

**BLIND CREEK RESOURCES LTD.**

ISSUED FOR USE

**CONCEPTUAL DESIGN BRIEF AND PLANS  
FOR A NEW GRANULAR SURFACED AIRSTRIP  
AT THE BLENDE PROPERTY, YUKON TERRITORY**

**C31101062**

**October 2007**



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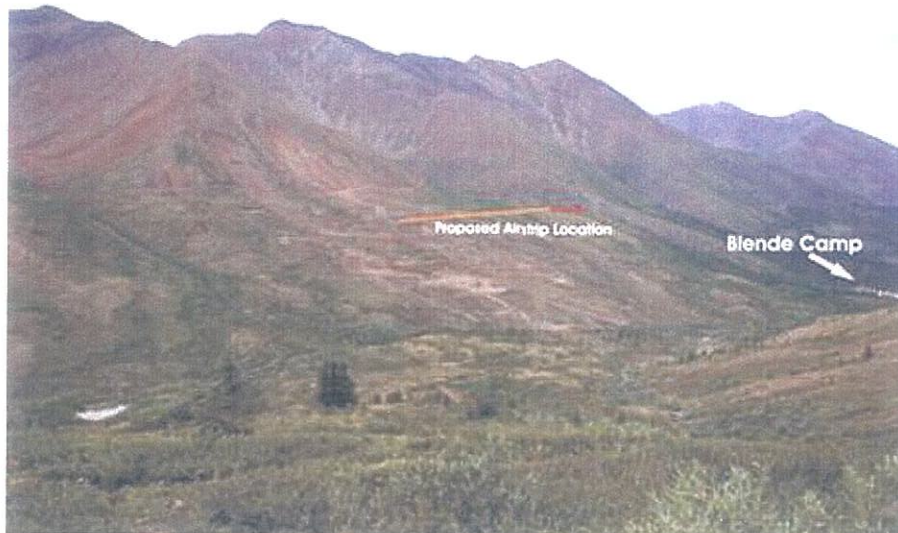
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## 1.0 INTRODUCTION

Blind Creek Resources Ltd. (BCR) commissioned EBA Engineering Consultants Ltd. (EBA) to provide a conceptual design for the construction of a granular surfaced, light aircraft aerodrome at the Blende Property, Yukon Territory (YT). The project was undertaken as per EBA's proposal dated September 10, 2007 (EBA File: C31101062).



The Blende Property is located approximately 60 km northeast of Keno, YT. The proposed aerodrome site is located across the valley (northeast) from the Blende camp on a natural bench on the side of a mountain at an elevation of 1320m. The site is serviced by rough exploration roads and is vegetated with brush and small trees.

BCR intends to construct a runway, taxiway and apron to allow small (Code A) Short Take-Off and Landing (STOL) aircraft access to the site. The conceptual designs for the proposed aerodrome are based on interpolated topographical mapping provided by BCR. EBA has not conducted a site inspection, geotechnical investigation or topographical survey. Figures 1 to 7 are attached and are intended to provide sufficient detail to allow BCR to evaluate the development impacts as well as determine the feasibility of proceeding to preliminary and final design.

This design brief details the following:

- design parameters in relation to industry design and safety standards;
- construction methodology and standards; and
- forecast material quantities.

## 2.0 DESIGN BRIEF

### 2.1 DESIGN PARAMETERS IN RELATION TO INDUSTRY DESIGN AND SAFETY STANDARDS

The airstrip design is based on design aircraft requirements provided by BCR for charter companies most likely to fly in and out of the aerodrome. The design has been based on Transport Canada's Aerodrome Standards and Recommended Practices TP312E. All deviations from the standards and recommendations are noted.

As directed by BCR, the design aircraft for the aerodrome is the Britten-Norman Islander. The typical requirements for runway width and length are listed in the table below.

Aircraft Type	Runway Length Required	Runway Width Required
Britten-Norman Islander	350 m (1,150 ft) at Sea Level	Code A Aircraft - 15 m (60 ft)

Transport Canada defines this as a Code 1A runway. Because the Islander is a twin engine aircraft, the runway surfaced width has been established at 18 meters to allow greater engine pod and wingtip clearances than the minimum recommended surfaced width of 15 meters. A graded strip, 19 meters wide on each side of the centreline of the runway, and its extended centreline, as well as a graded runway end strip 30 meters beyond the runway ends, have been provided.

Two concepts for runway length have been prepared. Site plans for the two options are shown on Figure 1 and Figure 4.

#### OPTION 1

- As instructed by BCR, Option 1 is based on a runway length of 380m (Figure 2). Based on information available to us, this runway length is marginally long enough for the Islander due to the aerodrome elevation and the runway grades. Available performance data for the Islander indicates that significant weight penalties would have to be taken to allow the Islander to take off on a warm calm day.
- The Obstacle Limitation Surfaces (OLS) for Option 1 are depicted on Figure 3. Both ends and the east side of the runway do not meet Transport Canada standards for certified aerodromes. The approaches are partially clear and should be reviewed with BCR's potential air carrier to determine if the approaches can be flown safely. Should this site be considered feasible, we would recommend that it only be flown under good VFR meteorological conditions and by pilots familiar with the aerodrome and mountain flying.

## OPTION 2

- Option 2 is based on a runway length of 500m (Figure 5). The 500m maximizes the available space between the two drainage courses at each end of the runway. To achieve this length and improve the approaches to both ends of the runway, the horizontal alignment has been changed from Option 1. We feel that maximizing the runway length will greatly improve safety and reliability by providing additional runway length that may be required due to the site's relatively high altitude and 2% longitudinal grade. The available performance data for the Islander indicates that some weight penalties would be required for take offs on a warm calm day however these may result in gross weights 200-300 lbs less than the maximum gross take off weight for Islanders at 4,400 ft. altitude.
- The OLS for Option 2 are depicted on Figure 6. Again, both ends and the east side of the runway do not meet Transport Canada standards for certified aerodromes. The approaches are partially clear and should be reviewed with BCR's potential air carrier to determine if the approaches can be flown safely. Should this site be considered feasible, we would again recommend that it only be flown under good VFR meteorological conditions, and by pilots familiar with the aerodrome and mountain flying.

To control costs for both options, excavation and grading of existing terrain has been kept to a minimum. The plans do not include any construction to improve the transitional surfaces. Cut and fill slopes have not been reviewed for slope stability.

To improve safety, tree and brush removal has been included to 45 m either side of runway centreline and extended centreline. This will improve visibility and allow easier spotting of vehicles, people and wildlife on or near the runway.

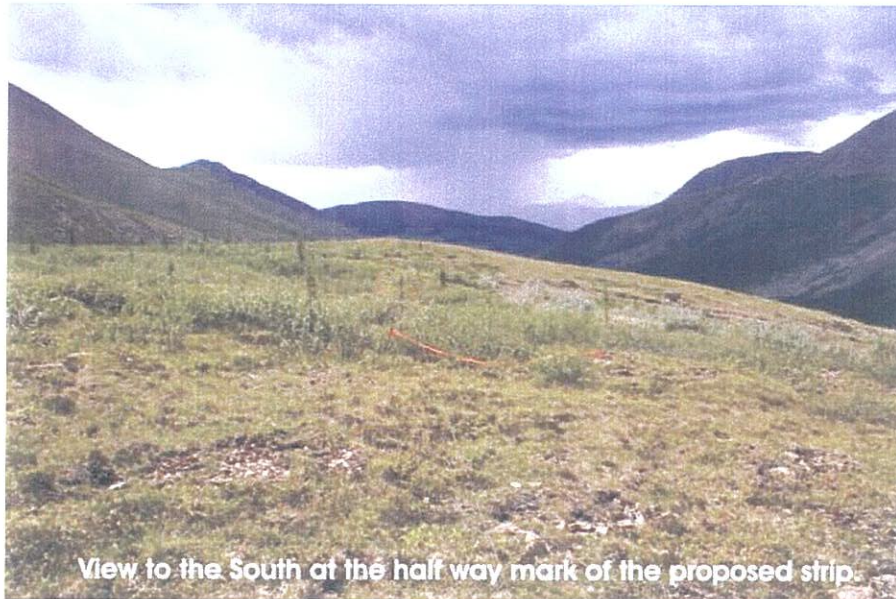
A small taxiway and apron have been provided for both options to allow aircraft to taxi off the runway prior to other aircraft departing or landing.

Runway/taxiway/apron edges and ends will be marked with stake-mounted reflectors including an orange flag or pylon. Although these reflectors are not approved for certified aerodromes, they will help define the runway, taxiway and apron surfaces and are frangible to minimize potential damage should aircraft strike them. They are also easily removable should the airfield be unused for any length of time. The reflectors, stakes and flags are relatively lightweight and can be transported by light aircraft.

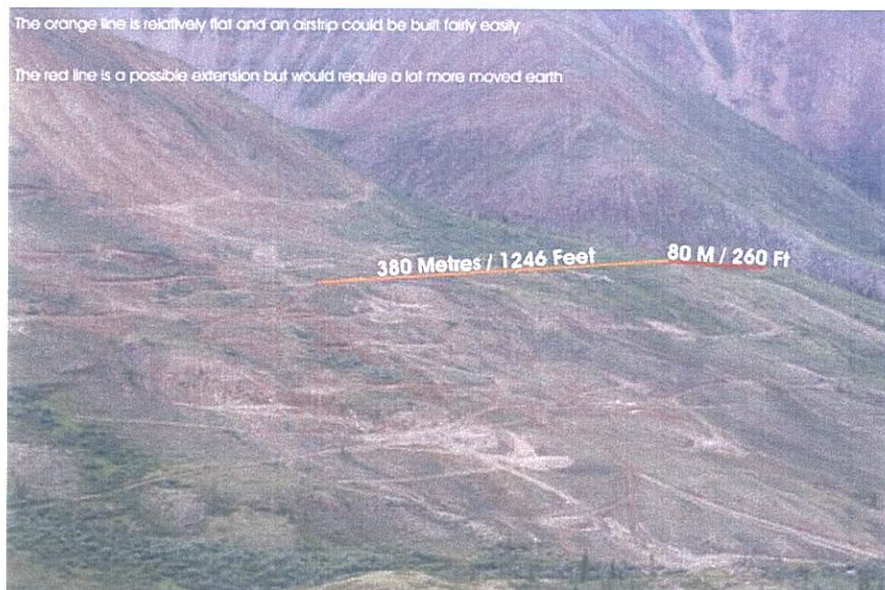
A single wind direction indicator has been included. The windsock tower is aluminium and breaks down into relatively small pieces, which can easily be transported in an Islander. Base construction for the windsock will require a relatively small cast-in-place concrete base.

## 2.2 CONSTRUCTION METHODOLOGY AND STANDARDS

The concepts have been designed to keep earthworks to a minimum and construction techniques simple.



The site will require clearing and grubbing to the limits shown on the drawings. All trees and brush should be disposed of in accordance with the governing environmental regulations.



Once clearing is complete, the subgrade can be constructed utilizing existing materials. It is expected that much of this work could be accomplished with bulldozers or earthmovers

and compaction equipment. The profiles have been designed to balance the cuts and fills. See Figure 7 for typical cross sections.

The suitability and stability of the existing materials as well as location of rock formations should be confirmed by a geotechnical investigation prior to preliminary and final design stages. In addition, a topographical survey of the site and the approaches will be required to confirm and further refine the runway alignment and material quantities.

Upon completion of the subgrade the aggregates for the runway surface course (granular base gravels) should be manufactured (crushed) or suitable natural materials found. The granular base course will be placed, graded and compacted over the entire area of the runway, taxiway and apron to a thickness of 200mm. We recommend additional granular base material be stockpiled near the aerodrome to ensure easy access for future maintenance and re-grading. Screening or crushing equipment as well as a loader, water truck, grader, compactor and dump trucks will be required for this stage of the work.

Upon completion of the base, the areas beyond the aerodrome travelled surfaces will be graded (graded areas) to allow an aircraft to leave the edge of the runway without incurring major damage. This work could be accomplished with a bulldozer or grader depending on the nature of the existing materials.

The stake mounted runway/taxiway/apron edge reflectors can be installed at the locations shown on the plan. The 0.6m long stakes for the reflectors can be driven into most sandy or clay materials however, if the grade is gravely or rocky, excavation and backfill may be required.

The windsock base should be constructed with cast-in-place concrete. The formwork for this base is normally a 0.450m diameter x 1.8m deep sono-tube.

Construction of the aerodrome access road has not been included in this brief.

## 2.3 FORECAST MATERIAL QUANTITIES

The quantities forecast below are based on interpolated topographical mapping provided by BCR. The site should be surveyed prior to preliminary and final design to better define the aerodrome location and ensure quantities are sufficiently accurate for construction.

### OPTION 1

ITEM	FORECAST QUANTITY
Granular Base material	2,100 cu. m.
Excavation (Cut) and Embankment (Fill)	34,000 cu. m.
Graded Areas beyond traveled surfaces	31,000 sq. m.
Tree and Brush Clearing	5 ha.
Edge Reflectors Mounted on Stakes	46
Wind Direction Indicator and Base	1

**OPTION 2**

ITEM	FORECAST QUANTITY
Granular Base material	2,600 cu. m.
Excavation (Cut) and Embankment (Fill)	46,000 cu. m.
Graded Areas Beyond Traveled Surfaces	40,000 sq. m.
Tree and Brush Clearing	6 ha.
Edge Reflectors Mounted on Stakes	50
Wind Direction Indicator and Base	1

**3.0 CLOSURE**

We trust that this information meets your present requirements. If you have any questions or require anything further, please contact Mr. Willms at 250.862.3026, ext. 256.

Respectfully submitted,  
EBA Engineering Consultants Ltd.

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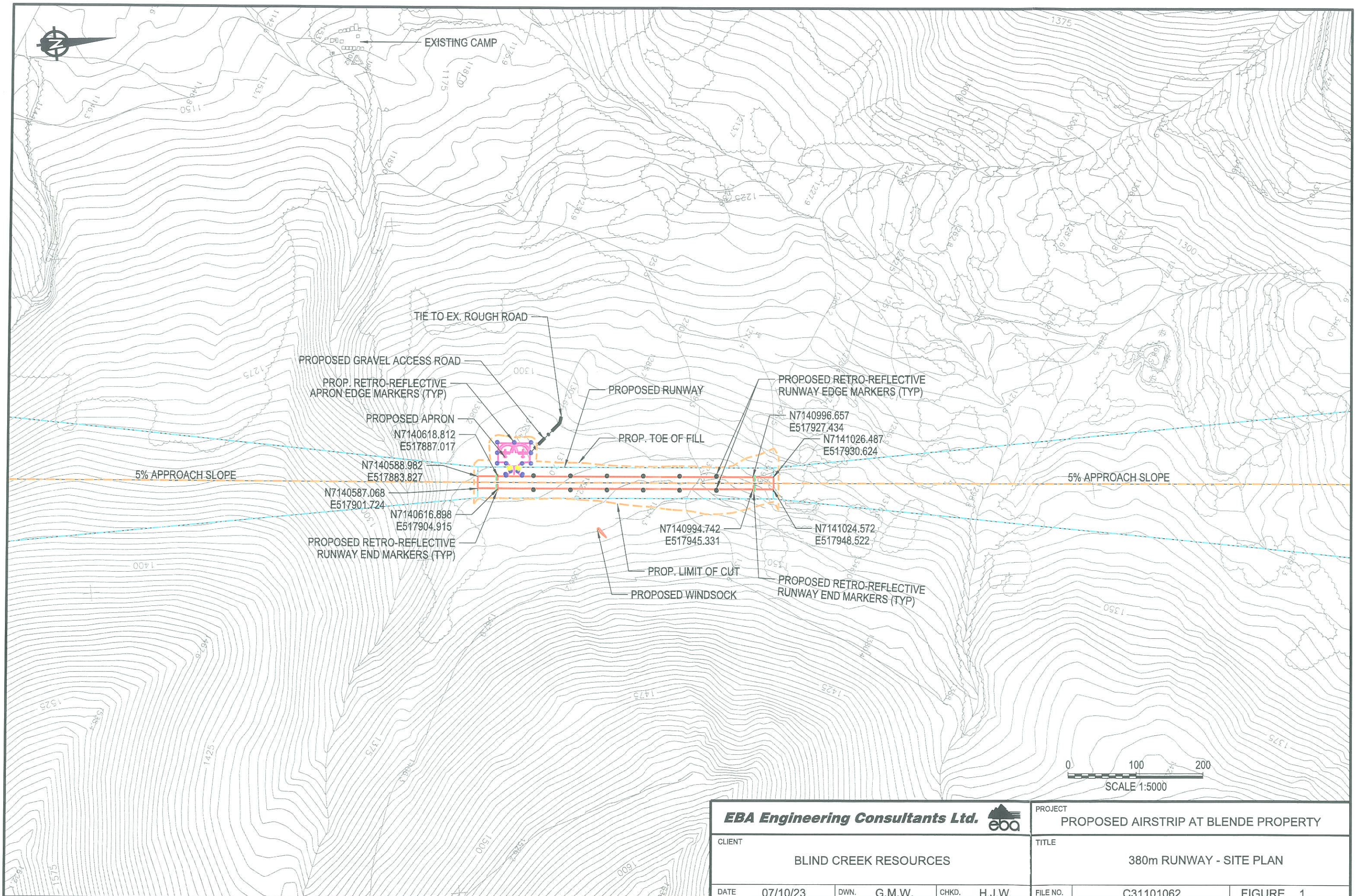





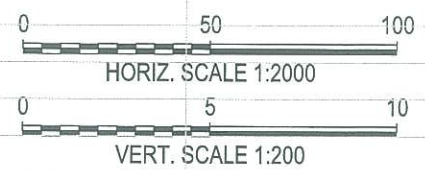
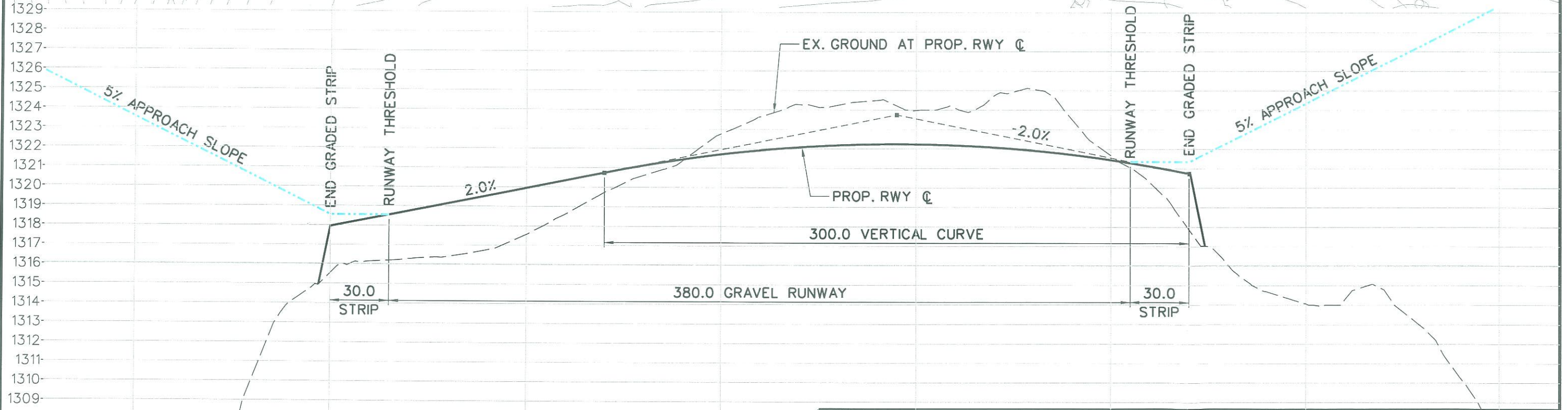
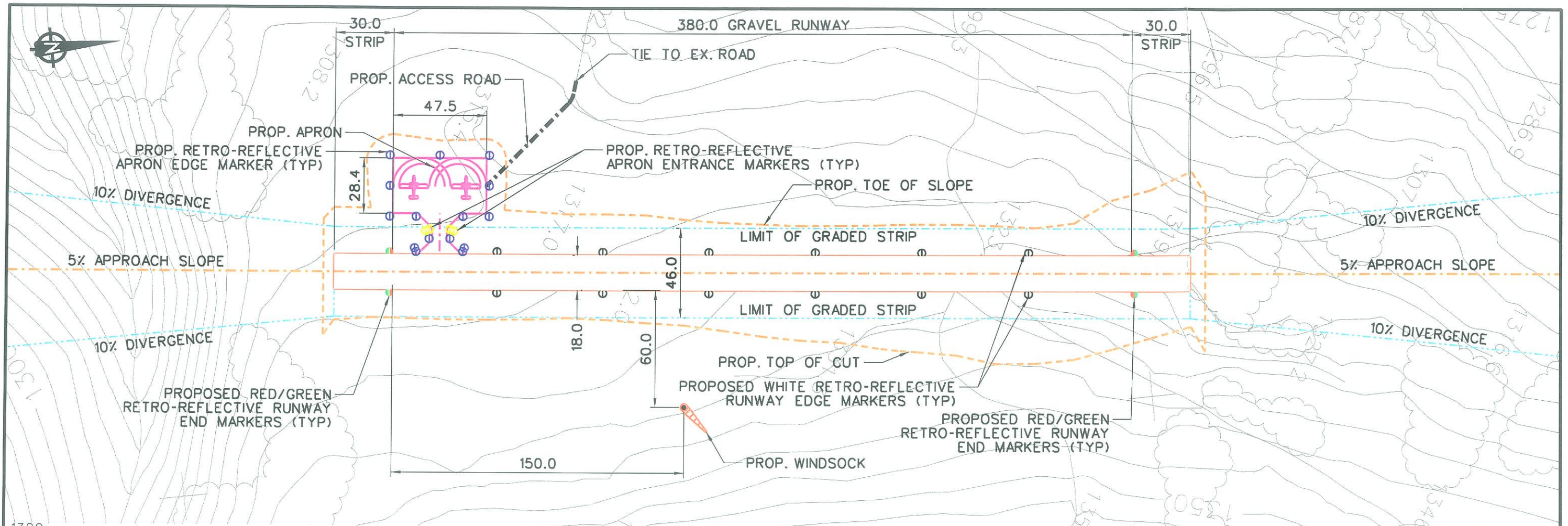
# APPENDIX


## APPENDIX A FIGURES

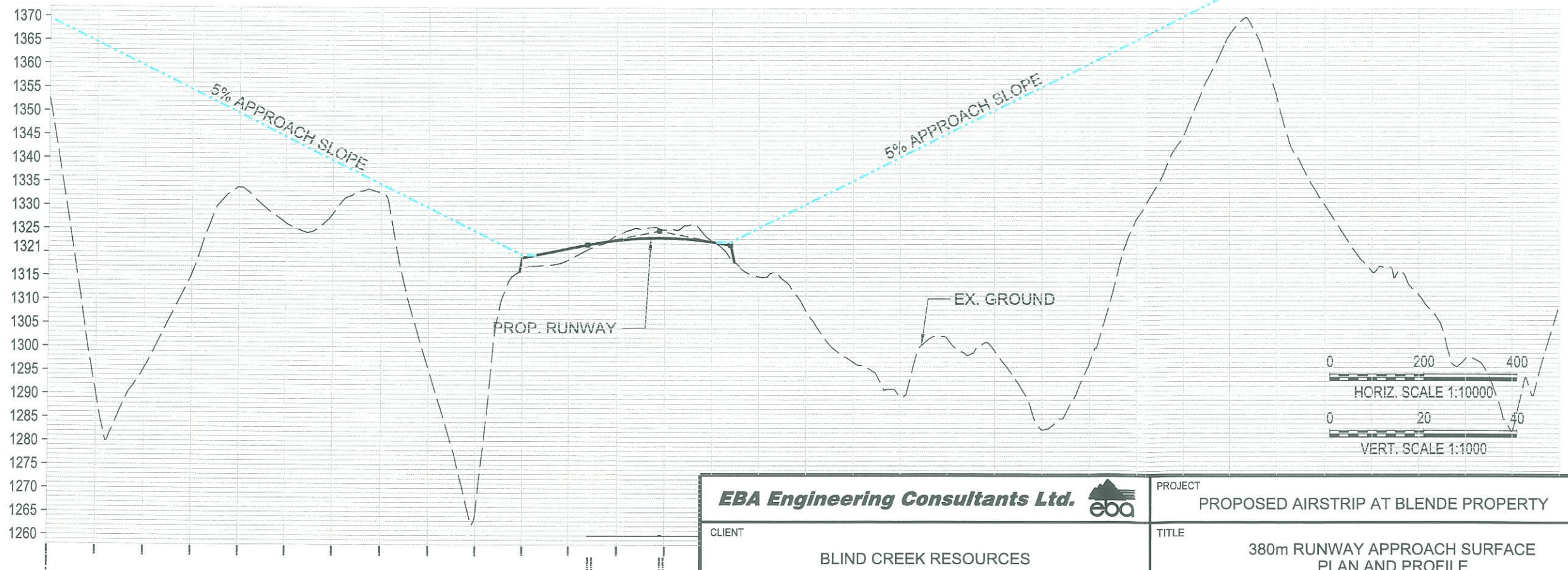
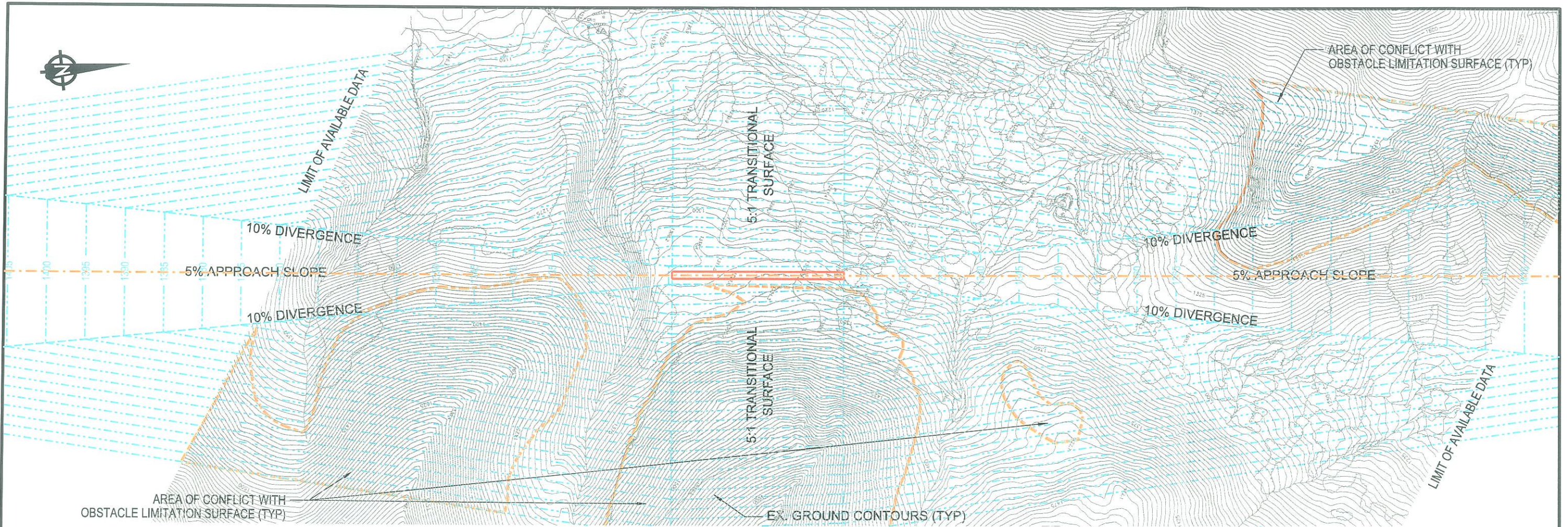





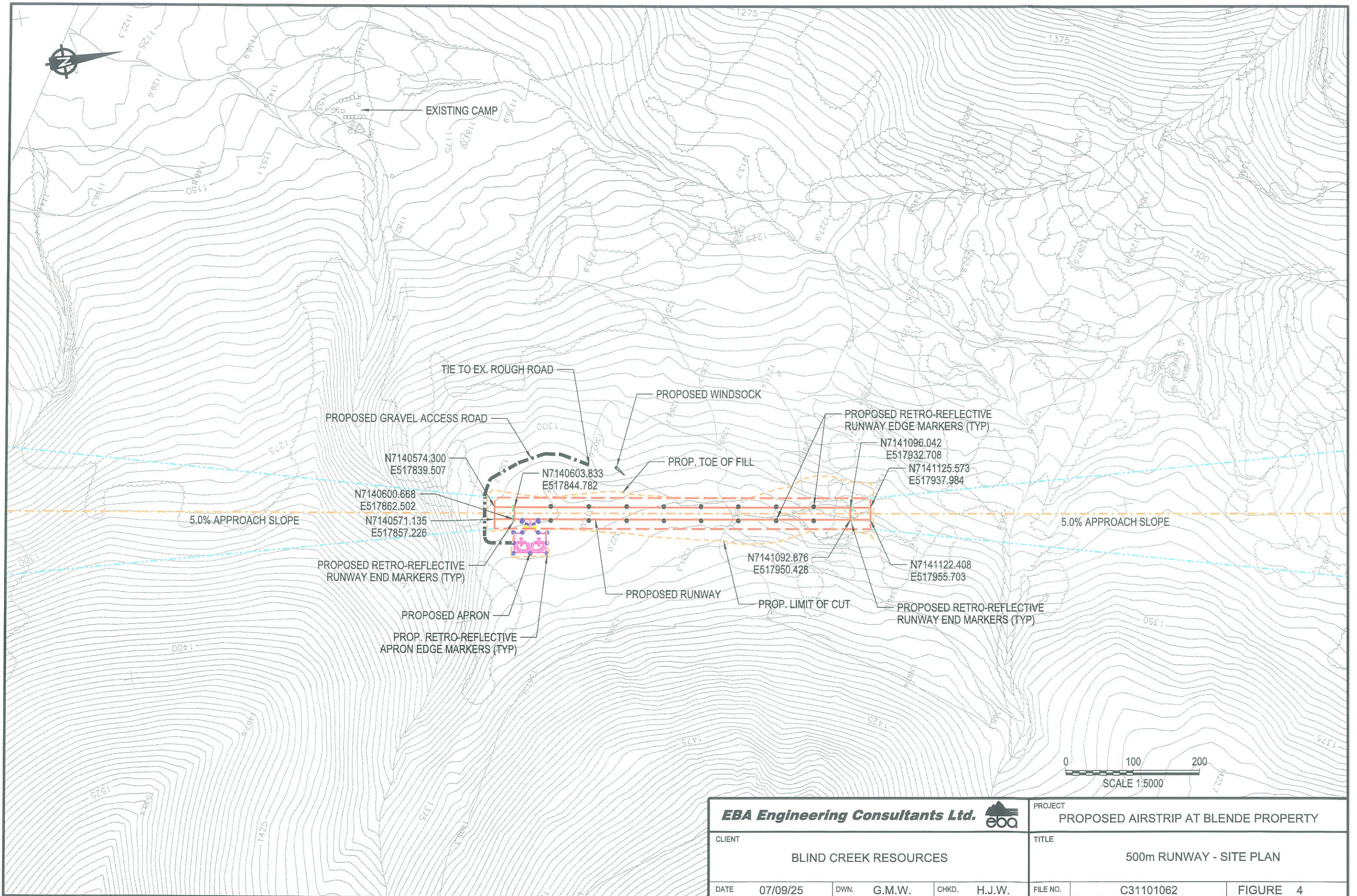
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CLIENT BLIND CREEK RESOURCES				TITLE 380m RUNWAY - SITE PLAN			
DATE	07/10/23	DWN.	G.M.W.	CHKD.	H.J.W.	FILE NO.	C31101062
						FIGURE	1




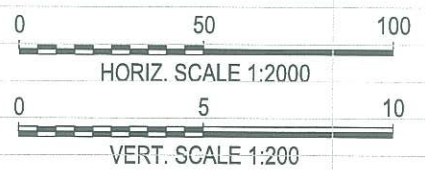
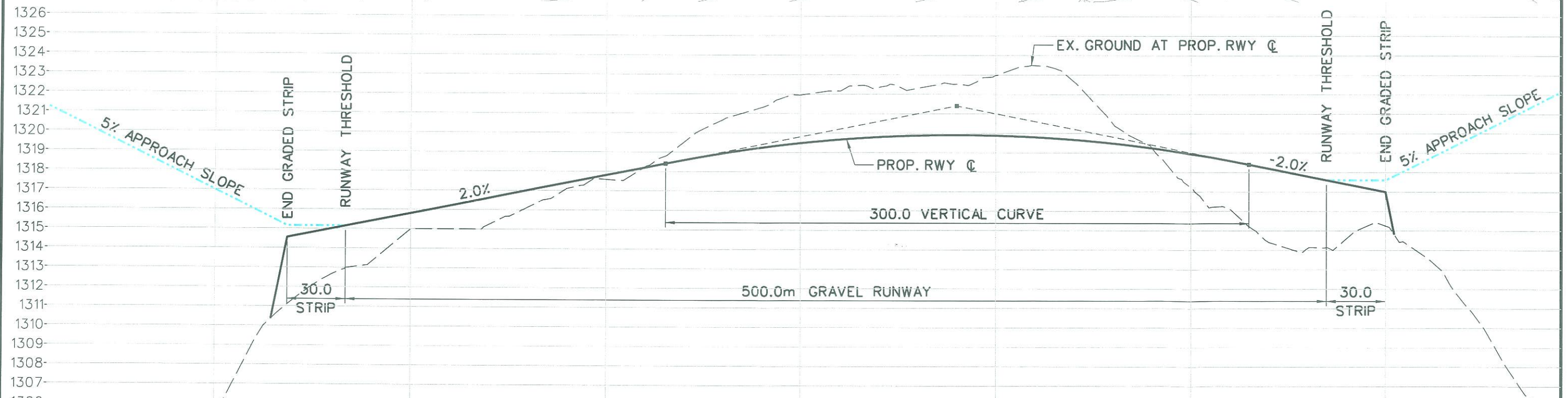
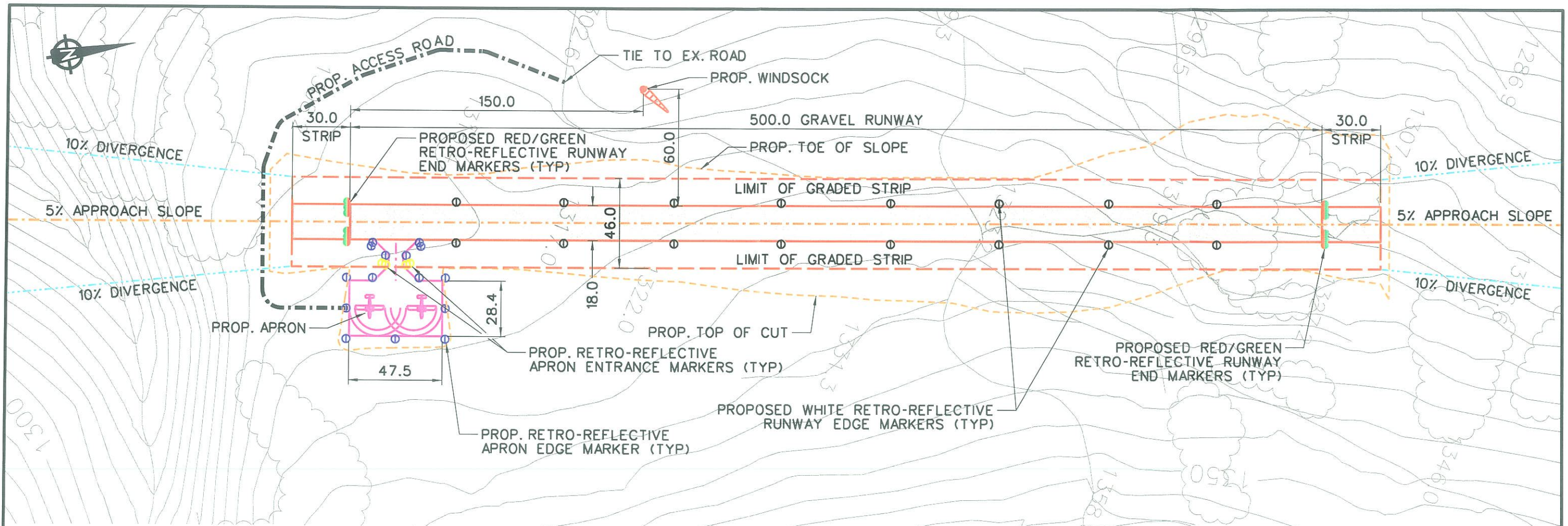
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CLIENT BLIND CREEK RESOURCES		TITLE 380m RUNWAY - PLAN AND PROFILE	
DATE 07/10/23	DWN. G.M.W.	CHKD. H.J.W.	FILE NO. C31101062
			FIGURE 2




<b>EBA Engineering Consultants Ltd.</b> 				PROJECT PROPOSED AIRSTRIP AT BLENDE PROPERTY			
CLIENT BLIND CREEK RESOURCES				TITLE 380m RUNWAY APPROACH SURFACE PLAN AND PROFILE			
DATE	07/10/23	DWN.	G.M.W.	CHKD.	H.J.W.	FILE NO.	C31101062
						FIGURE	3



<b>EBA Engineering Consultants Ltd.</b> 				PROJECT PROPOSED AIRSTRIP AT BLENDE PROPERTY			
CLIENT BLIND CREEK RESOURCES				TITLE 500m RUNWAY - SITE PLAN			
DATE	07/09/25	DWN.	G.M.W.	CHKD.	H.J.W.	FILE NO.	C31101062
						FIGURE	4



<b>EBA Engineering Consultants Ltd.</b> 		PROJECT PROPOSED AIRSTRIP AT BLENDE PROPERTY	
CLIENT BLIND CREEK RESOURCES		TITLE 500m RUNWAY - PLAN AND PROFILE	
DATE 07/09/25	DWN. G.M.W.	CHKD. H.J.W.	FILE NO. C31101062
			FIGURE 5



OBSTACLE LIMITATION SURFACE CONTOURS (TYP)

AREA OF CONFLICT WITH OBSTACLE LIMITATION SURFACE (TYP)

10% DIVERGENCE

5% APPROACH SLOPE

10% DIVERGENCE

5:1 TRANSITIONAL SURFACE

5:1 TRANSITIONAL SURFACE

10% DIVERGENCE

5% APPROACH SLOPE

10% DIVERGENCE

EX. GROUND CONTOURS (TYP)

AREA OF CONFLICT WITH OBSTACLE LIMITATION SURFACE (TYP)

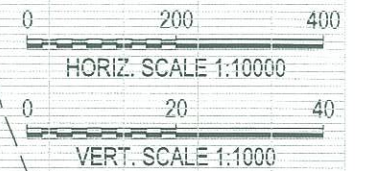
5% APPROACH SLOPE

5% APPROACH SLOPE

1335  
1330  
1325  
1321  
1315  
1310  
1305  
1300  
1295  
1290  
1285  
1280  
1275  
1270  
1265  
1260

PROP. RUNWAY

EX. GROUND



**EBA Engineering Consultants Ltd.**

PROJECT  
PROPOSED AIRSTRIP AT BLENDE PROPERTY

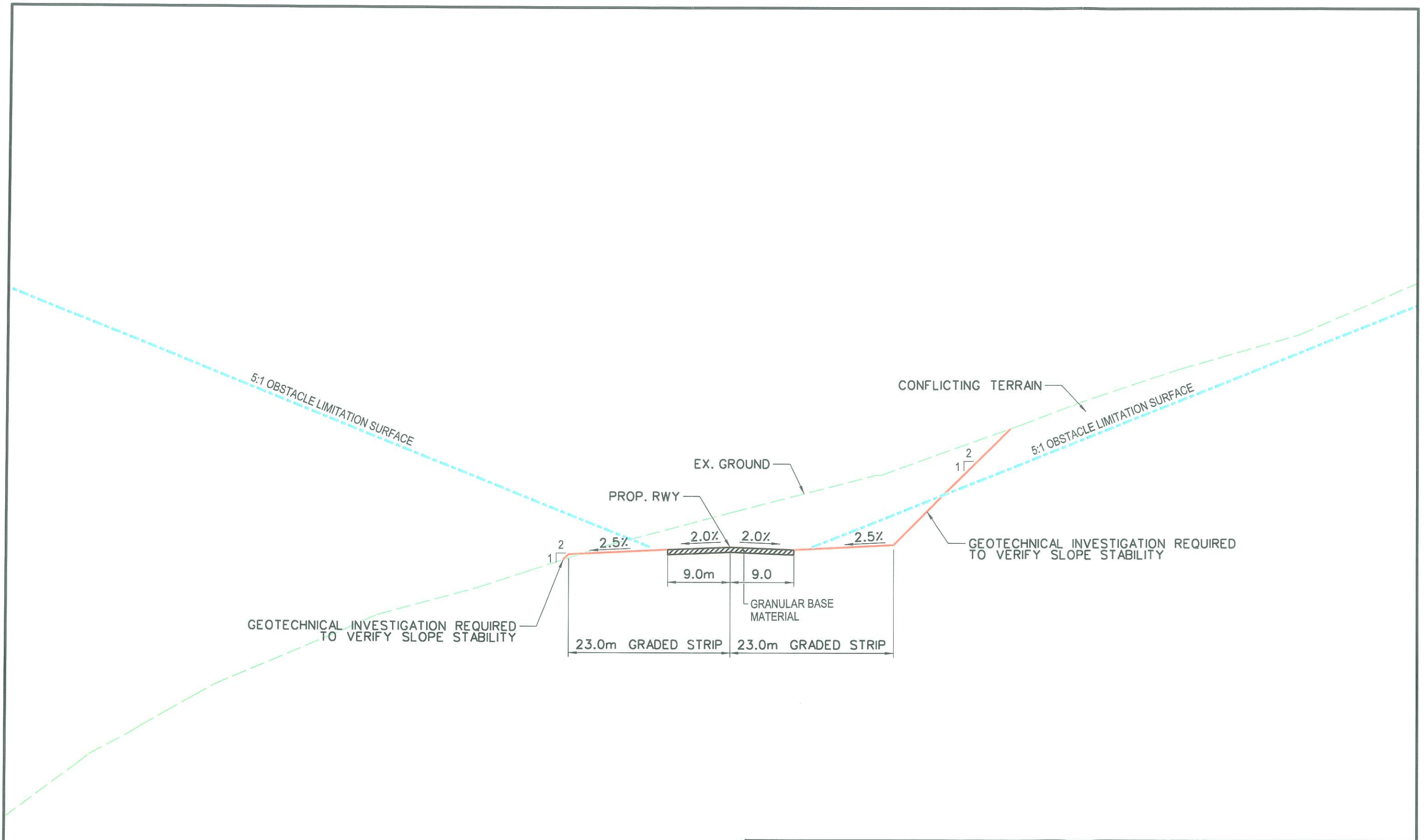
CLIENT  
BLIND CREEK RESOURCES


TITLE  
500m RUNWAY APPROACH SURFACE  
PLAN AND PROFILE

DATE 07/09/26 DWN. G.M.W. CHKD. H.J.W.

FILE NO. C31101062 FIGURE 6





<b>EBA Engineering Consultants Ltd.</b> 				PROJECT PROPOSED AIRSTRIP AT BLENDE PROPERTY			
CLIENT BLIND CREEK RESOURCES				TITLE TYPICAL SECTION			
DATE	07/10/23	DWN.	G.M.W.	CHKD.	H.J.W.	FILE NO.	C31101062
						FIGURE	7