

**Harrison Transportation**

PO Box 11 557

Palm Beach

Papamoa 3151

548

30 May 2023

Shae Crossan  
Stratum Consultants  
PO Box 13651  
Tauranga

Dear Shae

**Tinex Group Ltd, Te Puna Station Road Existing Activities – Transportation Assessment Additional Information**

Tinex Group Ltd seek consent for the existing yard-based industrial activities at 245 Te Puna Station Road, Te Puna. A Transportation Assessment Report has previously been prepared, the report dated 28 November 2022. Council has requested further information. This report provides the further information on transportation issues.

**1. Tracking Curves**

Council has requested the provision of tracking curves to show how the site access onto Te Puna Station Road is used by the vehicles that are expected to use it. It has previously been recommended that the vehicle entrance be upgraded in accordance with Council's standard design for commercial vehicle entrances, as specified in the Development Code, Drawing W437, Diagram A. An analysis of the tracking however shows that the standard design will not fully accommodate the left turn movements. It is therefore recommended that the corner radii of the entrance be upgraded to a higher standard, as given in the Waka Kotahi NZTA Planning Policy Manual, Appendix 5E, Diagram D.

The tracking of the design 17.9 m long truck and articulated trailer unit turning right in and left out of the site is shown on Stratum Consultants drawing 423022 CIV D001, sheet 01, copy attached. This shows that the tracking can be accommodated in one continuous forward motion, without the trucks needing to cross over the Te Puna Station Road centreline.

**2. Road Widening Opposite the Access**

Council has requested an assessment of whether omitting the widening opposite the vehicle entrance could result in crashes. The Transportation Assessment Report used traffic count data collected during May, June and July 2022. Some additional data is also available for Te Puna Road (recorded in October 2021) and Clarke Road (recorded in February 2021). The recorded traffic volumes are summarised in the following table.

Road	ADT (veh/day)		Peak Hour Traffic (veh/h)	
	5-Day	7-Day	AM Peak	PM Peak
Te Puna Station Road	3,064	2,865	460	255
Te Puna Road (North of Te Puna Station Rd)	3,959	3,833	323	343
Te Puna Road (North of SH2)	2,152	2,061	202	214
Clarke Road	294	275	47	38

**Table 1: Previous Traffic Count Data**

Council also has additional annual average daily traffic (AADT) data available for both Te Puna Road and Station Road as follows:

- Te Puna Road, south of Te Puna Station Road: 1,792 veh/day.
- Clarke Road: 315 veh/day.

The AADT volumes provided by Council are similar to the ADT volumes given in Table 1. While it is noted that the ADT for Te Puna Road north of SH2 is greater than the AADT south of Te Puna Station Road, this is to be expected given the different locations.

Since these traffic counts were recorded, a slip on Te Puna Station Road east of the site has restricted vehicle movements to and from the east. Council has undertaken new traffic counts on Te Puna Road and Clarke Road, after the slip occurred. The count for Te Puna Road was recorded 110 m south of Te Puna Station Road. This data is summarised in the following table.

Road	ADT (veh/day)		Peak Hour Traffic (veh/h)	
	5-Day	7-Day	AM Peak	PM Peak
Te Puna Road (South of Te Puna Station Road)	4,154	3,892	411	466
Clarke Road	1,216	956	291	181

**Table 2: Latest Traffic Count Data**

Table 2 shows a 7-day ADT on Te Puna Road, south of Te Puna Station Road, of 3,892 veh/day. This is an increase of 2,100 veh/day when compared to the 2021 AADT. Similarly, the 7-day ADT on Clarke Road of 956 veh/day is an increase of 641 veh/day when compared to the 2021 AADT.

The combined increase in ADT on Te Puna Road and Clarke Road is 2,741 veh/day, which compares with the previously recorded ADT on Te Puna Station Road of 2,865 veh/day. The difference of 124 veh/day compares with a recorded daily traffic generation of the existing business park activities of 25 veh/day. The difference between 124 veh/day and 25 veh/day is expected to be mainly due to the daily variation between counts, as well as and a very small volume of traffic using Teihana Road.

The available data therefore suggests that the closure of Te Puna Station Road has resulted in a diversion of traffic as follows:

- From Te Puna Station Road onto Te Puna Road (south of Te Puna Station Road) of approximately 2,100 veh/day. Using the previous count on Te Puna Road north of SH2, gives a lesser diversion of 1,831 veh/day.
- From Te Puna Station Road (east of the business park) onto Clarke Road of 641 veh/day.

NZTA is presently undertaking road works on SH2 immediately to the east of the Wairoa Bridge. It is understood that the latest traffic count data was recorded while these road works were in progress. It is also understood that these road works have resulted in additional queuing on SH2 during the morning peak, with additional rat-running on the adjacent roads to avoid the queues, including vehicles using Te Puna Station Road and Clarke Road. It is however not known to what degree the traffic volumes on Clarke Road will reduce once the road works are complete and, if the volumes do not reduce sufficiently, whether Council will implement additional restrictions along Clarke Road to reduce the rat-running.

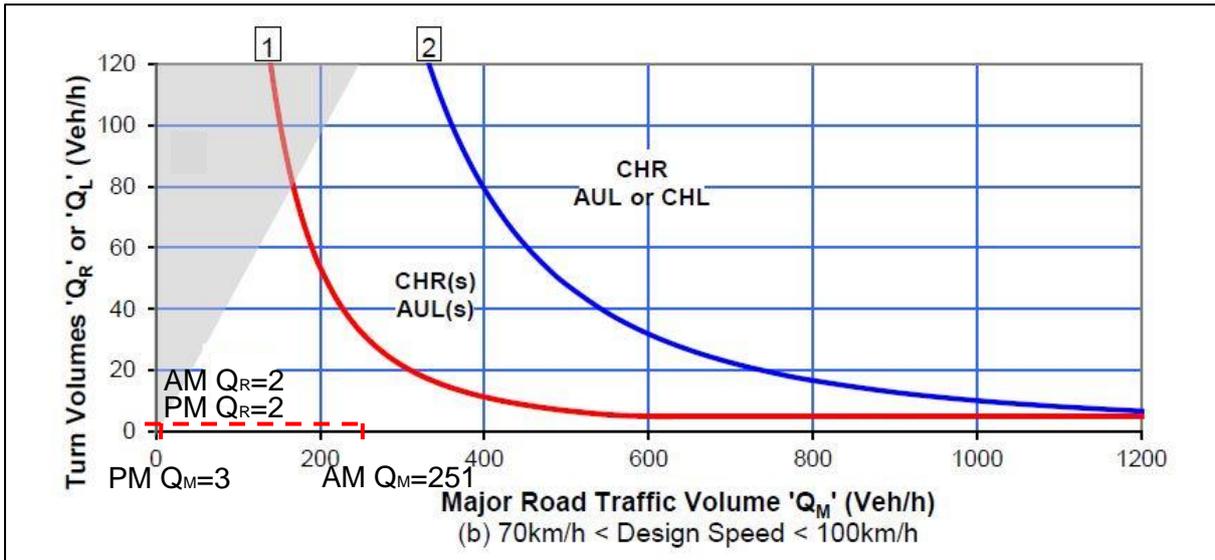
When assessing the safety of the site entrance, the peak hour volumes are also relevant. Using the recorded traffic count data given in the above tables, rather than the AADT, gives expected peak hour traffic volumes on Te Puna Station Road, inclusive of Clarke Road traffic, as given in the following table.

Road	ADT (veh/day)		Peak Hour Traffic (veh/h)	
	5-Day	7-Day	AM Peak	PM Peak
Te Puna Road (South of Te Puna Station Road)	4,154	3,892	411	466
Less Previous count (North of SH2)	2,152	2,061	202	214
<b>Increase on Te Puna Road</b>	<b>2,002</b>	<b>1,831</b>	<b>209</b>	<b>252</b>
Te Puna Station Road	3,064	2,865	460	255
<b>Te Puna Station Road less Increase on Te Puna Road</b>	<b>1,062</b>	<b>1,034</b>	<b>251</b>	<b>3</b>

**Table 3: Expected Traffic Volumes on Te Puna Station Road**

Table 3 shows that the morning peak hour traffic on Te Puna Station Road is expected to decrease to 251 veh/h while the evening peak hour traffic is expected to decrease to 3 veh/h.

An assessment of the warrant for the provision of a right turn bay at the vehicle entrance during both the morning and evening peaks was given in the previous transportation assessment report. With the closure of Te Puna Station Road to east of the site, the through traffic volumes on Te Puna Station Road have decreased and vehicles that were previously expected to turn left into the site will now turn right into the site. An updated assessment is given in the following figure.



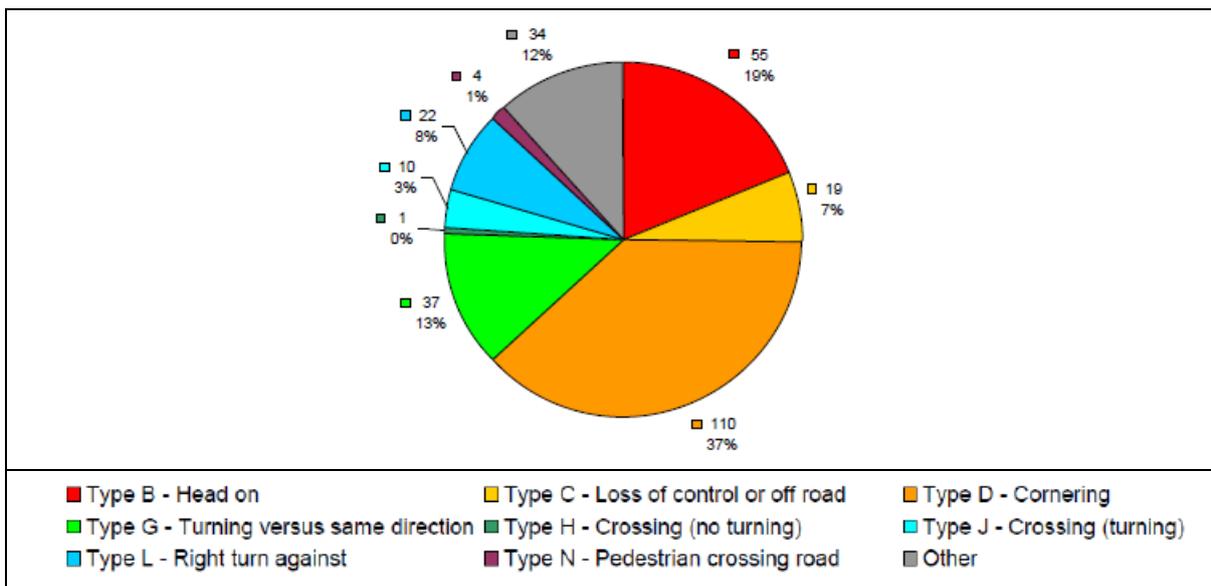
**Figure 1: Warrant for Right Turn Lane**

Figure 1 shows that the existing peak hour right turn volumes are significantly less than the volume required for a right turn lane to be warranted.

While the provision of seal widening at an access is typically required at lower volumes than for the provision of a right turn bay, the above assessment shows that the expected turning volumes are significantly less than those required for the provision of a right turn bay.

It is noted that, if the traffic volumes on Clarke Road reduce once the current road works on SH2 are completed, then the morning peak hour volume on Te Puna Station Road (shown as AM  $Q_M$  on the above figure) is also expected to reduce. This will further lessen any need for seal widening on Te Puna Station Road.

Further guidance is available in the NZTA *“High Risk Intersection Guide”*. For rural uncontrolled intersections, which are the closest intersection type to a private vehicle entrance, the proportion of intersection crashes and casualties by crash movement type is shown in the following figure.



**Figure 2: Death and Serious Injury Crashes by Movement Type**

Figure 2 shows that the majority of crashes resulting in a death or serious injury (DSI) are associated with movement types D (cornering), and B (head-on). The provision of road widening opposite the access will typically address type G (turning, same direction) crashes, which account for a low (13%) proportion of rural uncontrolled intersection DSI crashes.

In summary, given the decrease in traffic on Te Puna Station Road following the slip, the low peak hour turning movements and the low proportion of type G crash types at a rural entrance, it is assessed that the provision of road widening opposite the vehicle entrance is not required.

Council has also requested clarification of how many heavy and light vehicles are expected to use the site each day. The previous traffic surveys identified an existing peak hour traffic generation of between 2 veh/h and 3 veh/h, with an estimated daily traffic generation of 25 veh/day. Over the full survey period, 60% of vehicles turning in and out of the site were heavy vehicles and 40% were light vehicles. On this basis, the daily heavy vehicle traffic generation is estimated at 15 veh/day while the light vehicle traffic generation is estimated at 10 veh/day.

### **3. Design of the Vehicle Entrance**

Council has queried whether any physical works are required for the proposed upgrade of the vehicle entrance. It is confirmed that physical works are required, as shown on the attached Stratum Consultants drawing 423022 CIV D001, sheet 02.

### **4. On-Site Parking and Manoeuvring**

The District Plan requires on-site manoeuvring to be provided and also specifies the required dimensions of any on-site car parking spaces. These details have not previously been provided but are now shown on the attached drawing. The drawing shows three car parking spaces on each site, together with a loading bay. The tracking of the design 17.9 m long heavy vehicle is also shown. The drawing shows that compliant on-site car parking, loading and manoeuvring can be provided.

### **5. Sealing of Parking Areas**

The District Plan requires car parking areas in industrial zones to be sealed. Parking areas in rural zones are however required to be metalled as a minimum. The car parking areas are proposed to be metalled. Council has requested justification for this non-compliance. This will be provided by others.

### **6. Intersection of Te Puna Road and Te Puna Station Road**

Council has requested tracking diagrams for heavy vehicles using the intersection of Te Puna Station Road and Te Puna Road, including trucks transporting swimming pools and houses. It is understood that swimming pools are transported on standard truck and semi-trailer units, up to 17.9 m long. The tracking of these vehicles is shown on the attached drawing. This shows that the tracking can be accommodated, however the rear of the trailer tracks over the Te Puna Station Road centreline. The drawing shows that it is proposed to alter the road markings at the intersection to accommodate the tracking of the design heavy vehicle.

It is understood that the transport of houses will be carried out during off-peak times under specific traffic control as an over-dimension load. This specific traffic control will manage the tracking of these vehicles.

## 7. Heavy Vehicle Turning Movements

Council has requested confirmation of the daily number of heavy vehicles turning in and out of Te Puna Station Road, at the intersection with Te Puna Road, and an assessment of the effect on the existing chip seal surface. The transportation assessment report presented the results of a traffic survey carried out during May 2022. This identified one heavy vehicle turning left into the site in the morning peak and one in the evening peak. Section 2 of this additional report has identified an expected daily heavy vehicle traffic generation of 15 veh/day.

As Te Puna Station Road east of the site is presently closed due to the slip, all heavy vehicle movements will use the intersection with Te Puna Road. It is expected that the majority of these heavy vehicle movements will be to and from the south. The estimated daily total heavy vehicle movements at the intersection are therefore as follows:

- Right turn from Te Puna Road: 7 to 8 veh/day.
- Left turn from Te Puna Station Road: 7 to 8 veh/day.
- Right turn from Te Puna Station Road: Negligible.
- Left Turn from Te Puna Road: Negligible.

An assessment of the effects on the existing chip seal surface will be carried out by others.

We trust that this additional assessment provides sufficient information, however, if you have any queries or require any clarification, please do not hesitate to contact us.

Yours sincerely,



Bruce Harrison  
***Harrison Transportation***

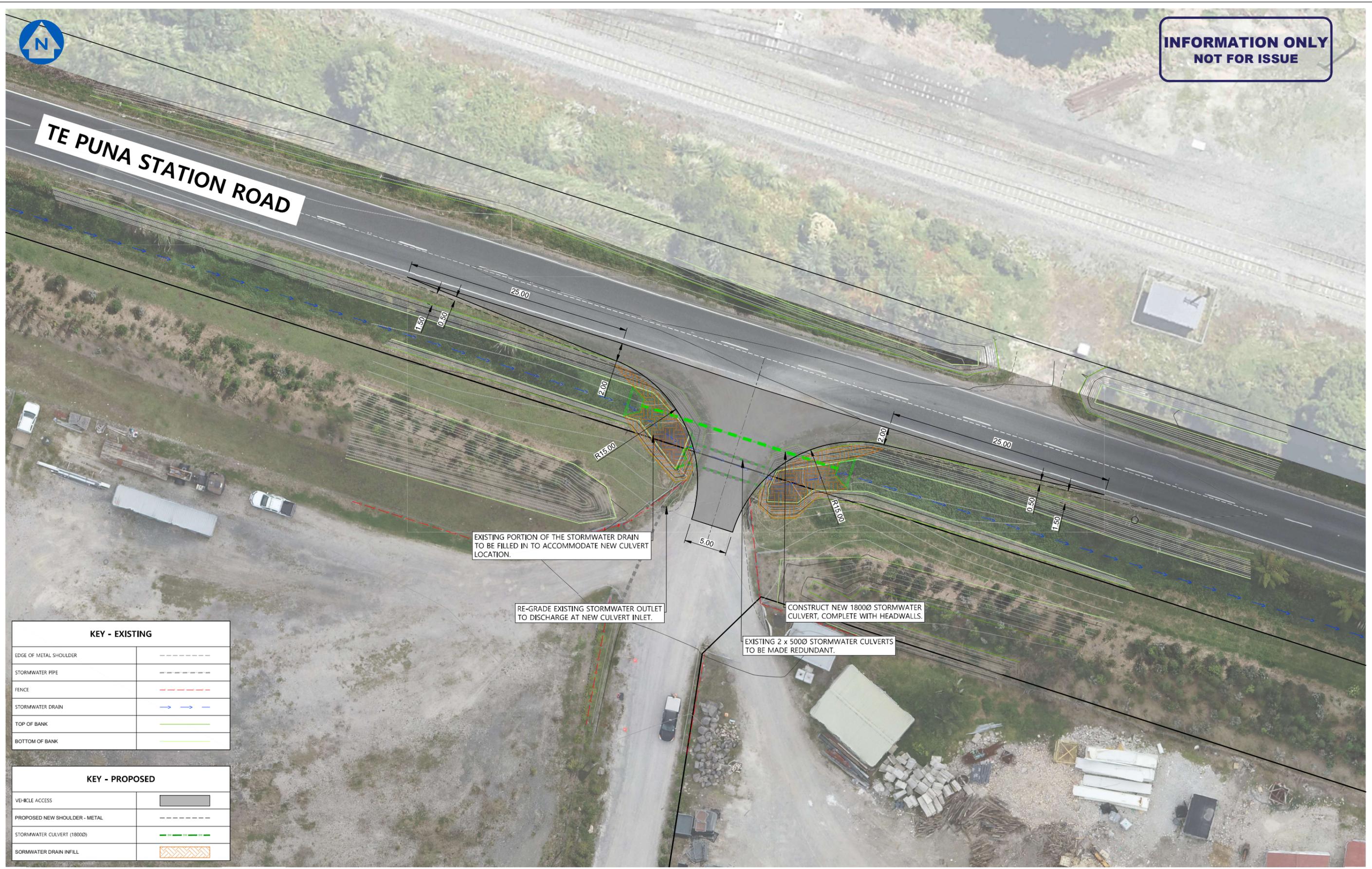
Phone: 07 576 6737  
Mobile: 027 221 6926  
Email: [bruce@harrisontransportation.co.nz](mailto:bruce@harrisontransportation.co.nz)





INFORMATION ONLY  
NOT FOR ISSUE

TE PUNA STATION ROAD



KEY - EXISTING

EDGE OF METAL SHOULDER	---
STORMWATER PIPE	---
FENCE	- - - -
STORMWATER DRAIN	→ → →
TOP OF BANK	---
BOTTOM OF BANK	---

KEY - PROPOSED

VEHICLE ACCESS	█
PROPOSED NEW SHOULDER - METAL	---
STORMWATER CULVERT (1800Ø)	---
STORMWATER DRAIN INFILL	▨

No.	Date	Drawn	Approved	Issue/Revision
A	29.05.23	JB	TH	FOR INFORMATION ONLY
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

TINEX GROUP Ltd  
245 TE PUNA STATION ROAD  
TE PUNA

INDUSTRIAL DEVELOPMENT  
LOT 2 DP22158  
PROPOSED ACCESS LAYOUT (SITE 1)

Drawing No. 423022-CIV-D001	
Sheet No. 02	Issue A
A1 SCALE: 1:200	

**Stratum**  
CONSULTANTS

OFFICE: TAURANGA CONTACT: 07 571 4500