PROPOSED WAIRAKEI CANOPY TOUR ASSESSMENT OF ENVIRONMENTAL EFFECTS

Prepared by Roam Consulting for:

Sky Play Adventures Limited

Issued 16 September 2019

ROAM

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Initial draft to client issued:	08 September 2019
Final report issued to client:	16 September 2019

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1 Project Introduction

1.1 Purpose of this Assessment

The purpose of this document is to provide an assessment of the potential environmental effects that the proposed Wairakei Canopy Tour may have on the environment.

This assessment has been prepared for Sky Play Adventures Limited (the applicants).

An assessment of effects on the environment is required to accompany any application for resource consent from Taupō District Council under the provisions of Section 88 of the Resource Management Act (the RMA and has been prepared in accordance with the Fourth Schedule of the RMA).

This assessment also meets the requirements of Section 17S of the Conservation Act 1987 to accompany a concession application to the Department of Conservation.

This application sets out:

i. The background to the development – the need for the project, and other relevant background considerations

ii. A description of the proposal including its location and context within the surrounding environment

iii. Statutory Context – an overview of the Resource Management Act, and Conservation Act requirements and relevant statutory plan provisions

iv. Assessment of Effects – the assessment of the environmental effects, including any mitigation measures

v. Consultation – a description of the consultation and engagement undertaken

2 Proposed Wairakei Canopy Tour

2.1 General Description

The applicants propose to establish the Wairakei Canopy Tour to showcase the story of the Waikato River. The aim of the tour is not only to create an attraction for locals and visitors but also to increase the awareness of a wide range of people about the river, its significance and the natural environment, including conservation. The tour is intended to be suitable for a range of ages and designed with the intention of minimising the fear of participants in relation to height.

The proposed tour will include five zip lines which will cross above the Waikato River and a series of walking tracks. A shuttle bus service will be used to transport participants from a 'home base', located on the corner of Huka Falls Road and Loop Road, to the start and end of the tour. The tour will start on the true right side of the Waikato River near the eastern margin of Huka Falls Scenic Reserve. The tour route will zig-zag downstream above the river and finish on the true left side of the river. For each section of zip line there will be a launching and landing platform positioned in relation to the topography of the site.

For the purposes of this assessment the operation and associated infrastructure has been separated into two components as follows:

- Home Base – which is the office area and associated parking situated on the corner of Huka Falls and Loop Roads. The home base is where participants will arrive, pay for the tour, be briefed and then be transported to the start of the zipline via shuttles. They will also be transported back by shuttle, or walk back via existing trails, to the home base at the end of their tour.
- Zipline – this is the towers, platforms, ziplines and tracks from which participants will take part in the tour. These are located along the left and right banks of the Waikato River 500m below the base of Huka Falls. This area also includes the location where participants will be dropped off at the start of their tour and picked up at the end by shuttle.

These components are shown on Figure 1:

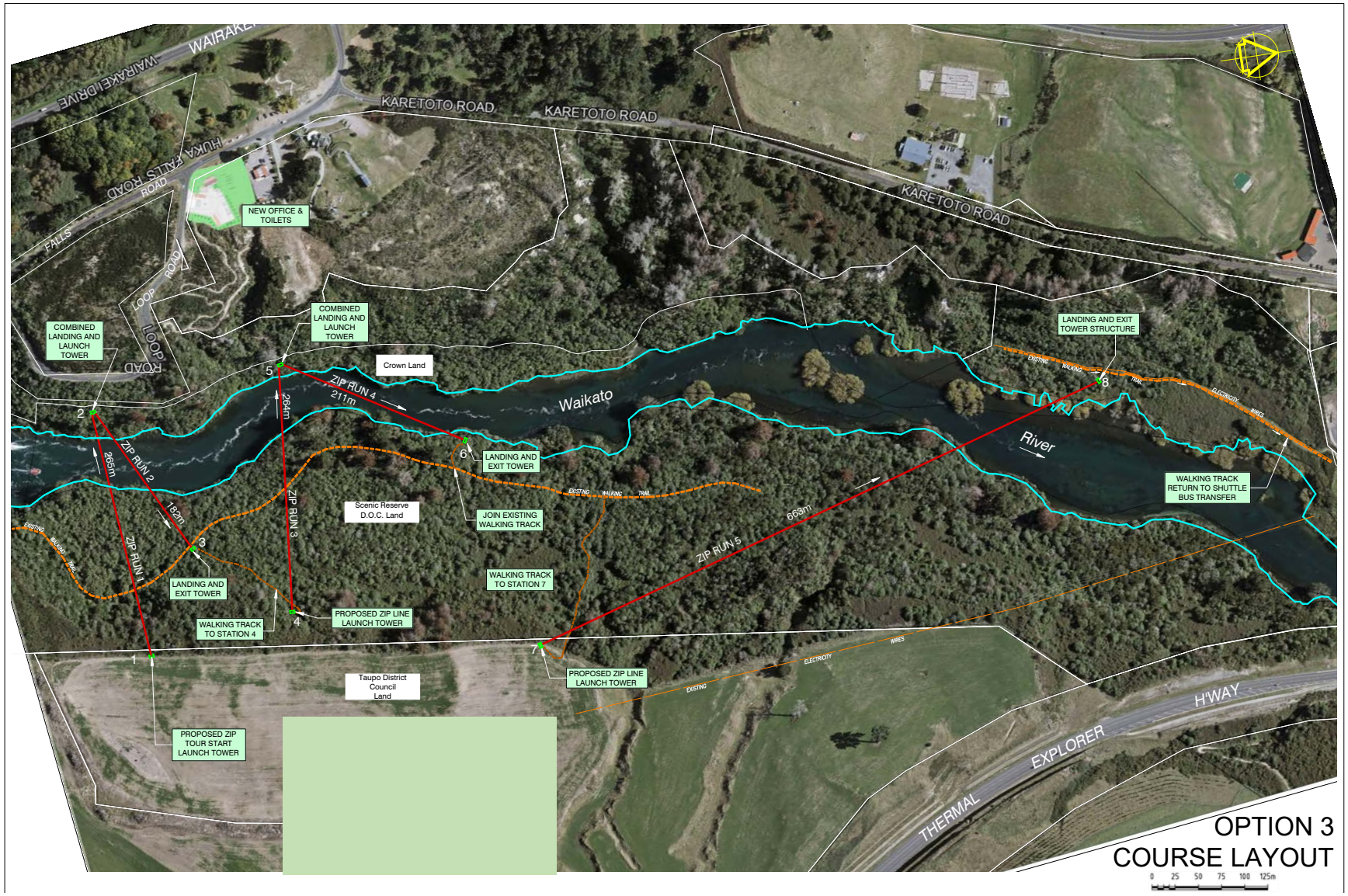

FIGURE 1 PROPOSED ZIPLINE COURSE LAYOUT

2.2 Subject Site and Tenure

The proposed development will be located across and around the Waikato River downstream of Huka Falls and on Huka Falls Road. The project is located over a range of tenure under Crown and local government ownership, as listed in the following table and shown on Figure 2:

Property	Status	Ownership/Management	Legal Description
A Home Base	Crown Land	Crown/LINZ	
B River	Crown Land – River Bed	Crown/LINZ	Sec 1 SO 61115
C Scenic Reserve	Crown Land – Scenic Reserve	Crown/Department of Conservation	Closed Road SO 43412 Crown Land ML 4215 Part Sec 1 Block XI Tatua SD SO 25178 Pt Sec 1 SO 25178 Blk XI, Tatua SD Pt Tauhara Middle 1 Pt Tauhara Middle 1 Block ML 1545 Pt Tauhara North Pt Tauhara North ML 1545 Pt Tauhara North ML 1545 Sec 1 Block XV Tatua SD SO 25178 Sec 21 SO 438783 Sec 22 SO 438783 Sec 7 SO 438783
D Taupō District Council	General Rural	Taupō District Council	Sec 1 SO 397435

The site for the proposal extends from just north of Huka Falls along either side of the Waikato River up to just south of the East Taupō Arterial (ETA) bridge. Along this section the river varies in width from around 30m to in excess of 100m. Here the river flows through a well-defined valley which itself has been shaped by the fluvial processes over time.

At Huka Falls the river channel narrows from a width of 75m with the flow concentrated into a small rocky ravine of around 15m in width. The constriction of the flow, which is in the order of 200,000 litres per second, combined with low rocky falls at each end, create a spectacular display as the velocity of the water is accelerated through the canyon to burst with immense power and ferocity into a turbulent pool at the base of the falls.

The dramatic natural display and accessibility of the falls from the State Highway have made Huka Falls an immensely popular attraction. The high visitor numbers are accommodated by a nearby carpark. A pedestrian bridge, formed pathways and lookouts provide suitable access for viewing Huka Falls from various locations as well as providing connections to the wider track

network that extends either side of the river into the areas where the development subject to this assessment is proposed.

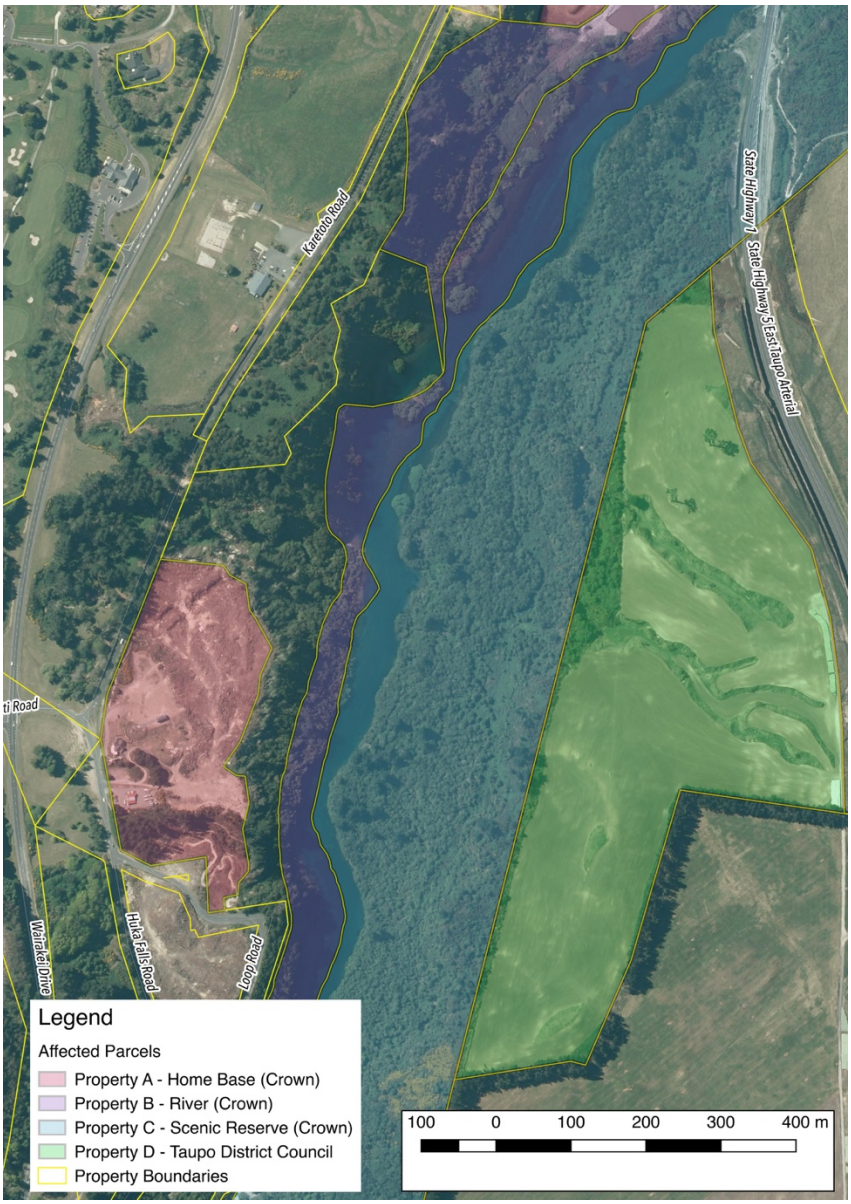

FIGURE 2 AFFECTED PARCELS

Beyond Huka Falls the river runs slow and deep. From the meandering edge of the riverbanks the variable slopes ascend steeply on either side, providing a sense of enclosure that accentuates the passage of the watercourse. This impression is heightened further by the dense, continuous bands of vegetation that occupy riverbanks along this section of the river. At the top of the slopes on either side of the watercourse the land levels out into undulating terrain. The change in topography is reinforced particularly on the eastern side where the top of the slope coincides with an abrupt transition into open pasture and cropland. On the western side the vegetation

transitions irregularly into more fragmented clusters, interspersed with areas of open grassland intersected by the local roading network.

The vegetation occupying the slopes on either side of this section of the Waikato River is characterised by a low dense canopy of regenerating indigenous vegetation intermixed with periodic scattered clusters of large remnant exotic tree species such as pines and willow associated with the water's edge. Many of the larger exotic trees appear to be 'Snags' or standing dead trees which have possibly been poisoned as part of the vegetation management regime in the area. In clearings and along the edges of the main stands of vegetation, exotic weeds such as blackberry, gorse and Himalayan honeysuckle commonly create a patchy assemblage of mixed vegetation. Despite this, the vegetation throughout the subject area remains largely dominated by vigorous native regrowth which significantly enhances the natural values and scenic qualities of this river landscape.

2.3 Adjacent Environment

Locally, Karetoto Road, Huka Falls Road and the Loop Road provide suitable access to the river environs and main tourist facilities and activities along the western bank. Beyond the roading network and available carparking, an existing track network on either side of the river allows pedestrian and cycle access along the length of the river from Huka Falls through the subject area to the Aratiatia Dam approximately 4km to the north. Along the track on the western side are several lookout areas, particularly in the vicinity of Huka Falls. Slightly to the north, another lookout associated with the Loop Road allows views further up the river. Apart from these locations, there are relatively limited opportunities to obtain expansive views of the surrounding area due to the dense low canopy of vegetation. The situation is similar on the eastern side beyond the Huka Falls lookout.

As well as Huka Falls, there are several tourism related facilities and commercial operations located on the western side of the river in the vicinity of the subject area. These include Kefi at the Hub (café), Four B mountain bike hire and guiding, Heli Adventure Flights (scenic flights), Huka Honey Hive, Huka Prawn Park and Rock and Ropes (high ropes course facility). On the eastern side there is no road access or commercial operations. The land along this portion of the river forms part of the Huka Falls Scenic Reserve which is administered by the Department of Conservation (DOC). In addition to the local roading network and ETA bridge, other significant infrastructure in the vicinity includes the Wairakei Power Station which is located on the western

bank of the Waikato River just to the north of the intersection of SH1 and SH5. The power station does not have any direct influence on the subject site apart from the associated high voltage transmission lines that run through the northern part of the subject area, but it does combine with the other commercial and infrastructural developments in and around Wairakei to have an appreciable influence on the character and quality of the wider landscape.

Similarly, although the subject area is endowed with significant natural features including the river and the associated landform, extensive regenerating indigenous forest and numerous recreational opportunities, the area is by no means pristine. Historically, it has been significantly modified by past land use, notably extensive vegetation clearance and other cultural influence/development particularly related to tourism activities. Apart from secluded locations away from these areas (e.g. along bush trails etc), the area remains influenced by such development and retains a distinct sense of activity.

2.4 Canopy Tour Operation

The tour will accommodate up to 110 customers per day between 8am and 6pm. It is anticipated that there will be some seasonal fluctuation with the canopy tour closing earlier in the winter depending on available light. Participants will arrive at the home base by private vehicle or bus, and some may walk or cycle from town. Participants will be encouraged to pre-book their tour, but it is anticipated that there will be some 'walk ups' who will arrive at the tour office on the off chance that they can book then and there.

Each tour will consist of up to 10 participants and two guides. Participants will be fitted at the home base with helmets, harnesses and zipline equipment and receive a 15 minute safety, biosecurity and protocol briefing from their guide. The guides will be trained and appropriately qualified.

The Zipline falls within the definition of Adventure Activity outlined by WorkSafe NZ and it is recognised that a safety audit and registration with WorkSafe NZ will be required. Prior to the commencement of the operation the applicants will pursue the relevant registration required to operate the activity once confirmation from the decision makers for the use of land has been obtained. WorkSafe have confirmed that the proposal is not considered to be an "amusement device" and therefore there is no requirement for the activity to be registered as such.

Tour groups will be transported from the home base by shuttle via the East Taupō Arterial (SH1) to Rakaunui Road, some 10km or a 15 minute drive away. The shuttles will cross private land to reach Station 1 at the start of the tour.

Each tour will take between 1 – 3 hours depending on customer preference, with the average tour duration estimated at 2 hours. Tours will start every 40 minutes and there will be a maximum of 11 tours per day.

Each of the five ziplines will have two wires – a lower on-flight cable and a return cable located above. One guide will stay at the front of each group and go across the zipline first, and the second guide will stay at the back of the group and go last across each zipline, after all participants have been across.

The tour consists of eight stations, three of which are launch towers, three of which are landing and exit towers and two of which are combined landing and launch towers. The eight stations are configured as follows:

- Station 1: Zip tour start / Zipline launch tower
- Station 2: Combined landing and zipline launch tower
- Station 3: Landing and exit tower
- Station 4: Zipline launch tower
- Station 5: Combined landing platform and zipline launch tower
- Station 6: Landing and exit tower
- Station 7: Zipline launch tower
- Station 8: Landing and exit tower

Platforms that are accessible from the ground will have a staff member stationed at them securing the site and helping the guide to receive the participants off the zipline.

As participants move through the tour, guides will stop with them at each station and tell stories about what the group will see. These stories will include the historical and natural significance of the area, information about the Waikato River and details of the surrounding natural environment, including conservation efforts.

At the end of the tour, participants will have the option to either complete a 15 minute trail walk back to the home base or ride back in the shuttle.

2.5 Details of Development

2.5.1 Home Base

The proposed home base for the operation will be located on the corner of Huka Falls and Loop Roads. This home base will be where visitors arrive for their tours, are greeted by staff, receive a briefing for the tour and are fitted with the necessary zipline equipment.

The base will consist of a 98sqm office building with the main entrance at the front of the building, parking areas for staff, visitors and buses, and landscaping of the area.

Two toilets connected to a capture vault system will be located within the building.

A sign will be erected on poles in front of the building, adjacent to the roadside.

The proposed location of the home base/office building on the corner of Huka Falls and Loop Roads is in close proximity to the existing Kefi at The Hub café, Four B bike hire /mountain bike guiding and Heli Adventure Flights. The site is also adjacent to Craters Mountain Bike Park and is connected to the surrounding businesses and mountain bike trails by a network of existing tracks.

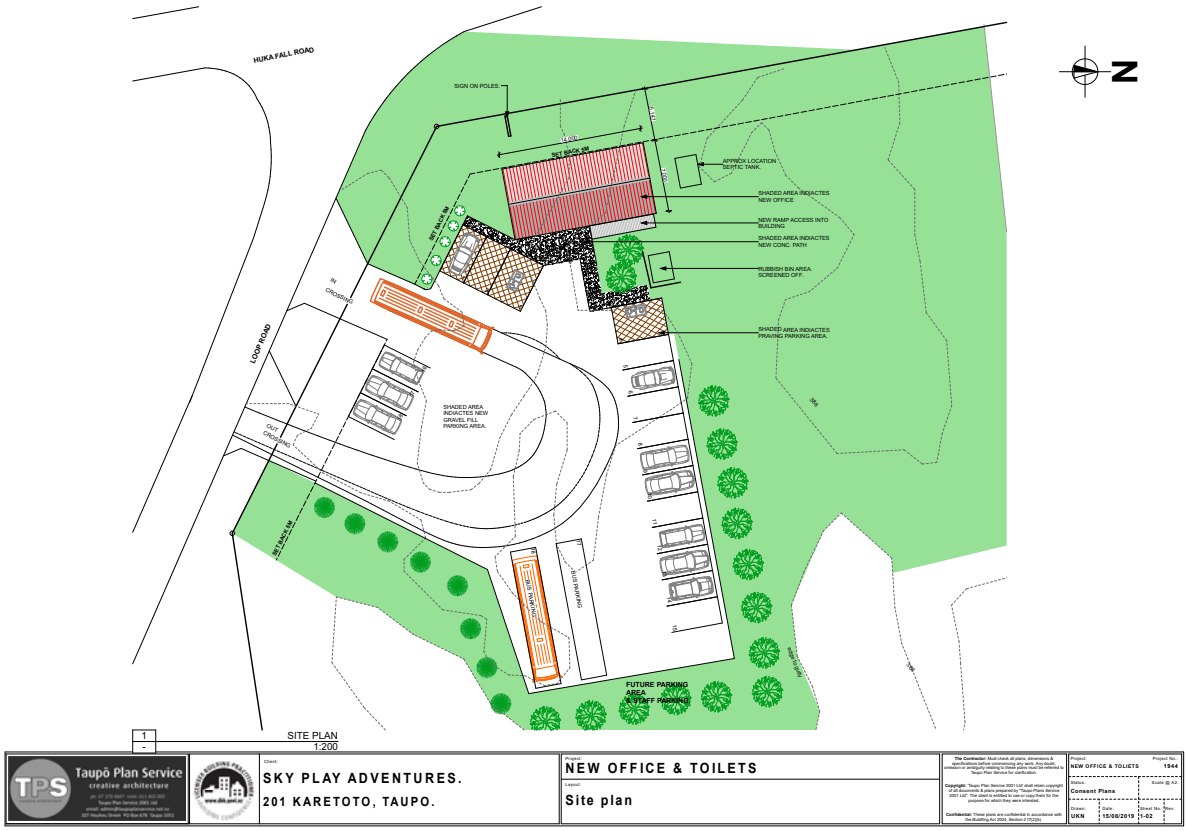

FIGURE 3 HUKA FALLS ZIPLINE HOME BASE LAYOUT

2.5.2 Zipline

The proposed layout of the zipline is shown on **Error! Reference source not found.**. The Canopy Tour zip lines and structures have been designed by an organisation that has designed numerous at-height adventure experiences throughout Australia and in other global locations.

The proposed tour will include five zip lines, or runs, which will cross the Waikato River, and a series of walking tracks (refer Figure 1). A shuttle bus service will take participants from the home base to the start of the tour. The tour begins on the true right side of the Waikato River near the eastern margin of Huka Falls Scenic Reserve. The tour route will zig-zag downstream above the river and finish on the true left side of the river. For each section of the zip line there will be a launching and landing platform positioned in relation to the topography of the site.

To enhance participant experience, the applicants are eager to undertake activities to enhance the indigenous vegetation and habitats within the site.

2.5.2.1 *Zip Line Components*

Platforms and towers *which will act as launching and landing locations for the zip lines.* Three of these will be on Property C, three (Platforms 2 and 5, and Tower 8) will be on Property B and two will be on Property D land. In the plan, the platforms range in size with the largest being 5 metres x 6 metres with the addition of a staircase connected to the side. The height of the proposed structures varies from around 2 metres to 17.6 metres. The height above ground level of the launching and landing platforms of the proposed structures varies as follows:

Structure	Approximate Height (m)	Property affected
Tower 1	5.1	Property D – Taupō District Council
Platform 2	1.7 and 6.8	Property B – River (Crown)
Platform 3	2.0	Property C – Scenic Reserve
Platform 4	0.8	Property C - Scenic Reserve
Platform 5	0.8 and 7.6	Property B - River (Crown)
Platform 6	1.2	Property C - Scenic Reserve
Tower 7	13.6	Property D – Taupō District Council
Tower 8	12.8	Property B - River (Crown)

FIGURE 4 HEIGHT OF THE PLATFORMS FOR PROPOSED ZIP LINE STRUCTURES

Wire cable *across the Waikato River for the five zip line runs between the platforms and towers.* These will range from 182 metres to 663 metres in length (refer Figure 5). Wire cables will pass above the platforms between approximately 3.2 – 15.8 metres above ground level. In some instances the cables are fixed directly to the structure, and in others a separate cable support staunchion

unit sits to the rear of the platforms. Two pairs of cables span the gap between the platforms. The lower, on-flight cable is 13mm in diameter and the return cable located above is 6mm in diameter.

Section of Zip Line	Approximate Length (m)	Maximum Cable Height (m)	Properties Affected
Run 1	265	35m	Property D – Taupō District Council Property C – Scenic Reserve Property B - River (Crown)
Run 2	182	25m	Property B - River (Crown) Property C – Scenic Reserve
Run 3	264	19m	Property C – Scenic Reserve Property B - River (Crown)
Run 4	211	11m	Property B - River (Crown) Property C – Scenic Reserve
Run 5	663	17m	Property D – Taupō District Council Property C – Scenic Reserve Property B - River (Crown)

FIGURE 5 LENGTH AND HEIGHTS OF THE PROPOSED SECTIONS OF ZIP LINE

Additional structural elements: The main structural elements of the platform and cable supports will be galvanised steel framing. A foundation system called 'Surefoot,' which is an alternative to traditional piling systems that requires much less excavation and no concrete foundation, would be used to found the structures. In locations where it is necessary to provide safety from falling, such as the stairways and around the launch and receive platforms, vertical timber battens will be used for balustrades and railings. Safety-fall netting on pole supports would also be installed on approach and exit faces. Vegetation clearance would be limited to the footprints of the proposed structures with a small additional clearance area of around 1.5m beyond.

Detailed plans of the zipline structures can be found in Appendix 1.

2.5.3 Tracks

Tracks will be used by participants and guides to walk between canopy tour stations, and also as an option for returning to the home base at the end of the tour. These tracks will be a combination of existing and new tracks.

The **existing tracks** the applicant is proposing to use are as follows:

- Huka-Aratiatia Walkway; total length of approx. 152 metres – will be used to enable tour participants to walk between Platform 6 and Tower 7
- Huka-Aratiatia Walkway, Te Totara Gully, Ferguson's Track; total length of approx. 890 metres – will be used for tour participants to walk from Tower 8 (at the end of the tour) to the shuttle bus stop on Karetoto Road, or alternatively undertake an optional longer walk back to the home base on the corner of Huka Falls and Loop Roads.

The **new walking tracks** the applicant is proposing to construct are as follows:

- Two new sections of track between Platform 6 and Tower 7 to intersect with the existing walking track. This will enable participants to walk between Platform 6 and Tower 7. The proposed new section of track is within Huka Falls Scenic Reserve. The new sections of track will be 36 and 189 meters long respectively).
- Upgrading of an old track between Platforms 3 and 4 to enable participants to walk between these two stations. The proposed upgraded track is within Huka Falls Scenic Reserve.

The combined total length of the two proposed new walking tracks is approximately 295 metres. The tracks will be approximately one metre wide and will have a 'hard' surface such as pumice or gravel laid. Wooden steps will be constructed in sections of steeper terrain and drainage will be installed along the proposed tracks.

The proposed new tracks will be developed in a sensitive manner and avoiding vegetation clearance as much as possible. The track will be constructed around any large trees to avoid felling.

Tracks will be developed to Walking Track Standards as described in Section 2.5 of SNZ HB 8630: 2004 New Zealand Handbook Tracks and Outdoor Visitor Structures.

2.5.4 Access and Parking

Figure 1 (above) and Figure 3 – Wider Site Plan (below) show the proposed access arrangement for the home base site which comprises two separate 6m wide entry and exit driveways on Loop Road. Vehicle crossings are approximately 11m wide at the kerbside in order to accommodate tour coach tracking. The exit is some 40m from the intersection with Huka Falls Road, and has good sightlines in both directions that satisfy RTS 6 requirements. Sightlines in both directions for drivers leaving Loop Road at the Huka Falls Road intersection are good for the 50 km/hr speed environment.

The proposed parking layout is seen on Figure 1 (above) which shows some 18 car parking spaces including two accessible spaces. This is expected to be more than adequate for the anticipated level of activity. Space for up to two tour coaches to load and unload passengers is also provided. Staff and tour coaches laying over during canopy tours can park in the level grass area at the north of the site (see Figure 6).

In addition to the parking at the home base, a small pick-up area may be developed for the shuttle bus at the end of the tour.

FIGURE 6 WIDER SITE PLAN

2.6 Construction

The tour route has been planned to enable the zip line to travel in a downriver direction based on differences in elevation of the hillslopes and the zip line platforms.

Platforms and towers will be constructed in relation to the topography of the site. The height of the launching and landing platforms of the proposed structures varies from approx. 0.8 metres–13.6 metres above ground level (refer Table 1).

The footprint of each structure will be approximately 5 metres x 5 metres. To minimise the footprint of the structures, Platform 2 will have two levels - the landing platform for the incoming zip line from Platform 1 and the launching platform for the outgoing zip line towards Platform 3. Platform 5 will also have two levels – the landing platform for the incoming zip line from Platform 4 and the launching platform for the outgoing zip line towards Platform 6.

A staircase – approximately 4.8 metres x 3.25 metres – will be required for Platforms 2 and 5, and Towers 1, 7 and 8. A small set of stairs to ground level will be required for Platforms 2, 3, 4, 5 and 6.

Sections of zip line will vary in length from approx. 182 metres to 663 metres (refer Figure 5). Wire cables will pass above the platforms at approx. 3.2 – 15.8 metres above ground level and be fastened to either the platforms or the ground using a combination of stay cables, staunchions, cable support units and cable tension units.

Towers will be constructed from timber and steel (clad with timber). Safety barriers, balustrades or fences will be attached to the towers to deter the general public from accessing the zip lines after hours.

Equipment and materials required to build the towers and tracks will be carried in by foot or lowered into place using a helicopter. A helicopter will be the preferred method of transporting materials to locations within Huka Falls Scenic Reserve. In some cases, sections of the towers may be constructed offsite and lowered into place by helicopter.

Temporary lead lines for the zip line will be laid using a helicopter. The permanent zip lines will be laid by helicopter after this and fastened into position. Dead fall and small branches of vegetation that are within the safe operating area of the zip line will be assessed and trimmed as required.

Two new walking tracks are to be formed. These tracks are a total of approximately 295 metres in length and approximately 1 metre wide. A 'hard' surface such as pumice or gravel will be laid on the tracks. Wooden steps will be constructed in sections of steeper terrain on the tracks and drainage will be installed along the proposed tracks. Some access routes will be required for maintenance.

2.7 Ecological Enhancement

A key element of the proposed Wairakei Canopy Tour is telling the conservation story for the area and showcasing the story of the Waikato River. The operation aims to increase the awareness of a wide range of people about the ecological importance of the environment surrounding the Canopy Tour and the cultural significance of the river and the natural environment. Zip lines will be used as a way for people to experience the wonder of the river from a different angle.

While existing ecological enhancement initiatives are in place along the Waikato River Corridor, the applicants would like to undertake activities that enhance the indigenous vegetation and habitats within the Canopy Tour site and contribute to the work already being done within the wider Waikato River Corridor. This will enhance the experience for tour participants and will raise awareness about the importance of ecological restoration and caring for the natural environment.

Section 12 of the document The Assessment of Ecological Effects For a Proposed Zip Line Tour Near Huka Falls by Wildlands (August 2019), identifies opportunities for mitigating the potential adverse ecological effects of the proposed Canopy Tour construction and operation through ecological enhancement that will strengthen the integrity of vegetation and habitats at the site.

These opportunities include intensive sustained pest animal control, pest plant control and restoration planting which will be implemented as part of the ongoing operation of the Canopy Tour as follows:

2.7.1 Pest Animal Control

Long-term intensive control of possums, rats, mustelids and feral cats will be implemented along the Waikato River Corridor from Huka Falls bridge to the State Highway 1 East Taupō Arterial (ETA) bridge. A pest animal control plan will be developed and pest control operations will be coordinated with Greening Taupō, Predator Free Taupō, the Department of Conservation and other relevant landowners and stakeholders. A total of approximately 7 kilometres of pest animal control lines will be established in the identified area which will greatly enhance the populations of indigenous fauna within the Canopy Tour site as well as the wider Waikato River corridor. Maintenance of the pest animal control network would be carried out regularly by appropriately trained and skilled personnel. Monitoring of the presence of pest animals within the identified area would be undertaken prior to the establishment of control measures so that progress can be monitored on an ongoing basis.

Bird count monitoring and surveying the presence of indigenous lizards and bats could also be added to the programme as detection of these animal groups could add a feature to the tour and potentially lead to further work to enhance populations.

2.6.2 Pest Plant Control and Restoration Planting

The applicants will also be undertaking pest plant control work within the site to enhance the ecological values of the site and improve the experience for Canopy Tour participants.

As recommended in the Wildlands report, a weed management and restoration planting plan will be developed in coordination with Greening Taupō, the Department of Conservation and other relevant landowners and stakeholders. This plan will include the identification of key areas for weed control and planting, weed control and planting prescriptions and details of how the programme will be maintained and monitored. The key areas identified that would currently benefit from this weed control are the patches of blackberry vineland and willow treeland.

Once pest plant control and restoration planting has been established and implemented consistently across the site, the programme could be extended into indigenous forest alongside the Waikato River, upstream and downstream from the site, and particularly within Huka Falls Scenic Reserve.

2.7.2 Filming

From time to time the applicants may wish to undertake filming or photography of the zipline and participants for promotional purposes. Filming and photography within PCL requires a concession from the Department.

Any filming within the Huka Falls Scenic Reserve will only take place where it is absolutely necessary and where the required 'shots' are unavailable from those parts of the operation outside of the reserve.

3 History of proposal and other sites considered

The proposed Wairakei Canopy Tour has been in the planning for over six years. Over this time there have been a number of sites and designs considered.

Site selection has been primarily focused around the Waikato River to ensure the river is a strong feature of the experience. Initial scoping was for sites in proximity to the river that provided a strong engagement with the river and were within a naturalised setting.

Other locations adjacent to Wairakei Drive that did not cross the river or involve the river trench were considered. These locations were investigated and designs developed, however the overall experience lacked the necessary impact to make for a compelling visitor experience. These roadside sites also lacked the natural features (i.e. indigenous vegetation) required to ensure a strong natural setting for the experience.

A number of sites and designs were considered along the Waikato River with a focus on 'The Hub' along Huka Falls Road, adjacent to other tourism-based activities (i.e. scenic helicopter flights, cafes, walking tracks, mountain biking etc.). The site chosen for the home base is Crown owned and is managed for tourism purposes. Its location is optimal for allowing the home base to be closely associated with the Canopy Tour operation. The home base site is also in close proximity to that part of the Waikato River surrounded by indigenous vegetation, so it had the natural values required to support the tour. The site chosen for the Canopy Tour is also in reasonable proximity to Huka Falls, meaning there is a chance of glimpses of the falls from the zipline for those on the Canopy Tour. There was, however, a strong desire from the applicant not to be too close to the falls in order to avoid any visual or cultural impact.

Tenure was a strong influencing factor on the design and location of the proposed Canopy Tour. Land tenure in the area is complex and has been dynamic over the last five years. Treaty settlement has meant that some Crown land in the area has been returned to Ngāti Tuwharetoa. Earlier concepts involved the use of Ngāti Tuwharetoa land for tower locations or to have wires crossing it. The 'Section 11' block (shown on Figure 7) which runs between Area A and Area B was one such block.

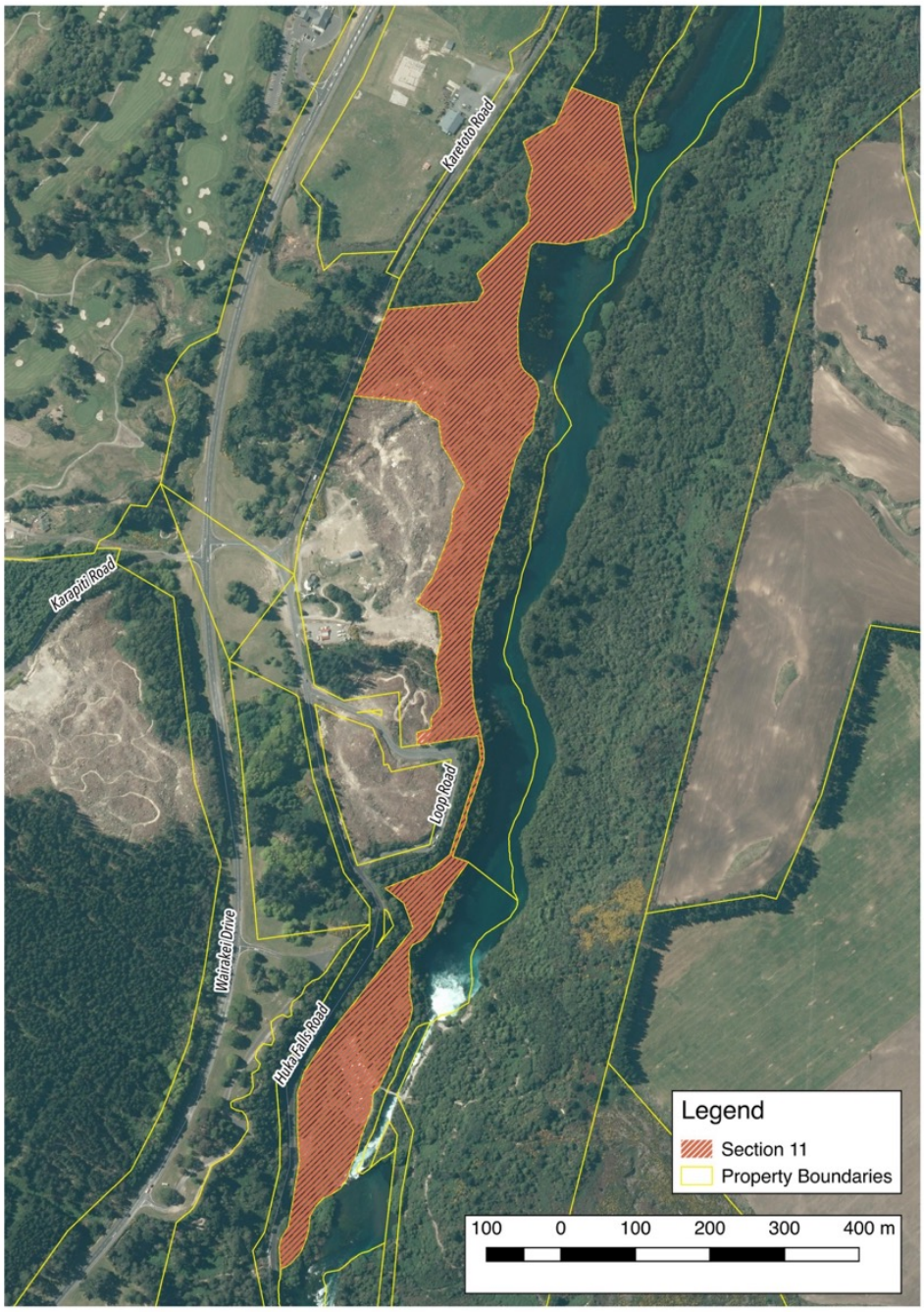

FIGURE 7 LOCATION OF 'SECTION 11' LAND

The applicant has been working with local iwi over the last five years to ensure that their views and values are reflected in the location and design of the proposed development. The applicant placed the development on hold for a number of years in an effort to work with local hapū and Te Kotahitanga o Ngāti Tuwharetoa (the entity established to manage the settlement process as well as implementing it for ngā hapū o Tūwharetoa) on the use of that land. This included included having the Canopy Tour located solely on the true left of the river to avoid the Scenic Reserve land, and also to cross above the river but not have platforms on the Scenic Reserve.

Given the timeframes associated with the settlement process and lack of certainty over the final ownership and management of the Section 11 block, the applicant decided to redesign the Canopy Tour to avoid that land.

The final design of the proposed Wairaeki Canopy Tour was informed by feedback from landscape architects and ecologists who assessed the development. The resulting redesign of the development was very similar to the final one proposed as part of this consenting process. In recent months the Canopy Tour was redesigned on the basis of the outcome of initial visual and ecological assessments. In addition, further changes were made to remove a walking bridge that was to cross the river between Platforms two and three (this was done after meeting with representatives of the Department) and Run Five was also moved to avoid identified wāhi tapu (this was done after meeting with Te Kotahitanga).

3.1 Use of the Huka Falls Scenic Reserve

Throughout the design process the applicant was conscious of the Huka Falls Reserve and its status as a Scenic Reserve. The status of the reserve had a strong bearing on the design process for the Canopy Tour. The nature of the reserve, in that it was not a pristine area and was already used for recreation purposes, was considered to be an opportunity. Initially, the applicant tried to avoid the reserve (by staying on the true left bank) or not physically touch it (i.e. by just having the zipline running above it) but due to tenure constraints this was not possible. To work effectively, the proposed zipline design does have platforms located within the reserve, and it also proposes to develop some new walking trails. Some previous design elements such as bridges and additional tracking were discarded to reduce the disturbance to the reserve and its scenic values. Where possible, infrastructure has been located outside of the reserve (Platforms 1, 2, 5, 7 and 8) and other platforms were designed and located to have minimal impact on the reserve and its current users. As noted above, as the reserve was not a pristine area there was significant opportunity for environmental enhancement and conservation activities to play an important role in the Canopy Tour project and the user experience. This will be a similar philosophy to the Rotorua Canopy Tours Zip Line which is located in Danseys Road Scenic Reserve. Based on the ecological assessment for the proposed development, it is anticipated that the project will have a positive effect on the environmental values associated with the reserve.

4 Statutory Assessment

The following statutory assessment considers both the Resource Management Act 1991 and the Conservation Act 1987 which are relevant to this proposal and the permissions sought.

4.1 Resource Management Act

4.1.1 Part II Purpose and Principles

The purpose and principles of the Resource Management Act 1991 (RMA) are set out in Part II of the Act. Part II is a relevant consideration in assessing the application.

4.1.1.1 Section 5

Section 5 sets out that the purpose of the RMA is to promote the sustainable management of natural and physical resources. In the RMA, 'sustainable management' means:

> *managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*
>
> (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
>
> (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
>
> (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The proposed development is considered consistent with Section 5 of the RMA in that its effects on the natural and physical resources of the site will be no more than minor.

4.1.1.2. Section 6

Section 6 of the RMA outlines matters of national importance that need to be recognised and provided for by the consent authority (Taupō District Council) in exercising functions and powers under the RMA. The following matters are of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development;

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development;

(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;

(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers;

(e) the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga;

(f) the protection of historic heritage from inappropriate subdivision, use, and development;

(g) the protection of protected customary rights.

The proposal will provide for the preservation of the natural character of the Waikato River and its margins with sensitive design. While the Waikato River is considered to be an Outstanding Natural Feature and Landscape under the District Plan, the landscape and visual assessment has identified that the effects on that landscape will be no more than minor. Similarly, part of the development will be located in a Significant Natural Area, however the ecological assessment has indicated that the effects of the proposed development will be no more than minor, and if restoration works are carried out as proposed, it is likely that the SNA will be enhanced. The proposal will not impede public access to the river. The design of the proposed development has been completed in a manner that is conscious of the relationship of Maori with their ancestral lands, water, sites, wāhi tapu, other taonga and customary rights. The proposal has been refined in consultation with Tangata Whenua. The proposal is not expected to have adverse effects on historic heritage features. The proposal is consistent with Section 6 of the RMA.

4.1.1.3. Section 7

Section 7 outlines other matters to which particular regard should be given by the consent authority, which are:

(a) kaitiakitanga;

(aa) the ethic of stewardship;

(b) the efficient use and development of natural and physical resources;

(ba) the efficiency of the end use of energy;

(c) the maintenance and enhancement of amenity values;

(d) intrinsic values of ecosystems;

(e) [Repealed]

(f) maintenance and enhancement of the quality of the environment;

(g) any finite characteristics of natural and physical resources;

(h) the protection of the habitat of trout and salmon;

(i) the effects of climate change;

(j) the benefits to be derived from the use and development of renewable energy

The proposed ecological restoration work is anticipated to result in an enhancement of the intrinsic values of local ecosystems and their associated amenity. The visual assessment has identified that the effects on the amenity of the area will be no more than minor. The approach by the applicants to improve the environment through their proposed development is considered to be consistent with the ethic of stewardship. Its location in an area valued for recreation and in close association with other recreation activities is considered to be an efficient use of the resources of the site.

4.1.1.4. Section 8

Section 8 requires the principles of Te Tiriti o Waitangi (the Treaty of Waitangi) to be taken into account when considering an application for resource consent.

The proposal will not affect the ability to achieve the principles of the Treaty of Waitangi and its design has been amended a number of times to ensure that adjacent Māori owned land is not affected by the development.

4.1.1.5. Part II Summary

Overall, it is considered that the proposed development is an efficient use of a natural and physical resource in a manner which provides for the protection and enhancement of nationally important landscape and natural value areas. Its design is also conscious of the important cultural associations of the site.

The proposal is considered consistent with Part II of the Resource Management Act (the RMA), and the RMA would be better served with approval rather than declining of the proposal.

4.1.2 Section 88 – Making an Application

It is considered that the Application meets all the requirements of Section 88. The assessment of effects is proportionate to the scale of potential effects that may be attributed to the proposal in accordance with Section 88(2)(b).

4.1.3 Section 104 Consideration of Resource Consent Applications

Section 104 of the RMA requires (subject to Part II of the Act) a consent authority to have regard to the matters in Section 104 when considering resource consent applications. Section 104 states:

i. When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to-

ii. Any actual and potential effects on the environment of allowing the activity; and

iii. Any relevant provisions of

   (i) national environmental standard:

   (ii) other regulations:

   (iii) a national policy statement:

   (iv) a New Zealand coastal policy statement:

   (v) a regional policy statement or proposed regional policy statement:

   (vi) a plan or proposed plan; and

iv. any other matter the consent authority considers relevant and reasonably necessary to determine the application.

v. When forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if the plan permits an activity with that effect.

The actual and potential effects of the project are assessed in Section **Error! Reference source not found.** of this document. The planning documents relevant to this project are outlined in Section **Error! Reference source not found.**, with the permitted baseline assessed in Section **Error! Reference source not found.**.

4.1.4 Section 104B: Discretionary Activities

This application is considered to be a discretionary activity under the provisions of both the Operative and Proposed Taupō District Plans.

Section 104B directs a consent authority, in making a decision on a Discretionary Activity, that:

(a) may grant or refuse the application; and

(b) if it grants the application, may impose conditions under section 108.

For the reasons set out in this report, it is considered that the Council can approve the application.

The applicant would be happy to discuss any conditions that may form part of any approval.

4.2 National Policy Statements

There are currently five National Policy Statements, being:

- National Policy Statement on Electricity Transmission
- National Policy Statement for Renewable Electricity Generation
- New Zealand Coastal Policy Statement
- National Policy Statement for Freshwater Management
- National Policy Statement on Urban Development Capacity

No national policy statements are considered relevant to the proposal.

4.3 National Environmental Standards

There are currently the following National Environmental Standards:

- National Environmental Standards for Air Quality
- National Environmental Standard for Sources of Drinking Water
- National Environmental Standards for Telecommunication Facilities
- National Environmental Standard for Electricity Transmission Activities
- National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health

Only the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (**NESCS**) is considered relevant to this proposal.

The NESCS came into force on 1 January 2012 and is issued under Sections 43 and 44 of the Resource Management Act. The NECS applies nationally, and the Council is required to enforce the NES.

Regulation 5, Subclause 1 – Application of the NECS, provides direction on where the regulations apply. Subclause 1 of Regulation 5 of the NECS reads:

> *These regulations-*
>
> (a) apply when a person wants to do an activity described in any of subclauses (2) to (6) on a piece of land described in subclause (7) or (8):
>
> (b) do not apply when a person wants to do an activity described in any of subclauses (2) to (6) on a piece of land described in subclause (9).

To determine whether or not a piece of land is described in regulation 5(7), an applicant is able to undertake the following methods under Regulation 6(2) or 6(3) to make that determination:

> *(2) One method is by using information that is the most up-to-date information about the area where the piece of land is located that the territorial authority-*
>
> > *(a) holds on its dangerous goods files, property files, or resource consent database or relevant registers; or*
> >
> > *(b) has available to it from the regional council.*
>
> *(3) The other method is by relying on the report of a preliminary site investigation-*
>
> > *(a) stating that an activity or industry described in the HAIL is, or is not, being undertaken on the piece of land; or*
> >
> > *(b) stating that an activity or industry described in the HAIL has, or has not, been undertaken on the piece of land; or*
> >
> > *(c) stating the likelihood of an activity or industry described in the HAIL being undertaken, or having been undertaken, on the piece of land.*

In considering regulation 6(2) of the NES, a request was made to Taupō District Council to check the Land Effects Layer held by TDC. A response from Kirsteen McDonald on 25 July 2019 confirmed that there is nothing for the property on the layer for that part of the site proposed to be used. Waikato Regional Council was also approached for a review of their most

up-to-date information to identify whether there are any sites on the subject piece of land which are subject to HAIL.

While zipline tower stations will be located on TDC farmland adjacent to the disposal of wastewater, the actual land being used is not currently, and has never been, used for such purposes.

Assessment of historical aerial photos have also not indicated any HAIL activities on the site.

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FIGURE 8 AERIAL PHOTO OF THE SITE FROM 1938

4.4 Waikato Regional Policy Statement

The proposed activity is a permitted activity under the Waikato Regional Plan.

The Waikato Regional Policy Statement (RPS) provides some guidance, through objectives and policies that are relevant to the proposed development.

Objective 3.9 Relationship of Tangata Whenua with the Environment seeks to ensure that the relationship of Tangata Whenua with the environment is recognised and provided for. This is

supported by Policy 4.3 which states "Tangata whenua are provided appropriate opportunities to express, maintain and enhance the relationship with their rohe through resource management and other local authority processes".

Overall, it is considered that the proposed development aligns with the direction set as the applicant has engaged with local hapu throughout the design of the proposed development. Feedback from this engagement has informed the proposed design included in the application.

Objective 3.19 The full range of ecosystem types, their extent and the indigenous biodiversity that those ecosystems can support exist in a healthy and functional state.

The proposed development will have no more than minor effects on indigenous biodiversity and the associated restoration activities could result in a net gain to biodiversity values in the area.

Objective 3.21 Amenity The qualities and characteristics of areas and features, valued for their contribution to amenity, are maintained or enhanced.

The landscape and visual assessment concluded that effects on the amenity of the area will be no more than minor.

Objective 3.22 Natural Character The natural character of the coastal environment, wetlands, and lakes and rivers and their margins are protected from the adverse effects of inappropriate subdivision, use and development.

The landscape and visual assessment concluded that effects on the natural character of the area will be no more than minor.

Objective 3.23 Public Access to and along the coastal marine area, lakes and rivers is maintained and enhanced.

It is considered that the proposed development will enhance access along that section of the Waikato River.

4.5 Taupō District Plan

The site is zoned under the Taupō District Plan (TDP) as Rural Environment, as shown on Figure 9.

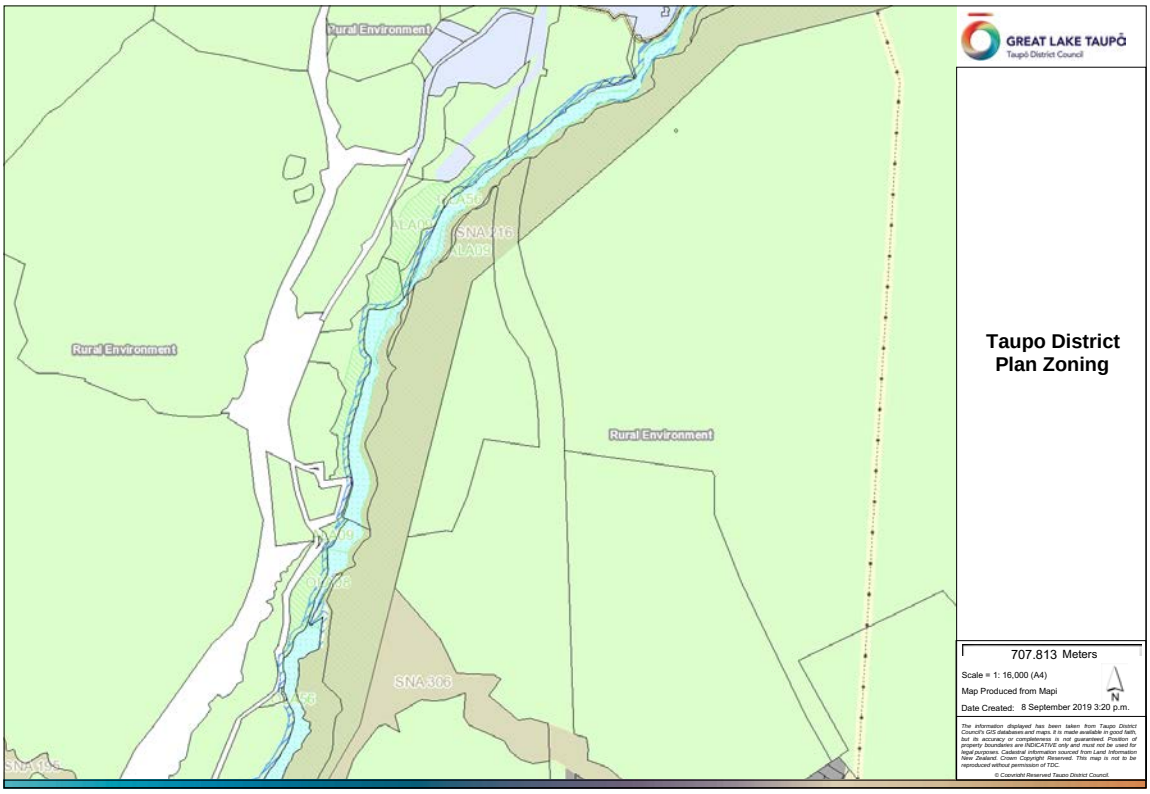


FIGURE 9 DISTRICT PLAN ZONING FOR THE SUBJECT SITE

Parts of the site are also identified by the TDP as:

1. Foreshore Protection Area
2. Amenity Landscape Area
3. Outstanding Landscape Area, and
4. Significant Natural Area.

The activity status of the proposed development under the TDP is **Discretionary**. The reasons for this activity status are set out in the following table which identifies the relevant rules and standards in the TDP that the proposed development is not consistent with.

Activity	TDC Consent Status
Development of the Home Base including the office and carparking area.	The location of the office 5m from the front boundary of the site is not consistent with standard 4b.1.3 which requires a 30m setback.

	The number of parks provided on site are not consistent with standard 4b.1.15 which requires 25 parks per hectare of the activity. **Discretionary Activity**
Development of the zipline.	As set out in Figure 4 and Figure 5, Stations 7 and 8 and the cables for all of the zipline runs will have a height greater than 10m, meaning they will not meet performance standard 4b.1.1.i. All cables will cross the Waikato River OLA at a height greater than 5m, meaning they will not meet performance standard 4b.1.1.ii. Stations 1 and 7 will be within 15m of neighbouring property boundaries. All the zipline runs will cross property boundaries, meaning that the activity will not meet performance standards 4b.1.4i a and c. All of the cables will be within the Foreshore Protection Area, meaning that rule 4e.2.1 is relevant. **Discretionary Activity**

FIGURE 10 ACTIVITY SCHEDULE

The table in Appendix 2 contains a more detailed assessment of the proposal against all of the relevant rules and performance standards to determine whether the activities proposed meet those rules and standards.

4.5.1 Objectives and Policies

An assessment of the proposed activity against the relevant objectives and policies in the TDP can be found in Appendix 11. This assessment is greatly informed by the technical assessments undertaken as part of this proposal.

On review of the assessment undertaken, it is considered that overall, the proposal is consistent with the relevant objectives and policies of the District Plan.

4.6 Conservation Act 1987

The applicants are seeking concessions from the Department to undertake the following activities in Huka Falls Scenic Reserve:

1. Construct and operate structures within the reserve
2. Guide groups of people on the structures and existing and proposed tracks within the reserve
3. Undertake promotional filming and photography from time to time.

In seeking a concession from the Department, this application is being made under Part 3B of the Conservation Act 1987. The relevant parts of the Conservation Act relating to the assessment of this proposal are considered to be Sections 17T, 17U, 17W, 17X, 17Y, 17S and 17Z.

Each of these Sections are addressed below:

4.6.1 Section 17S Contents of Application

It is considered that the wider Assessment of Environmental Effects (AEE) report and associated concession forms appropriately set out the information required by Section 17S.

Section **Error! Reference source not found.** and **Error! Reference source not found.** of this report set out the description of the activity and the places where it will occur.

A description of the potential effects of the proposed activity are set out in Section **Error! Reference source not found.** of this report and in the attached technical reports. This also includes the actions generally undertaken at the design phase to mitigate any effects.

The applicant is seeking a concession for a period of thirty years. The reasons for this duration are so that it reflects the considerable capital expenditure required to develop the facility and to ensure that there is adequate certainty of tenure to recoup these capital costs and support the associated investment in the project.

The activity is to develop and operate the Wairaeki Canopy Tour zipline as set out in Section **Error! Reference source not found.** of this report. This will involve the construction of the zipline and the ongoing occupation of the land and airspace on and over the Scenic Reserve during this time. The operation of the tour will also involve guiding of paying customers and occasionally ground based photography or video (i.e. not aerial or drone based) for promotional purposes.

4.6.2 Section 17T Minister to Consider Applications

Section 17T(1) requires that the Minister must consider an application for a Concession if the application—

(a) complies with section 17R(2); and

(b) is not returned under section 17SA; and (c) is not declined under section 17SB; and (d) is not returned under section 17SD(4).

Section 17R(2) is not applicable in this instance. The application is considered to be comprehensive and contains all necessary information to enable assessment. It does not need to be returned as being deficient in such information under Section 17S.

The proposal is not considered to be in non-compliance with, or obviously inconsistent with, the provisions of this Act or any relevant Conservation Management Strategy or Conservation Management Plan that would require the application being immediately declined under Section 17SB.

At this stage the Department has not requested further information, but if such information is requested the applicant will provide it within the specified timeframe, therefore the proposal will not need to be returned in accordance with Section 17SD(4).

Section 17T(2) enables public notification of the proposal in accordance with Section 17SC(3) whereby the Minister may publicly notify any application for a permit or an Easement if, having regard to the effects of the permit or Easement, he or she considers it appropriate to do so.

In this case, the proposed Easement and associated works and activities will partially occur within the Huka Falls Scenic Reserve.

4.6.3 Section 17Sc Public notification of application for leases, licences, permits, or easements

Section 17sc requires that the Minister must publicly notify every application for—

(a) a lease; or

(b) a licence for a term (including renewals) of more than 10 years.

(2) The Minister may publicly notify any other application for a licence if, having regard to the effects of the licence, he or she considers it appropriate to do so.

(3) The Minister may publicly notify any application for a permit or an easement if, having regard to the effects of the permit or easement, he or she considers it appropriate to do so.

In this case the applicant is seeking a licence term of more than 10 years and meaning that the application will need to be notified as for public comment.

4.6.4 Section 17U Matters to be considered by the Minister

Section 17U outlines the matters that the Minister must have regard to when considering an application. Section 17U(2) provides for the application to be declined if the information available in the application is insufficient or inadequate to enable assessment of the effects (including the effects of any proposed methods to avoid, remedy, or mitigate the adverse effects) of any activity, structure, or facility or if there are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure, or facility.

In this case the application, including associated technical reports, is considered to comprehensively cover the proposal and associated effects and mitigation methods. The proposal is clearly understandable.

Based on the expert landscape, noise and ecological reporting provided with the application it is considered that the proposal demonstrates adequate and reasonable methods to mitigate the effects of the proposal such that the proposal does not need to be declined. In respect to the ecological effects, the proposed activity and associated enhancement work will result in a net benefit to the ecological values of the Scenic Reserve.

Section 17U(3) specifies that the Minister cannot grant an application for a Concession if the proposed activity is contrary to the provisions of this Act or the purposes for which the land concerned is held. The proposal is considered to be consistent with the provisions of the Conservation Act 1987 and, as is detailed below in the assessment of the Taupō Tongariro Conservation Management Strategy, the proposal is consistent with the purposes for which the land is held.

As noted above, the land on which the proposed activity is to be undertaken is a Scenic Reserve and in terms of Reserves Act 1977, Part 3 Section 19(1), Scenic Reserves are held for:

(a) the purpose of protecting and preserving in perpetuity for their intrinsic worth and for the benefit, enjoyment, and use of the public, suitable areas possessing such qualities of scenic interest, beauty, or natural features or landscape that their protection and preservation are desirable in the public interest:

(b) the purpose of providing, in appropriate circumstances, suitable areas which by development and the introduction of flora, whether indigenous or exotic, will become of

such scenic interest or beauty that their development, protection, and preservation are desirable in the public interest.

It is considered that the classification of the land as a Scenic Reserve does not preclude this development from occurring on the land. The proposal will facilitate public access within the Reserve and better enable those people to obtain the benefit and enjoyment of the Reserve and the surrounding landscape that the Reserve is part of. It will better enable the applicant's clients the opportunity to appreciate the natural features, scenic interest and beauty of the Reserve from both a ground level and aerial / treetop perspective.

It is noted that Rotorua Canopy Tours Zipline, near Rotorua, operates in Dansey Road Scenic Reserve. The Canopy Tours model is one which is held in high regard for not only creating a compelling experience but also enabling significant conservation outcomes. It is anticipated that similar outcomes can be achieved with this proposal based on the expert ecological advice received.

Section 17U(4) requires that the Minister shall not grant any application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where they are satisfied that the activity—

(a) could reasonably be undertaken in another location that—

(i) is outside the conservation area to which the application relates; or

(ii) is in another conservation area or in another part of the conservation area to which the application relates, where the potential adverse effects would be significantly less;

or

(b) could reasonably use an existing structure or facility or the existing structure or facility without the addition.

Section 3 of this report details the history of the proposal including other sites and designs considered. The design process and identification of an appropriate location has taken six years. The objective of the proposal is to showcase the Waikato River, its stories and the conservation values present. It also has a secondary objective of ecological enhancement. It is considered that there is no other location and design where the proposal could be undertaken to deliver on its objectives. In its current location, the proposed development has been redesigned a number of

times to work within tenure restrictions and also to ensure that it provides a compelling experience that is sensitive to the surrounding landscape.

Given the nature of the proposed development and its reliance on topography to ensure the zip lines are able to function, it is not able to avoid the Reserve land. It is also important to note that the Reserve area is only one component of the wider landscape and the project. The project is located on multiple tenure (Figure 2), and while the Reserve land is only one part of the tenure to be used, it is integral to both the participant experience and the functioning of the zip line.

The sensitivities of the Reserve land and surrounding environment are acknowledged and have informed the design of the project. Input and advice from visual, noise and ecological experts have led to a proposal that has a discrete set of effects which are considered to be no more than minor. This design not only lends itself to a soft footprint on the landscape, but it also provides for real opportunities to enhance and restore the natural values at place and provide a visitor experience that will grow and enhance participants' understanding of the important values of this landscape.

4.6.5 Section 17W Relationship between concessions and conservation management strategies and plans

Section 17W(1) specifies that where a Conservation Management Strategy or Conservation Management Plan has been established for a conservation area and the strategy or plan provides for the issue of a Concession, a Concession shall not be granted in that case unless the Concession and its granting is consistent with the strategy or plan.

A detailed assessment of the relevant sections of the Taupō Tongariro Conservation Management Strategy is outlined below. This assessment confirms that the proposal is consistent with the Conservation Management Strategy and the expected use of the Huka Falls Scenic Reserve.

Section 17W(3) specifies that the Minister may decline any application, whether or not it is in accordance with any relevant Conservation Management Strategy or Conservation Management Plan, if he or she considers that the effects of the activity are such that a review of the strategy or plan, or the preparation of a strategy or plan, is more appropriate.

It is considered that the proposal is consistent with the Taupō Tongariro Conservation Management Strategy and further, that the effects of the proposal as assessed by experts in

landscape, ecology and noise, are of a scale that it would be inappropriate and unnecessary to initiate a review of the Conservation Management Strategy.

4.6.6 Section 17X Power of the Minister to impose and enforce conditions

This section of the Act enables the Minister to enforce conditions that they consider appropriate for the activity, structure, or facility, including (but not limited to) conditions relating to or providing for:

The activity itself, the carrying out of the activity, and the places where it may be carried out:

- The payment of fees/rent/bonds;
- The restoration of the site,
- Periodic review of the terms and conditions of a Concession;

The applicant is happy to work with the Department in respect to the identification of any conditions that the Department sees as appropriate to apply. In the first instance these should relate to ensuring that the proposed activity will be developed and operated in the manner set out in this report. This includes ensuring public access is maintained, health and safety matters are confirmed, and ecological restoration activities are carried out.

4.6.7 Section 17Y Rents Fees and Royalties

Section 17Y specifies that a condition of the Minister's granting a concession shall be that the applicant pay any specified rents, fees, and royalties to the Minister; and shall pay any other levy or charge made on an occupier or owner of land, as a result of the grant of a lease, licence, or easement, either to the Minister or as directed by the Minister.

Further it specifies that the rent, fee, or royalty may be fixed at the market value, having regard to—

(a) any circumstances relating to the nature of the activity; and

(b) the effects of the activity on the purposes of the area affected; and

(c) any contractual conditions, covenants, or other encumbrances placed upon intrinsic resources, natural resources, or historic resources by the concession.

In addition, it specifies that rent, fees, and royalties for a concession shall be reviewed at intervals not exceeding 3 years.

The applicant is happy to discuss with the Department a specified fee or rent for the proposed activity. Any such discussions should be informed by the beneficial ecological activities proposed and also by the fact that the development is located on multiple land parcels.

4.6.8 Section 17Z Term of concession

This section of the Act specifies the timeframes for which approvals under the Conservation Act may be granted.

With respect to Easements, it is specified that these may be granted for a term not exceeding 30 years, but in exceptional circumstances, the Minister may grant a term not exceeding 60 years.

In this case the applicant is seeking the maximum term of 30 years and is happy to consider a review period of ten yearly intervals.

This will provide certainty that the Easement will exist for the anticipated lifetime of the proposed facility, and any extension to that term will be sought via a re-licence process closer to the end of the licence's term.

The overall duration of the Easement will also be appropriate given the multi-million dollar expense of the infrastructure and associated works.

4.7 Taupō / Tongariro Conservation Management Strategy 2002 – 2012.

The Tongariro / Taupō Conservation Management Strategy (CMS) was adopted in 2002 and is still the only CMS for the area. There are no conservation management plans or reserve management plans relating to the area.

The Conservation Act 1987 states that the purpose of conservation management

strategies is to:

"…implement general policies and establish objectives for the integrated management of

natural and historic resources and for recreation, tourism and other conservation purposes…"

The functions of the Tongariro/Taupo Conservation Management Strategy are:

- to provide a management umbrella for Tongariro/Taupo Conservancy activities for the next 10 years and beyond;
- to identify all public conservation lands;
- to provide management priorities for the conservancy;
- to implement clear guidelines for the management of natural and historic values;

- to give effect to the principles of the Treaty of Waitangi in managing public conservation land;
- to give the community at large an opportunity to effectively contribute to the management of public conservation land.

The Tongariro/Taupō Conservation Management Strategy covers all public conservation land (PCL) within Tongariro/Taupō Conservancy and advocates for the protection of natural and historic values outside those boundaries but within the community of interest. The strategy is legally binding on the Minister of Conservation and on the Department and is therefore an important statutory consideration in decision making by the Minister for applications to use any PCL in the area.

The CMS sets out objectives and policy for each of the Department's functional outputs and describes in detail all Public Conservation Land. In this instance the Huka Falls Scenic Reserve is identified in the CMS as Conservation Unit number 60077 and is Crown land that is administered by the Department of Conservation.

A copy of the full Land Inventory Sheet for the Huka Falls Scenic Reserve can be found in Appendix 3. The full extent of the Reserve showing the subject site can be seen in Figure 11.

For context, the special conservation values associated with the Reserve in its entirety are identified on the Inventory sheet as follows:

- Special Conservation Values: Very high visitor use. Huka Falls has national geopreservation significance.
- Earth Data: Riverbank, bluffs, Huka formation, pumice deposits, steep erosion gullies. Flora: Fivefinger-kohuhu forest, cabbage tree forest, kanuka-manuka scrub, shoreline turf herbfield.
- Fauna: Most common forest birds. Range of waterfowl along Waikato River.
- Fishery Values: Moderate.
- Tangata Whenua Issues: Information held in the domain of Ngāti Tuwharetoa and Ngāti Tahu.
- Historic Resources: Travel route, shelter, rock overhangs.
- Recreation: Walking high, sightseeing high, mountain biking high, picnicking moderate. Rural natural 100%.

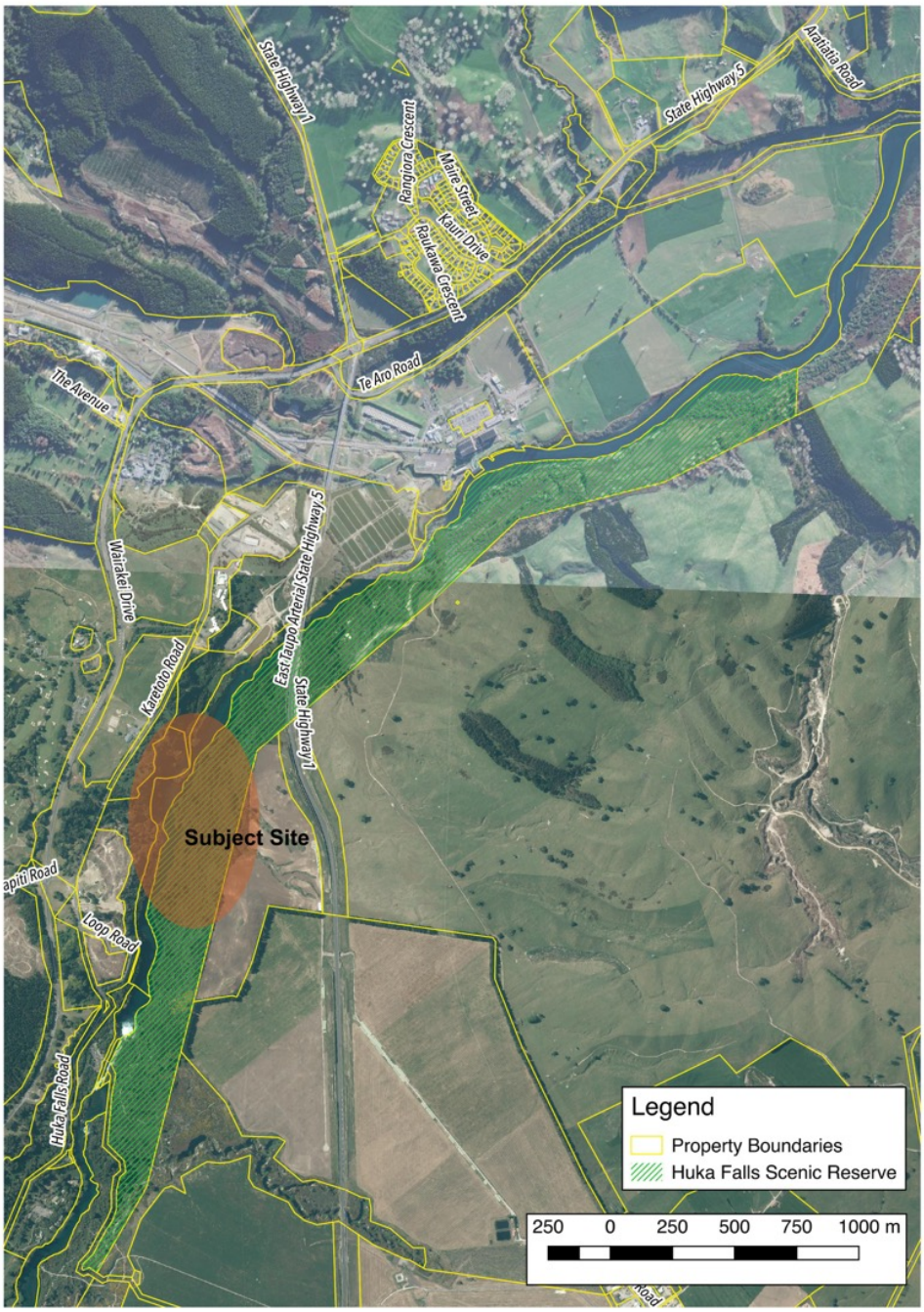


FIGURE 11 EXTENT OF THE HUKA FALLS RESERVE AND SUBJECT SITE

Appendix 4 sets out all relevant objectives and matters of implementation of relevance in the CMS, as well as how the proposed development will be positioned. Overall it is considered that the proposed development is consistent with these provisions and the CMS generally.

It is also considered that, given the recreational basis of the proposed activity, the anticipated environmental outcomes and the less than minor effects on the environment deem the activity consistent with the purpose for which the land is managed and the Minister can grant the concession application.

5 Consideration of other relevant matters

The following are considered to be relevant to the determination of the appropriateness of the proposed development.

5.1 Ngati Tahu-Ngati Whaoa Iwi Environmental Management Plan

The Ngati Tahu-Ngati Whaoa Iwi Environmental Management Plan has been reviewed within the context of the proposed development. It is a relevant document as the rohe of the iwi extents to Huka Falls, as noted on page 17 of the plan.

"From Te Waiheke o Huka (Huka Falls) to the south, we extend east to our pouwhenua at Ngāpuketerua beyond the Rangitaiki River, then northward across the plains of Kāingaroa to Wairapukao and further on to Pekepeke. From here we extend to our northern pouwhenua at Maunga Kākaramea, turning west to the Paeroa Range and on to Orākei Kōrako on the banks of the Waikato River, the birth place and principal papakāinga of Ngāti Tahu-Ngāti Whaoa. From Orākei Kōrako we extend further west to Pōhaturoa, an ancient pā site."

The plan also identifies that the Waikato River and forested areas are of significance to the iwi, and that wāhi tapu and historic sites of significance to iwi are found alongside the river and waterways.

The plan also sets out information in relation to natural resources, including goals and principles for managing those resources. Those goals and principles considered relevant to this proposal are discussed below.

5.1.1 Koiora – Flora and Fauna

The goals and management principles focus on enhancement and active management of the resource. This includes pest control and restoration of those areas in a planned and strategic manner and in partnership with others. The planned ecological restoration associated with the Canopy Tour is consistent with these goals and principles. This work will be undertaken in consultation with the iwi as it progresses.

5.1.2 Significant Sites and Wāhi Tapu

The goals and management principles direct that wāhi tapu are not sites for development or commercial use, nor should there be a loss of such sites through development. The applicant has engaged with the iwi who have inspected the proposed development site with a cultural

researcher. They have indicated that no wāhi tapu will be disturbed through the proposed development.

5.1.3 Whenua – Land and Land Use

The goals and management principles focus on good stewardship of the land to ensure that its values are managed in a sustainable manner. It is considered that the 'light touch' approach of the development is consistent with these principles and that the indigenous vegetation on that land is to be enhanced.

5.1.4 Wai – Lakes, Rivers, Streams, Wetlands and Aquatic Life

The goals and management principles focus on protecting and enhancing the quality of freshwater. The proposed development will have no effects on the quality of the Waikato River, however the tour will have a strong focus on the need to look after freshwater for the benefit of all.

5.2 Ngati Tuwharetoa Environmental Iwi Management Plan 2003

The Environmental Iwi Management Plan for Ngāti Tuwharetoa seeks to ensure that land, flora and fauna, ngā wāhi tapu and other taonga are protected, enhanced, utilised and managed according to the tikanga and kawa of ngā hapū o Ngāti Tūwharetoa for the benefit of current and future generations.

Some of the relevant policies/baselines contained in the iwi management plan include:

- Protect important landscape features from inappropriate use and development.
- Advocate for the protection of the mauri of wāhi tapu by preventing destruction and modification.
- Upon an 'accidental discovery', works are to stop immediately until such a time that tangata whenua are contacted and appropriate protocol are in place.
- Support proposals that seek to protect and enhance biodiversity e.g. projects that create linkages and corridors over privately owned land between significant ecosystems.
- Ensure that the views of ngā hapū o Ngāti Tūwharetoa are an integral part of all initiatives that seek to maintain and enhance biodiversity.

Assessments undertaken to inform the development of the proposal have indicated that the effects on the land, flora and fauna will be no more than minor. In the case of biodiversity values, the proposed restoration works will result in enhancement to the values at the location. A cultural

assessment has identified sites of importance in the area and there will be no disturbance of those sites. Any additional sites discovered during the proposed works will result in an immediate stop work.

6 Assessment of Environmental Effects

The matters that must be addressed pursuant to Clauses 6 and 7 of Schedule 4 of the Resource Management Act 1991 are detailed below.

The proposed development is considered to raise the following actual or potential effects on the environment:

- Positive Effects;
- Effects on Landscape and Visual Character;
- Effects on Ecology and Indigenous Vegetation;
- Effects on Traffic and Transport
- Effects of Noise
- Effects on Recreation and Use

In assessing the actual or potential effects on the environment from the categories listed above, reliance has been placed on the various supporting reports and assessments as outlined throughout the application.

6.1 Positive effects

The proposal is considered to result in positive effects as set out below:

6.1.1 Recreation Opportunities

The proposed Wairakei Canopy Tour will offer another way for people to enjoy the conservation estate and the wider Waikato River corridor and gain an appreciation for the ecological values of the area. The proposed site is within an area that already has a number of tourism-related activities including Huka Falls Jet, Huka Falls River Cruises, Huka Prawn Park, Four B mountain bike hire and guiding, Huka Honey Hive and a range of walking and mountain biking tracks. The Canopy Tour fits well with these other activities as it offers a unique experience that compliments those already in operation.

The proposal will facilitate public access within Huka Falls Reserve and better enable those people to obtain the benefit and enjoyment of the Reserve and the surrounding landscape which the Reserve is part of. It will better enable the applicant's clients the opportunity to appreciate the natural features, scenic interest and beauty of the Reserve from both a ground level and aerial / treetop perspective.

6.1.2 Tourism and Economic Development

Both Destination Great Lake Taupō and Enterprise Great Lake Taupō have expressed support for the proposed Wairakei Canopy Tour from a tourism and economic development perspective. The operation is expected to increase visitor spend in the region by attracting visitors to the region who want to do a zip line tour, and its proposed location in close proximity of other tourism operations increases the likelihood of these people also visiting other attractions. The Canopy Tour also fills a gap in the 'soft adventure' market for the region, i.e. it offers adventure without a high level of risk or physical exertion so is achievable by a wide range of people.

The Canopy Tour is expected to create approximately 35 new jobs ranging from office and sales staff to guides, drivers and operations managers. The applicants are committed to employing and training locals to work within the Canopy Tour operation and offer viable career prospects, especially to iwi and youth.

6.1.3 Ecological

The proposed Canopy Tour operation offers considerable potential for ecological enhancement and for increasing participant awareness of the importance of ecological restoration and caring for the natural environment. As noted in the Wildlands report, intensive sustained pest animal control, weed control, and restoration planting will be planned and implemented. These works have the potential to create net environmental gains through improvement of the ecological condition of the site and improved habitat for indigenous fauna. Ecological restoration at this site will complement previous and current work within the Waikato River Corridor, such as that undertaken by Greening Taupō. This work will be an integral part of the 'story' associated with the Canopy Tour.

This beneficial work is proposed to occur within the Huka Falls Scenic Reserve and also within SNA 216, an area identified as being nationally significant.

6.2 Effects on Landscape and Visual and Natural Character

The proposed development will result in the introduction of a number of man-made elements and associated disturbance into a natural area. The Waikato River where the Canopy Tour zip lines are to be developed has been identified in the TDP as an Outstanding Landscape area, and its banks as being Amenity Landscape Areas. In addition, the area adjacent to the river is classified as a Foreshore Protection Area. Overall, the areas where it is proposed for zip lines to be developed

are sensitive to development and this is one of the triggers for resource consent being required under the TDP.

These scenic elements are also responsible for the land on the true right of the river being classified as a Scenic Reserve.

A Landscape and Visual Assessment was undertaken for the proposed Canopy Tour by LA4 Landscape Architects. A copy of that assessment can be found in Appendix 5. The assessment considered the landscape and visual effects of the proposed development as well as effects on natural character. That assessment has been the key determinant of the level of such effects posed by the proposed development.

In respect to natural character, the assessment at para 6.18 concludes the following:

"The section of the Waikato River displays a high degree of natural character. However this will not be directly affected in any significant way by the proposal. Potential effects are therefore limited to the associated terrestrial areas. Despite historic modification of these areas, they are undergoing the process of natural regeneration of indigenous vegetative cover. This process and the resultant landscape patterns therefore also represent a significant degree of natural character. Nonetheless, based on the consideration of the above criteria I consider that the significance of the overall effects of the proposal on the natural character of these areas would also be very low."

Overall, the assessment contains the following conclusion in respect to the overall landscape and visual and landscape effects:

"Although the proposed development spans a number of landscape character areas of mixed character and quality, the main components are largely located within the river valley of the Waikato River which despite historic modification retains significant landscape values and a high level of visual amenity as a result of a combination of the river, landform and the regenerating native forest. These physical characteristics and experiential qualities of the landscape in combination with the proximity of several other natural attractions and the major transport connections mean that the area is also very popular as a tourist destination and for recreational activities. Consequently these are also significant contributors to the established character.

This proposal embraces both the natural assets of the local landscape and the desire for people to experience what it has to offer in a way that maximises the potential exposure and enjoyment of the landscape setting. However it achieves this in a manner which will avoid any significant disruption to

both the physical landscape resource or the other qualities and characteristics that contribute to the considerable landscape and amenity values.

In doing so the proposal is consistent with the key relevant policy directions of the relevant statutory planning documents, not only in relation to landscape and visual considerations but also concerning recreational use.

Accordingly I consider that proposal is suitable in landscape and visual terms and combined with the proposed mitigation measures would provide a positive landscape and environmental outcome for the area."

6.3 Effects on Traffic and Transport

The Traffic Impact Assessment report completed by Traffessionals on 5 August 2019 concludes that the proposed Canopy Tour activity will have insignificant adverse effects:

'From a traffic engineering perspective, it is concluded that the proposed Zipline activity at 415 Huka Falls Road in Taupō will have insignificant adverse effects, and can be approved for resource consent.'

6.3.1 Carparking

The Taupō District Council car parking requirement for outdoor recreational activities is 25 car parking spaces per hectare. Due to the very low intensity of the Canopy Tour activity, this is not considered to be a reasonable basis for such an assessment, so the parking demand is estimated from first principles as described below:

Based on the aforementioned assumptions, the Canopy Tour would cater for up to approx. 110 customers per day and up to approx. 50 customers and 12 staff on site at any one time. Assuming 50% of customers arrive by private vehicle, maximum customer parking demand is estimated at around 8-13 vehicles at any one time (based on four tour groups on the Canopy Tour at any one time, plus one group arriving or departing).

The proposed parking layout (seen in Figure 3 above and in Figure 6), which shows some 18 car parking spaces including two accessible spaces, is expected to be more than adequate for the anticipated level of activity. Space for up to two tour coaches to load and unload passengers is also provided. Staff and tour coaches laying over during Canopy Tours can park in the relatively level grass area at the north of the site.

In addition to the parking at the home base, a small pick-up area may be developed for the shuttle bus at the end of the tour. The location of this is yet to be confirmed although it will not be within the Scenic Reserve.

6.3.2 Vehicle Trips

Based on the operating schedule discussed in Section 2.3 above, the proposed Canopy Tour is expected to cater for up to approximately 110 customers per day.

The assumption is that 50% of customers will arrive by tour coach or shuttle, which could mean up to 24 shuttle trips per day if demand dictated a collection from Taupō accommodation every 40 minutes. At a conservative estimate of 2-3 occupants per private vehicle, the remaining customers would generate around 36-60 vehicle trips daily. Shuttle trips to and from the start of the Canopy Tour on Rakaunui Road would comprise around 22 vehicle trips per day (i.e. 11 tours), and a staff of 12 would generate around 24 car trips per day (i.e. at the start and end of the working day).

The proposed Canopy Tour activity is therefore expected to generate in the order of up to approx. 130 vehicle trips per day in peak season. It is considered that this is relatively minor in the context of Wairakei Drive and Huka Falls Road, and should be readily accommodated.

6.4 Ecological and Conservation Effects

The proposed Wairakei Canopy Tour operation will be located within secondary indigenous forest in Huka Falls Scenic Reserve (SNA 216) and on the opposite (true left) side of the Waikato River. Huka Falls, at the southern end of this site, is one of the most visited natural attractions in New Zealand. There are existing walking and biking tracks, and commercial activities such as jet boating and river cruises. This site is of moderate to high ecological value and is an important corridor for the movement of indigenous fauna throughout the wider landscape. The cultural and ecological significance of the Waikato River, and in particular Huka Falls, is a key reason for the location of the proposed tour.

The potential effects on the ecological values at the site associated with the proposed development are:

- Loss and damage of vegetation
- Erosion and sedimentation
- Effects on indigenous fauna

- Increased human presence

An assessment of the ecological effects associated with the proposed Canopy Tour has been undertaken by Wildlands. A copy of that assessment can be found in Appendix 6. Section 10 of that assessment describes these potential effects in detail and considers the level of effect which is likely to result from the proposed development.

The assessment concludes that the largest potential ecological effects of the operation will result from clearance and trimming of vegetation during the construction and maintenance of five platforms, three towers, zip lines and associated walking tracks. There is potential for adverse ecological effects if any larger indigenous trees are cleared or damaged, or if erosion was to occur, although this is unlikely. Construction of the platforms, towers, zip lines and tracks can be undertaken in a low-impact manner. If the potential adverse effects that have been identified are avoided or minimised, the overall adverse ecological effects of the proposed Wairakei Canopy Tour will be minor.

There is also considerable potential for ecological enhancement and for increasing participant awareness of the importance of ecological restoration and caring for the natural environment. Minor adverse ecological effects of the proposed operation can be reduced to less than minor through mitigation. Intensive sustained pest animal control, weed control, and restoration planting will be planned and implemented. These works have the potential to create net environmental gains through improvement of the ecological condition of the site and improved habitat for indigenous fauna. Ecological restoration at this site will complement previous and current work within the Waikato River Corridor such as that undertaken by Greening Taupō. This work will be an integral part of the 'story' associated with the Canopy Tour.

6.5 Noise

The operation of the Canopy Tour and the participants using it are likely to result in noise effects within the subject site. Consideration of noise effects is important in respect to the Scenic Reserve status of part of the subject site which is currently used for recreational purposes.

A Noise Assessment was carried out by Tonkin & Taylor Ltd in August 2019. That assessment can be found in Appendix 7 of this report. The noise assessment concludes that, provided the proposed Canopy Tour uses zip line equipment that has noise performance as good as that used (and measured) elsewhere, it will have negligible noise effects. It also concludes that the construction of the proposed Canopy Tour will not result in adverse levels of noise and the

recommended noise limits of NZS 6803:1999 will be met, provided the construction does not require unusually noisy equipment.

The following provides the basis for these conclusions:

The sources of noise due to the proposed Wairakei Canopy Tour will principally consist of:

- The metal on metal sound from the cable and sheave wheel
- Yelling and shouting from people whilst travelling along the zip line
- Sound produced from the dampening and braking system at the end of each zip line

The effects of noise emissions from the proposal have been assessed using sound propagation modelling using worst case assumptions. A baseline monitoring survey was undertaken in the area surrounding the proposed Canopy Tour.

The average predicted noise levels at residential receivers are significantly below the District Plan noise limits for permitted activities and are unlikely to be audible against background noise levels. The proposed Canopy Tour operation is therefore unlikely to detract from the amenity or general environmental quality of the surrounding residential environment.

The average predicted noise levels at locations of recreational user exposure are less than the measured average ambient noise levels. The increase in average noise levels at recreational user locations is negligible.

Predicted instantaneous maximum noise levels at downstream locations on the trails, particularly near the zip line landing platforms, will result in audible noise compared to the existing ambient and background sound levels. However, these predicted maximum noise levels are similar to the levels experienced by jet boat passes at most locations on the trails, and less than the levels experienced during low-level helicopter fly overs at all locations.

Recreational users in the area of the proposed zip line course currently experience maximum noise levels from adventure activities equivalent to or in exceedance of the proposed zip line course. The effects of noise from the proposal are unlikely to be considered incongruous in the heavily frequented tourist and adventure activity area. The noise effects associated with the proposal are therefore unlikely to detract from the amenity or the general environmental quality of the surrounding area for recreational users, given the nature of the other activities that are currently taking place in the area.

6.6 Cultural Effects

The Waikato River and the surrounding area are considered taonga to those tangata whenua associated with the river. Ngāti Tahu-Ngati Whaoa and Ngāti Tuwharetoa have identified associations with and important sites within this part of the Waikato River. The river has high cultural significance as a key waka route through the central North Island, and is also central to the well-being and way of life for those who lived on its banks and in the wider area. In addition to wider associations, there are also physical sites that reflect past use and areas of importance to tangata whenua.

To better understand the potential impact of the proposed development on the important cultural values of the site, the applicant has engaged with iwi. This engagement has included the following:

- Meetings with representatives of nga hapū of Tuwharetoa on and off the site to discuss the proposed development.
- A walkover of the subject site by the applicant and representatives of Ngāti Tahu-Ngati Whaoa and a cultural researcher to assess any potential impacts on their values.

In addition, the applicant commissioned a Cultural Assessment, to be undertaken by Gayle Leaf, for the subject site. A copy of the assessment can be found in Appendix 9 and speaks of the values and the importance of specific sites within the area to the Ngāti Tuwharetoa river hapū. The sites identified in the assessment informed the design of the proposed development to ensure that these are avoided. The recommendations are also agreed with however, in lieu of storyboarding, the applicant's preference is to have these stories told orally.

A letter of support for the proposed development from Ngāti Tahu-Ngati Whaoa can be found in Appendix 10. This letter was received in 2017 after the field assessment and a more recent email was received in June 2019 reiterating that support based on the revised design. This support was provided on the basis that Ngāti Tahu-Ngati Whaoa are comfortable with the proposed development and its impact on their cultural values at the site.

6.7 Recreation Effects

As noted in Section 6.1.1, the subject site is a recognised recreation area, with many people visiting the site for recreational purposes including walking, cycling and sightseeing. Visual and noise effects on existing users are discussed above. The development will result in physical

development in the vicinity of existing walking and cycling tracks with all of the proposed stations located away from the existing tracks. Canopy Tour participants will, however, use parts of these tracks to walk between Stations 6 and 7 and also from Station 8. This will result in groups of up to 12 people on those sections of track every 45 minutes.

This proposed use will be different from existing use which is generally made up of smaller groups of people more dispersed along the track. The proposed use is not, however, considered inconsistent with the purpose of the tracks as concessions can be granted for groups of walkers and cyclists to be guided along these tracks.

It will be important to ensure that these groups of tour participants share the tracks with other users in a manner that ensures other users are not unduly held up or crowded off the trail. The guides accompanying the participants will brief their groups on appropriate trail etiquette in the initial tour briefing and as they leave Station 6. Guides will be positioned front and rear of the groups to ensure participants don't go past the stations and to alert them of other users on the trails.

6.8 Effects Summary

The proposed Canopy Tour activity is consistent with the established tourism and recreation activities within the reserve. The proposal has been designed to minimise ecological, noise, landscape and visual effects on the subject site and the wider environment. The proposed ecological restoration work is anticipated to result in a net ecological benefit to the site.

The effects from transport and parking are also considered to be minor.

Ngati Tahu-Ngati Whaoa have provided support for the proposal on the basis that the important cultural values associated with the area will not be adversely affected. The proposed development is also consistent with the outcome of a cultural assessment undertaken for the proposed development.

Overall, the adverse effects of the proposal are expected to be minor. The activity has the potential to result in positive effects for ecological values, to enhance the recreational offerings, and enable social and economic effects to ensue.

7 Consultation and Engagement

In the planning and design of this development there has been significant engagement by the applicant with key stakeholders. The following section sets out the nature of this engagement.

Letters of support from stakeholders can be found in Appendix 10.

7.1 Iwi

The applicant has been actively engaging with iwi for the length of this project. It is noted that there are a number of iwi who have associations with the site and the wider Waikato River. The applicant has been working with all parties to secure support for the proposed development.

7.1.1 Ngāti Tahu-Ngāti Whaoa

Ngati Tahu-Ngati Whaoa hold mana-whenua over the subject site and are recognised as having co-management responsibilities for the Waikato River as one of the affiliate iwi represented through Te Arawa Iwi Trust and the Ngati Tuwharetoa, Raukawa and Te Arawa River Iwi Act (2010). A number of meetings have been held with representatives of Ngati Tahu-Ngati Whaoa, including an on-site assessment to ensure the proposed development would not impact on any of their cultural sites. As well as the initial assessment in 2017, a more recent assessment was undertaken by cultural researcher Perry Fletcher at the request of the iwi.

Ngati Tahu-Ngati Whaoa have provided written support for the proposed development and wish to be actively involved in the development of the proposal as it moves forward.

7.1.2 Ngāti Tuwharetoa

Since 2015, the applicant has met with members of Nga Hapu of Ngāti Tuwharetoa to discuss the proposed development. These meetings have been with individuals on site and off. The applicant has also been engaging with Te Kotahitanga o Ngāti Tūwharetoa (TKT), not only in respect to the use of the land but also to seek their views and secure their support for the project. TKT are also neighbours as they represent the owners of the 'Section 11' block shown in Figure 7. As noted above, the settlement process has meant this engagement has been dynamic. TKT are working through the settlement process for Ngāti Tuwharetoa.

In preparing this application, TKT were formally approached for comment and the applicant met with Hikuwai hapū collective to discuss the proposed development. This meeting resulted in specific feedback on the proposed route and the operational requirements of the proposal, and a

commitment was made to continue to investigate ways for hapū and the applicant to form an ongoing relationship. There was support for the proposed environmental restoration elements of the project. As a result of this meeting, the design of Run 5 and the location of Station 8 were amended to ensure no sites of importance were to be affected. It was also decided to add a toilet adjacent to Station 7 to ensure participants did not end up 'bush toileting'.

7.1.3 Ngāti Raukawa

Initial engagement with Ngāti Raukawa resulted in a response from them requesting that the applicant works with Ngāti Tahu-Ngati Whaoa and Ngāti Tūwharetoa as the proposed development was more relevant to those iwi.

7.2 Taupo District Council

The applicant has been engaging with Taupō District Council (TDC) in their capacity as a landowner and regulatory body. The applicant will seek a formal licence to occupy and access Area D so that Stations 1 and 7 can be developed and participants can be transported to the beginning of the tour.

The applicant is seeking resource consent from TDC to develop the proposed Wairakei Canopy Tour.

7.3 Land Information New Zealand

The applicant has been engaging with TDC in their capacity as managers of properties A and B for the Crown.

The applicant has secured licences from LINZ for Area A to develop the ziplines for the Wairakei Canopy Tour on these lands and run it for a period of 20 years.

Approval has also been given by LINZ for a lease over Area B.

It is noted that securing these licences required LINZ to advise local iwi and seek their feedback prior to making a decision.

7.4 Department of Conservation

A concession is being sought from DOC to develop the proposed Wairakei Canopy Tour and operate it for a period of 30 years on the Huka Falls Scenic Reserve.

7.5 Other Parties

The following parties have also been engaged with in the planning and design of the project. All have provided written support for the project.

- Destination Great Lake Taupō
- Enterprise Great Lake Taupō
- Contact Energy
- Mercury Energy
- Taupō Bike Hub
- Kefi at the Hub
- Heli Adventure Flights

8 Notification

8.1 Concession Notification

1. The Conservation Act 1987 section 17SC specifies that the Minister must publicly notify every application for—
    1. (a) A lease; or
    2. (b) A licence for a term (including renewals) of more than 10 years.

As the application is for a period of greater than 10 years it must be publicly notified by the Department.

8.2 Resource Consent Public Notification

Under Section 95A of the RMA the resource consent application is not precluded from public notification.

Section 95A specifies that a consent application must be publicly notified if it is required to be publicly notified by the District/Regional Plan or a rule in a NES, or the Council decides that the activity will have or is likely to have adverse effects on the environment that are more than minor (in accordance with Section 95D), or the applicant requests public notification. The applicant is not requesting public notification and public notification is not required by the District Plan or a NES rule.

Section 95D(a) requires Council to disregard any effect on persons who own or occupy land on which the activity will occur or any land adjacent to the subject site. Also Section 95D(b) allows Council to disregard the effects related to the permitted baseline.

As discussed in Section 6 of this report, it is considered that the effects of the proposal are less than minor. There are no special circumstances that necessitate public notification and public notification will be undertaken by the Department of Conservation for the concession application. Permission has been given by LINZ for the use of the parcel of land which includes the Waikato River and the airspace above.

Accordingly, there is no need to publicly notify the resource consent application to satisfy an assumed public interest.

8.3 Resource Consent Limited Notification

Section 95B specifies the criteria for limited notification of resource consent applications. The proposal is not precluded from limited notification by the District Plan or a NES rule.

Under Section 95E Council must determine whether any persons are affected, including protected customary rights groups or persons who have a statutory acknowledgment over the area of the proposal. Ngati Tuwharetoa, Ngāti Tahu-Ngati Whaoa and Ngati Raukawa have a statutory acknowledgement area of the river, and consultation has been undertaken and approval obtained from Ngāti Tahu-Ngati Whaoa.

Under Section 95E(1) of the RMA a person is considered affected in relation to an activity if the activity's adverse effects on the person are minor or more than minor (but are not less than minor). The proposed development is within land owned by the Department of Conservation, Taupō District Council and the Crown (administered by LINZ). LINZ has provided the applicant with a lease to occupy and operate the Wairakei Canopy Tour over the Waikato River and on their land on the left bank. The applicants are currently seeking a licence to access and occupy Taupō District Council land for Stations 1 and 7.

Stations 2, 5 and 8 are outside of the permitted setbacks from the neighbouring 'Section 11' land, however it is noted that the owners of that land will be advised of the application through the statutory acknowledgement process.

The site office/home base is to be located on land managed by LINZ and a licence to occupy has been secured from LINZ for that purpose. The two closest leases of that land have also provided letters of support for the proposed application.

The applicant's planner met with the TDC development engineer on 14 August 2019 to discuss the application with respect to parking and traffic effects. No concerns were raised about the effects of the proposed activity on the safe operation of the adjoining roading network.

The noise and traffic assessment does not consider that there will be any effects more than minor, wider than the subject site.

9 Conclusion

A concession and resource consent are sought for the establishment and operation of a Canopy Tour zip line activity downstream of Huka Falls, and for an associated office/home base building and parking area off Huka Falls Road. The proposed development will occur across multiple tenure including the Waikato River and the Huka Falls Scenic Reserve.

The proposed development will include the construction of towers, platforms, a site office and a parking area. There will be disturbance to indigenous vegetation and earthworks to create new trails.

The proposed activity will add to the recreational offerings in a location that is popular with walkers, bikers and sightseers. The proposed development is anticipated to be popular with both locals and visitors and contribute to Taupō as a popular visitor destination.

Ecological, noise, visual, traffic and cultural assessments have been undertaken which demonstrate that the effects of the proposed activity will be no more than minor. A proposed ecological restoration plan has been proposed which is anticipated to result in a net gain in the ecological values of the site.

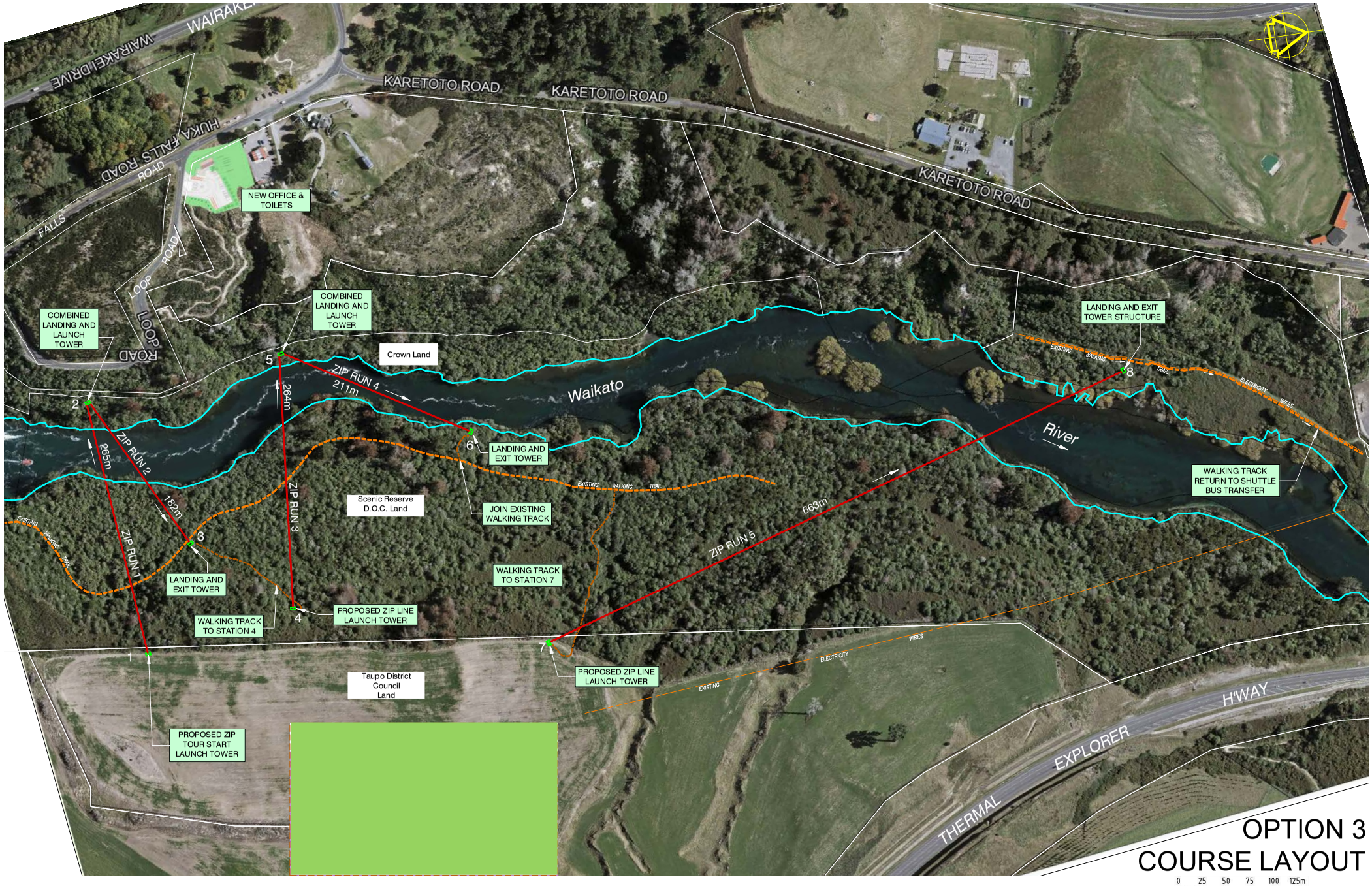
We certify that the information contained herein is in accordance with the requirements of the Resource Management Act 1991 and that the Applicant has a legal obligation to comply with any Conditions imposed should the Application be approved and given effect to.

Rowan Sapsford

Roam Consulting Limited

16 September 2019

Appendix 1. Plans



OPTION 3
COURSE LAYOUT

0 25 50 75 100 125m

McKENZIE&Co CONSULTANTS LTD
Phone: 07 378 8635
infoTaupo@mckenzieandco.co.nz

ZIP SUPPORT P/L
Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

SKY PLAY ADVENTURES
HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND
SCHEMATIC COURSE ROUTE & COORDINATES

ISSUED FOR FINAL CONCEPT APPROVAL 01/08/2019

SCALE:	PROJECT No:	DRAWING No:	Rev:
1:2500	374	P-08	A

1 SITE PLAN
- 1:200

Taupō Plan Service
creative architecture

Client:
SKY PLAY ADVENTURES.
201 KARETOTO, TAUPO.

Project:
NEW OFFICE & TOILETS

Layout:
Site plan

The Contractor: Must check all plans, dimensions & specifications before commencing any work. Any doubt, omission or ambiguity relating to these plans must be referred to Taupo Plan Service for clarification.

Copyright: "Taupo Plan Service 2001 Ltd" shall retain copyright of all documents & plans prepared by "Taupo Plans Service 2001 Ltd". The client is entitled to use or copy them for the purpose for which they were intended.

Confidential: These plans are confidential in accordance with the Building Act 2004, Section 217(2)(b).

Project:	Project No.:
NEW OFFICE & TOLIETS	1944
Status: Consent Plans	Scale @ A2:

Drawn:	Date:	Sheet No.:	Rev:
UKN	15/08/2019	1-02	

1	Over all Site Plan
-	1:1000

Taupō Plan Service
creative architecture

Client:
SKY PLAY ADVENTURES.
201 KARETOTO, TAUPO.

Project:
NEW OFFICE & TOILETS

Layout:
Overall site plan

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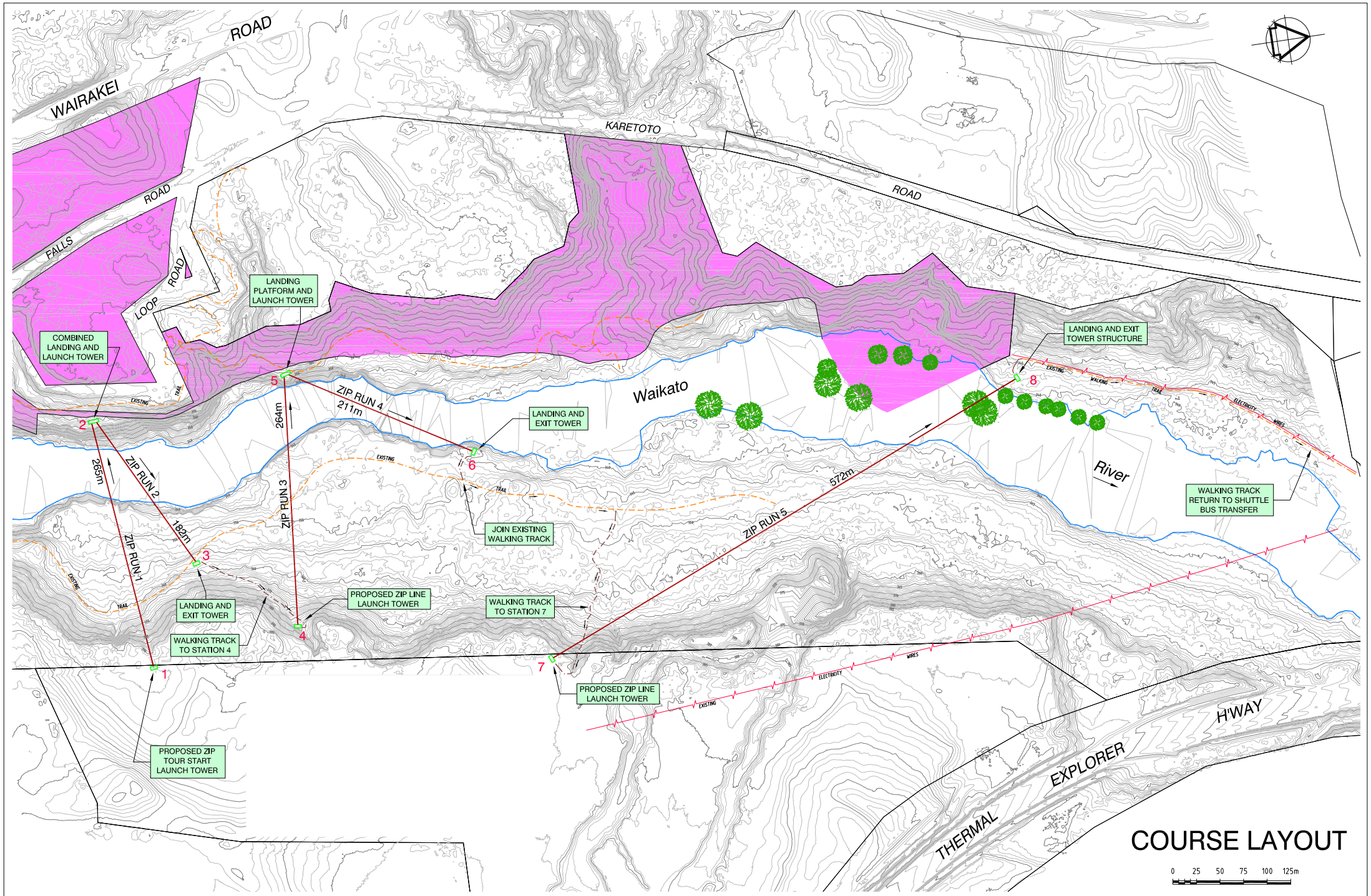
Project:	Project No.:
NEW OFFICE & TOLIETS	1944
Status: Consent Plans	Scale @ A2:

Drawn:	Date:	Sheet No.:	Rev:
UKN	15/08/2019	1-01	



A2

ZIP SUPPORT P/L
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PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

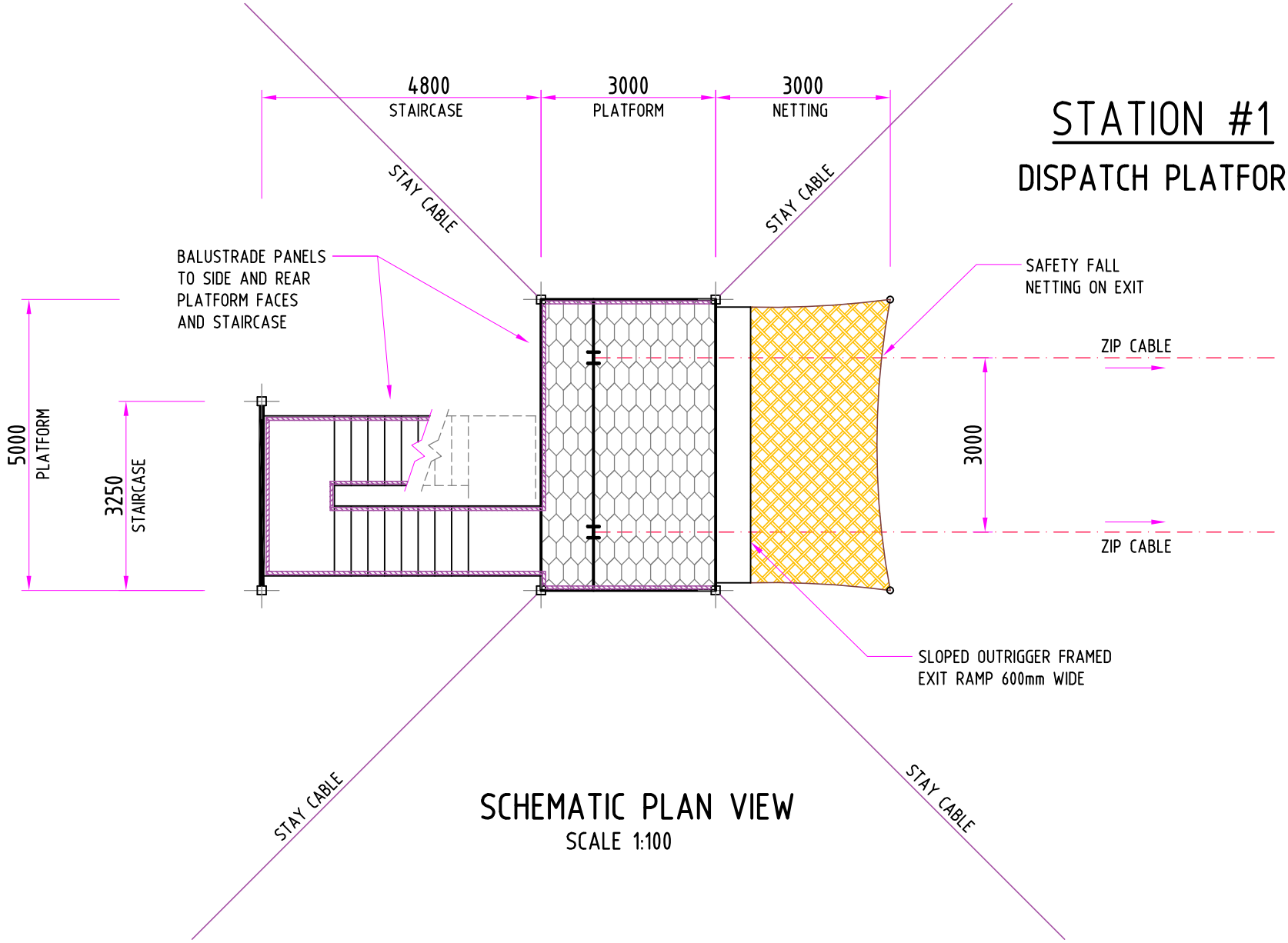
WAIRAKEI CANOPY TOUR & ZIP LINE
HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND
SCHEMATIC COURSE ROUTE & COORDINATES

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
1:2500	374	P-08

STATION #1

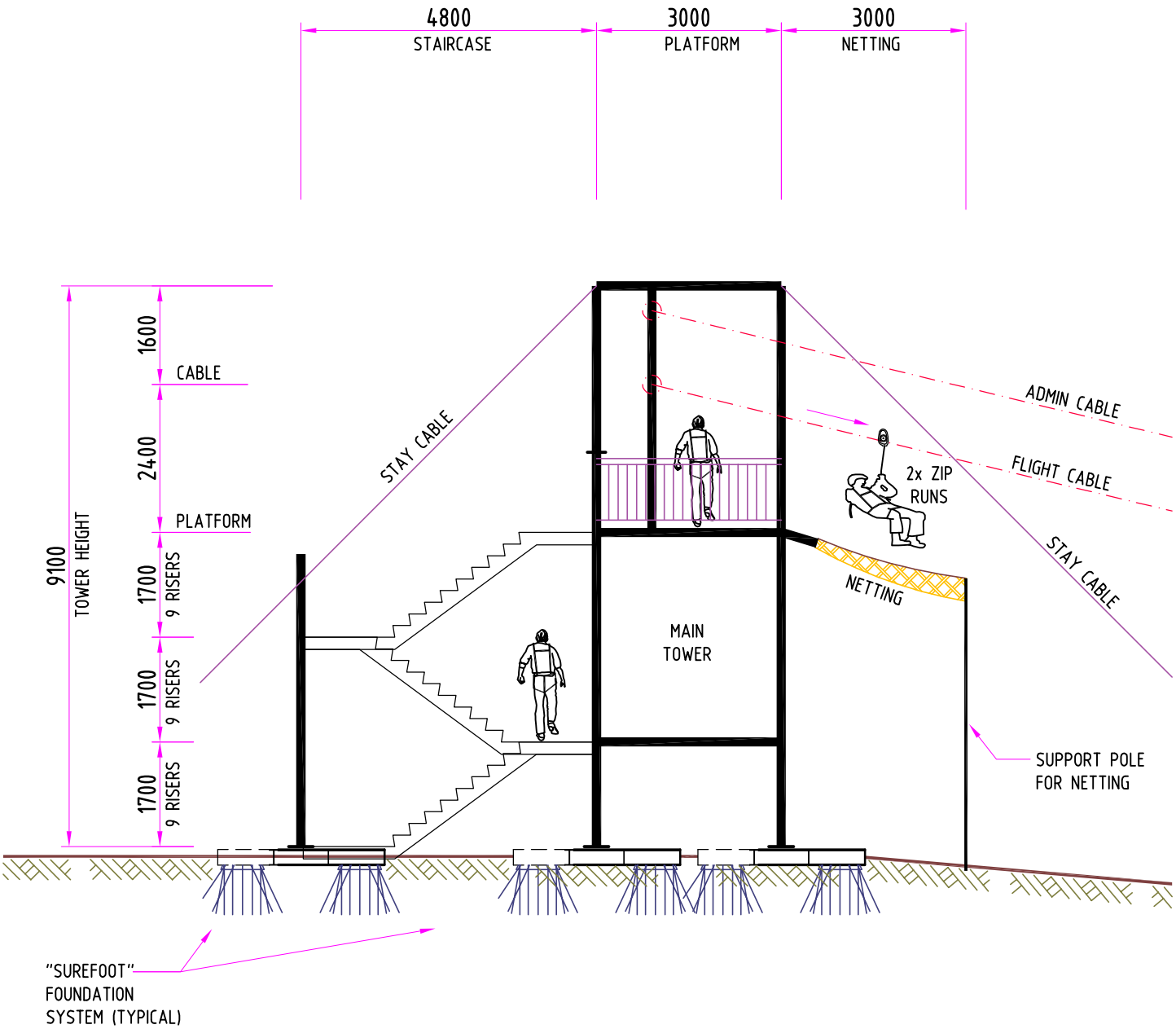
DISPATCH PLATFORM



SCHEMATIC PLAN VIEW
SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-01



SIDE ELEVATION

SCALE 1:100

STATION #1

DISPATCH PLATFORM

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJ. No: 374	DRAWING No: TC-02

STATION #2

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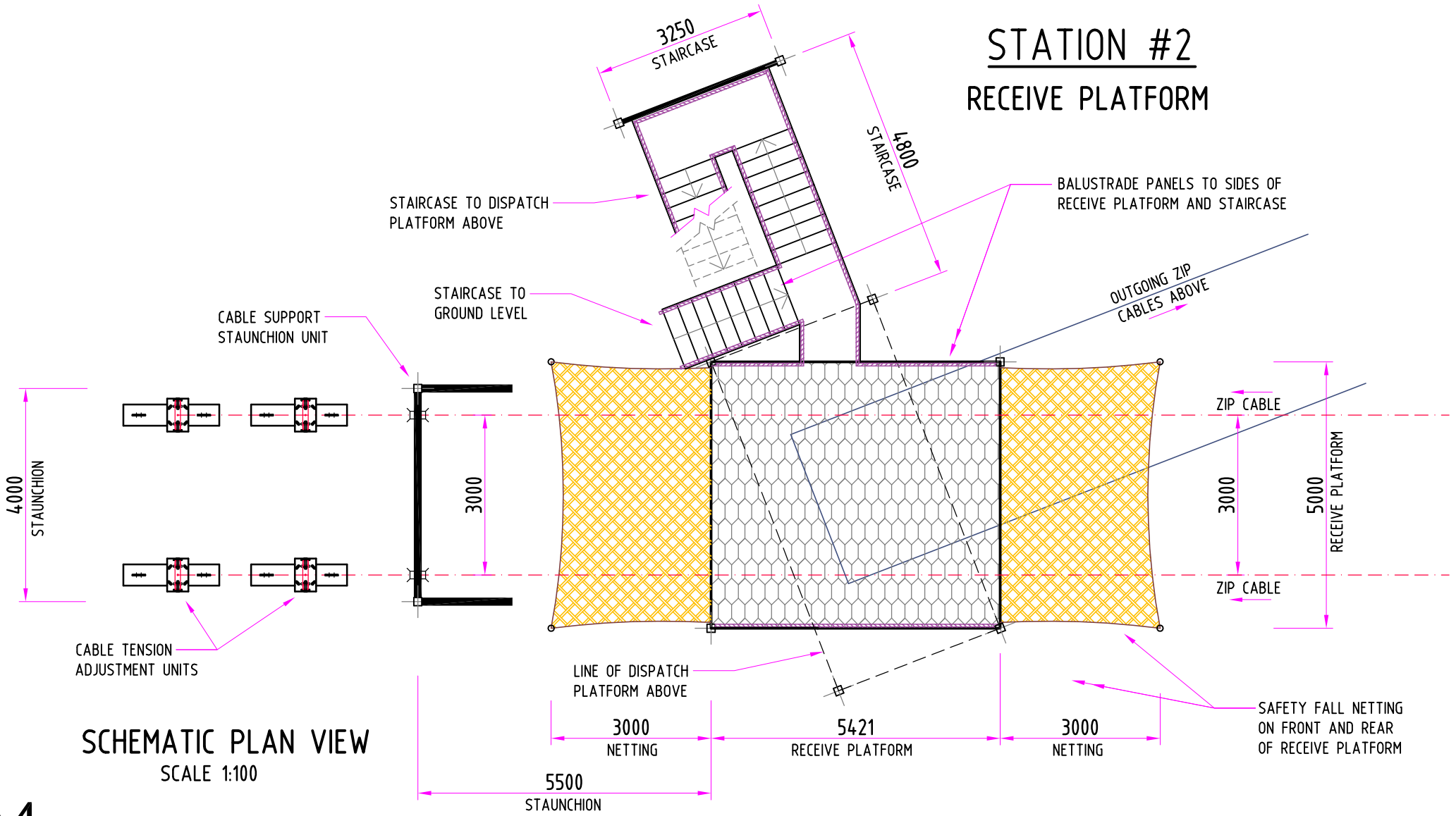


SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

WAIRAKEI CANOPY TOUR & ZIP LINE

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

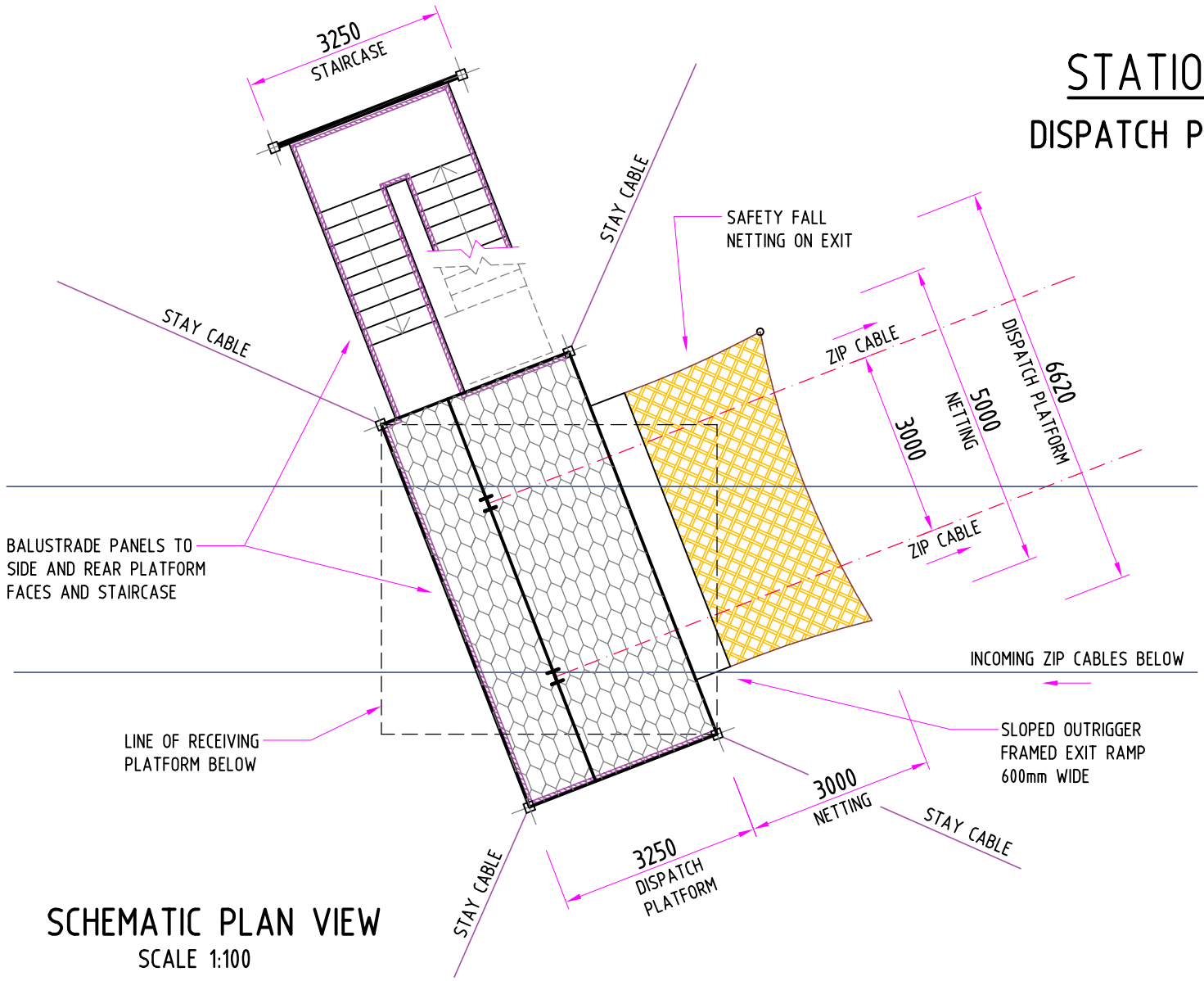
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-03

STATION #2

DISPATCH PLATFORM



SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
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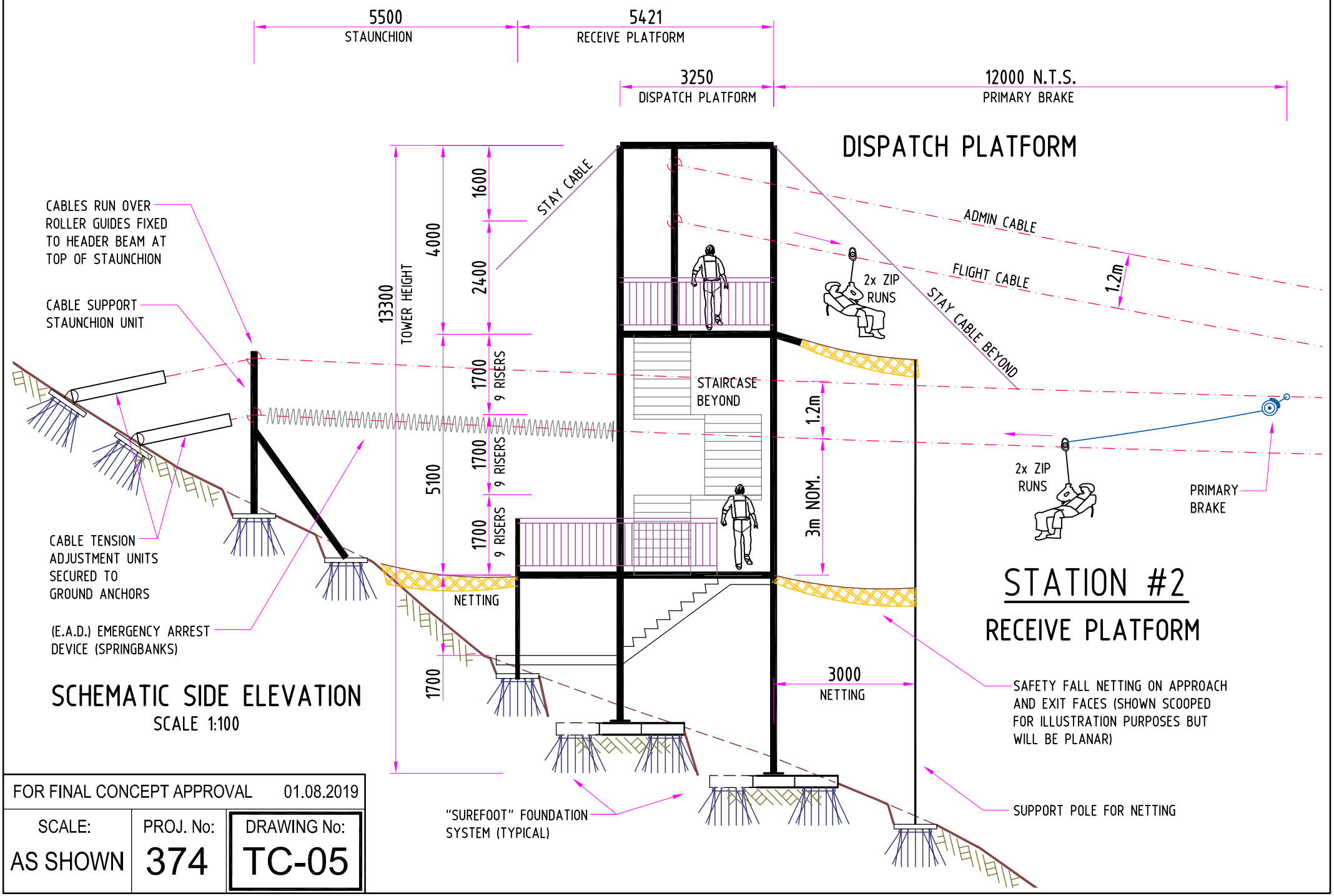

SCHEMATIC SIDE ELEVATION

SCALE 1:100

FOR FINAL CONCEPT APPROVAL		01.08.2019
SCALE: AS SHOWN	PROJ. No: 374	DRAWING No: TC-05

STATION #3

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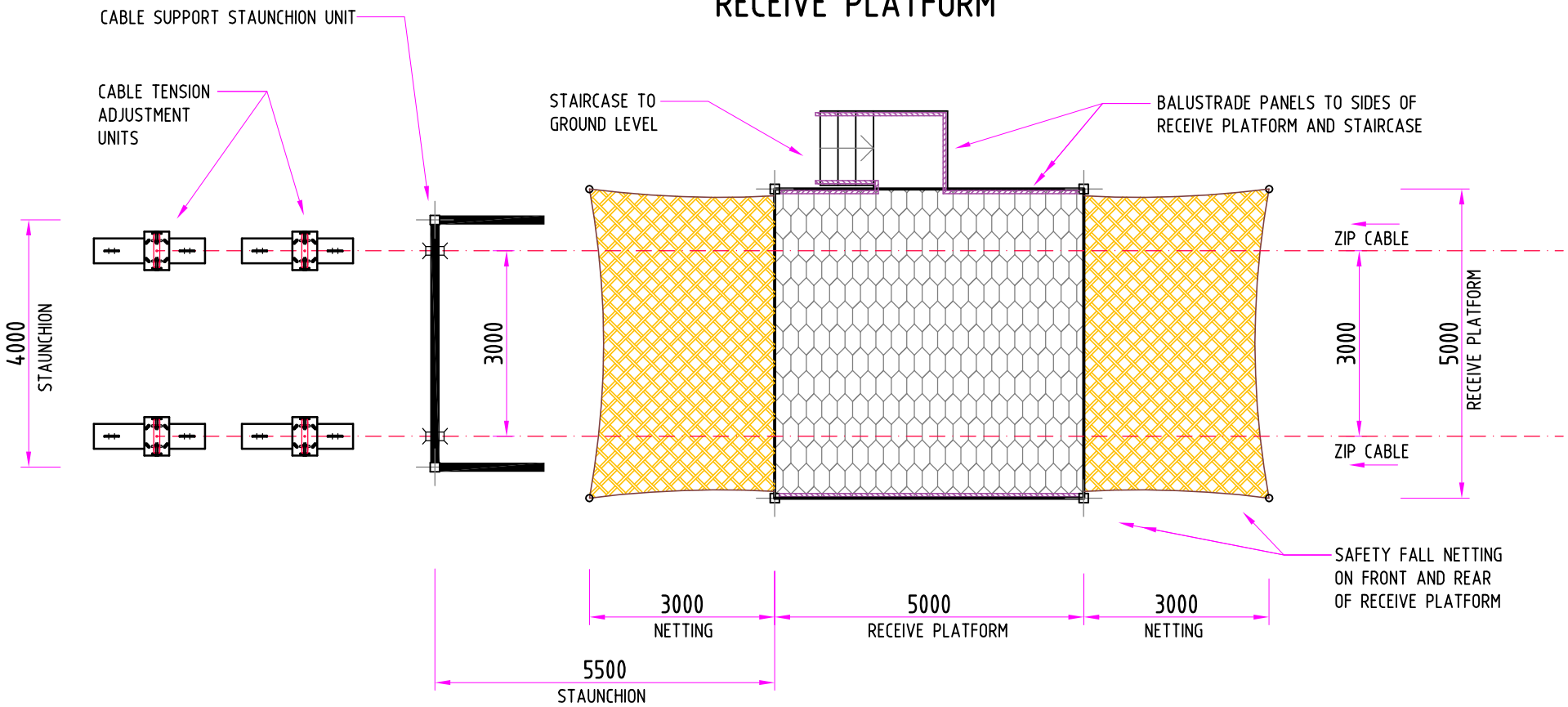


SCHEMATIC PLAN VIEW

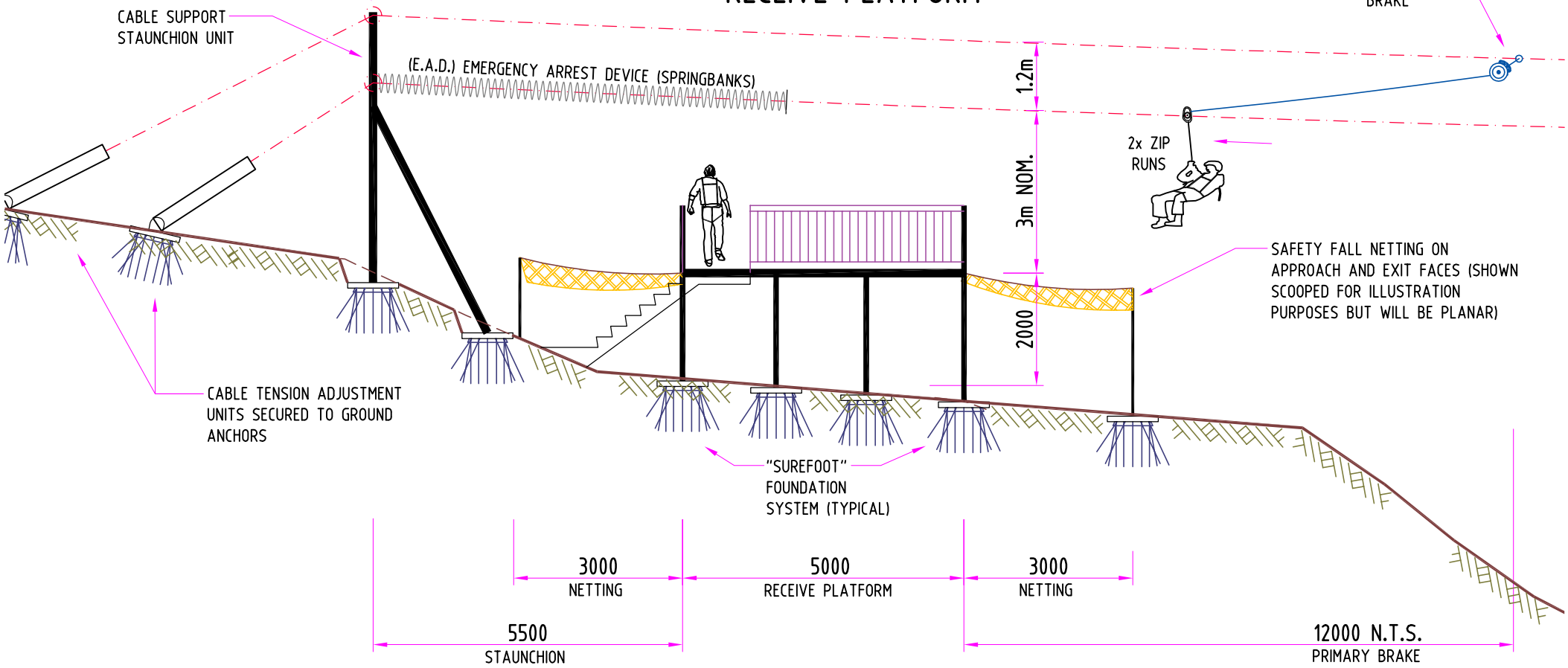
SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-06

STATION #3

RECEIVE PLATFORM



SCHEMATIC SIDE ELEVATION

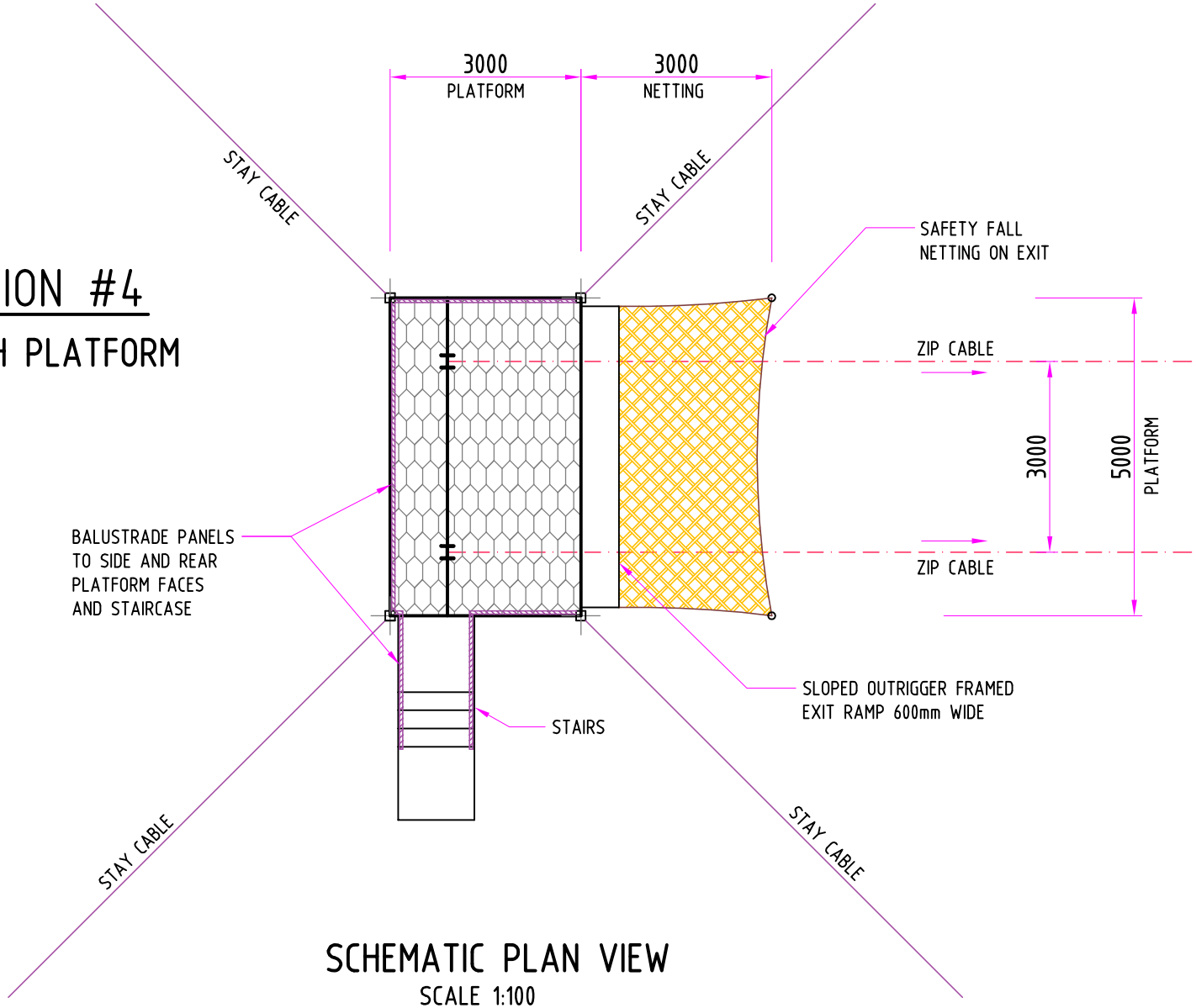
SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-07

STATION #4

DISPATCH PLATFORM



SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
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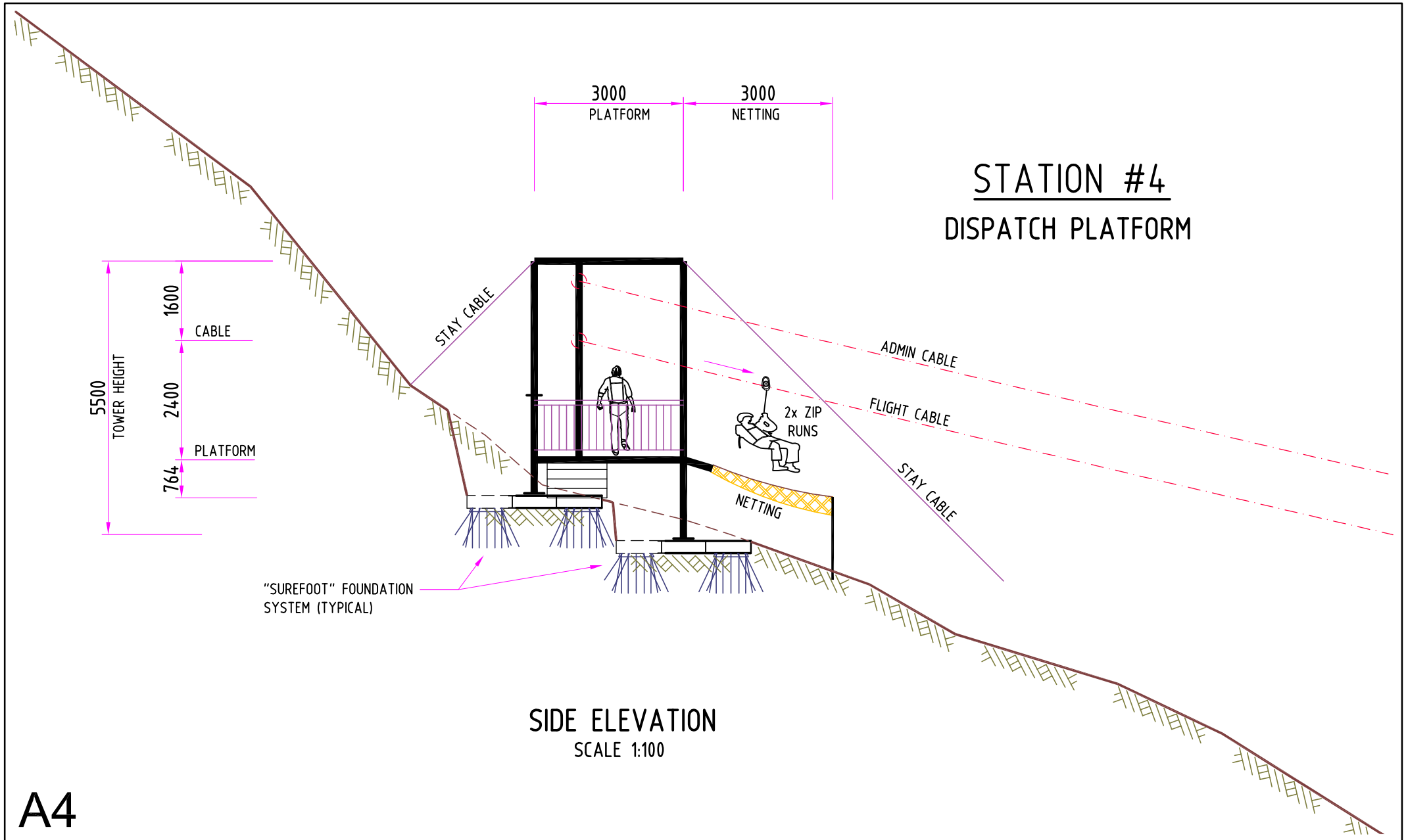


SIDE ELEVATION
SCALE 1:100

A4

ZIP SUPPORT P\L
Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

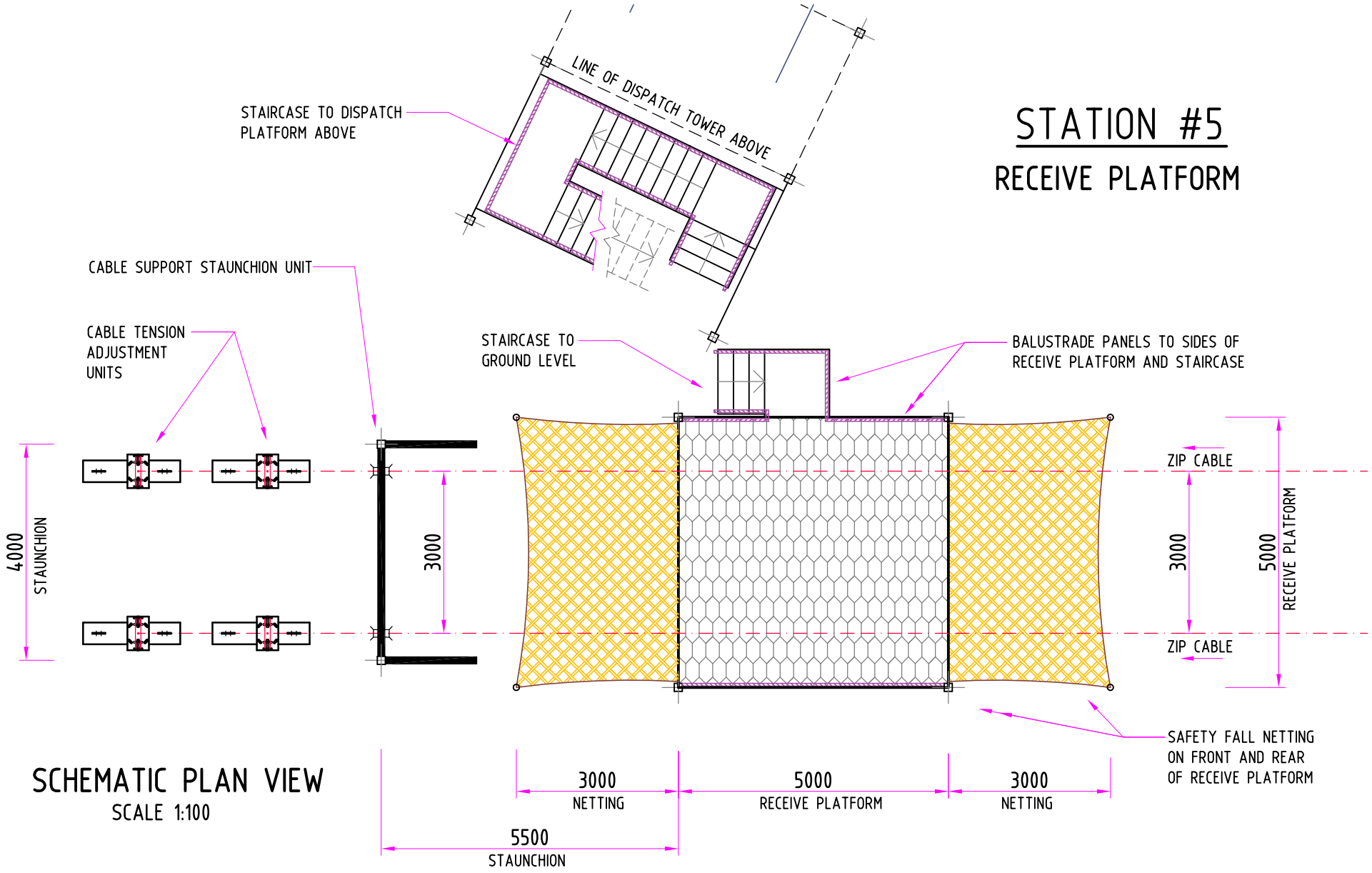
WAIRAKEI CANOPY TOUR & ZIP LINE
HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-09

STATION #5

RECEIVE PLATFORM



SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-10

STATION #5

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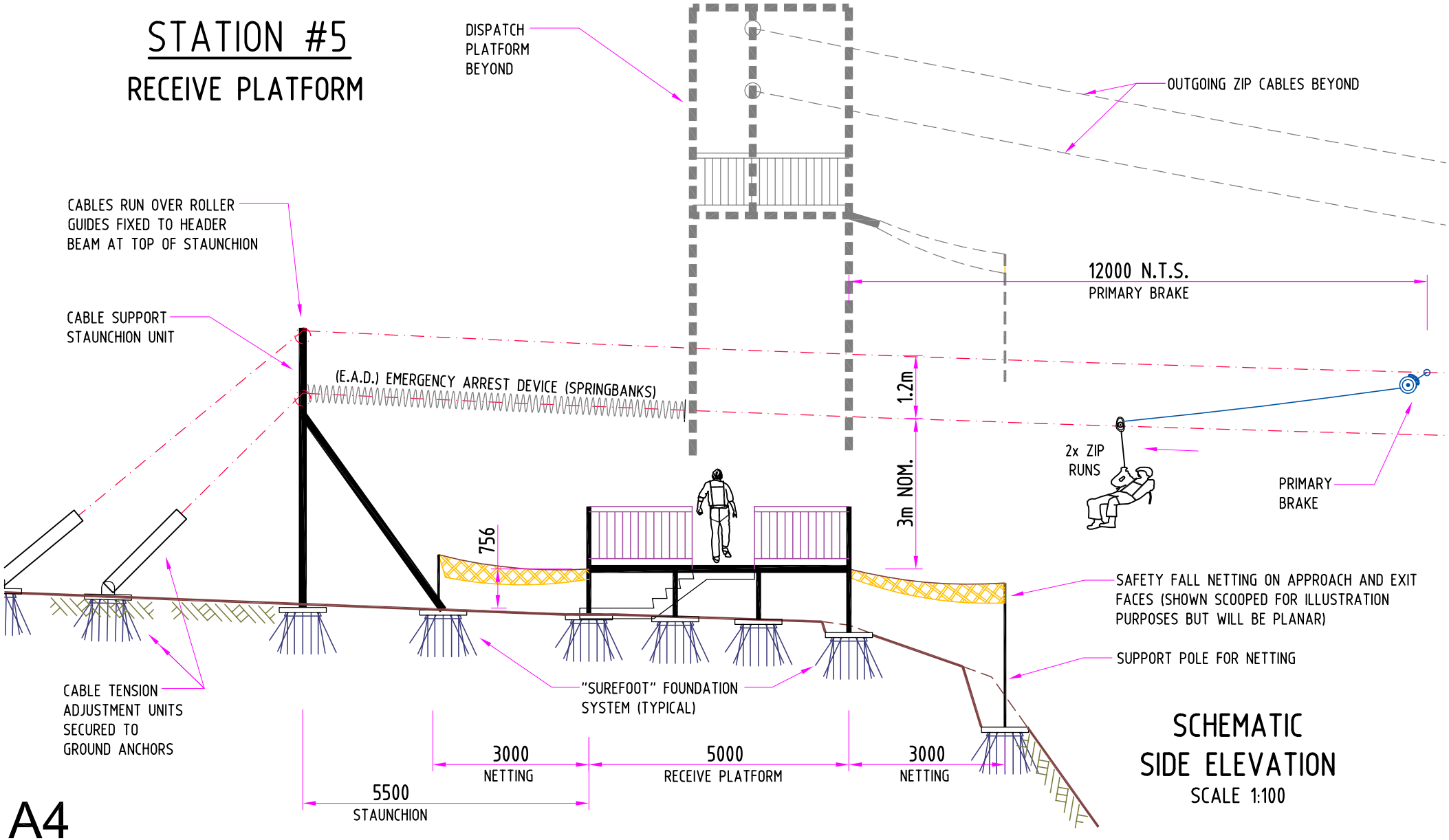


SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

WAIRAKEI CANOPY TOUR & ZIP LINE

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

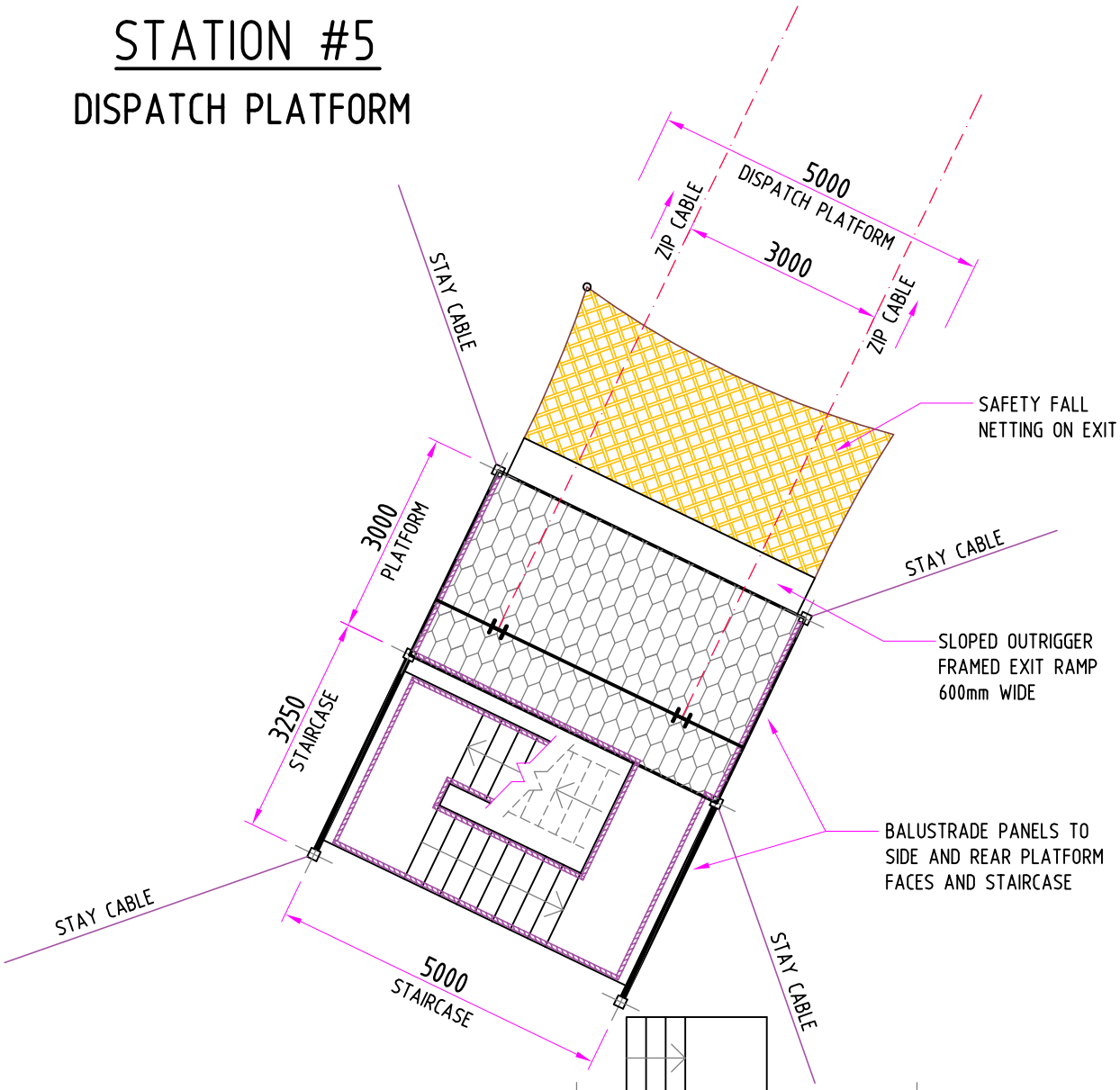
CONCEPT TOWER DESIGNS

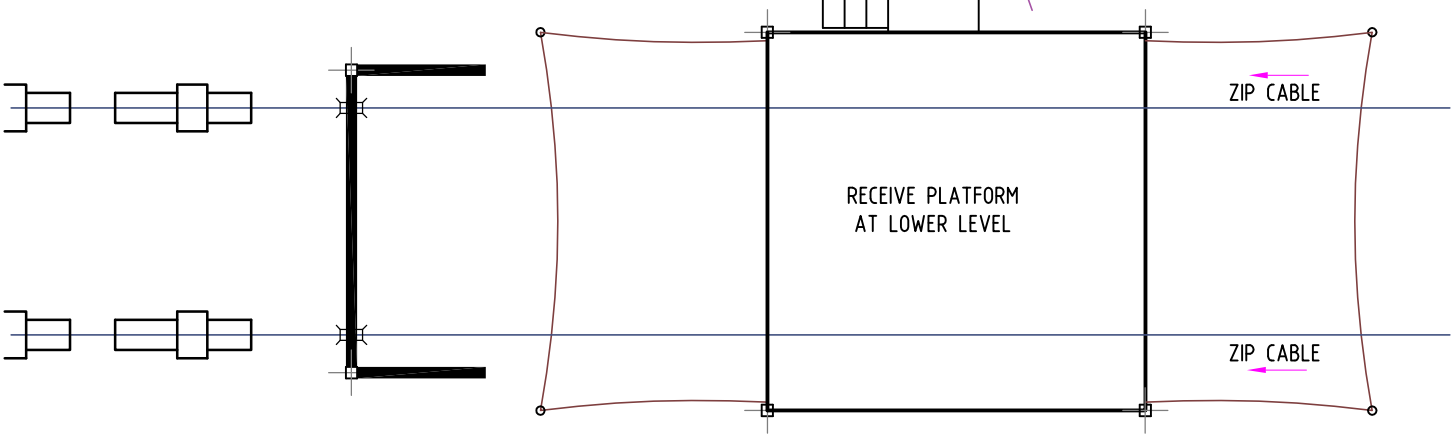
ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-11

STATION #5

DISPATCH PLATFORM





SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
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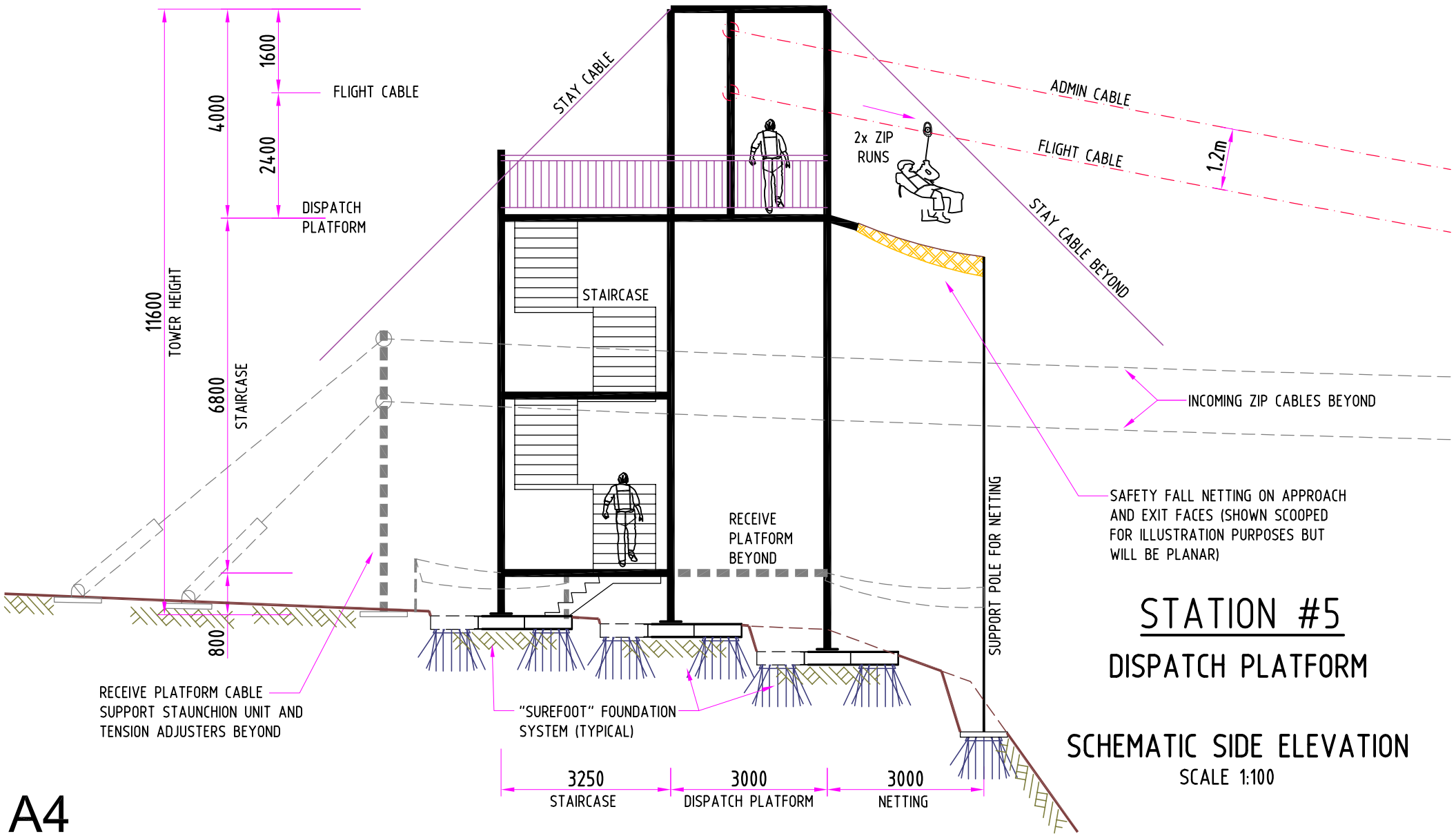


STATION #5

DISPATCH PLATFORM

SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

WAIRAKEI CANOPY TOUR & ZIP LINE

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

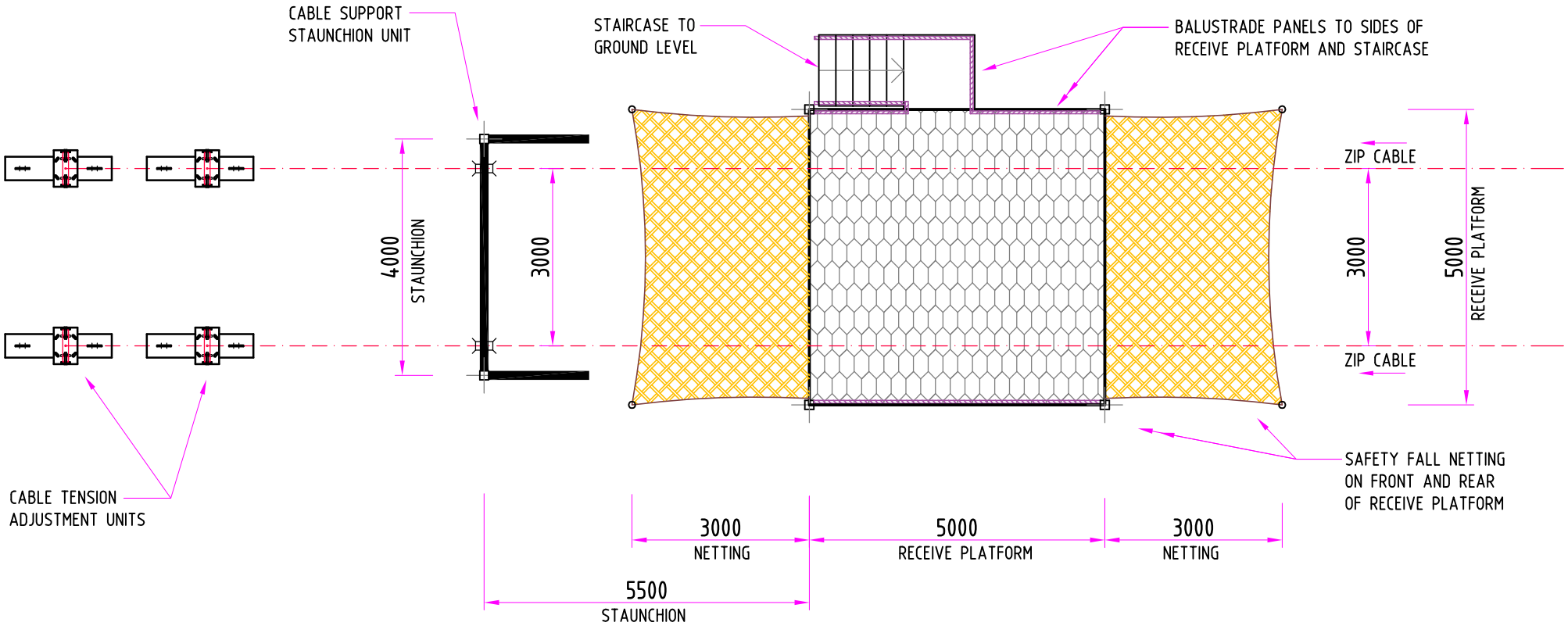
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-13

STATION #6

RECEIVE PLATFORM



SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
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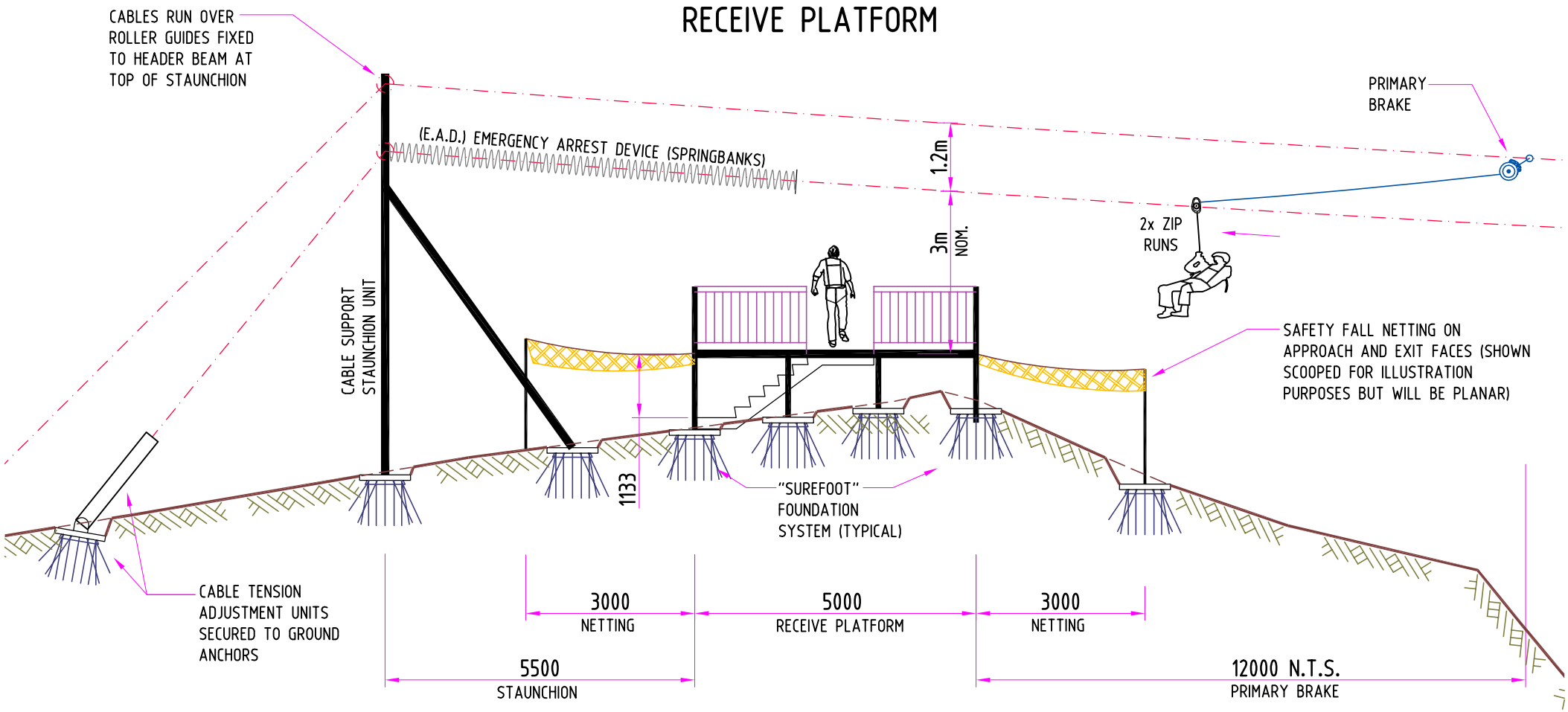
STATION #6

RECEIVE PLATFORM



SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
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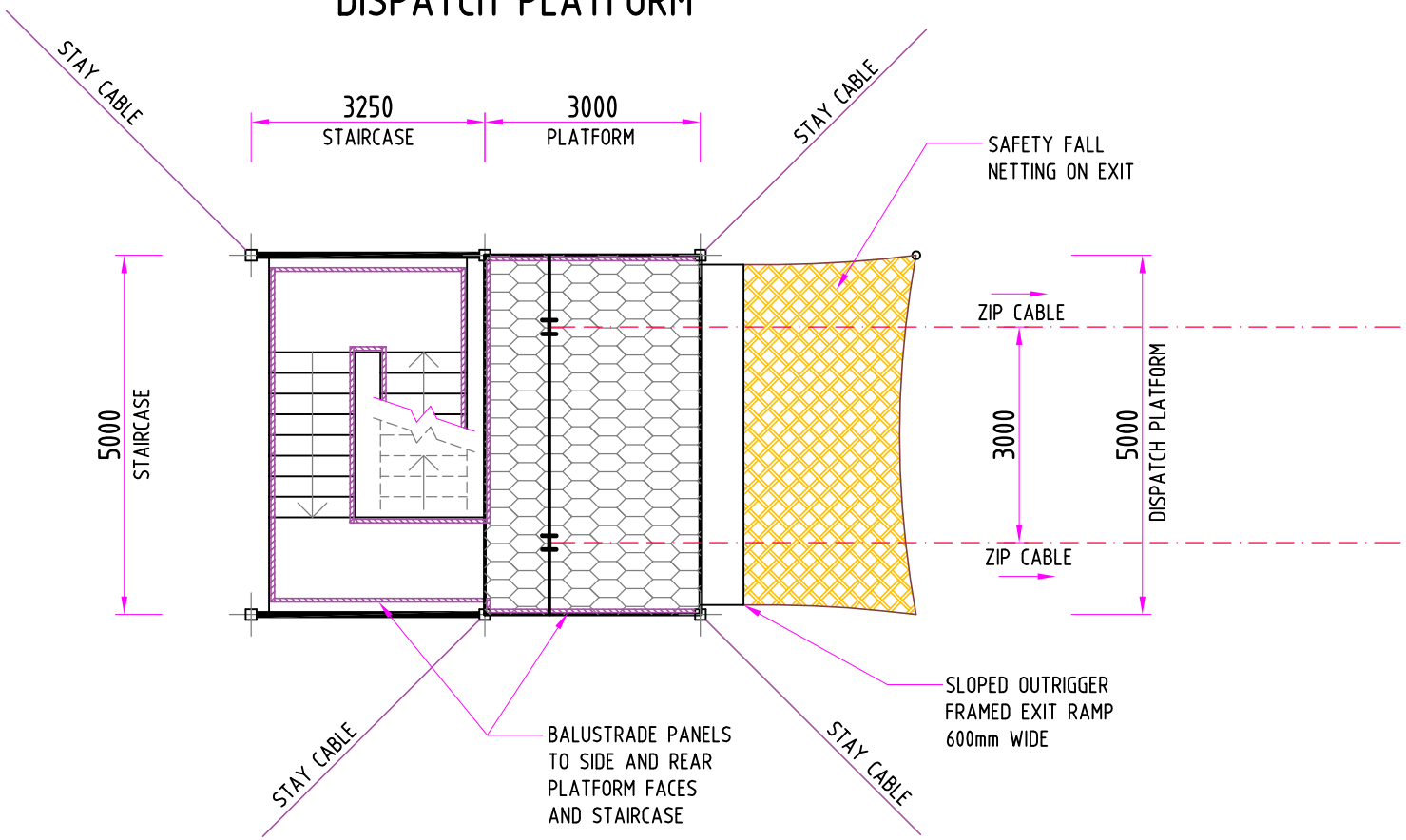
STATION #7

DISPATCH PLATFORM



SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
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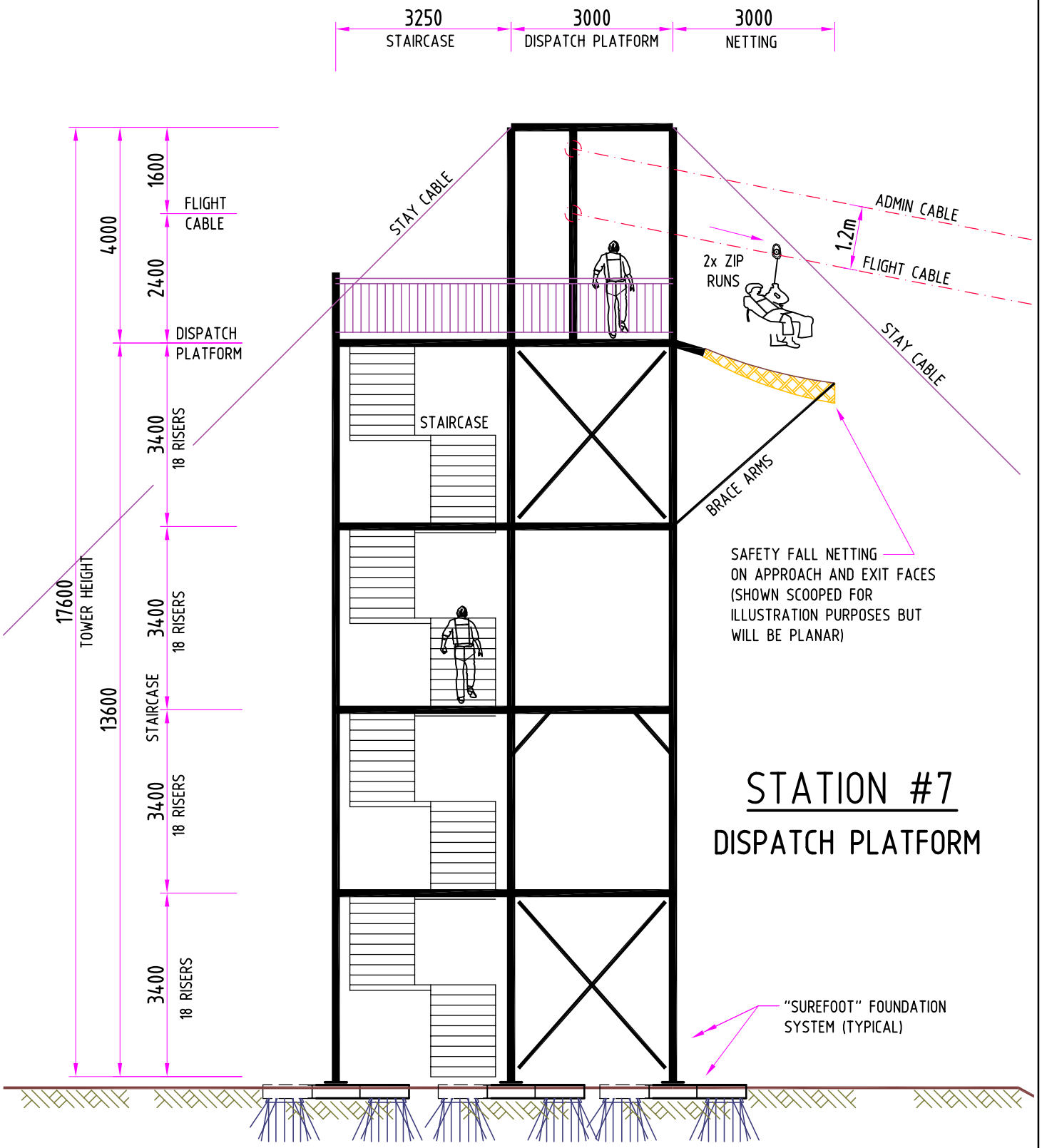

SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
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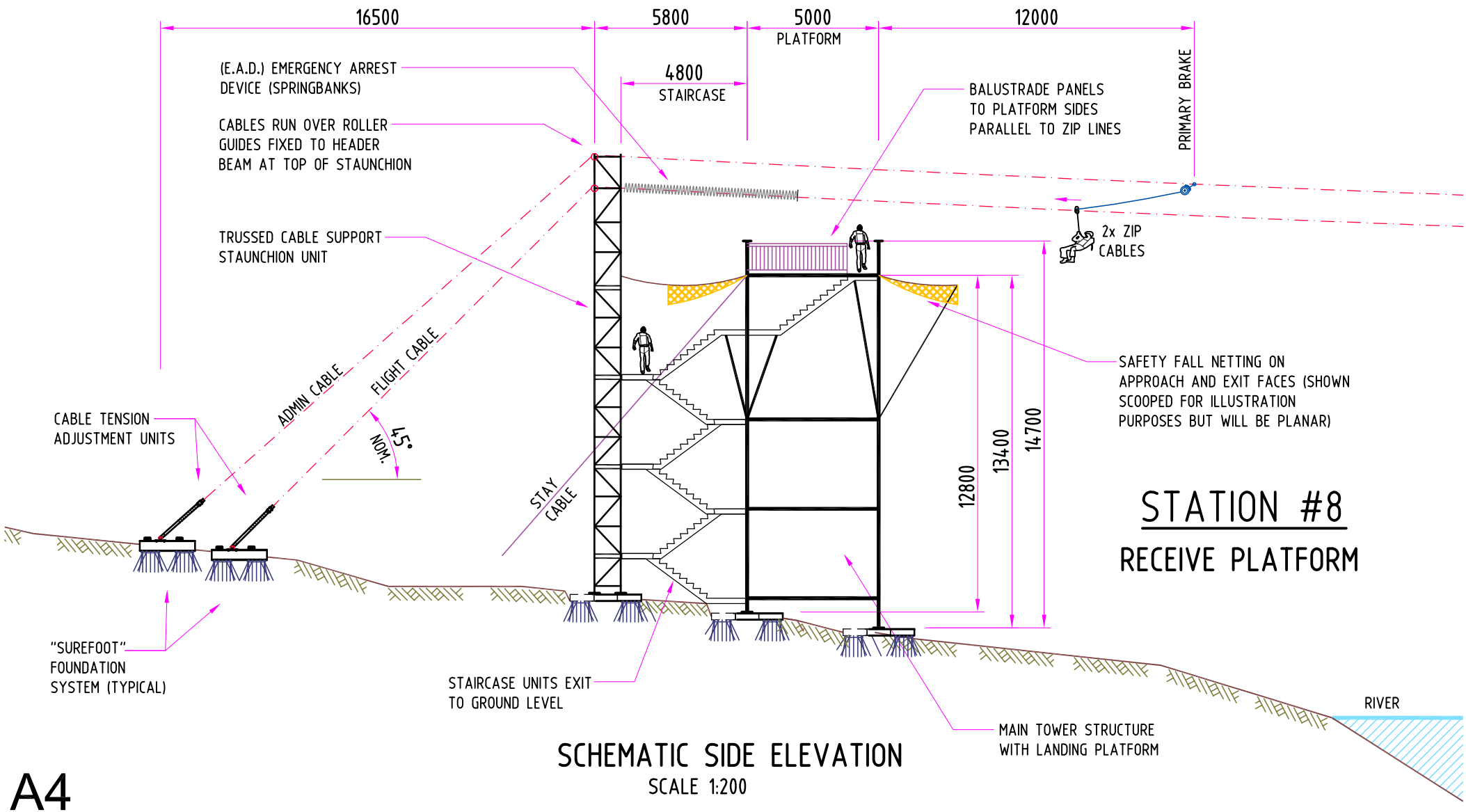

SCHEMATIC SIDE ELEVATION
SCALE 1:200

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR & ZIP LINE HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
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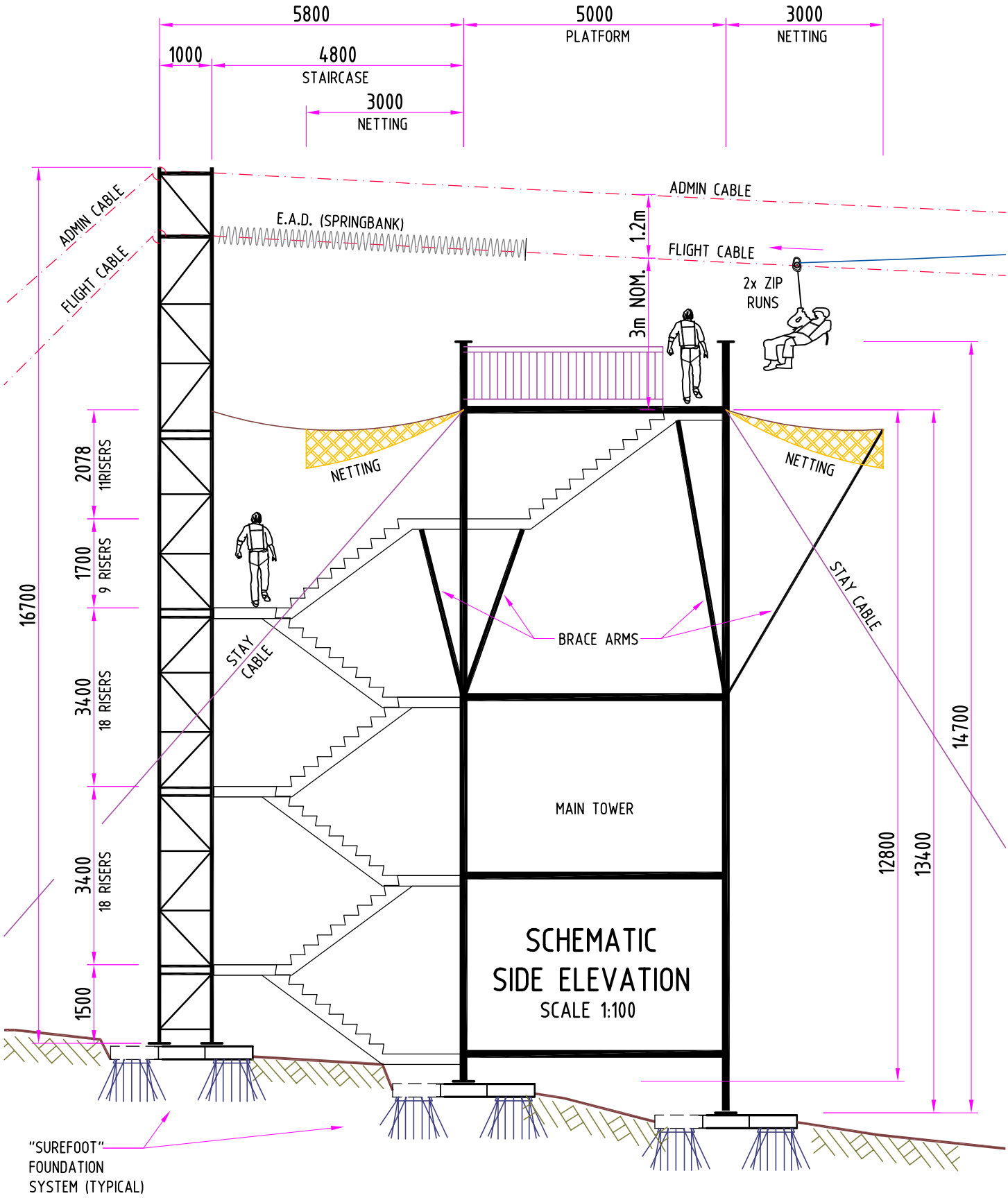


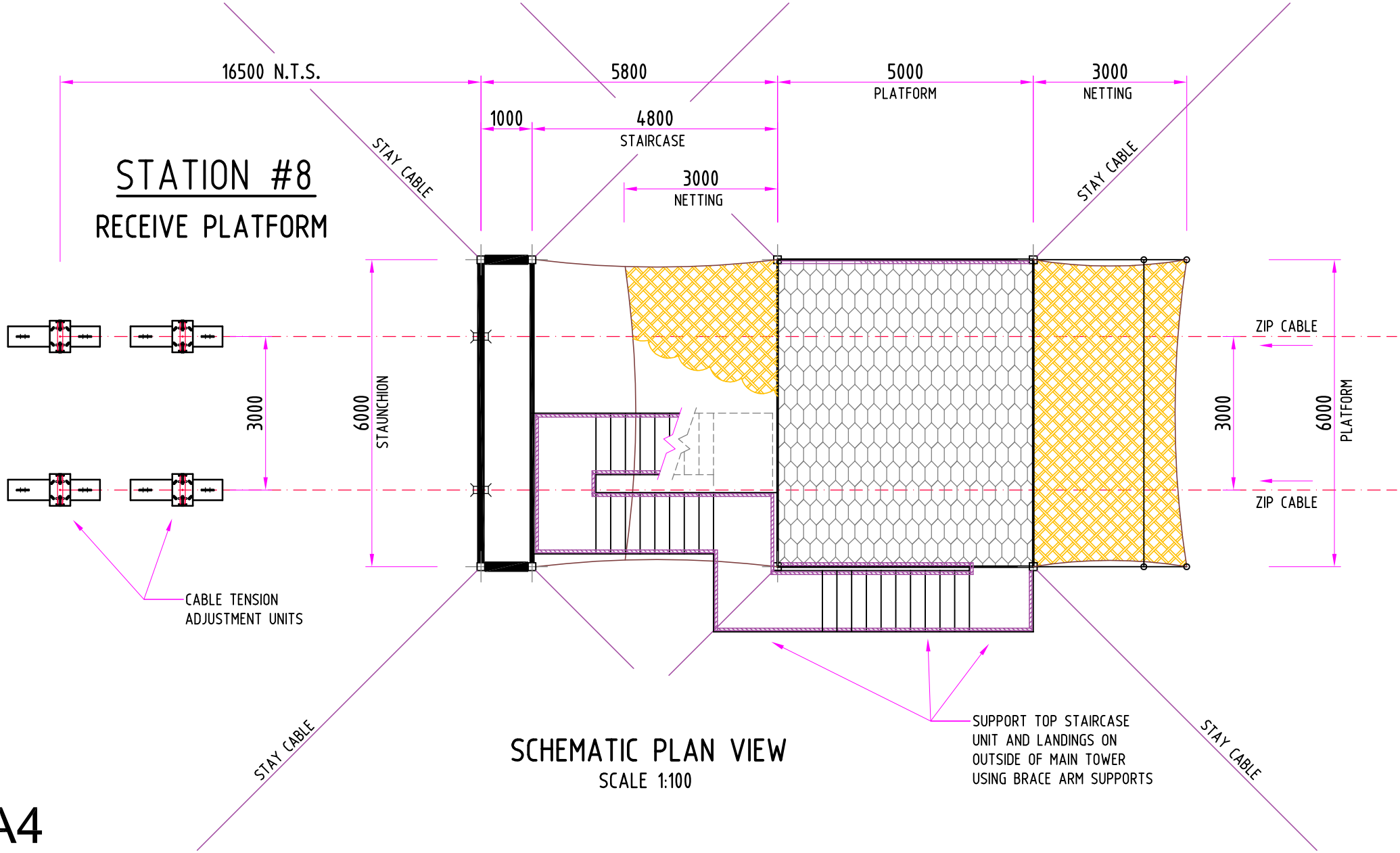
STATION #8

RECEIVE PLATFORM

NOTE: SAFETY FALL NETTING ON APPROACH AND EXIT FACES (SHOWN SCOOPED FOR ILLUSTRATION PURPOSES BUT WILL BE PLANAR)

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	WAIRAKEI CANOPY TOUR HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJ. No: 374	DRAWING No: TC-19



SCHEMATIC PLAN VIEW
SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
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WAIRAKEI CANOPY TOUR & ZIP LINE

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-20

Appendix 2. Taupo District Plan Rules and Standards Assessment

Standard	District Plan Requirements	Proposed Development	Compliant with the Plan?
4b.1.1 Maximum Building Height	i 10m General Rural ii 5m Outstanding Landscape Areas	The heights of towers 7 and 8 and all of the cables (at their highest point) are greater than that permitted by these standards. Note that the cables are the only structures within the OLA.	No
4b.1.2 Maximum Building Coverage	i 2.5% aggregate total of all buildings or 1000m^2 ground floor area of a single building whichever is the more restrictive ii 2.5% aggregate total of all buildings or 250m^2 ground floor area of a single building whichever is the more restrictive. Refer rule 4b.2.7	The dimensions of the towers are set out on the plans in Appendix 1. The towers are distributed over three parcels and have a coverage well below the rural standards. No towers are located within the OLA. The site office will be 98 sqm. Along with the other buildings on that land parcel (572m^2) the coverage for the site will be 0.73%.	Yes
4b.1.3 Minimum building Setback – Front Boundary	a. 25m b. 5m adjacent to Foreshore Protection Area boundary	The proposed site office will be located 5.147m from the front boundary. No other structures or cables are located adjacent to front boundaries.	No
4b.1.4 Minimum building Setback –	a. 15m b. 25m from Residential Environment Boundary	Towers 1 and 7 will be located within 15m of the property	No

All other boundaries	c. 5m from the Foreshore Protection Area Boundary ii 25m within an OLA	boundaries. The cables, which are considered to be parts of the buildings, will cross all boundaries and the foreshore protection area.	
4b.1.9 **Maximum Noise Limits**	The noise level arising from any activity measured within the notional boundary of any rural environment site or within the boundary of any residential environment site, other than the site where the noise is generated, shall not exceed the following limits: i. 7.00am – 10.00pm 55dBA L_{eq} ii. 10.00pm – 7.00am 40dBA L_{eq} and 70dBA L_{max}	Activities on the site will be generally residential in nature and will comply with the standards.	Yes
4b.1.15 **Parking, Loading and Access**	In accordance with Section 6: Parking Loading and Access	The amount of parking required does not meet the standards in Section 6 for an outdoor Recreation Activity	No
4b.1.17 **Maximum Signage Total Face Area**	$2m^2$ total face area in one sign per allotment	One sign, no greater than $2m^2$ will be located at the front of the site office.	Yes
4b.1.18 **Maximum Signage Style**	Signage must relate to the activity undertaken on the allotment. No flashing, reflectorised or illuminated signage.	The proposed sign will not be lit and will relate to the zipline activity.	Yes
4b.1.19 **Maximum Earthworks**	i. No dust or silt nuisance beyond the boundaries of the allotment (except internal allotment boundaries).	Earthworks undertaken as part of the development will comply with this rule.	Yes

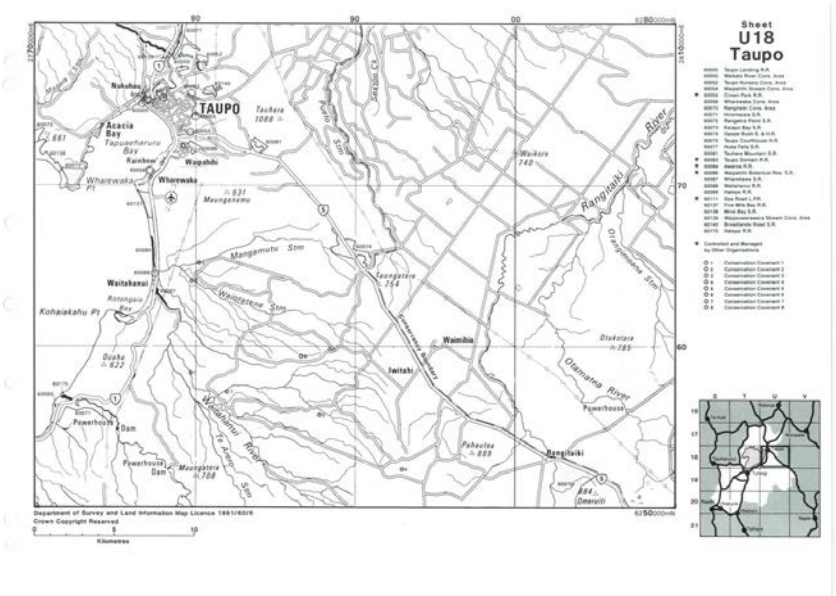
4b.1.22 Nominal Allotments		N/A	N/A
6.2.5 Parking requirements – all environments	Vii – Outdoor recreation facility 25 per 1 hectare	15 carparks and 2 bus carparks will be provided on site with additional space provided on the wider site for bus and shuttle parking. The overall site used for the full zipline activity is greater than 1 ha meaning that the proposed parking numbers will not meet the requirements of the plan.	No

Rule Ref	Rule	Comments
4e.2.1	**Any building on or above ground within a Foreshore Protection Area is a discretionary activity.**	**Does not comply**
4e.6.1	**Indigenous Vegetation Clearance within a Significant Natural Area is a permitted activity where the following criteria are met …** **The vegetation is in an area which is:** **a. Public Conservation land managed under the Conservation Act 1987 or the National Parks Act 1980, or**	Disturbance of the SNA will occur within the Huka Falls Scenic Reserve which is public conservation land managed under the Conservation Act 1987. **Complies**
4e.8	**Surface of Water**	There will be no activities on the surface of the water associated with this proposal. **Complies**
4e.9	**Flood Hazard**	No buildings are proposed to be located in a flood hazard area. **Complies**
4e.10	**Fault Line Hazard Area**	There are no identified Fault Line Hazard Areas in the vicinity of the proposed development.

		Complies
4e.11	**Landslide Hazard Area**	There are no identified Landslide Hazard Areas in the vicinity of the proposed development. **Complies**
4e.12	**Hot Ground Hazard Area**	There are no identified Hot Ground Hazard Areas in the vicinity of the proposed development. **Complies**

Appendix 3. Huka Falls Scenic Reserve

Sheet U18 Taupo 6077 Huka Falls Scenic Reserve



Site Name: Huka Falls

Ecological District: Atiamuri

Status: Scenic Reserve

Area (ha): 104.9957

Area Office: Turangi/Taupō

Place: Taupō Basin

Local Authority: Taupō District Council

Legal Description: Section 2, Block XIV,
Tatua Survey District.

Conservation Unit No.: 60077

File Reference: RES 011

Map Reference: U17 795 805

Management Plan: No

Special Conservation Values: Very high visitor use. Huka Falls has national geopreservation significance.

Earth Data: Riverbank, bluffs, Huka formation, pumice deposits, steep erosion gullies.

Flora: Fivefinger-kohuhu forest, cabbage tree forest, kanuka-manuka scrub, shoreline turf herbfield.

Fauna: Most common forest birds. Range of waterfowl along Waikato River.
Fishery Values: Moderate
Tangata Whenua Issues: Information held in the domain of Ngati Tuwharetoa and Ngati Tahu.

Historic Resources: Travel route, shelter, rock overhangs.
Site Numbers Present: 6433, 6437, 6438

Recreation: Walking high, sightseeing high, mountain biking high, picnicking moderate. Rural natural 100%.

Facilities: Walking tracks, viewpoints, on-site interpretation. Spa-Huka and Huka- Ariatiatia walkways through area. Toilets, picnic tables, car park (part of new reserve to be gazetted).

Animal Pests: Possums, rabbits, rats, mustelids.

Plant Pests: Wilding pines, wilding fruit trees, Himalayan honeysuckle (Leycesteria formosa), blackberry, gorse, broom (Cytisus scoparius) (Cytisus scoparius), willow, climbing spindle berry (Celastrus orbiculatus). Refer Tongariro/Taupō Problem Plant Strategy.

Fences: Well fenced along boundary with adjoining farm.

Access: Through lease area (Patuiwi). Huka Falls Road. Foot access via Aratiatia Scenic Reserve Walkway.

Concessions: TT/161/WAT - Taupō Bungy and Scenic River Cruises (application), TT/188/GUI – Chris Jolly Outdoors.

Other Issues: Lease held by the Department from Patuiwi (annual rental paid). Mountain biker/walker conflict. Pressure for tourism development. Jet boating noise and wash impacts on banks. Very high use area adjacent Huka Falls 900,000 visitors per annum. Area and facilities on true left of river awaiting gazettal as reserve (refer conservation unit 60141). High rate of vandalism. Taupō District Council water supply easement required.

Management Priority: Maintain recreation facilities. Continue wilding pine removal. Monitor visitor use, control climbing spindle berry (Celastrus orbiculatus). Ensure TDC water supply easement is documented.

Management Work Done: Track/site maintenance. Wilding pine removal on logging scale. Climbing spindle berry (Celastrus orbiculatus) control started 1997/1998. Possum control. Major native revegetation programmes. Track visitor surveys. Major site upgrade completed 1990 (new bridge). Major track upgrade (Taskforce Green) 1993-1995. Interpretation panels, viewing platforms (Hannah's sponsorship) 1995. Visitor surveys summer 1995/1996 assisted by Wairakei Tourist Park. Upgrade of Spa-Huka Walkway including monitoring. Climbing spindle berry (Celastrus orbiculatus) control. Sewage disposal pipes from new Huka Falls toilet located in reserve.

Last Update: January 2001

Bibliography: Wairakei Tourist Park Committee, Wairakei Tourist Park visitor facility overlooking Huka Falls., DOC, 1992

Value:

Historic:	1	Conservation:	2	Recreation:	1

Appendix 4. CMS Objective Assessment

3.1.4 Animal Pests	
Objective: To maintain indigenous biodiversity through appropriate management of animal pest species. (c) Animal pests will be eradicated, where this is possible and practical, using all available techniques. Where eradication is not currently possible or practical, animal pests will be controlled at a level below the threshold at which damage occurs to natural and historic values. (g) The Department will facilitate and encourage integration and co-ordination between all visitor groups, authorities and agencies with an interest in the eradication of animal pests and/or their impacts. (t) Public awareness of the need to control animal pests within the conservancy will be fostered.	The project will involve the development and implementation of a pest animal control plan including the establishment of a pest animal control network in the area to control possums, rats and mustelids. The applicant will work with Greening Taupō, Predator Free Taupō and the Department of Conservation in the implementation of the animal pest management plan associated with the proposed development. Conservation, including the importance of animal pest management, will be a key message delivered by guides as part of the tour. This will be done with the intent of fostering a greater understanding of the importance of conservation activities and how people can be involved.
3.1.5 Plant Pests	
Objective: To maintain indigenous biodiversity through appropriate management of plant pest species. (i) The Department will continue to use volunteer input in pest eradication programmes.	The project will involve the development and implementation of a weed management and restoration planting plan for the site. The plan should include identification of the key areas for weed control and areas to be planted,

(o) Public awareness of the need to control plant pests will be fostered.	weed control and planting prescriptions, monitoring and maintenance. The applicant will work with Greening Taupō, the Department of Conservation and any other relevant landowners and stakeholders. Conservation, including the importance of plant pest management will be a key message delivered by guides as part of the tour. This will be done with the intent of fostering a greater understanding of the importance of conservation activities and how people can be involved.
3.1.6 Restoration and Rehabilitation	
Objective: To restore/rehabilitate disturbed areas to a self-perpetuating original condition where natural processes continue as free from human influence as possible. a) Where possible, disturbance of the natural environment will be prevented so that restoration is not necessary. (b) Sites of high natural and historic value which have been degraded by events such as human-induced fire, inappropriate use, or animal and plant pests will be restored. (f) Community involvement in projects on public conservation land will be facilitated.	The project will involve the disturbance of the natural environment for the development of the towers and tracks. However, a major focus for the construction and operation of the guided Canopy Tour is to avoid or minimise adverse effects. This is because of the moderate to high ecological value secondary indigenous forest and habitats present alongside the Waikato River and within the Huka Falls Scenic Reserve. It will also be important to preserve the natural environment and ecological features for tour participants to enjoy. The completed project should, with the noticeable exceptions of the formed walking tracks, platforms, towers and zip lines, look like a natural secondary forest ecosystem

	(allowing six months or so for the groundcover to recover following track construction). The associated ecological report has identified that if the planned pest animal control, weed control and restoration work is undertaken then net environmental gains to the area should be created as a result of the project.
3.2.2 Native Fauna	
Objective: To maintain and enhance indigenous biodiversity through appropriate management of native fauna and native fauna habitats.	Part of the proposal is to work in conjunction with DOC and other parties to implement such management strategies for the subject area as part of enhancing the natural environment and the visitor experience.
3.2.2 Native Flora	
Objective: To protect indigenous biodiversity in the conservancy through appropriate management of native flora and native flora habitats.	The project will involve the disturbance of the natural environment for the development of the towers and tracks. However, a major focus for the construction and operation of the guided Canopy Tour is to avoid or minimise adverse effects. This is because of the moderate to high ecological value secondary indigenous forest and habitats present alongside the Waikato River and within the Huka Falls Scenic Reserve. It will also be important to preserve the natural environment and ecological features for tour participants to enjoy. The completed project should, with the noticeable exceptions of the formed walking

	tracks, platforms, towers, and zip lines, look like a natural secondary forest ecosystem (allowing six months or so for the groundcover to recover following track construction). The associated ecological report has identified that if the planned pest animal control, weed control and restoration work is undertaken then net environmental gains to the area should be created as a result of the project.
3.5 Recreation Management	
Objective: To provide for a diversity of recreation uses on public conservation land if these are consistent with protection of natural and historic values or consistent with the purpose for which the particular reserve is held. (b) Monitoring of visitor impacts on the environment will remain a key management function with adverse effects to be avoided, remedied or mitigated.	The proposal provides an opportunity to maximise the visitor experience of the natural features the areas provide. It can be integrated into the site in a sensitive manner with minimal disturbance to the existing natural features and landscape values. It is also considered that, given the recreational basis of the proposed activity, the anticipated environmental outcomes and the less than minor effects on the environment, the activity is consistent with the purpose for which the land is managed. The applicant is happy to undertake any monitoring of its proposed operation as required by the Department.
3.5.10 Visitor Health and Safety	
Objective: To endeavour to ensure that visitors to public conservation land are aware	All participants will be required to take part in an induction process that will include a safety

of hazards and take appropriate precautions to minimise risks. (a) All reasonable precautions will be taken to minimise risks to visitors. (b) Visitor health and safety will be promoted through education and provision of information about potential problems or dangers. (c) Facilities will be carefully sited and maintained to a safe standard. New toilet facilities will be designed and sited to protect waterways. (d) Field staff will be trained in first aid and relevant outdoor skills. (f) Concession documents will make clear that concessionaires are responsible for the safety of their clients.	briefing by trained guides. Participants will be accompanied by two guides during their tour who will specifically supervise the safety and wellbeing of each participant. All guides will receive the required training and have the certification required. This will include first aid qualifications. All facilities will be developed in line with appropriate building standards and the wider operation will operate as per an audited safety plan. This plan will be developed once a concession is granted and a copy will be provided to the Department for review. An audited safety plan will be developed for the operation once all permissions have been granted and the operation is able to start.
3.6.2 Visitor and Volunteer Programmes	
Objective: To increase awareness of and active support for conservation through visitor and volunteer programmes. (c) Joint venture opportunities with the Tongariro Natural History Society, outdoor education organisations, local authorities, non-Government organisations and concessionaires will be arranged.	The conservation story, including how people can be actively involved in conservation efforts locally (at the site) and wider (i.e. at home etc), will be an important part of the tour. One of the objectives of the tour is to facilitate awareness of the benefits of conservation to all those who participate. The applicant intends to work actively with Greening Taupō and other local conservation groups in implementing their on-site conservation plan. It is acknowledged that the

	subject site is in an area of active conservation efforts by Greening Taupō, Bike Taupō and Shawn Vennell.
3.6.3 Conservation Awareness	
Objective: To provide information, through a range of media, which will increase public understanding of conservation, enhance public enjoyment of public conservation land and appreciation of its natural and historic values and increase public understanding of the work of the Department. (b) Local recreation opportunities on public conservation land will be promoted where they do not have an adverse effect on the environment or existing visitors.	The conservation story, including how people can be actively involved in conservation efforts locally (at the site) and wider (i.e. at home etc), will be an important part of the tour. One of the objectives of the tour is to facilitate awareness of the benefits of conservation to all those who participate. The proposed activity is seen as another way in which locals and visitors can experience and enjoy the area. It will provide an opportunity to view the river corridor in a new way. Visual, ecological and noise assessments have been undertaken to ensure that the proposed activity will not detract from the site or its users. While it will introduce new structures into the environment, the effects will not be more than minor. In respect to the ecological effects, it is anticipated that there will be a net gain to the values at site. Existing users of the reserve will be able to see the proposed structures, the wires and participants on these wires. The assessment in Section 6 of the LVA considers the effects of these potential interactions and concludes that the adverse visual effects will be low to

	moderate, with the moderate effects associated with Station 7 which sits outside of the reserve.
3.6.4 Associate / Community Liaison and Involvement	
Objective: To develop and maintain support for conservation initiatives on and off public conservation land. (c) Concessionaires will be encouraged to provide information to their clients on conservation issues and wise use of public conservation land. Standards will be set and monitored regularly. Meetings with concessionaires will be held at regular intervals.	The conservation story, including how people can be actively involved in conservation efforts locally (at the site) and wider (i.e. at home etc), will be an important part of the tour. One of the objectives of the tour is to facilitate awareness of the benefits of conservation by all those who participate. The applicant intends to work actively with Greening Taupō and other local conservation groups in implementing their on-site conservation plan. It is acknowledged that the subject site is in an area of active conservation efforts by Greening Taupō, Bike Taupō and Shawn Vennell. The proposed conservation activities associated with the proposed development will result in a net ecological gain to the area.
3.8.1 Recreation Concessions	
Objective: To foster visitor enjoyment of land managed by the department through authorising commercial recreation and tourism activities which are compatible with the natural and historic values of any area and which do not reduce the enjoyment of these values by other visitors.	The proposed Wairakei Canopy Tour is well suited to the natural opportunities and constraints that the site offers, and it would significantly enrich the experience of the area for visitors with minimal impact on the use and enjoyment of other users of the area. All facilities and operations will be developed in line with appropriate building standards and

a) The department will assess and process applications for recreation concessions on public conservation land in accordance with the Conservation Act 1987 and standard operating procedures in place at the time. (c) Recreation and tourism concessions must conform with all other objectives and implementation provisions of this document. (e) The department will not grant any further concessions over an area if it is considered that an increase in use will adversely affect natural or historic resources or cause adverse and irresolvable conflict with other visitors to that area. (i) The department will work closely with local tourism organisations to assess visitor demand. If deemed to be appropriate and of benefit to conservation the department may advertise for interest in operating a particular type of commercial recreation activity on public conservation land (k) Concessionaires must take primary responsibility for the safety of their clients and will comply with all relevant legislation.	the wider operation will operate as per an audited safety plan. This plan will be developed once a concession is granted and a copy will be provided to the Department for review. The effects on natural character and on existing users of the reserve resulting from the proposal would be localised and low. The anticipated magnitude of effects on the naturalness of the wider area, even in combination with established limited development, is not considered to be enough to constitute a significant cumulative effect or result in irresolvable conflict with other users.
3.8.1.1 Recreation Concessions - Guiding	
Objective: To ensure that guiding concessionaires provide for an enhanced	All operations will be undertaken in a manner consistent with the terms of the concession granted, including returns and providing a schedule of guides etc. It is anticipated that

visitor experience while ensuring general visitor safety. (a) Concessionaires must conform with the general concessions policies and management plans or strategies for the conservancy. (b) Concessionaires must demonstrate that they as well as their employees have an appropriate mix of skills, experience and qualifications. (c) Applicants for a concession may wish to seek support from referees to confirm their skills and experience in lieu of national standard qualifications. These referees will need standing in the appropriate field for which a concession is sought. (e) The concessionaire's safety and operations plan will outline criteria under which guides will be employed. This plan may be independently audited by an appropriately qualified assessor chosen by the department. (f) Any concession approved must have an up-to-date schedule of approved guides. Concessionaires must inform the department whenever their employee mix changes. (h) The department will require visitor returns from concessionaires regarding their clients. This information will be used to audit guide/client ratios where set in the safety and operations plan and for building visitor use patterns for management purposes.	any concession granted will be done so in a manner consistent with general concessions policies and management plans or strategies for the conservancy. Those employed by the Canopy Tour will be able to safely and effectively manage and operate the facility. All staff will receive the appropriate training required to safely undertake their duties. Where possible, local staff will be employed who are appropriately able to manaaki (welcome) participants and talk of the histories and values of the river.

3.8.2.4 Easements[1]	
Objective: To grant easements only where they will not significantly compromise natural or historic values or public use and their purposes cannot reasonably be achieved by other means on private land. (a) All applications for easements which involve vegetation clearing, earthworks or the erection of any structure will require an environmental impact assessment which should clearly show that all alternatives have been investigated. Applications will only be approved if the department is satisfied that the report shows the application to be acceptable in terms of the above objective.	This application is accompanied by visual, ecological and noise assessment documents. These documents were developed by appropriately qualified and experienced experts and demonstrate that there will be a low (no more than minor) level of effects on the environment resulting from the proposed development. In respect to the ecological effects, the assessment notes that if the proposed restoration plan is implemented there will be a net ecological gain to the site. As noted in the wider document, a number of sites and designs have been considered for the proposed activity. As the focus of the proposed experience is a river tour, to operate and provide the appropriate experience it is required to cross the river and involve the reserve as part of the experience. Initial plans looked at avoiding a 'footprint' on the reserve, but this would create some operational difficulties for the Canopy Tour zip lines and also reduce the experience for users, therefore affecting the viability of the proposed operation. As it stands, the current design attempts to minimise the impact of development on the reserve through designing and sighting towers in a sensitive

[1] Note this objective is under non-recreation concessions, however, even though the activity proposed is recreation based, the objectives and associated matters of implementation are considered relevant to the application.

	manner. In some cases, this will require participants walking between stations to reduce the potential height and visual prominence of towers.
3.8.2.11 Advertising, promotion and filming	
Objective: To ensure that advertising, promotional and filming activities on public conservation land are consistent with identified conservation values and policies. (a) The applicant must provide evidence that the proposal cannot be undertaken off public conservation land. (b) The activity proposed by the applicant must be consistent with the values for the conservation unit as identified in the conservation management strategy and any other plan for that unit. (c) Where pristine environments would be adversely affected by a proposed activity, the department will not grant a concession. (d) The applicant must not use the department's branding or suggest any endorsement by the department in any activity undertaken, without the express permission of the department. (f) The activity must not interfere with the use and enjoyment of the park by other visitors or deny public access opportunities.	As noted above, the proposed development is required to be located on PCL for operational purposes, however it is considered through an assessment of the CMS and associated expert assessments that it is consistent with identified values and policies. Filming and photography, however, will not be undertaken on PCL as part of the operation of the Canopy Tour. The applicant may from time to time, however, want to undertake filming and photography for promotional reasons. Although there is high natural character and scenic values associated with this viewpoint due to the combination of the landform, dense native vegetation and distant views along the river valley, the potential sensitivity is tempered somewhat by the existing use and development associated with Huka Falls. This includes established recreational infrastructure such as bridges, signage, tracks etc, as well as associated tourist activities including the frequent helicopter flights, jet boats and scenic boat excursion activity on the river. Accordingly, this area is not considered to be pristine.

(i) The department will protect cultural values when considering a concession application for advertising or filming on public conservation land. (j) Promotional activities which are consistent with the purpose for which the land is held will be permitted.	Any filming done will be undertaken in a sensitive manner and will be minimised on PCL. The applicant will consult with iwi prior to any promotional filming taking place and will provide proof of that consultation to the Department. The applicant will happily comply with any and all conditions provided by the Department for any promotional filming done on PCL

Appendix 5. Landscape and Visual Assessment

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SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO

Landscape and Visual Effects Assessment

August 2019

Document History and Status

Revision	Date	Reviewed by	Status
D	16.08.2019	R Pryor	Final

File Number/Name	19798 LVA01
Author	J Hogan
Client	Sky Play Adventures

1.0 INTRODUCTION

1.1 LA4 Landscape Architects have been engaged to undertake a landscape and visual assessment as part of the resource consent application for a proposed zip line and associated development along the Waikato River in Wairakei, Taupo.

1.2 The scope of this assessment includes:

- a description of the site and setting
- analysis of the existing landscape character and visual characteristics of the area
- a description of the proposal
- a detailed assessment of the potential effects of the proposal concerning landscape, visual amenity considerations
- consideration of the proposal in relation to key relevant planning provisions applicable to this assessment.

1.3 The assessment considers the potential landscape and visual effects of the proposal in the context of the site and the wider landscape setting, as well as effects on key public views.

1.4 Investigations of the site and surrounding area as part of this assessment were carried out during June and July 2019.

2.0 LANDSCAPE CONTEXT

2.1 This section describes the landscape setting and the subject site ('the site') and considers the landscape values, character and quality of the landscape.

The Setting *(Refer to Figures 1 and 2)*

2.2 The site is located in along the banks of the Waikato River in Wairakei approximately 4km to the north of Taupo township. The Waikato River is the most prominent of a number of natural features in the area and the focus of the landscape locally. It is the longest river in New Zealand, running for 425km beginning at the northern side of Lake Taupo, flowing northward through the Waikato countryside to the sea at Port Waikato on the west coast. To the north of Taupo the river meanders through the landscape enclosed by the enveloping landform and a fragmented mantle of vegetation. Beneath the ground geothermal activity of the Taupo Volcanic Zone become evident at the surface with scattered steam fields and other natural features of volcanic origin.

2.3 In this area State Highway 5 (SH5) one runs more or less parallel to the river. It provides the main road access into Taupo from the north and south. SH1 traverses the Waikato River east to west through the central part of Wairakei to form the East Taupo

Arterial (ETA), which provides a bypass to Taupo. Both are popular tourist routes and the confluence of these major highways result in high traffic volumes.

Figure 1. Location of the Site (NTS) *Source: Taupo DC Maps*

2.4 Wairakei is a small settlement that has developed over time in response to the proliferation of natural features in the area, which include numerous related to the local geothermal activity, the Waikato River and nearby Lake Taupo. These features and the proximity of key transport routes have seen the development of a strong tourism focus locally. Some of the most prominent features and facilities include the Huka Falls, Wairakei Thermal Area, Craters of the Moon, the Wairakei Resort and International Golf Course.

2.5 The section of highway from the ETA intersection south to Taupo provides a distinctive and memorable approach to Taupo. With the golf course on the western side of the highway and expansive grass verges on the eastern side, combined with large exotic specimen trees and swathes of regenerating native vegetation interspersed with tracts of grassland, the landscape exhibits a semi-manicured parkland quality offering fragmented glimpses to the forested hills to the west and Mount Tauhara to the east.

2.6 The high volumes of passing traffic together with the natural landscape resources, particularly the proximity to the river, has also resulted in a proliferation of tourist activities in this area ranging from recreational pursuits such as walking and cycling

tracks, to scenic highlights such as the Huka Falls and commercial ventures such as Huka Prawn Park, jet boat rides and river cruises, themed retail outlets and scenic helicopter flights.

2.7 Along the eastern side of SH5, a network of secondary roads afford access to the river and the various attractions on offer. Extensive layby areas along the on this side of the highway also provide areas for picnicking under trees and parking to allow access to the extensive track network associated with the river.

The Site and Immediate Surrounds

2.8 The site for the proposal extends from just north of the Huka Falls along either side of the Waikato River up to just south of the ETA bridge. Along this section the river varies in width from around 30m to in excess of 100m. Here the river flows through a well-defined valley which itself has been shaped by the fluvial processes over time. At the Huka Falls the river channel narrows from a width of 75m with the flow concentrated into a small rocky ravine of around 15m in width. The constriction of the flow which is in the order of 200 000lt per second combined with low rocky falls at each end create a spectacular display as the velocity of the water is accelerated through the canyon to burst with immense power and ferocity into a turbulent pool at the base of the falls.

2.9 The dramatic natural display and accessibility of the Falls from the state highway have made the Huka Falls an immensely popular attraction. The high visitor numbers are accommodated by a nearby carpark. A pedestrian bridge, formed pathways and lookouts provided suitable access for viewing the Falls from various locations as well as connections to the wider track network that extends either side of the river into the areas where the development subject to this assessment is proposed.

2.10 Beyond the Falls the river runs slow and deep. From the meandering edge of the riverbanks the variable slopes ascend steeply on either side providing a sense of enclosure that accentuates the passage of the watercourse. This impression is heightened further by the dense continuous bands of vegetation that occupy riverbanks along this section of the river. At the top of the slopes on either side of the watercourse the land levels out into undulating terrain. The change in topography is reinforced particularly on the eastern side where the top of the slope coincides with an abrupt transition into open pasture and cropland. On the western side the vegetation transitions irregularly into more fragmented clusters, interspersed with areas of open grassland intersected by the local roading network.

2.11 The vegetation occupying the slopes on either side of this section of the Waikato River is characterised by a low dense canopy of regenerating indigenous vegetation intermixed with periodic scattered clusters of large remnant exotic tree species such as pines and willow associated with the water's edge. Many of the larger exotic trees appear to be 'Snags' or standing dead trees, which have possibly been poisoned as

part of the vegetation management regime in the area. In clearings and along the edges of the main stands of vegetation exotic weeds such as blackberry, gorse and Himalayan honeysuckle commonly create a patchy assemblage of mixed vegetation. Despite this, the vegetation throughout the subject area remains largely dominated by vigorous native regrowth, which significantly enhances the natural values and scenic qualities of this river landscape.

Figure 2. Aerial Photograph of the Study Area *Source: Taupo DC Maps*

2.12 Locally, Karetoto Road, Huka Falls Road and the Loop Road provide suitable access to the river environs and main tourist facilities and activities along the western bank. Beyond the roading network and available carparking an existing track network on either side of the river allows pedestrian and cycle access along the length of the river from the Huka Falls through the subject area to the Aratiatia Dam approximately 4km to the north. Along the track on the western side are several lookout areas, particularly in the vicinity of the Huka Falls. Slightly to the north another lookout associated with the Loop Road allows views further up the river. Apart from these locations there are relatively limited opportunities to obtain expansive views of the surrounding area due to the dense low canopy of vegetation. The situation is similar on the eastern side beyond the Huka Falls lookout.

Photograph 1. Huka Falls

2.13 As well as the Huka Falls there are several tourism related facilities and commercial operations located on the western side of the river in the vicinity of the subject area. These include Kefi at the Hub(café), an outdoor adventure/mountain bike hire facility, Heli-adventures, Huka Honey Hive and Rocks and Ropes (climbing facility). On the eastern side there is no road access or commercial operations. The land along this portion of the river forms part of the Huka Falls Scenic Reserve which is administered by the Department of Conservation (DOC). In addition to the local roading network and ETA bridge other significant infrastructure in the vicinity includes the Wairakei power station which is located on the western bank of the Waikato River just to the north of the intersection of SH1 and SH5. Although this does not have any direct influence on the subject site apart from the associated high voltage transmission lines that run through the northern part of the subject area, along with the other commercial and

infrastructural developments in and around Wairakei, they combine too have a appreciable influence on the character and quality of the wider landscape.

2.14 Similarly, although the subject area is endowed with significant natural features including the river and the associated landform, extensive regenerating indigenous forest, as well as numerous recreational opportunities, the area is by no means pristine. Historically it been significantly modified by past landuse, notably extensive vegetation clearance as well as other cultural influence/development, latterly, particularly those related to tourism activities, and apart from secluded locations away from these areas (e.g. along bush trails etc), it remains influenced by such development and retains a distinct sense of activity.

Photograph 2. View of vegetated slopes on the western bank

3.0 PREVIOUS LANDSCAPE STUDIES

3.1 Landscape values associated with the area have been considered previously in the following relevant assessments:

Waikato Regional Landscape Assessment (2010)

3.2 The Waikato Regional Landscape Study 2010 identified and described special landscapes of the Waikato Region and presented recommendations for their management and protection.

3.3 Within this assessment the Waikato river is identified as follows:

> *The central defining landscape feature of the region is the Waikato River (Waikato, meaning fast flowing river), which runs from Lake Taupo to its mouth in Franklin District.* [1]

3.4 Despite, this the river was not identified as an Outstanding Natural Feature (ONF) but was included in the category High Value Amenity Natural Features and Landscape (HVANFL).

3.5 Part C of this assessment sets out policy frameworks to manage important landscapes:

> *High Value Amenity Natural Features and Landscapes require a more generic level of protection and management than Outstanding Natural Features and Landscapes and the coastal environment, wetlands, lakes and rivers and their margins.*
>
> *An appropriate policy framework is considered to be one where the elements contributing to the amenity values of the identified landscapes and features are managed such that overall the amenity values of those landscapes and features are not eroded.* [2]

Outstanding and Amenity Landscape of the Taupo District (2009)[3]

3.6 This slightly earlier study evaluated important landscapes of the Taupo District on a district rather than regional level. Important landscapes were ranked based on a set of criteria as follows:

Physical Criteria

- Presence of significant natural elements

Perceptual Criteria

- Coherence

[1] M.C Buckland, O'Connor Planning Consultants Ltd. (2010) Waikato Regional Landscape Assessment. Pg 20
[2] Ibid. Pg 120
[3] Isthmus Group

- Vividness/Memorability
- Transient conditions

Meaning Criteria

- Shared and recognised values
- Historical association
- Value to Tanga Whenua

3.7 Within this study the Waikato River was assessed as an Outstanding Landscape Feature.

Waikato River - Key Attributes

Highly prominent feature although secluded from most viewing locations due to high cliff sides. Unique as NZs largest river covering some 425km in distance from its source at Lake Taupō. The water quality is best at the headwaters, providing a distinctive turquoise blue colour.

Presence of 5 hydroelectric power dams within the district has significantly altered the river in those locations. Remaining free flowing river and lake areas provide a high level of amenity and recreation for local communities. Kayaking value depends on water flows – best around 100 to 150 cubic metres per second. National kayaking slalom site near Reids Farm, and play hole feature down stream of Huka Lodge, and wave feature at Ngawaapurua Rapids, located down stream of Aratiatia Power Station – ideal surfing level from 180 to 240 cubic meters per second. Very high cultural significance as historical access through the central North Island. [4]

3.8 The Huka Falls Scenic Reserve occupies the eastern bank of the Waikato River from Huka Falls to the north beyond the study area. This encompasses the densely vegetated slopes and is defined along its eastern boundary by the abrupt transition to flat cropland at the top of the slope. Within this study the Huka Falls Scenic Reserve was assessed as an Amenity Landscape Area (ALA). These are areas that may not be physically outstanding when compared to surrounding mountains and river escarpments, but provide a strong link to the historical and cultural past of Maori, as well as local community identity.

Huka Fall Scenic Reserve - Key Attributes

High scenic and amenity value. Natural setting interspersed with public facilities such as walk/biking tracks, visitors centre, viewing platforms and bridge. Structures generally in keeping with the natural surroundings. High value as a scenic backdrop to the Huka Falls.

High ecological value, with the continuous native vegetation cover providing the main visual amenity attributes.[5]

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[4] Isthmus 2008. The Outstanding and Amenity Landscapes of the Taupo District . Pg 55
[5] Ibid. Pg 57

4.0 STATUTORY PLANNING CONTEXT

4.1 The proposal is considered a *discretionary activity* under the Taupo District Plan. A full statutory assessment is provided in the planner's report that accompanies the application. The relevant planning provisions relating to landscape and visual matters include:

Resource Management Act (RMA)

Section 6(a) - the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development

Section 6(b) - the protection of outstanding natural features and landscapes from inappropriate subdivision, use and development

Section 7(c) - the maintenance and enhancement of amenity values

Section 7(f) - the maintenance and enhancement of the quality of the environment

The Fourth Schedule lists a number of matters that should be considered when preparing an assessment of effects on the environment, including:

(7)(1)(b) Any physical effect on the locality including landscape and visual effects.

4.2 These RMA provisions are given effect by the relevant planning provisions of the Waikato Regional Policy Statement and the Taupo District Plan.

Waikato Regional Policy Statement

4.3 The second generation of the Waikato Regional Policy Statement (Te Tauākī Kaupapa here ā-Rohe), or RPS became operative in May 2016. It provides an overview of the resource management issues of the Waikato region and the ways in which integrated management of the Regions natural and physical resources will be achieved. Landscape, natural character and amenity matters are covered in Chapter 12.

Policy 12.1 Outstanding Natural features and landscapes

This policy requires that identified values and characteristics of outstanding natural features and landscapes of regional or district significance are protected from adverse effects, including cumulative effects, arising from inappropriate subdivision, use and development.

No part of the study area, including the Waikato River are identified as outstanding natural features or landscape of regional significance in the RPS.

Policy 12.2 Preserve Natural Character

This policy seeks to ensure that activities along rivers and their margins are appropriate in relation to the level of natural character.

Policy 12.3 Maintain and Enhance Amenity Values

This policy requires that areas of amenity value are identified and those values are maintained and enhanced.

Policy 12.4 Maintain and enhance public access

This policy seeks to ensure that public access along rivers is maintained and enhanced.

Taupo District Plan

4.4 Under the Taupo District Plan the site is located in the Rural Environment Zone. The site is also subject to several overlays including:

- Outstanding Landscape Areas – OLA 56 (Waikato River)
- Amenity Landscape Area – ALA 09
- Significant Natural Areas Overlay - SNA 216 (Huka Falls Scenic Reserve).
- River and Margin Foreshore Protection Area

4.4 The Landscape Attributes (OLA and ALA) noted are derived from the Isthmus Groups landscape study discussed and considered significant due to the landscape attributes listed in 3.7 and 3.8 above.

4.5 Key relevant objective and policies relating to this landscape and visual matters associated with this proposal include:

3b.2 Rural Environment Zone Objectives

Objective 3b.2.1

The management of the Rural Environment to maintain and enhance rural amenity and character.

3h.2 Landscape Values Objectives

Objective 3h.2.1

Protect Outstanding Landscape Areas from inappropriate subdivision, use and development which may adversely affect the Landscape Attributes

Objective 3h.2.2

Maintain Landscape Attributes of Amenity Landscape Areas.

Objective 3h.2.3

Recognise and encourage the enhancement of Amenity Values with Landscape Areas in the Taupo District.

3i.2 Natural Values Objectives

Objective 3i.2.1

The protection of Significant Natural Area in the Taupo District from more than minor adverse effects of indigenous vegetation clearance.

4.6 Consideration of the proposal against the relevant objective and policies relating to landscape and visual matters are included in Section 6.0 of this report.

Tongariro Taupo Conservation Management Strategy (DOC)

4.7 Conservation Management Strategies are 10 year regional strategies prepared by the Department of Conservation (DOC) for the integrated management of natural, historic and cultural resources for conservation purposes. Because this development is partially located within the Huka Falls Scenic Reserve, concession must be sought from DOC. Key relevant principles of the management strategy include the protection and enhancement of the natural environment and historic resources while fostering recreational use of public conservation land.

Reserves Act 1977

4.8 The Reserves Act is administered by DOC for the general purpose of:

(a) providing, for the preservation and management for the benefit and enjoyment of the public, areas of New Zealand possessing—

(i) recreational use or potential, whether active or passive; or

(ii) wildlife; or

(iii) indigenous flora or fauna; or

(iv) environmental and landscape amenity or interest; or

(v) natural, scenic, historic, cultural, archaeological, biological, geological, scientific, educational, community, or other special features or value[6]

4.9 As well as the preservation of the natural environment it also places considerable emphasis on public access and appropriate use where as a key function of reserves.

[6] Reserves Act 1977 .Pg 14

5.0 THE PROPOSAL *(Refer to Figure 4 and Appendices A, B and C)*

5.1 The Sky Play Adventures proposal is for the establishment of a series of ziplines along this section of the Waikato River. The various elements of the proposal are fully described elsewhere as part of the application. However, in brief, the details include the establishment of a recreational adventure tour beginning approximately 270m north of the base of the Huka Falls, extending along the river for around 1km. The regenerating forest and river environment would be experienced by participants from both sides, accessed by a series of zip lines and new tracks interconnecting with the existing track network. Associated development would include the establishment of a small carpark and administration area, and vegetation management and enhancement of the associated areas of regenerating forest.

Zipline

5.2 The zip line course and structures have been designed by TouchCloud who have designed numerous at-height adventure experiences throughout Australia and in other global locations. The proposed course includes 5 zipline runs across the Waikato River ranging from 182m to 572m in length. Each zip line run has a platform structure at each end to launch from and alight upon. The structures range in height from around 2m to 17.6m. In some instances the cables are fixed directly to the structure. On others, a separate cable support staunchion unit sits to the rear of the platforms. In plan the platform range in size with the largest being 5 x 6m with the addition of a staircase connected to the side. Two pairs of cables would span the gap between the platforms. The lower on-flight cable is 13mm in diameter and the return cable located above is 6mm. The main structural elements of the platform and cable supports would be galvanised steel framing. A foundation system called 'Surefoot,' which is an alternative to traditional piling systems that requires much less excavation and no concrete foundation would be used to found the structures. In locations where it is necessary to provide safety from falling, such as the stairways and around the launch and receive platforms, vertical timber battens would be used for balustrades and railings. Safety-fall netting on pole supports would also be installed on approach and exit faces. Vegetation clearance would be limited to the footprints of the proposed structures with small additional clearance area of around 1.5m beyond.

Administration and Carpark

5.4 A small office with separate toilet facilities, and a carpark for 18 cars, bus parking and turnaround is proposed at the northern intersection of Huka Falls Road and the Loop Road.

Access

5.5 Road access to the eastern side of the river would be via Rakanui Road. Additional walking tracks would be formed in some locations to link platforms and connect in with the existing track network. These would be constructed in accordance with New Zealand Standard for *Tracks and Outdoor Visitor Stuctures*[7]. Following the completion of the course participants would be picked up at the Honey Hive on Karetoto Road.

Planting

5.6 A key objective of the venture is to provide a complete visitor experience. As part of this it is proposed that a vegetation management and enhancement programme would be established in coordination with DOC for the areas of native vegetation associated with the development. This would include plant and animal pest control, and infill as well as enrichment planting.

[7] *SNZ HB 8603:2004*

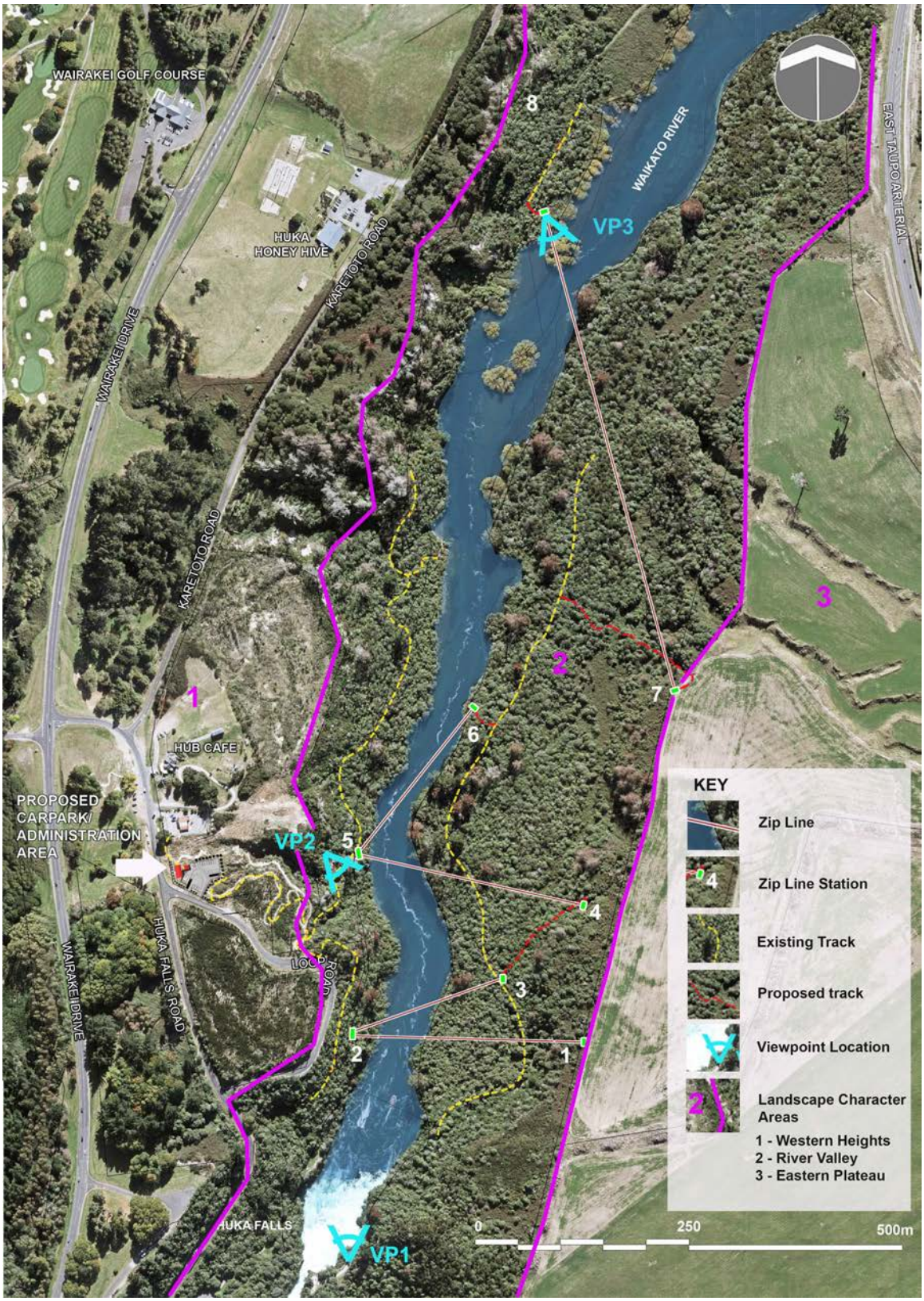

Figure 3. Aerial photograph showing proposed development, associated landscape character areas and photo-viewpoints

6.0 EVALUATION OF THE PROPOSAL

6.1 LA4's Assessment of effects uses the recognised NZILA 7 point scale assessment rating, as follows:

Negligible - Low – Low to moderate - Moderate – Moderate to high - High – Very high

With respect to the RMA sections 95A(a) and 104D, effects Moderate or greater would be considered more than minor, Low to moderate would be minor, and Low or Negligible less than minor. The extent of adverse effects are described as follows on the *Quality Planning* Website.[8]

Nil Effects

- *No effects at all.*

Less than Minor Adverse Effects

- *Adverse effects that are discernible day-to-day effects, but too small to adversely affect other persons.*

Minor Adverse Effects

- *Adverse effects that are noticeable but will not cause any significant adverse impacts.*

More than Minor Adverse Effects

- *Adverse effects that are noticeable that may cause an adverse impact but could be potentially mitigated or remedied.*

Significant Adverse Effects that could be remedied or mitigated.

- *An effect that is noticeable and will have a serious adverse impact on the environment but could potentially be mitigated or remedied.*

Unacceptable Adverse Effects

- *Extensive adverse effects that cannot be avoided, remedied or mitigated*

The Quality Planning website (QP) was launched in 2001 to '*promote good practice by sharing knowledge about all aspects of practice under the RMA*' among resource management practitioners, council planners, private practitioners, consultants and environmental managers among others.

The successful partnership includes the Ministry for the Environment, New Zealand Planning Institute, Resource Management Law Association, New Zealand Institute of Surveyors, Local Government New Zealand and New Zealand Institute of Architects.

[8] http://www.qualityplanning.org.nz/index.php/consents/environmental-effects

6.2 This assessment process has involved field investigations, photographic recording of the site and surrounding environment, a desktop assessment utilising aerial photographs/maps, and a landscape character analysis and visibility assessment with the assistance of a photo-simulations prepared of the development.

Landscape Effects

6.3 The assessment of landscape effects take into consideration physical changes to the landscape as a resource which may give rise to changes to its character and in turn the perceived values of the landscape.

6.4 The assessment of landscape effects therefore considers the sensitivity of the landscape (receiving environment) and the type and magnitude of change the proposal will bring. Landscape sensitivity is influenced by landscape quality and vulnerability, or the extent to which the landscape character and values are at risk to change. Landscape values relate to peoples perceptions and the importance that they place on particular attributes of a landscape.

6.5 Landscape character derives from a combination of attributes that give an area its identity. Landscape character is influenced by natural and built elements as well as types, patterns and intensity of landuse, historic, cultural and other intangible qualities.

6.6 Susceptibility to change considers not only the receiving environment but also the nature and characteristics of the proposal. A landscapes ability to accommodate change is dependent on a variety of considerations such as the:

- existing landuse and resultant landscape patterns,
- physical characteristics of the landscape,
- scale of the landscape, the quality and values placed on a landscape
- the ability to mitigate any effects.

6.7 The magnitude of change considers the type and scale of change to key landscape features and characteristics in relation to its area of influence.

6.8 The proposal spans several different landscape character areas (refer to Figure 3), each with a combination of landscape components that distinguish each from the other. These can be broadly defined as:

1. Western Heights

This area includes flatter elevated areas where the vegetation compositions are more mixed fragmented by areas of open grassland, roading and scattered small-scale tourism and commercial development.

2. River Valley

The river valley includes the river and adjacent slopes as far as the extent of the main assemblages of vegetation that combine harmoniously to form a distinct character area.

3. Eastern Plateau

On the eastern side of the river there is a clear demarcation along the fenceline where the densely vegetated slope abruptly transitions into relatively flat cropland.

6.9 Most of the proposed development is located within the *River Valley* landscape character area. The only development in the *Western Heights* is the carpark and administration area. Stations 1 and 7 sit on the interface of the *River Valley* and the *Eastern Plateau*.

6.10 The proposed administration and carpark area would be located on the corner immediately to the south of the existing Heli-adventures, café and mountain bike/adventure tourism facility. This area is already significantly modified and strongly influenced by the proximity to the nearby state highway and the existing commercial/tourism activity. Consequently, the area exhibits relatively low sensitivity to change. The proposed development in this area would require only minor additional modification to the landform and no vegetation clearance. The proposed carpark and buildings are comparable in size, use and character to the established adjacent development. For these reasons I consider that the development proposed for this area would result in negligible adverse landscape effects.

6.11 In contrast the *River Valley* landscape character area exhibits considerable landscape sensitivity. Although the terrestrial parts have been subject to historical modification, the abundant regenerating indigenous vegetation covering the landform provides a harmonious backdrop and counterpoint to the deep blue slow-flowing waters of the river. In addition, the vegetation combines with the landform to cloak the river and in doing so create a comparative sense of separation and seclusion from the adjacent areas. The quality and sensitivity of this landscape character area are underlined by the Outstanding and Amenity Landscape classifications given respectively to the river and associated terrestrial areas in the District Plan.

6.12 These landscape classifications recognise that the areas are not pristine however and the landscape character is influenced by the relatively intensive existing tourist and recreational use both of the river and the land. The proposals in this area are consistent with these established uses. The development will require a relatively small amount of further modification to the land resource. Vegetation clearance would only be necessary for small, localised areas associated with the individual

stations and new track alignments. This would not have any significant effect on the existing vegetation patterns or apparent continuity of cover. Similarly the structures have been designed to minimise the amount of earth disturbance with footings that require limited excavation and no concrete. Accordingly the magnitude of landscape change that results from this proposal in this character area would be very low. Furthermore any disturbance to the land and vegetation would be mitigated by localised remedial planting and the wider enhancement of the areas of native regrowth by the proposed vegetation management and enhancement programme.

6.13 Stations 1 and 7 are located on the interface between the *River Valley* and the *Eastern Plateau* landscape character areas, although they will appear more as part of the latter as they will be on the clear edge of the vegetation. This area is open flat cropland. It is a large-scale productive working landscape with relatively low sensitivity. Within this context, two platforms will have limited adverse effects in terms of physical change or influence on the established landscape character of the area.

6.14 Although the sensitivity of the landscape character areas varies considerably, the type and magnitude of change that the proposal would bring in any of the defined areas would be very low. The construction of the structures and associated tracks would in the context of the setting, would also result in limited physical disturbance and landscape change. Further the nature of the proposals means that they can be accommodated throughout the site with negligible implications for the established landscape character of the various areas identified. Consequently I consider that overall any adverse effects on the character and quality of the landscape resulting from the proposal would be very low.

Natural Character Effects

6.15 Although not defined in the RMA natural character values are recognised as a Matters of National Importance (Part 2, Section 6) in relation to managing the use, development and protection of natural and physical resources. Natural character relates to the degree of ‘naturalness’ of a landscape. Natural character is primarily determined by the nature and extent of modification to a landscape and comprises natural elements appearing in natural patterns, underpinned by natural processes.

6.16 The highest levels of natural character are where there is the least modification. Natural character effects relate to the degree to which a proposal alters the biophysical and / or perceived naturalness of a landscape.

6.17 The purpose of an assessment on effects on natural character is to determine whether an activity is appropriate. This is dependent on the extent to which a location can absorb development without adverse effects on the natural qualities of the

setting. The following considerations are useful to assist in determining whether adverse effects on natural character are of this proposal are significant.[9]

Consideration	Comment
1. *Status of resources: The importance of the area—locally and regionally. (Effects on rare or limited resources are usually considered more significant than impacts on common or abundant resources).*	The terrestrial areas where the zip lines are proposed are identified as of some significance on a local level by the Amenity Landscape classification in the District Plan. None of the area is noted to be of regional significance in landscape terms in the Waikato Regional Policy Statement however.
2. *Proportion of resource affected/area of influence: The size of the area affected by the activity often influence the degree of impact (i.e. affecting a large area will generally be significant). Affecting a large proportion of a limited area or resource will tend to be significant resources).*	The areas affected by the proposal are scattered, isolated and very small in the context of the setting.
3. *Persistence of effect: The duration and frequency of effect (for example, long-term or recurring effects as permanent or long-term changes are usually more significant than temporary ones. The ability of the resource to recover after the activities are complete is related to this effect.*	Effects on the biophysical resource would be short-term during, and shortly after construction. Proposed planting would rapidly assist in restoring the patterns and process of vegetative regeneration in the limited areas affected by the development.
4. *Reversibility or irreversibility: Whether the effect is reversible or irreversible. Irreversibility will generally be more significant (depending also on nature and scale), and reversibility the converse.*	The proposed structures and associated tracks could potentially be removed at a later date with no enduring effects.
5. *Cumulative effects: The accumulation of impacts over time and space resulting from the combination of effects from one activity/development or the combination of effects from a number of activities. Cumulative effects can be greater in significance than any individual effect from an activity (for example, loss of multiple important sites).*	The effects on natural character resulting from the proposal would be localised and low. The anticipated magnitude of effects on the naturalness of the wider area, even in combination with established limited development, are not considered to be enough to constitute a significant cumulative effect.

9 *Adapted from The Department of Conservation's Policy 13 Guidance Note for the New Zealand Coastal Policy Statement (NZCPS)*

6. *Degree of change: The character and degree of modification, damage, loss or destruction that will result from the activity. Activities that result in a high degree of change are generally more significant.*	The level of modification to the environment associated with the proposal is very small.
7. *Magnitude of effect: The scale and extent of possible effects caused by an activity (for example on the number of sites affected, on spatial distribution etc). Activities that have a large magnitude of effect are generally more significant.*	The size and area of influence of the components of the proposal are limited and localised.

6.18 This section of the Waikato River displays a high degree of natural character. However this will not be directly affected in any significant way by the proposal. Potential effects are therefore limited to the associated terrestrial areas. Despite historic modification of these areas, they are undergoing the process of natural regeneration of indigenous vegetative cover. This process and the resultant landscape patterns therefore also represent a significant degree of natural character. Nonetheless, based on the consideration of the above criteria I consider that the significance of the overall effects of the proposal on the natural character of these areas would also be very low.

Visual Effects

6.19 The assessment of visual effects analyses the perceptual response that any of the identified changes to the landscape may have in relation to visual amenity or peoples visual appreciation of the landscape setting. Visual effects are influenced by the sensitivity of the receiving environment combined with the type and magnitude of visual change associated with a proposal.

6.20 Visual sensitivity is influenced by several factors including visibility of a proposal, the nature and extent of the viewing audience, the visual qualities of the proposal, and the ability to integrate any change within the landscape setting, where applicable. The nature and extent of visual effects are determined by a systematic analysis of the visual intrusion and qualitative change that a proposal may bring, specifically in relation to aesthetic considerations and visual character and amenity.

Methodology

6.21 The methodology used to determine the nature and extent of visual effects involves:

a) identification of the physical area or catchment from which the proposed development would be visible;

b) identification of the different viewing audiences within this area that would be affected by the development, followed by the allocation of viewpoints to positions that capture those audience's perspectives;

c) the preparation of photographs and/or photo-simulations from the representative viewpoints where required;

e) evaluation of the effects taking into account the preceding analysis based on the following base criteria:

i) *Sensitivity of the view* – the relative quality of the views, values attached to a view, and their vulnerability to change.

ii) *Viewpoint / perceptual factors* – the type and size of the population exposed to views, including the viewing distance, focus and level of exposure, and context from which they experience the view.

iii) *Context* – the degree to which the proposed development would fit into the existing surrounding environs.

iv) *Magnitude of Change* – including consideration relating to prominence and legibility, size/scale, visual intrusion/contrast, the impact upon key landscape elements and patterns, geographical extent and duration.

v) *Mitigation potential* – the extent to which any potential adverse effects of the development could be mitigated through integration into its surrounds by specific measures.

Visual Catchment & Audience

6.22 The visual catchment is the area from which noticeable visual effects of the development are likely to be evident to any significant degree. Visual catchments are determined by a combination of the scale of a proposal, viewing distance, and screening elements within the landscape. The main visual catchment relating this proposal includes the forested portion of the valley associated with the Waikato River from the Huka Falls north to just south of the ETA bridge. It is within this area that the key components of the proposal are located. It is also the combination of the associated landform and vegetation in this area that visually contain most of the proposed development. Some elements of the proposal will be visible from beyond these areas. These include the carpark/administration area, which will be visible from Huka Falls Road and Loop Road, and Stations 1 and 7 which would be visible from the cropland to the east of the river valley and at some points along the ETA.

6.23 Based on the visual catchment described the potential viewing audience is comprised of the following main groups:

i. visitors to Huka Falls and the nearby scenic lookouts area along the western side of the river

ii. recreational users of the track network either side of this part of the river

iii. users of the proposed zip line

iv. tourist and recreational users of this part of the river

v. people taking scenic helicopter flights from the nearby heli-adventure facility

vi. road users and others using Huka Falls Road and the Loop Road

vii. workers farming the cropped area immediately to the east of this section of the Waikato River

viii. road users along limited sections of SH1 (ETA) to the east of this section of the Waikato River.

6.24 Of these audiences, those who are likely to be the most sensitive and have the most potential to be exposed to the parts of the development that are located in visually sensitive areas include the groups identified above in i - iv. Accordingly the assessment of visual effects focuses mainly on these audiences for which photo-simulations have been prepared to demonstrate the likely visual effects. For the remaining audiences the assessment of visual effects is limited to a written description and analysis.

6.25 The viewpoints selected for the photo-simulations are locations where these audiences would be exposed to potential visual effects of the proposal. Each of these viewpoints is accompanied by a brief discussion, a summary of the effects rating, and conclusions about the proposal in light of these findings. The location of the viewpoints is depicted in Figure 3.

Visual Effects Analysis

6.26 The following summaries describe the visual implications of the proposal from the viewpoints selected and the remaining audiences described above:

Viewpoint 1 *(refer to Figure 3 and Appendix D – Viewpoint 1)*

Location and Audience

6.27 This viewpoint is located at the northern-most lookout area for the Huka Falls on the eastern side of the river. The audience consists of tourists visiting the Falls and recreational users accessing the local track network. This is a very large audience and one who is likely to have some sensitivity with high expectations of visual amenity given the context of the setting.

Visual Sensitivity

6.28 Although there are high natural character and scenic values associated with this viewpoint as a result of the combination of the landform, dense native vegetation and distant views along the river valley, the potential sensitivity is tempered somewhat by the existing use and development associated with the Huka Falls. This includes established recreational infrastructure such as bridges, signage, tracks etc, as well as associated tourists activities including the frequent helicopter flights, jet boats and scenic boat excursion activity on the river. These considerations together with the past modification indicated by the scattered remnant pines and secondary native regrowth combine to reduce the overall visual sensitivity locally.

Visual Effects

6.29 Despite this there remains the potential for development to give rise to visual effects of some magnitude in this area. Yet as demonstrated by the photo-simulation, the nature and scale of the proposal would ensure that this does not eventuate. The reasons for this are that the existing vegetation and landform together with the distribution of the zipline infrastructure mean that there is very limited visual exposure to the various components of the proposal form this viewpoint. Indeed only partial views of Station 2 emerging from the canopy at a distance of approximately 270m as well as a couple of runs of the zip line cables would be visible. Other cables are also shown in the distance but are difficult to make out in the photo-simulation. The nature and scale of the visible portion of this platform would ensure that although distinguishable, it would not be highly prominent. The portion of the structure that is apparent would present a simple unobtrusive addition to the view that has a visual character in keeping with the established recreational themes and associated activity. Also, with time the structure would become further assimilated into the backdrop as it naturally weathers and the surrounding vegetation grows to surround it.

6.30 The regular appearance of people travelling across the valley on the wires is another element of the visual change that would coincide with the establishment of the structural components of the zipline. However, although visible and distinctive, these participants would also be a very small component of the view and would not detract significantly from the scenic qualities currently experienced. Whats more, it is not the sort of occurrence that would be entirely unexpected given the pervasive tourism/recreational presence associated with the Falls and this part of the river where the appearance of jet boats are a regular occurrence. It is also conceivable that this activity could even be considered to add to the experience by providing visual interest of a dynamic nature consistent with the immersive experience of the Falls and activity of the boats.

6.31 For these reasons I consider that the proposal would result in low adverse visual effects from this viewpoint.

Viewpoint 2 *(refer Appendix D - Viewpoint 2)*

Location and Audience

6.32 This viewpoint is located on the existing track that extends along the western bank of the Waikato River. This represents the view of recreational users of the track but is also indicative of a type of view that could be anticipated for tourists and recreational users of the river locally. Again, these are likely to be audiences with some expectations for natural scenic values and visual amenity. It should be noted however that there are comparatively few opportunities along this track or the track on the opposites side of the river where there are expansive views over the river to the other side due to the contiguous vegetation cover. Apart from a few limited opportunities as in the instance of this viewpoint, generally views are restricted to occasional glimpses through the canopy.

Visual Sensitivity

6.33 As for the previous viewpoint, although not pristine the natural and scenic qualities of this view mean it is still sensitive to development. The influence of tourist/recreation infrastructure is also less pronounced as mitigating factors in reducing the potential effects of development in this instance as they have less of a persuasive effect on the established landscape character. The vulnerability of the land-based portions of the view to visual effects is however reduced to a degree by the diversity of colours and textures of the regenerating forest canopy which provide a background that can assimilate development of a certain scale and appearance.

Visual Effects

6.34 This is clearly demonstrated by the photo-simulation prepared from this viewpoint. Looking to the other side of the river Stations 3 and 4 are visible features of the view. The associated cables of these structures as well as Station 1 are also visible to a limited degree, although these are of little significance being largely assimilated into the backdrop. The structures of the stations, although legible, are by no means prominent or intrusive elements and are successfully visually integrated to a large degree due to their size and appearance in combination with the backdrop and filtering provided by the established vegetation. Again people travelling along the zipline would not detract significantly from the enjoyment of the natural and scenic qualities because of their relatively minor and intermittent presence and the thematic compatibility of this activity with the recreational character of the area. As a result the visual effects of the proposal from this viewpoint would also be low.

<u>Viewpoint 3</u> *(refer to Appendix D – Viewpoint 3)*

Location and Audience

6.35 The photograph for Viewpoint 3 was taken from near the base of proposed Station 8 and looks back across the river to Station 7 located approximately 500m away in the distance. This viewpoint provides a representative view of the users of the zip line as well as that of tourist/recreational users of the river in the vicinity. As for the previous viewpoints these are audiences who are likely to be quite sensitive in visual terms.

Visual Sensitivity

6.36 The wide expanse of the river in combination with the densely vegetated landform rising from the river's edge combine to generate a high level of scenic appeal. The landscape character and quality is influenced though by the somewhat patchy matrix of the early successional vegetation and the presence of the large standing dead pine trees, both of which chronicle past modification of the area and combine to moderate the landscape and amenity values and reduce its vulnerability to the effects of visual change.

Visual Effects

6.37 From this viewpoint a single station (Station 7) and associated zip wires are clearly visible silhouetted against the skyline. Although visually prominent the structure processes a level of visual permeability that assists in reducing its apparent solidity and scale. It is also generally in keeping with the established tourism/recreational character associated with the river and wider area. Further the zip lines are similar in appearance to the existing high voltage electricity lines which are currently located on both sides of the river and span the river in close proximity (refer to Appendix A). So, although prominent, the visible elements of the proposal are not overly intrusive or inconsistent with established themes within the landscape setting. For these reasons, I consider that the visual effects of the proposal form this viewpoint are low-moderate.

Other Audiences

River Users

6.38 As noted this stretch of the river has comparatively high levels of tourist and recreational use, with helicopter and jet boat tours in particular, a regular occurrence up to as far as the Huka Falls. The visual effects of the proposal on this audience is not dissimilar to the effects represented by Viewpoints 2 and 3 discussed. This audience will experience a constantly changing landscape moving along the river. The Huka Falls jetboat excursions, for example, begins by the Huka Prawn Park under the ETA Bridge. From this location, the passage along the river changes from the highly modified area around the ETA Bridge, which is strongly influenced by the transport and geothermal power station infrastructure and various other tourist

activities. Although further upstream toward the Huka Falls the character and quality of the landscape improves, the experience remains influenced by the wider development and activities associated with the river to a certain extent.

6.39 In terms of visual effects for this audience, the components of the proposal, even the tallest platform are still comparatively small in the context of the setting. They are also spread out, scattered over a long section of river so would not be experienced collectively, but rather as a series of discrete elements of various degrees of visibility. In reality from on the river, down low in the landscape the majority of the platforms would also largely be screened or visually assimilated by the vegetation. The activity of people using the zipline would also be a very minor and incidental part of the experience for this audience. For these reasons the visual effects for this group are also considered to be low.

Scenic Helicopter Audience

6.40 Scenic helicopter flights leave from a location nearby to where the proposed carpark/administration area is proposed. From the air this audience would be travelling at considerable speed with an overview of a much wider landscape in which the elements of this proposal would constitute an inconsequential amount of change.

Road Users – Huka Falls and Loop Road

6.41 The only part of the proposal visible to this audience would be the small carpark and administrations area. This area is currently open grassland that sits next to the café and a carpark associated with the adventure tourism/mountain biking facility. This area is not sensitive in landscape and visual terms and the development proposed in this area is relatively small in scale and consistent with the established character of development in the immediate vicinity. Consequently the visual effects associated with the proposal for this audience would be very low.

Farm Workers and Road Users along SH1 (ETA) to the east of the Waikato River

6.42 On this side of the river beyond the river valley the landform is flat to undulating, the landscape character is dominated rural production, with grassland and cropland and small exotic tree plantations, with distant views to the surrounding low hill country. Although the Waikato River is nearby it remains hidden by the landform and vegetation. The landscape has only low to moderate landscape values but exhibits some visual sensitivity due to its openness.

6.43 The audiences in this area consist of farmworkers and road users along the ETA. Although the former are likely to have some sensitivity to visual change, the road users are likely to be more indifferent, travelling through a constantly changing landscape at speed.

Photograph 3. View of the edge of the cropland, Waikato River beyond

6.44 The only parts of the proposal that would potentially be visible from this section of road would be the platforms associated with Station 1 and 7. These are located at the interface of the scenic reserve and the open cropland. These structures are 9.1m and 17.6m tall respectively. While the platforms are dimensionally narrow they are relatively tall and consequently would be prominent from locations where they are visible. They are however not of an overall scale that would make them excessively dominant elements in the landscape, and their simple open structure would a provide a degree of visual permeability which would assist in reducing their apparent scale and presence. Similarly their simple utilitarian nature would not be entirely incongruous within this agricultural setting.

6.45 Despite the prominence of these structures, for workers associated with rural production activities in the vicinity the platforms the would not have a significant effect on the existing level of visual amenity as they would not be discordant, dominant or have a significant impact on the existing rural character.

6.46 The experience would be similar for road users, however, they would have a lower degree of exposure only experiencing fleeting distant glimpses of the structures from the highway as they emerge from the sections of road enclosed by low cuttings along this section of the ETA. Accordingly for these audiences, any adverse visual effects would range from low to moderate for the farmworkers to low for the road users.

Photograph 4. View from ETA east toward the location of Station 7 (Source: Google Maps)

7.0 EVALUATION OF PLANNING CONSIDERATIONS

7.1 In this section I consider the proposal against the key relevant landscape related objectives and policies of the relevant statutory planning documents.

Waikato Regional Policy Statement

Policy 12.1 Outstanding Natural features and landscapes This policy requires that identified values and characteristics of outstanding natural features and landscapes of regional or district significance are protected from adverse effects, including cumulative effects, arising from inappropriate subdivision, use and development. *Policy 12.2 Preserve Natural Character* This policy seeks to ensure that activities rivers and their margins are appropriate in relation to the level of natural character (more policy stuff?? *Policy 12.3 Maintain and Enhance Amenity Values* This policy requires that areas of amenity value are identified and those values are maintained and enhanced	***Comment*** All of these policies are covered in more detail in the relevant provisions of the Taupo District Plan which gives effect to the intent of the Regional Policy Statement. Consequently to avoid repetition, any relevant effects in relation to these matters are discussed as part of the commentary on District Plan considerations below.

Note that below policies are only listed where of particular relevance to the assessment of landscape and visual effects and/or add another level of consideration to the intent of the relevant objective. In some instances the overall intent of the policy direction is paraphrased for succinctness and clarity.

Taupo District Plan

3b.2 Rural Environment Zone Objectives Objective 3b.2.1 *The management of the Rural Environment to maintain and enhance rural amenity and character.*	***Comment*** The entire site has is subject to the underlying Rural Environment Zone. All of the proposed development excluding the carpark and administration area is also subject to overlays which respond to the significant landscape values associated with the area. Nonetheless, the underlying provision is still applicable. The District Plan identifies that rural activities are anticipated in 'Landscape Areas'. It is not anticipated that these will be restricted solely to productive landuse in a traditional sense, but may also include development associated with tourist activity and recreation, which are also considered productive uses of the land resource. Indeed this section of the plan focuses on the protection of amenity values and maintaining a clear distinction between rural and urban-type use and activities while recognising that the rural environment is diverse and has a degree of flexibility in accommodating various use and activities. The proposed development is a suitable use of the land which has limited capacity for other types of productive landuse. Particularly given the high landscape and natural values and corresponding overlays which largely protect the regenerating indigenous vegetation and river environs, therefore limiting the scope for activity and use. The development is consistent with the established character of the area and will have negligible implications for the established amenity.

Objective 3h.2.1 *Protect Outstanding Landscape Areas from inappropriate subdivision, use and development which may adversely affect the Landscape Attributes*	***Comment*** All the development is restricted to the terrestrial areas that provide a backdrop of the Waikato River which is identified and an OLA. Consequently the proposed development will have no direct impact on the river, and very limited effects on the appreciation of the river, the character of which is already influenced in a compatible manner by tourist and recreational activity.
Objective 3h.2.2 *Maintain Landscape Attributes of Amenity Landscape Areas.* *Policies* *i. Ensure new subdivision, use, and development is located and designed in a way that maintains the Landscape Attributes of Amenity Landscape Areas, while considering the existing landscape character and the underlying District Plan Environment.* *ii. Where Significant Natural Areas are within Amenity Landscape Areas, avoid, remedy, or mitigate more than minor adverse visual effects of Indigenous Vegetation Clearance on the Landscape Attributes of the Amenity Landscape Area.* *iii. Manage the scale and intensity of subdivision, use and development in Amenity Landscape Areas to avoid, remedy, or mitigate more than minor adverse effects on the Landscape Attributes, considering:* *a. The suitability of the site for the activity proposed.* *b. The scale, location, design, and nature of the subdivision, use or development in relation to the provisions of the underlying Environment, and whether it will be*	***Comment*** The main areas of development associated with the proposal are located within the Areas identified as ALA 09 either side of the river. The main attributes of the Huka Falls Scenic reserve are listed as follows in Section 7.1 of the District Plan*:* • *High scenic and amenity values* • *Natural setting interspersed with public facilities such as walking/biking tracks, visitor centre, viewing platform and bridge. Structures generally in keeping with the natural surroundings.* • *Highly valued as a scenic backdrop to the Huka Falls.* • *High Ecological value, with the continuous native vegetation cover providing the main visual amenity attributes.* The proposed structures are of simple functional design and are comparatively small in the context of the scale of the setting. They are generally located within the existing low dense canopy of bush where they can be successfully integrated without significant effect on the general appreciation of the area. The type of use is consistent with the type of recreational tourism activities commonly associated with natural areas. As stated for visitors to the Huka Falls the main focus is on the Falls itself which captivates the

sympathetic with the Landscape Attributes of the Amenity Landscape Area. *c. The extent to which the Landscape Attributes will be affected.* *d. The ability to remedy or mitigate more than minor adverse effects.* *e. The visual impact of Indigenous Vegetation Clearance within Significant Natural Areas on the Landscape Attributes, and the ability to revegetate cleared areas with appropriate indigenous species.* *f. The effectiveness and appropriateness of any mitigation to address adverse landscape and visual effects of subdivision, use or development, including appropriateness of mitigating vegetation to screen or soften built structures, and ongoing maintenance of mitigation planting.* *g. Recognise specific site requirements for use or development.*	attention of visitors due to the power intensity of the display. This is not to downplay the significance of the downstream river and forested setting which add considerably to the total experience. Nonetheless, views away from the Falls are a secondary consideration, and the limited visibility of the elements proposed as part of the development would have a very minor impact on the totality of the experience. Indeed, it is conceivable that the zipline activity could actually heighted the experience of for those visiting the area given the existing recreational attributes and compatibility and dynamic nature of this pursuit. Similarly the amount of vegetation removal required to allow the integration of the various components of the proposal is very small and would have negligible implications for the patterns and continuity of the regenerating native vegetation. The scale and dispersed nature of the elements associated with the development are key factors that would ensure that any effects on landscape amenity would be very low. The site presents almost optimum conditions for the proposed activity. The variable landform provides the necessary elevation to propel the riders over long distances, and together with the vegetation, the ability to visually integrate the development into the setting. The landscape has high scenic values and provides a contrast of experience with the juxtaposition of the wide river channel and the continuous stands of bush. The small amount of vegetation clearance required to construct the various elements of the proposal can largely be mitigated by remedial planting the areas of disturbance and by the benefits of the proposed more widespread vegetation management and enhancement proposed.

Objective 3h.2.3 *i. Recognise and encourage the enhancement of Amenity Values with Landscape Areas in the Taupo District.* *Built Structures* *d. Built structures are located and designed in a way to integrate with the Landscape Attributes.* *e. Building materials utilise recessive colours and have low reflectance levels.* *f. Existing vegetation patterns are utilised to integrate buildings within the Landscape Area.* *Planting* *j. New tree planting and vegetation patterns reflect the existing landscape character and natural patterns of the landscape.* *k. Where possible, ecological corridors and ecosystems are restored.* *l. Planting is used to help integrate buildings with the Landscape Area.* *iii Enable activities that result in a Net Environmental Gain for Landscape Areas in the Taupō District.*	***Comment*** As discussed the relevant structures are of a simple design, of suitable scale, reasonably recessive materials/colours and a have level of visual permeability, which together with the established vegetation will assist with their assimilation into the setting. The planting proposed as part of the development will reflect the natural compositions of the regenerating vegetation. This combined with more widespread infill and enrichment planting together with pest management will assist in visually integrating the development while enhancing the ecological values of the local area.
3i.2 Natural Values Objectives *Objective 3i.2.1* *The protection of Significant Natural Area in the Taupo District from more than minor adverse effects of indigenous vegetation clearance.*	***Comment*** This has already been covered in depth by the preceding discussion.

Tongariro/Taupo Conservation Management Strategy

3.22 Native Fauna *Objective* *To maintain and enhance indigenous biodiversity through appropriate management of native fauna and native fauna habitats.*	Comment Part of the proposal is to work in conjunction with DOC to implement such management strategies for the subject area as part of enhancing the natural environment and the visitor experience.
3.5 Recreation Management *Objective* *To provide for a diversity of recreation uses on public conservation land if these are consistent with protection of natural and historic values or consistent with the purpose for which the particular reserve is held.*	The proposal provides an opportunity to maximise the visitor experience of the natural features the areas provide. It can be integrated into the site in a sensitive manner with minimal disturbance to the existing natural features and landscape values.
3.8.1 Recreation Concessions *Objective* *To foster visitor enjoyment of land managed by the department through authorising commercial recreation and tourism activities which are compatible with the natural and historic values of any area and which do not reduce the enjoyment of these values by other visitors.*	The proposed zip-line canopy tour is well suited to the natural opportunities and constraints that the site offers, would significantly enrich the experience of the area for visitors with minimal impact on the use and enjoyment of other users of the area.

The Reserves Act 1977

19 Scenic reserves *(1) It is hereby declared that the appropriate provisions of this Act shall have effect, in relation to reserves classified as scenic reserves—* *(a) for the purpose of protecting and preserving in perpetuity for their*	Comment A significant component of this proposal is located within the Huka Falls Scenic Reserve. A key theme of the Act is the desire to achieve a suitable balance between the protection, preservation and use of reserves. As has been demonstrated by the preceding analysis in this assessment, the proposed development can be successfully integrated into the reserve with

intrinsic worth and for the benefit, enjoyment, and use of the public, suitable areas possessing such qualities of scenic interest, beauty, or natural features or landscape that their protection and preservation are desirable in the public interest: *(2) It is hereby further declared that every scenic reserve classified for the purposes specified in subsection (1)(a) shall be so administered and maintained under the appropriate provisions of this Act that* *(a) to the extent compatible with the principal or primary purposes of the retention and preservation of the natural or scenic values, open portions of the reserve may be developed for amenities and facilities where these are necessary to enable the public to obtain benefit and enjoyment from the reserve:*	relatively minimal disturbance to the established natural and scenic values, while significantly improving public access and enjoyment as anticipated by this legislation.

8.0 SUMMARY AND CONCLUSIONS

8.1 Although the proposed development spans a number of landscape character areas of mixed character and quality, the main components are largely located within the river valley of the Waikato River which despite historic modification retains significant landscape values and a high level of visual amenity as a result of a combination of the river, landform and the regenerating native forest. These physical characteristics and experiential qualities of the landscape in combination with the proximity of several other natural attractions and the major transport connections mean that the area is also very popular as a tourist destination and for recreational activities. Consequently these are also significant contributors to the established character.

8.2 This proposal embraces both the natural assets of the local landscape and the desire for people to experience what it has to offer in a way that maximises the potential exposure and enjoyment of the landscape setting. However it achieves this in a manner which will avoid any significant disruption to both the physical landscape resource or the other qualities and characteristics that contribute to the considerable landscape and amenity values.

8.3 In doing so the proposal is consistent with the key relevant policy directions of the relevant statutory planning documents, not only in relation to landscape and visual considerations but also concerning recreational use.

8.4 Accordingly I consider that proposal is suitable in landscape and visual terms and combined with the proposed mitigation measures would provide a positive landscape and environmental outcomes for the area.

Jason Hogan

(NZILA) Registered Landscape Architect

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SKY PLAY ADVENTURES

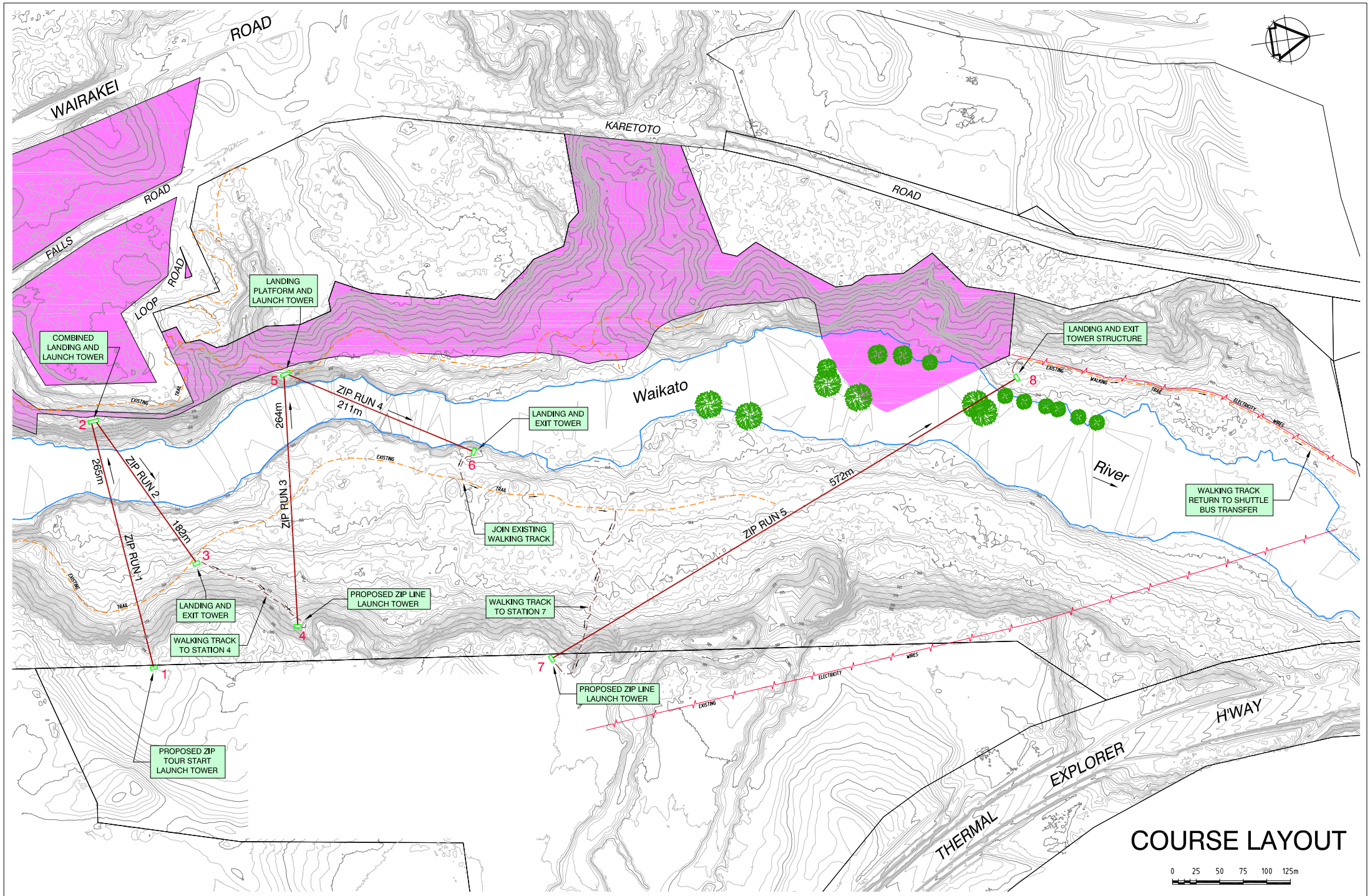
Waikato River, Taupo

Landscape and Visual Effects Assessment

August 2019

APPENDICES

APPENDIX A - COURSE LAYOUT AND PROFILES



COURSE LAYOUT

A2

ZIP SUPPORT P/L
Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

SKY PLAY ADVENTURES
HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND
SCHEMATIC COURSE ROUTE & COORDINATES

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
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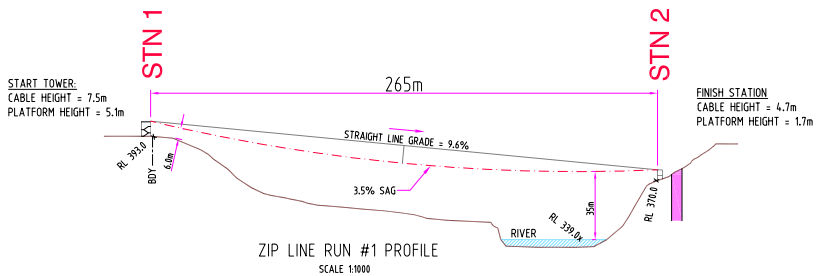

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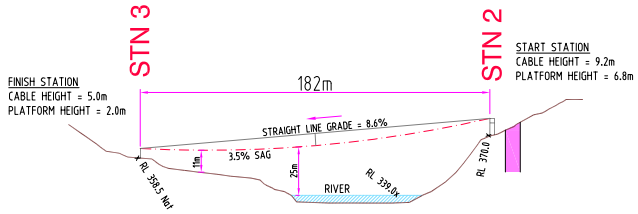

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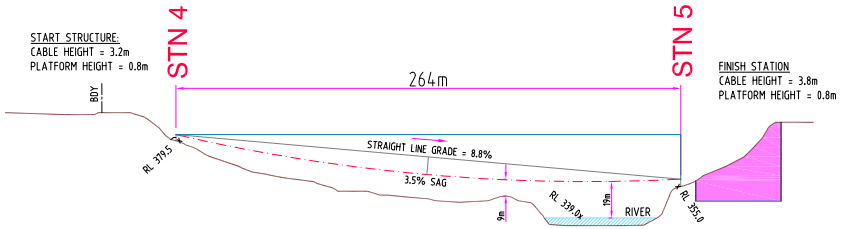

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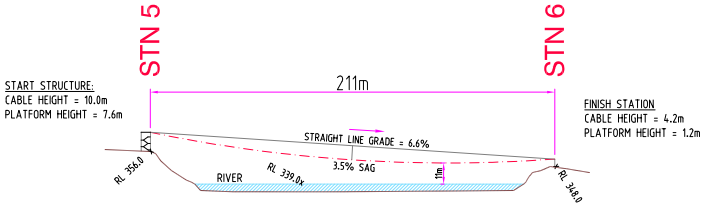

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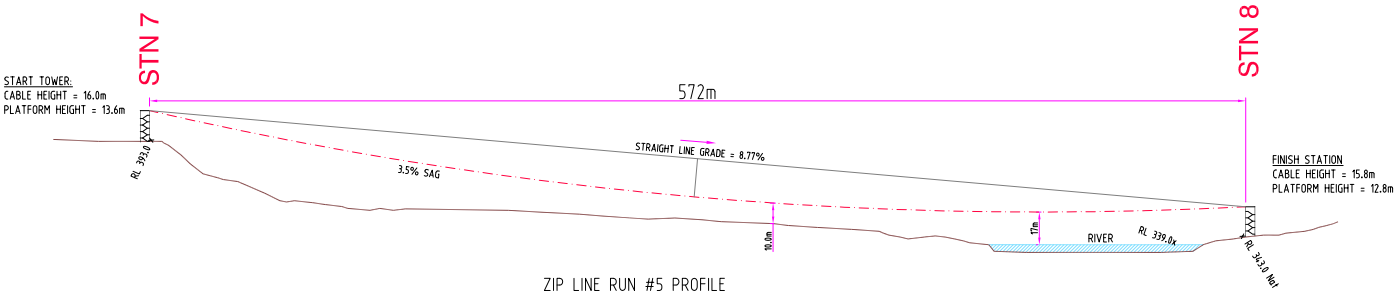


ZIP LINE RUN #5 PROFILE
SCALE 1:1000

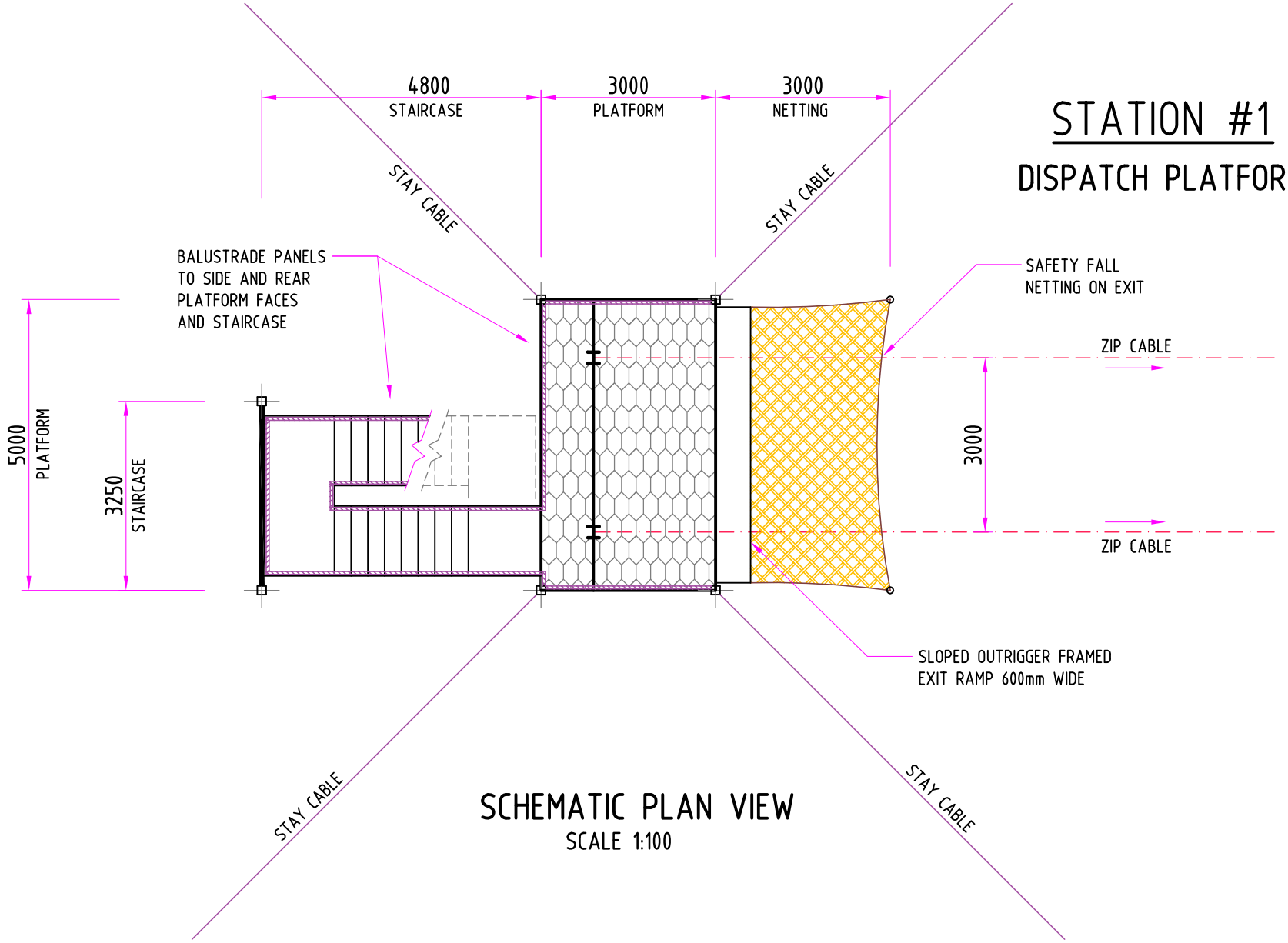
COURSE PROFILES

0 25 50 75 100 125m

A2

ZIP SUPPORT P/L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND SCHEMATIC COURSE ROUTE & COORDINATES	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019 SCALE: 1:1000 NAT.	PROJECT No: 374	DRAWING No: P-09

APPENDIX B - CONCEPT TOWER DESIGNS



STATION #1

DISPATCH PLATFORM

SCHEMATIC PLAN VIEW

SCALE 1:100

A4

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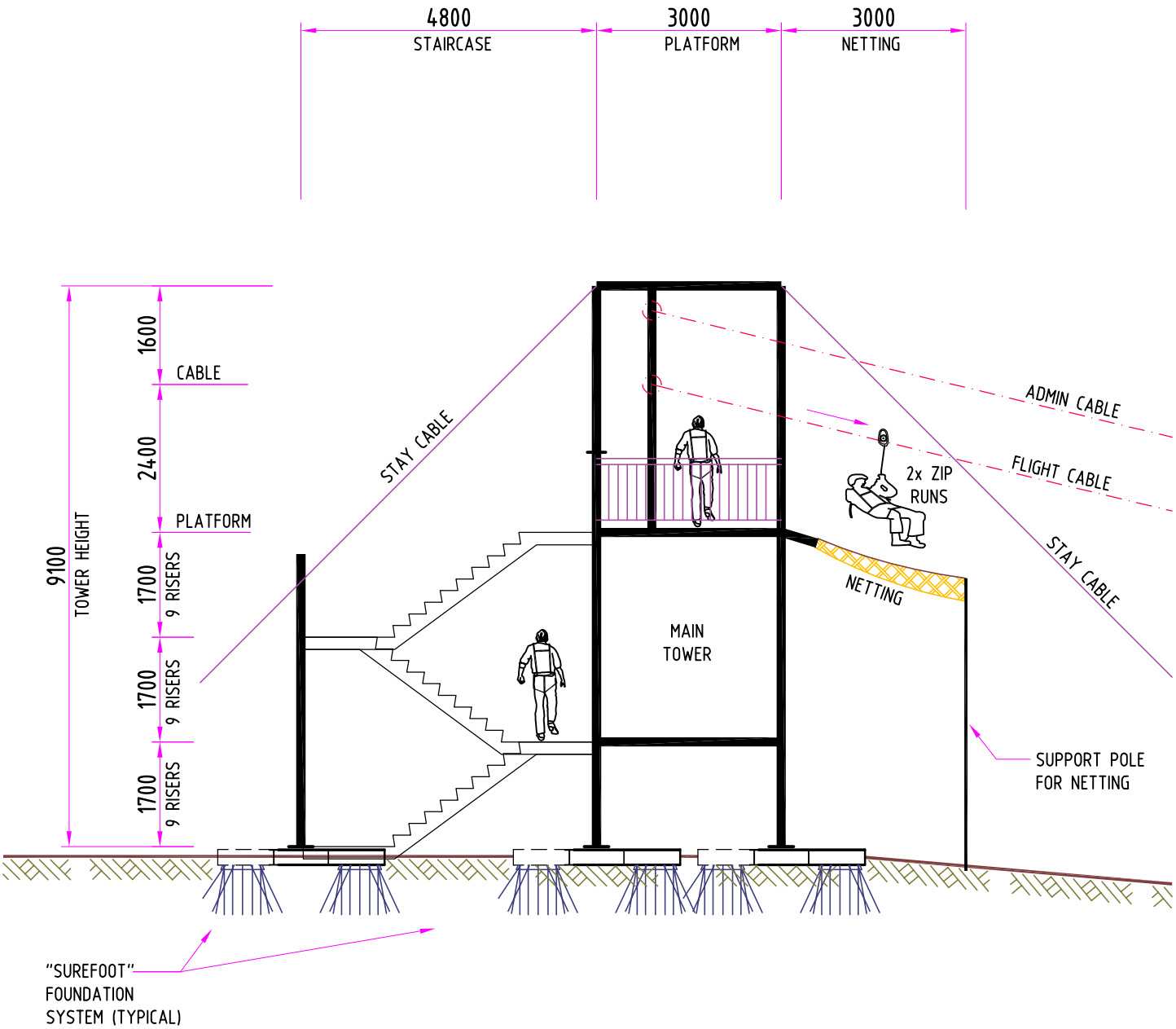
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-01



SIDE ELEVATION

SCALE 1:100

STATION #1

DISPATCH PLATFORM

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJ. No: 374	DRAWING No: TC-02

STATION #2

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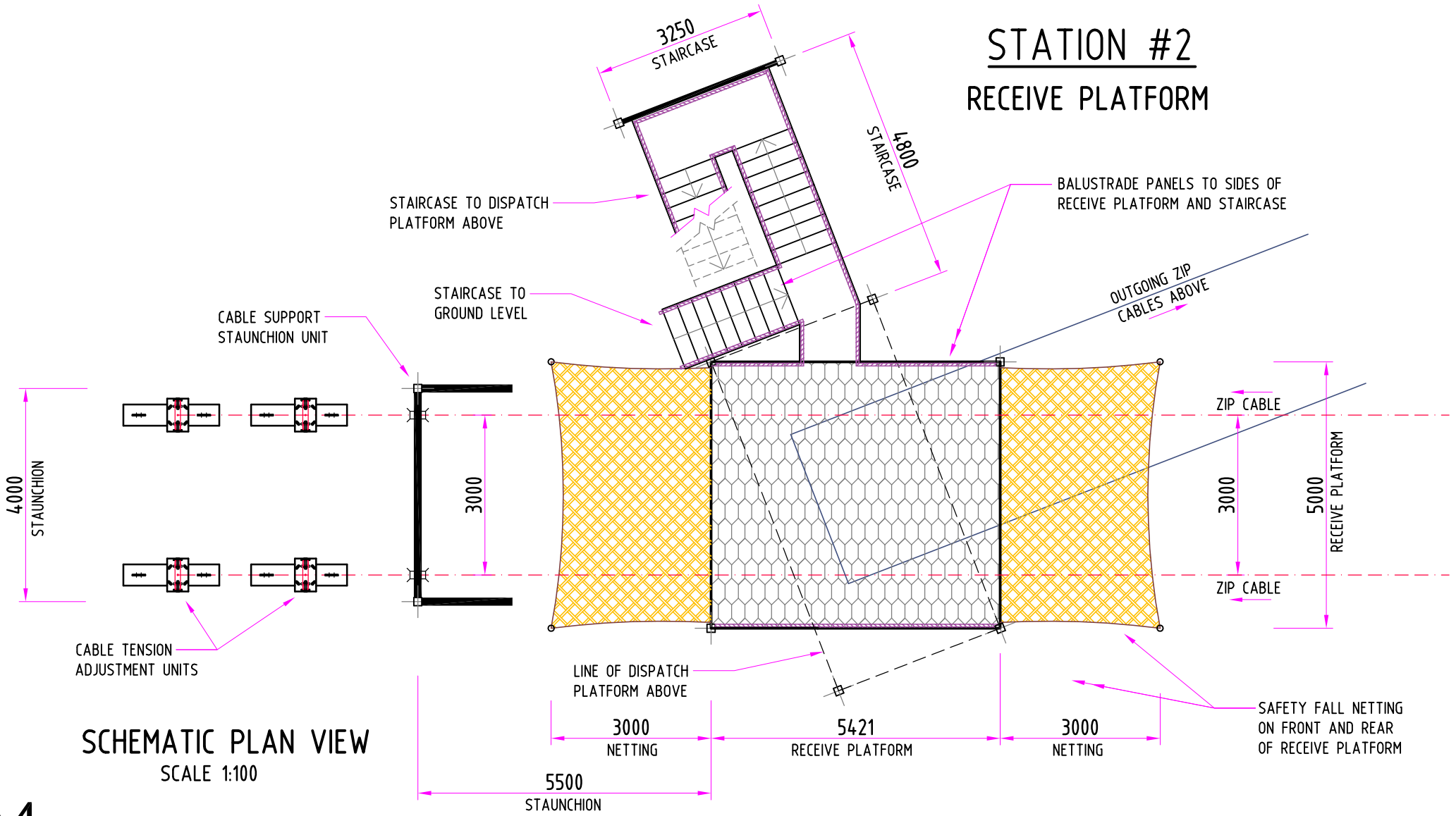

SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L

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SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

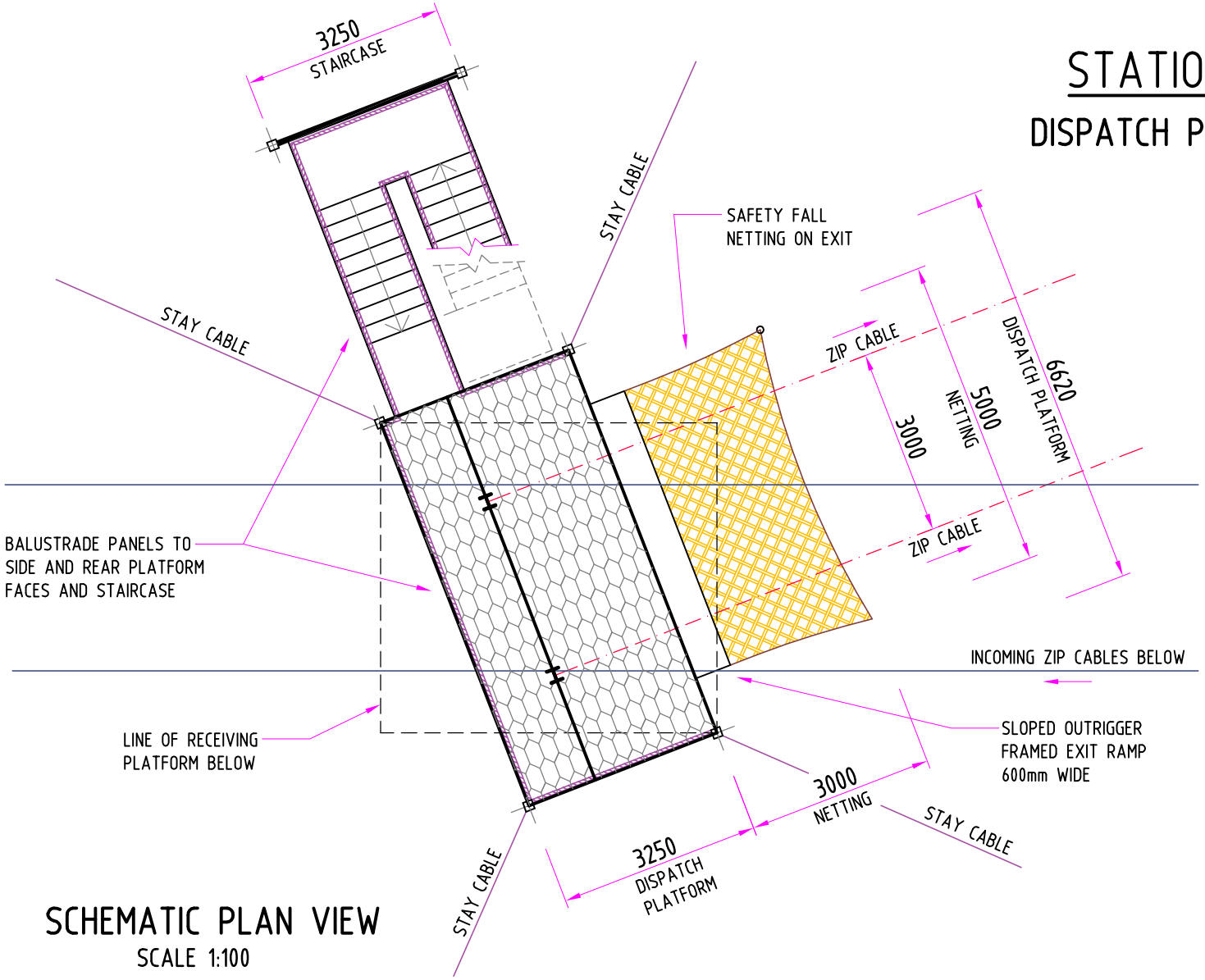
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-03

STATION #2

DISPATCH PLATFORM



SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
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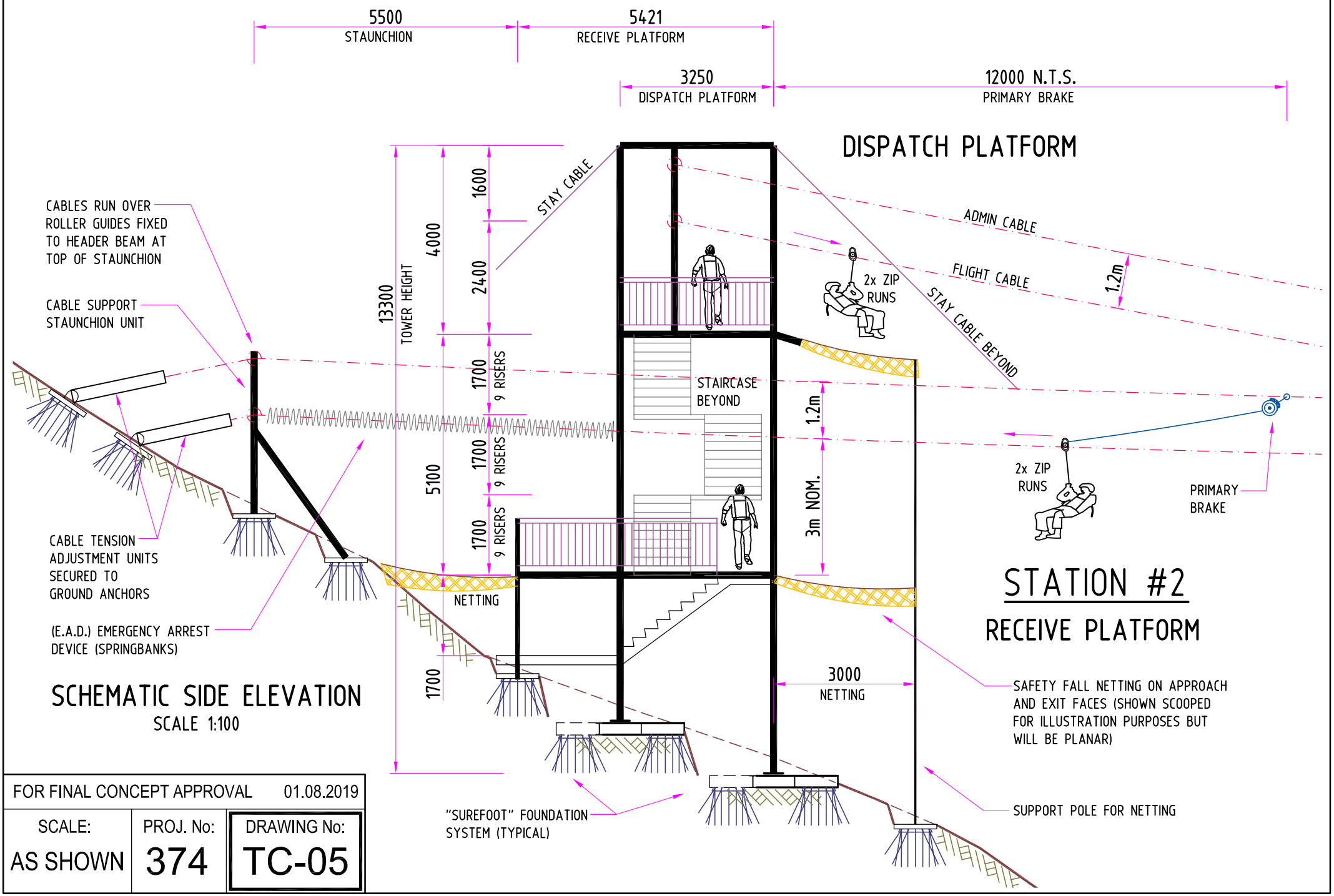

SCHEMATIC SIDE ELEVATION

SCALE 1:100

FOR FINAL CONCEPT APPROVAL		01.08.2019
SCALE: AS SHOWN	PROJ. No: 374	DRAWING No: TC-05

STATION #3

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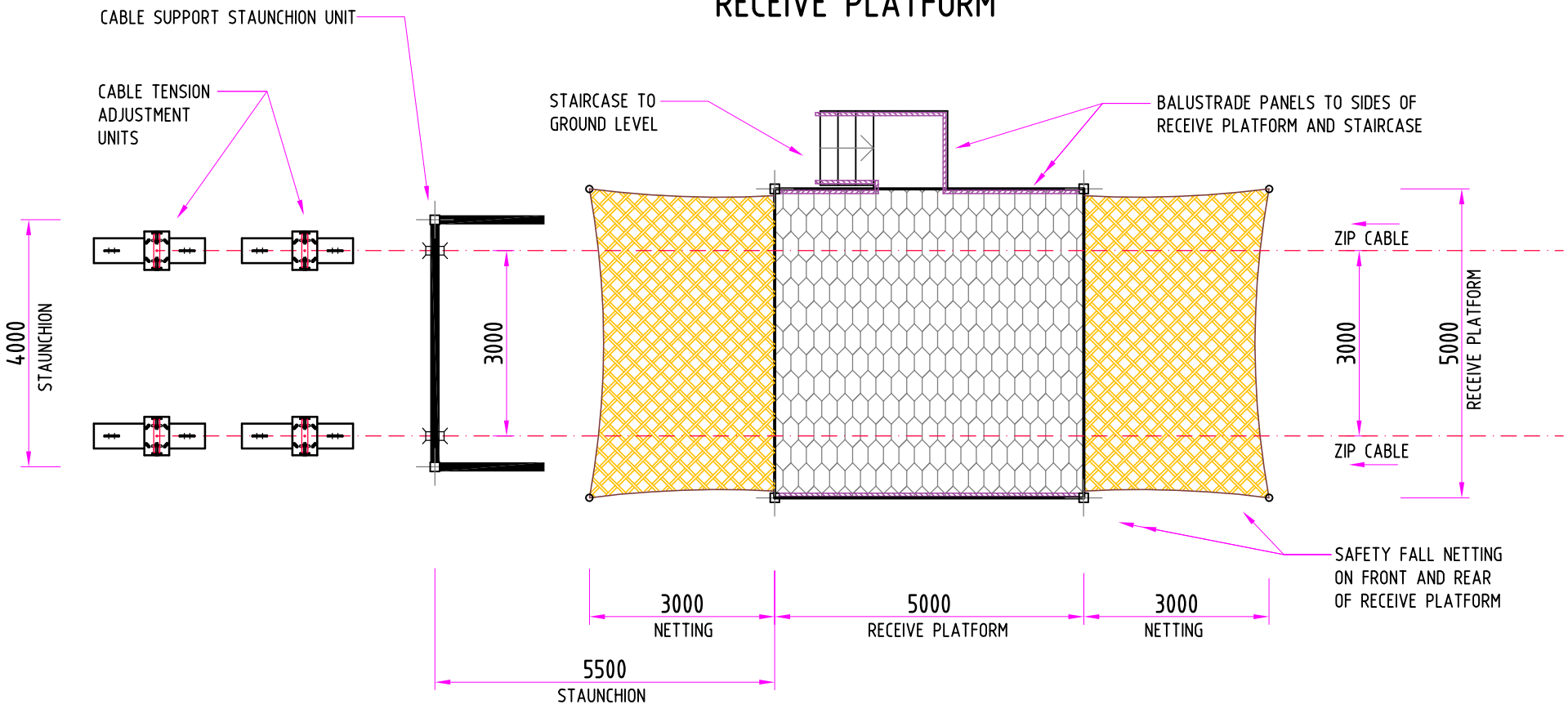

SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L

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SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

CONCEPT TOWER DESIGNS

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SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-06

STATION #3

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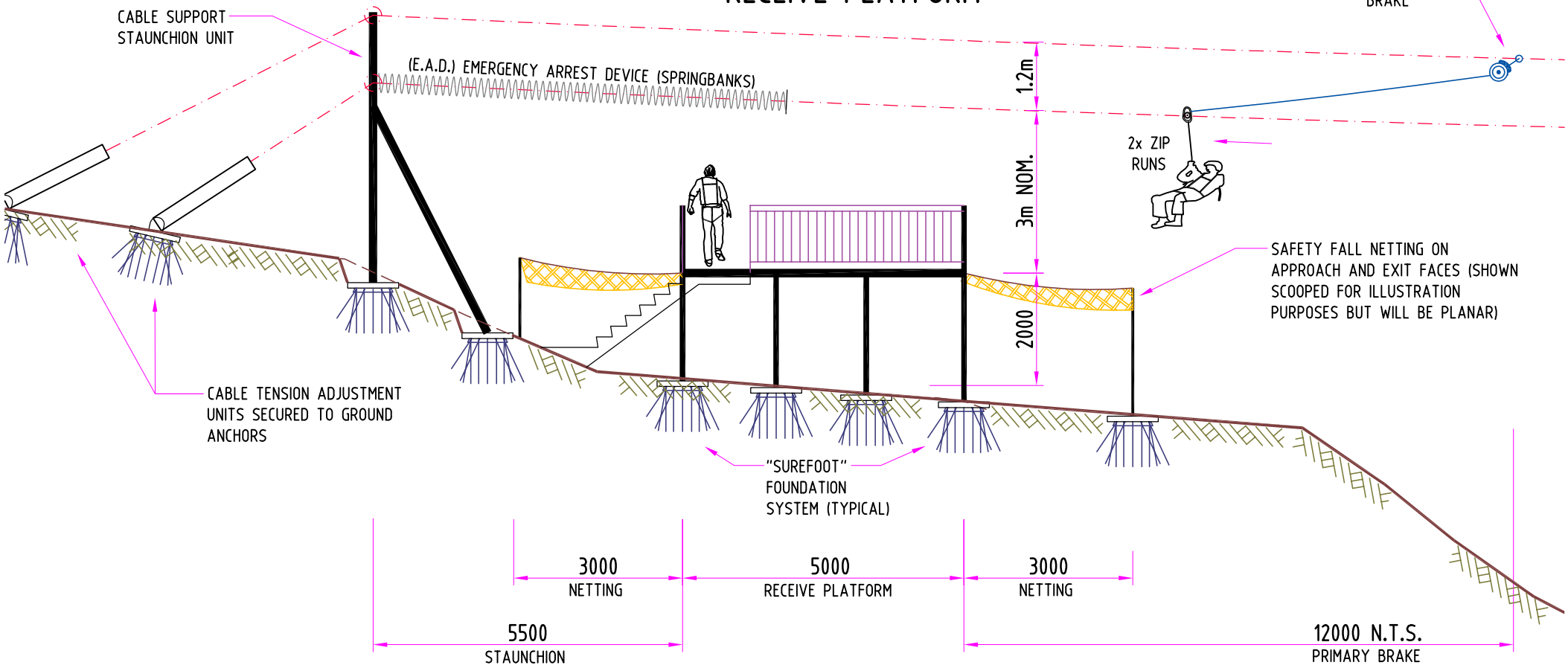

SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

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SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

CONCEPT TOWER DESIGNS

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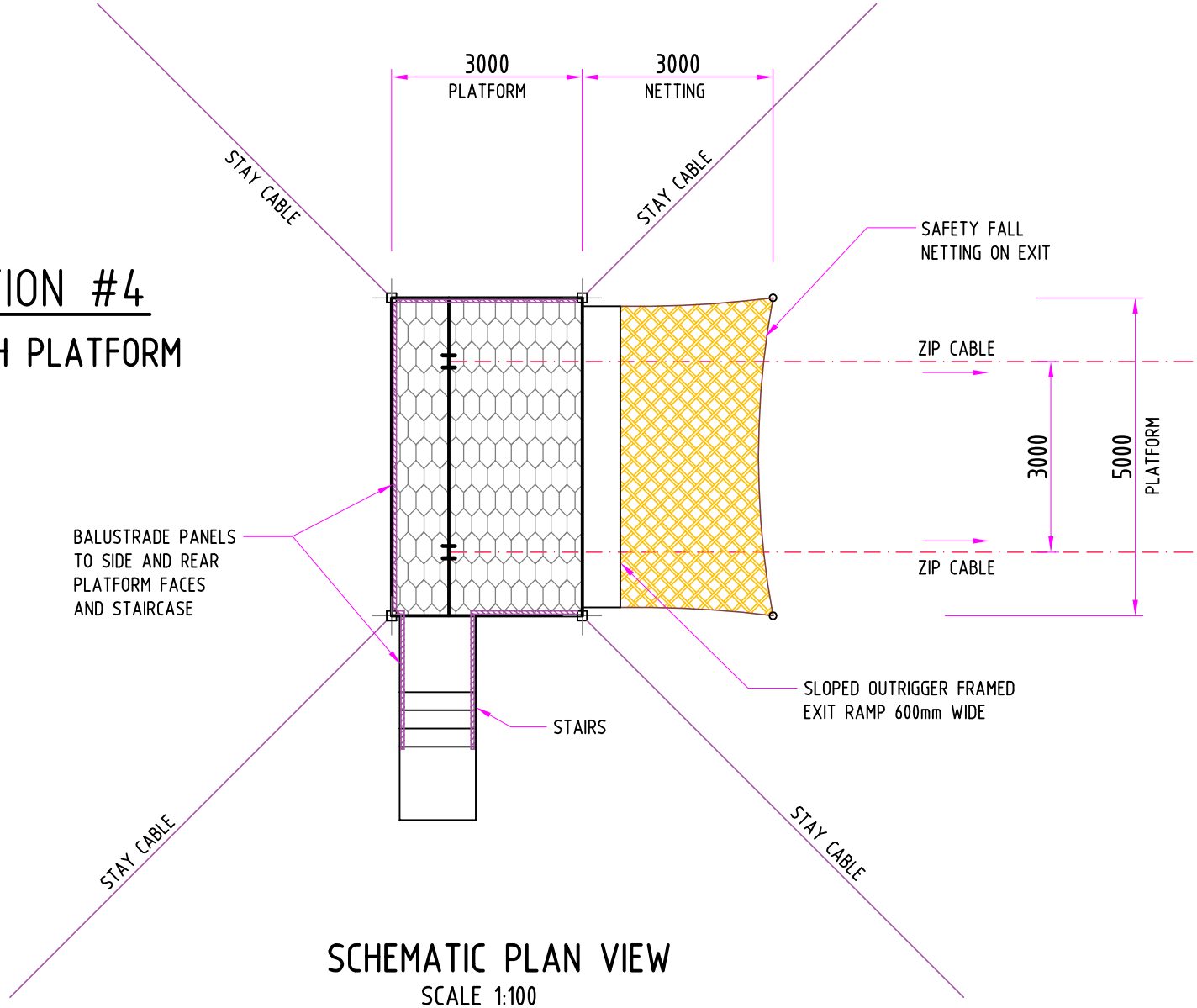
SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-07

STATION #4

DISPATCH PLATFORM



SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
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SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
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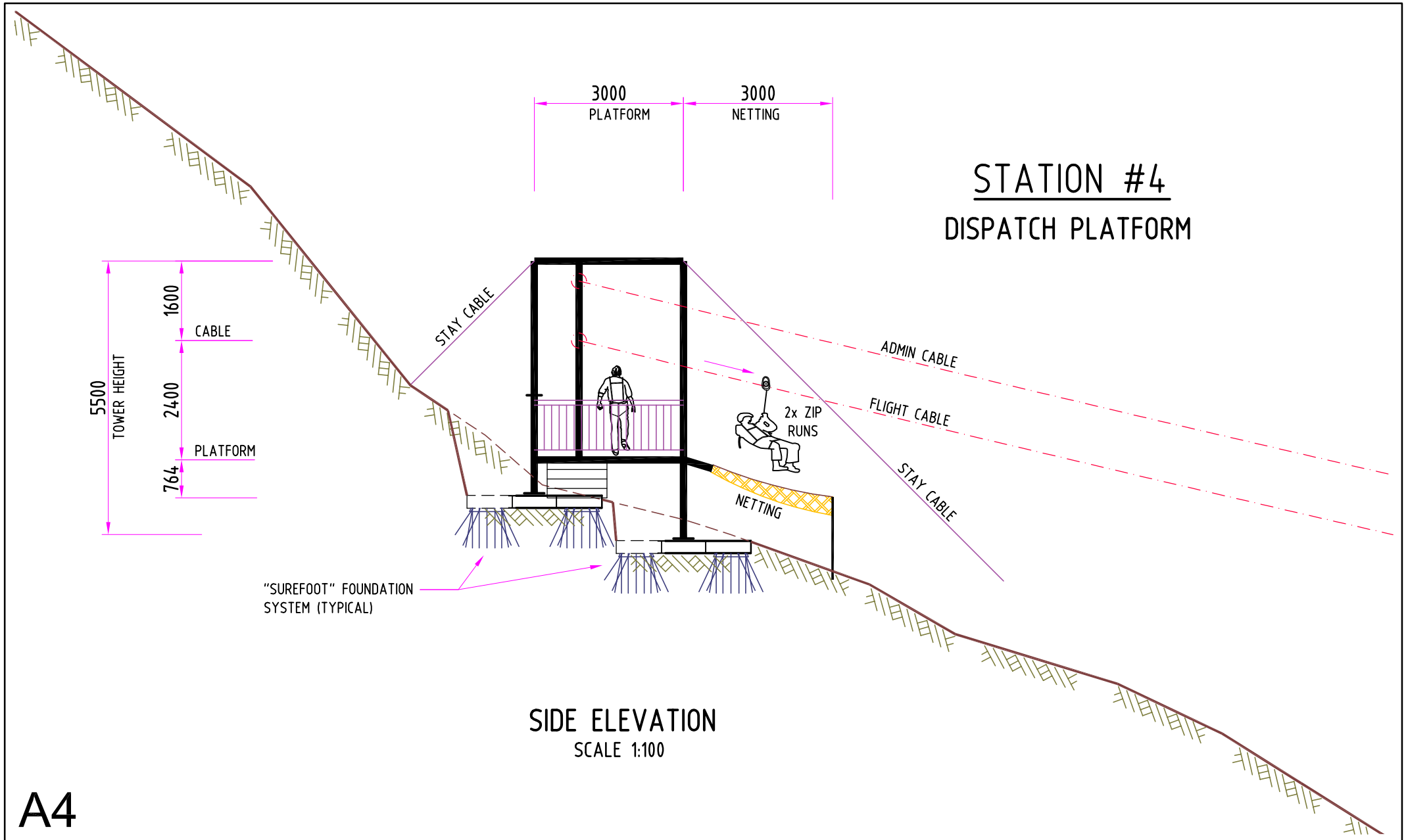

SIDE ELEVATION
SCALE 1:100

A4

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SKY PLAY ADVENTURES
HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
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STATION #5

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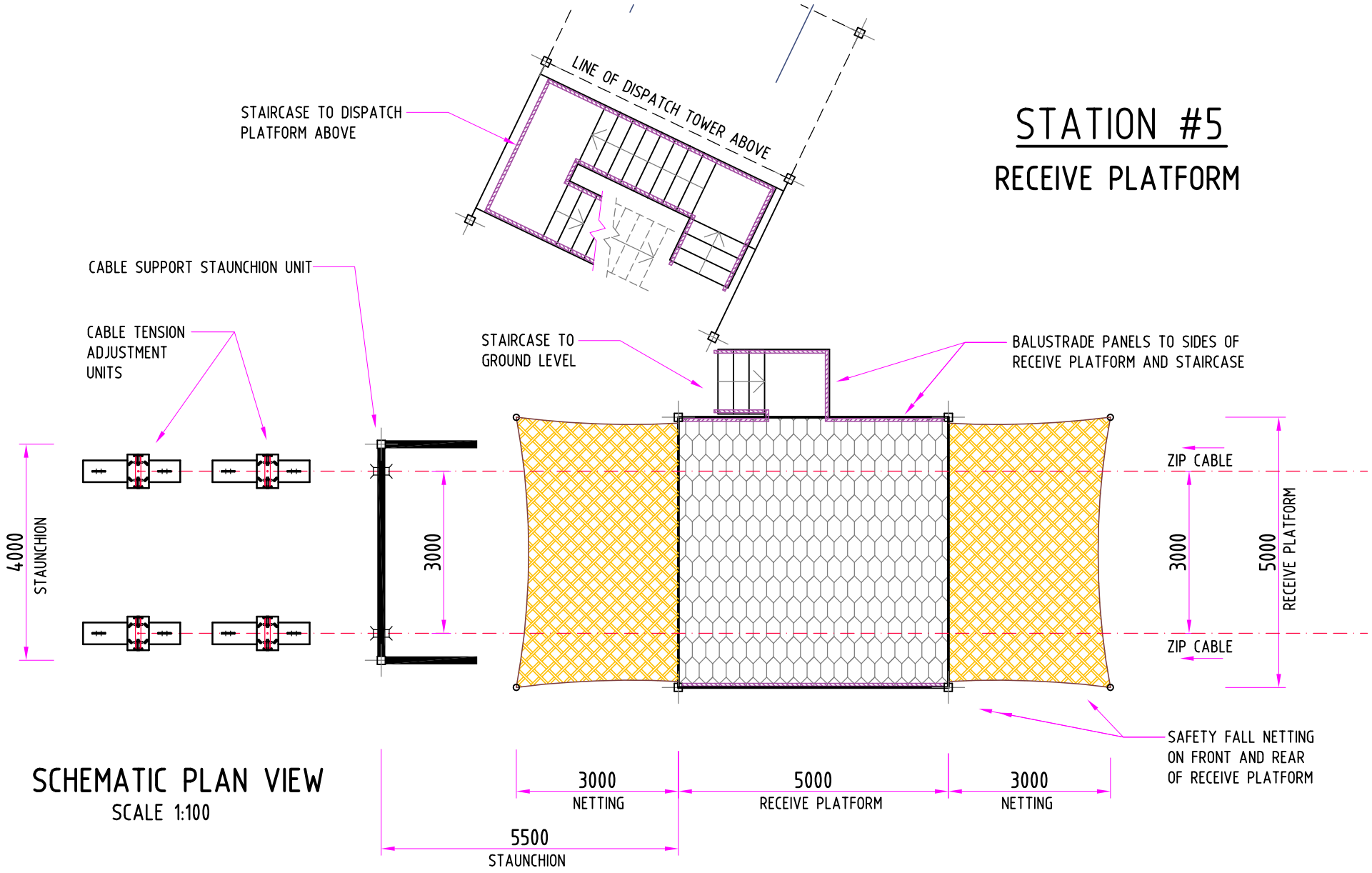

SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
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STATION #5

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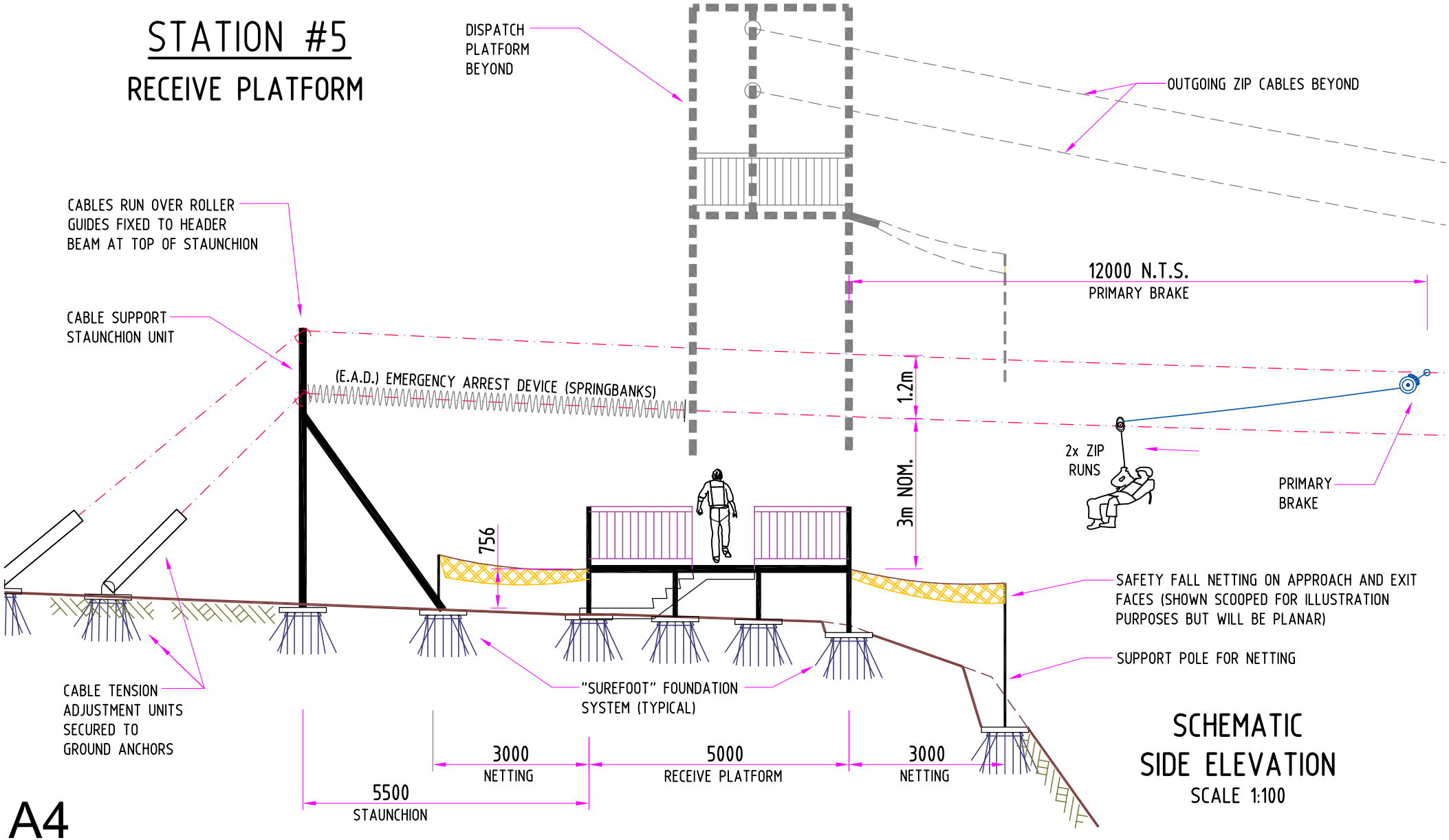


SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

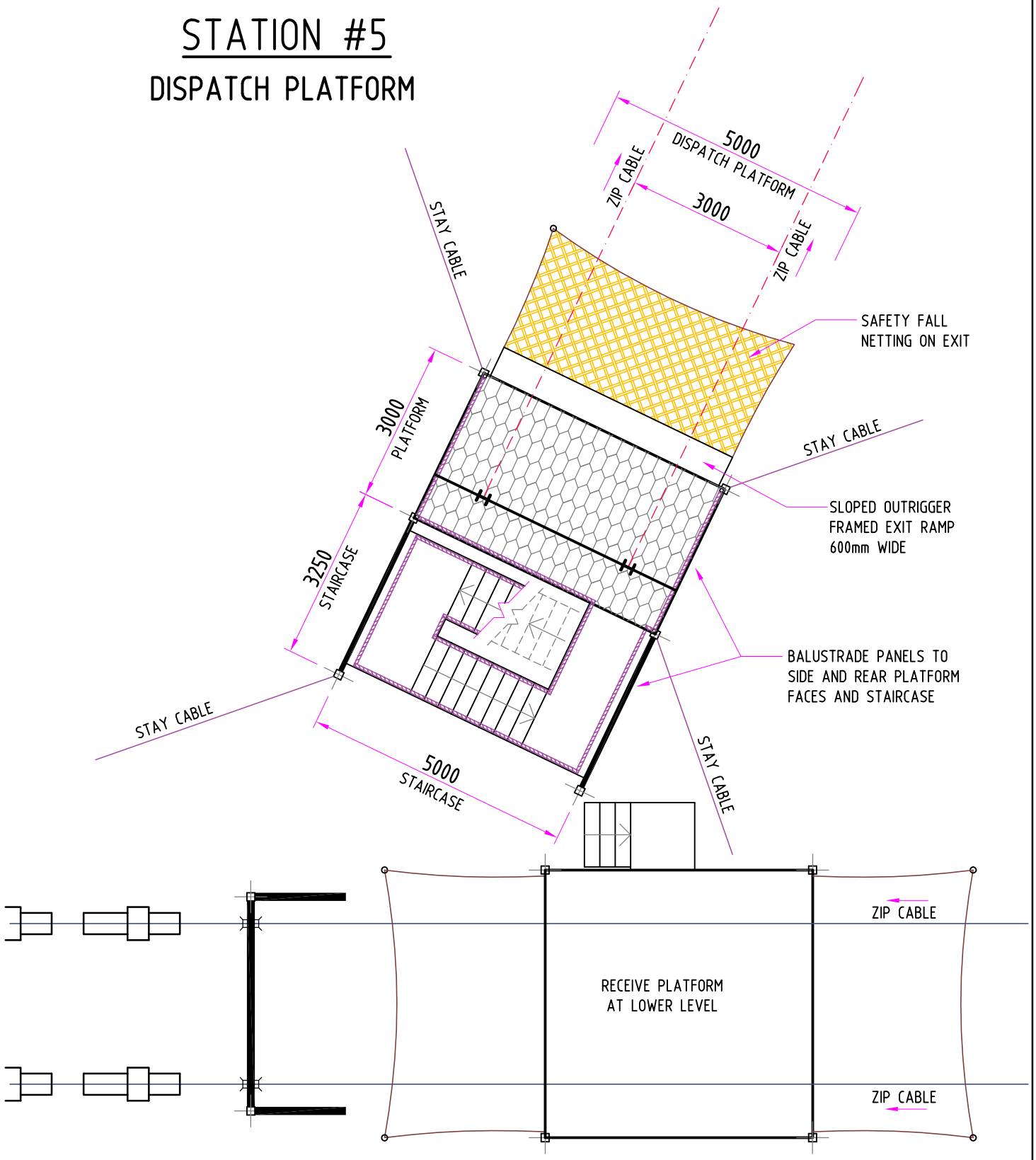
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-11

STATION #5

DISPATCH PLATFORM

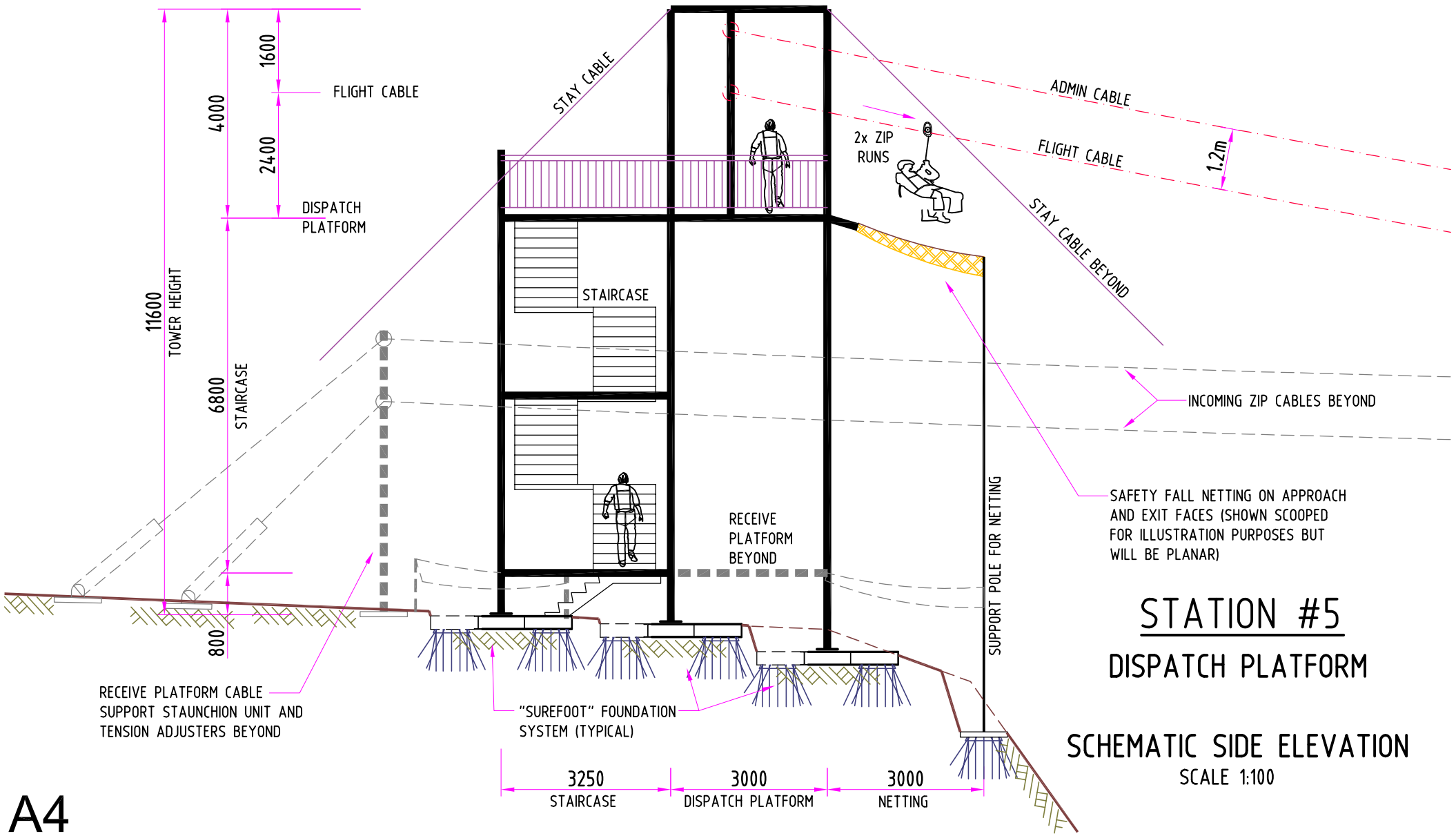


SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJ. No: 374	DRAWING No: TC-12



STATION #5

DISPATCH PLATFORM

SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

SKY PLAY ADVENTURES

HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND

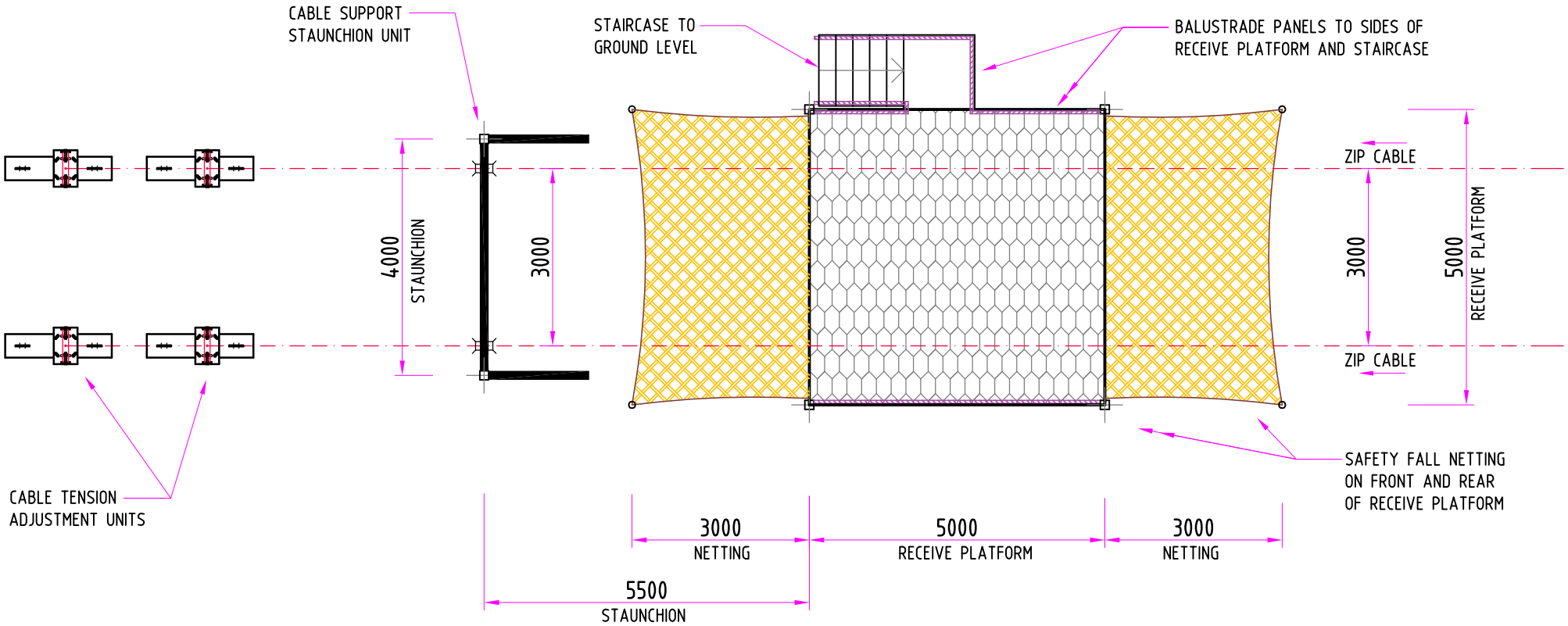
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-13

STATION #6

RECEIVE PLATFORM



SCHEMATIC PLAN VIEW

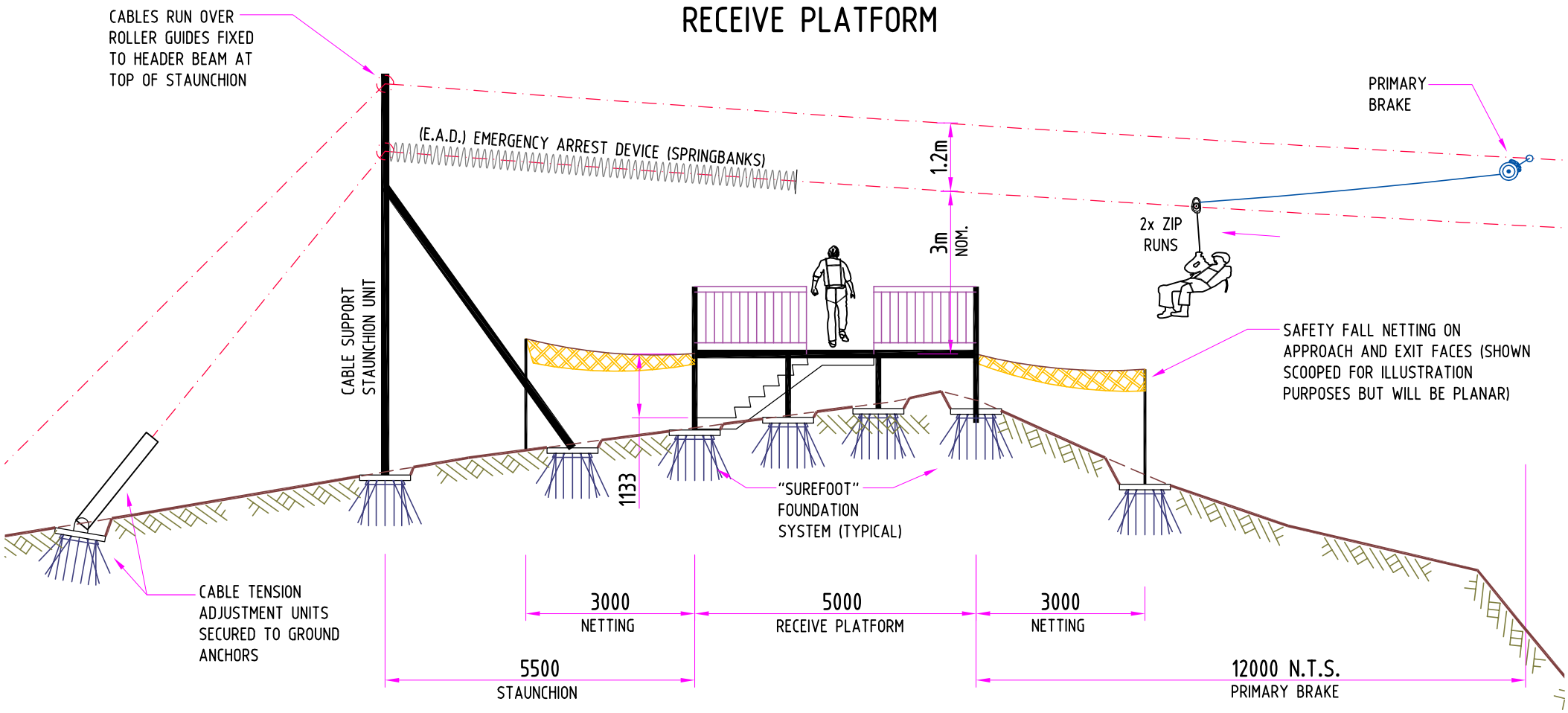
SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-14

STATION #6

RECEIVE PLATFORM



SCHEMATIC SIDE ELEVATION

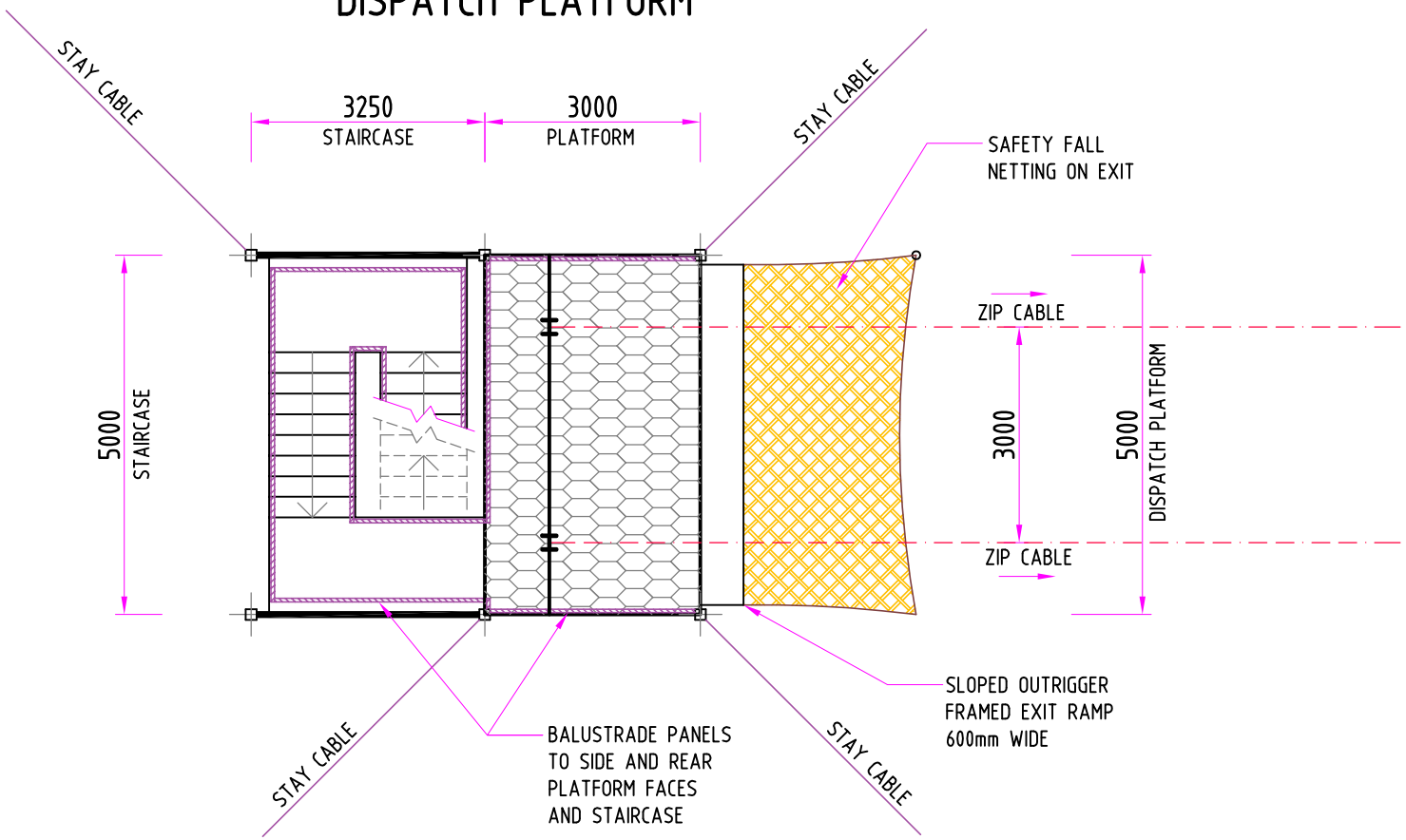
SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-15

STATION #7

DISPATCH PLATFORM

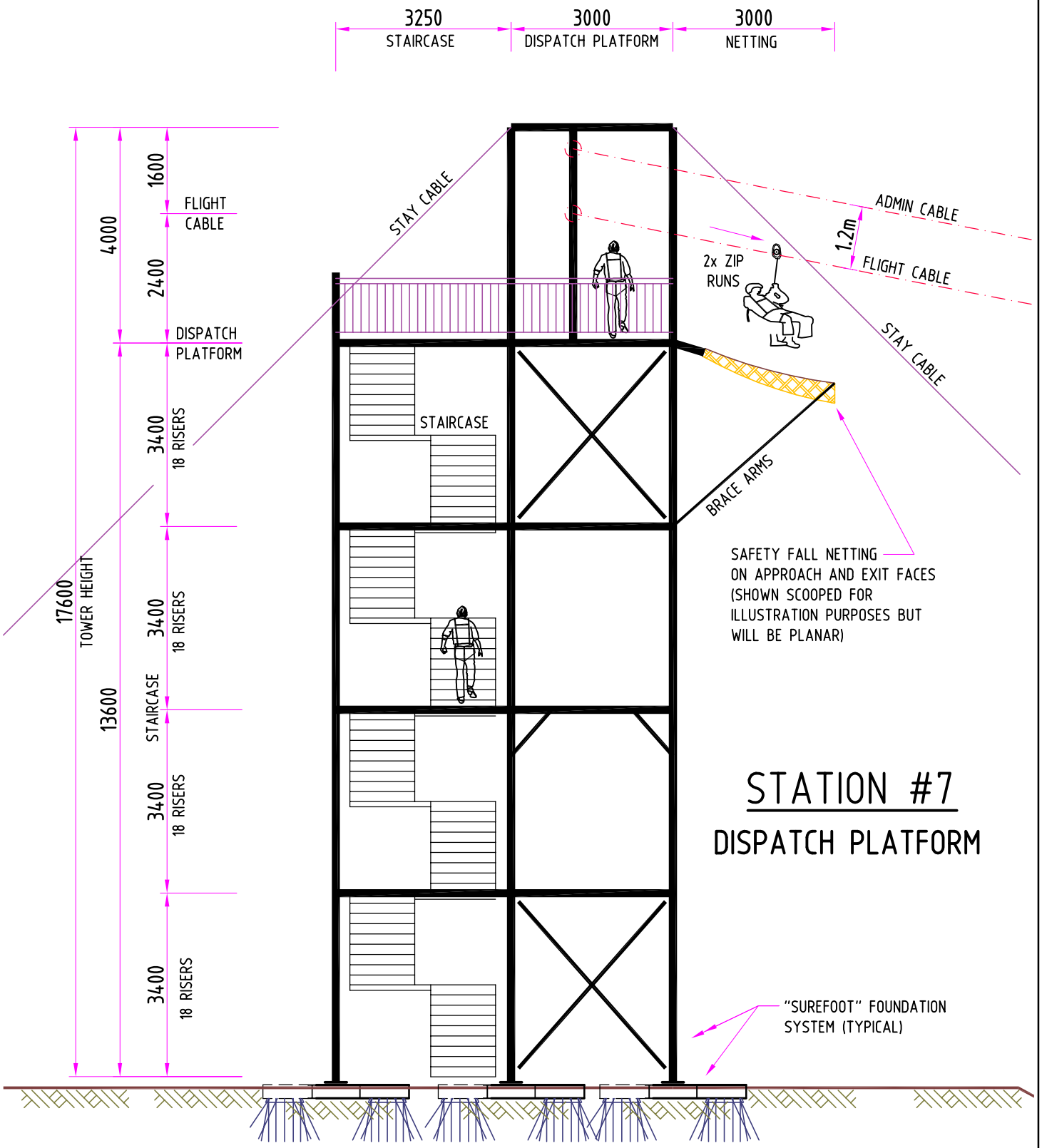


SCHEMATIC PLAN VIEW

SCALE 1:100

A4

ZIP SUPPORT P\L Unit 4, 4-6 Tengah Crescent PO Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJECT No: 374	DRAWING No: TC-16



SCHEMATIC SIDE ELEVATION

SCALE 1:100

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
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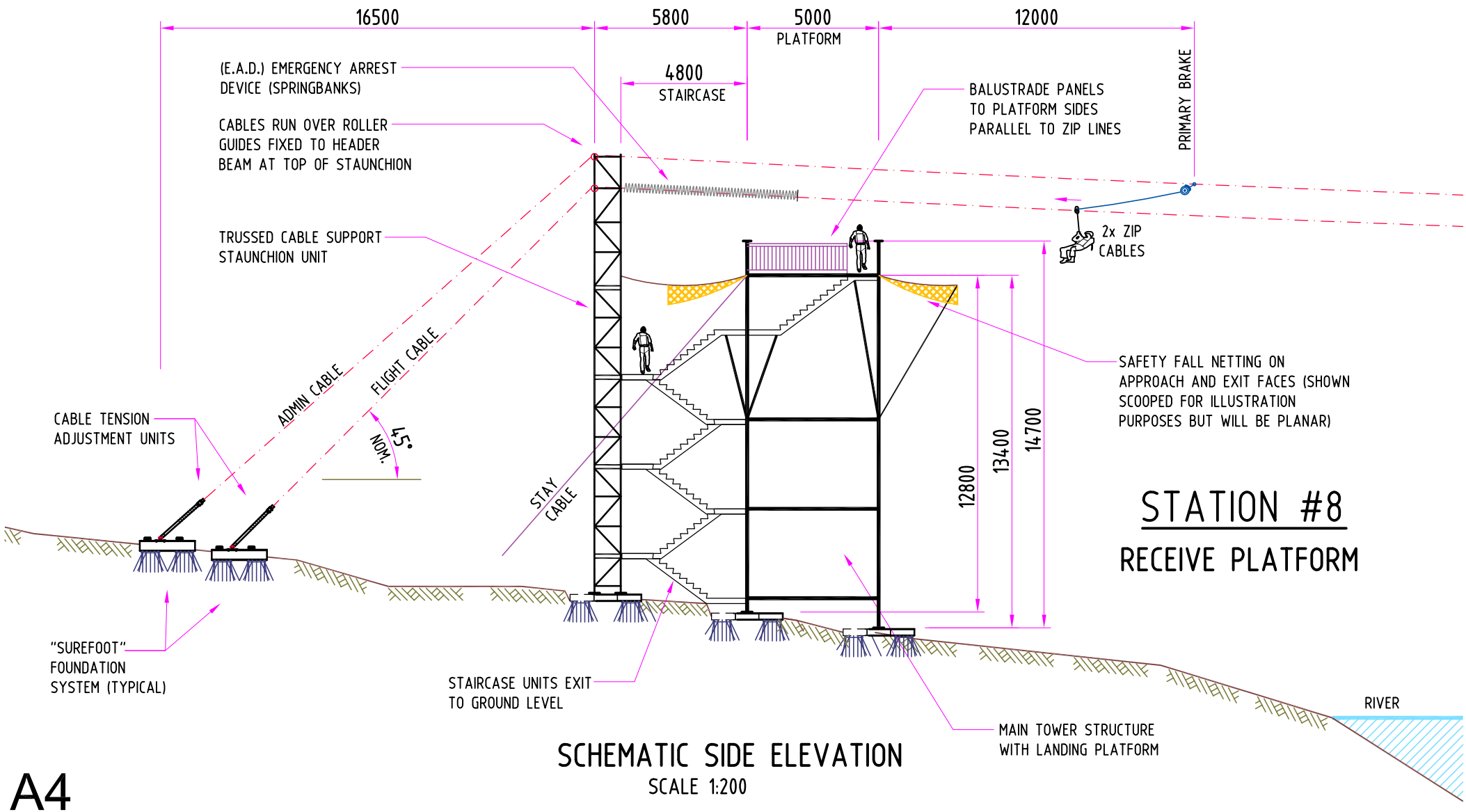


SCHEMATIC SIDE ELEVATION
SCALE 1:200

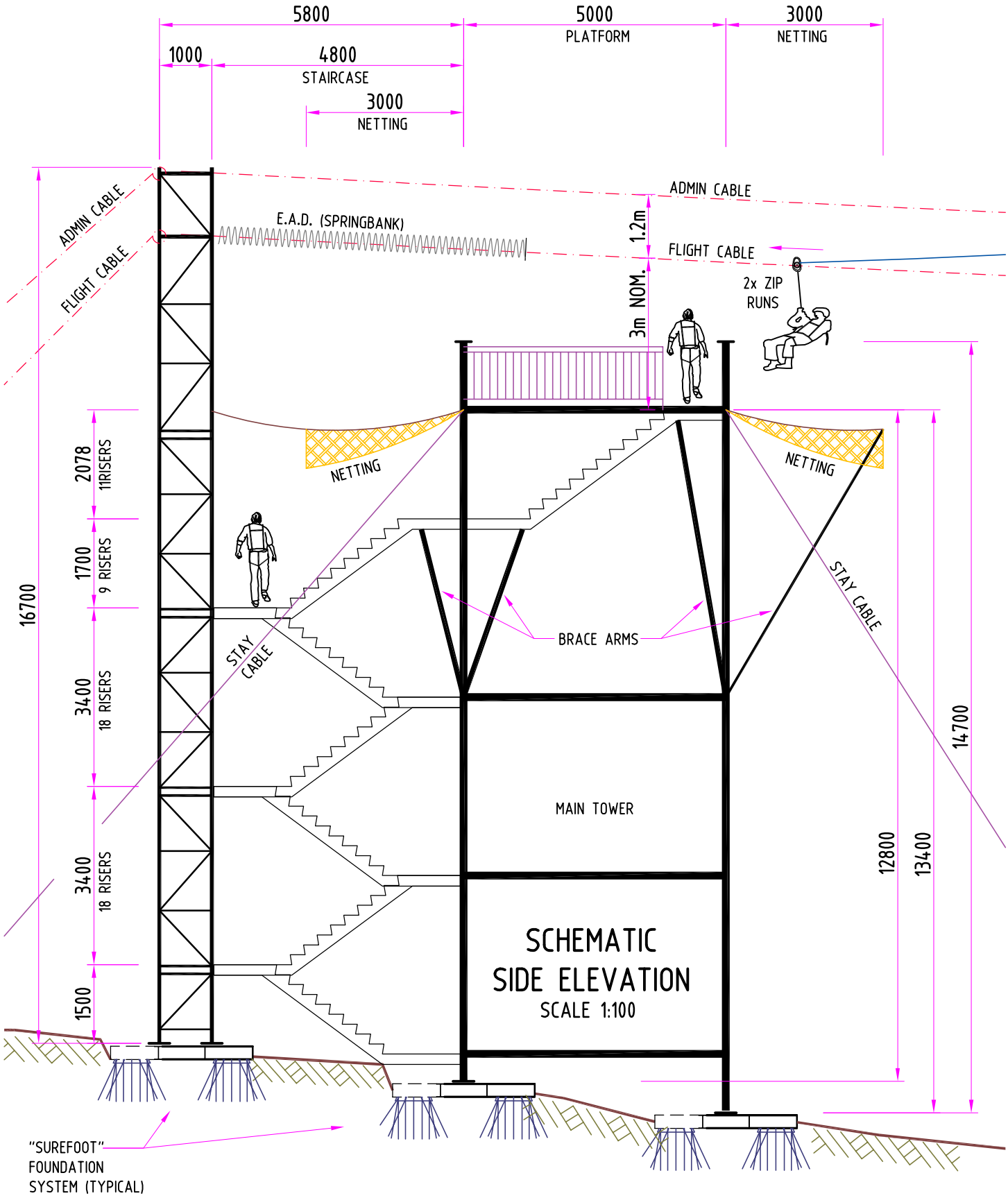
A4

ZIP SUPPORT P\L
Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

SKY PLAY ADVENTURES
HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-18



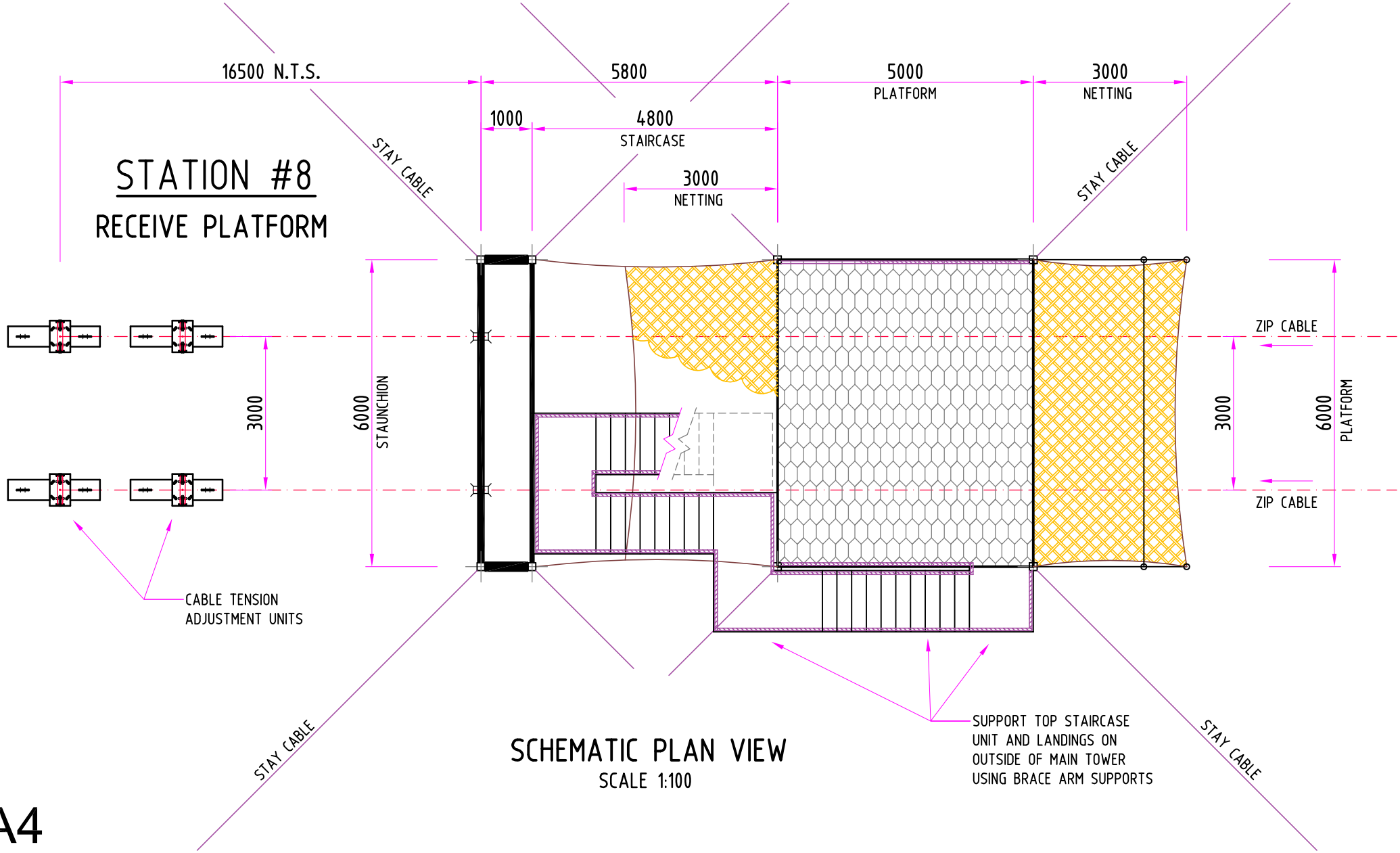
STATION #8

RECEIVE PLATFORM

NOTE: SAFETY FALL NETTING ON APPROACH AND EXIT FACES (SHOWN SCOOPED FOR ILLUSTRATION PURPOSES BUT WILL BE PLANAR)

A4

ZIP SUPPORT PIL Unit 4, 4-6 Tengah Crescent Box 135 Mona Vale NSW 1660 Tel: +61 2 9979 1016	SKY PLAY ADVENTURES HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND CONCEPT TOWER DESIGNS	FOR FINAL CONCEPT APPROVAL 01.08.2019		
		SCALE: AS SHOWN	PROJ. No: 374	DRAWING No: TC-19



SCHEMATIC PLAN VIEW
SCALE 1:100

A4

ZIP SUPPORT P\L

Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016

SKY PLAY ADVENTURES
HUKA FALLS, WAIKATO RIVER, TAUPO, NEW ZEALAND
CONCEPT TOWER DESIGNS

ISSUED FOR FINAL CONCEPT APPROVAL 01.08.2019

SCALE:	PROJECT No:	DRAWING No:
AS SHOWN	374	TC-20

APPENDIX C - CARPARK AND ADMINISTRATION AREA DESIGN

1 SITE PLAN
- 1:200

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creative architecture

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Client:
SKY PLAY ADVENTURES.
201 KARETOTO, TAUPO.

Project:
NEW OFFICE & TOILETS

Layout:
Site plan

The Contractor: Must check all plans, dimensions & specifications before commencing any work. Any doubt, omission or ambiguity relating to these plans must be referred to Taupo Plan Service for clarification.

Copyright: "Taupo Plan Service 2001 Ltd" shall retain copyright of all documents & plans prepared by "Taupo Plans Service 2001 LM". The client is entitled to use or copy them for the purpose for which they were intended.

Confidential: These plans are confidential in accordance with the Building Act 2004, Section 217(2)(b).

Project:	Project No.:
NEW OFFICE & TOLIETS	1944
Status: Consent Plans	Scale @ A2:

Drawn:	Date:	Sheet No.:	Rev:
UKN	15/08/2019	1-02	

APPENDIX D - PHOTO-SIMULATIONS

Viewpoint 01 - Existing

VIRTUALVIEW
3D VISUALISATION SPECIALISTS

Easting: 1868965.645
Northing: 5717689.085
Elevation : 350.50m
Height of Camera : 1.4m
Orientation of View : N
Date of Photography : 22 July 2019
Time of Photography : 11:24am

Sky Play Adventures

Viewpoint 01

Version info: 0002
Date Printed: 02-08-2019

NOTES: The proposed is a 3D photo montage.
All photos were taken by LA4.
The camera positions are based on the xyz co-ordinates supplied via LA4 from surveyor.

Viewpoint 01 - Proposed

VIRTUALVIEW
3D VISUALISATION SPECIALISTS

Easting: 1868965.645
Northing: 5717689.085
Elevation : 350.50m
Height of Camera : 1.4m
Orientation of View : N
Date of Photography : 22 July 2019
Time of Photography : 11:24am

Sky Play Adventures
Viewpoint 01

Version info: 0002
Date Printed: 02-08-2019
NOTES: The proposed is a 3D photo montage.
All photos were taken by LA4.
The camera positions are based on the xyz co-ordinates supplied via LA4 from surveyor.

Viewpoint 02 - Existing

VIRTUALVIEW
3D VISUALISATION SPECIALISTS

Easting: 1868939.716
Northing: 5718140.730
Elevation : 369.00m
Height of Camera : 1.4m
Orientation of View : SE
Date of Photography : 22 July 2019
Time of Photography : 1:45pm

Sky Play Adventures

Viewpoint 02

Version info: 0002
Date Printed: 02-08-2019

NOTES: The proposed is a 3D photo montage.
All photos were taken by LA4.
The camera positions are based on the xyz co-ordinates supplied via LA4 from surveyor.

Viewpoint 02 - Proposed

VIRTUALVIEW
3D VISUALISATION SPECIALISTS

Easting: 1868939.716
Northing: 5718140.730
Elevation : 369.00m
Height of Camera : 1.4m
Orientation of View : SE
Date of Photography : 22 July 2019
Time of Photography : 1:45pm

Sky Play Adventures
Viewpoint 02

Version info: 0002
Date Printed: 02-08-2019
NOTES: The proposed is a 3D photo montage.
All photos were taken by LA4.
The camera positions are based on the xyz co-ordinates supplied via LA4 from surveyor.

Viewpoint 03 - Existing

VIRTUALVIEW
3D VISUALISATION SPECIALISTS

Easting: 1869174.203
Northing: 5718872.893
Elevation : 341.00m
Height of Camera : 1.4m
Orientation of View : SE
Date of Photography : 22 July 2019
Time of Photography : 3:02pm

Sky Play Adventures

Viewpoint 03

Version info: 0002
Date Printed: 02-08-2019

NOTES: The proposed is a 3D photo montage.
All photos were taken by LA4.
The camera positions are based on the xyz co-ordinates supplied via LA4 from surveyor.

Viewpoint 03 - Proposed

VIRTUALVIEW
3D VISUALISATION SPECIALISTS

Easting: 1869174.203
Northing: 5718872.893
Elevation : 341.00m
Height of Camera : 1.4m
Orientation of View : SE
Date of Photography : 22 July 2019
Time of Photography : 3:02pm

Sky Play Adventures

Viewpoint 03

Version info: 0002
Date Printed: 02-08-2019
NOTES: The proposed is a 3D photo montage.
All photos were taken by LA4.
The camera positions are based on the xyz co-ordinates supplied via LA4 from surveyor.

APPENDIX E - DOC HUKA FALLS LAND INVENTORY SHEET

Land Inventory Sheet

Site Name:	Huka Falls	**Conservation Unit No.:**	60077
Status:	Scenic Reserve		
Area (ha):	104.9957	**File Reference:**	RES 011
Area Office:	Turangi/Taupo	**Map Reference:**	U17 795 805
Place:	Taupo Basin	**Management Plan:**	No
Local Authority:	Taupo District Council	**Ecological District:**	Atiamuri
Legal Description:	Section 2, Block XIV, Tatua Survey District.		

Special Conservation Values:	Very high visitor use. Huka Falls has national geopreservation significance.
Earth Data:	Riverbank, bluffs, Huka formation, pumice deposits, steep erosion gullies.
Flora:	Fivefinger-kohuhu forest, cabbage tree forest, kanuka-manuka scrub, shoreline turf herbfield.
Fauna:	Most common forest birds. Range of waterfowl along Waikato River.
Fishery Values:	Moderate.
Tangata Whenua Issues:	Information held in the domain of Ngati Tuwharetoa and Ngati Tahu.
Historic Resources:	Travel route, shelter, rock overhangs.
Site Numbers Present:	6433, 6437, 6438
Recreation:	Walking high, sightseeing high, mountain biking high, picnicking moderate. Rural natural 100%.

Facilities:	Walking tracks, viewpoints, on-site interpretation. Spa-Huka and Huka-Ariatiatia walkways through area. Toilets, picnic tables, car park (part of new reserve to be gazetted).
Animal Pests:	Possums, rabbits, rats, mustelids.
Plant Pests:	Wilding pines, wilding fruit trees, Himalayan honeysuckle (*Leycesteria formosa*), blackberry, gorse, broom (*Cytisus scoparius*) (*Cytisus scoparius*), willow, climbing spindle berry *(Celastrus orbiculatus)*. Refer Tongariro/Taupo Problem Plant Strategy.
Fences:	Well fenced along boundary with adjoining farm.
Access:	Through lease area (Patuiwi). Huka Falls Road. Foot access via Aratiatia Scenic Reserve Walkway.
Concessions:	TT/161/WAT - Taupo Bungy and Scenic River Cruises (application), TT/188/GUI – Chris Jolly Outdoors.
Other Issues:	Lease held by the department from Patuiwi (annual rental paid). Mountain biker/walker conflict. Pressure for tourism development. Jet boating noise and wash impacts on banks. Very high use area adjacent Huka Falls 900,000 visitors per annum. Area and facilities on true left of river awaiting gazettal as reserve (refer conservation unit 60141). High rate of vandalism. Taupo District Council water supply easement required.

Management Priority: Maintain recreation facilities. Continue wilding pine removal. Monitor visitor use, control climbing spindle berry *(Celastrus orbiculatus)*. Ensure TDC water supply easement is documented.

Management Work Done: Track/site maintenance. Wilding pine removal on logging scale. Climbing spindle berry (*Celastrus orbiculatus*) control started 1997/1998. Possum control. Major native revegetation programmes. Track visitor surveys. Major site upgrade completed 1990 (new bridge). Major track upgrade (Taskforce Green) 1993-1995. Interpretation panels, viewing platforms (Hannah's sponsorship) 1995. Visitor surveys summer 1995/1996 assisted by Wairakei Tourist Park. Upgrade of Spa-Huka Walkway including monitoring. Climbing spindle berry (*Celastrus orbiculatus*) control. Sewage disposal pipes from new Huka Falls toilet located in reserve.

Last Update: January 2001

Bibliography: Wairakei Tourist Park Committee, Wairakei Tourist Park visitor facility overlooking Huka Falls., DOC, 1992

Value:	**Historic:**	1	**Conservation:**	2	**Recreation:**	1

Appendix 6. Assessment of Ecological Effects

ASSESSMENT OF ECOLOGICAL EFFECTS FOR A PROPOSED ZIP LINE TOUR NEAR HUKA FALLS

Wildlands

R5077

ASSESSMENT OF ECOLOGICAL EFFECTS FOR A PROPOSED ZIP LINE TOUR NEAR HUKA FALLS

View of kōhūhū-kānuka-whauwhaupaku forest within Huka Falls Scenic Reserve from Ferguson's Gully track. 26 June 2019.

Contract Report No. 5077

August 2019

Project Team:
Angela Simpson - Report author
William Shaw - Project management

Prepared for:
Sky Play Adventures
Taupō

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Reviewed and approved for release by:

W.B. Shaw
Director/Principal Ecologist
Wildland Consultants Ltd

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1. INTRODUCTION

Sky Play Adventures are proposing to establish a series of zip lines and a river tour, approximately 4.5 kilometres north of Taupō township. The proposed location of the operation is within Huka Falls Scenic Reserve and also on the opposite side of the Waikato River within land administered by the Department of Conservation. Sky Play Adventures commissioned Wildland Consultants to prepare an assessment of the potential ecological effects of the proposed tour and an assessment of opportunities to undertake ecological restoration of indigenous vegetation and habitats at the site.

This report provides an assessment of the ecological values of the site; potential ecological effects of the tour and associated structures including zip lines; and options for avoiding, minimising, and mitigating potential adverse effects. Opportunities for ecological restoration are also addressed.

2. METHODS

2.1 Overview

Existing information relevant to the site was collated and reviewed. Following a meeting with the client, a site visit was undertaken to map, describe, and assess the ecological values of the site. An assessment of ecological effects was prepared which includes options to avoid, minimise, or mitigate any adverse effects of the tour and provides options for ecological restoration and enhancement.

2.2 Review of existing information

A preliminary meeting was held with the client on 5 June 2019, to develop an understanding of the proposed development.

Existing information on the site, surrounding environment, and ecological restoration projects within the surrounding area was compiled and reviewed.

The Department of Conservation Bioweb Database of threatened and uncommon plant species (version received 18 January 2019) was accessed in July 2019 to check for records within the vicinity of the site.

The Department of Conservation Bat Database was accessed in July 2019 for records within the vicinity of the site. A targeted field survey for bats was beyond the scope of this project.

A desktop assessment was undertaken of indigenous lizard species which may be present in and near the site. This involved evaluation of previous records in the area from the Department of Conservation's Bioweb Herpetofauna Database and evaluation of habitats present in the area and its potential suitability for relevant lizard species. A targeted field survey for reptiles was beyond the scope of this project.

The New Zealand Freshwater Fish Database (https://nzffdms.niwa.co.nz/) was accessed in July 2019 for records of aquatic fauna within the vicinity of the site.

2.3 Site visit

High resolution aerial photographs of the site (Taupō District Council Imagery 2016) were obtained and printed at a scale suitable for field use (1:1,500).

A site visit was undertaken on 26 June 2019 to evaluate the ecological values of the site and the potential ecological effects of the proposed operation. The proposed location for each zip line tower and walking track was visited on foot.

Vegetation and habitat types present within the site were identified, described, and mapped using aerial photographs for the site. Structural classes for vegetation and habitat types follow Atkinson (1985). Vegetation and habitat types, and key features identified during the site visit were later digitised using ArcGIS 10.6.

All vascular plant species observed during the site visit were recorded and are listed in Appendix 1.

Observations of indigenous and exotic avifauna were noted at the site during the site visit and are listed in Appendix 2. Additional avifauna records from 2017-2019 within about seven kilometres of the project area were obtained from eBird in July 2019.

Representative photographs were taken of the vegetation and habitat types, and views from key locations. Site photographs are provided throughout the report and in Appendix 3.

2.4 Assessment of potential effects

Ecological values of the site and potential ecological effects of the proposed tour were assessed. Potential ecological effects during both construction and ongoing operation were considered.

Options to avoid, minimise, or mitigate any potential adverse effects of the tour were evaluated. Options were developed for ecological restoration and enhancement of ecological features and values at the site and in the surrounding area.

3. OVERVIEW OF PROPOSED ZIP LINE OPERATION

3.1 Overview

This section has been compiled from information supplied by the client.

Sky Play Adventures propose to establish a river tour to showcase the story of the Waikato River. Aims of the tour are to increase the awareness of a wide range of people about the cultural significance of the river and the natural environment. Zip lines will be used as a way for people to experience the wonder of the river from another angle. The tour is intended to be suitable for a range of ages and designed with the intention of minimising the fear of participants in relation to height.

The proposed tour will include five zip lines which will cross above the Waikato River and a series of walking tracks (refer to Figure 1). A shuttle bus service will be used to transport participants from a welcome office to the start and end of the tour. The tour will start on the true right side of the Waikato River near the eastern margin of Huka Falls Scenic Reserve. The tour route will zig-zag downstream above the river and finish on the true left side of the river. For each section of zip line there will be a launching and landing platform positioned in relation to the topography of the site.

To enhance the participant experience Sky Play Adventures are eager to undertake activities to enhance the indigenous vegetation and habitats within the site. They have identified that there are likely to be opportunities to collaborate with Greening Taupō in restoring the Waikato River Corridor.

3.2 Footprint of the proposed operation

The venture will require the following features to be developed:

- Platforms and towers which will act as launching and landing locations for the zip lines. Five of these will be within the Huka Falls Scenic Reserve (SNA 216) and three (Platforms 2 and 5 and Tower 8) will be on the true left side of the river.
- Wire cable for the five sections of zip lines between the platforms and towers.
- Existing tracks (Huka-Aratiatia Walkway; total length of *c.*152 metres) will be used for a section of the tour between Platform 6 and Tower 7, and from Tower 10 to the shuttle bus stop or finish of the tour (Huka-Aratiatia Walkway, Te Totara Gully, Ferguson's Track; total length of *c.*890 metres) on Karetoto Road. Two sections of walking track will be constructed to intersect with the existing track between Platform 6 and Tower 7. An old track will be upgraded for the section of the tour between Platforms 3 and 4.
- A small pick-up area may be developed for the shuttle bus at the end of the tour. The location of this is yet to be confirmed although it will not be within the Scenic Reserve.

Tours will be run in groups of 10 people. It is estimated that 40,000 to 60,000 people will participate in the tours per year.

No toilet facilities will be developed along the tour route or within the Scenic Reserve. Tours will be undertaken during daylight hours only (about 8am to 5pm or 6pm depending on the time of year).

3.3 Construction methods

The tour route has been planned to enable the zip line to travel in a downriver direction based on differences in elevation of the hillslopes and the zip line platforms.

Platforms and towers will be constructed in relation to the topography of the site. The height of the launching and landing platforms of the proposed structures varies from *c.*0.8-13.6 metres above ground level (refer to Table 1).

Table 1: Height (metres) of the platforms for proposed zip line structures.

Structure	Approximate Height (m)
Tower 1	5.1
Platform 2	1.7 and 6.8
Platform 3	2.0
Platform 4	0.8
Platform 5	0.8 and 7.6
Platform 6	1.2
Tower 7	13.6
Tower 8	12.8

The footprint of each structure will be approximately 5.0 metres by 5.0 metres. To minimise the footprint of the structures, Platform 2 will have two levels: the landing platform for the incoming zip line from Platform 1 and the launching platform for the outgoing zip line towards Platform 3. Platform 5 will also have two levels - the landing platform for the incoming zip line from Platform 4 and the launching platform for the outgoing zip line towards Platform 6. A staircase - approximately 4.8 metres by 3.25 metres - will be required for Platforms 2 and 5, and Towers 1, 7, and 8. A small set of stairs to ground level will be required for Platforms 2, 3, 4, 5, and 6.

Sections of zip line will vary from *c.*182 to 572 metres (Table 2). Wire cables will pass above the platforms at *c.*3.2-15.8 metres above ground level and be fastened to the ground using a combination of stay cables, staunchions, cable support units, and cable tension units.

Table 2: Length (metres) of the proposed sections of zip line.

Section of Zip Line	Approximate Length (m)
Tower 1 - Platform 2	265
Platform 2 - Platform3	182
Platform 4 - Platform 5	264
Platform 5 - Platform 6	211
Tower 7 - Tower 8	572

Towers will be constructed from timber and steel (clad with timber). Safety barriers, balustrades, or fences will be attached to the towers to deter the general public from accessing the zip lines after hours.

Equipment and materials required to build the towers and tracks will be carried in by foot or lowered into place using a helicopter. A helicopter will be used in preference for transporting materials to locations within the Huka Falls Scenic Reserve. In some cases, sections of the towers may be constructed offsite and lowered into place by helicopter.

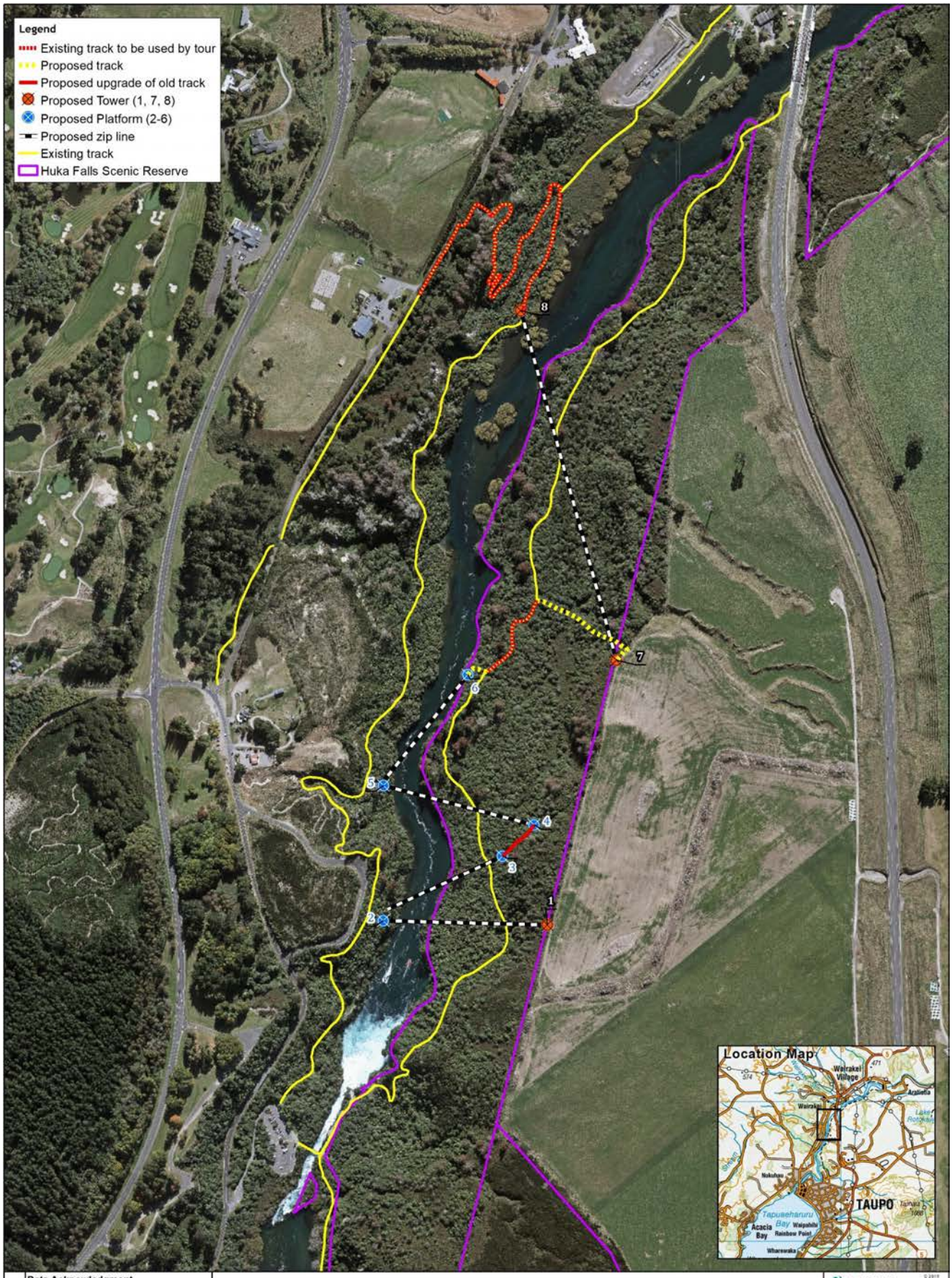

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Figure 1. Overview of proposed tour route, Huka Falls

0 100 200 m

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Scale:	1:5,500
Date:	30/07/2019
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Temporary lead lines for the zip line will be laid using a helicopter. Then the permanent heavy gauge zip line will be laid by helicopter and fastened into position. Dead fall and small branches of vegetation which are within the safe operating area of the zip line will be assessed and trimmed as required.

Two walking tracks are to be formed. These tracks - *c*.295 metres total length and *c*.1.0 metre-wide - will have a 'hard' surface laid, such as pumice or gravel. Wooden steps will be constructed in sections of steeper terrain. Drainage will be installed along the proposed tracks. Some access routes will be required for maintenance.

4. ECOLOGICAL AND STATUTORY CONTEXT

4.1 Overview

The proposed operation will be undertaken on both sides of the Waikato River between Huka Falls and State Highway 1. This site is approximately 4.5 kilometres south of Taupō township, within Atiamuri Ecological District, Taupō District, and Waikato Region. The proposed operation will utilise existing tracks, and establish towers, zip lines, and an additional track within Huka Falls Scenic Reserve. Five proposed zip lines will span the Waikato River.

4.2 Atiamuri Ecological District

The following is based on Wildland Consultants (2009) and Spring-Rice (1996).

Atiamuri Ecological District (*c*.219,559 hectares) is centred on Atiamuri village. The western boundary is roughly between Horohoro Bluffs, Mangakino, Whakamaru, and Marotiri. The eastern boundary is roughly between Rerewhakaitu and Iwitahi. The southern boundary is near to Poihipi Road in the west and to the north of Taupō township and Tauhara in the east. The northern boundary roughly follows State Highways 38 and 5 to the Horohoro Bluffs.

<u>Landforms</u>

Landforms of Atiamuri Ecological District are characterised by volcanism and the Waikato River system.

The most striking visual feature of the Ecological District, particularly on the eastern side are steep-sided, more or less flat-topped rhyolite domes, formed by the extrusion of rhyolitic magma subsequently overlain with volcanic ash from the Taupō eruption. There are also rhyolite domes within the hilly landscape from Atiamuri south towards Lake Taupō.

South of the Waikato River are deeply dissected tephra deposits of the Taupō eruption which overlay the tilted ignimbrite sheet. The Reporoa Plains developed from the deposition of alluvial material following impoundment of the Waikato River by material ejected in the Taupō eruption 26,500 years B.P.

Soon after exiting Lake Taupō, the Waikato River becomes confined between steep cliffs of silicified sediments before plummeting *c.*15 metres over the Huka Falls. Numerous smaller rivers and streams, many spring-fed, emerge from the surrounding hills to join the Waikato River. Within Atiamuri Ecological District there are significant wetlands alongside the Waikato River and a sequence of impounded lakes behind hydro-electric dams.

Climate

Atiamuri Ecological District typically has warm, sometimes dry summers and cool winters with frequent ground frosts. Annual rainfall is *c.*1,200-1,600 millimetres (McEwen 1987) with a winter maximum. The prevailing wind is southwesterly, but northwesterly, westerly, and southerly winds are also common. Spring and summer are the windiest seasons (Spring-Rice 1996).

Vegetation

Prior to human arrival vegetation was mostly lowland mixed podocarp forest with submontane podocarp/broadleaved forest at higher-altitude sites. An extensive wetland occupied the Reporoa Basin, with numerous smaller wetlands scattered throughout the Ecological District. The numerous geothermal sites (such as Wairakei) supported distinctive scrub, shrubland, fernland, and mossfield vegetation. More than 90% of primary forest was destroyed by centuries of Māori fires, and by 1840, primary forest was generally restricted to the rhyolite domes and steep gullies. In 1840 approximately 90% of Atiamuri Ecological District was in fire-maintained secondary vegetation of bracken fernland, tussockland, and scrub (Leathwick *et al.* 1995).

Vegetation in the Ecological District changed little after initial European settlement until the early 1900s. From that time to the present, the combined effects of logging, land clearance, drainage and fires have removed 93% of the indigenous vegetation (Leathwick *et al.* 1995). Most has been converted to exotic pasture and plantation forests. The sequence of impounded lakes behind hydro-electric dams on the Waikato River have created significant aquatic habitats.

Introduced pest plants are common throughout the district. Grey willow (*Salix cinerea*) and crack willow (*Salix fragilis*) have extensively colonised remaining wetlands and river/lake margins. Wilding pines (*Pinus* spp.) are a particular threat in geothermal areas (Spring-Rice 1996).

Fauna

Early European accounts record the presence, and use by Māori, of indigenous kōkopu (*Galaxias* spp.), īnanga (*Galaxias maculatus*), and eels (shortfin (*Anguilla australis*) and longfin (*Anguilla dieffenbachii*)) in the streams and rivers. Kākahi (freshwater mussel, *Echyridella menziesi*) and kōura (freshwater crayfish, *Paranephrops planifrons*) were also gathered for food. The introduction of trout (rainbow (*Oncorhynchus mykiss*) and brown (*Salmo trutta*)), rudd (*Scardinius erythrophthalmus*), and goldfish (*Carassius auratus*) has had significant effects on aquatic ecosystems.

An extensive range of bird species was present in the Ecological District at time of European settlement and many were important food sources for Māori. Subsequent loss of habitat and introduction of predators has caused a decline in bird numbers and species. However, common forest birds are present and several rare/threatened indigenous bird species still occur here including: North Island kōkako (*Callaeas cinerea wilsoni*; At Risk-Recovering, as per Robertson *et al*. 2017), North Island brown kiwi (*Apteryx mantelli*; At Risk-Declining), New Zealand dabchick (weweia, *Poliocephalus rufopectus*; At Risk-Recovering), and spotless crake (pūweto, *Porzana tabuensis tabuensis*; At Risk-Declining).

Pekapeka (long-tailed bats, *Chalinolobus tuberculatus* "North Island"; Threatened-Nationally Critical, as per O'Donnell *et al*. 2017) are also present (Smith *et al.* 2017).

Indigenous brown skinks (*Oligosoma zelandicum*) and spotted skinks (*Oligosoma lineoocellatum*) were common in the Ecological District in the 19th century but the arrival of ship rats (*Rattus rattus*) and Norway rats (*Rattus norvegicus*) decimated skink populations. Geckos were apparently always uncommon, and have not been recorded for many decades (Spring-Rice 1996).

4.3 Huka Falls Scenic Reserve

Huka Falls Scenic Reserve covers *c.*116 hectares on the true right side of the Waikato River, between Lake Aratiatia in the north and Owen Delany Park in the south. The Reserve is generally less than 270 metres wide, from the edge of the Waikato River to the inland margin.

Huka Falls Scenic Reserve is also recognised as a Significant Natural Area (SNA 216 - Huka Falls Scenic Reserve) in the Taupō District Plan (Taupō District Council 2019) and is described in Wildland Consultants (2014a).

The Huka Falls are a site of national geopreservation significance and popular tourist site (Department of Conservation 2002). The Waikato River narrows from about 50-100 metres wide upstream to flow through the canyon at Huka Falls which is about 220 metres long and only about 15 metres wide. This constriction of the river creates a turbulent and fast flow of water over the falls at approximately 220,000 litres per second.

Vegetation types present within the reserve have previously been described as:

- Whauwhaupaku (*Pseudopanax arboreus*)-kōhūhū (*Pittosporum tenuifolium*) forest
- Tī kōuka (*Cordyline australis*) forest
- Kānuka (*Kunzea robusta*)-mānuka (*Leptospermum scoparium* agg.) scrub
- And, shoreline turf herbfield (Department of Conservation 2002).

A range of waterfowl and common forest birds have been recorded at this site previously (Department of Conservation 2002).

Pest plants recorded at this site include wilding pines, Himalayan honeysuckle (*Leycesteria formosa*), blackberry, gorse (*Ulex europaeus*), broom (*Cytisus scoparius*), willow, and climbing spindleberry (*Celastrus orbiculatus*) (Department of Conservation 2002).

Pest animals recorded at this site include brushtail possum (*Trichosurus vulpecula*), European rabbit (*Oryctolagus cuniculus cuniculus*), rats, and mustelids (Department of Conservation 2002).

4.4 Huka Falls (true left side)

An area of *c.*38 hectares on the true left side of the Waikato River alongside Huka Falls is also administered by the Department of Conservation but is awaiting gazettal (Department of Conservation 2002) and is not recognised as an SNA in the Taupō District Plan (Taupō District Council 2019). Whauwhaupaku-kōhūhū forest and kānuka-mānuka scrub occur within this area (Department of Conservation 2002).

A geothermal spring occurs on the margin of the Waikato River near the Hall of Fame Stream (Wildland Consultants 2014b). A small population of *Christella* aff. *dentata* ("thermal") (At Risk-Naturally Uncommon as per de Lange *et al.* 2018) occurs to the south of this confluence (Wildland Consultants 2014b). This geothermal spring is part of the Wairakei Geothermal Field (ibid.).

Similar pest plants and pest animals have been recorded at this site as within the Huka Falls Scenic Reserve (Department of Conservation 2002).

4.5 Upper Waikato River

The Waikato River is of very considerable cultural significance.

The Waikato River is the longest (425 kilometres long) river system in New Zealand. The river flows from Lake Taupō to the west coast at Port Waikato.

The ecology of the river varies in relation to changes in land use and human pressures along the river. Rapids and gorges would have originally characterised the upper and mid-reaches of the Waikato River.

Electricity generation is a major cause of changes in the river habitat. Eight dams have converted sections of the river above Karapiro to lakes or very slow-flowing environments. Parts of the river above Karapiro which have retained fast-flowing water experience rapid fluctuations in water level due to hydroelectric operations. In addition, there is some discharge of heat into the river from a geothermal plant (Environment Waikato 2008).

4.6 Ecological restoration in the area

Since 2014, restoration activities within the vicinity of Huka Falls Scenic Reserve and Taupō township have been undertaken by a collaborative organisation called

"Greening Taupō"[1]. Community partners of Greening Taupō are Project Tongariro, Kids Greening Taupō, Predator Free Taupō, Tūwharetoa Māori Trust Board, Taupō District Council, Bike Taupō, and Waikato Regional Council. Prior to this, independent conservation and restoration activities were undertaken by relevant parties such as the Department of Conservation, regional and district councils, and individual landowners.

Greening Taupō facilitates more than six projects in and around the Taupō region[1]. One of the major projects is the "Waikato River Corridor". This corridor includes land adjacent to the Waikato River from the State Highway 1 Taupō bypass bridge to the Control Gates Bridge. Key areas within the corridor are Department of Conservation reserves, Taupō District Council Reserves, Hipapatua (formally Reids Farm Recreation Reserve) and Owen Delany Park (Taupō District Council). This is an important wildlife corridor and one of the largest areas of indigenous habitat in close proximity to Taupō township.

Key tasks for the Waikato River Corridor are the control of pest plants, planting of indigenous plants, control of pest animals, enhancement of recreation opportunities, and improvement of cultural connections to the land.

The skills and expertise of many community partners are utilised for the Greening Taupō projects including Bike Taupō, the local tramping club, the Greening Taupō Wicked Weeders, and Kids Bike Taupō.

Restoration planting has been undertaken within the Waikato River Corridor for many years with sponsors including McDonalds and more recently the Hilton Lake Taupō Hotel.

In early 2015, Greening Taupō secured funding of $100,000 (spread over three years) from the Waikato Catchment Ecological Enhancement Trust (WCEET) for restoration work alongside the Waikato River above and below the Huka Falls. Since then, many of the wilding pines within this area have been poisoned or felled and a large area has been planted with indigenous species alongside the Rotary Track. A large planted area is being cared for by the local tramping club and support from the Greening Taupō Wicked Weeders.

Additional restoration undertaken with funding from the Waikato River Clean-up Trust has also been initiated below the Huka Falls to Aratiatia. Bike Taupō have been contracted by Greening Taupō to control wilding pines and to assist with the preparation of planting sites. Planting of indigenous species has been undertaken alongside the Aratiatia bike/walking track as a community event. Another site is being prepared for planting in 2019.

Additional restoration planting has been undertaken in several places along the nearby Wairakei Drive in 2017 and 2018.

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[1] Greening Taupō (https://www.greeningtaupo.org.nz/). Accessed on 19 July 2019.

Other than wilding pines, there is currently no active trapping of pest animals or additional pest plant control within the stretch of river between the State Highway 1 Taupō bypass bridge and Huka Falls.

4.7 District plan provisions

Part of the proposed operation will be within Huka Falls Scenic Reserve, which is recognised as SNA 216 - Huka Falls Scenic Reserve in the Taupō District Plan (Taupō District Council 2019). Under the district-wide rules (Taupō District Plan, Section 4e.6.1), indigenous vegetation clearance within this SNA is a permitted activity because the vegetation clearance is within an area administered by the Department of Conservation and is for the purpose of structures and pedestrian use (Section 4e.6.1 Criteria i.f).

5. VEGETATION AND HABITATS AT THE SITE

Six broad vegetation and habitat types were identified based on vegetation structure and composition. Vegetation and habitats are mapped in Figure 2 and listed in Table 3, with descriptions of each type provided below.

Table 3: Vegetation and habitat types present at the site.

Vegetation and Habitat Type	
1.	Kōhūhū-kānuka-whauwhaupaku forest
2.	Whauwhaupaku-whekī-kōhūhū forest
3.	Tī kōuka forest
4.	Blackberry vineland
5.	Crack willow-grey willow treeland
6.	Tasmanian blackwood forest

1. Kōhūhū-kānuka-whauwhaupaku forest

Forest (*c.*8 metres tall) dominated by kōhūhū, kānuka, and whauwhaupaku. The relative dominance of these three species varies within this unit. Other species which are common in the canopy are māhoe, whekī, whekī-ponga, and makomako. Kōwhai and mamaku occur near the river margins in places. Tī kōuka occurs locally except near the boundary with tī kōuka forest (Vegetation and Habitat Type 3), where it is particularly common. Patches of blackberry, gorse, and broom occur in places, particularly on the eastern margin. Dead standing and several live wilding pines are present.

2. Whauwhaupaku-whekī-kōhūhū forest

Forest (*c.*8 metres tall) dominated by whauwhaupaku, whekī, and kōhūhū. Other species which are common in the canopy are māhoe, makomako, kānuka, rangiora, and whekī-ponga. Kōwhai occurs near the river margins in places. Patches of dead standing wilding pines are present and some live wilding pines remain.

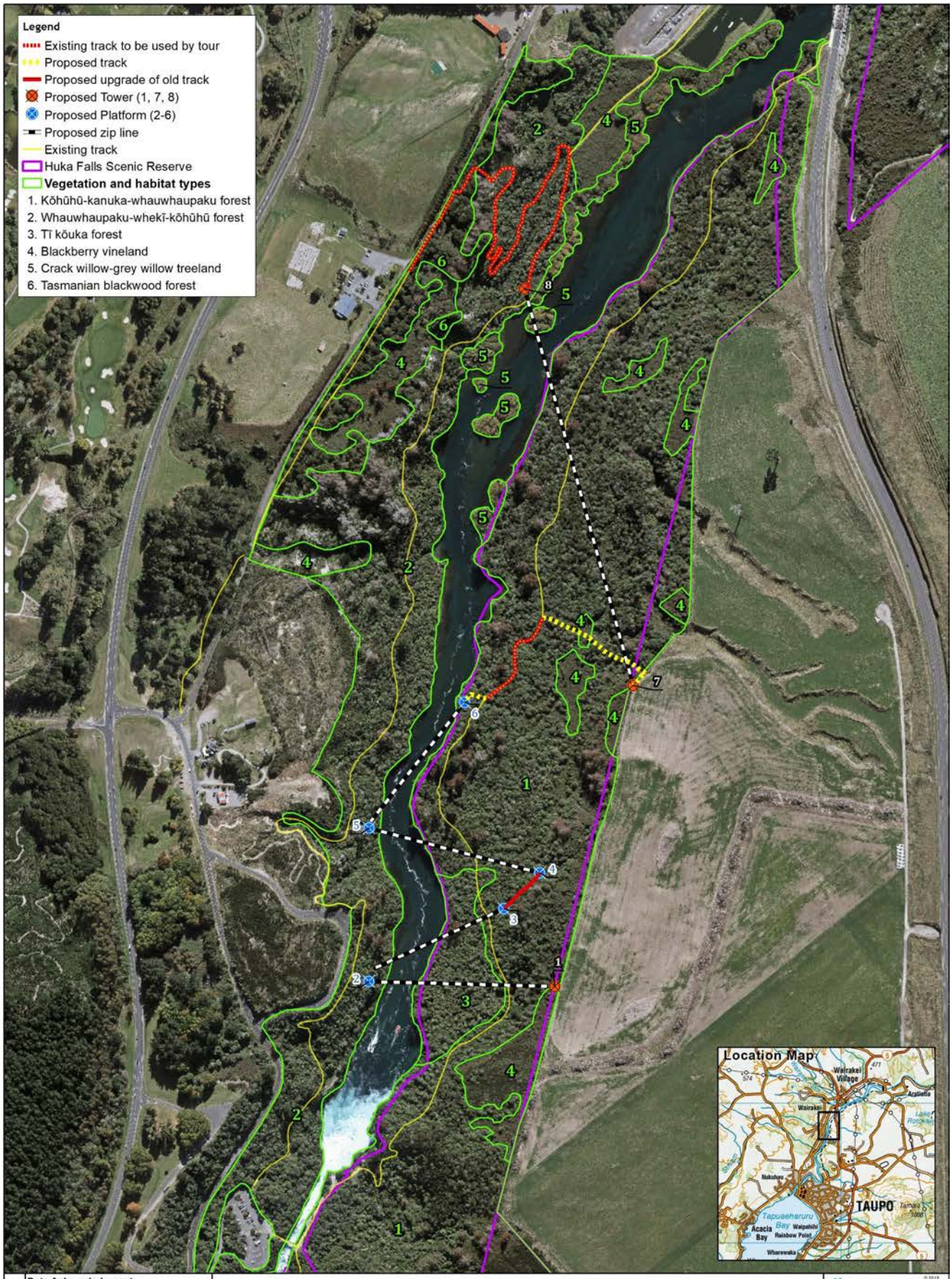

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Figure 2. Vegetation and habitat types within the site of the proposed tour, Huka Falls

0 100 200 m

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Date:	30/07/2019
Cartographer:	FM
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3. **Tī kōuka forest**

Forest dominated by tī kōuka (*c.*6 metres tall). There are scattered kōwhai, kānuka, and kōhūhū. A few kahikatea and a few dead standing wilding pines are present.

4. **Blackberry vineland**

This vineland is dominated by blackberry (*c.*2-3 metres tall) with bracken scattered throughout. Gorse, broom, and Himalayan honeysuckle are common. There is occasional Chinese privet (*c.*3 metres tall) and kōhūhū is scattered in places (*c.*6 metres tall).

5. **Crack willow-grey willow vineland**

Patches of crack willow and grey willow (both *c.*8 metres tall) occur along the margins of the Waikato River and on small islands within the river.

6. **Tasmanian blackwood forest**

Planted forest of Tasmanian blackwoods (*Acacia melanoxylon*) (*c.*10 metres tall). Naturalised saplings of Tasmanian blackwood are also present. Blackberry is common in the understorey. A few indigenous plant species are present including saplings of rimu and kōhūhū.

6. VEGETATION AND HABITATS AT SPECIFIC LOCATIONS

6.1 Overview

Descriptions of the vegetation and habitats present at each of the proposed tower, platform, and track locations are provided for the following sites shown in Figure 2:

- Tower 1.
- Platform 2.
- Platform 3.
- Track from Platform 3 to Platform 4.
- Platform 4.
- Platform 5.
- Platform 6.
- Track from Platform 6 to Tower 7.
- Tower 7.
- Tower 8.

6.2 Tower 1

The proposed start of the tour is near the eastern margin of Huka Falls Scenic Reserve. Vegetation within this location is vineland dominated by blackberry

(*c*.2 metres tall) (Plate 1), with occasional broom and gorse. Kōhūhū (*c*.6 metres tall) are present around the patch of blackberry vineland where the tower will be located.

Plate 1: View from proposed location of Tower 1 towards Platform 2 (in direction of arrow). 26 June 2019.

6.3 Platform 2

Platform 2 will be a combined landing platform for the zip line from Tower 1 and a launching platform for the zip line to Platform 3 (Plate 2).

Plate 2: Proposed location of Platform 2. 26 June 2019.

Vegetation at this location is forest comprising whauwhaupaku, whekī, and kōhūhū (*c*.6 metres tall) (Plate 3). There are occasional māhoe (*c*.5 metres tall) and rangiora (*c*.3 metres tall). There is a dense cover of kiokio and hangehange in the understorey.

Plate 3: View from proposed location of Platform 2 towards Platform 3. 26 June 2019.

6.4 Platform 3

Platform 3 is to be located at the lower end of an old forestry track. This will be a landing platform for the zip line from Platform 2 (Plate 4). Vegetation at this location is whauwhaupaku-māhoe forest (*c*.6 metres tall) with occasional tī kōuka and makomako (Plate 5). The understorey includes abundant Himalayan honeysuckle, and scattered ground ferns (hen and chicken fern, *Pneumatopteris pennigera*, and *Pellaea rotundifolia*).

6.5 Track from Platform 3 to Platform 4

A section of approximately 70 metres of an old forestry track (Plate 6) will be upgraded for use in the tour between Platforms 3 and 4. Vegetation along this track is forest of māhoe and whauwhaupaku (*c*.5 metres tall), with occasional patē, whekī, and tī kōuka. *Muehlenbeckia australis* is common in places. Ferns (including hen and chicken fern, hound's tongue fern, *Asplenium flaccidum*, and *Austroblechnum lanceolatum*) are scattered in the understorey in places.

Plate 4: View from proposed location of Platform 3 towards Platform 2. 26 June 2019.

Plate 5: Proposed location of Platform 3. 26 June 2019.

Plate 6: Old forestry track which will be upgraded for a track between Platforms 3 and 4. 26 June 2019.

6.6 Platform 4

Platform 4 is to be located towards the upslope end of an old forestry track. This will be a launching platform for the zip line to Platform 5 (Plate 7). Vegetation at this location is kōhūhū-māhoe forest (*c*.5 metres tall) with occasional whekī and tī kōuka (Plate 8). The understorey has very limited vegetation cover and is dominated by leaf litter.

6.7 Platform 5

Platform 5 will be a combined landing platform for the zip line from Platform 4 (Plate 9) and a launching platform for the zip line to Platform 6 (Plate 10).

This platform will be located on top of a cliff above the Waikato River, within an area which is currently dominated by kiokio. Whekī, whauwhaupaku, māhoe (*c*.6 metres tall), and horoeka occur around the patch of ferns.

6.8 Platform 6

Platform 6 will be a landing platform for the zip line from Platform 5. There is a patch of wind fallen kānuka at this location (Plate 11). Himalayan honeysuckle, and a few saplings of māhoe (*c*.2 metres tall) and Chinese privet are present. Kōhūhū, māhoe, and kānuka (*c*.5 metres tall) are present around the margins of the proposed location of Platform 6. Understorey species present include mingimingi, *Carex uncinata*, *Astelia fragrans*, and hound's tongue fern.

Plate 7: View from proposed location of Platform 4 towards Platform 5 (approximate location of Platform 5 is indicated by a circle). 26 June 2019.

Plate 8: Proposed location of Platform 4. 26 June 2019.

Plate 9: View from proposed location of Platform 5 towards Platform 6. 26 June 2019.

Plate 10: View from proposed location of Platform 5 towards Platform 6. 26 June 2019.

Plate 11: Proposed location of Platform 6. 26 June 2019.

6.9 Track from Platform 6 to Tower 7

It is proposed that participants will walk between Platform 6 and Tower 7. This walk will use a section (*c.*152 metres long) of the existing Huka-Aratiatia Walkway and require two sections of track to be developed.

The section of track to be developed from Platform 6 to the existing track is about 36 metres long. Vegetation within this route is forest of kōhūhū, māhoe, and kānuka (*c.*5 metres tall) with occasional horoeka, whauwhaupaku, kōwhai, ponga, and tī kōuka (Plate 12). Understorey species present include hangehange, mingimingi, Himalayan honeysuckle, rangiora, *Carex uncinata*, and hound's tongue fern.

Plate 12: Proposed location of track from Platform 6 to the existing Huka-Aratiatia Walkway. 26 June 2019.

The section of track to be developed from the existing track to Tower 7 is about 189 metres long. Vegetation within the lower half of this route is forest of kōhūhū and māhoe (*c*.8 metres tall) with scattered whekī and whekī-ponga (Plate 13). *Pneumatopteris pennigera* is common in the understorey, particularly along a shallow ditch. Other species present in the understorey include Chinese privet, *Pellaea rotundifolia*, *Carex uncinata*, and hound's tongue fern.

Plate 13: Lower half of the proposed track route from the existing Huka-Aratiatia Walkway to Tower 7. 26 June 2019.

Patches of blackberry vineland are present near halfway along the proposed route from Huka-Aratiatia Walkway to Tower 7 (Plate 14). There is occasional Himalayan honeysuckle, and Chinese privet amongst the blackberry.

Vegetation within the upper half of this proposed route is forest of kōhūhū and kānuka (*c*.8 metres tall), with local tī kōuka (Plate 15). Māhoe, Himalayan honeysuckle, whekī, whekī-ponga, and mingimingi are common in the understorey to *c*.4 metres tall. Blackberry, gorse, and bracken are interspersed throughout, particularly toward the upper slopes. Other species present in the understorey include rangiora, koromiko, Spanish heath, *Pellaea rotundifolia*, *Polystichum silvaticum*, and hound's tongue fern. Near the top of the hillslope the proposed route is within a steep-sided erosion gully.

Plate 14: View from a patch of blackberry vineland near halfway along the proposed track route from the existing Huka-Aratiatia Walkway to Tower 7. 26 June 2019.

Plate 15: View upslope on steeper section of the proposed route from the existing Huka-Aratiatia Walkway to Tower 7. 26 June 2019.

6.10 Tower 7

The proposed launch tower for the longest section of zip line is on the eastern margin of Huka Falls Scenic Reserve. Vegetation within the proposed location of this tower is vineland dominated by blackberry, bracken, and gorse (*c*.2-3 metres tall) (Plate 16). There are occasional kōhūhū (*c*.4 metres tall) on the downslope margin of this location.

Plate 16: View of proposed location of Tower 7 (indicated by circle). 26 June 2019.

6.11 Tower 8

Tower 8 is the final landing tower for the tour. It is located *c*.5-10 metres from the existing Te Totara Gully track. Vegetation within the proposed location of this tower is vineland dominated by blackberry (*c*.3 metres tall) intermixed with bracken (Plate 17). There is a dead standing whekī. Makomako, whekī (both *c*.5 metres tall), and mingimingi are present on the margins of the tower location. An emergent kānuka (*c*.9 metres tall) is present nearby. Whauwhaupaku, willow, kōhūhū, karamū, rangiora, kiokio, and patē are present near the river margins.

Plate 17: Proposed location of Tower 8. 26 June 2019.

7. FLORA

A total of 80 vascular plant species were recorded during the site visits, including 62 indigenous and 18 exotic plant species (listed in Appendix 1).

Two of the indigenous vascular plants recorded within the site, have a national-level threat classification (as per de Lange *et al.* 2018). Kānuka is classified as Threatened-Nationally Vulnerable and mānuka is classified as At Risk-Declining. These species are in the Myrtaceae plant family which is at risk of infection by myrtle rust (*Austropuccinia psidii*), a potentially devastating fungal disease which arrived in New Zealand in May 2017 and has no known treatment. Along with other species in the Myrtaceae family (including all species of rātā) the threat status of these species has been elevated as a precautionary measure based on the potential threat posed by myrtle rust. However, these species are otherwise common and widespread in the local environment.

A small population of *Christella* aff. *dentata* ("thermal") (At Risk-Naturally Uncommon) has previously been recorded on the true left side of the Waikato River, south of the confluence with the Hall of Fame Stream (Wildland Consultants 2014b). In New Zealand this fern species is generally restricted to frost-free areas with warmer climates such as Northland and Raoul Island. However, it survives at geothermal sites because of its ability to tolerate elevated soil temperatures.

8. FAUNA

8.1 Avifauna

Six indigenous and two introduced bird species were recorded during the site visits (Appendix 2). None of these birds are classified as Threatened or At Risk on a national-level (Robertson *et al.* 2017). They are considered to be common birds of secondary forest and riverside habitats.

Other birds which have been recorded at Huka Falls since 2017 are listed in Table 4. One of these species is a bird of terrestrial habitats which has a national-level threat classification of At Risk: pōpokatea (whitehead; At Risk-Declining). Four of these species favour freshwater habitats and have a national-level threat classification of At Risk: Australasian coot, little black shag, black shag (all At Risk-Naturally Uncommon), and pied shag (At Risk-Recovering).

In addition, kārearea/bush falcon (*Falco novaeseelandiae* "bush"; At Risk-Recovering) have been recorded on Lake Taupō foreshore (recorded on 22 October 2018, eBird https://ebird.org/hotspot/L4787356 accessed on 25 July 2019) and are likely to utilise habitats within the site from time to time.

Table 4: Birds recorded at Huka Falls between October 2017 and April 2019. Source: eBird[1].

Common Name	Scientific Name
Indigenous	
Australasian coot	*Fulica atra australis*
Black shag, kawau	*Phalacrocorax carbo novaehollandiae*
Kāhu, swamp harrier	*Circus approximans*
Little black shag	*Phalacrocorax sulcirostris*
Little shag	*Phalacrocorax melanoleucos brevirostris*
Miromiro, pied tomtit	*Petroica macrocephala toitoi*
New Zealand scaup, pāpango	*Aythya novaeseelandiae*
Paradise shelduck, pūtangitangi	*Tadorna variegata*
Pied shag	*Phalacrocorax varius varius*
Pōpokatea, whitehead	*Mohoua albicilla*
Shining cuckoo, pīpīwharauroa	*Chrysococcyx lucidus lucidus*
Spur-wing plover	*Vanellus miles novaehollandiae*
Warou, welcome swallow	*Hirundo neoxena neoxena*
White-faced heron	*Egretta novaehollandiae*
Exotic	
Californian quail	*Callipepla californica bunnescens*
Chaffinch	*Fringilla coelebs*
Common starling	*Sturnus vulgaris*
Dunnock	*Prunella modularis*
Goldfinch	*Carduelis carduelis*
Greenfinch	*Carduelis chloris*
Mallard	*Anas platyrhynchos*
Myna	*Acridotheres tristis*
Song thrush	*Turdus philomelos*
Yellowhammer	*Emberiza citrinella*

[1] Accessed on 25 July 2019 https://ebird.org/hotspot/L4046325.

8.2 Bats

It is highly likely that long-tailed bats (pekapeka; Threatened-Nationally Critical) utilise this site for roosting, foraging, and commuting. This is because long-tailed bats have been recorded in several locations nearby and in similar habitats. Long-tailed bats have been recorded near Wairakei Village (Smith *et al.* 2017) which is about four kilometres from the site at Huka Falls and in Tauhara Forest (Borkin and Parsons 2010) which is about nine kilometres from the site. The home range span of long-tailed bats is up to 19 kilometres (O'Donnell 2001).

Long-tailed bats utilise crevices and cavities in large trees or flaky tree bark for roosting (Sedgeley and O'Donnell 1999). They also roost in holes in dead standing trees (ibid.). Trees at the proposed site of the tour are suitable for bat roosts.

8.3 Herpetofauna

No reptiles or amphibians were observed during the site visit.

There are no recent records within 10 kilometres of this site in the Department of Conservation Bioweb herpetofauna database (Department of Conservation Bioweb herpetofauna database, accessed on 16 January 2019). Speckled skink (*Oligosoma infrapunctatum*; At Risk-Declining as per Hitchmough *et al.* 2016) was recorded near Wairakei Village in 1993 ((Department of Conservation Bioweb herpetofauna database, accessed on 16 January 2019). Auckland green gecko (*Naultinus elegans*; At Risk Declining) and forest gecko (*Mokopirirakau granulatus*; At Risk Declining) were recorded within 10 kilometres of the site of the proposed tour in about 1965 and 1930.

Understorey habitats (such as rocks and fallen branches) and leaf litter at the site may be suitable for terrestrial skink species. However, lizard populations are often in low densities in mainland New Zealand due to predation pressure and habitat modification. Indigenous lizards are highly cryptic and can be particularly difficult to find when in low numbers.

8.4 Aquatic fauna

Indigenous freshwater fish species recorded at Lake Aratiatia and likely to utilise the Waikato River below Huka Falls include longfin eel (*Anguilla dieffenbachii*; At Risk-Declining as per Dunn *et al.* 2018), shortfin eel (*Anguilla australis*), common bully (*Gobiomorphus cotidianus*), and common smelt (*Retropinna retropinna*)[1].

Exotic fish species recorded at Lake Aratiatia and likely to utilise the Waikato River below Huka Falls include brown bullhead catfish (*Ameiurus nebulosus*), rainbow trout, and goldfish[1].

[1] NZ Freshwater Fish Database (https://nzffdms.niwa.co.nz/), accessed July 2019.

Indigenous freshwater invertebrates including kōura (freshwater crayfish, *Paranephrops planifrons*) and freshwater shrimp (*Paratya* spp.) have also been recorded in this section of the Waikato River[1].

8.5 Pest animals

Possum (*Trichosurus vulpecula*) browse sign was noted during the site visit. The typical mainland suit of pest animals will be present within the site, including rats (*Rattus norvegicus* and *R. rattus*), mustelids (*Mustela* spp.), hedgehogs (*Erinaceus europaeus*), and feral cats (*Felis catus*). These species are all known to eat birds' eggs, and most will also kill chicks and adult birds.

Possums can also alter vegetation composition by heavily browsing favoured food trees, disrupting vital ecological processes such as flowering, fruiting, seed dispersal and germination, competing with indigenous wildlife for food. Possums also eat lizards and invertebrates.

9. ECOLOGICAL VALUES

The site of the proposed tour is of moderate to high ecological value. The vegetation present is predominantly secondary indigenous forest with a variable canopy of kōhūhū, kānuka, whauwhaupaku, whekī, and tī kōuka. Three indigenous vascular plants which have a national-level threat classification are present. Although there are patches of blackberry vineland and pest plants (most notably wilding pines and grey willow), indigenous vegetation has been regenerating at this site for quite some time and has developed a good quality forest canopy with young emergent podocarps (kahikatea, tōtara, and rimu) present in places. Secondary indigenous vegetation such as this is particularly significant in Atiamuri Ecological District because there is less than seven percent of the pre-human indigenous vegetation cover remaining (Leathwick *et al.* 1995).

The site also provides good habitat for indigenous birds (including some nationally At Risk species) and nationally threatened long-tailed bats. Indigenous freshwater fish (including a nationally At Risk species) and invertebrates utilise the section of river within the site. Indigenous lizards and reptiles have not been recorded at this site and if present are likely to be present in very low numbers. The location of the site alongside the Waikato River means that it is an important corridor for the movement of indigenous fauna throughout the wider landscape.

10. POTENTIAL ECOLOGICAL EFFECTS

10.1 Overview

Potential adverse ecological effects of the proposed operation relate to vegetation clearance, construction of walking tracks, construction of launching and landing structures, installation of zip lines, noise disturbance, and potential disturbance of fauna, each of which is discussed below.

10.2 Loss and damage of vegetation

10.2.1 Clearance for platforms and towers

The landing and launching structures have been designed with the intention of minimising the footprint on the landscape. However, some vegetation clearance will be required for construction of the platforms and towers, with the footprint of each structure to be approximately five metres by five metres. Additional staircases (of varying sizes) will be built for access to all structures. The height of the proposed structures varies from *c.*1.2-13.6 metres above ground level. The zip lines will pass above the structures at *c.*3.2-15.8 metres above ground level.

Towers 1, 7, and 8 are to be located in areas which are currently blackberry vineland. Although these areas would eventually regenerate to indigenous forest if left, they currently have low ecological value compared to the surrounding site. Vegetation clearance for construction of these towers will have less than minor ecological effects because this is an exotic-dominant habitat. In addition, the platforms of these towers will be more than five metres above ground level, so short indigenous vegetation may be able to regenerate underneath and surrounding the towers following construction.

Platforms 3, 4, and 6 are to be located in areas of modified secondary indigenous forest. Vegetation at the location of Platforms 3 and 4 is slightly younger than the surrounding forest because it has regenerated from the old forestry track. Vegetation at the location of Platform 6 is regenerating following a localised treefall. Exotic plants including Himalayan honeysuckle, blackberry, and Chinese privet are present at each of these three platform locations. Vegetation clearance for construction of these platforms will have minor ecological effects.

Vegetation clearance for Platform 5 would have minor ecological effects. This is because the patch of kiokio ferns at this location is of relatively young age compared to the surrounding forest. The lower level of Platform 5 will be about 0.8 metres above ground level which will allow for some regeneration of indigenous vegetation following construction. Some trimming of the surrounding indigenous trees may be required due to the height of this two-level platform (total height of about 11.6 metres).

Platform 2 is to be located within intact secondary indigenous forest. Ecological effects of vegetation clearance at this structure are likely to be greater than any of the other platforms and towers. Felling of small indigenous trees (including māhoe, whauwhaupaku, rangiora, whekī, kōhūhū) and clearance of indigenous understorey species is likely to be required in order to establish the foundations of the platform and construct the *c.*13 metre tall (total height) two-level platform. The lower level platform will be about 1.7 metres above ground level which will allow for some regeneration of indigenous vegetation following construction. Vegetation clearance for construction of Platform 2 will likely have moderate ecological effects.

10.2.2 Clearance for zip lines

The zip line will pass through the site at a variety of heights and over the structures at *c.*3.2-15.8 metres above ground level. As such, it is likely that the indigenous forest

canopy will be vulnerable to some degree of local disturbance. In places, selected individual trees and/or saplings may need to be trimmed to create an open gap that this large enough for users of the zip line to pass through. This will be required at the construction phase and potentially during regular maintenance. Excessive vegetation trimming may cause increased risk of localised windfall because of increased wind penetration into the forest canopy. Damage to indigenous vegetation, particularly larger indigenous trees is not only undesirable from an ecological standpoint, but also from an economic standpoint as these will be one of the main viewing attractions for users of the zip line.

It is unlikely that indigenous trees will need to be felled in order for the zip line to traverse through and above the forest canopy.

Zip line wire cables will be secured from the landing and launching structures into the ground using a combination of stay cables, staunchions, cable support units, and cable tension units. A relatively small area of vegetation clearance will be required for these anchors compared to the area of vegetation clearance required for construction of the platforms and towers.

The potential ecological effects of construction and maintenance of the zip line on vegetation are likely to be minor if damage to larger indigenous trees is avoided.

10.2.3 Clearance for tracks

Formation of the two sections of track (between Platforms 3 and 4 and between Platform 6 and Tower 7) will require some vegetation clearance. The track between Platforms 3 and 4 will be approximately 70 metres long. Two sections of track will be constructed between Platform 6 and Tower 7, firstly a 36 metre-long section from Platform 6, then a 189 metre-long section to Tower 7. Tracks will be approximately one metre wide.

It is likely that track construction will incorporate benching and use of wooden steps on sloping surfaces, drainage works, and hardening of track surfaces using pumice or gravel.

Clearance of vegetation for the track between Platforms 3 and 4 would have very minor ecological effects. This is there is because there is an old forestry track in this location. Vegetation on this hillside is secondary indigenous forest with sparse understorey vegetation. Felling of large indigenous trees should not be required.

Clearance of vegetation for the track between Platform 6 and Tower 7 would have minor ecological effects. This is because the secondary indigenous forest is relatively young and no large indigenous trees should require felling. Clearance of understorey vegetation will be required but the indigenous understorey species are widespread throughout the remainder of the site. Exotic species such as blackberry and Himalayan honeysuckle are present in places. The section of track on the hillslope and in the steep-sided erosion gully will require careful planning to prevent erosion.

A short section of track (5-10 metres long) may be required from Tower 8 to the existing track (Te Totara Gully Track). Less than minor ecological effects on

indigenous vegetation and habitats should result from construction of this track because no large indigenous trees should require felling and only common understorey plant species such as kiokio currently occur along this route.

10.2.4 Damage to tree roots

It is important that large lateral roots of indigenous trees are not severed during construction of the tracks and structures. If soil is excavated for construction, tree roots could be partially lost or damaged. Root loss or damage is likely to reduce nutrient and water uptake efficiency, and increase the vulnerability of a tree to wind throw, fungal pathogens, invertebrate damage (Ministry for Primary Industries 2013). Effects of root loss on tree health can be expected to be proportional to the area of the root system of a tree that is affected. Damage to tree roots could have major ecological effects, however with appropriate management, these effects can be reduced to minor.

10.2.5 Damage to adjoining vegetation

Equipment and materials required to build the structures and tracks will be carried in by foot or lowered into place by helicopter. In some cases, sections of the platforms and towers may be constructed offsite and lowered into place by helicopter.

Vegetation immediately adjacent to the proposed tracks and structures may be damaged by physical contact during construction or when construction materials are being transported. Any damage to the bark or branches of indigenous trees alongside the proposed track routes or structures may become a potential site for attack by fungal pathogens and/or insects. Such damage can also result in reduced nutrient and water uptake and loss of structural integrity (Ministry for Primary Industries 2013). Damage by physical contact may therefore lead to gradual declines in tree health and eventual tree death.

Trampling of understorey and groundcover vegetation by workers and machinery may also occur during construction of the tracks and structures. Damage to adjoining vegetation by physical contact and trampling could have moderate ecological effects, however with appropriate management, these effects can be reduced to less than minor.

10.3 Erosion and sedimentation

Removal of indigenous vegetation, and construction of the tracks, platforms, and towers has the potential to create erosion and sediment run-off during heavy rain events. Erosion is a particular risk along the upper sections of the proposed track to Tower 7 because there is already an erosion gully in this location.

The locations of the proposed platforms, towers, and tracks are generally some distance from waterways. The proposed location of Platform 5 is on top of a cliff, about 16 metres from the edge of the Waikato River. The location of Platform 6 is *c.*12 metres from the river and Tower 8 is *c.*17 metres from the river. It is unlikely that any sediment run-off from construction of the platforms and towers would adversely affect water quality in the Waikato River. There is a small ditch alongside

the proposed location of the track to Tower 7 near the existing Huka-Aratiatia Walkway. Construction of the track to Tower 7 alongside the ditch is unlikely to result in sediment loss because this is a relatively flat section of track.

Pumice or gravel will be used for the track surfaces. These materials occur naturally in the landscape and are likely to have less than minor ecological effects on waterways.

Erosion and sedimentation of waterways could have major ecological effects, however with appropriate management, these effects will be reduced to less than minor.

10.4 Effects on indigenous fauna

There is some likelihood, albeit limited, that birds, bats, lizards, and invertebrates using the site during the construction period will be subject to disturbance. Most birds and invertebrates that are potentially subject to disturbance are highly mobile and will be able to deal with localised disturbance. As such, it is expected that the potential displacement effects on birds and invertebrates will be less than minor.

It is highly likely that long-tailed bats utilise this site. For example, the flaking bark of kānuka and cavities in the large dead standing wilding pine trees provide habitat suitable for bat roosts. No large trees are to be felled, so no potential bat roosts will be affected or removed. There is potential, albeit slight, that long-tailed bats (if present) could be disturbed during installation of the zip line and associated structures, however, any potential effects on bats are very unlikely.

Indigenous skinks may utilise habitat at the locations of the proposed structures within the forest (Platforms 2, 3, 4, 5, 6, and Tower 8) and along the proposed track routes. Vegetation clearance associated with construction of these structures and tracks has the potential to disturb, or cause injury and/or mortality to indigenous lizards (skinks and geckos). Indigenous lizards are absolutely protected under the Wildlife Act (1953) which is administered by the Department of Conservation, and it is illegal to disturb or remove habitats of indigenous lizards without a Wildlife Authority Act issued by the Department. However, due to the lack of previous records of indigenous lizards at this site, the very localised nature of the structures, and the limited extent of new tracks, any potential effects on lizards are likely to be less than minor.

As discussed in Section 10.3, it is unlikely that any sediment run-off from construction will be in such levels that it will cause any degradation of the water quality in freshwater habitats of the Waikato River. With appropriate management the effects of erosion and sedimentation on aquatic fauna will be reduced to less than minor.

10.5 Increased human presence

Some noise and disturbance during the guided tours (and during construction) is expected. The tour is estimated to attract 40,000 to 60,000 participants per year (in groups of 10 people). Generally, a large number of people using a confined forest area may have effects on nesting and breeding of indigenous avifauna. However, the

Huka Falls Scenic Reserve is already a major tourist attraction, with more than 900,000 visitors per year (Department of Conservation 2002). Commercial jet boating and helicopter tours are undertaken to showcase the falls. There are existing walking and biking tracks on both sides of the river within this site. Any additional effects of noise disturbance on fauna within the site will likely be less than minor.

As the tour is intended to be guided by staff from Sky Play Adventures, participants are unlikely to venture off the tracks and into the wider forest. Trampling of understorey vegetation alongside the tracks is therefore likely to be minor.

There is potential for participants to accidentally drop litter or spread propagules of pest plants within the forest during the tour. Litter dropped along the track will detract from the natural values of the site.

If managed appropriately, the overall effects of increased human presence within the proposed tour route should be less than minor.

11. OPTIONS TO AVOID OR MINIMISE POTENTIALLY ADVERSE ECOLOGICAL EFFECTS

11.1 Overall intent

A major focus for construction and operation of the guided zip line tour should be to avoid or minimise adverse effects. This is because of the moderate to high ecological value secondary indigenous forest and habitats present alongside the Waikato River and within the Huka Falls Scenic Reserve. It will also be important to preserve the natural environment and ecological features for tour participants to enjoy.

The completed project should - with the noticeable exceptions of the formed walking tracks, platforms, towers, and zip line - look like a natural secondary forest ecosystem (allowing six months or so for the groundcover to recover following track construction).

Avoidance and minimisation of potential adverse ecological effects are addressed below.

11.2 Construction of zip line structures

Actions which should be undertaken to avoid and minimise ecological effects associated with vegetation clearance during the construction of the platforms and towers, and installation of the zip lines are outlined below:

- Clearance and trimming of large trees (particularly any indigenous trees over *c.*30 cm diameter at breast height (1.35 metres above ground level, dbh)) should be avoided. Where required, vegetation clearance should be limited to the immediate location of the platforms, towers, and zip line.

- Physical contact with indigenous trees (large branches, and trunks in particular) should be avoided when construction materials and tools are being transported and during construction.
- Defined low impact routes and helicopters should be used for carrying in construction materials and tools to reduce the area of understorey vegetation which is trampled.
- Where possible, indigenous understorey seedlings within proposed platform and tower locations should be removed carefully and then used for site rehabilitation.
- The proposed locations of platforms and towers should be assessed by a suitably experienced engineer, to ensure that the sites are stable and suitable for the proposed structures, and to avoid sediment loss during construction.
- Soil disturbance and erosion during construction should be avoided as much as possible. This is particularly important at Platform 5.
- Damage to roots of indigenous trees adjacent to the structures should be avoided.
- Materials used for platform and tower construction should be suited to the environmental conditions present. Options for platform and tower materials include treated timbers (dried well prior to use), steel, hardwood timbers, fibreglass, and glass.

Actions which should be undertaken following construction include (as required):

- Restoration of all natural drainage patterns.
- Restoration of natural ground surface.
- Restoration of natural soil, including a humus layer.
- Replacement of indigenous groundcover plants.
- Any vegetation trimming that is required for maintenance should be minimised and undertaken with care to avoid damaging indigenous trees (particularly any indigenous trees over *c.*30 cm dbh).

11.3 Construction of tracks

Actions which should be undertaken to avoid and minimise ecological issues associated with vegetation clearance in during track construction are provided below:

- Walking tracks should follow a path of 'least resistance' so that the clearance of indigenous trees can be avoided.
- Clearance or trimming of large indigenous trees (particularly any indigenous trees over *c.*30 cm dbh) should be avoided.
- Clearance should be limited to the width of the track (approximately 1 metre wide) and narrow shoulders which are no wider than required.

- Physical contact with indigenous trees (large branches, and trunks in particular) should be avoided when construction materials are being transported and during construction.
- Defined low impact routes and helicopters should be used for carrying in construction materials and tools to reduce the area of understorey vegetation which is trampled.
- Where possible, indigenous understorey seedlings within proposed track route should be removed carefully and then used for site rehabilitation.
- No large lateral roots of any indigenous tree should be cut or damaged.
- Soil compaction should be avoided as much as possible.
- Only 'clean' pumice or 'clean' gravel should be used, which is free of pest plant propagules and pest animals (such as plague skink (*Lampropholis delicata*). Any stockpiles of pumice, gravel, and/or cement should be stored securely prior to use in track construction, to prevent leakage onto the forest floor, or into waterways.
- Trees should not be marked with attachments that could result in bark damage (biodegradable flagging tape can be used to mark proposed track routes and removed when construction is completed).
- Track construction should avoid, as much as possible, alteration of the natural drainage patterns and natural ground surface levels. The creation of small impoundments should be avoided. The section of track in the steep-sided erosion gully below Tower 7 will require careful planning of track drainage to prevent erosion. Sedimentation of the ditch near the existing track (Huka-Aratiatia Walkway) and alongside the track to Tower 7 should be avoided.
- Participants should be constrained to the formal tracks and defined gathering points, to avoid ongoing incremental trampling damage to the forest floor.
- To limit use by the general public, any unformed routes should not be obvious from the existing tracks.

Actions to be undertaken following track construction include (as required):

- Restoration of all natural drainage patterns.
- Restoration of natural ground surface.
- Restoration of natural soil, including a humus layer.
- Replacement of indigenous groundcover plants.
- Removal of all markings and unnecessary artificial objects.
- Any vegetation trimming required for maintenance should be kept to a minimum and undertaken with care to avoid damaging indigenous trees (particularly any indigenous trees over *c.*30 cm dbh).

- Any large lateral roots of indigenous trees which become exposed on the tracks should be reburied.

11.4 Avoid and minimise effects on indigenous fauna

Actions which should be undertaken to avoid and minimise ecological effects on indigenous fauna include those described in the previous sections (such as minimizing vegetation clearance). Additional actions are described below:

Birds and Terrestrial Invertebrates

During construction, noise levels should be kept to a minimum, to avoid disturbance of avifauna.

Where possible, an indigenous forest canopy should be maintained above and around the structures and tracks to enable avifauna to be able to continue to move throughout the site.

Upon completion of the proposed tracks leaf litter will spread naturally over the track surfaces. This will improve the opportunities for terrestrial invertebrates to move across the trail. Soil invertebrates which are exposed during excavation should be relocated with the soil they were exposed within, into the surrounding vegetation.

Bats

No larger trees (including exotic trees such as wilding pines) should be felled as such trees provide suitable habitat for bat roosts.

Herpetofauna

Reptiles and amphibians are unlikely to be adversely affected due to the low likelihood of them being encountered and also because of the local effects of the proposal.

Aquatic Fauna

Appropriate management of erosion and sedimentation (as discussed in Sections 12.2 and 12.3) will avoid potential effects on aquatic fauna in the Waikato River.

11.5 Management and education of participants

Low noise levels from participants and guides during the tour should be encouraged. This will enhance the ecological experience for visitors and also minimise noise disturbance to the forest environment.

Participants should be constrained to the platforms, towers, and tracks, to avoid ongoing incremental trampling of understorey vegetation and compaction of soil adjacent to structures and tracks.

The importance of caring for the environment, ecological restoration and biosecurity should be actively promoted to participants. Education about pest animals and pest plants, and their control should be incorporated into track signage, promotional material, and the speeches of guides during the tour. Opportunities for participants to engage in activities such as Greening Taupō and Predator Free New Zealand should be explained. The introduction of species of fungi, bacteria, or plants and animals which do not occur naturally in indigenous forests can pose serious risks to natural ecosystems. All equipment used on the tour (clothing, footwear, or bags) should be free from plant seeds, plant fragments, pest animals, or excessive dirt. It is important that participants are instructed to carry any litter with them out of the forest. Promotion of environmental care and biosecurity is particularly suited to these types of trails because it leads to an increased general awareness of these issues in the participants who will be from other parts of New Zealand and other countries.

12. MITIGATION AND ECOLOGICAL RESTORATION

12.1 Overview

If the potential adverse effects which have been identified are avoided or minimised (as per Section 12), the proposed tour will result in minor ecological effects, primarily associated with construction of the platforms, towers, and walking tracks. The ecological effects of construction and operation should be mitigated by undertaking activities that enhance the ecological integrity of the vegetation and habitats at the site.

Options for mitigation at the site are intensive sustained pest animal control, pest plant control, and restoration planting.

12.2 Pest animal control

<u>Overall Intent</u>

Possums and rats are likely to be the pest animals having the greatest impacts on indigenous animals and plants within the site. Long-term intensive control of introduced pest animals would improve habitat quality and enhance the populations of indigenous fauna within the site and the wider Waikato River corridor. It is viable to implement intensive sustained pest animal control throughout the entire site because of its relatively small size, elongated shape, and the presence of a network of existing tracks.

To maximise the effectiveness of pest animal control, a pest animal control plan should be developed for the site and pest control operations should be coordinated with Greening Taupō, Predator Free Taupō, the Department of Conservation, and any other relevant landowners and stakeholders. The plan should be revised after 3-5 years because the priorities for pest animal management and monitoring may change.

Pest Animal Control Network

A network of bait stations and/or kill traps would be suitable for the control of possums, rats, and mustelids.

For ease of access, it would be suitable to install pest animal control stations alongside Karetoto Road, existing tracks (Huka-Aratiatia Walkway, Ferguson's Track, Te Totara Gully, Te Totara Gut, Café Track), proposed tracks, and the farm margin on the eastern side of the river. Approximate lengths of various sections which could be used for pest animal control stations are provided in Table 5.

Table 5: Lengths of potential pest animal control lines.

Description of Section	Length (km)
Huka Falls bridge to State Highway 1 Taupō bypass bridge (Huka-Aratiatia Walkway, eastern side of river)	2.14
Farm margin on eastern side of the river	1.41
Huka Falls Bridge to Taupō Wake Park (western side of river: Te Totara Gully, Te Totara Gut, Café Track)	1.89
Ferguson's Track along Karetoto Road and along Te Totara Gut (western side of river)	1.18
Proposed tracks (eastern side of river: Platform 3 to Platform 4, and Platform 6 to Tower 7)	0.29
Total	**6.91**

A total of approximately seven kilometres of pest animal control lines could be established between the Huka Falls bridge and the State Highway 1 Taupō bypass bridge, including *c.*3.8 kilometres on the eastern side of the river and *c.*3.1 kilometres on the western side of the river. Additional pest animal control lines could be interspersed between these lines at a later date, if required.

Pest animal control stations should be at installed at least 10 metres from tracks to reduce the likelihood of unwanted interference.

Traps for possums (e.g. Sentinel, Trapinator, Goodnature A12) should be installed at *c.*100 metre intervals. If the full length of pest animal control lines described above was used, approximately 70 traps would be required at this spacing.

Rat control traps (DOC 200, Victor, and/or Goodnature A24 self-resetting traps) should be installed at *c.*50 metre intervals. Bait stations could also be installed on the same lines, for the control of rats and mice. If the full length of pest animal control lines described above was used, approximately 140 rat stations would be required at this spacing.

DOC 200 traps will also catch stoats. A small number of DOC 250 traps could also be used as these are suitable for ferrets (and will also catch stoats).

Cage traps should be used to control feral cats. This trapping method enables any pet cats caught incidentally to be returned to their owners.

Maintenance of Pest Animal Control Network

Reinvasion of possums and rats from the surrounding area is likely to be rapid and ongoing, so control would need to occur year-round.

Traps should be checked at least monthly, however fortnightly checks are required between September and March to align with the breeding season of birds, which is when the risk of predation is highest. All pest control should be undertaken by suitably trained, skilled, and experienced personnel. Appropriate information needs to be provided for public and visitors to the area, to advise them of the use of baits and/or traps.

Once a pest animal control network has been established and is being implemented consistently across the site, it would be appropriate to extend pest control into indigenous forest alongside the Waikato River (particularly within Huka Falls Scenic Reserve), both upstream and downstream.

Monitoring

Pest animal monitoring should be implemented prior to the establishment of pest animal control and then as required. A series of chewcards could be located along the pest animal control lines to monitor the presence of pest animals and tracking tunnels could be used for rodent monitoring. Results of this monitoring should be used to adapt the pest control methods in response to changes in the species of pests detected or relative abundances.

There would be merit in undertaking five-minute bird count monitoring in association with pest control. This could provide baseline data for regular long-term monitoring of the outcomes of pest control. Standardised methods should be followed, as per Hartley and Greene (2012). Data should be analysed to assess any changes in bird species diversity and numbers over time. Monitoring locations should be evenly spaced along the pest animal control lines and are close to areas of key habitat for birds of interest (such as river margins). Any other animals observed during the bird monitoring should be recorded.

It is important that bird monitoring is undertaken at approximately the same time of year because the behaviour and chance of recording some birds varies with the seasons.

Although not required at this stage, in the future, it may be desirable to survey for the presence of indigenous lizards or bats at specific locations within the site. Detection of these animal groups could add a feature to the tour and potentially lead to further work to enhance the populations.

12.3 Pest plant control and restoration planting

Overall Intent

Ongoing control of pest plants which are currently present within the site would enhance the ecological values and enhance the experience of tour participants.

A weed management and restoration planting plan for the site should be developed in coordination with Greening Taupō, the Department of Conservation, and any other relevant landowners and stakeholders. The plan should include identification of the key areas for weed control and areas to be planted, weed control and planting prescriptions, monitoring and maintenance.

The plan should be revised after 3-5 years because the priorities for pest plant control, restoration planting, and monitoring will change.

Once pest plant control and restoration planting has been established and implemented consistently across the site, it would be appropriate to extend pest plant control into indigenous forest alongside the Waikato River (particularly within Huka Falls Scenic Reserve) both upstream and downstream.

Key Priorities

Key areas which would currently benefit from weed control are the patches of blackberry vineland and willow treeland.

Following weed control, the patches of blackberry vineland will be suitable for planting with indigenous species. Overtime, indigenous vegetation would naturally regenerate within these areas, however restoration planting will speed up this process and provide some mitigation for the tour.

Removal of the stand of Tasmanian blackwood forest on the edge of Karetoto Road could be considered in discussion with the landowners. Some (or all) of these trees could potentially be harvested. Following removal of the exotic trees, this area could be restored to indigenous forest.

Locally-sourced species should be used for planting that are representative of vegetation within Huka Falls Scenic Reserve. Restoration planting should include a range of early and mid-successional species (such as kōhūhū, mānuka, and kānuka), which will establish a canopy cover relatively quickly. Later successional species (such as tōtara) should also be planted at the same time. These are slower-growing species which are longer-lived and will create a tall indigenous canopy. Ongoing maintenance (including infill planting) and pest plant control will be required in any areas of indigenous planting for at least three to five years, until a contiguous indigenous canopy has established.

Regular ongoing control of wilding pines should be continued throughout the site. Poison-standing methods are preferred rather than felling because of the potential for bat roosts in large wilding pine trees. Dismantling of large wilding pines may be required for Health and Safety reasons near tracks (to prevent fall of decaying branches). Inspection of any trees which are to be dismantled (and are greater than 15 cm dbh with cavities that may be suitable for bat roosts) will be required by a qualified and approved bat ecologist endorsed by the Department of Conservation prior to dismantling.

Monitoring and Follow-Up Control

The aim of monitoring should be to rapidly detect pest plant species and to implement control as required. This is easy to do if an experienced observer checks these sites on a three-monthly basis and provides advice on the required control response(s). Pest plant control is most effective if it is undertaken while infestations are small. Follow-up control should be undertaken of any pest plant species.

13. CONCLUSIONS

The proposed Huka Falls guided zip line operation will be located within secondary indigenous forest in Huka Falls Scenic Reserve (SNA 216) and on the opposite (true left) side of the Waikato River. Huka Falls, at the southern end of this site, is one of the most visited natural attractions in New Zealand[1] There are existing walking and biking tracks, and commercial activities such as jet boating. This site is of moderate to high ecological value and is an important corridor for the movement of indigenous fauna throughout the wider landscape. The cultural and ecological significance of the Waikato River, and in particular the Huka Falls, is a key reason for the location of the proposed tour.

The largest potential ecological effects of the operation will result from clearance and trimming of vegetation during the construction and maintenance of five platforms, three towers, zip lines, and associated walking tracks. There is potential for adverse ecological effects if any larger indigenous trees are cleared or damaged, or if erosion was to occur, although this is unlikely. Construction of the platforms, towers, zip lines, and tracks can be undertaken in a low-impact manner. If the potential adverse effects which have been identified are avoided or minimised, the overall adverse ecological effects of the proposed zip line river tour will be minor.

There is also considerable potential for ecological enhancement and for increasing participant awareness of the importance of ecological restoration and caring for the natural environment. Minor adverse ecological effects of the proposed operation can be reduced to less than minor through mitigation. Intensive sustained pest animal control, weed control, and restoration planting should be planned and implemented. These works have the potential to create net environmental gains through improvement of the ecological condition of the site and improved habitat for indigenous fauna. Ecological restoration at this site will complement previous and current work within the Waikato River Corridor, such as that undertaken by Greening Taupō. This work should be an integral part of the 'story' associated with the zip line tour.

[1] https://www.doc.govt.nz/parks-and-recreation/places-to-go/central-north-island/places/taupo-area/things-to-do/huka-falls-tracks/

ACKNOWLEDGMENTS

Adrian Pike initiated this project, co-ordinated the site visit, and provided useful information on the proposed operation. Rowan Sapsford (Roam Consulting) provided background information on current and previous restoration projects within and adjacent to the site, and feedback on the draft report.

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LIST OF VASCULAR PLANTS RECORDED AT THE SITE, 26 JUNE 2019

Key
P = planted (not naturally occurring at the site)

INDIGENOUS SPECIES

Gymnosperms

Dacrycarpus dacrydioides	kahikatea
Dacrydium cupressinum	rimu
Podocarpus totara var. *totara*	tōtara

Monocot. trees and shrubs

Cordyline australis	tī kōuka, cabbage tree

Dicot. trees and shrubs

Aristotelia serrata	makomako, wineberry
Brachyglottis repanda	rangiora
Coprosma robusta	karamū, kāramuramu
Coprosma tenuifolia	
Dodonaea viscosa	akeake (P)
Fuchsia excorticata	kōtukutuku, kōnini
Gaultheria antipoda	tāwiniwini, koropuka, takapo, taupuku
Geniostoma ligustrifolium var. *ligustrifolium*	hangehange
Hebe stricta var. *stricta*	koromiko, kōkōmuka
Hoheria sexstylosa	houhere, lacebark
Kunzea robusta	kānuka
Leptecophylla juniperina var. *juniperina*	prickly mingimingi
Leptospermum scoparium agg.	mānuka
Leucopogon fasciculatus	mingimingi
Melicytus lanceolatus	māhoe wao
Melicytus ramiflorus subsp. *ramiflorus*	māhoe
Olearia rani var. *colorata*	heketara
Pittosporum eugenioides	tarata; lemonwood
Pittosporum tenuifolium	kōhūhū, rautāhiri, rautāwhiri
Pseudopanax arboreus	whauwhaupaku, puahou, five finger
Pseudopanax crassifolius	horoeka, lancewood
Schefflera digitata	patē
Sophora tetraptera	kōwhai
Weinmannia racemosa	kāmahi

Dicot. lianes

Clematis paniculata	puawānanga
Muehlenbeckia australis	puka
Rubus schmidelioides var. *schmidelioides*	tātarāmoa, bush lawyer

Lycopods and psilopsids

Tmesipteris lanceolata

Ferns

Adiantum cunninghamii	huruhuru tapairu, maidenhair fern
Asplenium bulbiferum	mouku, hen and chicken fern
Asplenium flaccidum	makawe, ngā makawe o Raukatauri
Asplenium oblongifolium	huruhuru whenua
Asplenium polyodon	petako
Austroblechnum lanceolatum	rereti, nini
Cyathea dealbata	ponga, silver fern
Dicksonia fibrosa	whekī-ponga, kurīpākā
Dicksonia squarrosa	whekī
Diplazium australe	
Histiopteris incisa	mātātā, water fern
Hymenophyllum sanguinolentum	piripiri, filmy fern
Microsorum pustulatum	kōwaowao, pāraharaha, hound's tongue fern
Parablechnum novae-zelandiae	kiokio
Pellaea rotundifolia	tarawera, button fern
Pneumatopteris pennigera	pākau
Polystichum silvaticum	
Polystichum wawranum	
Pteridium esculentum	rārahu, bracken
Pteris tremula	turawera, shaking brake
Pyrrosia eleagnifolia	leather-leaf fern

Grasses

Austroderia fulvida	toetoe
Poa anceps agg.	

Sedges

Carex geminata agg.	rautahi
Carex uncinata	kamu matau a Maui, kamu
Machaerina sinclairii	toetoe tūhara, pēpepe
Schoenus tendo	wīwī

Monocot. herbs (other than orchids, grasses, sedges, and rushes)

Astelia fragrans	kakaha
Dianella nigra	tūrutu
Phormium tenax	harakeke, flax

Composite herbs

Senecio bipinnatisectus	Australian fireweed

NATURALISED AND EXOTIC SPECIES

Gymnosperms

Pinus radiata	radiata pine

Dicot. trees and shrubs

Acacia melanoxylon	Tasmanian blackwood
Buddleja davidii	buddleia
Chamaecytisus palmensis	tree lucerne
Cotoneaster glaucophyllus	cotoneaster
Cytisus scoparius	broom
Erica lusitanica	Spanish heath
Leycesteria formosa	Himalayan honeysuckle
Ligustrum sinense	Chinese privet
Rubus sp. (*R. fruticosus* agg.)	blackberry
Salix cinerea	grey willow
Salix ×fragilis	crack willow
Teline monspessulana	Montpellier broom
Ulex europaeus	gorse

Grasses

Dactylis glomerata	cocksfoot

Composite herbs

Erigeron sumatrensis	broad-leaved fleabane
Mycelis muralis	wall lettuce

Dicot. herbs (other than composites)

Digitalis purpurea	foxglove

LIST OF AVIFAUNA RECORDED AT THE SITE, 26 JUNE 2019

BIRDS

Indigenous

Anthornis melanura melanura	korimako; makomako; bellbird
Gerygone igata	riroriro; grey warbler
Prosthemadera novaeseelandiae novaeseelandiae	tūī
Rhipidura fuliginosa placabilis	pīwakawaka; North Island fantail
Todiramphus sanctus vagans	kōtare sacred kingfisher; New Zealand kingfisher
Zosterops lateralis lateralis	silvereye; tauhou

Introduced

Passer domesticus	house sparrow
Turdus merula	Eurasian blackbird

ADDITIONAL SITE PHOTOGRAPHS

Plate A3.1: A steeper section of the track between Platforms 3 and 4, which may require steps. 26 June 2019.

Plate A3.2: View from Tower 8 towards Tower 7. 26 June 2019.

Plate A3.3: Location of Tower 8 (arrowed) in relation to the existing track (Te Totara Gully Track). 26 June 2019.

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Appendix 7. Noise Assessment

REPORT

Tonkin+Taylor

Noise assessment

Huka Falls Zip Line

Prepared for
Sky Play Adventures Ltd
Prepared by
Tonkin & Taylor Ltd
Date
August 2019
Job Number
1011379.0000.v1

Exceptional thinking together
www.tonkintaylor.co.nz

Document Control

Title: Noise assessment					
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by:**
29 07 19	1.0	Draft for client review	M Bevington	D Humpheson	P Kneebone
07 08 19	1.1	Final	M Bevington	D Humpheson	P Kneebone

Distribution:

Sky Play Adventures Ltd	1 PDF copy
Tonkin & Taylor Ltd (FILE)	1 electronic copy

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Appendix A : Sound Level Meter Information

Appendix B : Photographs of Baseline Locations

Appendix C : Baseline Monitoring Survey

Appendix D : Average Noise Level Contour Plot

1 Introduction

Huka Falls Zip Line Ltd has engaged Tonkin & Taylor Ltd (T+T) to prepare a noise impact assessment to support a resource consent application for the operation of a zip line activity course near Taupo in the Waikato region. The resource consent application is being prepared by Sky Play Adventures Ltd.

The proposed zip line course consists of a series of five zip lines crossing the Waikato River north of the Huka Falls.

The sources of noise due to the proposal will principally consist of:

- The metal on metal sound from the cable and sheave wheel.
- Yelling and shouting from people whilst travelling along the zip line.
- Sound produced from the dampening and braking system at the end of each line.

The assessment also considers, qualitatively:

- The noise associated with the shuttling of customers to and from the zip line course by minibus.
- Temporary noise from construction of the zip line course.

This report is structured as follows:

- Section 2 – A description of the proposed activity.
- Section 3 – A discussion of the receiving environment and the existing soundscape.
- Section 4 – An assessment of the baseline sound levels around the site.
- Section 5 – A discussion of the appropriate assessment criteria.
- Section 6 – An assessment of the effects of noise using a sound propagation modelling.
- Section 7 – Final concluding statements.

This report was prepared in accordance with our agreement dated 28 June 2019.

2 Proposed Activity

The Huka Falls are located approximately 4 km north of the town of Taupo in the Waikato Region. The area over which the proposed zip line course starts is 270 m downstream (north) of the base of the falls and 390 m from the sightseeing bridge that crosses the river. The zip line course consists of five zip lines criss-crossing the Waikato River canyon and extends approximately 1 km downstream.

Figure 2.1 provides a plan view of the proposed zip line course. Figure 2.2 provides a profile view of each zip line run.

The operating time of the zip line course will be seasonal and dependent on tourist demand. During peak season it is expected that the zip line tours will be 8am – 6pm. During off peak seasons where tourist demand is likely to be less, and during winter where daylight hours are shorter, the operating hours of the zip line will be shorter. As a worst case there is likely to be 10 zip line tours per day with 10 customers per tour. Each tour will take approximately two hours.

Customers will be transferred to the start and back to the customer services building by two or three shuttle buses. The number of vehicle trips will vary depending upon demand.

Construction of the zip line course will involve the construction of platforms for each zip line run and in some cases walking paths between the towers. Work will include vegetation clearance, earthworks for path construction, and the construction of a customer services building accessed from Huka Falls Road.

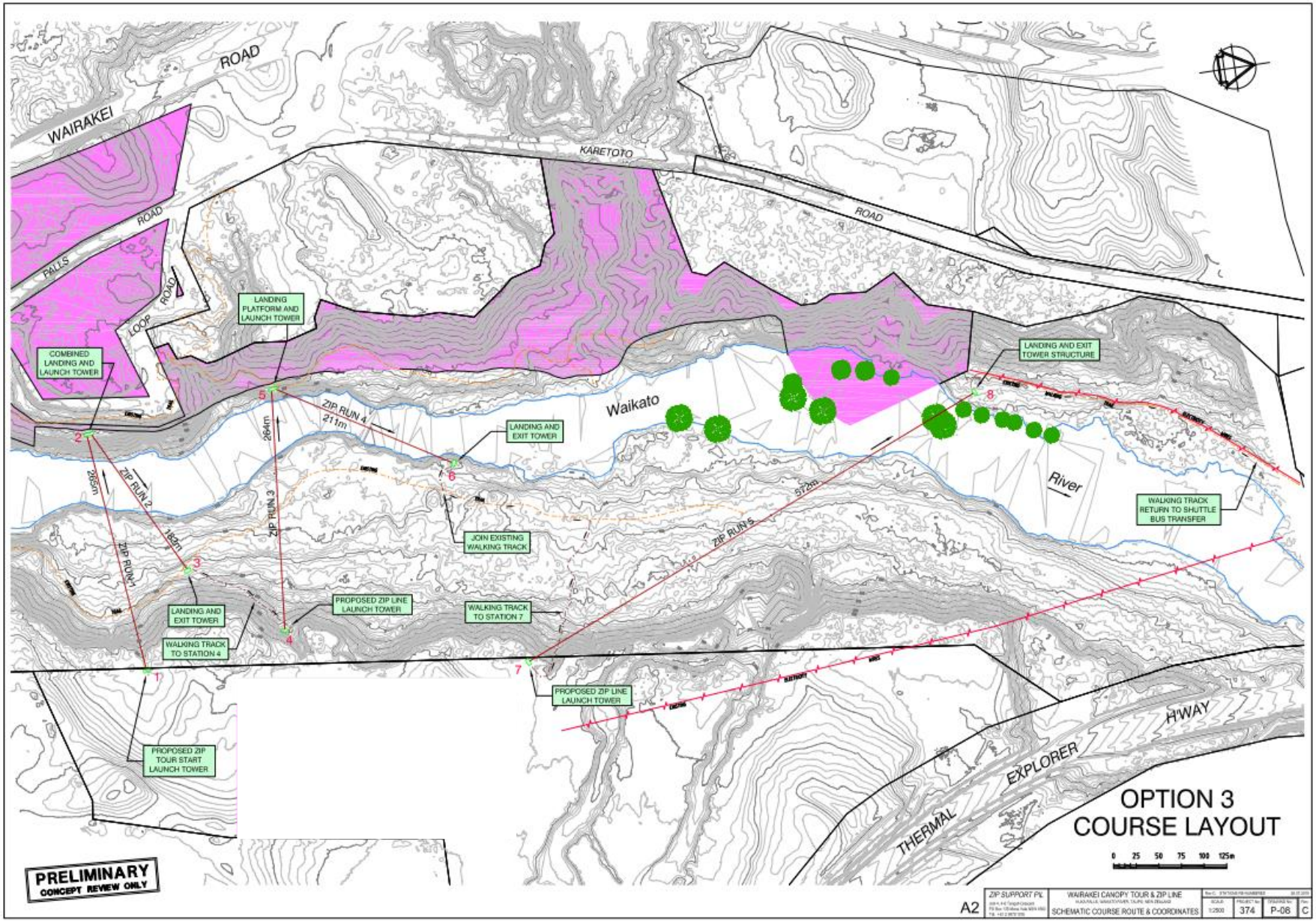


Figure 2.1: Plan view of proposed zip line course. Source: Sky Play Adventures Ltd.

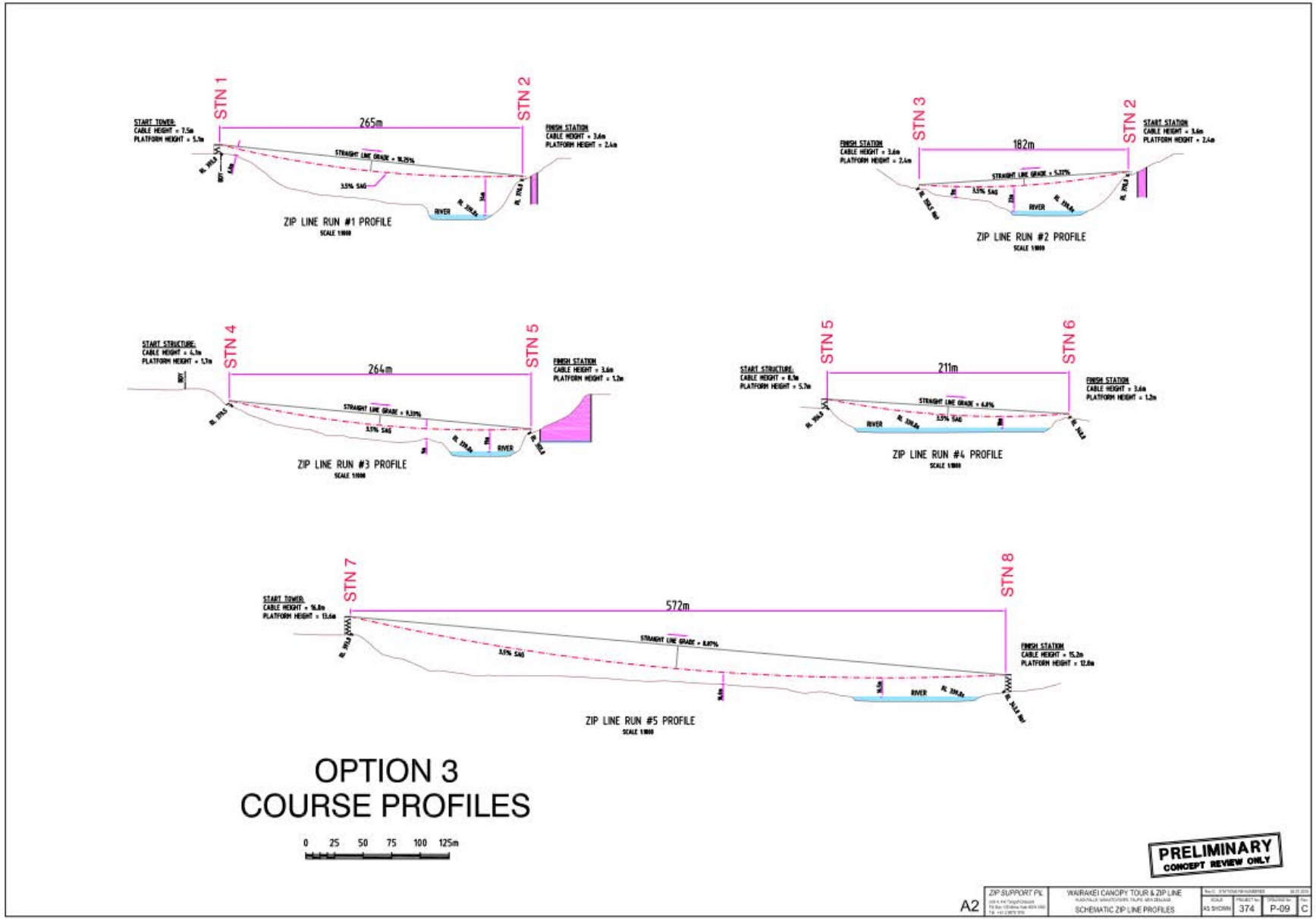


Figure 2.2: Proposed zip line course run profiles. Source: Sky Play Adventures Ltd Ltd.

3 Receiving Environment

3.1 Receivers

The receivers of interest in the local area are residential dwellings, visitors to the Huka Falls and recreational users of the local walking and cycling trails.

A map of the area is provided in Figure 3.1. The red dots show the location of the nearest residential dwellings. The yellow dots represent selected receiver locations for recreational users near the visitor centre, falls and along the walking and cycling trails (purple). The yellow dots also represent the location of measurements in the baseline survey, discussed later in Section 4. The proposed location of the zip line course layout is shown in orange.

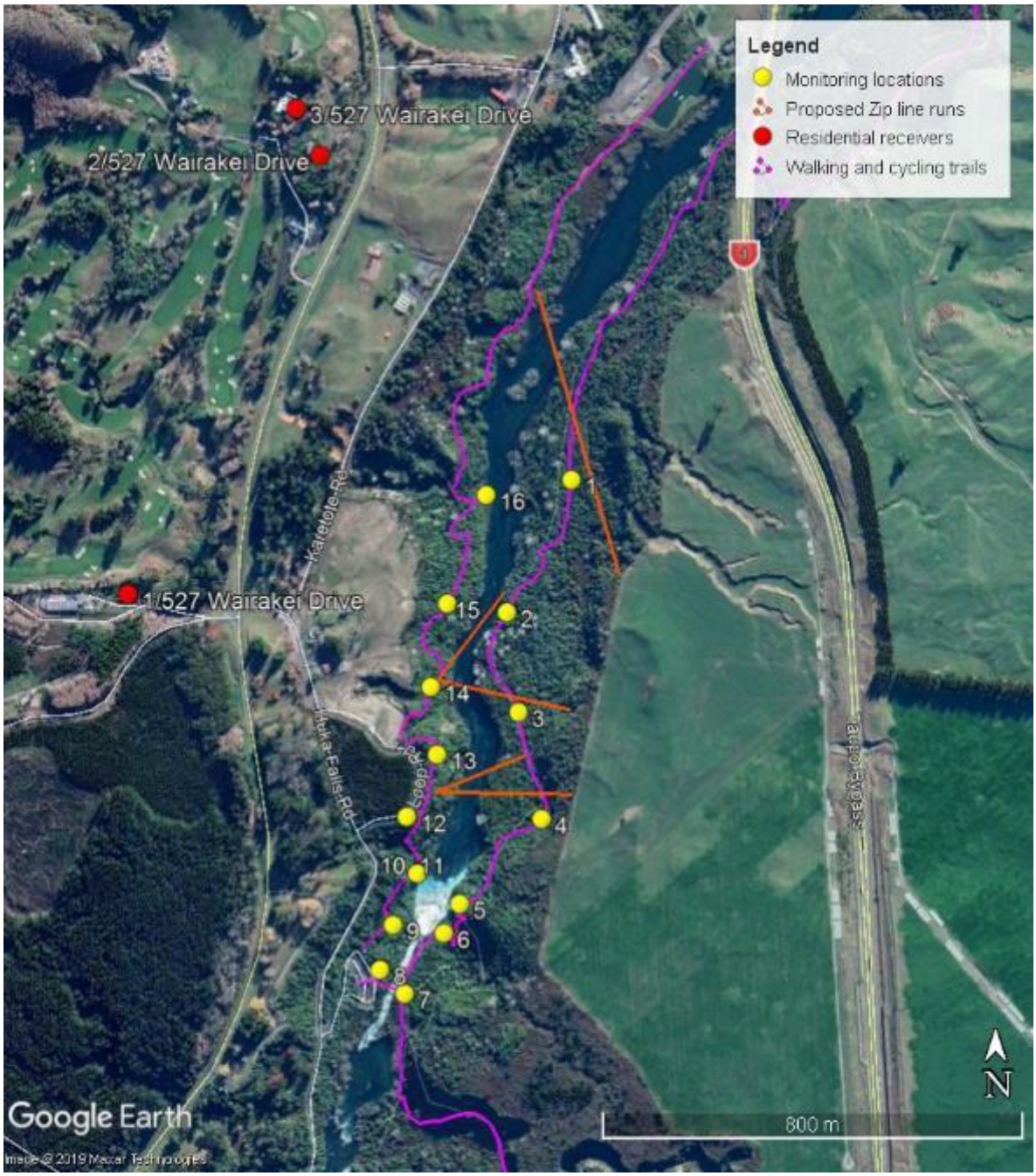


Figure 3.1: Assumed receiver locations and course layout. Source: Google Earth 2019.

The nearest residential dwelling is approximately 870 km from the customer service building and 450 m from the nearest zip line. Table 3.1 lists the nearest residential receivers and their distance to the nearest point of the zip line course. All three residential dwellings are within the nearby golf course.

Table 3.1: Residential receivers

Receiver	Distance to nearest zip line
1/527 Wairakei Drive	600 m
2/527 Wairakei Drive	450 m
3/527 Wairakei Drive	550 m

The Huka Falls area is a popular visitor's attraction and the surrounding area is typically frequented by day visitors who travel to the area by vehicle (cars and minibuses) and stop to take photos near the base of the falls and at the visitor centre (locations 5 – 12). Some visitors progress further downstream along the walking and biking trails, but these locations are frequented significantly less than areas closer to the falls, as witnessed when the baseline noise survey was undertaken (see Section 4).

3.2 Local soundscape

The volume of water flowing through the Huka Falls is significant, varying between 50 m^3/s and 319 m^3/s. The resulting sound from the cascading water dominates sound levels in the wider area round the base of the falls. The sound levels due to the falls decrease with distance downstream. At a distance of approximately 400 m, the Waikato River bends slightly to the west and the sound from the falls on the trails becomes harder to distinguish.

State Highway 1 Taupo Bypass and the Thermal Explorer Highway run either side of the proposed zip line course area. At the distance downstream where the falls become less audible, road traffic noise due to both roads becomes more apparent.

Helicopter rides are popular in the area and frequently fly over and circle the falls area at a low altitude, creating significant levels of noise. Approximately 200 m to the east of the proposed zip line area is Heli Adventure Flights. Helicopters routinely take off and land at this location.

Regular high speed jet boats run on the Waikato River from approximately 2 km downstream of the falls up to the base of the falls. On the walking and cycling trails, noise levels from jet boat passes and the screams and shouts from the passengers are clearly audible.

4 Baseline Study

On Saturday 13 July 2019 an attended baseline monitoring survey was completed. Baseline measurements were taken in accordance with NZS 6801:2008 at locations along the walking and cycling trails (Figure 3.1 and Figure 4.1). Weather conditions during the measurements varied between overcast with scattered showers and clear. The wind was calm and recorded a zero wind speed measurement. Measurements were not affected by the occasional showers.

Sound level measurements were recorded using a Class 1 type sound level meter, further details of the equipment can be found in Appendix A. Measurements were taken at a height of 1.5 m and for a period of 15 minutes. Photographs of the SLM set-up for specific locations can be found in Appendix B. Where measurements were of a specific noise source or had a demonstrable stable L_{Aeq}, the measurement period was over a shorter duration.

For context, Figure 4.1 shows an elevated view of the area with the location of the monitoring and proposed runs relative to the complex terrain in and around the surrounding river valley.

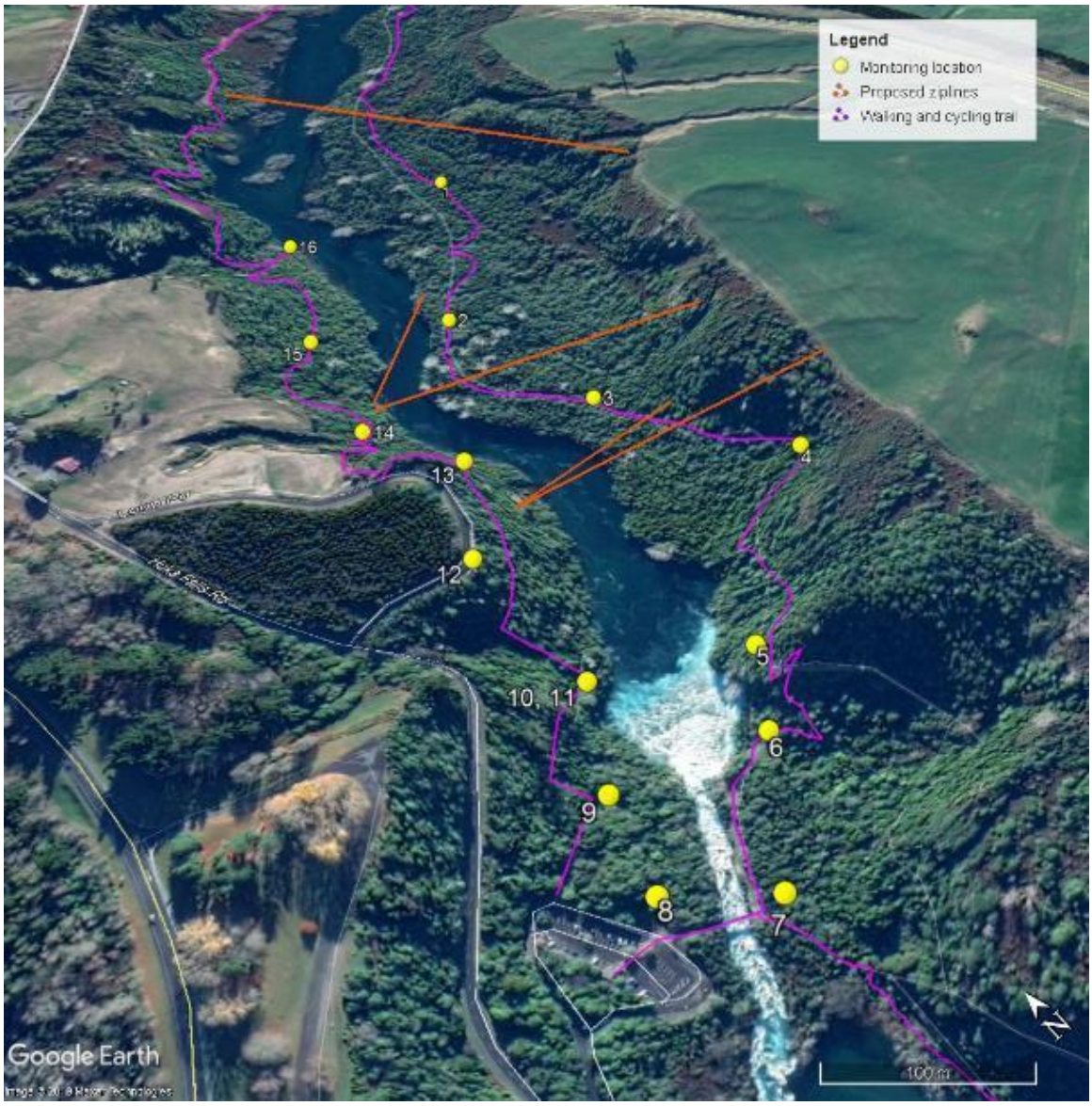


Figure 4.1: Elevated view of the area. Source: Google Earth 2019.

The results of the baseline study are summarised below in Table 4.1, including observations made during each measurement.

As wind speeds were calm, there was negligible noise generated by wind induced noise through vegetation. Therefore the measured baseline levels are considered representative of the periods when background noise levels will be at their lowest.

To provide context to the measured levels, time series graphs of each measurement can be found in Appendix C. An example time series graph of the measured L_{Aeq} levels at monitoring location 1 (furthest monitoring location from the falls) is shown below in Figure 4.2. The graph is annotated to describe the events contributing to the changes in measured sound levels. When jet boats and helicopters pass-by, there is a significant increase in noise levels.

Table 4.1: Summary of baseline measurements

Monitoring location	Start time	Measurement period (mm:ss)	L_{Amax}	L_{AEQ}	L_{A10}	L_{A90}	L_{A99}	Notes during measurement
1	10:08 AM	15:04	70	54	56	41	40	Road noise audible. Jet boat movements on river. Helicopter flyover.
2	10:28 AM	01:15	80	65	65	46	41	Jet boat drive by.
3	10:35 AM	04:49	59	46	48	45	44	Falls audible. Road noise slightly audible.
4	10:44 AM	13:29	66	46	48	41	40	Road noise audible. Falls audible. Jet boat movements. Walkers and runners passing.
5	11:01 AM	03:26	76	67	68	66	66	Falls clearly audible and constant. Walkers and cyclists passing and talking. L_{Aeq} stabilised.
6	11:11 AM	14:27	88	68	69	64	64	Falls dominant. People talking and shouting at viewing area. Jet boat and helicopter movements.
7	11:37 AM	03:26	70	62	64	59	59	Falls clearly audible. Helicopter movements. People talking. Rain cut measurement short.
8	11:49 AM	14:32	72	58	59	56	56	Falls audible. Car movements in carpark and doors closing. Helicopter movements. Jet boat movements faint.
9	12:09 PM	01:40	56	53	54	53	52	Stable L_{Aeq}. Falls clearly audible. Birdsong. Faint shouts.
10	12:16 PM	01:31	63	62	62	61	61	Falls dominant and in isolation. Stable L_{Aeq}.
11	12:18 PM	07:33	83	68	72	62	61	Falls clearly audible. Jet boat movements. Helicopter flyover.
12	12:33 PM	13:59	77	61	63	57	56	Falls clearly audible. Faint road noise. Cars arrive at lookout point and people talking. Helicopter fly overs. Faint jet boat movements.
13	1:37 PM	14:21	72	55	56	45	44	Falls audible. Road noise audible. Cyclist passing. Helicopter flyover and circling.
14	1:59 PM	15:20	83	61	56	34	33	Falls noise faint difficult to distinguish. Jet boat movements. Helicopter and plane flyover. Birdsong.
15	2:22 PM	15:15	81	59	59	34	32	Jet boat movements. Helicopter flyovers. Birdsong.
16	2:47 PM	15:55	91	64	60	34	33	Jet boat movements, water lapping. Helicopter and small plane flyover.

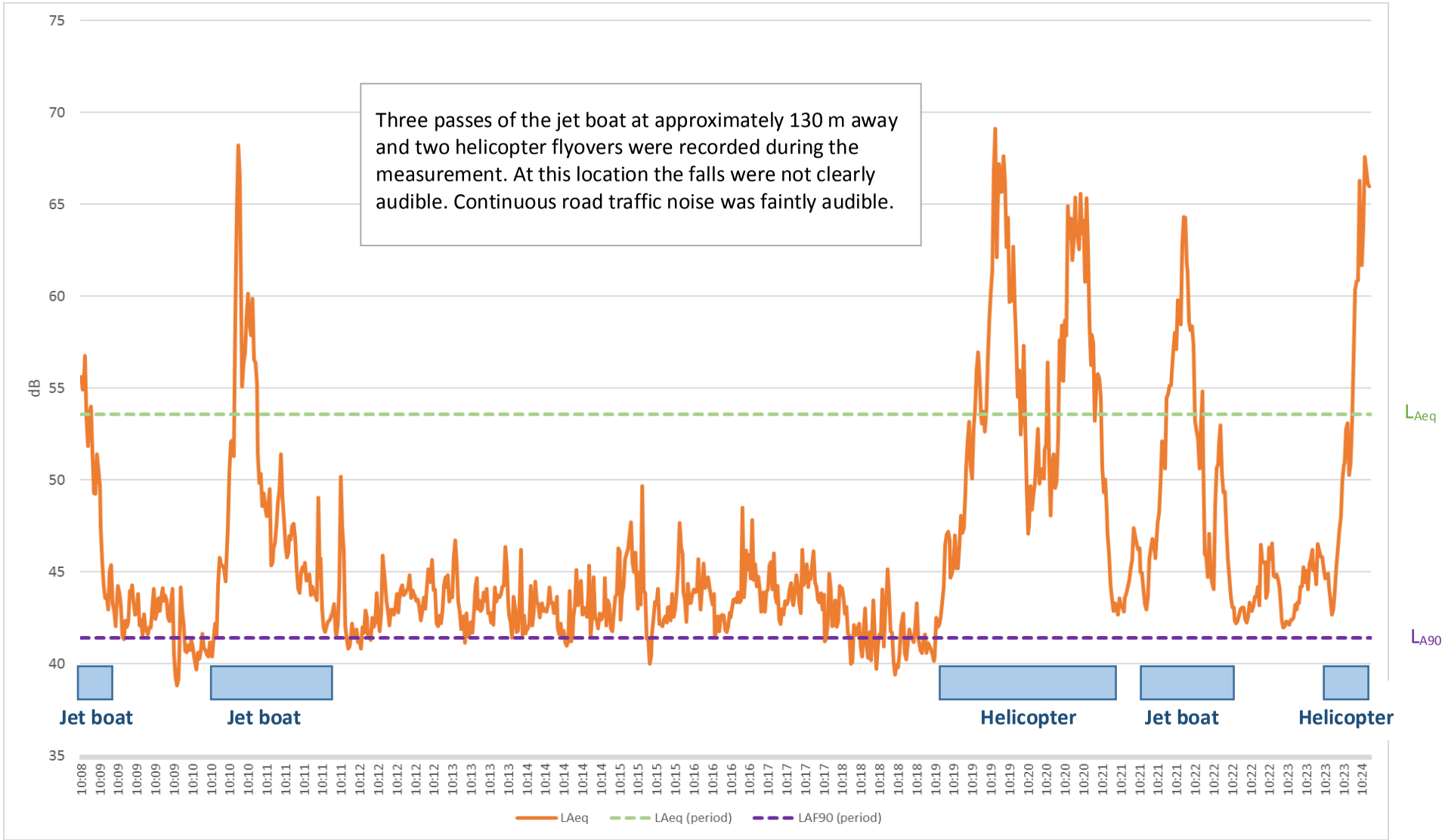


Figure 4.2: Time series of measurement at location 1 including commentary of levels. For explanation of dotted lines, refer Section 5.

5 Assessment Methodology

5.1 Residential criteria

The proposed zip line is in a rural environment, as defined in the Taupo District Plan. The Taupo District Plan rule 4b.1.9, reproduced below, provides the maximum noise limit for permitted activities within the rural environment.

> *Rule 4b.1.9 – Maximum noise limits*
>
> *The noise level arising from any activity measured within the notional boundary of any rural environment site or within the boundary of any residential environment site, other than the site where the noise is generated, shall not exceed the following limits:*
>
> *I. 7.00am – 10.00pm 55dBA L_{eq}*
>
> *II. 10.00pm – 7.00am 40dBA L_{eq} and 70dBA L_{max}*

These noise limits apply to noise from the zip line activity, as measured at the boundaries of the three residential dwellings. Only the day time noise limit applies as there will be no night time operations.

5.2 Recreational user criteria

District plan noise limits serve to establish whether the noise experienced from another site is likely to result in annoyance or unreasonable noise. However compliance with a noise limit does not necessarily result in the noise being considered excessive as defined in s326 of the Resource Management Act 1991 (RMA) - '*any noise that is under human control and unreasonably interferes with the peace, comfort and convenience of any person'*. There may be situations where a more restrictive approach is required if the noise source in question has particularly intrusive attributes. This is generally allowed for in NZS 6802:2008, i.e. the application of a special audible characteristic (SAC) correction to a noise source which has noticeable features.

In situations where there is the potential for excessive noise or where a receiving noise environment or source of noise is not considered within a district plan (e.g. recreational users exposed to noise that does not affect conventional noise sensitive receivers), there is a duty to avoid unreasonable noise. Section 16(1) of the RMA requires:

"*Every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level.*"

Whether noise is reasonable will depend upon the expectations of the individual and their sensitivity to noise. The degree of disturbance or annoyance will vary depending upon the characteristics of the noise, which can include the magnitude (sound level), frequency content, whether it is intermittent or continuous and the times of occurrence. There is a good evidence linking transportation and, to a lesser degree, industrial noise to defined thresholds of noise annoyance. However for recreational noise, there is a paucity of evidence as the degree of annoyance is based on the individual's expectations of the natural noise levels in the area. Therefore the onset of noise annoyance can vary considerably depending upon the context of the area, the activities being performed and the expectations of the individual.

The Huka Falls area is a popular visitor's attraction and unlike remote wilderness where walkers are likely to have expended considerable effort to remove themselves from anthropogenic (human

sounds), the surrounding area is typically frequented by day visitors who travel to the area by vehicle and stop to take photos with some visitors progressing further along the walking and biking tracks.

The definition of unreasonable noise in the context of a typical visitor to the falls and general surroundings is likely to vary based on their expectation of the noise levels in the area. The rating of unreasonable for visitors to the falls will be less than that of residents due to their transient use of the area and acceptance that it is a popular visitor location. The World Health Organisation's (WHO) community noise guidelines 1999 suggests that average noise levels should be kept low for recreational parks and public spaces and that the 'signal to noise ratio' is maintained (i.e. no creep in the background or ambient noise environment). The WHO guidance does not provide any guidance on the duration of noise that is acceptable but it is generally accepted that people are more likely to be less affected by high levels of noise if exposed for a short period of time. A typical example is the noise experienced from overflying aircraft. People are more likely to be accept this type of activity if they only occasionally experience this type of noise. Whereas a permanent resident is likely to be more disturbed due to the prolonged exposure to regular overflights. Therefore in the context of this assessment, the duration or frequency of noise exposure is also a consideration.

The WHOs 'signal to noise ratio' or background / ambient creep is determined by comparing the noise in question to the current noise environment. The degree of noise change is then assessed against a commonly adopted semantic rating system. Noise level changes less than 3 dB are considered negligible as a perceptible change in noise level will occur at noise level changes greater than 3 dB.

The following table provides a rating system commonly used to describe changes in noise levels.

Table 5.1: Rating change in noise level

Noise change	Rating
< 3dB	negligible
3-5 dB	minor increase
5-10 dB	moderate increase
> 10 dB	major increase

5.3 Assessment criteria

Rule 4b.4.5 of the Taupo District Plan sets out assessment criteria related to noise. Table 5.2 lists these criteria and discusses the relevant aspects of this assessment.

Table 5.2: District plan assessment criteria

Criteria	Commentary
Ambient sound levels and the impact of any cumulative increase.	A baseline survey of sound levels in the local area has been undertaken. The baseline survey measurements provided data of background levels and the contribution from other regular noise generating activities such as jet boats and helicopters in the area. Sound propagation modelling has been undertaken to provide predicted noise levels from the zip line operation. The modelling includes consideration of
The degree to which the sound contrasts with the characteristics of the existing sound environment in terms of level, character, duration and timing.	
The length of time, and the level by which the noise limits will be exceeded, particularly at night.	

Criteria	Commentary
The nature and location of nearby activities and the effects they may experience resulting from the increase in sound levels.	the local terrain, the variation in sound power level and duration. This report provides an assessment of the predicted sound levels due to the operation of the zip line and an assessment against noise limits for residential receivers and a comparison of the existing and predicted noise levels for recreational receivers. There will be no night time activity on site and therefore only day time amenity affects have been assessed. The zip line system will use latest technology to minimise the noise generated by the cable, carrier and braking system.
Whether the sound levels are likely to detract from the amenity or general environmental quality of the surrounding Residential Environment.	
The topography of the allotment and any influence this may have on sound propagation.	
Proposed methods for the avoidance, remedying or mitigation of potential adverse effects and the degree to which they would be successful including: i. Insulation and barriers and the isolation of the source of the noise.	

6 Assessment of Effects

6.1 Sound propagation modelling

Sound propagation modelling software, SoundPLAN version 8.1, has been used to undertake modelling of the potential noise effects of the proposal. SoundPLAN uses the ISO:9613-2 general calculation method for the attenuation of sound during propagation outdoors.

6.1.1 Source data

The sound power level data for the zip line has been determined from a review of measurements and assessments undertaken at other zip line courses.

Of relevance, noise measurement data collected by J.C.Brennnan & Associates, Inc. at Park City, Utah in August 2013, indicated that the primary noise sources associated with the zip line included people yelling, and the metal-on-metal sound from the cable and the sheave wheel. Noise level data indicated that two individuals passing by on the zip line resulted in a maximum noise level of 68 dB(A) and a sound exposure level (SEL) of 72 dB(A), at a distance of 50 feet (~15 m).

Accordingly, a sound power level of 100 dB(A) has been used to represent the noise generated at a single point in time as two customers traverse along the cable. This sound power level is inclusive of the additional noise generated by a person yelling. The assessment assumes that a person yells for the entire time they are on the zip line. From observations of similar operations, a person is only likely to yell once they leave the starting platform. For the remainder of the period, noise levels are estimated to be at least 15 dB lower than those included in the SoundPlan model. The assessment presented is therefore a worst case.

Each proposed zip line has been represented by a line source within the model. The applicant expects that whilst the course is in use, there will be approximately four traverses on each zip line in a 15 minute period[1]. NZS 6802 prescribes a standard reference time interval of 15 minutes.

SoundPLAN provides a moving point source calculator that calculates the resultant sound power level per linear metre of a line source, based on the following parameters; sound power level of the source, the speed at which the source moves, the distance over which the source travels and the number of events within a specified time frame.

Table 6.1 presents the line source information used within the modelling. The geometry of the line sources are as per the information provided in Figure 2.1 and Figure 2.2. The model assumes all lines run simultaneously.

Table 6.1: Line source data used in the modelling

Zip line run	Source type	Sound power level Lw dB(A)	Speed (km/h)	Length of run (m)	Sound power level per metre of a single pass L'w dB(A)	Sound power level of line for a single pass Lw dB(A)
Run1	Line	100	65	266	51.9	75.2
Run2	Line	100	65	183	51.9	73.6
Run3	Line	100	65	265	51.9	75.2
Run4	Line	100	65	211	51.9	74.2
Run5	Line	100	80	573	51	78.5

[1] applicant estimates there will be 10 customers per tour and four runs in 15 minutes.

Noise measurements[2] were undertaken by 101 Acoustics Ltd at a landing platform of a zip line run, at the Zip World Velocity site in Bethesda, Wales. The noise measurements captured the customer approaching and hitting the braking system to finish the run. The noise level data indicated a highest specific noise level of 78 dB $L_{Aeq\ (20\ sec)}$ at a distance of 3 metres.

Within the SoundPLAN model, the noise generated when the customer hits the braking system at each of the landing platforms has been included as a point source. A sound power level of 99 dB(A) for a duration of five seconds has been assumed for each event, with four events every 15 minutes.

6.1.2 Terrain

The terrain in the area of the proposed zip line course and Waikato River is very complex and varies significantly over short distances. High resolution 0.5m LiDAR data for the immediate area surrounding the proposed zip line course and nearby receivers has been included within the SoundPLAN model.

The propagation of sound near the ground is affected by the ground type. Different types of surface have varying levels of sound absorption. These variations have been accounted for in SoundPLAN by defining ground absorption factors to specified areas. A ground absorption factor of 0 (hard ground) has been applied to the extent of the Waikato River. A ground absorption factor of 1 (soft ground has been applied to the surrounding area, which is predominantly covered by forest and pasture land.

6.2 Predicted levels

A contour plot of the predicted average noise levels for the surrounding area is provided in Appendix D.

6.2.1 Residential receivers

Table 6.2 presents the average predicted sound pressure levels due to zip line operations at the three closest residential receiver locations. Predicted levels assume that the zip line will be operating over 15 minutes (four traverses), as per the reference period specified in NZS 6802. The Rating Level includes a +5 dB correction to account for the special audible characteristics of people yelling on the zip line.

Table 6.2: Predicted sound levels and rating level at residential receivers (at or within the notional boundary)

Receiver	Predicted $L_{Aeq\ (15\ min)}$	Rating level $L_{Aeq\ (15\ min)}$	District plan permitted activity limit L_{Aeq}
1/527 Wairakei Drive	25	30	55
2/527 Wairakei Drive	25	30	
3/527 Wairakei Drive	24	29	

The calculated rating levels at residential receivers are well below the District Plan daytime permitted activity noise limit of 55 dB L_{Aeq}. The predicted noise levels are unlikely to be audible against background levels at residential locations.

[2] 101 Acoustics Ltd – Noise Report: An assessment of the noise impact of increasing capacity of zip line operations at Zip World Velocity (Bethedsa), October 2015.

Noise effects at residential receivers will be negligible.

6.2.2 Recreational receivers

The predicted sound levels at each of the monitoring locations on the walking and cycling trails is presented in Table 6.3. Baseline measurements are also presented with a comparison against the predicted levels.

The baseline L_{A90} value represents the sound level which is equalled or exceeded for 90% of the measurement time. This level will generally exclude short duration high noise level events such as jet boat pass-bys and helicopter fly overs. The L_{A90} can be said to the level of sound that subjectively is perceived as continuously present and is representative of the quieter periods of a measurement.

A SAC correction has not been applied to the noise experienced by recreational users as the scope of NZS 6802:2008 applies to noise experienced by residential activities. If it were to be applied, the resulting rating levels would be below the permitted activity noise limit (residential) of the district plan (i.e. less than 55 dB L_{Aeq}).

Table 6.3: Predicted levels at recreational locations

Receiver	Baseline		Predicted	Comparison	
	L_{Aeq}	L_{A90}	L_{Aeq}	Predicted increase in baseline L_{Aeq}	Difference [1] predicted over L_{A90}
1	54	41	37	0.1	-5
2	65	46	47	0.1	0
3	46	45	45	2.4	0
4	46	41	43	1.7	2
5	67	66	34	0.0	-32
6	68	64	31	0.0	-33
7	62	59	28	0.0	-31
8	58	56	28	0.0	-28
9	53	53	31	0.0	-22
10	62	61	36	0.0	-25
11	68	62	36	0.0	-26
12	61	57	39	0.0	-18
13	55	45	41	0.2	-5
14	61	34	50	0.4	16
15	59	34	39	0.0	5
16	64	34	35	0.0	1

1 Only levels likely to be greater than -10 dB may be audible.

6.2.2.1 Predicted increase in baseline L_{Aeq}

The predicted noise levels have been added to the measured ambient noise levels and the change in noise level has been reported. At all measurement locations the increase in noise level due to the operation of the zip lines will be below 3 dB.

According to the semantic rating (Table 5.1), the increase in average noise level at all recreational receiver locations will be negligible and therefore operation of the zip line will not result in a creep in ambient noise levels.

6.2.2.2 Difference over baseline L_{A90}

We have assessed the difference between the predicted noise level and the measured background, L_{A90}. This difference determines the significance of the noise and whether it is likely to be clearly audible or not.

Locations 5-12 are areas that are most frequented by recreational users. The predicted average noise levels from the zip line course are negligible at these locations due to the distance to the zip line course and the dominance of the sound generated by the falls. Operation of the zip line when experienced at Location 5-12 will result in a negligible noise effect and will not detract from visitors' enjoyment of the Huka Falls.

Locations 1-4 and 13-16 are further downstream, at these locations the background levels are lower due to the distance from the Huka Falls. The predicted L_{Aeq} values are not greater than 5 dB above the baseline L_{A90} levels, the exception being monitoring location 14, where the difference is +16 dB.

Location 14 is in close proximity to the landing platform at the end of run 3 and the start of run 4. This location provides a good representation of the potential average noise levels a recreational user may receive further downstream of the falls, if they were positioned near a landing platform for the entire assessment period of 15 minutes. The average predicted L_{Aeq} level of 50 dB at location 14 is 11 dB below the measured L_{Aeq} of 61 dB.

At locations downstream of the falls where background noise levels are lower than the contribution of noise from use of the proposed zip lines, there will be periods when zip line noise is audible. However the overall level of noise and the time of exposure that a recreational user will be exposed to it are considered to result in a less than minor noise effect.

6.2.2.3 Maximum predicted levels

Table 6.4 presents the maximum predicted instantaneous noise levels at locations downstream of the falls. These predicted levels assume the maximum sound power level is present at each location on the modelled zip line and is therefore a worst case scenario. The measured noise level of jet boats passes and a low level helicopter fly over are presented for each location with a comparison against the predicted maximum zip line noise levels. Where a jet boat pass-by event did not occur during the measurement, the most representative nearby measurement has been used as a proxy.

Table 6.4: Maximum instantaneous noise levels at recreational locations

Receiver	Measurement L_{Amax}		Predicted	Comparison	
	Jet boat pass by	Helicopter fly over	L_{Amax}	Predicted – Jet boat	Predicted – Helicopter
1	70	81	72	2	-9
2	80	81	82	2	1
3	68	81	80	12	-1
4	62	81	78	16	-3
13	68	81	71	3	-10
14	68	81	79	11	-2
15	68	81	71	3	-10
16	90	81	69	-21	-12

At locations where the trails are near the river bank the maximum predicted instantaneous noise level from the zip line is comparable to a jet boat pass by. The maximum predicted instantaneous noise level is predicted to be equivalent or less than a helicopter fly over at all locations.

6.3 Traffic

Assuming traffic speeds and fleet composition do not change, it would require traffic associated with the development (customer and shuttle bus movements) to be comparable to existing vehicle movements to result in a 3 dB increase in road traffic noise levels. This is an improbable scenario and therefore traffic associated with the development will not result in a more than minor effect.

6.4 Construction

Construction will create temporary noise during the construction of the platforms and the installation of the zip line equipment. We understand there is nothing unusual about the proposed structures or construction methods that would lead to louder-than-usual construction. Construction noise is expected to meet the relevant construction noise limits of NZS 6803:1999 due to the significant spatial separation from existing residential and commercial buildings.

7 Conclusions

The sources of noise due to the proposed Huka Falls zip line course will principally consist of:

- The metal on metal sound from the cable and sheave wheel.
- Yelling and shouting from people whilst travelling along the zip line.
- Sound produced from the dampening and braking system at the end of each line.

The effects of noise emissions from the proposal have been assessed using sound propagation modelling using worst case assumptions. A baseline monitoring survey was undertaken in the area surrounding the proposed zip line course.

The average predicted noise levels at residential receivers are significantly below the district plan noise limits for permitted activities and are unlikely to be audible against background noise levels. The proposed zip line course is therefore unlikely to detract from the amenity or general environmental quality of the surrounding residential environment.

The average predicted noise levels at locations of recreational user exposure are less than the measured average ambient noise levels. The increase in average noise levels at recreational user locations is negligible.

Predicted instantaneous maximum noise levels at downstream locations on the trails, particularly near the zip line landing platforms, will result in audible noise compared to the existing ambient and background sound levels. However these predicted maximum noise levels are similar to the levels experienced by jet boat passes at most locations on the trails, and less than the levels experienced during low-level helicopter fly overs at all locations.

Recreational users in the area of the proposed zip line course currently experience maximum noise levels from adventure activities equivalent to or in exceedance of the proposed zip line course. The effects of noise from the proposal are unlikely to be considered incongruous in the heavily frequented tourist and adventure activity area. The noise effects associated with the proposal are therefore unlikely to detract from the amenity or the general environmental quality of the surrounding area for recreational users, given the nature of the other activities that are currently taking place in the area.

Provided that construction does not require unusually noisy equipment, construction of the zip lines will not result in adverse levels of noise and the recommended noise limits of NZS 6803:1999 will be met.

Provided the zip line equipment has noise performance as good as that used (and measured) elsewhere, then the effects of noise due to the proposed zip line course are assessed to be negligible.

8 Applicability

This report has been prepared for the exclusive use of our client Huka Falls Zip Line Ltd, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report in support of an application for resource consent prepared by Sky Play Adventures Ltd and that Taupo District Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
PP	
.....	.....
Matt Bevington	Penny Kneebone
Senior Environmental Scientist	Project Director

\\ttgroup.local\corporate\christchurch\tt projects\1011379\issueddocuments\190807.hukanoise_fin.docx

Appendix A: Sound Level Meter Information

Class 1 type Bruel & Kjaer 2250 Sound level meter.

Serial number 2559312.

IEC 61672 class 1 Bruel & Kjaer 4189 microphone.

Serial number 2453501.

Calibration due - 6-8-2020

Appendix B: Photographs of Baseline Locations

Photograph Appendix B.1: Monitoring location 1.

Photograph Appendix B.2: Monitoring location 2.

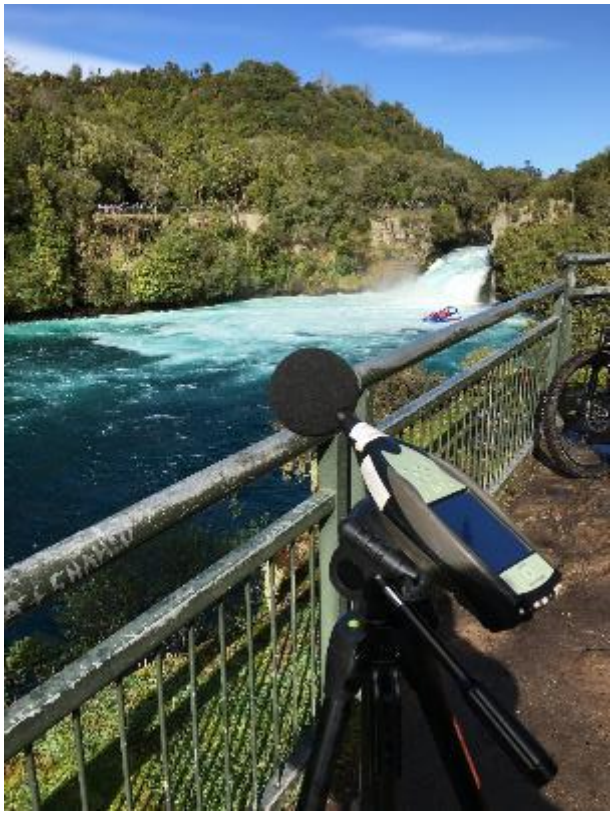
Photograph Appendix B.3: Monitoring location 3.

Photograph Appendix B.4: Monitoring location 4.

Photograph Appendix B.5: Monitoring location 5.

Photograph Appendix B.6: Monitoring location 6.

Photograph Appendix B.7: Monitoring location 8.



Photograph Appendix B.8: Monitoring location 11.

Photograph Appendix B.9: Monitoring location 12.

Photograph Appendix B.10: Monitoring location 13.

Photograph Appendix B.11: Monitoring location 14.

Photograph Appendix B.12: Monitoring location 15.

Photograph Appendix B.13: Monitoring location 16.

Appendix C: Baseline Monitoring Survey

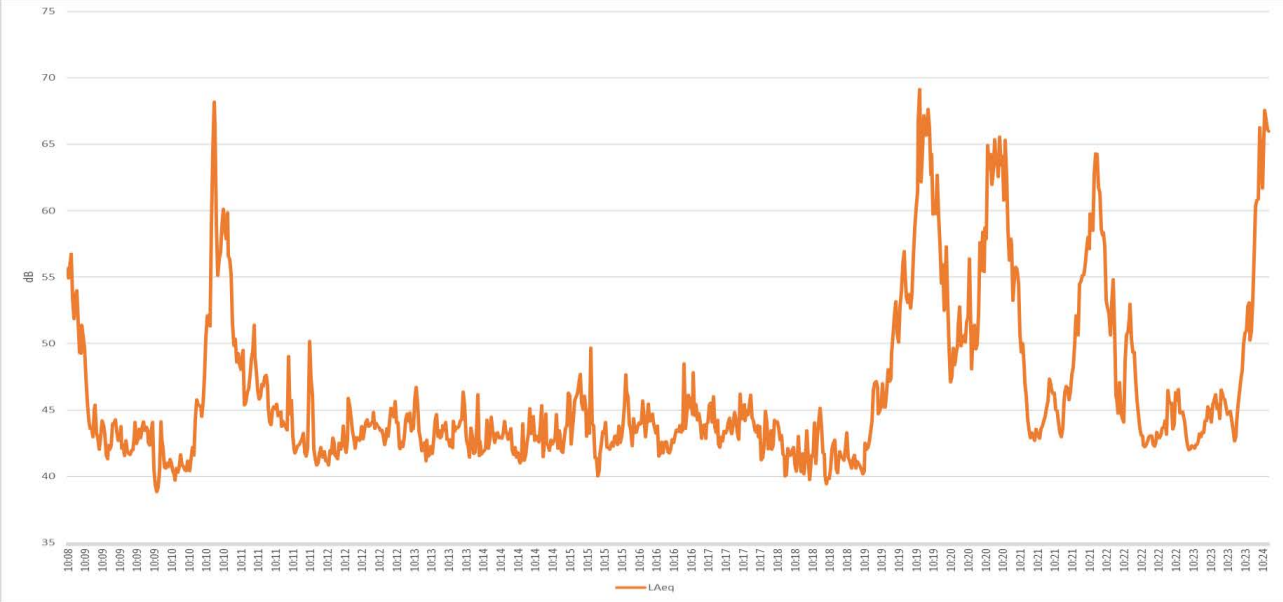


Figure Appendix C.1: Time series of L_{Aeq} at monitoring location 1.

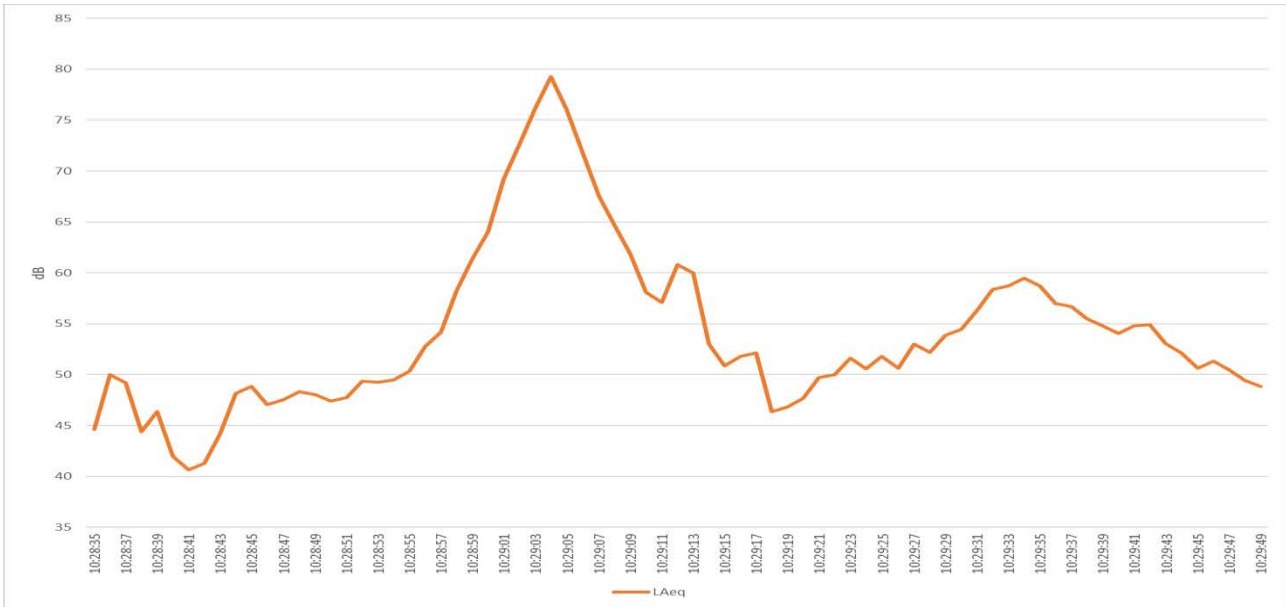


Figure Appendix C.2: Time series of L_{Aeq} at monitoring location 2.

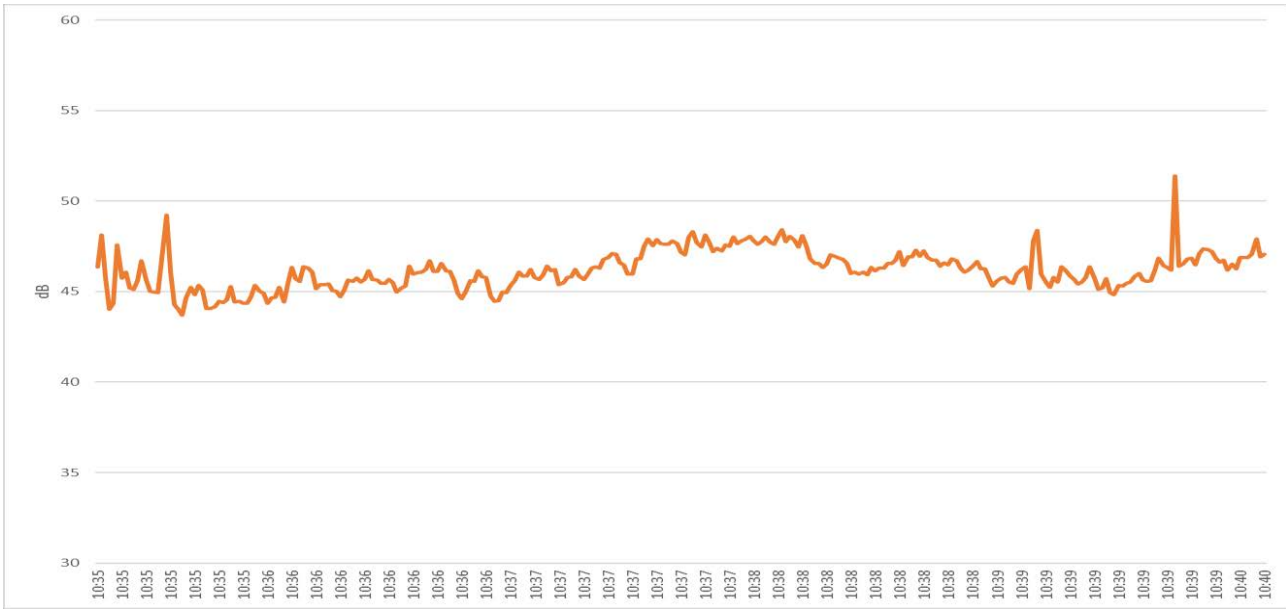


Figure Appendix C.3: Time series of L_{Aeq} at monitoring location 3.

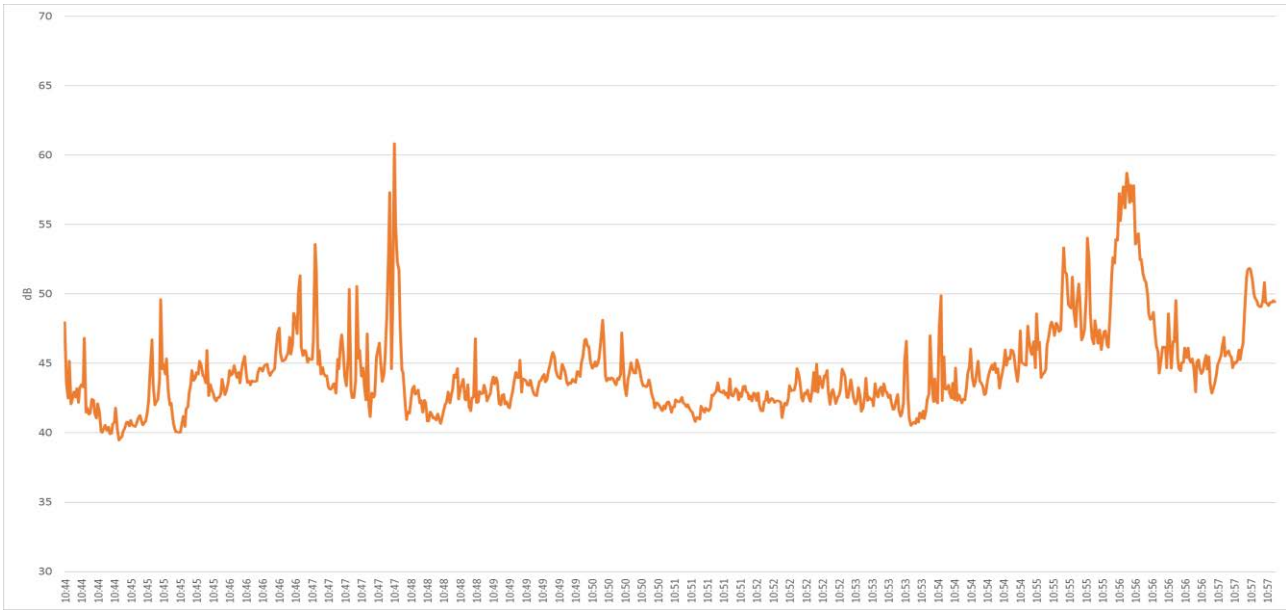


Figure Appendix C.4: Time series of L_{Aeq} at monitoring location 4.

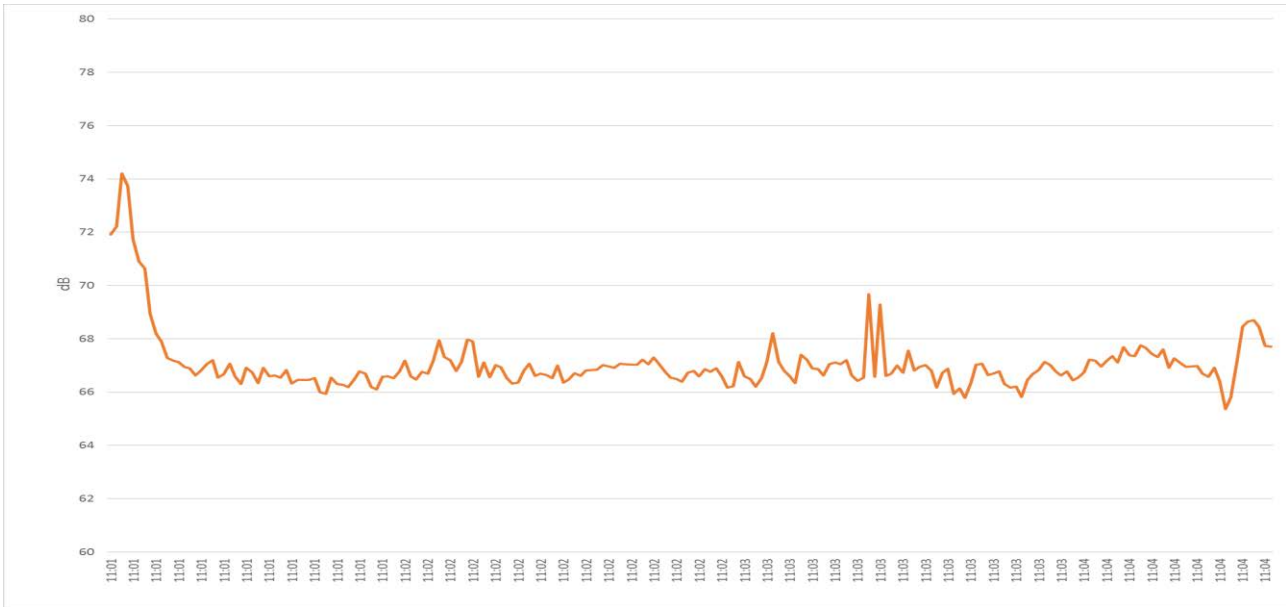


Figure Appendix C.5: Time series of L_{Aeq} at monitoring location 5.

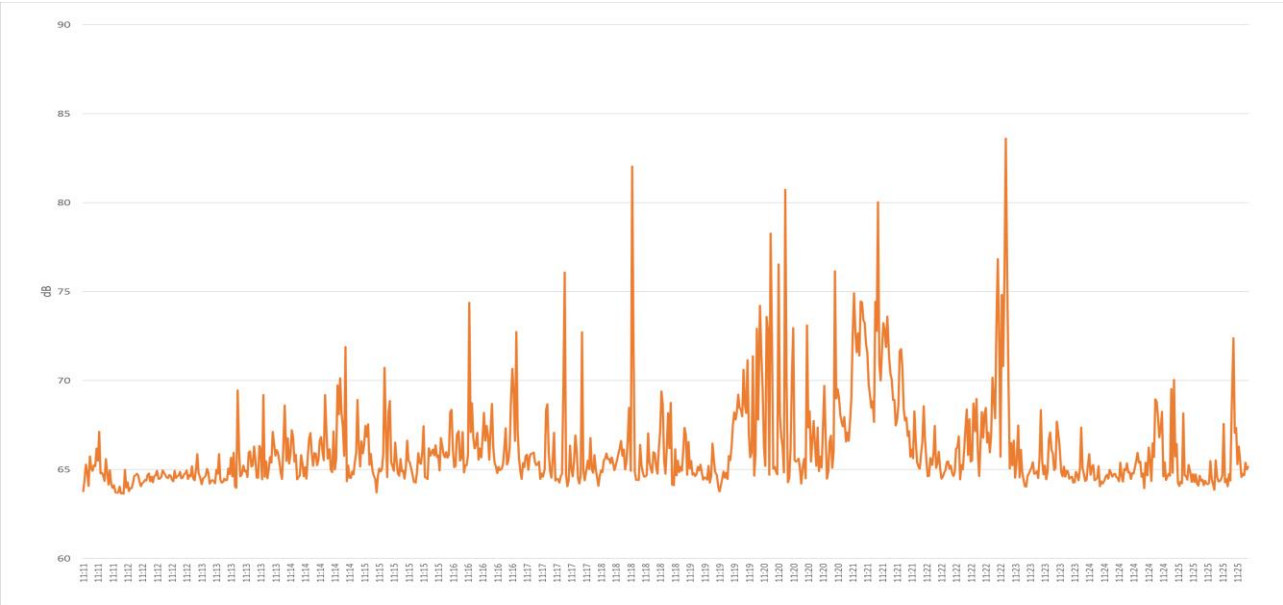


Figure Appendix C.6: Time series of L_{Aeq} at monitoring location 6.

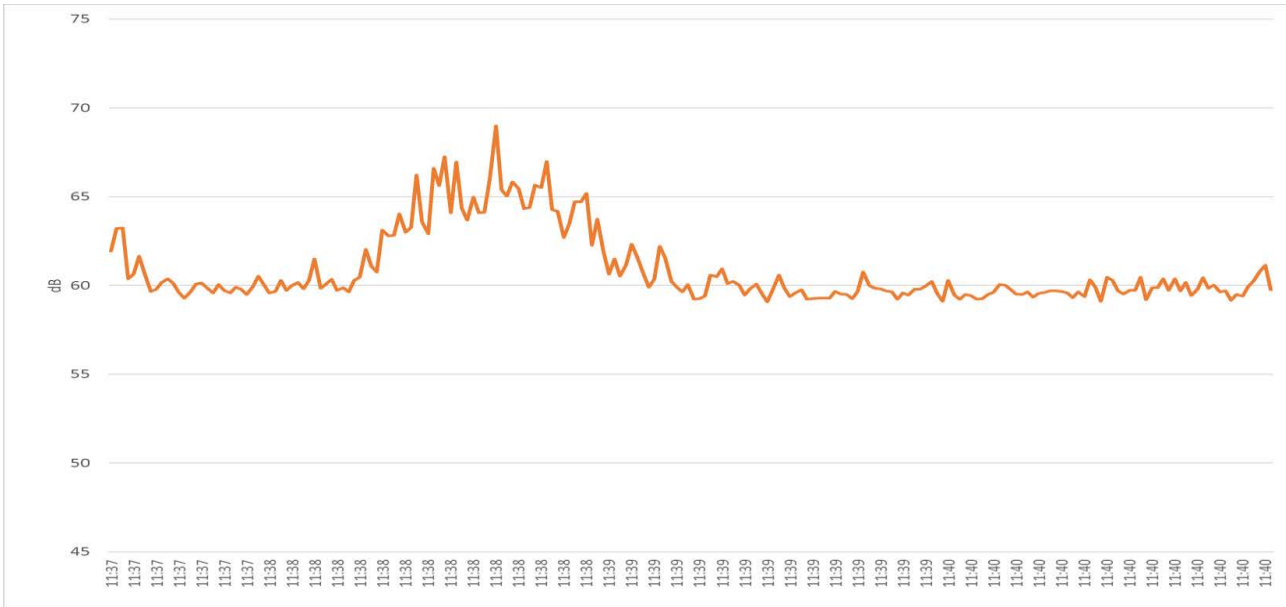


Figure Appendix C.7: Time series of L_{Aeq} at monitoring location 7.

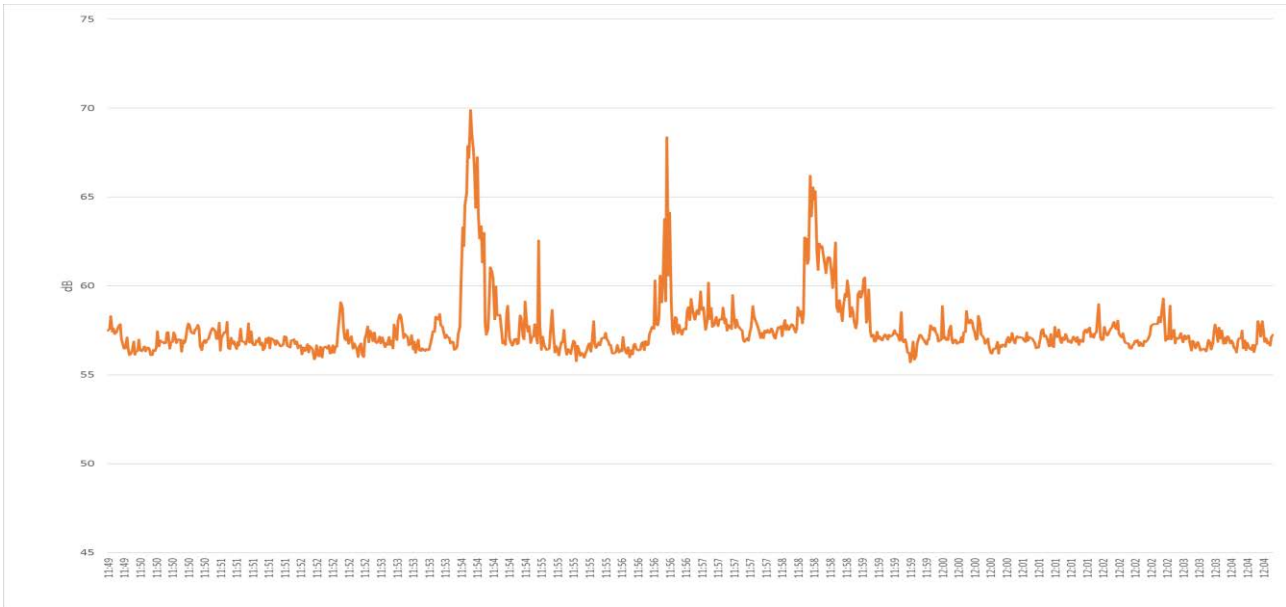


Figure Appendix C.8: Time series of L_{Aeq} at monitoring location 8.

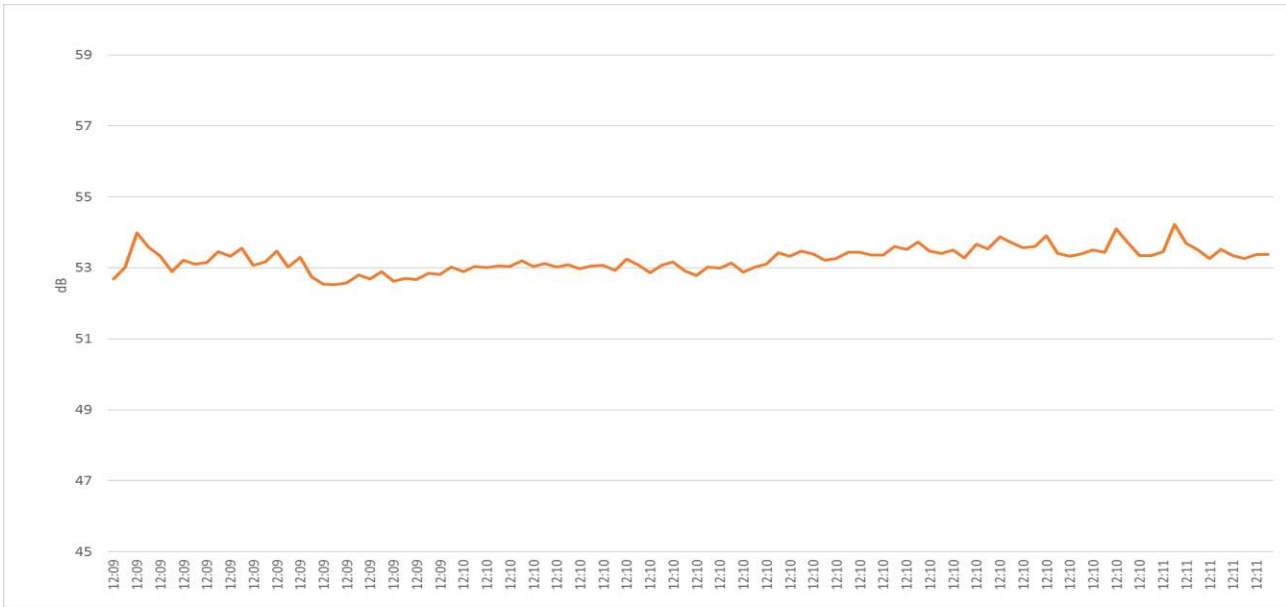


Figure Appendix C.9: Time series of L_{Aeq} at monitoring location 9.

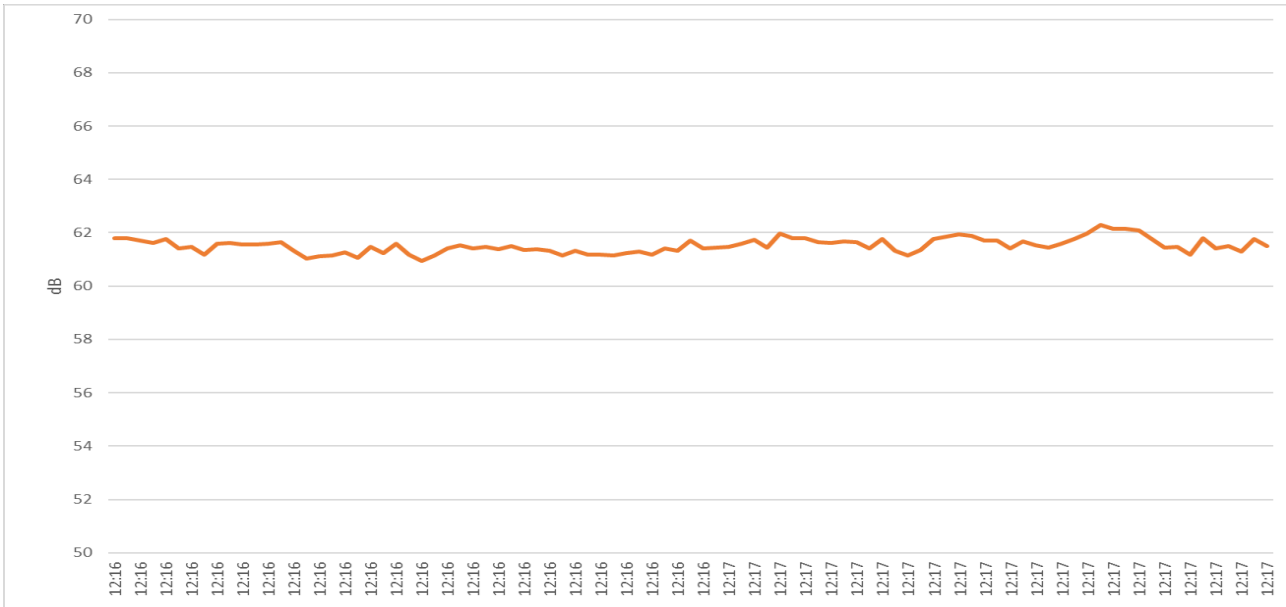


Figure Appendix C.10: Time series of L_{Aeq} at monitoring location 10.

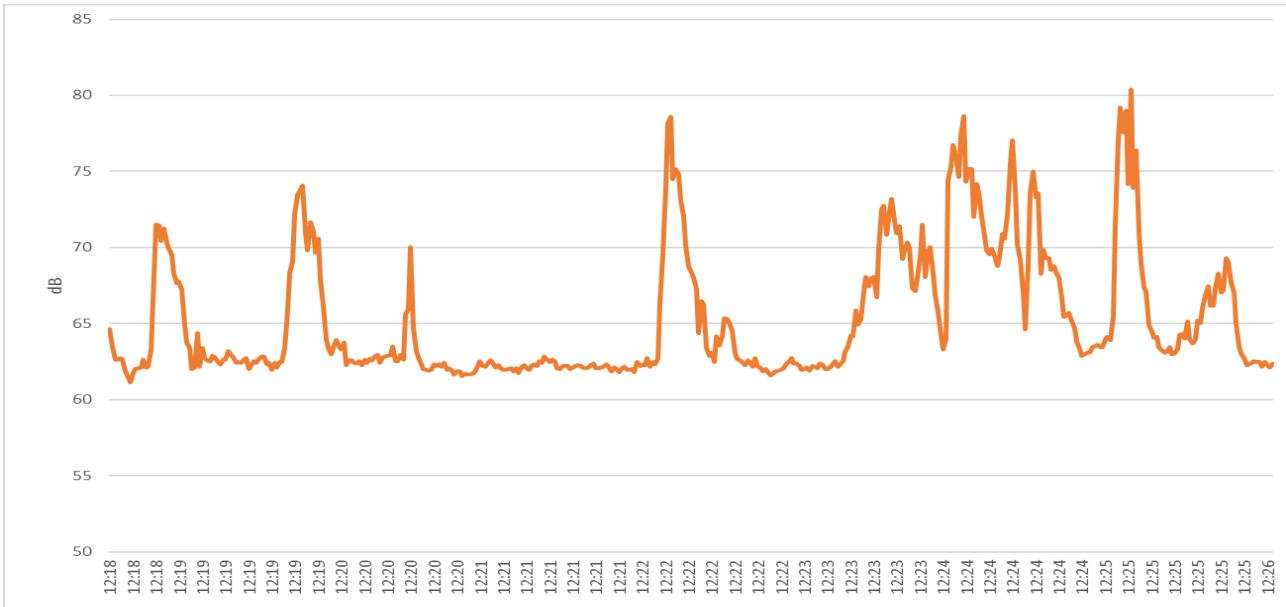


Figure Appendix C.11: Time series of L_{Aeq} at monitoring location 11.

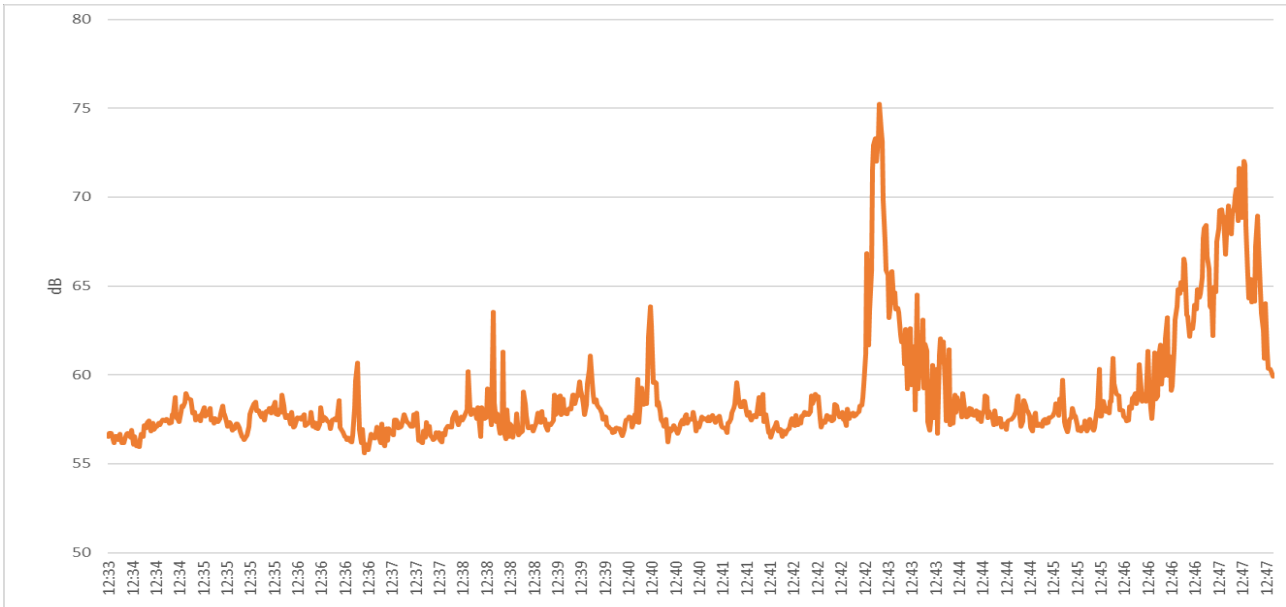


Figure Appendix C.12: Time series of L_{Aeq} at monitoring location 12.

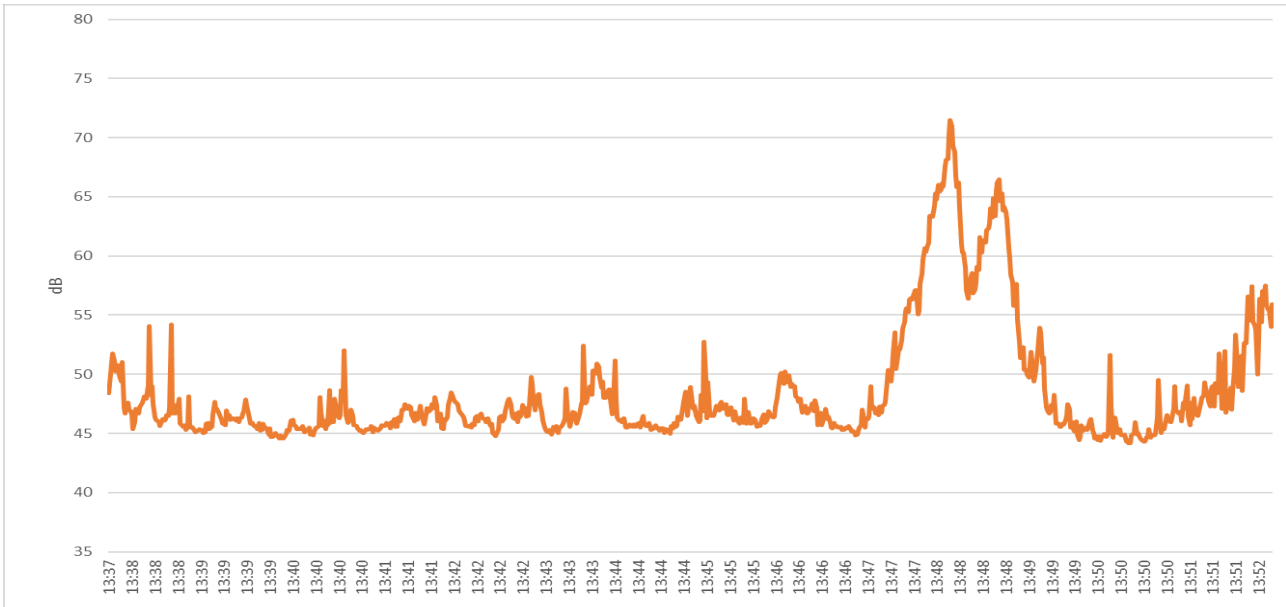


Figure Appendix C.13: Time series of L_{Aeq} at monitoring location 13.

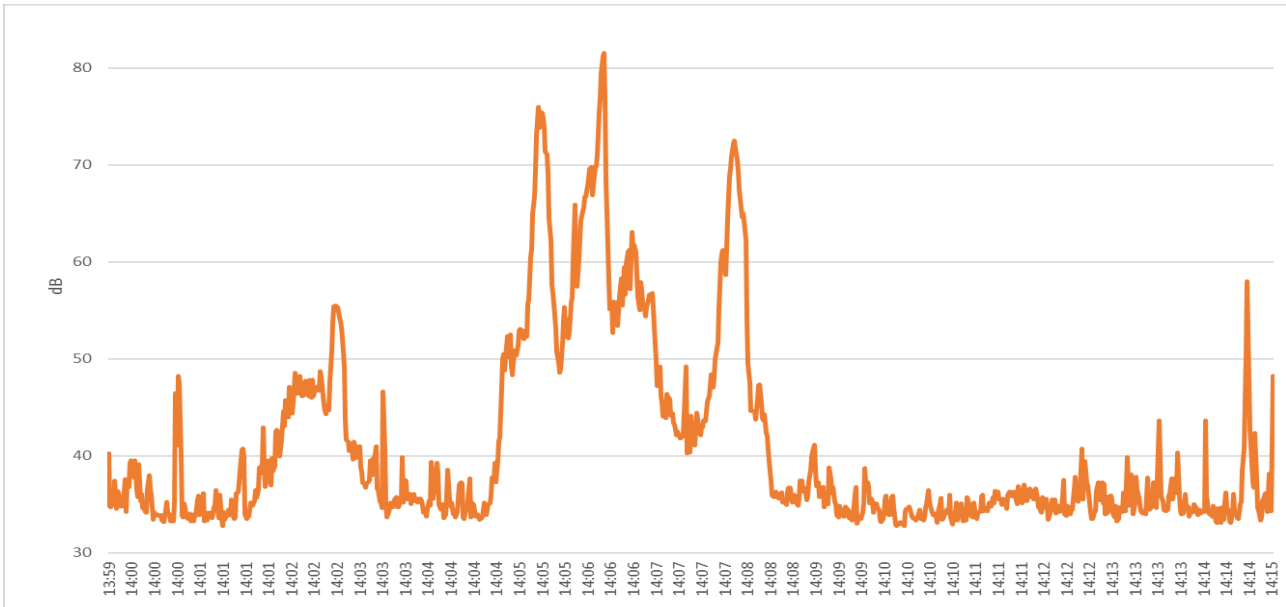


Figure Appendix C.14: Time series of L_{Aeq} at monitoring location 14.

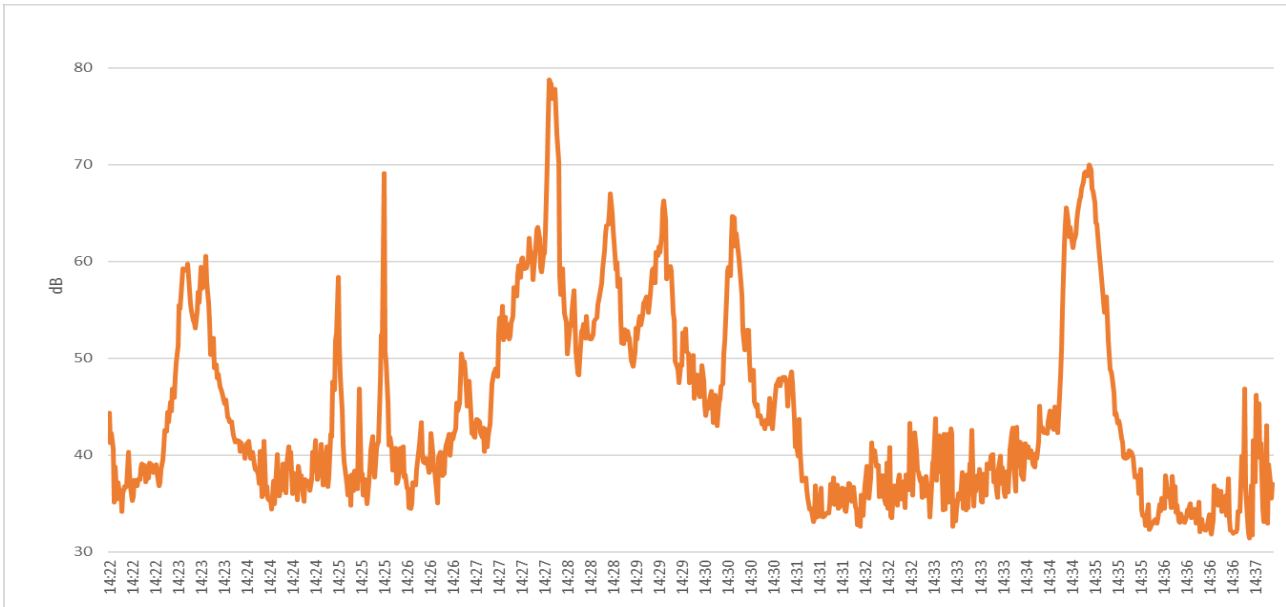


Figure Appendix C.15: Time series of L_{Aeq} at monitoring location 15.

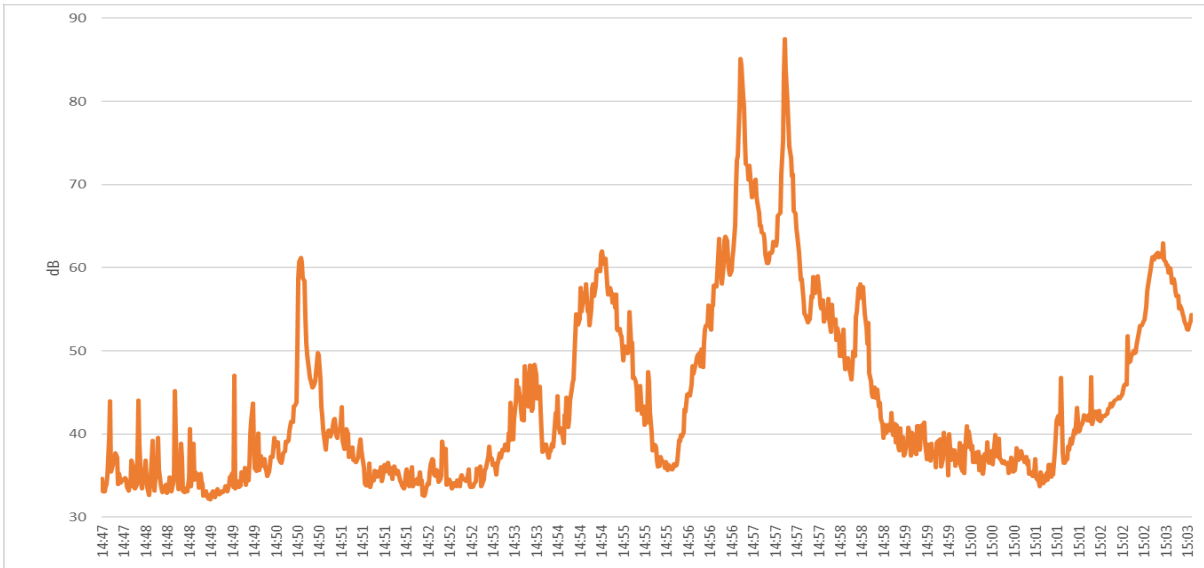
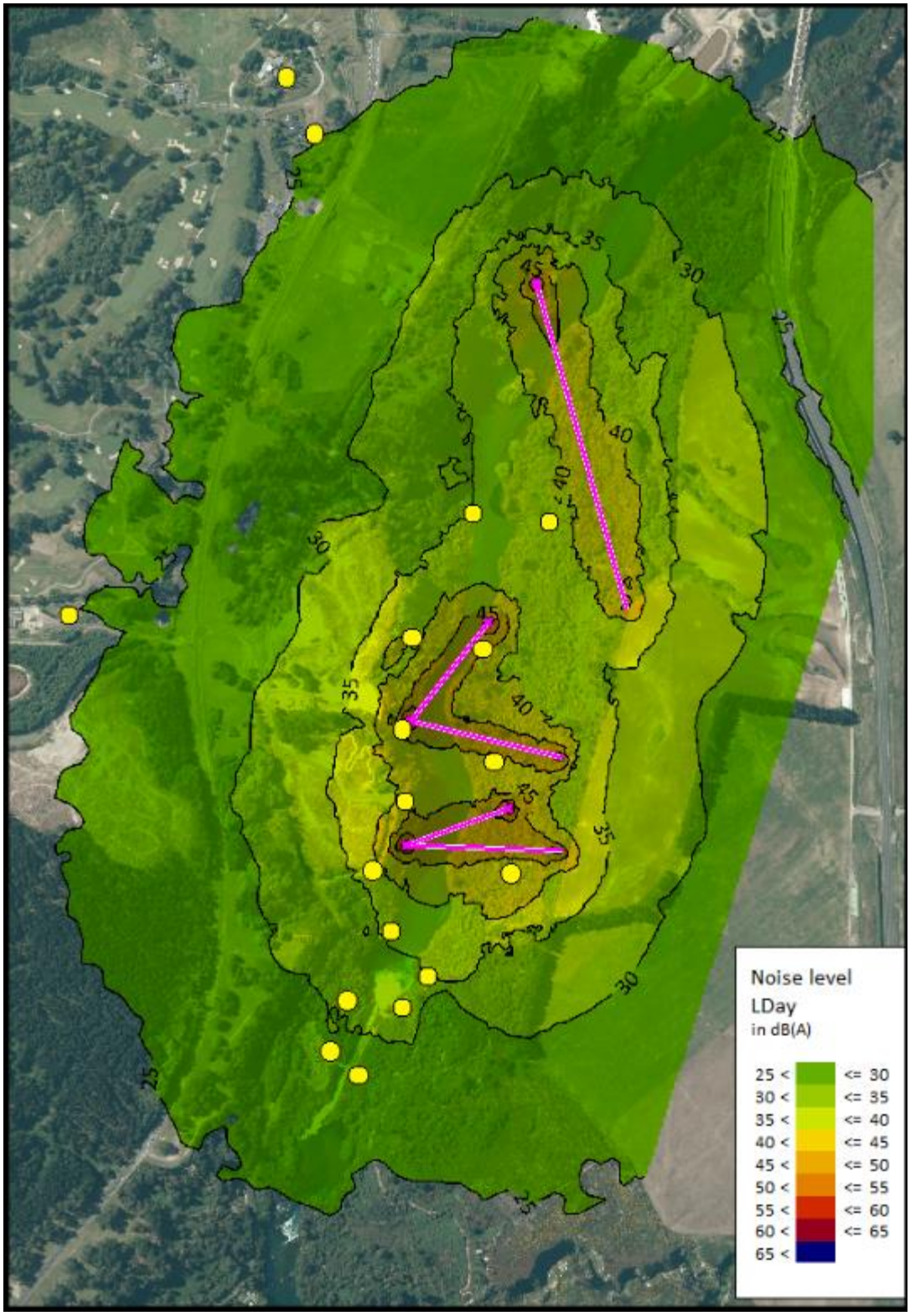


Figure Appendix C.16: Time series of L_{Aeq} at monitoring location 16.

Appendix D: Average Noise Level Contour Plot


Noise level
LDay
in dB(A)
25 < <= 30
30 < <= 35
35 < <= 40
40 < <= 45
45 < <= 50
50 < <= 55
55 < <= 60
60 < <= 65
65 <

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Appendix 8. Traffic and Parking Assessment

415 Huka Falls Road, Taupo
Proposed Zipline Operation

Traffic Impact Assessment

Date: 5 August 2019 2019

Author: Duncan Campbell ME (Hns) CMEngNZ MIPENZ

For: Adrian Pike
Skyplay Adventures Ltd

1.0 INTRODUCTION

This is a brief assessment of a proposed new Zipline recreational activity located at 415 Huka Falls Road in Taupo. In summary, it is concluded that the proposal is satisfactory from a traffic engineering perspective in terms of operation and safety.

Location of the site is shown in Figure 1 below, and is on the north-eastern eastern corner of the Huka Falls Road intersection with Loop Road, close to Wairakei Drive. Drawing T1910 001 is attached to this report and show the proposed layout.

This report will assess proposed parking and access arrangements, as well as potential effects to the local street network.

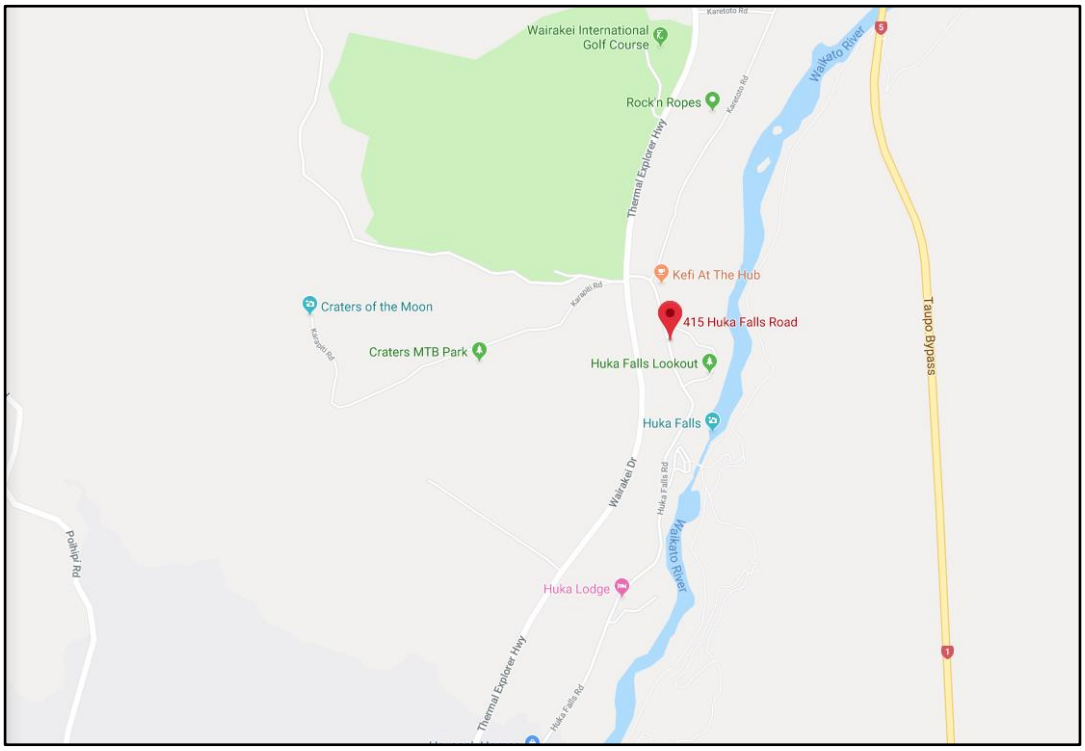

Figure 1: Site location

2.0 SITE DESCRIPTION AND CRASH HISTORY

Site Description

Wairakei Drive is an Arterial Road that carries in the order of 7,000 vehicles per day[1], and is a single-lane carriageway approximately 12m wide with a speed limit of 80 km/hr (recently reduced in December 2018 from 100 km/hr). Huka Falls Road is a Local Road which carries around 1500 vehicles per day[1] with a carriageway width of around 6.5m and a speed limit of 50 km/hr. The intersection of Huka Falls Road with Wairakei Road is slightly staggered from Karapiti Road on the opposite side, and there are no turning lanes for either intersection (refer Figure 2).

Nearby activities include the popular Craters Mountain Bike Park on the other side of Wairakei Drive, and Huka Falls which is around 700m to the south on Huka Falls Road. The site at 415 Huka Falls Road is currently bare land, and is adjacent to a bike rental shop and the Hub Café which also has a helipad.

Figure 2: Site Location

[1] Based on traffic count data supplied by Taupo District Council, undertaken in September 2017 (Wairakei Drive) and December 2018 (Huka Falls Road)

Crash History and Proposed Safety Project

In terms of reported crash history the past five years 2014 -18 (and including to date in 2019), there were 20 reported crashes within 250m of the site, 19 of these occurred on Wairakei Drive as shown in Figure 3[2]. There was also one minor vehicle damage only incident on Huka Falls Road in the immediate vicinity of the site that involved a vehicle manoeuvring out of a parking space.

Of the 19 reported at the Wairakei Drive / Huka Falls Road / Karapiti Road intersection, three involved serious injury and five minor injury. This does represent a high incidence of crashes, considered in great part due to the undesirable combination of an offset X-intersection without any turn bays and in a high speed environment. Although the recent speed limit reduction to 80 km/hr will improve matters, the crash history does appear to justify some kind of significant safety intervention. The existing staggered alignment of the two side roads does not allow for provision of right-turn bays since they would overlap, so Taupo District Council is apparently considering a safety project here in the next 2-3 years that includes the realignment of Karapiti Road[3].

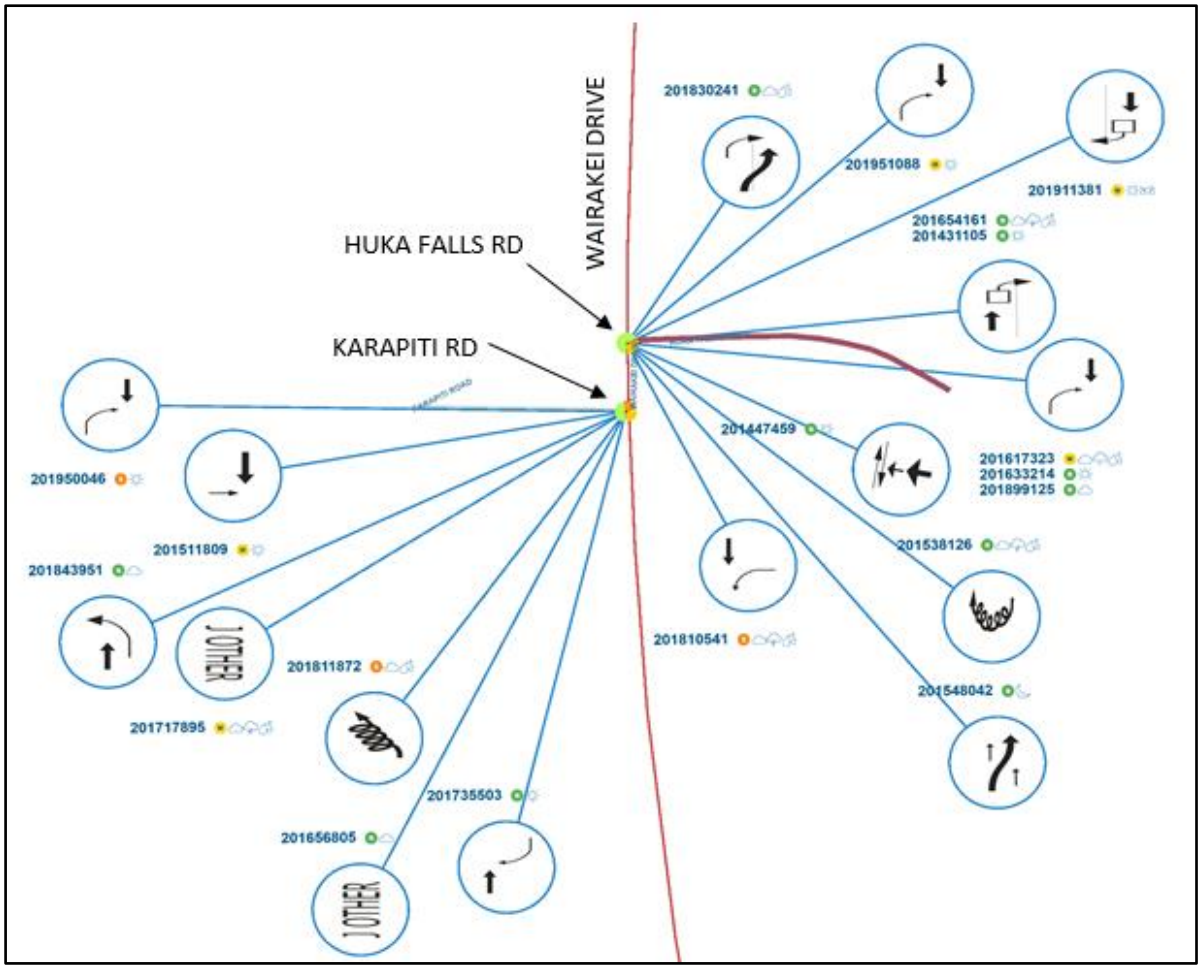

Figure 3: Reported crashes 2014 – 2019

[2] Data sourced from the NZTA Crash Analysis System (CAS)
[3] According to information supplied by Taupo District Council.

3.0 ACCESS

Drawing T1910 001 shows the proposed access arrangement for the site, and comprises separate entry and exit driveways on Loop Road. Both vehicle crossings are approximately 11m wide in order to accommodate tour coach tracking. The exit is some 40m from the intersection with Huka Falls Road, and has good sightlines in both directions (refer Figure 4). Sightlines in both directions for drivers leaving Loop Road at the Huka Falls Road intersection are also good for the 50 km/hr speed environment (refer Figure 5).

Overall it is considered that the proposed access arrangements are satisfactorily in terms of safety and operation.

Figure 4: Looking left and right from the proposed exit onto Loop Road

Figure 5: Looking left and right from Loop Road at the intersection with Huka Falls Road

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4.0 PROPOSED OPERATION, PARKING AND LAYOUT

Proposed Operation

The Zipline operation is expected to operate as follows:

- Hours of operation 8am – 6pm with some seasonal fluctuation
- Around 50% of patrons will arrive by tour coach or arranged shuttle from Taupo accommodation, the rest by private vehicle[4].
- After a briefing session at the Huka Falls Road headquarters, tour groups of up to 10 customers and two staff will be transported by shuttle to Rakanui Road some 10 km away to start the zipline tour (refer Figure 6). Zipline tours will finish at the Huka Falls Road site.
- Tour duration between 2-4 hours depending on customer preference, with average tour duration estimated as 2 hr 40 min
- 40 min interval between tours

Parking Requirements, Demand and Provision

The Taupo District Council requirement for outdoor recreational activities is 25 car parking spaces per hectare. However, due to the very low intensity of the Zipline activity this is not considered to be a reasonable basis for such an assessment, so the parking demand is estimated from first principles as described below.

Based on the aforementioned assumptions, the Zipline would cater for up to some 110 customers per day, and up to around 50 customers and 12 staff onsite at any one time. Assuming 50% of customers arriving by private vehicle, maximum customer parking demand is estimated at around 8-13 vehicles at any one time (based on four tour groups on the Zipline at any one time, plus one group arriving or departing).

The proposed parking layout is seen on Drawing T1910 001 which shows some 18 car parking spaces including two accessible spaces, which is expected to be more than adequate for the expected level of activity. Space for up to two tour coaches to load and unload passengers is also provided. Staff and tour coaches laying over during Zipline tours, can park in the relatively level grass area at the north of the site (refer Figures 2 and 7).

[4] Based on client estimate

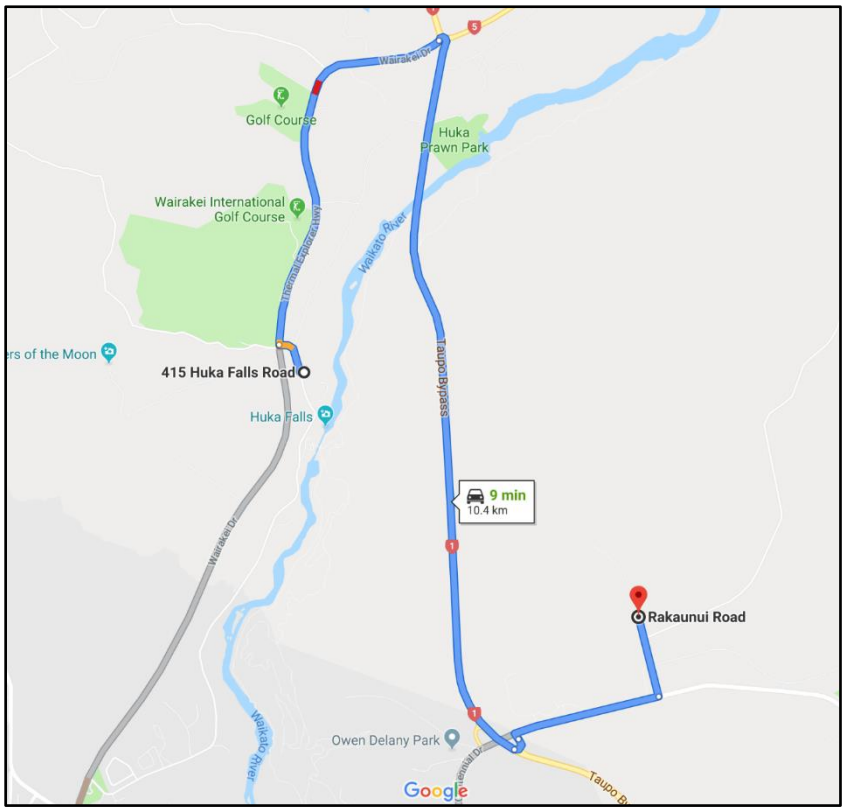


Figure 6: Driven route to shuttle customers to the Rakanui Road start of the zipline

Figure 7: Gated entrance to the north end of the site for staff and tour coach parking

5.0 TRAFFIC GENERATION AND EFFECT TO THE LOCAL STREET NETWORK

Based on the operating schedule discussed in Section 4.0, the proposed Zipline is expected to cater for up to around 110 customers per day.

The assumption is that 50% of customers will arrive by tour coach or shuttle, which could mean up to 24 shuttle trips per day if demand dictated a collection from Taupo accommodation every 40 minutes. At a conservative estimate of 2-3 occupants per private vehicle, the remaining customers would generate around 36-60 vehicle trips daily. Shuttle trips to and from the start of the Zipline on Rakanui Street would comprise around 22 vehicle trips per day (i.e. 11 tours), and a staff of 12 would generate around 24 car trips per day (i.e. at the start and end of the working day.)

Hence the proposed Zipline activity is expected to generate in the order of up to around 130 vehicle trips per day in peak season. It is considered that this is relatively minor in the context of Wairakei Drive and Huka Falls Road, and should be readily accommodated.

6.0 CONCLUSION

From a traffic engineering perspective, it is concluded that the proposed Zipline activity at 415 Huka Falls Road in Taupo will have insignificant adverse effects, and can be approved for resource consent.

Yours faithfully,

Duncan Campbell
Principal Traffic Engineer & Director
TRAFFESSIONALS Ltd

No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Designed	Drawn	Date

FOR:

BY:

TRAFFESSIONALS
TRAFFIC ENGINEERING PROFESSIONALS

PO Box 2321, Taupo 3351
P: 07 281 7714, E: info@traffessionals.com

Drawn DC	Designed DC
Approved	
Date July 2019	
Scale 1:250 @ A3	

Client **Adrian Pike**
Project **415 Huka Falls Road, Taupo**
Proposed Zipline

Original Size **A3** Project No: **T1910** Drawing No: **001** Rev: **A**

Plot Date: 2019-08-05 05:37:18

File: C:\Users\paddlepoot\AppData\Local\Temp\BricsCAD\bp_0\TRAFF Taupo Zipline 2.dwg

Appendix 9. Cultural Assessment

HUKA ZIP LINE

CULTURAL ASSESSMENT

Prepared for
Taupō Zipline Adventures Ltd

Gayle Leaf

01 August 2017

FRONT COVER:

NAME: "The Great Huka Falls on the Waikato River, Lake Taupo."

VIEW AT: Auckland Museum Collections.

FROM: Auckland War Memorial Museum Tamaki Paenga Hira.

DESCRIPTION: View of the river with hills on either side.

SUBJECT: Waikato River (N.Z.), Huka Falls, Thermal regions (N.Z.).

INTRODUCTION

What are Māori Values?

Māori values are derived from the traditional belief system based on mātauranga Māori. These values can be defined as instruments through which Māori make sense of, experience, and interpret their environment. They form the basis for Te Ao Māori (the Māori world view), and provide the concepts, principles, and lore Māori use to varying degrees in everyday life, and often their ethics and principles.

This can govern responsibilities and the relationships Māori have with the environment and the way they make decisions. Important Māori values include: tikanga (customary practice, values, protocols), whakapapa (ancestral lineage, genealogical connections, relationships. links to ecosystems), tino rangatiratanga (self-determination), mana whenua (authority over land and resources), whānaungatanga (family connections), kaitiakitanga (environmental guardianship), manaakitanga (act of giving and caring for), whakakotahitanga, (consensus, respect for individual differences and participatory inclusion for decision-making), arohatanga (the notion of care, respect, love, compassion), wairuatanga (a spiritual dimension).

Māori values can therefore be translated into, and provide a basis for, what is valued, (e.g. a geographic reference or context of that value), and the information required to establish what is significant and how to proritise values among natural resources, soils, significant cultural sites, significant biodiversity habitats and species, iconic cultural plant and animal species.[1]

---

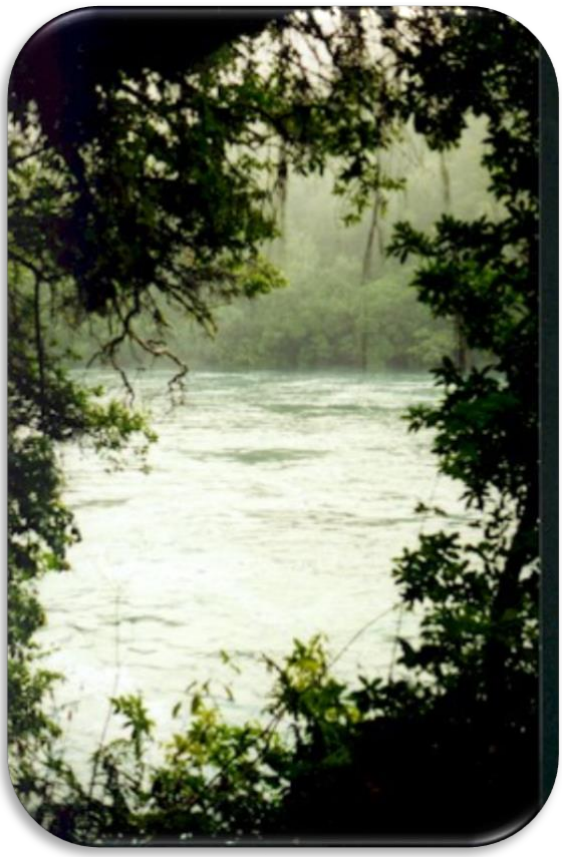
[1] Henare M 1988. Nga Tikanga me nga Ritenga o te Ao Māori.
Henare M 2001. Tapu, mana, mauri, hau, wairua: a Māori philosophy of vitalism and cosmos.
Marsden M 1988. The natural world and natural resources.
Marsden M, Henare TA 1992. Kaitiakitanga.
Barlow C 1993. Tikanga Whakaaro: Key concepts in Māori culture.
Harmsworth GR 1997. Māori values and GIS.
Mead, H. 2003. Tikanga Māori: Living by Māori values.

What are Cultural Values?

Cultural values are difficult to define. They have been called 'ill fitting' and they are usually categorised as 'non-use or non-materialistic, non-monetary values that are less tangible and extremely difficult to define and package using economic instruments'.

Cultural values can include such features as the wairua (spiritual), tapu (sacred), metaphysical, customary, ethical integrity, education-knowledge, heritage, well-being, recreation, and mana (authority). There are also values not readily open to compromise.

The term 'cultural values' can be either *tangible or intangible, material or non-material, use or non-use, qualitative or quantitative*. Whatever term is used 'cultural values' needs to be fully understood and developed.[2]



[3]

[2] **Awatere A 2005. The influence of cultural identity on willingness to pay values in contingent valuation surveys.**
Awatere A 2008. The price of mauri: exploring the validity of welfare economics when seeking to measure mātauranga Māori.
Steenstra A 2010. The Waikato River settlement and natural resource management in New Zealand.

[3] **From Researchers Personal Collection. This photo was taken from inside a cave below the Huka Falls looking eastward - 2001**

SIGNIFICANCE OF THE WAIKATO RIVER

"I want to speak about the river but I must always start from the beginning from a cultural perspective and from a spiritual perspective. To the South of us we have nga maunga kahui ariki (the chiefly mountains) and there is the beginning of the Waikato awa which has a name, called Waikato iti. That stream flows all the way through the whenua and the connections it has to the many hapū and marae and then down to the moana, and from the moana to the outlet which is better known as Waikato."[4]

[5]

The Waikato River has been populated for approximately 700 to 800 years. The river provided physical and spiritual sustenance for large populations of Māori living along its catchment.

Throughout that time it was a source of food, including eels, fish and plants. It was also an important waka route. A well-known saying about the Waikato River uses taniwha as a metaphor for chiefs: '*Waikato taniwha rau, he piko he taniwha, he piko he taniwha'. (Waikato of a hundred taniwha, on every bend a taniwha).*

This saying attributes the power and prestige of the Waikato tribes to that of the river. With the arrival of European settlers in the 1840s and 1850s the Waikato River was the main access route inland for traders and missionaries.[6]

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[4] **Interviewee - Hoani Simon 2017 - Studio Study of Te Rau o Te Huia Environmental Enhancement Project by Landscape Architect Student, Natalie Couch - Auckland University.**

[5] "***Exit of the Waikato From Lake Taupō" - A Ride Through the Disturbed Districts of New Zealand, from the Journals and Letters of Lieut. The Hon. Herbert Meade, R.N. edited by his brother.***

[7]

SIGNIFICANCE TO WAIKATO RIVER HAPŪ

The Waikato River and its tributaries are taonga to tāngata of the River Hapū. This significance is reflected in a Ngāti Tūwharetoa proverb that says: *"So long as the Waikato river flows from Nukuhau, so will the life stream of the chieftainesses of Ngāti Tūwharetoa continue to flow from the fountain".*[8] This is in reference to the story about Waitapu, wife of Te Rangiita, refusal to give up hope of producing a son. The first four children being girls.

The Waikato River was highly significant to the well-being and ways of life for the River Hapū. The relationship between the River Hapū and their taonga existed beyond mere ownership, use, or exclusive possession, it concerned personal and hapū identity, hapū authority and control, and the right to continuous access.

Signs of occupation, tohu, included the evidence of kāinga (*settlement*), māra (*cultivations*), bird snaring places in bush or swamp, kōura and kōkopu fishing places, raupō and harakeke (*flax*) gathering areas or collecting places for various other fibre,

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[6] **Waikato River Authority Website - the Waikato River and its Catchment.**
[7] **From Researchers Personal Collection.**
[8] **Tuwharetoa' - John Te H. Grace.**

food and medicinal resources. There were also certain special areas such as hot springs or places where kōkōwai (*red ochre*) or paruparu (*black dye*) were collected and processed; all these were tohu, evidence of occupation.

The main kāinga were Whakaipo, Hiruharama, Te Ruatakauhi, Nukuhau, Tapuwaeharuru, Paerata, Orangimaru, Oruanui and Puketarata. The only kāinga located near the river was Nukuhau and Tapuaeharuru, the others were associated with pockets of the ngahere (*forest*), well away from the Waikato River, which yielded good supplies of native birds, and with swamps and hot springs that provided other benefits.

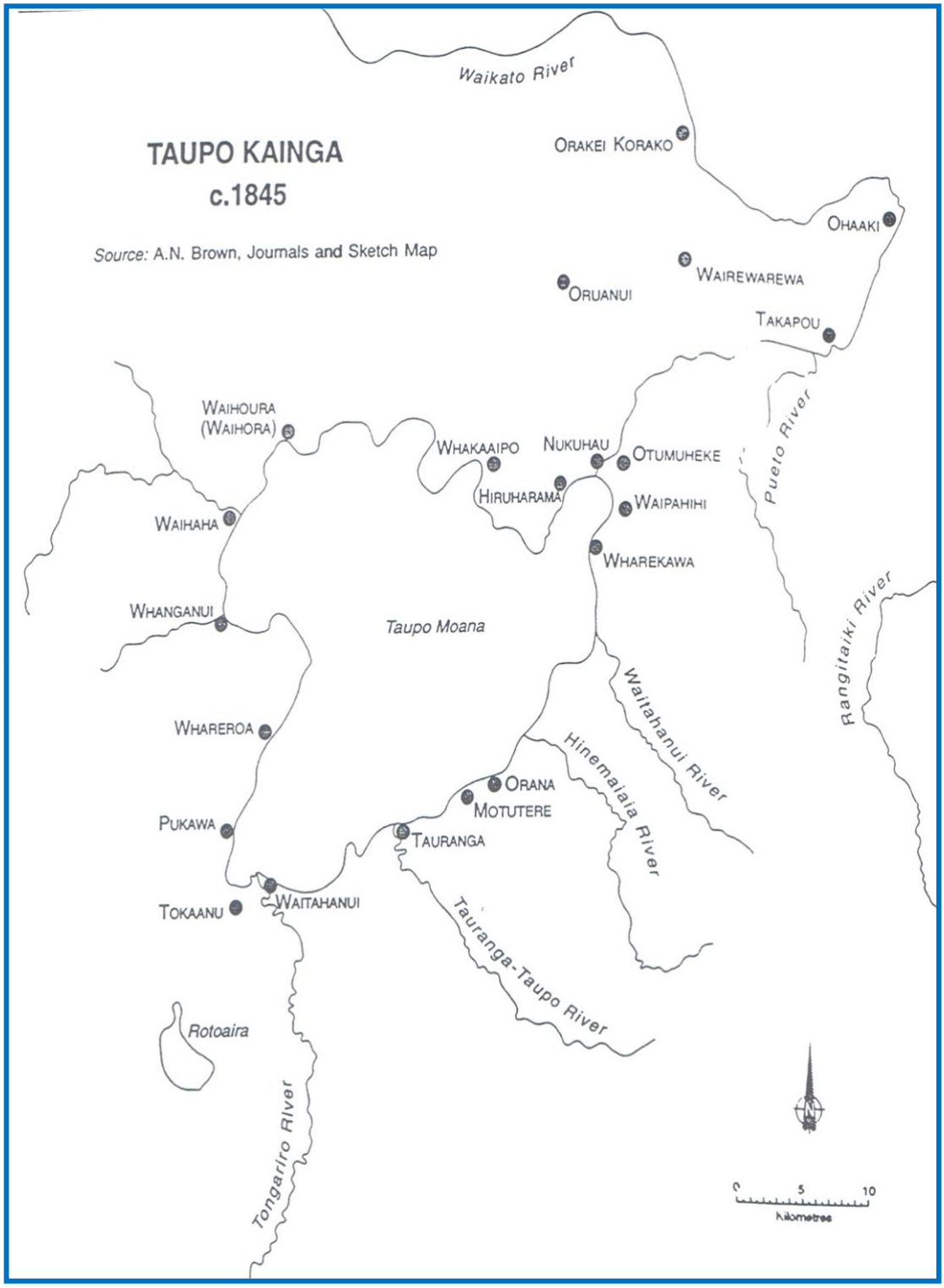
We were a moving people, although we had our settlements we would still travel to different areas to base ourselves while hunting, fishing and gathering the different types of food, depending on the seasons. During those times temporary kāinga were built in the location of the fishing, cultivation and geothermal grounds. Temporary kāinga were built to live in until they had finished working on and around the land and river.

[9]

[9] **From Researchers Personal Collection.**

[10]

[10] **Complied by Gerard Ward (1956) is a picture of kāinga occupied at various time over the period 1830 to 1880.**



11

[11] **A.N. Brown Journals & Sketch Map - In most cases, the favourite site for permanent Māori kāinga was one within easy reach of forest, water, cultivable land and geothermal heat. This pattern is shown clearly in Rev. A.N. Brown's sketch map of kāinga he visited on his annual pastoral round in the 1840's. These kāinga were permanently occupied.**

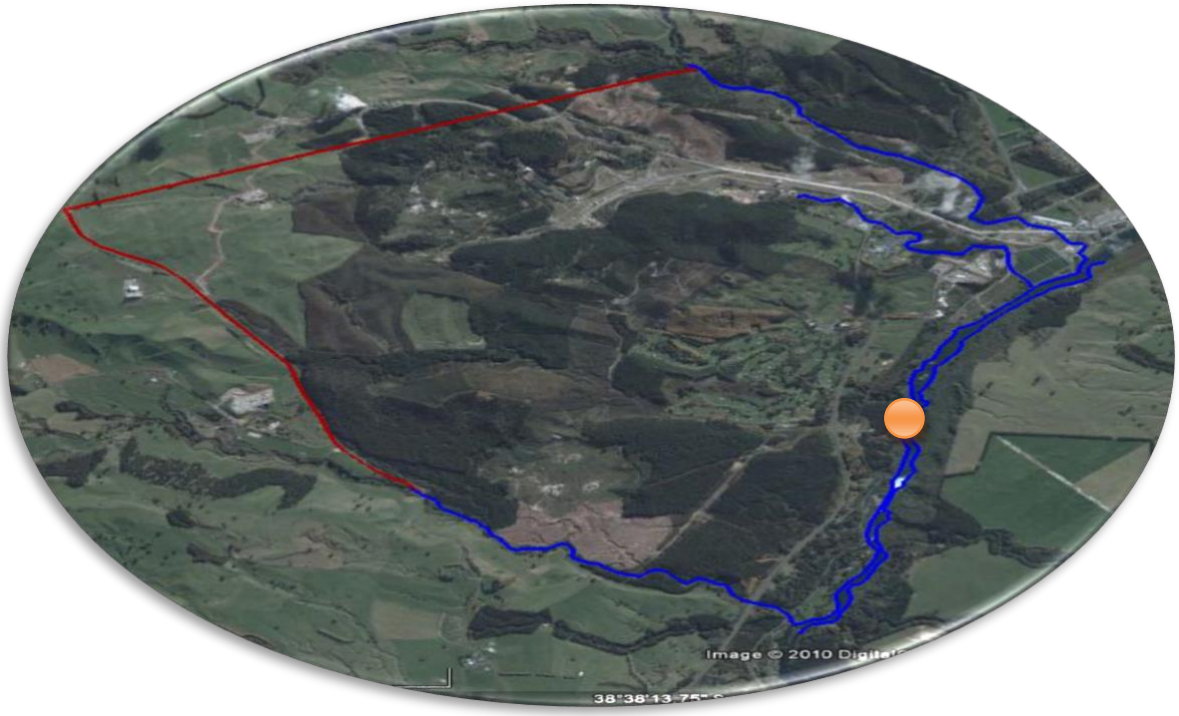
DEVELOPMENT SITE:

Huka 1 & part Wairākei Forest - Huka Fall Road, Loop Road and Karetoto Road, Wairākei, Taupō. The Zipline will be based 7 km north of Taupō on land in mixed tenure (crown and Taupō District Council), [12] *now including Cultural Re-dress lands under Ngāti Tūwharetoa Treaty Settlement Deed.*

[12] **Perception Planning, 2016. Report prepared by Rowan Sapford, Senior Planner**

LOCATION - WAIRĀKEI BLOCK

MĀORI USE AND OCCUPATION OF THE NATURAL SITES THAT BORDER HUKA ZIP LINE DEVELOPMENT



[13]

Wairākei Block, Map No. 5167, was surveyed 1881. The Claimants were Poihipi Tukairangi and others, the boundaries were pointed out by Henare Poihipi, Mohi Apu and others. The total acreage was 4203. Wairākei Block was purchased our of Maori ownership 18.12.1882 and the whole block was transferred by the purchaser Robert Graham.

The rights to occupy land, and use the resources of land and water were held on the basis of *take tūpuna, take raupatu and, at times, take tuku.* Such rights had to be kept alive by actual occupation.

Signs of occupation, tohu, included the evidence of kāinga, urupā, other wāhi tapu and other uses such as cultivations, bird snaring places in bush or swamp, eel weirs, koura and kōkōpu fishing places, raupo and flax gathering areas or collecting places for various other fibre, food and medicinal resources.

[13] **Google Map layed with the 1881 Wairākei Block boundary**

There were also certain special areas such as hot springs or places where kōkōwai or kupapa were collected and processed; all these were tohu, evidence of occupation.

While most European travelers may have seen the North Taupō region as wild dreary, desolated, waste land, to hapū every place had meaning and significance.

Several tribes of northern Tūwharetoa used the geothermal resources at Wairākei. There was no permanent settlement within the geothermal area in the nineteenth century. People came from the large settlements around the Taupō lakeshore and Ōruanui and lived in temporary encampments at Wairākei while they proceeded kokowai (red ochre), dug for fern root and fished for kokopu (native trout) along the Waikato River below Huka Falls.

[14]

The main geothermal features were known by separate names. Some hot pools, in particular Te Kiriohinekai and Matarakutia, were considered to have special therapeutic qualities. The kokowai resource was highly valued. The following extracts from evidence given to the Maori Land Court in 1881 indicate the nature of Maori use and occupation **(Tpo MB 2 Wairakei Block)**.

[14] **Huka Falls Auckland Libraries Heritage Images Collection. PHOTOGRAPHER: Young, Eric. W. DESCRIPTION: Showing morning mist rising off Huka Falls, Taupo, Taupo Region (N.Z.)**

- ***Poihipi Tukairangi:*** *I claim the land through ancestry, though Karetoto. I have houses on the land. Karetoto had a pa there. They lived on koura (fresh water crayfish) kokopu (native trout) and fern root. They got fern root at Poromango, Karapiti, Te Hereatengana, and Kaiwaewae. They caught kokopu at Te Onepu, Te Karo, Te Waikau to the mouth of Matarakutia, Ririwai and the Ngatokahuihui below the Huka Falls, also at Otupo the mouth of Te Hineokiriwai (sic Te Kiriohinekai) and Te Kuraomoehau…There is a part called Te Pahi on this land. It was named after an ancestor of mine…We got red ochre from Oruanui (Block on northwest boundary of Wairakei Block) and burnt it on this land. We made reserves on this land to protect the fern root and timber.*

- **Hare Te Kume:** *I claim the whole block through ancestry. Rongomaitutaiaka is the ancestor we claim through…Rongomai defeated the Ngati Hotu and took the land. Kurapoto his father defeated them…his descendants have ever since occupied the land. I myself have occupied it from childhood and have cultivated potatoes there. I have also had a weir in one of the streams at Te Kiriohinekai. We had a plantation at Te Apunga and at other places. I had a house near the same place but it is now rotten. It is about four years since I planted there. I then went to live at Oruanui and at Kiorehai nearby…Kurapoto divided the land between his son and daughter…The Waipuwerawera Stream was the dividing line.*

He went on to explain that there has been a pa on an island in the Waikato River below Huka Falls called Te Pa o Te Waira. There were no pa on Wairakei Block; fortified settlements were on islands in the Waikato River. The area called Te Mihi was so named after a fight involving Kurapoto, and that a post (a rahui sign) had been put at Opuwai nearby to protect the fern root.

He also explained the importance of kokowai, red ochre, a valuable commodity used in ceremonial exchanges of goods, which cemented tribal relationships.

- Ngati Te Rangiita gave red ochre to Ngati Te Au and the latter gave a feast in return. The ochre was burnt on this land, the feast was given at Hiruharama…Our houses on the block were temporary residences where we went to catch fish and dig fern root. We had no permanent residences. We planted potatoes in some places…Karapiti was so named because a number of people who had gathered together to dig fern root quarrelled there. Karapiti is a hill, also a hot spring.

[15]

Kokowai, red ochre from geothermal areas, was the source of red colouring used as paint or dye, although its use diminished as European paints were introduced. J.C. Bidwill travelled in the Taupo district in 1839 and described the processing of kokowai in the Wairakei area.

- The natives are fond of daubing their heads with a sort of red paint which they call "cocoi" (kokowai); I saw a large manufactory of it on the banks of the Waikato; a double circle of matwork was formed around a large spring of rusty water, and the curdy carbonate of iron was by this means strained off. After this preparation, it is burned and mixed with oil **(Bidwill 1841, pp 35-36).**

In his evidence **Erueti Tarakainga** stated, "We got red ochre from this land…Te Kiriohinekai and Pirorerore were the places at which we obtained it." **Tukorehu** also gave evidence that he went to Wairakei "to get red ochre," to visit the Hot Springs and dig fern root at Karapiti. He also commented that Tuhuatahi, the Maori name for the Champagne Pool, was the original name of the block. Wairakei was the name of an ancestor.

Te Hemopo Te Hikarahui corroborated the evidence of **Hare Te Kume**, indicating that there were cultivations on the Waikato riverbank near the mouth of Te Kiriohinekai Stream and Huka Falls. People also came to the riverbank in the vicinity to catch kōkopu and dress flax.

[15] **From Researchers Personal Collection. Photo of Waira Island submerged under water indicated by the tops of the trees. Reference on page 11 to Te Pa o Te Waira**

[16]

Hapū defined thoroughly all the natural features of this land, each maunga (mountain) and hiwi (hill) had its special name and every awaawa (valley, gorge) and mania (open land or plain) and awa (river) down to the smallest awaiti (stream), each being called after some characteristic feature or legendary tale connected with it.

Wairakei has passed through three significant stages:-

1. ***Maori Landscape,*** *perceived, occupied and used by people who considered themselves part of their land and its resources.*

2. *In the 1880's the tourist landscape was imposed, a health resort, natural wonders of geysers, hot pools and fumaroles, rapids and waterfalls in the Waikato River, a place to delight the Victorian visitor. This image persisted into the 1930's, but*

[16] **From Researchers Personal Collection. Photo taken of a steam vent at Waipuwerawera Valley, 2005.**

Wairakei was always too isolated to become a major centre of tourism in the Rotorua evolved. The 1940's saw a major shifts in attitudes toward Wairakei. The tourist hotel survived its term as psychiatric hospital, became part of the Tourist Hotel Corporation chain and the main focus became the golf course.

3. *The third stage of Wairakei was ushered in with the construction of the geothermal power project. Unique and distinctive landscape evolved, of pipelines, well heads, flash plants and silencers, and plumes of steam rising from the engineering works. The geysers and hot pools died. The areas of hot and steaming ground shifted. Some ground subsided, up to 10 metres and more. Waiora Valley,* ***the place of health-giving waters*** *was bulldozed into* ***Bore Valley****.*[17]

18

19

[17] **WAIRAKEI: MAORI USE AND OCCUPATION - Evelyn Stokes, December 1988**

[18] **Postcard of a Hot-water Falls at Waiora Valley, Wairakei, Taupo. National Library Collection Wellington**

[19] **Postcard of a Hot-water Falls at Waiora Valley, Wairakei, Taupo. National Library Collection Wellington**

[20]

[21]

[20] **From Researchers Personal Collection. Photo taken of a steam vent displaying the different colours of the kōkōwai (ochre) at Waipuwerawera Valley, 2005.**

MAPS OF CULTURAL SITES NEAREST TO HUKA ZIP LINE DEVELOPMENT SITE

1. MOTUWAIRA ISLAND

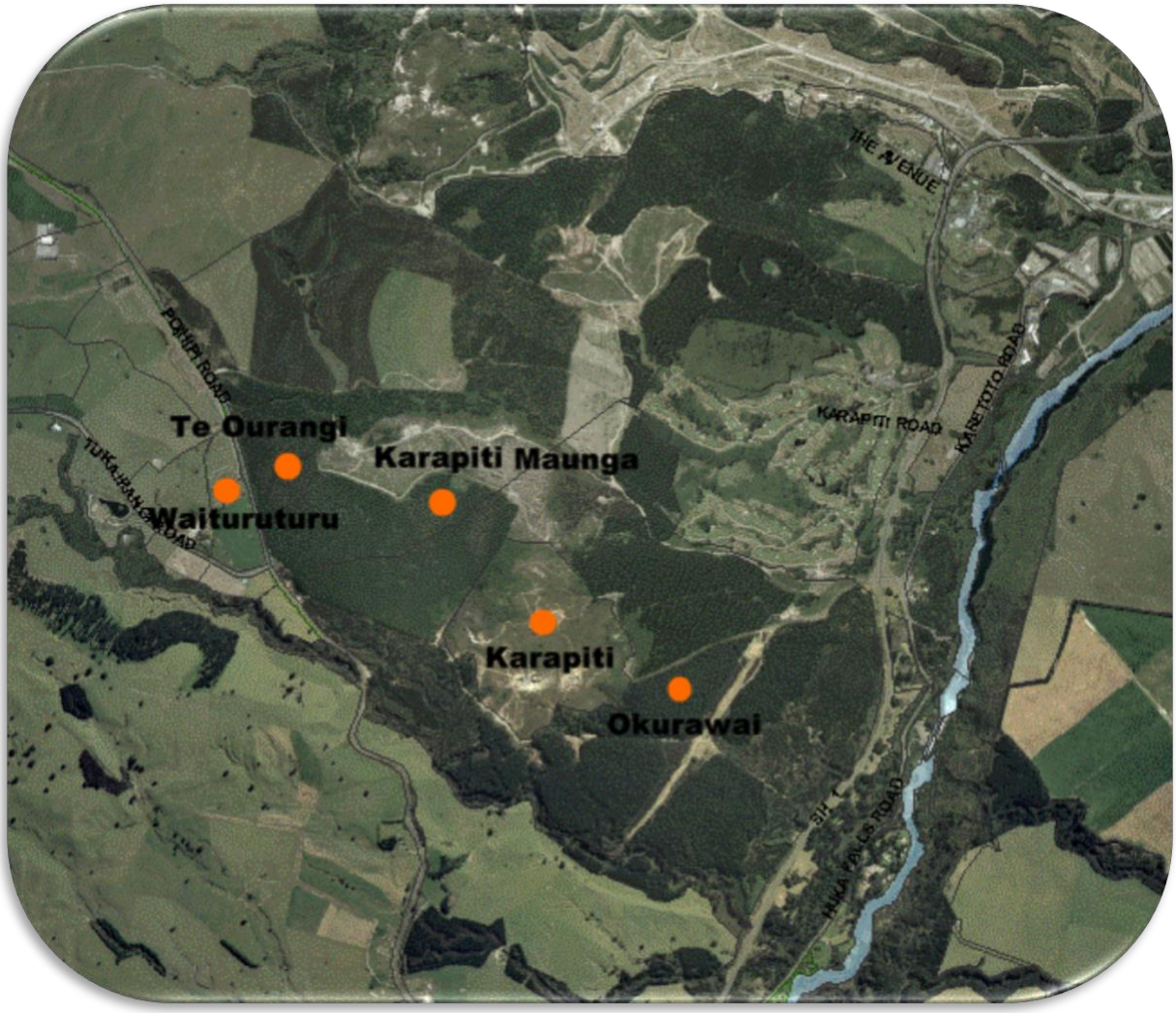
Site Named	Significance	Reference	Witness
Waira Island	Pā	Tpō MB 01	Hare Reweti Te Kume
Waira Island	Pā	Tpō MB 02	Hare Reweti Te Kume
Waira Island	Pā	Tpō MB 02	Hemopo Hikarahui

[21] **From Researchers Personal Collection. Photo taken of steam vents at Waipuwerawera Valley, 2005.**

2. TE HUKA FALLS

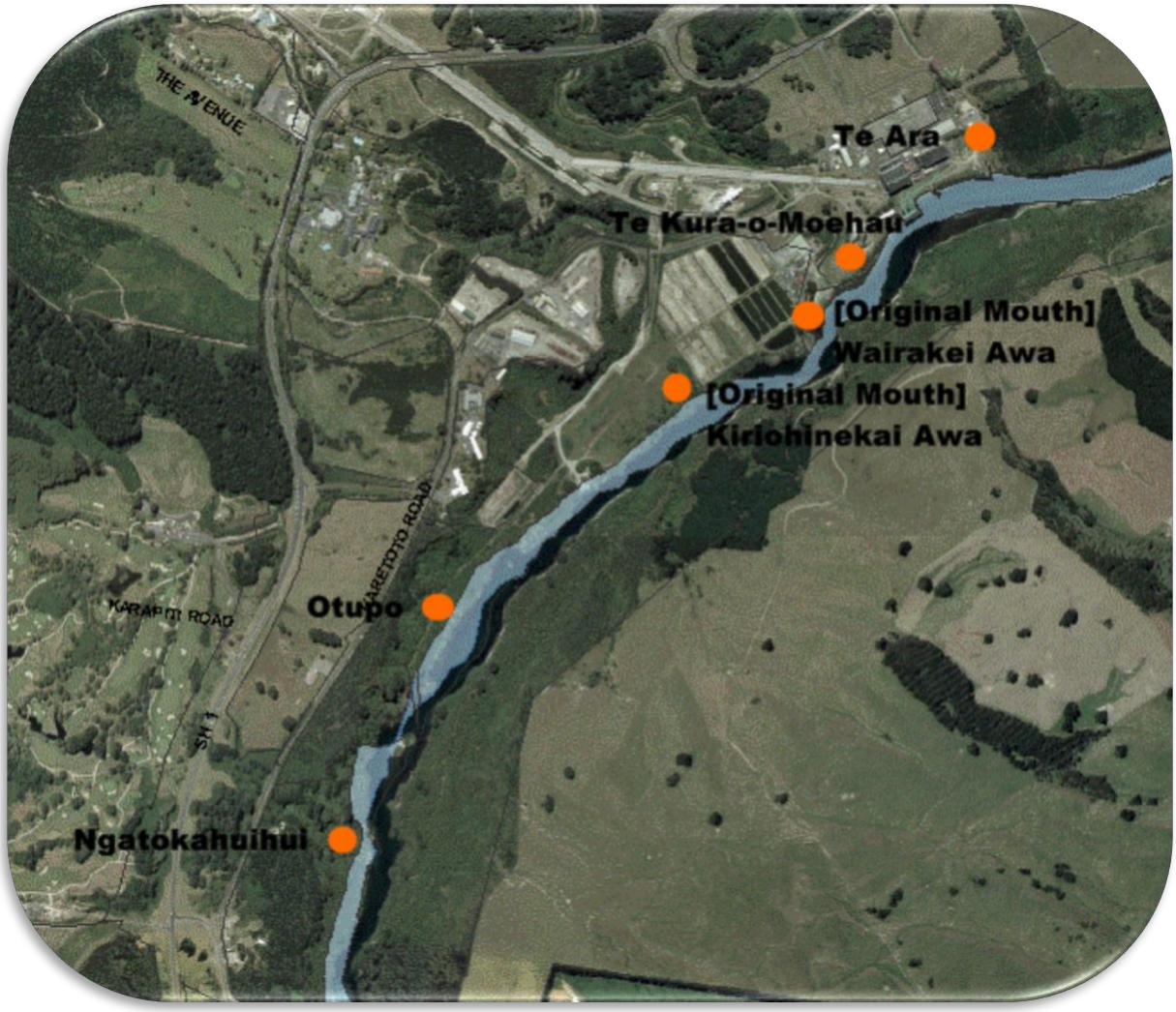
Site Named	Significance	Reference	Witness
Te Huka	Kāinga	Tpō MB 02	Hare Reweti Te Kume
Te Huka	Burial	Tpō MB 02	Hare Reweti Te Kume
Te Huka	Mahinga Kai	Tpō MB 02	Hemopo Hikarahui
Te Huka	Ana Tūturu	Tpō MB 02	Hemopo Hikarahui
Te Huka	Hīnga Ika	Tpō MB 02	Erueti Tarakainga

3. WAIPUWERAWERA VALLEY



Site Named	Significance	Reference	Witness
Karapiti	Aruhe	Tpō MB 04	Eru Poihipi
Karapiti	Aruhe	Tpō MB 02	Poihipi Tukairangi
Karapiti	Aruhe	Tpō MB 02	Tukorehu
Karapiti	Aruhe	Tpō MB 02	Patoromu Te Ririapu
Karapiti	Aruhe	Judge Scannells Vol. 37	Aperahama Te Kume
Karapiti	Aruhe	Judge Scannells Vol. 37	Te Oti Te Puke
Karapiti	Aruhe	Judge Scannells Vol. 37	Arama Karaka

4. SITE SURROUNDING THE PRAWN FARM & CONTACT ENERGY POWERSTATION



Site Named	Significance	Reference	Witness
Te Ara			
Te Kura-o-Moehau			
Wairākei Awa	Hīnga Ika	Tpō MB 02	Poihipi Tukairangi
Wairākei Awa	Meaning	Tpō MB 02	Erueti te Poko
Kiriohinekai Awa	Hīnga Ika	Tpō MB 02	Poihipi Tukairangi
Kiriohinekai Awa	Hīnga Ika	Tpō MB 02	Hare Reweti Te Kume
Kiriohinekai Awa	Mahinga Kai	Tpō MB 02	Hemopo Hikirahui
Kiriohinekai Awa	Mahinga Kai	Tpō MB 02	Erueti Tarakainga
Kiriohinekai Awa	Kōkōwai	Tpō MB 02	Erueti Tarakainga
Otupo	Hīnga Ika	Tpō MB 02	Poihipi Tukairangi
Ngatokahuihui	Hīnga Ika	Tpō MB 02	Poihipi Tukairangi

RECOMMENDATIONS FOR CONTINUED RELATIONSHIPS BETWEEN HAPŪ AND HUKA ZIP LINE DEVELOPMENT

I recommend that Taupō Zipline Adventures Ltd undertake:

1. **Story Boarding**

- History of River Hapū engagement to the river and whenua,
- History of European travellers through this area,
- History of the nature environment.

2. **Activities**

- Planting Projects, involving the schools and public.
- Water Monitoring Projects, part of the Healthy Rivers Projects.
- Walking Track, for everyone.

3. **Naming Development Area**

Most Tūwharetoa place names disappeared from NZ maps in and around 1940's, and were replaced by European names. Many of those names and locations seemed lost to the present and future generations, but during the Waitangi Tribunal process, much research was undertaken by many people and the re-surfacing of these names and locations took place.

Place names are important signposts of modern, historical and cultural influences and values of the people that gave them. Knowing the correct names for places and their locations is important.

There are some significant names given in this report that could be considered.

The recognition of our Cultural Values Sites can be seen as a positive reflection of the understanding of the past history of hapū in this and other areas of Tūwharetoa.

The reason to recognise these sites are historically significant for several reasons. Our heritage is a rich and varied one, including our stories and legends, our traditional and contemporary arts, but is that understood by the institutions and community of Taupō.

I am in favour of our history being told in an appropriate manner and developments like this is a beneficial way to enhance and promote our history and environment to local, national and international visitors.

Nga mihi

Appendix 10. Engagement Letters

From: Eugene Berryman-Kamp [mailto:eugene@tarit.co.nz]
Sent: Tuesday, 18 June 2019 4:00 PM
To: Michelle Phillips <michelle@tahu-whaoa.com>
Cc: Nuki Nicholson <nuki@tarit.co.nz>
Subject: Re: Huka Zipline Support for proposal

Tena koe Michelle, firstly apologies for the delay in getting back to you.

TARIT fully supports the approach outlined in your letter dated 10 June 2019, regarding this application, and reinforce the need for Huka Zipline to continue to engage with Ngati Tahu Ngati Whaoa as representatives of the mana whenua in the rohe, regarding all aspects of the application and future operation.

Please feel free to forward this email to interested parties as confirmation that TARIT has been consulted regarding the application, and supports the Ngati Tahu Ngati Whaoa trust letter dated 10 June 2019.

I am more than happy to be contacted directly if required, na Eugene.

On Tue, Jun 11, 2019 at 4:47 PM Michelle Phillips <michelle@tahu-whaoa.com> wrote:

> Kia ora Eugene
>
> Last week I met with representatives of Huka Zipline and Geoff from TN2T regarding the latest design for their towers (see attached). Prior to that meeting I spoke with Perry about the change in design from the one presented in 2017 and included his feedback in our latest support letter (also attached). During the meeting Geoff, Adrian and Simon asked if I would ask TARIT to also supply an updated email or letter of support (an email was provided by you 16/9/16 to LINZ as feedback to their application) in order to demonstrate to DOC and TDC that all appropriate iwi authorities have been consulted. Would you mind putting together an email based on the attached?
>
> Na
> Michelle

--

TE ARAWA RIVER IWI TRUST

Eugene Berryman-Kamp
CEO - Tumu Whakarae

E: eugene@tarit.co.nz
M: 027 840 2390
O: 07 346 3915

www.tarit.co.nz

Te Arawa River Iwi Trust
Ground Level| GHA Centre|1108 Fenton Street | ROTORUA 3040

ENVIRONMENTAL DEPARTMENT
Ngati Tahu-Ngati Whaoa Runanga Trust
PO Box 162, Reporoa 3060
Ph: (07)366-6177 /Mob: (027) 4870069
Email: johlene@tahu-whaoa.com

Our Reference: 05/2015

12th August 2017

Simon Bothamley
220 Caroline Drive
RD3
TAUPO 3379
(by email)

Tēnā koe Simon

Re: Zipline Proposal – Wairakei

Thank you for sharing information on the proposal to construct a Zipline activity downstream from Huka Falls.

This geographic area holds many stories, special sites and taonga for the Ngati Tahu-Ngati Whaoa people. It is of high importance to the iwi that these values are maintained, protected and enhanced where possible.

We appreciate the opportunity to undertake a site visit to assess any potential impacts on Ngati Tahu-Ngati Whaoa values at the proposed location.

After receiving Perry Fletcher's feedback, we are comfortable with the proposal and the current proposed location of the infrastructure and lines (as provided to us on 1/6/2017 via email). Should any alignment or structure locations change then we would require further assessment and input to ensure no cultural sites would be impacted.

There are some key points we wish recognised moving forward:

- Ngati Tahu-Ngati Whaoa hold mana-whenua over this area and are recognised as having co-management responsibilities for the Waikato River as one of the affiliate iwi represented through Te Arawa Iwi Trust and the Ngati Tuwharetoa, Raukawa and Te Arawa River Iwi Act (2010). As such, we wish this to be recognised in this development process and acknowledged as we move forward.

- That Ngati Tahu-Ngati Whaoa have an opportunity to explore sharing our stories with visitors. We look forward to a further conversation regarding this sometime in the near future.

We look forward to hearing from again you in the near future and would appreciate updates as you progress.

Naku noa, na

Johlene Kelly
Environment Department

Ka ora te iwi – Ka ora te tangata

HELI ADVENTURE FLIGHTS

415 HUKA FALLS RD • TAUPO, NEW ZEALAND • PHONE: +64 7 374 8680 •
EMAIL: adventure@helicoptertours.co.nz • WEB: www.helicoptertours.co.nz

3/7/2019

To whom it may concern,

We have been briefed by Simon in 2016 and now again in 2019 about the plans for the Huka Falls zip line.

I have no objections to Simon's proposal for the zip-line venture he has been working on. This letter is to further support the letter I wrote in 2016. We see the addition of the zip line to the Taupo/Wairakei tourist area as huge asset, which will benefit us as a whole bringing more people to the area.

I wish them all the best for getting it up and running, I hope to see Huka Falls Zip line in business soon.

Kind Regards,

Bruno Sterla
CEO, Heli Adventure Flights

TAUPŌ

24 June 2019

Mr Adrian Pike
Huka Falls Zipline
C/ 325 Middle Road
Havelock North 4172

Dear Adrian

Re: Huka Falls Zipline

Destination Great Lake Taupo (DGLT) is the tourism marketing and promotion agency for the Taupo District. We also have a function to support, promote and assist in activities and projects which will increase the opportunities for employment in the tourism and visitor industries in the district.

We have reviewed the proposed development material and we believe the activity has the potential to significantly add to the mix of tourism activities and attractions in our region. We believe the activity will compliment other adjoining attractions and most importantly will provide a new 'soft adventure' activity which can run all year round.

The nearby Huka Falls is one of New Zealand's most visited natural attractions and an iconic tourism experience in Taupo, with an estimated visitation of 1,000,000 visitors per year.

Diversifying our product offering is important if we are to continue to attract our share of domestic and international visitors. Visitors to the Taupo Region spent $670 Million* Year Ending April 2019, an increase of 6% on the same period last year. (* MBIE Monthly Regional Tourism Estimates YE April 2019)

Destination Great Lake Taupo is pleased to support the granting of the commercial licence, and looks forward to working collaboratively with Taupo Zipline Adventures

Kind regards,

Jane Wilson
General Manager

Destination Great Lake Taupō

T +64 7 376 0400
E visit@lovetaupo.com

Level 1, 32 Roberts Street
Taupō 3330
PO Box 149, Taupō 3351
New Zealand

GREAT LAKE TAUPŌ

lovetaupo.com

From: **Kerry Pearce** Kerry.Pearce@contactenergy.co.nz
Subject: RE: Simon Bothamley's Zipline Application
Date: 21 August 2017 at 8:32 AM
To: Rowan Sapsford rowan@perceptionplanning.co.nz

KP

Hi Rowan

Contact has no objection to the proposed zipline station.

However, please note that the location of the station appears to be near a significant geothermal feature, so there will be certain Plan Rules that will need to be complied with.

Regards
Kerry Pearce

From: Rowan Sapsford [mailto:rowan@perceptionplanning.co.nz]
Sent: Monday, 14 August 2017 11:46 a.m.
To: Kerry Pearce <Kerry.Pearce@contactenergy.co.nz>
Subject: Simon Bothamley's Zipline Application

Hi Kerry, further to conversations that you have had with myself and Simon. LINZ have asked for a letter of support, or otherwise, from Contact Energy for that part of his proposed zipline located adjacent to the river.

I have attached a plan showing the location of the zipline station proposed to be located adjacent to the river. Simon is after a licence to occupy 7.5m by 7.5m at the location shown.

Is it possible to get a letter or email stating Contact's view on the proposed development.

Please give me a call if you wish to discuss further.

cheers

Rowan Sapsford

PERCEPTION PLANNING
your connection with the environment

Level 1, 127 Tongariro Street
Taupo 3330
07 3788 105 | 021 744 957
perceptionplanning.co.nz

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Johlene Kelly
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Ka ora te iwi – Ka ora te tangata

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Jane Wilson
General Manager

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Rowan Sapsford

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your connection with the environment

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Taupo 3330
07 3788 105 | 021 744 957
perceptionplanning.co.nz

22 July 2019

To Whom it may concern

It is my pleasure to be writing this letter to express my full support of the Huka Falls Zipline. As owner of Kefi @ The Hub Café, 415 Huka Falls Road, an immediate neighbour to the Zipline, I can say that the Zipline is not only eagerly awaited, but will be a welcome addition to the Wairakei Tourist Park.

Should you require any further information, feel free to contact me directly.

Yours sincerely

Natalie Kapetaneas

Kefi
47 Horomatangi St
Taupo, 3330

Kefi @The Hub
415 Huka Falls Road
Wairakei, 3384

phone: 021 0449 350 email: natrhug@yahoo.com

Appendix 11. Relevant Taupō District Plan Objectives and Policy Assessment

Objectives and Policies	Assessment
3B Rural Environment	
OBJECTIVE 3b.2.1 The management of the Rural Environment to maintain and enhance rural amenity and character. POLICIES **iii.** Maintain the open space and dispersed building character. **iv.** Provide for a range of productive land use activities within the Rural Environment while ensuring any adverse effects are avoided, remedied or mitigated. **v.** Protect the District's lakes and river margins from buildings that are visually obtrusive and/or result in a decline of the amenity of the margin area.	The entire site is subject to the underlying Rural Environment Zone. All of the proposed development excluding the carpark and administration area is also subject to overlays which respond to the significant landscape values associated with the area. Nonetheless, the underlying provision is still applicable. The District Plan identifies that rural activities are anticipated in 'Landscape Areas'. It is not anticipated that these will be restricted solely to productive landuse in a traditional sense, but may also include development associated with tourist activity and recreation, which are also considered productive uses of the land resource. This section of the plan focuses on the protection of amenity values and maintaining a clear distinction between rural and urban-type use and activities while recognising that the rural environment is diverse and has a degree of flexibility in accommodating various use and activities.

vi. Avoid, remedy or mitigate adverse effects of subdivision, use and development of land on areas or features of cultural, historical, landscape or ecological value. **viii.** Recognise that the Rural Environment encompasses a range of landscape characteristics, amenity values and land use patterns and activities when considering the appropriateness of development within the zone.	The proposed development is a suitable use of the land which has limited capacity for other types of productive landuse. Of particular note are the high landscape and natural values and corresponding overlays which largely protect the regenerating indigenous vegetation and river environs, therefore limiting the scope for activity and use. The development is consistent with the established character of the area and will have negligible implications for the established amenity.
OBJECTIVE 3b.2.4 The efficient and effective functioning of the Rural Environment by enabling the use and development of natural and physical resources, while ensuring appropriate environmental outcomes are achieved. POLICIES **i.** Control activities which may potentially restrict or compromise the operation of existing activities of the Rural Environment including the creation of new rural allotments that may lead to conflict between residential and rural activity.	The proposed development is appropriate to be located within the rural environment. It is a recreational based activity which has been designed in a manner to be sensitive to the values of the subject site and ultimately improve those values. Landscape, ecological, noise and traffic assessments have demonstrated that the effects of the proposed development will be no more than minor and in some instances likely to generate positive environmental outcomes. The proposed development is not likely to effect or place any undue pressure on existing rural activities or infrastructure, or lead to reverse sensitivity effects.

ii. Require potentially sensitive activities to provide mitigation methods to protect them from the effects of existing activities within the Rural Environment, in order to avoid the potential effects of reverse sensitivity. **iii.** Avoid subdivision and development of rural land that will put pressure on rural infrastructure and may require an increase in the level of service now or in the future.	
3E Land Development	
OBJECTIVE 3e.2.5 Ensure land development does not detract from the amenity value or qualities of the local environment. POLICIES i. Ensure that proposals for the subdivision and development of land assess the particular amenity values of the area including the physical characteristics of the land and avoids, remedies or mitigates any adverse effects.	A Landscape and Visual Assessment has been carried out for the proposed development which has considered the impact of the proposal on the amenity of the local environment. The relevant structures are of a simple design, of suitable scale, reasonably recessive materials/colours and they have a level of visual permeability that, together with the established vegetation, will assist with their assimilation into the setting. The planting proposed as part of the development will reflect the natural compositions of the regenerating vegetation. This, combined with more widespread infill, enrichment planting and pest

	management, will assist in visually integrating the development while enhancing the ecological values of the local area.
3F Traffic and Transport	
OBJECTIVE 3f.2.1 The safe and efficient operation of the roading network, and movement of traffic, including cyclists and pedestrians within the District. POLICIES **i.** Ensure activities avoid, remedy or mitigate any adverse effects on the operation and function of the roading network, including the movement of traffic cyclists and pedestrians, as accordance with the Roading Hierarchy. **ii.** Encourage activities, including the design and location of new vehicle crossings, to provide for the safe and efficient movement of traffic, including cyclists and pedestrians.	A traffic assessment has been carried out and is summarised in Section 6.3 of this report. The assessment considers the vehicle movements associated with the development, the vehicle crossings and also the parking requirements.

iii. Encourage the use of alternative modes of transport such as cycling and public transport.	
3g Tangata Whenua Cultural Values	
OBJECTIVE 3g.2.1 Recognise and provide for the cultural and spiritual values of Tangata Whenua in managing the effects of activities within the District. POLICIES **i.** Take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) in the management of the natural and physical resources of the District. **ii.** Ensure activities have regard for the cultural values of Tangata Whenua as Kaitiaki of their culture, traditions, ancestral lands, water and other taonga.	Sky Play Adventures Limited commissioned a Cultural Assessment for the subject site, which was undertaken by Gayle Leaf. A copy of the assessment can be found in Appendix 9. The assessment speaks of the values and importance of the site and the wider area to the Ngāti Tuwharetoa river hapū. The sites identified in the assessment informed the design of the proposed development to ensure that these sites are avoided. A letter of support for the proposed development from Ngāti Tahu-Ngati Whaoa can be found in Appendix 10. This letter was received in 2017 after the field assessment, and a more recent email was received in June 2019 reiterating that support based on the revised design. This support was provided on the basis that Ngāti Tahu-Ngati Whaoa are comfortable with the proposed development and its impact on their cultural values at the site.

iii. Ensure activities on or near Sites of Significance to Tangata Whenua are undertaken in a manner which provides for the cultural and spiritual value and significance of the site.	
3H Landscape Values	
OBJECTIVE 3h.2.1 Protect Outstanding Landscape Areas from inappropriate subdivision, use, and development which may adversely affect the Landscape Attributes. POLICIES **i.** Ensure subdivision, use, and development is located and designed in a way that protects the Landscape Attributes of Outstanding Landscape Areas. **ii.** Protect Outstanding Landscape Areas from more than minor adverse visual effects of earthworks, including more than minor visible scarring or more than minor adverse change to the natural landform or natural feature. **iii.** Avoid the erection of built structures that will have more than minor adverse visual effects on the Landscape Attributes of	The majority of the development is restricted to the terrestrial areas that provide a backdrop to the Waikato River which is identified as an OLA. There will be cables across the Waikato River which are within the OLA. The impact that these cables and their users are likely to have is considered in the Landscape and Visual Effects Assessment undertaken by LA4 Landscape Architects. This assessment considers the impact of the development from a number of key viewing areas and includes consideration of the following matters: • Status of resources • Proportion of resource affected/area of influence • Persistence of effect • Reversibility or irreversibility • Cumulative effects • Degree of change • Magnitude of effect

Outstanding Landscape Areas, or will result in cumulative adverse effects from increased built density. **v.** Where Significant Natural Areas are within Outstanding Landscape Areas, avoid, remedy, or mitigate more than minor adverse visual effects of Indigenous Vegetation Clearance on the Landscape Attributes of the Outstanding Landscape Area. **vi.** Remedy or mitigate potential adverse effects of subdivision, use, or development on the attributes of Outstanding Landscape Areas, giving consideration to: a. The suitability of the site for the proposed subdivision, use or development. b. Recognise specific site requirements for some uses or development. c. The scale, location, design and nature of the subdivision, use or development, and whether it will be sympathetic with the Landscape Attributes of the Outstanding Landscape Area. d. The ability to remedy or mitigate significant adverse effects. e. The extent of any disturbance or modification to the Outstanding Landscape Area as a result of subdivision, use or	The LA4 report notes the following: *"This section of the Waikato River displays a high degree of natural character. However this will not be directly affected in any significant way by the proposal. Potential effects are therefore limited to the associated terrestrial areas. Despite historic modification of these areas, they are undergoing the process of natural regeneration of indigenous vegetative cover. This process and the resultant landscape patterns therefore also represent a significant degree of natural character. Nonetheless, based on the consideration of the above criteria I consider that the significance of the overall effects of the proposal on the natural character of these areas would also be very low."* The LA4 report does identify (Section 6.37) that the visual effects of Station 7 and associated zip line wires are low-moderate, however it is important to note that Tower 7 is not located within a landscape area. Consequently, the proposed development will have no direct impact on the river and very limited effects on the appreciation of the river, the character of which is already influenced in a compatible manner by tourist and recreational activity. The content of the LA4 report covers off the important points raised under Objective 3h.2.1 and concludes that:

development, including potential impacts of earthworks and the ability of earthworked areas to be rehabilitated. f. The visual impact of Indigenous Vegetation Clearance within Significant Natural Areas on the Landscape Attributes, and the ability to revegetate cleared areas with appropriate indigenous species. g. The effectiveness and appropriateness of proposed mitigation to address adverse landscape and visual effects of subdivision, use or development, including appropriateness of mitigating vegetation to screen or soften built structures, and ongoing maintenance of mitigation planting.	*"...proposal is suitable in landscape and visual terms and combined with the proposed mitigation measures would provide a positive landscape and environmental outcomes for the area."*
OBJECTIVE 3h.2.2 Maintain the Landscape Attributes of Amenity Landscape Areas. POLICIES **i.** Ensure new subdivision, use, and development is located and designed in a way that maintains the Landscape Attributes of Amenity Landscape Areas, while considering the existing landscape character and the underlying District Plan Environment.	The main areas of development associated with the proposal are located within the Areas identified as ALA 09 either side of the river. The main attributes of the Huka Falls Scenic Reserve are listed as follows in Section 7.1 of the District Plan: • High scenic and amenity values • Natural setting interspersed with public facilities such as walking/biking tracks, visitor centre, viewing platform and bridge. Structures generally in keeping with the natural surroundings.

ii. Where Significant Natural Areas are within Amenity Landscape Areas, avoid, remedy, or mitigate more than minor adverse visual effects of Indigenous Vegetation Clearance on the Landscape Attributes of the Amenity Landscape Area. **iii.** Manage the scale and intensity of subdivision, use and development in Amenity Landscape Areas to avoid, remedy, or mitigate more than minor adverse effects on the Landscape Attributes, considering: a. The suitability of the site for the activity proposed. b. The scale, location, design, and nature of the subdivision, use or development in relation to the provisions of the underlying Environment, and whether it will be sympathetic with the Landscape Attributes of the Amenity Landscape Area. c. The extent to which the Landscape Attributes will be affected. d. The ability to remedy or mitigate more than minor adverse effects. e. The visual impact of Indigenous Vegetation Clearance within Significant Natural Areas on the Landscape Attributes, and the ability to revegetate cleared areas with appropriate indigenous species. f. The effectiveness and appropriateness of any mitigation to address adverse landscape and visual effects of subdivision, use	• Highly valued as a scenic backdrop to the Huka Falls. • High ecological value, with the continuous native vegetation cover providing the main visual amenity attributes. The proposed structures are of simple functional design and are comparatively small in the context of the scale of the setting. They are generally located within the existing low dense canopy of bush where they can be successfully integrated without significant effect on the general appreciation of the area. The type of use is consistent with the type of recreational tourism activities commonly associated with natural areas. As stated previously, the main focus for visitors to Huka Falls is on the falls themselves as they captivate the attention of visitors due to the power and intensity of the display. This is not to downplay the significance of the downstream river and forested setting which add considerably to the total experience. Nonetheless, views away from the falls are a secondary consideration, and the limited visibility of the elements proposed as part of the development would have a very minor impact on the totality of the experience. Indeed, it is conceivable that the Canopy Tour zip line activity could actually heighten the experience for those visiting the area given the existing

or development, including appropriateness of mitigating vegetation to screen or soften built structures, and ongoing maintenance of mitigation planting. g. Recognise specific site requirements for use or development.	recreational attributes, the compatibility and the dynamic nature of this pursuit. Similarly, the amount of vegetation removal required to allow the integration of the various components of the proposal is very small and would have negligible implications for the patterns and continuity of the regenerating native vegetation. The scale and dispersed nature of the elements associated with the development are key factors that would ensure any effects on landscape amenity would be very low. The site presents almost optimum conditions for the proposed activity. The variable landform provides the necessary elevation to propel the riders over long distances, and together with the vegetation, the ability to visually integrate the development into the setting. The landscape has high scenic values and provides a contrast of experience with the juxtaposition of the wide river channel and the continuous stands of bush. The small amount of vegetation clearance required to construct the various elements of the proposal can largely be mitigated by remedial planting of the areas of disturbance and by the benefits of the more widespread vegetation management and enhancement proposed.

OBJECTIVE 3h.2.3 Recognise and encourage the enhancement of Amenity Values within Landscape Areas in the Taupō District. POLICIES **i.** Recognise and encourage subdivision, use or development that enhances Amenity Values within Landscape Areas in the Taupō District, by utilising, but not being limited to, the following principles: Built Structures a. Built structures are located and designed in a way to integrate with the Landscape Attributes. b. Building materials utilise recessive colours and have low reflectance levels. c. Existing vegetation patterns are utilised to integrate buildings within the Landscape Area. Planting d. New tree planting and vegetation patterns reflect the existing landscape character and natural patterns of the landscape.	The relevant structures are of a simple design, of suitable scale, use reasonably recessive materials/colours and have a level of visual permeability which, together with the established vegetation, will assist with their assimilation into the setting. The planting proposed as part of the development will reflect the natural compositions of the regenerating vegetation. This, combined with more widespread infill, enrichment planting and pest management, will assist in visually integrating the development while enhancing the ecological values of the local area. As noted in Section 13 of the attached ecological assessment, the proposed restoration works are anticipated to result in a net environmental gain through the improvement of the ecological condition of the site and improved habitat for indigenous fauna.

e. Where possible, ecological corridors and ecosystems are restored. f. Planting is used to help integrate buildings with the Landscape Area. **ii.** Encourage the utilisation of design guidelines that maintain and enhance Amenity Values within Landscape Areas in the Taupō District. **iii.** Enable activities that result in a Net Environmental Gain for Landscape Areas in the Taupō District.	
3i Natural Values	
OBJECTIVE 3i.2.1 The protection of Significant Natural Areas in the Taupō District from more than minor adverse effects of indigenous vegetation clearance. POLICIES **i.** Avoid remedy or mitigate more than minor adverse effects of vegetation clearance on the ecological values of Significant Natural Areas.	The attached ecological assessment considers the effect of the proposed development on the values of the indigenous ecosystems in the subject site. That part of the development on the true right side of the Waikato River is within SNA216. The development on the true left bank is not within this SNA. The Wildlands report sets out an assessment of the effects of the development for the whole site in a manner that considers the points raised under 3i.2.1.

ii. Consideration of the scale, intensity, purpose, location and design of activities within Significant Natural Areas to avoid, remedy or mitigate adverse effects on their ecological values, considering the effects of the vegetation clearance on: a. The composition of significant indigenous flora and fauna, and the naturalness, diversity and the life supporting capacity of Significant Natural Areas. b. Ecosystems located across a succession of natural habitats (such as geothermal areas, aquatic areas, riparian areas, foreshores, alpine areas and forest sequences etc), or in areas which experience occasional stress events (such as seasonal wetlands, slip faces, etc), and are more likely to be more diverse than anywhere else. c. Rare or threatened indigenous flora or fauna, or species unique to the District, including adverse effects on areas used by rare or threatened indigenous fauna on a regular basis. d. Protection of the long term ecological sustainability of a Significant Natural Area, including taking into account the level of disturbance within the area, pest impact, or threats, by existing or proposed protection measures with particular regard	The clearance and disturbance activities associated with the proposed development include: • Clearance of platforms and towers • Clearance for zip lines • Clearance for tracks • Damage to tree roots • Damage to adjoining vegetation • Erosion and sedimentation • Effects on indigenous fauna • Increased human presence The Wildlands report considers that the effects of these disturbance activities within SNA216 are likely to have less than minor to minor[2] ecological effects. Section 11 of the Wildlands report includes a number of options to avoid or minimise the potentially adverse effects of the proposed development. Section 12 of the report is a mitigation and ecological

[2] Note that clearence associated with the development of platform 2 could have modeate ecological effects, however platform 2 is not within a SNA.

to covenants or other mechanisms which ensure the long term protection of natural values including significant indigenous vegetation or habitat. e. The extent to which the Significant Natural Area makes up part of an ecological corridor, and provides linkages to other indigenous habitats.	restoration plan. The applicant has agreed to undertake the measures set out in these sections of the plan. Page 40 of the Wildlands report includes the following conclusion: *"Minor adverse ecological effects of the proposed operation can be reduced to less than minor through mitigation. Intensive sustained pest animal control, weed control, and restoration planting should be planned and implemented. These works have the potential to create net environmental gains through improvement of the ecological condition of the site and improved habitat for indigenous fauna. Ecological restoration at this site will complement previous and current work within the Waikato River Corridor, such as that undertaken by Greening Taupō. This work should be an integral part of the 'story' associated with the zip line tour."* On this basis, if the development includes the mitigation and restoration activities set out in the Wildlands report, it is likely that the effects of the development on the values of the SNA will be less than minor and with potential for actual ecological gain over time.
OBJECTIVE 3i.2.2	As noted above, the proposed development and associated mitigation and restoration activities have the potential to lead to a net environmental gain outcome for the natural values in the area. This

Facilitate the long term protection of areas of natural value in the Taupō District. POLICIES **ii.** Enable and recognise activities that result in a Net Environmental Gain for areas of natural value in the District. **iii.** Recognise the historical and current role that māori have played in the long term management and protection of Significant Natural Areas in the Taupō District.	outcome should be recognised by decision makers when considering the application.
OBJECTIVE 3i.2.3 The enhancement of areas of natural value in the Taupō District. POLICIES **i.** To enable the enhancement of areas of natural value by: a. Recognising landowners and trustees who have protected the areas of natural value on their lands, b. Recognising the extent of Significant Natural Areas under Māori land tenure, and the need to provide for the relationship of Māori and their culture and traditions with their ancestral lands and tāonga,	As noted above, the proposed development and associated mitigation and restoration activities have the potential to lead to a net environmental gain outcome for the natural values in the area. The subject site is of moderate to high ecological value and is an important corridor for the movement of indigenous fauna throughout the wider landscape. The proposed development and associated positive environmental outcomes are anticipated to have a beneficial impact on this important corridor. This outcome should be recognised by decision makers when considering the application.

c. Recognising all landowners as having kaitiakitanga (the ethic of stewardship) of the biodiversity on their lands, and identifying and implementing statutory and non-statutory mechanisms to implement this. d. Facilitating landowners to achieve the long term protection and enhancement of areas of natural value through the use of non-regulatory methods. **ii.** Recognise and encourage development that enhances areas of natural value, particularly the establishment, re-establishment, extension or buffering of ecological linkages along waterways, and between existing areas of natural value.	