONE 1 – TLOF/FATO PAVED AREA

1. The work in Work Zone 1 includes the removal of existing asphalt pavement layer, scarifying and recompacting the existing granular base materials, and placement of a new asphalt pavement structure. New pavement markings are included in the scope of work.
2. Duration – Approximately 7 days.
3. Work hours Dusk to Dawn
4. Work permitted 7 days a week, 8 hours a day – dependent upon flight schedule at the time of construction, and weather.
5. All equipment and personnel must be signed in and out by the Heliport Operator personnel assigned to this proejct.
6. No material stockpiles or wind-rows shall be permitted within the work zone while the work zone is open to air traffic. All material stockpiles or wind-rows shall be confined to the contractor’s laydown area while the work zone is open to air traffic.
7. All construction equipment and personnel shall be confined to the contractor's laydown area while the work zone is open to air traffic.

3 CONSTRUCTION PROCEDURES

3.1 CIRCULATION OF CONSTRUCTION VEHICLES

1. Construction traffic shall be restricted to the areas indicated on the Heliport Reconstruction Plan of Operation and Construction (PCO). Access to the project area shall be as indicated on the Construction Sequencing Drawing enclosed as Appendix A.
2. The access road to work zone 1 will be closed to the contractor while the heliport is open to air traffic, however it will remain open for Alpine Helicopter personnel.

3.2 IDENTIFICATION OF CONSTRUCTION VEHICLES

1. All Contractor's vehicles that will be operating on the Heliport area of the Canmore (Alpine) Heliport must be equipped with an amber rotating warning light that must be turned on while a vehicle is in these areas. If equipped with headlights, these must also be turned on at all times in the heliport area.
2. The rotating warning lights shall be mounted on the vehicle in a location that will permit the beam to be seen by helicopter or surface traffic from any direction, within 360°. The light beam shall be set at an angle of 60° above the horizontal and it shall rotate at a constant speed of 35 RPM.
3. The enclosing globe of the warning light shall be "aviation yellow" for all vehicles.

3.3 ESCORT

1. All construction traffic must enter and exit the work zone -1 area or the Heliport areas only through the "Construction Access Route."
2. During hours that the heliport is open to aircraft traffic, the Construction Access Route must be closed with the existing gate and access will be monitored by Alpine Helicopters. Control of the gate and site access will be the contractors responsibility during dusk to dawn construction operations. . Contractors will not have access to the work zone during daytime operations unless requested by Engineer and agreed upon by Alpine Helicopters..
3. During the hours that the Heliport is closed to aircraft traffic, the Heliport will be NOTAM'ed closed and the gate will be opened for the Construction Access Route. Construction vehicles are permitted to enter and exit the work zone 1 only through the open Construction Access Route.
4. Cellular telephones will be the primary method of communication between contractor, owner, leaseholder, and engineer, during construction..
5. The Heliport operator personnel will confirm the schedule prior to construction starting with the Contractor. Escorting requirements will be determined based on the Contractor work schedule; any updates required will be made during the weekly construction meetings dependant on the Contractor's needs.
6. NOTAM preparation is the responsibility of the Alpine Helicopter Inc. (The operator)
7. The escort is under the responsibility of the Contractor.

3.4 INSPECTION CHECK BEFORE RE-OPENING HELIPORT

1. The Contractor will inspect the Heliport area and will confirm to the Heliport Operator Personnel that these areas are acceptable to be re-opened to air traffic. The Contractor will also confirm that the gate is closed on the Construction Access Route and the white wooden cross is laid in place and secured with sandbags

on the TLOF/FATO surface. This procedure shall be completed at least thirty (30) minutes before the first scheduled aircraft take off or Estimated Time of Arrival (ETA).

2. It is the Contractors responsibility to confirm that the site construction meets all the requirements prior to re-opening to aircraft traffic.

3.5 HELIPORT PASS (SECURITY)

1. No Heliport pass system is in place at the Canmore (Alpine) Heliport, the contractor should provide a list of the employees that will work on this site.

3.6 CLEARANCE DISTANCE FOR VEHICLES AND EQUIPMENT

1. While Work Zone 1 is open to helicopter operations, the Contractor must move his equipment and personnel to the Contractor's Laydown area. The Heliport Operator Personnel will advise the Contractor when it is safe to return to work. The Contractor shall follow the instructions given by the Heliport Operator Personnel.

3.7 PULL-BACK AREAS

1. The pull-back area for the project is the Contractor's Laydown as shown on Drawing No. Exhibit 1-1.

3.8 HEIGHT OF EQUIPMENT

1. The height of equipment parked in the Contractor's Laydown, shall not exceed 10.0 meters.

3.9 OBSTACLES (GENERAL)

1. No material stockpiles or wind-rows shall be permitted within the Work Zone 1, while the heliport is open to air traffic.

3.10 SURFACE GRADING AND COMPACTION

1. At the end of each working day, the Contractor shall:
    a. Ensure that there are no loose objects or any Foreign Object Debris (FOD) that could be lifted by the Helicopter downwash during landing or take-off.
    b. Ensure that the white wooden cross is laid on the TLOF/FATO centre and is weighed down with sandbags.

3.11 CONTRACTOR'S LAYDOWN AREA

1. At the end of each day all construction equipment and any tools shall be located in the Contractor's Laydown as shown on drawing CS1.

3.12 CLOSING OF HELIPORT

1. Should it become necessary to close the Heliport, a NOTAM must be issued containing all relevant information, including the expected reopening day and time.

3.13 PASSENGER CONTROL

1. The Heliport operator will be responsible to direct passenger to and from the helicopter and to and from the Heliport terminal building. The Heliport Operator Personnel will make sure that Contractor's equipment or any tools does not interfere with passenger pathway and or processing.

3.14 OPEN FLAME

1. Open flames, fire, and smoking are prohibited on the project site/heliport area..

3.15 BLASTING

1. No blasting is anticipated for the duration of this project.

3.16 LOCATING EXISTING SERVICES

1. The contractor is responsible for all utility locates around the work area.
2. The Contractor shall take caution while working around existing services
3. The Contractor shall make good any damage to existing services caused by construction activities.

4 OPERATION PROCEDURES

4.1 HELIPORT OPERATIONS

1. Heliport will be opened from Dawn to Dusk. During construction the TLOF/FATO will not be available for helicopters to use. A proper marking for closed TLOF/FATO will be installed at the helipad, when the heliport is open for operations.
2. Helicopters will use the published center of the TLOF/FATO, and hover to the helicopter parking spot.
3. Refer to Drawing No. Exhibit 1-1for the marking details.

5 AERODROME STANDARDS AND RECOMMENDED PRACTICE

The Canmore (Alpine) Heliport is a certified Heliport and must comply with Transport Canada Document TP325 and TP312E Aerodrome Standards and Recommended Practices, Canadian Aviation Regulations, and a number of other Federal or Provincial regulations. This PCO has been prepared based on recommended practices to accommodate temporary deviations to these standards to permit the proposed construction activity.

The following summarizes the aeronautical safety measures implemented:

1. All construction equipment and storage areas will be located to remain clear of any Heliport obstacle limitation surfaces (OLS) and electronic zoning protection areas.
2. NOTAMs will be issued by the Heliport Operator indicating the status of the Heliport including any operational impacts/facility closures.
3. Upon completion of the reconstruction of the TLOF/FATO paved area will be certified to TP325 standards.

6 COMMUNICATION PLAN

6.1 COMMUNICATION PRIOR TO CONSTRUCTION

1. This communication plan includes the communications that will take place prior and during the realization of the construction project.

6.2 MEETINGS WITH OPERATORS AND USERS

1. It is recommended that the Town of Canmore meet with the Alpine Helicopter Inc. (The Operator) to confirm the contents of the PCO. These confirmations or edits as required should be completed prior to tendering the projects, so that all bidders may be aware of the construction impacts of the PCO during the tendering period.

6.3 LIST OF PERSONS RESPONSIBLE FOR CONSTRUCTION

For the Transport Canada contact is:

Name: ***Greg Bast***	Position: ***Civil Aviation Safety Inspector – Aerodromes and Air Navigation***
Entity: ***Transport Canada***	
Telephone Number: ***403-669-0837***	
Email: ***Greg.Bast@tc.gc.ca***	

For the Town of Canmore, (Heliport Owner), the person responsible for the project is:

Name: ***Trevor Reeder***	Position: ***Project Manager, Engineering Department***
Entity: ***Town of Canmore***	
Telephone Number: ***403-679-5021***	
Email: ***trevor.reeder@canmore.ca***	

For the Alpine Helicopters Inc. the person responsible for the project is:

Name: ***Robert Humphrey***	Position: ***Base Manager***
Entity: ***Alpine Helicopters***	
Telephone Number: ***403-510-8991***	
Email: rhumphrey@alpinehelicopters.com	

For the Engineer, the person responsible is:

Name: ***John Gibbons***	Position: ***Project Manager***
Entity: ***WSP***	
Telephone Number: ***403-836-2358***	
Email: ***john.gibbons@wsp.com***	

For the Contractor, the person responsible is:

Name:	Position:
Entity:	
Telephone Number:	
Email:	

Once the contract is awarded, the Town of Canmore, the Engineer and the Contractor shall identify the persons responsible for this project.

6.4 PUBLICATIONS

1. No modification will be made to the Canadian Flight Supplement (CFS) or Canadian Air Pilot (CAP).

6.5 NOTAM'S

1. NOTAMs shall be issued by the Heliport Operator in the following cases:
   - Heliport use restricted to regular scheduled traffic and medevac during the construction period.

6.6 COMMUNICATION DURING CONSTRUCTION

1. During the construction period, communications will be done through project meetings and daily contacts between the Engineer, the Heliport Operator Personnel and the Contractor.

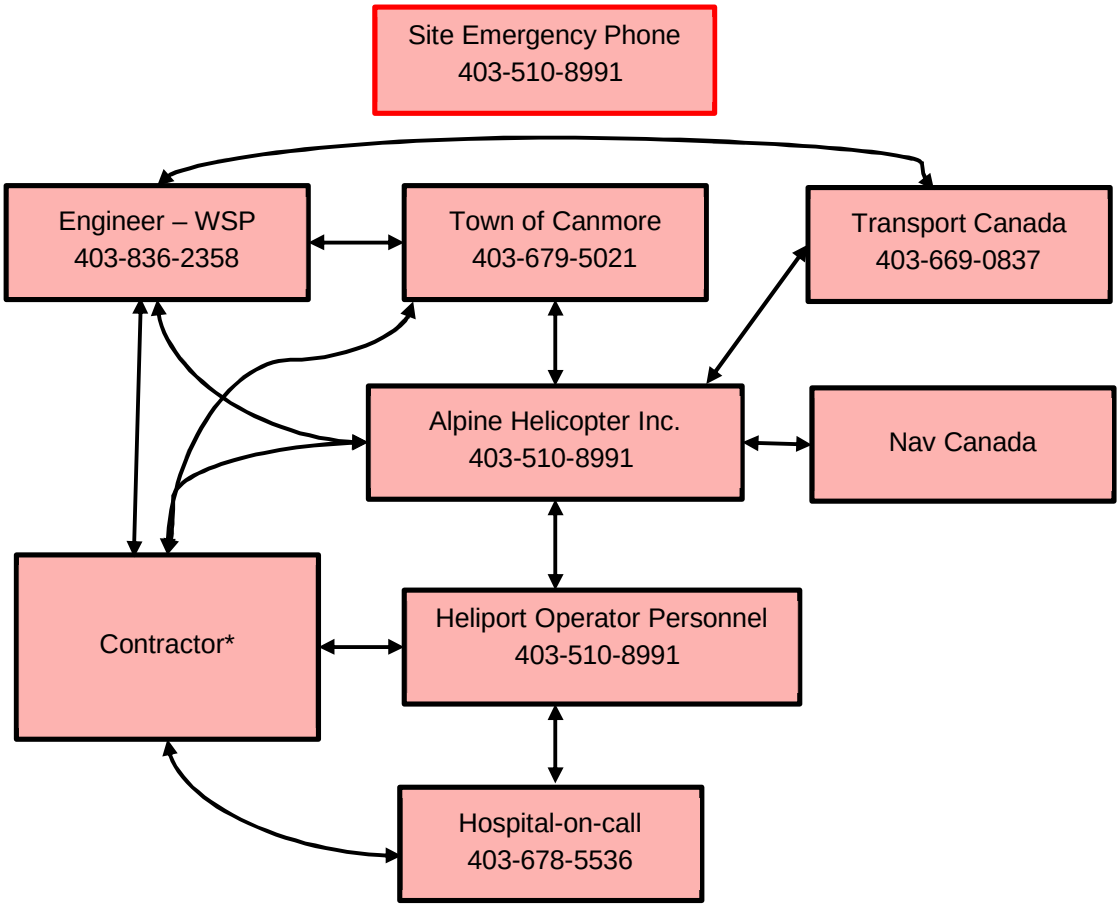
6.6.1 PLANNING OF PROJECT MEETINGS

1. The Engineer will organize project meetings in determining the date and time. They will also be responsible for establishing and distributing the minutes of these meetings.

6.6.2 ISSUANCE OF COMMUNICATIONS

1. Written directives will be issued by the Engineer to the Contractor if the question requires immediate attention that cannot wait for the next project meeting.

6.7 COMMUNICATION CHART



Note: * To be completed upon project tendering and award

Figure 5-1 Communication Chart

7 CONSTRUCTION SAFETY

7.1 ACCESS CONTROL

1. At the beginning of each working shift, including resuming works after any breaks, the Contractor's vehicles will be authorized to proceed to the work area via the Contractor Access Road when approved by the Heliport Operator Personnel.

7.2 DURING OPERATION WORKING HOURS

1. Work is not permitted when the Heliport is open to air traffic.

7.3 OUTSIDE OPERATION WORKING HOURS

1. Work is permitted only when the Heliport is NOTAM closed; however a Heliport Operator Personnel will be on stand-by if the Heliport must be reopened for a emergency air traffic.

7.4 FOD CONTROL

1. No FOD are expected to result from this project. However, the Contractor shall clean the site used by the contractor vehicles. Cleaning must be done on a continuous basis.
2. The Contractor shall keep the construction site clean and free of debris and waste.
3. The Contractor shall evacuate from the construction site any debris and waste construction materials at regularly scheduled times or to eliminate them in accordance with the Engineer directives. No waste material shall be burned on the construction site.

7.5 STOCKING OF CONSTRUCTION MATERIAL AT HELIPORT

1. No material shall be stocked on the Heliport area. All construction material is to be stocked in the laydown area,it will be transported on-site on time for their utilization.

8 CONSTRUCTION PLANS APPROVAL

1. Construction plans for this project have been prepared by WSP Canada Group Limited (the Engineer) and shall be approved by the Town of Canmore.

9 APPROVAL OF PLAN OF CONSTRUCTION OPERATIONS

Project:	Canmore Heliport reconstruction
Project Number	TBD
Heliport Name	Canmore (Alpine) Heliport
Heliport Operator & Certificate Holder	Alpine Helicopter Inc.

Heliport Manager	Robert Humphrey
	Heliport Manager 91 Bow Valley Trail, Canmore, Alberta, T1W 1N8

Certificate Number	5151-545
Date of Issue	25 September 2002

I undertake to meet the obligations set out in this plan of construction; and I hereby certify that the information in this plan is complete and accurate and no relevant information has been omitted.

_____ _____

Date (y-m-d) Signature of Heliport Operator/Certificate Holder

This Plan of Construction Operations Manual is approved.

_____ _____

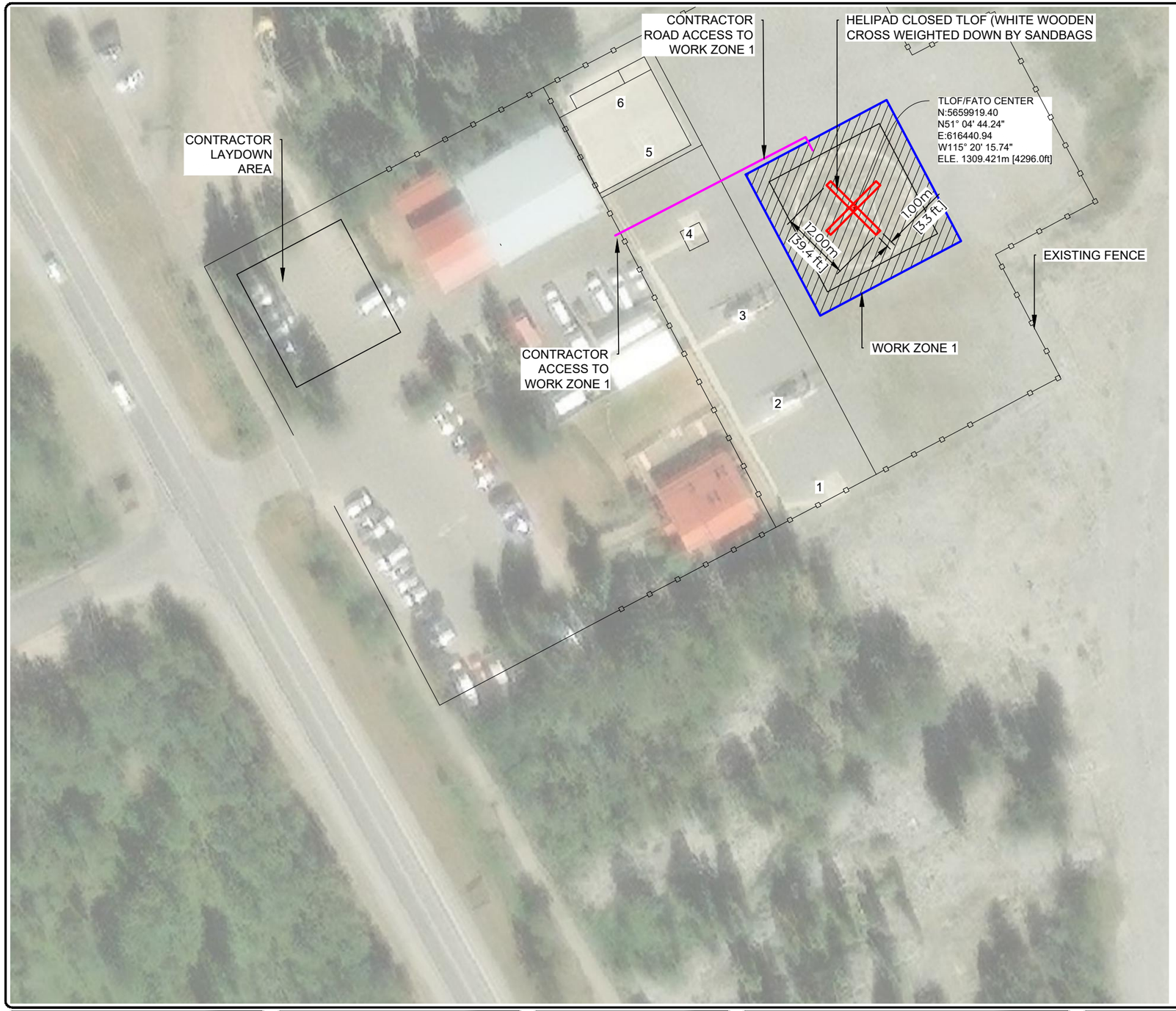
Date (y-m-d) for Town of Canmore

APPENDIX

A DRAWINGS

APPENDIX

A-1 CONSTRUCTION SEQUENCING PLAN EXHIBIT 1-1



WORK ZONE 1

1. 1. DURATION
   - 1.1. APPROXIMATELY 7 DAYS

2. WORK HOURS
   - 2.1. WORK PERMITTED 7 DAYS A WEEK,
   - 2.2. DUSK TO DAWN
   - 2.3. 8 HOURS A DAY - DEPENDENT UPON FLIGHT SCHEDULE AT THE TIME OF CONSTRUCTION, AND WEATHER.

3. CLOSURES
   - 3.1. TLOF/FATO DURING CONSTRUCTION TIME

4. DESCRIPTION OF WORK / RESTRICTIONS
   - 4.1. REMOVAL OF THE ASPHALT LAYER OF THE TLOF/FATO
   - 4.2. NEW ASPHALT PAVEMENT FOR TLOF/FATO
   - 4.3. NEW PAVEMENT MARKINGS FOR TLOF/FATO
   - 4.4. ALL EQUIPMENT AND PERSONNEL MUST BE SIGNED IN AND OUT BY AN HELIPORT PERSONNEL.
   - 4.5. NO MATERIAL STOCKPILES OR WIND-ROWS SHALL BE PERMITTED WITHIN THE WORK ZONE 1 WHEN THE HELIPORT IS OPEN FOR AIR TRAFFIC.
   - 4.6. ALL CONSTRUCTION EQUIPMENT AND PERSONNEL SHALL BE CONFINED TO THE CONTRACTOR'S LAYDOWN AREA WHILE THE WORK ZONE 1 IS OPEN TO AIR TRAFFIC.
   - 4.7. IN THE EVENT OF PULL BACK OPERATIONS THE CONTRACTOR WILL RELOCATE ALL VEHICLES, EQUIPMENT, AND PERSONNEL TO THE CONTRACTOR'S LAYDWON AREA, AS DIRECTED BY THE HELIPORT PERSONNEL.

5. OPERATIONS
   - 5.1. HELIPORT WILL BE OPENED FROM DAWN TO DUSK; THE TLOF/FATO WILL NOT BE AVAILABLE FOR THE HELICOPTERS TO BE USED. A PROPER MARKING FOR CLOSED TLOF/FATO WILL BE INSTALLED AT THE HELIPAD WHEN THE HELIPORT IS OPEN FOR OPERATIONS.
   - 5.2. HELICOPTERS WILL USE THE PUBLISHED CENTER OF THE TLOF/FATO, AND HOVER TO THE HELICOPTER PARKING SPOTS 1 to 6

6. HELICOPTER DATA
   - 6.1. HELICOPTER TYPE: H145
   - 6.2. MAXIMUM TAKE OF WEIGHT: 3,700KG/8,157POUND
   - 6.3. DYNAMIC TAKE OF WEIGHT: 5,550KG/12,235
   - 6.4. DAILY OPERATIONS: 50 ARRIVALS AND 50 DEPARTURES

7. SAFETY
   - 7.1. CONTRACTOR TO PROVIDE:
     - 7.1.1. SAFETY EMERGENCY PLAN
     - 7.1.2. FIRST AID
     - 7.1.3. EYE WASH
     - 7.1.4. FIRE EXTINGUISHER

No.	DATE d/m/y	DESCRIPTION	BY	QA/QC
1	04/03/2023	ISSUED FOR INFORMATION	AD	JU

REVISION / ISSUE

Consultant

Client

Town of CANMORE

N W E S

Scale

Scale - AS NOTED

SCALE BASED ON SHEET SIZE 11" X 17"

Location:

TOWN OF CANMORE
CANMORE MUNICIPAL HELIPORT (CEW9)

Title:

HELIPORT RECONSTRUCTION
PLAN OF OPERATION AND
CONSTRUCTION (PCO)

Project No.	Revision No.	Date:
231-01538-00	1	09/05/2023

EXHIBIT 1-1