

Western Bay of Plenty District Council

Change to the District Plan – First Review

Private Plan Change 72 Rangiuru Business Park Structure Plan

Section 32 Report

Prepared by: Harrison Grierson for Quayside Holdings



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David Needham/Tracey Miller

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Tracey Miller

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David Needham

OFFICE OF ORIGIN Tauranga
TELEPHONE 07 578 0023
EMAIL d.needham@harrisingrierson.com



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1.0 INTRODUCTION

1.1 GENERAL INTRODUCTION AND BACKGROUND

The Rangiuru Business Park (Park) is a zoned area contained in the Western Bay of Plenty District. The zoning for this area was established through a private plan change process commencing in 2005 and concluding in 2008. The change was advanced by Quayside Properties Limited. Quayside will not be the developer of the Park but is a significant owner of land in the Park.

Since 2005 little progress has been made on commencing development of the Park for several reasons one of which was the Global Financial Crisis causing development uncertainty. Given the physical separation of the Park from trunk infrastructure and the escalating construction costs, the economic viability of the park also needed to be reviewed.

During the 10 year period since the Park zoning was established clarity has been provided over one of the key infrastructure assets for the park, being the Tauranga Eastern Link (TEL), which has now been constructed. This road has recently been completed and opened in August 2015.

The following key elements of the Park and the drivers for this plan change are as follows:

1.2 TRANSPORTATION

The existing approved layout for the park included a 4 legged interchange with the TEL. During construction of the TEL it was determined due to geotechnical constraints that the location of the interchange would be better if it was moved slightly south of its current proposed location. The new location clashed with the location on the structure plan of the proposed culverts running under the TEL alignment. Therefore, during construction it was determined that the culverts would be constructed in a more northerly location and the interchange, for which a preliminary design had been done, would be in a more southerly location. This has had a flow on effect in terms of the internal roading network.

As part of the review of the viability of the Park an alternative roading option has been explored, being a 3-legged interchange as opposed to the existing 4 legged option. This would see the removal of the proposed south-bound leg out of the Park. These south bound movements would occur via the now renamed Te Puke Highway which has returned to ownership of the Western Bay of Plenty District Council as it is now no longer the State Highway. The benefits of this option are reduced costs for the interchange, however it is also proposed to retain the 4-legged option if at a later date it is determined to be economically viable.

In respect to the interchange, at the request of the Tauranga City and Western Bay of Plenty District Councils an area of land has been set aside for a future Kaituna Link, which is a potential link to Papamoa East. Planning for this is sometime away and no details are known, however land provision for this future strategic link is included.

The current structure plan for Rangiuru included a staging provision which limited the size of the first stage of development due to transportation constraints and timing of the TEL. Given the TEL is now in place and the interchange will be a lead piece of infrastructure this staging constraint has been reviewed. Further, given the changes to the interchange, a review of the location and design of the associated Park roading network was also required. Therefore an improved collector road alignment based on the interchange location has been identified.

Lastly, due to viability issues a review was undertaken of the internal road widths and corridors to assess cost, need, and also timing of upgrades. As a result amended cross-sections better fitting the Park needs are included. These still meet transportation needs based on volumes and functionality.

1.3 STORMWATER

The methodology of stormwater management is not changing through this plan change. Due to the interchange location and principal culverts under the TEL (which are now in place) a review of the drainage patterns and networks and associated earthworks levels was needed to give effect to the changed drainage patterns. Opportunities were looked at to determine if construction cost savings could be made. The outcome of this process is amended stormwater servicing solutions for the Park in terms of locations of assets, plus swale and pond size changes.

1.4 WATER/WASTEWATER

As a result of layout changes it was determined that a review of the internal networks were needed for the existing servicing solutions. This has been done. However, given the significant capital cost of these two services a review of alternative options of water supply and wastewater treatment and disposal was undertaken.

For water supply an exploratory bore has commenced to determine if a source close to the Park is a better option for water. If this proves to be the case then treatment and reticulation will be provided on site.

In reviewing the servicing and viability of the Park, investigations were undertaken on alternative options for standalone wastewater treatment and disposal within the Park. Pending consenting constraints a Sequencing Batch Reactor (SBR) process and on site disposal may be a more viable option.

1.5 LAND USES

1.5.1 EXISTING PROVISIONS

The existing industrial zoned Park and its provisions, including land uses, were established in the original zoning process. Quayside Properties Limited promoted a private plan change in 2005 which was eventually settled and made operative in 2008. In 2009 the Council initiated a District Plan review with the now operative District Plan being made operative in 2012. The provisions for permitted and other activities in the Industrial zone reflects the uses anticipated in Rangioru and other Industrial zones in the Western Bay of Plenty district.

These uses can be regarded as the most appropriate to achieve the following objectives relating to land uses within the Industrial zone (21.2.1):

1. *The efficient and optimum use and development of industrial resources (including land and buildings) in a manner which provides for the economic well being of the people living in the District.*
3. *Industrial areas in which industrial activities can operate effectively and efficiently, without undue restraint from non-industrial uses which may require higher amenity values.*
4. *Viable commercial centres in which commercial activities that do not have a functional need to locate in an industrial area are consolidated.*

This is further reinforced through the following policies:

1. Provide industrial areas within the District close to established urban centres that provide for a wide variety of industrial activities to establish.
6. Limit the establishment of non-industrial activities in industrial areas to those which have a functional or operational need for such a location.

1.5.2 SECTION 21.3.1

Section 21.3.1 notes as general permitted activities (all areas except Comvita):

- (a) Industry (except within the Omokoroa Light Industrial Zone).
- (b) Storage, warehousing, coolstores and packhouses.
- (c) Retailing which is accessory and secondary to (a) and (b) above and which has:
 - (i) Rangiuru Business Park – a maximum of 250m² indoor / outdoor retail or a maximum of 25% of the gross floor area of the primary activity whichever is the lesser;
 - (ii) All other areas – a maximum floor area of 100m².
- (d) Building and construction wholesalers and retailers.
- (e) Commercial services.
- (f) Takeaway food outlets with a maximum floor area of 100m² (excluding Te Puna Business Park).
- (g) Service stations and garages (excluding the Te Puna Business Park).
- (h) Medical or scientific facilities.
- (i) Veterinary rooms and pet crematoriums.
- (j) Activities on reserves as provided for in the Reserves Act 1977.
- (k) Police stations, fire stations and St Johns Ambulance stations.
- (l) Depots (except transport and rural contractors depots within the Omokoroa Light Industrial Zone).
- (m) Vehicle, machinery and automotive parts sales (excluding Te Puna Business Park).
- (n) Works and network utilities as provided for in Section 10.
- (o) Commercial sexual services.
- (p) Offices and buildings accessory to the foregoing on the same site.
- (q) Green waste and waste recycling facilities where these occur within buildings (i.e. are enclosed).
- (r) Aquaculture

Additional permitted activities (Section 21.3.2) for Rangiuru include:

- (a) In the Community Services Area of the Business Park only:
 - (i) Offices (not covered by 21.3.1(p));

- (ii) Retailing (not covered by 21.3.1(c)) and involving a maximum floor area of 100m²;
- (iii) Places of assembly.

Section 21.3.10 notes as discretionary activities:

- (a) With respect to any activity in 21.3.1(c), retailing involving a maximum floor area greater than 100m² but not exceeding 25% of the gross floor area of the industrial activity.
- (b) Places of assembly, excluding those permitted in 21.3.2 (a) (iii).
- (c) Accommodation facilities ancillary to an industrial activity.
- (d) Education Facilities – Tertiary Education Facilities only.

Section 21.3.12 notes non-complying activities as:

- (a) Any retailing activity not covered by the foregoing rules including retailing which is accessory and secondary to industry, storage or warehousing.
- (b) Any office activity not covered by the foregoing rules.

1.5.3 CHANGE PROPOSED – PERMITTED ACTIVITIES

Some minor additions and changes are proposed to these provisions to enable a more viable Park – in particular to ensure the efficient and optimum use and development of industrial resources being the Park itself. However, Quayside has been careful to limit the establishment of non-industrial activities in the Park to those which have a functional or operational need for such a location.

Plan Change 72 is seeking to add additional permitted activities for the Rangiuru Business Park. These are:

- Increased provision for larger takeaway outlets
- Handling, storage, processing, consignment and transportation of cargo.
- Provision for childcare facilities.

1.5.4 TAKEAWAY FOOD OUTLETS WITH A MAXIMUM FLOOR AREA OF 350M²

Presently the permitted square metre standard is 100m² which is very small and may discourage such activities which are compatible in a service centre type scenario, or to provide a food outlet for workers within the Park once it is fully developed. The increased provision is more in keeping with a standard takeaway outlet.

This mirrors Section 23.3.1.(f) already in the Plan, but expands the footprint from 100m² to 350m². Sites bordering the TEL and interchange will be attractive to a petrol station / truck stop (permitted under 21.3.1.(g)). Similar motorway stops nationwide also attract dine in eateries of larger than the permitted 100m².

In preparing this plan change consideration of the appropriate size and types of takeaway outlets was undertaken for the Park. Consequently, an increase to 350m² floor area maximum is proposed plus inclusion of the option for associated dine in facilities

where the use is partnered with a service station. This change provides for a service centre/truck stop type scenario.

1.5.5 HANDLING, STORAGE, PROCESSING, CONSIGNMENT AND TRANSPORTATION OF CARGO

This is likely achievable under the current sections 23.3.1.(b) and 23.3.1.(l). However, the reworded permitted activity clearly defines potential devanning and distribution operations.

1.5.6 COMMUNITY CENTRES

Community Centres may be located within 250m of the intersections marked “Community Service Area” on the Rangiuru Business Park Structure Plans. Within these centres Quayside proposes that the following activities are permitted:

- (i) Offices (not covered by 21.3.1(p));
- (ii) Retailing (not covered by 21.3.1(c)) and involving a maximum floor area of 100m²;
- (iii) Places of assembly.
- (iv) Educational Facilities (Limited to childcare/daycare/pre-school facilities)

The net land area of these facilities is limited to the 2.6ha which is already set aside for these uses in the Structure Plans.

The intention of this is to locate these uses around central roundabout focal points of the Park. Splitting the area between two parts of the Park and across stages of development.

The location of the existing Community Centre precinct was previously in the middle of the business park and was not part of the initial stages of development, meaning no such services could be provided in the first stages of the Park. The two areas are now proposed where Young Road and the Collector Roads intersect.

The inclusion of childcare facilities in the Community Centre Area is proposed. Rangiuru is not directly adjacent to a town centre or urban area where such services are more readily available. The addition of childcare facilities is necessary to support the Park’s workforce. Given the educational facilities are designed to service the business park, this change does not impact on existing and proposed activities.

1.5.7 CHANGES PROPOSED – DISCRETIONARY ACTIVITIES

Plan Change 72 is seeking to add the following discretionary activities (Section 23.3.11) for the Rangiuru Business Park:

- Offices accessory to activities 21.3.1 and 21.3.2 (b) which are not on the same lot as the Permitted Activities.
- Any individual activity or land use which exceeds the Maximum Daily Demand for water (54m³/ha/day).

1. Office Activities

The District Plan currently has limited provision for office activities in the Industrial zone, which is consistent with the objective 21.2.1.4 of viable commercial centres in which commercial activities that do not have a functional need to locate in an industrial area are consolidated. In order to enable optimum use of the Park, Quayside is proposing a discretionary activity route for offices with a functional need to locate

within the Park (consistent with Policy 21.1.1.6). Offices that are associated with industrial or rural activities may find Rangiuru as a suitable base given its transport links and central location within the Bay of Plenty. A discretionary activity criteria is proposed in conjunction with this.

The intention of this change is not to allow wider or increased opportunity for general office. Rather this enables those activities that have a sound business relationship with a permitted activity in the Park to be established on separate landholdings where this makes business or sense.

2. High Water Users

This has been added to ensure that the infrastructure provided through Appendix 7 is suitable for the park as a whole. The infrastructure level is aligned to the original plan change, i.e. Rangiuru is designed for heavy industry and not restrictive regarding high water use. This change provides for assessment of additional mitigations to manage water and waste on very heavy users, thereby ensuring that the capacity of the Park and its financial contributions are equitable to all land holders and potential developers. The Maximum Daily Demand is set high and will capture some known heavy water industry uses such as dairy factories (estimated 70m³/ha/day). Additional mitigations could include funding another bore and or waste module or acquiring larger sites.

1.6 AGREEMENTS

Several existing agreements exist in relation to the development of the Park, and these include a funding agreement between Western Bay of Plenty District Council and Quayside Properties Limited. This is now redundant due to servicing changes.

A secondary agreement exists with the New Zealand Transport Agency (NZTA) over funding of intersections onto the former State Highway (now known as the Te Puke Highway). Consideration of this agreement is being reviewed but does not impact this plan change.

1.7 STAGING

Given the changes to the layout generated by the newly completed TEL and the question over viability of the Park the proposed staging for the Park was also reviewed. The current plan has one stage of interim development which was derived through transportation and the need to limit pre-TEL traffic. As the TEL has now been built staging needs to change. Given the viability issues and the cost of up front lead infrastructure plus the established funding methodology being a fully developer funded structure plan, the need to establish a regime that enables the Park to be viable including a staging regime is necessary.

1.8 EXISTING CONSENTS

Several existing consents are in place for the development covering stormwater discharge and earthworks. The proposed amendments sought through this plan change do not require changes to the stormwater discharge consents and change to the earthworks consent may be required, no impediment to this is foreseen.

Various other consents will be required through the process as is normal in development projects. Should the alternative water supply and/or wastewater system be advanced then a comprehensive suite of consents will be required for those alternative systems.

1.9 FINANCIAL CONTRIBUTIONS

Due to the changes set out above in respect to infrastructure and the established park, changes to the financial contributions regime are needed. The regime works on the same basis as the current regime in that financial contributions are payable on a m² basis for subdivision and development in the Park to pay for trunk infrastructure as identified in the Structure Plans and the associated financial contribution schedule in Appendix 7. However, the financial contribution schedule has been amended to reflect the revised infrastructure and staging, and updated construction cost estimates (and actual costs in respect of the culverts located under the TEL).

It remains the case that the financial contributions schedule is able to be updated each year through the Annual Plan and/or Long Term Plan process to reflect up-to-date costs so as to enable full recovery of infrastructure costs.

2.0 INFRASTRUCTURE AND SERVICING SUMMARY

2.1 TRANSPORTATION

Transportation issues are discussed in two reports prepared by Traffic Design Group (TDG) in Appendix 3.

In summary some of the key aspects to note are:

- Updated collector road network;
- Redesigned and more cost effective road cross-sections;
- Revision of construction costs;
- Rebuild of Pah Road to sealed rural standard from State Highway to Young Road in interim stage of development;
- Inclusion of rail crossing barrier arms;
- Intersection layout changes at Pah Road and Young Road;
- Roundabout / Intersection Improvements at State Highway and Pah Road and consideration of timing;
- Upgrade of Pah Road in stages of development;
- Staged Young Road upgrades at the Maketu Road end;
- An upgrade of the Young Road, Maketu Road, and State Highway Intersection to incorporate an improved left turn slip lane.

2.2 WASTEWATER SOLUTIONS

As it stands the existing solution to wastewater is an internal gravity system and then pumped wastewater back to the Te Puke Wastewater Treatment Plant for treatment and discharge. The option to pump waste back to Te Puke is still valid although a change to a low-pressure sewer reticulation network is proposed which will eliminate all but one of the internal pumping stations.

In reviewing the servicing and viability of the Park, investigations were undertaken on alternative options for standalone wastewater treatment and disposal within the Park.

The options included:

- Modified Ludzack-Ettingger (MLE) process;
- Sequencing Batch Reactor (SBR) process; and
- Membrane Bioreactor (MBR) process.

Of the three processes considered, the SBR process is considered to offer the best opportunities for modulating to suit staged development, and for achieving high quality of treatment with significant nutrient removal.

If an onsite system is pursued, then subject to obtaining resource consent it is proposed to discharge treated effluent to a wetland constructed alongside the Carr's Drain stormwater attenuation pond.

2.2.1 DESIGN FLOWS

An evaluation of water use and wastewater production from industrial subdivisions around New Zealand, Australia and the USA was undertaken to determine the demands and production for wet through to dry industries. An assessment of the potential makeup of wet and dry industries within the Park was undertaken to determine the potential demands and production values appropriate for the Park.

The dry weather flow (DWF) wastewater production value was assessed, and subsequently the value used for reticulation evaluation is 23.8m³/ha/day. A maximum day multiplier of 1.8mx is then applied to give the peak annual day flow of 42.8m³/ha/day, and then a daily dry weather peak factor of 1.7x was applied to this to give a potential peak hour flow of 0.87 L/s/ha. Further allowance is then made for inflow and infiltration during wet weather at a rate of 0.2 L/s/ha to result in an average wet weather flow of 60.1m³/ha/day.

These figures are relevant to whether the treatment and disposal solution is to pump back to Te Puke, or to treat onsite.

2.2.2 PUMP STATIONS AND RISING MAINS

If pumping back to Te Puke is the preferred option, then a single pump station adjacent to the Diagonal Drain Stormwater Pond on Pah Road would be required along with the previously proposed rising main back to Te Puke. The other two pump stations proposed by the current structure plan would not be required if the low pressure sewer system is adopted.

The ultimate capacity of this pump station would need to be in the order of 125 L/s, to be transferred through a 3880m rising main. The rising main would need to be approximately 400mmOD PE.

The pump configuration could consist of 2 x 40kW pumps initially which operate alternately on variable speed drives, provided that they are set to run together at 100% power at least once a day to achieve the required cleansing velocity in the rising main, and then 2 additional pumps could be added in later stages as waste flows increase.

If an internal treatment plant is selected, then no pump stations are necessary as each property will have their own individual pump station with small high head pumps capable of delivering directly to the local treatment plant.

2.2.3 EMERGENCY STORAGE

Under normal circumstances for either option emergency storage shouldn't be necessary as the individual pump chambers on each property would need to incorporate up to 9 hours of storage on each site, however as it is quite possible that

industrial sites may maintain backup generator power supplies to keep their industrial processes running, and if so then it is possible power would remain available to the individual pump chambers.

For the Te Puke wastewater option it would be necessary to maintain some degree of emergency storage at the pump station. We suggest this might only need to be the equivalent of 20% of the normal requirement, or the equivalent of approximately 108 minutes across the serviced area. Initially this could be provided by storage within the main Te Puke transfer pump station, but ultimately would be supplemented by an off-line storage tank.

An emergency storage tank for the Park Treatment Plant option is not required. The treatment plant will have to have its own backup generator to keep the treatment process running, so therefore there would be nothing preventing the plant from continuing to accept wastewater during a power outage. Those without their own generator would need to utilise the storage on their own property.

2.2.4 REQUIRED LAND

Land required for the Te Puke transfer option would comprise land for the pump station wet well, a control room, and for a future emergency storage tank. Based on a pump station approximately 8m diameter x 5m deep, a storage tank 3m diameter x 20m long, and a control shed of 2m x 2m, a parking area, a transformer and a portable generator pad it is estimated that a site of approximately 600m² would be required.

2.3 EXISTING AND PROPOSED WATER SUPPLY

The existing water supply solution for the Park is based on off-site infrastructure and internal reticulation. As with wastewater through this plan change process a review of the internal layout triggered a review of the servicing network. This included consideration of financial viability. In addition to the exiting option an assessment of using an on site water bore and treatment and storage facility has been evaluated. It is noted that neither of these options considers supply from the proposed Waiari Treatment Plant on No1 Road in Te Puke. A study into the possible connection to Waiari was undertaken, and the costs were considered well above other options. As with the current structure plan option, the Waiari option would require an extremely long gravity supply main, which would add significant cost over the alternative option considered above.

The on site option involves:

- On site production bore and secondary production bore to supplement and/or provide backup to a primary bore;
- Construction of a staged modular treatment plant;
- Construction of 2 reservoirs initially which would be supplemented with a further two tanks as further stages are developed;
- Construction of a pressure booster pump system together with a standby generator setup;
- Development of internal reticulation comprising PE mains.

An exploratory bore is currently being drilled to around a 300m depth and if successful an allocation will be sought from the Bay of Plenty Regional Council, so that the long term interests of the Park are protected.

Treatment is likely to be required for Iron and Manganese, which is common in groundwater sources.

2.3.1 WATER DEMAND PARAMETERS

The demand figures that have been assumed are as follows:

TABLE 1: WATER DEMAND FIGURES	
DEMAND	VOLUME
Average Daily Demand (ADD)	30m ³ /ha/day
Maximum Daily Demand (MDD)	54m ³ /ha/day
Peak Hour Demand (PHD)	1.56 l/sec/ha
Fire Demand (FD)	50 l/sec for 60 minutes = 180m ³

Based on these figures the ultimate reservoir volume required has been assessed at 2680m³. This should be developed initially as 2 x 670m³ reservoirs to provide adequate water supply and firefighting reserve, and subsequently by the addition of two further 670m³ reservoirs to make up the total required.

The proposed FW3 water supply classification for firefighting has been selected to provide the best economic balance between provision of water supply and reticulation assets capable of storing and conveying large firefighting flows, and the estimated likelihood for high hazard occupancies to require high flows on demand. The FW3 scenario ensures the vast majority of likely tenants in the Park will have sufficient firefighting water to meet their demands, but those with specific high risk activities will need to develop their own on-site water storage to meet their specific needs.

2.4 PROPOSED STORMWATER DESIGN

The existing approved stormwater management system is a combination of stormwater swales, pipes, ponds and associated structures. This is designed to ensure management of storm and floodwater management in the 1, 10 and 100 year storm events. It is characterised by discharge to pond areas and two distinct discharge points.

2.4.1 PIPE, SWALE, CULVERT AND POND SIZING

Stormwater swale, culvert and pond sizing has been carried out using DHI modelling software. Rational calculations incorporating WBOPDC Development Code rural rainfall intensities (SW3A) have been used to size stormwater pipes as outlined the drawings contained in Appendix 4.

The outcome of the review subsequent to the changes brought on by the construction of the TEL are as follows:

3. Swales/Pipes

The current stormwater network as shown on the Structure Plan, directs runoff to one of two attenuation ponds. The smaller (Diagonal Drain Pond) is situated on the east side of Pah Road and collects runoff from the west and southwest portion of the Park. The second, and larger pond (Carrs Drain Pond) is located on the north side of the TEL and provides attenuation and ultimately discharge into Carrs Drain.

In the current structure plan the stormwater network passes under the TEL at two locations corresponding with the main undeveloped site stormwater crossing points.

With the identification of the new location for the TEL interchange, the concentration of both sets of culverts into a single waterway became a logical outcome. In essence the southern bank of culverts has been eliminated and the northern set have been increased in capacity.

Modelling was undertaken to confirm the required sizes for the ponds and the culverts. This work was peer reviewed and then consented by the Bay of Plenty Regional Council. The modelling showed that the critical 100 year event developed a discharge of some 43m³/sec through the culverts. The culverts were sized to be 1.2m high x 4.0m wide, and it is necessary for there to be a bank of five culverts. There is negligible fall on the culverts under the TEL, and to pass the 100yr event there will be some heading up at the entry.

Leading to the box culverts are two large swales. The swale running parallel with the TEL measures some 34m wide from top edge to top edge. A second swale heads southwest and is somewhat smaller at 15m across from top edge to top edge.

As the large swale reaches the TEL interchange it splits into two. One branch continues under the interchange road via a box culvert and runs further east toward the eastern extent of the Park. The second branch turns south and runs parallel to the main entrance road off the TEL. This branch needs to continue south almost to the Te Puke Highway.

The Diagonal Drain Pond is feed by piped reticulation rather than swales.

Throughout the Park there will be a network of piped stormwater, critical sections of this network are included in the proposed structure plan.

No options or alternatives have been put forward for management of stormwater from the Park.

4. Ponds

The proposed ponds can be developed in stages. This is particularly the case with the larger Carr's Pond which receives runoff from approximately 75% of the Park.

It would be logical to develop Carr's Pond from north to south thus maintaining the balance of the pond site in a natural state and therefore being available for grazing.

2.5 FINANCIAL CONTRIBUTIONS - STRUCTURE PLAN

The proposed changes to the Structure Plans also need to be reflected in changes to the financial contributions schedule. A review has been undertaken of the construction costs based on the updated plans and the alternative options. The Business Park is divided into four areas which have been used to determine infrastructure sequencing and costs over time.

3.0 RESOURCE MANAGEMENT ACT 1991 (ACT)

3.1 PART 2

Part II of the Resource Management Act provides the guiding purpose and principles of the Act. In preparing this change consideration to the purpose and principles was given at all stages. Adopting the changes delivers a sustainable management framework as defined in this part of the Act.

3.2 SECTION 32

Before a proposed plan change can be publicly notified the Council is required under section 32 ("s.32") of the Act to carry out an evaluation of alternatives, costs and benefits of the proposed review. With regard to the Council's assessment of the proposed plan change s.32 requires the following:

- (1) An evaluation report required under this Act must:
- (a) examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and
 - (b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—
 - (i) identifying other reasonably practicable options for achieving the objectives; and
 - (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and
 - (iii) summarising the reasons for deciding on the provisions; and
 - (c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.
- (2) An assessment under subsection (1)(b)(ii) must:
- (a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—
 - (i) economic growth that are anticipated to be provided or reduced; and
 - (ii) employment that are anticipated to be provided or reduced; and
 - (b) if practicable, quantify the benefits and costs referred to in paragraph (a); and
 - (c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.
- (3) If the proposal (an amending proposal) will amend a standard, statement, regulation, plan, or change that is already proposed or that already exists (an existing proposal), the examination under subsection (1)(b) must relate to:
- (a) the provisions and objectives of the amending proposal; and
 - (b) the objectives of the existing proposal to the extent that those objectives—
 - (i) are relevant to the objectives of the amending proposal; and
 - (ii) would remain if the amending proposal were to take effect.
- (4) If the proposal will impose a greater prohibition or restriction on an activity to which a national environmental standard applies than the existing prohibitions or restrictions in that standard, the evaluation report must examine whether the prohibition or restriction is justified in the circumstances of each region or district in which the prohibition or restriction would have effect.
- (5) The person who must have particular regard to the evaluation report must make the report available for public inspection –
- (a) as soon as practicable after the proposal is made (in case of a standard or regulation); or
 - (b) at the same time as the proposal is publicly notified.
- (6) In this section, -
- objectives** means,—
- (a) for a proposal that contains or states objectives, those objectives:
 - b) for all other proposals, the purpose of the proposal
- proposal** means a proposed standard, statement, regulation, plan, or change for which an evaluation report must be prepared under this Act
- provisions** means,—
- (a) for a proposed plan or change, the policies, rules, or other methods that implement, or give effect to, the objectives of the proposed plan or change:
 - (b) for all other proposals, the policies or provisions of the proposal that implement, or give effect to, the objectives of the proposal

In this case, Plan Change 72 is an "amending proposal" as envisaged by s 32(3), but does not seek to make any changes to the objectives or policies of the District Plan. It is clear from s32(3) that a focus of the s32 evaluation is to be on the provisions and objectives of the amending proposal.

3.3 SECTION 74

In accordance with Section 74(2A) of the Act, Council must take into account any relevant planning document recognised by an iwi authority lodged with Council.

4.0 ISSUES AND OPTIONS REVIEW

In accordance with s32 of the Act, the following sets out a summary of the key issues and options considered.

4.1 ISSUE 1 INTERCHANGE AND TRANSPORTATION

The following provides a summary of the considerations for the provisions relating to this issue.

4.1.1 OPTION 1 – STATUS QUO – INTERCHANGE AND TRANSPORTATION

Advantages/Benefits	The advantage of the status quo would mean no cost outlay.
Disadvantages/Cost	The Plan is almost impossible to give effect to given the new culvert locations and interchange design needs. Only a small percentage of the Park could commence and this would be unviable. The disadvantages of retaining the interchange are therefore an inappropriate zoning. The current roading network and cross sections could be retained to some extent however they are in the incorrect locations in some instances and over specified in others adding cost which is a key economic disadvantage.
Effectiveness / Efficiency	Effectiveness – The existing provisions were effective for the previous solutions but are now ineffective for the current operating environment. Efficiency – as a consequence of not being able to deliver the Park the status quo is inefficient in terms of achieving the desired outcome.
Risks of Acting / Not Acting if there is uncertain or insufficient information about the subject matter	Not acting would simply mean the structure plan could not be given effect to. The culverts under the TEL alignment have been constructed, the interchange would be very difficult to construct in its current location. It is highly probable that not changing the interchange location would have the risk of the Park not commencing making the zoning redundant. The associated transportation solutions are derived from the interchange location and trying to make the development viable. The risk of not amending are again a redundant zone.

4.1.2 OPTION 2 – AMENDED AS PROPOSED – INTERCHANGE AND TRANSPORTATION

Advantages/Benefits	Provides a structure plan framework that meets the new location of the interchange. Provides flexibility for options around the design of the interchange and reduces costs of development where possible for the internal network of roads and other intersections.
Disadvantages/Costs	A potential disadvantages may relate to timing of infrastructure as is it relates to some internal landowners.
Effectiveness / Efficiency	Effectiveness – provides an effective roading network for the Park that meets modern Industrial Park standards. Efficiency – Is efficient in that it provides for sequencing for roading infrastructure in a logical manner.
Risks of Acting / Not Acting if there is uncertain or insufficient information about the subject matter	Given the flexibility in the provisions there are some risks in terms of uncertainty in the timing of the interchange, the upgrades to intersections and the options around the staging. Not acting and providing this flexibility could compromise the viability of the Park altogether.

4.1.3 COMMENTARY

The following provides commentary on the considerations or the provisions relating to this issue. The objectives and policies of Chapter 12 of the District Plan are relevant to this issue and are not part of this plan change request. Relevant objectives and policies (i.e. those relating to the transportation network for the Park) are:

12.2.1 Objectives

2. *Subdivision and development is planned in an integrated manner and provided with the necessary infrastructure and services to ensure that the land is able to be used for its intended purpose.*
4. *Sufficient infrastructure capacity is provided to ensure the efficient and equitable provision of services to all land in the catchment.*
5. *Comprehensive assessment of development proposals to ensure that the full effect of the proposal is able to be determined.*

12.2.2 Policies

2. *The design of subdivision is in accordance with structure plans.*
3. *Require subdivision to be undertaken in accordance with any staging requirements to ensure the effective and efficient servicing of land within the catchment.*
9. *Adverse effects of traffic generation from subdivision and development on the transport network will be avoided, remedied or mitigated.*

4.1.4 MOST APPROPRIATE OPTION

The most appropriate method to implement the existing objectives of the Plan is to seek some changes to the structure plans and the transportation network is part of that structure plan. Changes are necessary to ensure efficiency of outcome while maintaining a safe and efficient transportation network.

4.2 ISSUE 2 WATER, WASTEWATER AND STORMWATER

The following provides a summary of the considerations for the provisions relating to this issue.

4.2.1 OPTION 1 – STATUS QUO – WATER, WASTEWATER AND STORMWATER

Advantages/Benefits	Existing established provisions and solutions provide demonstrated certainty.
Disadvantages/Costs	The existing solutions for the three services are difficult to give effect to given the location requirements of the roading network and alignments, particularly for stormwater. The disadvantages of the existing solutions is the lack of flexibility and significant upfront infrastructure costs which potentially threaten the viability of the Park.
Effectiveness / Efficiency	Effectiveness – existing provisions are effective in providing clarity around what is required but are ineffective in that they won't necessarily deliver a viable Park. Efficiency – Provisions are not efficient in that they don't necessarily deliver a viable series of servicing solutions.
Risks of Acting / Not Acting if there is uncertain or insufficient information about the subject matter	In terms of stormwater, given the changes to the roading network and the culverts are already in place under the TEL, not following through with changes to the stormwater solution means the risk is a Park that cannot be developed. Further it equals sunk infrastructure cost of culverts In respect of water/wastewater the existing options could be developed in some form, the risk is they may not be the most viable options and impact viability of the Park development.

4.2.2 OPTION 2 – AMENDED AS PROPOSED – WATER, WASTEWATER, AND STORMWATER

Advantages/Benefits	The changes to the provisions as proposed provide the flexibility needed to deliver the services in the most efficient manner.
Disadvantages/Costs	The disadvantages of the water/wastewater alternatives is that there is some uncertainty on these options until they are fully consented.
Effectiveness / Efficiency	Effectiveness – the provisions provide solutions to changes generated from culvert and interchange locations. They also provide solutions for concerns around economic viability of providing the water/wastewater services. Efficiency – the solutions have been designed to reduce cost where possible.
Risks of Acting / Not Acting if there is uncertain or	In terms of not acting, the risk in terms of stormwater is that no option exists that can be given effect to.

insufficient information about the subject matter	In terms of water/wastewater, not providing for the flexibility of the on site options limits the options that the developers of the Park have in terms of delivering cost effective infrastructure and the viability of the Park altogether is at risk.
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4.2.3 COMMENTARY

The following provides commentary on the considerations or the provisions relating to this issue. The objectives and policies of Chapter 12 of the District Plan are relevant to this issue and are not part of this plan change request. Relevant objectives and policies (i.e. those relating to stormwater, wastewater, and water supply within the Park) are:

12.2.1 Objectives - District Plan

2. *Subdivision and development is planned in an integrated manner and provided with the necessary infrastructure and services to ensure that the land is able to be used for its intended purpose.*
3. *Infrastructure and services are designed and constructed to minimum standards which will result in improved environmental outcomes without significant additional cost to the community.*
4. *Sufficient infrastructure capacity is provided to ensure the efficient and equitable provision of services to all land in the catchment.*

12.2.2 Policies – District Plan

2. *The design of subdivision is in accordance with structure plans.*
3. *Require subdivision to be undertaken in accordance with any staging requirements to ensure the effective and efficient servicing of land within the catchment.*
4. *Require subdivision and development to provide infrastructure and services to meet the reasonably foreseeable needs of other land in the vicinity of the development.*
5. *Require subdivision and development to comply with the minimum standards in the Development Code for the provision of infrastructure and services, or to an alternative standard which is as effective and efficient in the long term and results in improved environmental outcomes.*
6. *Require all subdivision and development proposals submitted to Council to include a comprehensive assessment prepared in accordance with the information requirements of the Development Code.*
7. *Subdivision and development practices that take existing topography, drainage and soil conditions into consideration with the aim of minimising the effects of stormwater run-off.*

The changes proposed largely are a realignment of the layout of development. The levels of services are being maintained for these assets and the use of structure plans retained. Therefore the objectives and policies are not being compromised through this Proposed Plan Change.

4.2.4 MOST APPROPRIATE OPTION

The most appropriate method to implement the existing objectives of the Plan is to seek some changes to the structure plans and provide alternatives for water and wastewater servicing which are still implemented through a structure plan approach and avoid exposing the community to excessive servicing costs.

4.3 ISSUE 3 STAGING AND FINANCIAL CONTRIBUTIONS

The following provides a summary of the considerations for the provisions relating to this issue.

4.3.1 OPTION 1 – STATUS QUO – STAGING AND FINANCIAL CONTRIBUTIONS

Advantages/Benefits	<p>The proposed staging in the current plan is limited to a small first stage on Quayside land which is derived through a transportation constraint. This was relevant at the time.</p> <p>The financial contributions regime in place delivers a mechanism for recovery in the Park</p>
Disadvantages/Costs	<p>The existing staging is in the wrong location given the Interchange location switch. Further the staging doesn't provide certainty about subsequent staging of development and ongoing logical sequencing of service delivery.</p> <p>The financial contributions as they stand do not provide enough clarity around a staged delivery of Rangiora and make development unviable for the first developer. Additionally the current financial contributions fail to have immediate effect to the TEL interchange.</p>
Effectiveness / Efficiency	<p>Effectiveness – the existing regime of staging is clear in the way it is presented and is therefore effective, albeit it is now outdated for the development needs. Similarly the financial contribution regime is effective in that it provides certainty to the developer on process.</p> <p>Efficiency – Staging and the use of financial contributions are an established efficient method for development.</p>
Risks of Acting / Not Acting if there is uncertain or insufficient information about the subject matter	<p>Retaining the existing staging simply does not reflect the current position of the Park, thereby reducing the likelihood of development.</p>

4.3.2 OPTION 2 – AMENDED AS PROPOSED – STAGING AND FINANCIAL CONTRIBUTIONS

Advantages/Benefits	<p>The proposed changes for staging provide certainty about development sequencing and cost recovery method. The advantage of this is to maximise the viability of the Park. The financial contribution changes support this cost recovery, ensuring first investors recover their cost first.</p> <p>As with the current staging, the first stage remains on Quayside land and gives effect to the Tauranga Eastern Link interchange, itself a significant investment since 2005.</p>
Disadvantages/Costs	<p>As with the 2005 Plan, the Park is dependant on the commencement of Stage 1 to open the path for other landholders.</p>
Effectiveness / Efficiency	<p>Effectiveness – the provisions are effective in ensuring mechanisms exist in the Plan to deliver a set of provisions that enable development to actually occur on the Park.</p> <p>Efficiency – the provisions are efficient in that they provide greater direction and priority on staging and consequential cost recovery.</p>

Risks of Acting / Not Acting if there is uncertain or insufficient information about the subject matter	The risk of not acting to introduce staging in the manner proposed and the amendments to the financial contributions regime is a planning framework that is at risk of not being taken up and the Park zoning remains in place for a further period of time creating uncertainty.
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4.3.3 COMMENTARY

The following provides commentary on the considerations or the provisions relating to this issue. The objectives and policies of Chapter 11 of the District Plan are relevant to this issue and are not part of this plan change request. Relevant objectives and policies (i.e. those relating to financial contributions are) are:

11.2.1 Objectives – District Plan

2. *The provision of adequate funding for and efficient utilisation of the District’s infrastructure.*
4. *A financial contributions strategy which is responsive to the social, environmental and economic needs of the community.*
5. *Timing of development commensurate with the ability to make appropriate provision for infrastructure.*

11.2.2 Policies – District Plan

3. *The costs of infrastructure should be allocated in an equitable manner over both existing and new users so as to ensure that such costs are not borne unfairly by the wider community.*
4. *Calculations to assess infrastructure requirements should be based on the level of service needed to meet peak demand.*
5. *Calculations shall not seek to do more than recoup costs actually incurred in respect of expenditure to provide infrastructure to deal with the effects of growth including, where appropriate, the costs of financing such infrastructure over time.*
6. *Where appropriate, contributions should be levied differentially to reflect the particular circumstances applying to different parts of the District.*
7. *Provision should be made for the updating of inputs to the calculation of financial contributions through the consent and Annual Plan and/or LTP process to reflect actual and up-to-date estimated costs of the provision of infrastructure.*
12. *The full costs of required infrastructure and services should be paid when subdivision and development requires such provision outside an approved development programme.*
13. *Developers who fund infrastructure ahead of time in an approved development programme should be refunded only at the time that development funds become available.*

The extent to which the amended provisions in the proposal are the most appropriate way to achieve the objectives has been examined. It is noted that the objectives seek a balance between the efficient funding of infrastructure and ensuring the community is not burdened by unnecessary costs. The policies echo this theme.

4.3.4 MOST APPROPRIATE OPTION

The most appropriate method to implement the existing objectives of the Plan is to seek some minor changes to the contributions schedules and the provisions specific for the Park in order to provide surety to the first developer of equitable recovery for lead infrastructure from subsequent developers.

4.4 ISSUE 4 LAND USE ACTIVITIES

The following provides a summary of the considerations for the provisions relating to this issue.

4.4.1 OPTION 1 – STATUS QUO – LAND USE ACTIVITIES

Advantages/Benefits	A known and certain set of provisions and land uses.
Disadvantages/Costs	<p>The provisions as they stand limit the nature of the activities that can occur in the Park. The community services are no longer in a logical place given the roading network changes. The disadvantage in retaining its existing location is that it limits opportunities in the first two stages of development.</p> <p>The current regime of activities place too many limits on office activities that may have a locational need to be in the Park.</p> <p>Lastly, activities that occur in modern business parks such as childcare facilities need to be provided for.</p>
Effectiveness / Efficiency	<p>Effectiveness – the provisions are largely effective in establishing the types of activities expected in a Park.</p> <p>Efficiency – use of permitted activities as a mechanism is an established planning tool.</p>
Risks of Acting / Not Acting if there is uncertain or insufficient information about the subject matter	<p>The risk of not changing or amending the provisions is that the existing provisions are retained and these potentially limit the activities that are logical to establish in a Park. This limitation can have the potential effect of reducing the potential tenants and delay uptake of developable land. Given the sensitivity of the Park's viability to develop, limiting activities has the risk of causing the Park to become uneconomic.</p>

4.4.2 OPTION 2 – AMENDED AS PROPOSED – LAND USE ACTIVITIES

Advantages/Benefits	<p>The minor changes proposed to the activities provide greater flexibility over land use in the Park, they do not fundamentally change the nature of the Park and activities that will establish.</p> <p>Economic growth and further employment activities are anticipated once the Park develops. Without further provision for activities anticipated in the Park, economic and/or employment opportunities may be more limited as it may take longer for the Park to develop.</p>
Disadvantages/Costs	<p>There are limited disadvantages and any are difficult to assess. Given the very limited nature of the additional provisions it is highly unlikely the changes will limit the nature of the activities that could establish or generate any reverse sensitivity effects. Further given the scale of the changes no distributional effects from or on other locations are anticipated.</p>

	Economic growth and further employment activities are anticipated once the Park develops. Further provision for activities anticipated in the Park, or a consenting pathway for office activities with a functional or operational need for such a location would encourage this.
Effectiveness / Efficiency	<p>Effectiveness – the extent of the changes proposed are effective in that they are limited to changes to the provisions that are already operative and align with the intent of the zoning that occurred in the first initial plan change process to deliver a functional Industrial Business Park.</p> <p>Efficiency – enabling the minor changes provides an improved set of provisions at minimal cost.</p>
Risks of Acting / Not Acting if there is uncertain or insufficient information about the subject matter	The risks of not adopting the changes are limits or additional restrictions on activities which reduces the functionality of the Park. This has implications in terms of viability of the Park. Given the considerable upfront infrastructure needed for the initial stages of development any limits on activities and associated activities challenges viability.

4.4.3 COMMENTARY

The following provides commentary on the considerations or the provisions relating to this issue. The objectives and policies of Chapter 21 of the District Plan are relevant to this issue and are not part of this plan change request. Relevant objectives and policies (i.e. those relating to land use activities within the Park) are:

21.2.1 Objectives – District Plan

1. *The efficient and optimum use and development of industrial resources (including land and buildings) in a manner which provides for the economic well being of the people living in the District.*
3. *Industrial areas in which industrial activities can operate effectively and efficiently, without undue restraint from non-industrial uses which may require higher amenity values.*
4. *Viable commercial centres in which commercial activities that do not have a functional need to locate in an industrial area are consolidated.*

21.2.2 Policies – District Plan

1. *Provide industrial areas within the District close to established urban centres that provide for a wide variety of industrial activities to establish.*
6. *Limit the establishment of non-industrial activities in industrial areas to those which have a functional or operational need for such a location.*

The extent to which the amended provisions in the proposal are the most appropriate way to achieve the objectives has been examined. It is noted that the objectives seek a balance between the efficient and optimum use and development of industrial resources (including land and buildings) in a manner which provides for the economic well being of the people living in the District while limiting activities which are not industrial in nature.

The policies echo this theme by seeking to strike the balance between provisions for a wide variety of industrial activities to establish while limiting those which are not industrial in nature unless they have a functional or operational need for such a location.

The existing permitted activities, which have been settled through the District Plan review, can be regarded as the most appropriate to achieve the objectives. This plan change proposal does not seek to amend those except as set out in Appendix 2 and commented on in section 1.5

4.4.4 MOST APPROPRIATE OPTION

The most appropriate method to implement the existing objectives of the Plan is to seek some minor changes to the permitted activities within the Park in order to make sure that these are realistically developable as permitted activities (increased takeaway floor area) and appropriately cater to the workforce of the Park (childcare centres in the community services areas).

In addition, in order to enable the optimum use of the Park, an additional permitted activity for cargo handling activities is made to be explicit, and a discretionary activity route for offices with a functional need to locate within the Park is preferred subject to assessment criteria to ensure that functional need.

In order to ensure the integrity of the infrastructure planning, a discretionary activity for high water users is proposed.

The proposed Community Services Area provisions in this change replicate the size that is currently provided for in the Park. Given the Parks physical separation from existing urban areas it is deemed necessary to provide some community services and other uses to support the workers of the Park. The preferred option proposed simply relocates the Community Services Area to more logical and central locations around key roundabouts.

To avoid all of the land for the Community Service Areas being held in single ownership and to avoid it being a single location consideration to various rule sets and planning mechanisms was given. The preferred option meets the key driver in that it does not define the area spatially and therefore does not limit the activity by specific location or to one landowner. Experience shows this can be too inflexible once detailed design is undertaken. The preferred planning mechanism also ensures that both ends of the Park can be serviced by these types of facilities. Additionally, the use of the 250m circle ensures the area in which these activities are located is contained and does not result in commercial activities at the key interchange, thereby sending wrong messaging about the Parks intent from those travelling on the State Highway. This could create undesirable destination journeys to the site. Lastly, the use of this mechanism, with maximum and minimum limits on area, ensures comprehensive sites are developed while still enabling individual activities to occur. A community centre and focal point for the Park will be created.

None of the changes generate redistribution effects from other locations as there is no increase in size or significant change in land uses from those that were previously part of the planning framework in this part of the sub-region. Nor do these changes significantly introduce uses that are out of character with a modern business Park.

5.0 PROPOSED PLAN CHANGE

5.1 SUMMARY OF CURRENT PLAN PROVISIONS

The Operative District Plan provides a clear framework for the establishment of the Park. This Proposed Plan Change does not propose to review or change the broader framework which was first promoted in 2005, confirmed in 2008, and further preserved through the review of the Operative District Plan including specifically the existing objectives and policies of the Operative District Plan. In summary the changes are to the

mechanics of the Plan rather than the basis for which the Park is established. Changes can be summarised as follows:

5.1.1 INDUSTRIAL

The intention of the Industrial Zone is to locate industrial activities together for the avoidance and management of adverse effects such as traffic, noise, dust, hazardous substances, visual effects and odour. The Industrial Zone also enables Council to better manage the provision of infrastructure and interface with the adjacent Residential and Rural Zones and enables better long term planning of transport corridors.

The Industrial chapter of the District Plan provides for the development of the Rangiuru Business Park through a set of objectives, policies and rules tailored to the development and operation of the Rangiuru Business Park.

The Industrial zone also adds services and employment opportunities to the existing Te Puke area and the proposed Te Tumu and Wairakei catchments.

5.1.2 SUBDIVISION & DEVELOPMENT

The intention of the Subdivision and Development chapter is to provide for subdivision in a planned and integrated manner, ensuring provision of infrastructure and services is provided to minimum standards, resulting in improved environmental outcomes without significant additional cost to the community.

The subdivision and development chapter of the District Plan provides specific rules and Objectives and Policies for the Rangiuru Business Park including specific provisions for services through the Rangiuru Business Park Structure Plan.

5.1.3 RANGIURU BUSINESS PARK STRUCTURE PLAN

The Rangiuru Business Park Structure Plan (Appendix 7, Section 11 – Western Bay of Plenty District Plan) sets the key development framework for the Park as it provides the following:

- Financial Contribution Schedule;
- Proposed Stormwater Catchment and Amenity Reserves Map;
- Proposed Contours with Proposed Layout Details Map;
- Sewer Reticulation Layout Map;
- Rooding Features Diagrams;
- Intersection Diagrams;
- Rooding Layout and Land Use Map.

5.1.4 CHAPTER 11 - FINANCIAL CONTRIBUTIONS

Chapter 11 of the District Plan has the intention of ensuring that infrastructure is funded in an efficient manner to meet the growth needs of the District. This has required some administration changes to ensure that the process for updating and recovering costs (including financing costs) is clear, although the basis of the regime (recovery of costs on a m² basis) remains the same.

5.1.5 DISTRICT PLAN MAPS

The proposed changes reflect the Structure Plan advancements/amendments. Removal of detail repeated in the Structure Plan is proposed, plus addition of staging. Otherwise no amendments are proposed to the zoning.

PLAN MAPS	
MAP	COMMENTARY
U78	Delete and replace, new plan to show only: <ul style="list-style-type: none"> • Industrial zoning; • Staging; • Reference to the structure plan.
U79	Delete and replace, new plan to show only: <ul style="list-style-type: none"> • Industrial zoning; • Staging; • Reference to the structure plan.
U80	Delete and replace, new plan to show only: <ul style="list-style-type: none"> • Industrial zoning; • Staging; • Reference to the structure plan.
U81	Delete and replace, new plan to show only: <ul style="list-style-type: none"> • Industrial zoning; • Staging; Reference to the structure plan.

5.16 SUMMARY

The existing rules being changed and the proposed changes to the rules are detailed in Appendix 2. The changes proposed are shown in strikeout and new text in colour. The changes are included in the versions of Chapters 11, 12, 21 and Appendix 7 to the District Plan.

6.0 CONSULTATION

Appendix 5 contains an overview of consultation undertaken and matters raised. The key issues raised during the consultation process were:

- Timing and funding of infrastructure;
- Individual landowner implications;
- Timing of development ;
- Transportation effects;
- Permitted activities.

The key issues raised are addressed in the effects assessment section of this report.

7.0 ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

In considering the effects of the development on the environment it is important to note that this Proposed Plan Change does not seek to introduce the zone, rather it introduces changes to the structure plan underpinning the zone, principally around infrastructure and funding. Any significant effects generated by the industrial zoning and associated land uses are an established part of the anticipated environment.

7.1 SOCIO-ECONOMIC EFFECTS

The changes will see an amended staging regime for the development which in theory could see some changes to the timing at which some landowners within the Park could develop. However, the changes to the staging are designed to enable the Park to develop in a viable manner otherwise the risk is the zoning could remain in place for a number of years before any development occurs and therefore uncertainty for those landowners continues over development timing.

Any significant negative socio-economic effects created through the industrial zoning were addressed as part of the decision making process in 2005.

7.2 CULTURAL AND HERITAGE EFFECTS

Consultation has been undertaken with Tapuika representatives on this proposed plan change. The changes proposed do not trigger any additional cultural or heritage issues. Should the alternative wastewater system be advanced then through that consenting process it will need to be reviewed.

7.3 AMENITY EFFECTS

No changes to the noise provisions are proposed and existing dwellings and internal noise levels are being retained. In terms of visual the theme of the development is being retained and the internal swale and greenspace amenity is largely being carried over other than where infrastructure solutions have changed.

7.4 ECOLOGICAL EFFECTS

No changes are proposed through this plan change and full compliance with the existing consents will be adhered to. A full consideration to ecological effect from the alternative on site wastewater disposal solution will be needed if and when that solution is advanced to regional consents.

7.5 TRANSPORT EFFECTS

These have been discussed in the transportation Section of this report and in the attached transport reports. The transportation network has been designed to meet that modelled flows in traffic and upgrades are proposed to meet the safety requirements of future users. Therefore, effects will be within acceptable levels given the future operating environment.

7.6 NATURAL HAZARDS

No changes are anticipated through this change.

7.7 INFRASTRUCTURE EFFECTS

There are no significant effects as such in terms of infrastructure. This Proposed Plan Changes just provides for a variety of options to enable the opportunity for reducing funding and construction costs. The level of service provided to the eventual users remains consistent and in line with modern industrial business parks.

8.0 REGIONAL POLICY STATEMENTS AND PLANS

8.1 REGIONAL POLICY STATEMENT

Sections 104(1)(b)(v)-(vi) of the Act state that consideration must be given to any relevant provisions of a regional policy statement, plan or proposed plan.

The Regional Policy Statement seeks to direct and maintain compact, well-designed and strongly connected urban areas to effectively and efficiently accommodate growth. The Park provides increased industrial land in the region. The Park, through the TEL road network will be within 10 minutes of the Port of Tauranga. The location of the Park provides a large area of industrial land in a suitable location that is in close proximity to the Port, providing for growth in a sustainable manner. Some summary considerations:

- (a) The "Energy and Infrastructure" Policies generally relate to regionally significant infrastructure and promote its importance. The infrastructure within the Rangiuru Business Park would not in isolation qualify as regionally significant. The only potentially relevant matter is Policy EI 7B which relates to managing the effects of (any) infrastructure to address effects on lawfully established activities.
- (b) The "Iwi Resource Management" Policies generally relate to the obligation on Councils to recognise and provide for the relationship of iwi and hapu with their historic sites, land and other important areas. They also look at minimising the impacts of proposals on such areas. In this regard consultation has assisted in giving consideration to the policies.
- (c) The "Urban and Rural Growth Management" Policies are relevant. These include the Rangiuru Business Park with the urban limits and growth sequencing diagrams. Similarly, the various Policies promoting well planned urban development / limits fit in well with development at Rangiuru. Rangiuru is part of a carefully planned strategy for setting urban limits and is anticipated in the RPS.

8.2 SMARTGROWTH

SmartGrowth is a 50-year growth management strategy for the Western Bay of Plenty. Tauranga City, Western Bay of Plenty District, Bay of Plenty Regional Council and Tāngata Whenua work together in partnership with Central Government, businesses, education groups, industry and the community to provide a unified direction and voice for the future of the Western Bay.

There are a number of desired outcomes and focus areas in the SmartGrowth Plan that align with the development of the Rangiuru Business Park including "Grow a sustainable economy", the Rangiuru Business Park will contribute towards creating an enabling business environment by providing industrial land for future development.

The proposed Plan Change 72 relates to changes to some of the existing rules and the development stages. The purpose of the industrial zone remains consistent with the purpose of SmartGrowth.

Through the formation of this change document discussions were undertaken with various SmartGrowth partners over the implications on the wider settlement strategy for the Western Bay, with particular regard to the retail and office distribution needs of the Western Bay. These discussions included consideration of the Wairakei Commercial areas, the Te Puke Township and the possible future Te Tumu Commercial areas. As stated throughout this document, the intent of Plan Change 72 is not to introduce significant changes to Rangiuru in terms of land uses and therefore no significant changes result in terms of distribution patterns and function of the Park. This Plan Change simply provides a framework to deliver the Park in an economic manner. The Community Area provisions have been reworked based on new layouts and the office provision provides for ancillary offices with a direct need to be in the Park. This does not open up opportunity for wholesale changes to the nature of the Park.

The Plan Change does not compromise the direction of the SmartGrowth strategy for providing employment land in the Eastern Bay catchment including a functional industrial park at Rangiuru.

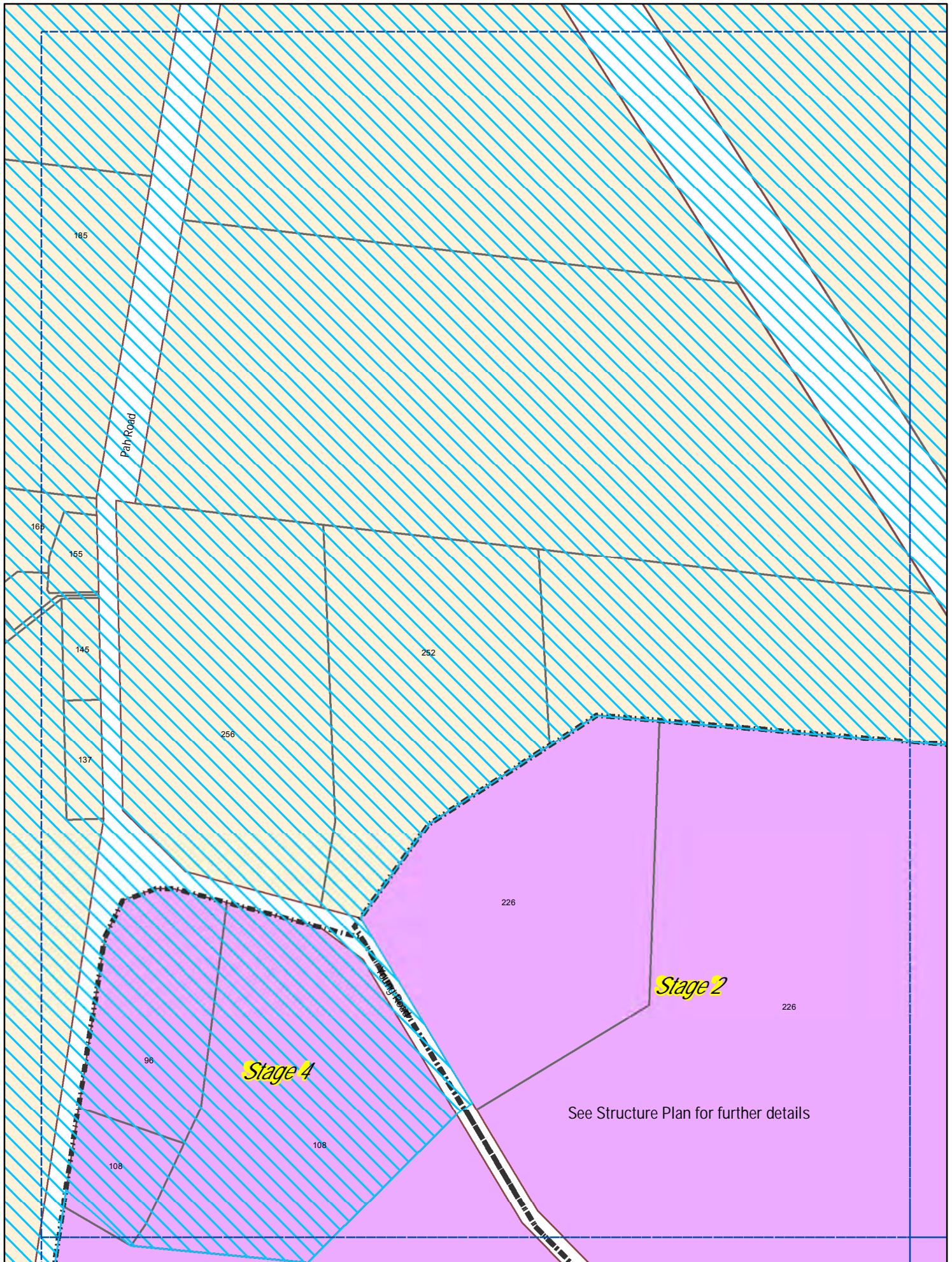
9.0 CONCLUSION

Proposed Plan Change 72 seeks amendments principally to the staging and infrastructure provisions of the existing established zone. Given the completion of the TEL and the relocated position of the interchange the Park is not able to develop without changes to the Structure Plans, therefore a plan change is necessary.

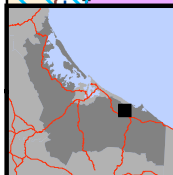
Given the considerable upfront infrastructure costs it is necessary to provide as much flexibility as possible to the provisions of the District Plan to facilitate a viable development. This includes the opportunity for alternative water and wastewater solutions and options around the design of the interchange. Furthermore, the provisions relating to staging and land uses need to be flexible enough to enable the already zoned Park to be developed and achieve the strategic outcomes of having an industrial park in the eastern part of the sub-region.

Effects from the Proposed Change 72 are minimal given the already established zoning. The Proposed Plan Change largely changes the mechanics in delivering the Park.

APPENDIX 1
PROPOSED PLAN MAPS

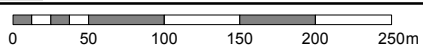
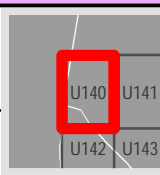


See Structure Plan for further details



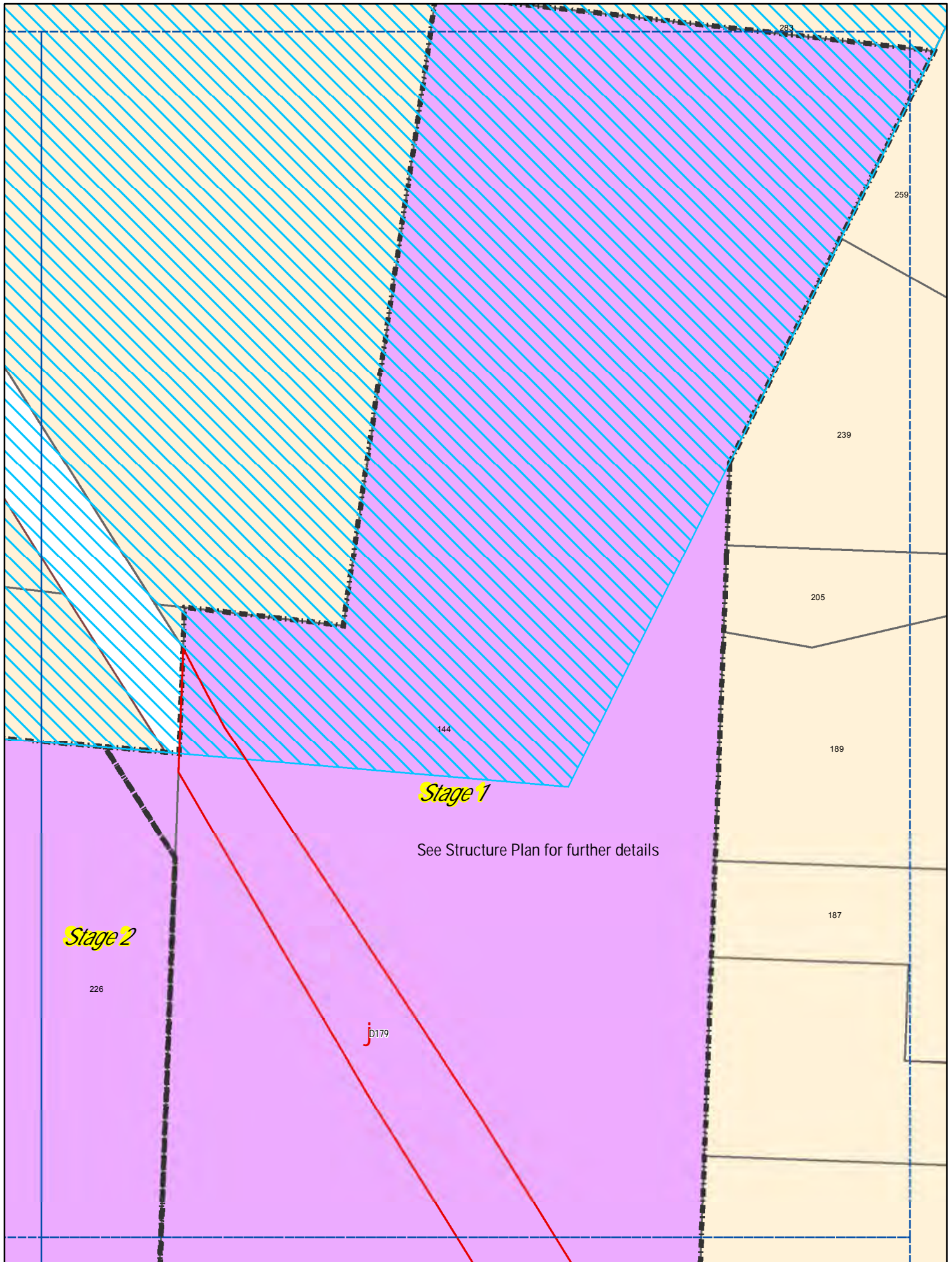
U140

Rangioru



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Revision Date: PC 72
September 2015

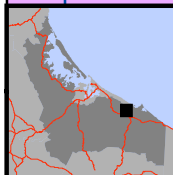


Stage 1

See Structure Plan for further details

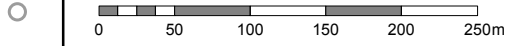
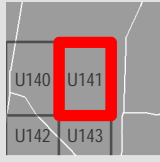
Stage 2

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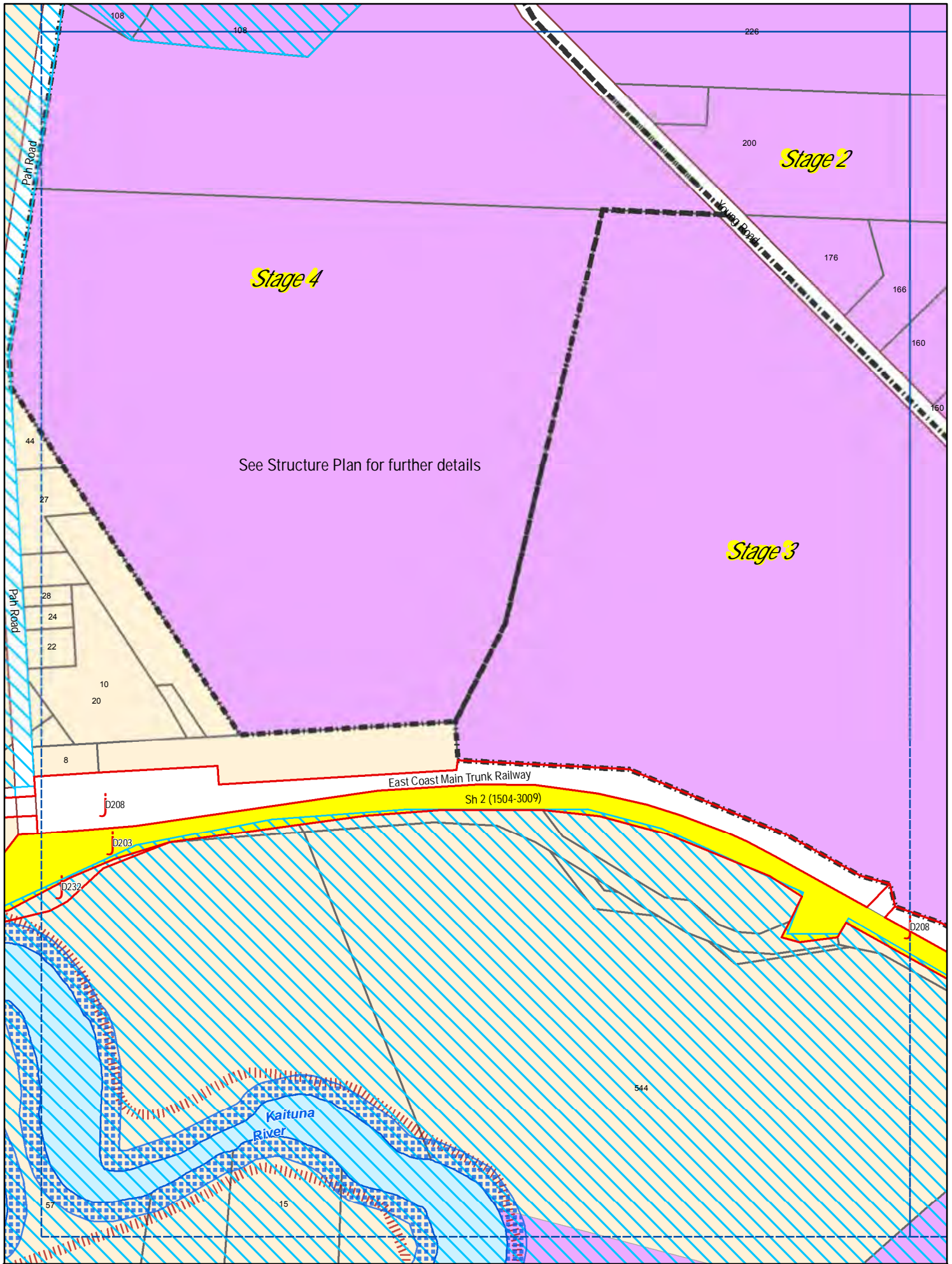
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Rangioru



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September 2015

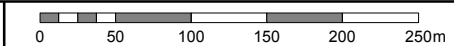


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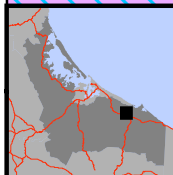
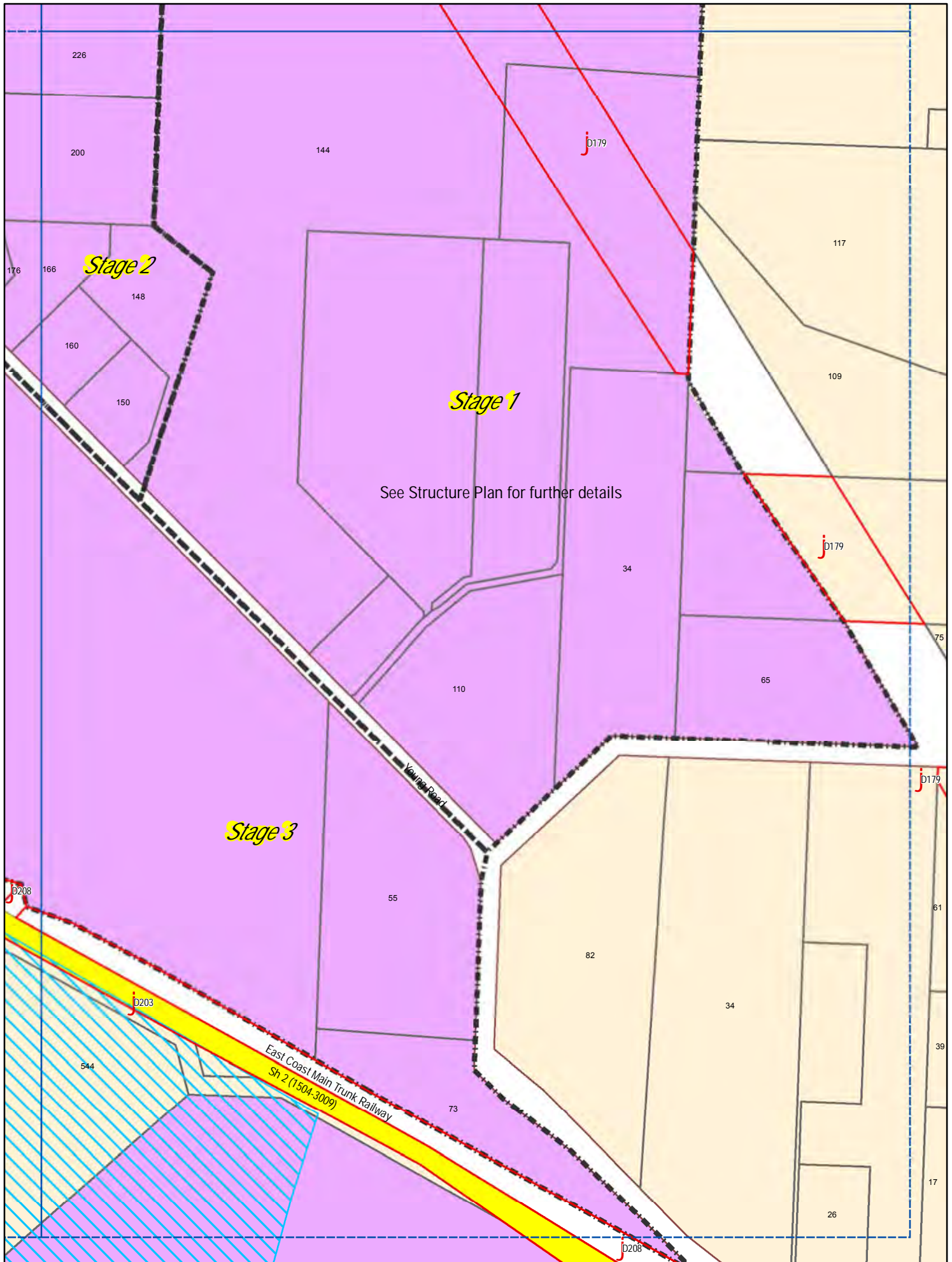
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Rangioru



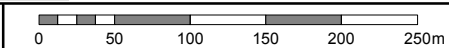
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September 2015



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Rangioru



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Revision Date: PC 72
September 2015

APPENDIX 2
PROPOSED TEXT CHANGES
CHAPTER 11, CHAPTER 12,
CHAPTER 21 AND APPENDIX 7

Financial Contributions

11. Financial Contributions

11.3 Rules

11.3.1 Interpretation

(c) NZOCR means the New Zealand Official Cash Rate.

11.3.3 Financial Contribution Formulae for Controlled and Restricted Discretionary Land Use Activities and all Subdivisions

These formulae are used to set the catchment financial contribution amounts and the values applied to the variables within the formulae will be updated annually.

(e) Rangioru Business Park

The equitable provision and funding of *infrastructure* and the need for full recovery of *infrastructure* costs (as set out in the financial contributions schedules) is a key driver for the Rangioru Business Park. For Rangioru Business Park the *infrastructure* required is anticipated to be built and funded by private developers as opposed to the Council. Accordingly, full recovery of financial contributions by the Council to refund the entities which build/fund that work (in order of construction) is appropriate.

Financial contributions will be calculated on the basis of available areas able to be developed as opposed to actual site utilisation or building area, and notwithstanding that different activities place different actual demand on *infrastructure* networks. The *infrastructure* cost contained in Appendix 7 are able to be updated annually through the *Annual Plan* and/or LTP as set out below.

As outlined in Chapter 12, *Infrastructure* for the Rangioru Business Park will be constructed generally in accordance with the designs specified in Appendix 7. Where Council identifies a more cost effective means of delivering future *infrastructure* for the park, the future *infrastructure* cost for that line item may be used as replacement *infrastructure*. Where the cost of *infrastructure* is lower than the anticipated cost, only the lower amount can be recovered.

Developers wishing to occupy land within these areas must make their decisions on location in full awareness that financial contributions are payable on the basis of site area without refinements for specific proposals.

- (i) As set out below, financial contributions shall be payable for subdivision and *development* in the Rangioru Business Park to pay for trunk infrastructure as identified in the *Structure Plans* and the associated financial contribution schedule in Appendix 7;
Where any circumstances exist that mean these provisions are inconsistent with the general provisions then this section shall prevail.
- (ii) With regard to any resource consent which is granted subject to a condition imposing a financial contribution for Rangioru Business Park, that condition shall provide for the amount of any financial contributions.
- (iii) Any financial contribution which is not paid in full within two years from the date of commencement of the consent or any subsequent two year period shall be adjusted so that the amount of the financial contribution required by the resource consent shall be the per square meter amounts as set out in the Rangioru Rangioru-Financial Contributions Schedule in Appendix 7 using the inputs to that schedule as updated annually through the *Annual Plan* and/or the *LTP* process, as detailed below.
- (iv) The financial contribution shall be in accordance with the ~~approved~~ Rangioru financial contribution schedule in Appendix 7 (specified dollar amount per square metre of site area so used), adjusted annually to reflect updated construction cost estimates or completed actual project construction costs, and the financing costs (based on the ~~90-day bank rate [BKBM-FRA-NZOCR rate]~~ plus 1.5%).
- (v) The financing costs are to be charged quarterly in arrear on the last day of March, June, September and December in each year on the actual capital expenditure at the start of the quarter as approved in the Rangioru financial contribution schedule less the financial contributions received during the quarter.
- (vi) ~~In addition further financing costs (based on the 90-day bank rate [BKBM-FRA rate] plus 1.5%) resulting from the assumed average delay of three years between the setting of financial contributions and their receipt are to be charged annually on 1 July on:~~
- (a) ~~the capital expenditure as approved in the Schedule;~~

~~(b) the financing costs calculated as in (ii) and (iii) above.~~

~~If, as a consequence of any amendments to the capital works programme, the allocation between public/network and developer benefit needs to be updated, this may also occur through the Annual Plan process (excluding those items listed in Appendix 7, Section 7 under "1.00 Roading infrastructure", where the 'public/network' contribution will remain at 0%).~~

(vii) The costs in the financial contribution schedule in Appendix 7 including the holding financing costs are indicative only as they are based on [August] 2015 costs and will be updated annually through the Annual Plan and/or LTP process to reflect up-to-date estimated costs (based on the rate of movement of the Cost of Construction Index) and/or actual costs of the provision of infrastructure and the financing costs (based on the NZOCR rate plus 1.5%.

(viii) The actual financial contributions payable will reflect the completed actual construction costs and the financing costs (based on the NZOCR rate plus 1.5%) to be determined at the time resource consents commence, taking into account the amounts as listed in the financial contributions schedule in Appendix &7 and any relevant costs listed in updated through the Council's Annual Plan and/or LTP.

~~(ix) Actual financial contributions may also be payable based on updated construction cost estimates in order to fairly contribute towards the funding of trunk infrastructure as identified in the Structure Plans and the associated Rangiuru financial contribution in Appendix 7 (for example, part funding of trunk infrastructure identified as part of a future stage).~~

~~(x) If any developed or agency elects not to recover the cost of trunk infrastructure which has been identified in the Structure Plans and the associated financial contribution schedule in Appendix 7, it may notify the Council accordingly and the relevant line item in the financial contribution schedule will be updated to reflect the lower amount to be recovered through the Annual Plan and/or LTP process.~~

~~(xi)~~ Discretionary and non-complying activities shall pay financial contributions on a full per square metre basis as set out on Appendix 7.

(xii) 'Site area':

- Excludes the areas set aside for trunk infrastructure as identified on the *Structure Plan*, such as local purpose reserves (stormwater), local purpose reserves (amenity), pedestrian/cycle access, collector and entrance roads, areas for treatment of water and/or wastewater and the Tauranga Eastern Motorway Link interchange.
- Includes the area of all local and private roads and other *infrastructure* not specifically required by the *Structure Plans*.
- The total net developable area is 148ha.

In respect of *development*, 'site area' relates to the total area of the *lot* or the total area of the tenancy area in which the *development* is located.

For the Seeka site being Lots 1 and 2 DPS 3521 the sites are area shall excluded from the developable area, ~~shown on Plan 011318-S-R400-Rev A in Appendix 6- Financial Contribution Calculations of the Private Plan Change Request - Metroplex Rangiuru Business Park Volume 1 November 2005.~~

~~(viii)~~ The financial contribution is payable at the time of subdivision or *development*, whichever happens first. Where a financial contribution has already been paid at the time of subdivision in respect of the total area of the lot any land, there shall be no further contributions payable at the time of *development*. Where a financial contribution has already been paid at the time of *development* in respect of any land, there shall be no further contributions payable for the same land at the time of any subsequent subdivision;

~~(viiiv)~~ Financial contributions at the time of subdivision are payable at subdivision completion stage (i.e. Section 224 application). Financial contributions at the time of *development* are payable at building consent stage or at the time land is used for Rangiuru Business Park purposes;

- (viii) In respect of the Rangiuru Business Park, where *Council* does not expect to be able to fund much of the trunk infrastructure needs for the foreseeable future, financial contributions from developers or agencies shall be collected by *Council* and paid directly to any prior developer or agency (in the order of investment) which has funded trunk infrastructure services in accordance with the financial contribution schedule and the *Structure Plans*.

Subdivision & Development

12. Subdivision and Development

12.4.13 Rangiuru Business Park Structure Plan

The rules below specify how the Rangiuru Business Park will be developed. To summarise how the required infrastructure operates in relation to the stages at the Park, the first developer of Stage 1 is responsible for developing the Rangiuru Interchange on the Tauranga Eastern Link, and also must construct at least 50% of the water and wastewater capacity for Stage 1. Stages 2, 3 or 4 may proceed provided at least 50% of the land in Stage 1 is in use. Subsequent stages must carry through the infrastructure options employed in stage 1 to the standard required in the Plan, and must also connect that infrastructure to the existing infrastructure at the Park.

12.4.13.1 General

(a) Local purpose reserves within the relevant development stage.

(b) Finished contours

All subdivision use and *development* in the Rangiuru Business Park shall result in finished contours that are in accordance with those shown in the *Structure Plan* in Appendix 7 (refer to "Structure Plan Proposed Contours with Proposed Layout Details" Plan). For clarity the purpose of this plan is to ensure that the stormwater drainage patterns and levels as set out in the structure plan are provided for as staged development occurs.

~~(e) To ensure the remediation of contaminated soil all earthworks shall comply with Condition 8 of Resource Consent No. 66312 issued by the Regional Council.~~

12.4.13.2 Stormwater - General

~~(b) Stormwater systems shall be in accordance with the Stormwater Management Plan that formed part of the application to the Regional Council for stormwater discharge permits for the Rangiuru Business Park (dated August 2005), specifically those in relation to the discharges from Stormwater Ponds 1 (Carrs) and 2 (Diagonal) as shown on the Structure Plans.~~

12.4.13.3 Water Supply – General

Water supply servicing in the Rangiuru Business Park is possible via two distinct options as follows:

Option A - Eastern Water Supply Network – which constitutes:

- New reservoir at Rangiuru Road (5,500m³):
- Gravity supply main from Rangiuru Road reservoir to Business Park (450mm diameter, approximately 7.8km length):
- Rising main from existing Eastern Supply water source to new reservoir at Rangiuru Road (225mm diameter, approximately 9.0km length):
- Temporary pump station, Stage 1:
- Pah Road/Young Road/ State Highway 2 reticulation loop (375mm diameter, approximately 5.3km length):
- Internal Park trunk reticulation.

Option B- On Site Water bore and Treatment Plant – which constitutes

- On site water bores;
- Treatment plant;
- On site reservoirs;
- Associated and ancillary equipment;
- Internal Park trunk reticulation as shown on the structure plan.

Both options are viable options. Option B will require resource consent from the Bay of Plenty Regional Council. Selection of the option to serve the Business Park to be determined by the developer of the first land use or subdivision within Stage 1 who must provide sufficient capacity for 50% of the land in Stage1.

Once a preferred option is chosen this is the option to serve the entire Business Park. A combination of options is not permissible unless demonstrated as being more cost effective.

12.4.13.4 Wastewater – General

Wastewater supply servicing in the Rangiuru Business Park is possible via two distinct options as follows:

Option A – Te Puke Wastewater Treatment Plant and Trunk reticulation – which constitutes:

- Main pump stations and associated emergency generator and emergency storage;
- Sanitary sewer rising main to the Te Puke Wastewater Treatment Plant (350mm diameter, approximately 5.8km length), including associated pipeline crossings under the Kaituna River and Waiari Stream;
- Upgrades of the capacity of the Te Puke Sewage Treatment Plan (upgrades triggered by stages of *development* above 60, 100 and 140ha).

- Sewer reticulation, including pump stations and associated emergency storage, within the relevant *development stage area*.

Option B - On Site Treatment and Disposal

- On site Sequencing Batch Reactor (SBR) treatment plant and wetland disposal area in four distinct modules;
- Wetland treatment and disposal ponds;
- Internal park trunk reticulation as shown on the structure plan.

Both options are viable options. Option B will require resource consent from the Bay of Plenty Regional Council. Selection of the option to serve the Business Park to be determined by the developer of the first land use or subdivision within Stage 1 who must provide sufficient capacity for 50% of the land in Stage 1.

Once a preferred option is chosen this is the option to serve the entire park. A combination of options is not permissible unless demonstrated as being more cost effective.

12.4.13.5 Rooding – General

- Rooding infrastructure provision/upgrading required by the Structure Plan and Appendix 7 shall be developed as required (unless stated otherwise in this Plan) prior to the issuing of a Section 224 certificate for any subdivision or building consent or any industrial use of the land.
- Local Roads - In addition to the Structure Plan, local roads shall be designed and constructed where necessary to provide for the future rooding access and needs of adjoining undeveloped land.
- Principal access to the Park is via the State Highway interchange which has 2 options. Either a 3 legged interchange or a 4 legged interchange. Both options are viable options with assets to vest in WBOPDC or NZTA as appropriate. Selection of the option to serve the Business Park to be determined by the developer of the first land use or subdivision within Stage 1. Once a preferred option is chosen this is the option to serve the entire Business park. A combination of options is not permissible.
- Stage 1 of the Rangiuru Business Park will include as lead infrastructure the construction of the Rangiuru Interchange to the Tauranga Eastern Link. The Interchange must be built by the first land use or subdivision developer in Stage 1.

12.4.13.36 Interim Development (~~Stage 1~~)- General

An interim *development*, Stage 1, shall comprise not more than 25ha (gross) of the land in the area indicated on the *Structure Plan* as "Stage 1 Area" (plus the stormwater management areas north-east of the Proposed Tauranga Eastern

Motorway) provided that all of the following *infrastructure* provision/upgrading required by the *Structure Plan* and Appendix 7 has been completed, or will be completed (generally to the standard and form as specified in the *Structure Plans*) prior to the issuing of a Section 224 certificate for any subdivision or building consent or any industrial use of the land:

~~(a) Rooding~~

- ~~(i) Collector and entrance roads within the interim development area, including associated roundabouts and associated road reserve widening for Young Road and an 'entrance threshold' feature and associated signage to advise of a Bylaw restricting Business Park traffic from using Young Road east of the Seeka packhouse site (including the Maketu Road/State Highway 2 intersection);~~
- ~~(ii) Upgrading of Young Road between the interim development area and the Pah Road intersection, including associated road reserve widening;~~
- ~~(iii) Pah Road/Young Road intersection upgrade (roundabout);~~
- ~~(iv) Upgrade of Pah Road to 10m wide sealed rural road standard;~~
- ~~(v) Upgrade of the Pah Road/State Highway 2 intersection to a roundabout subject to final design and construction methodology being approved by the New Zealand Transport Agency;~~
- ~~(vi) Installation of barrier arms at the Pah Road railway crossing;~~
- ~~(vii) The area of road subject to the "access restriction" notation on the *Structure Plans* in Appendix 7 cannot be used to provide direct access from the Tauranga Eastern Motorway or Entrance Road to adjacent land.~~

~~(b) Water supply~~

- ~~(i) Water reticulation within the interim development area;~~
- ~~(ii) New reservoir at Rangioru Road (5,500m³);~~
- ~~(iii) Gravity supply main from Rangioru Road reservoir to Business Park (450mm diameter, approximately 7.8km length);~~

- (iv) Rising main from existing Eastern Supply water source to new reservoir at Rangiora Road (225mm diameter, approximately 9.0km length);
- (v) Temporary pump station, Stage 1;
- (vi) Pah Road/Young Road/State Highway 2 reticulation loop (375mm diameter, approximately 5.3km length).

(e) Wastewater

- (i) Sewer reticulation within the interim development area;
- (ii) Main pump station in Stage 1 area and associated emergency generator and emergency storage;
- (iii) Sanitary sewer rising main to the Te Puke Wastewater Treatment Plant (350mm diameter, approximately 5.8km length), including associated pipeline crossings under the Kaituna River and Waiari Stream;
- (iv) Partial upgrade of the capacity of the Te Puke Sewage Treatment Plant (22.5% of the total capacity upgrade needed).

(d) Stormwater

- (i) Stormwater Pond 1 (Carrs), including vesting of associated local purpose reserve, creation of 60% of the pond (starting from the outlet structure at the northern end) and the corresponding proportion of *earthworks*, landscaping, walkways, boardwalks and associated works, and all inlet and outlet structures;
- (ii) Stormwater reticulation (drains and pipes) within the interim development area;
- (iii) Stormwater reticulation between the interim development area and Stormwater Pond 1, namely:
 - Swale (9m bottom width) north-east of proposed Tauranga Eastern Motorway;
 - Swale (35m bottom width) north-east of proposed Tauranga Eastern Motorway;
 - Swale (4m bottom width) south-west of proposed Tauranga Eastern Motorway;

- ~~Swale (9m bottom width) south-west of proposed Tauranga Eastern Motorway;~~
- ~~Creation of associated easements north-east of proposed Tauranga Eastern Motorway and vesting of associated local purpose reserves (stormwater), including associated landscaping, fencing and walkways, south-west of proposed Tauranga Eastern Motorway.~~

~~(e) **Local purpose reserves (amenity)**~~

~~Local purpose reserves within the interim development area, including associated landscaping, fencing and walkways.~~

The Rangiuru Business Park shall be developed in stages. The first stage of development shall be Stage 1 as shown on the structure plan drawings (Appendix 7). Stage 1 area is approximately 45ha gross.

Infrastructure provision/upgrading required by the Structure Plan and Appendix 7 shall be developed for Stage 1 generally to the standard and form as specified in the Structure Plans (unless stated otherwise) prior to the issuing of a Section 224 certificate for any subdivision or building consent or any industrial use of the land. Sub-staging is permissible as long as it is demonstrated that infrastructure provision for the whole of the stage is not compromised.

The estimated percentage of infrastructure works for each stage are also set out in the Rangiuru contributions tables contained in Appendix 7.

12.4.13.7 Interim Development – Roading

Te Puke Highway (formerly SH2)/Pah Road intersection and Maketu Road/ Te Puke highway intersection upgrade timing:

- (a) For the first 70ha of development, no upgrade to the existing intersection is required unless:
- i. either intersection is classified as a “High Risk” intersection in terms of the NZTA High Risk Intersection Guide, or
 - ii. (for Te Puke Highway/Pah Road only) if the average peak hour delays to side road traffic exceed 45s.

Biennial monitoring (by Western Bay of Plenty District Council) of the safety and capacity performance should be undertaken. If either (i) and/or (ii) are met, the upgrades required in below must be put in place.

- (b) To enable development of greater than 70 ha of RBP, completion of the following infrastructure is required:

- Upgrade of the intersection of Pah Road/Te Puke Highway to a roundabout or, other suitably designed form.
- A left turn out slip lane shall be installed at the Maketu Road intersection with Te Puke Highway

The upgrade of either intersection may be delayed subject to annual monitoring (by Western Bay of Plenty District Council) of the safety and capacity performance to demonstrate the following thresholds have not been met:

- “High Risk” intersection in terms of the NZTA High Risk Intersection Guide or, in the case of Pah Road intersection, if the average peak hour delays to side road traffic exceed 45s or, in the case of Maketu Road intersection, if the peak hour queues on Maketu Road prevent right turning traffic from approaching the intersection.

If the threshold trigger for intersection treatment is reached at any of the above stages of development the council will, within 18 months, implement appropriate measures designed to improve the performance of the intersection.

Noting: An alternative exists known as the “Mid Block” Intersection. This option is not shown on the structure plan and therefore requires a resource consent as a discretionary activity (refer to 12.4.9.4). If obtained the reallocation of any contributions collected for existing intersections can be used for the Mid-Block intersection subject to the road controlling authorities’ approval.

~~12.4.13.4 Subsequent Development (Stage 2,3 and 4)~~

~~Any subdivision or *development* beyond the above specified interim development (Stage 1) provided that all of the following *infrastructure* provision/upgrading (as applicable) and as specified on the *Structure Plans* and in Appendix 7 has been completed or will be completed (generally to the standard and form as specified in the *Structure Plans*) prior to the issuing of a Section 224 certificate for any subdivision or a building consent or any industrial use of the land:~~

~~(a) Reading~~

- ~~(i) The Tauranga Eastern Motorway and its associated interchange and portion of entrance road to join with that in the interim development area (also see stormwater infrastructure below for multiple box culverts to be installed under Tauranga Eastern Motorway at time of construction). The location of the Tauranga Eastern Motorway interchange as shown on the *Structure Plans* in Appendix 7 may not be the optimal location in terms of access to the business park *development* and the wider transport network.~~

~~Therefore, following further analysis, the affected parties may agree to alter the location of the interchange. A further plan change or variation, and associated notice of requirement, may be required to give effect to such agreement.~~

- ~~Provided that:~~
- ~~The area of road subject to the "access restriction" notation on the *Structure Plans* in Appendix 7 cannot be used to provide direct access from the Tauranga Eastern Motorway or Entrance Road to adjacent land;~~
- ~~(ii) Collector and entrance roads within the relevant *development* stage area, including associated roundabouts and road reserve widening for Young Road;~~
- ~~(iii) Upgrade of Young Road from the Business Park to Maketu Road to 10m wide sealed rural road standard.~~

~~(b) **Water supply**~~

- ~~(i) Water reticulation within the relevant *development* stage area;~~
- ~~(ii) New primary water supply bore adjacent to Rangioru Road reservoir (applicable for stages of *development* after the first 40ha);~~
- ~~(iii) Treatment plant adjacent to Rangioru Road reservoir (applicable for stages of *development* after the first 40ha);~~
- ~~(iv) New secondary water supply bore adjacent to Rangioru Road reservoir (applicable for stages of *development* after the first 80ha);~~
- ~~(v) New primary water supply bore adjacent to Business Park (applicable for stages of *development* after the first 120ha).~~

~~(c) **Wastewater**~~

- ~~(i) Sewer reticulation, including pump stations and associated emergency storage, within the relevant *development* stage area;~~
- ~~(ii) Partial upgrades of the capacity of the Te Puke Sewage Treatment Plan (upgrades triggered by stages of *development* above 60, 100 and 140ha).~~

~~(d) Stormwater~~

- ~~(i) Stormwater Pond 1 (Carrs), creation of remaining 40% of the pond (in two stages as required by *development* staging) and the corresponding remaining proportions of *earthworks*, landscaping, walkways, boardwalks and associated works;~~
- ~~(ii) Stormwater Pond 2 (Diagonal), including vesting of local purpose reserve, all associated *earthworks*, inlet and outlet structures, landscaping and associated works (applicable only to *development* stages wholly or partly in the associated stormwater catchment for Pond 2, as shown in the *Structure Plans*);~~
- ~~(iii) Stormwater reticulation (drains and pipes) within the relevant *development* stage area including vesting of associated local purpose reserves (stormwater), stormwater reticulation between the relevant *development* stage area and the stormwater pond serving that catchment, including swales, culverts (under the Tauranga Eastern Motorway) and vesting of associated local purpose reserves (stormwater) including associated landscaping, fencing and walkways.~~

~~(e) Local purpose reserves (amenity)~~

~~Local purpose reserves within the relevant *development* stage area, including associated landscaping, fencing and walkways/cycleways.~~

~~(f) Local Roads~~

~~In addition to the *Structure Plan* roads required by (a) above, local roads shall be designed and constructed where necessary to provide for the future roading access and needs of adjoining undeveloped land.~~

12.4.13.8 Subsequent Stages

Any subsequent stages of development can proceed following Stage 1. All infrastructure for the whole of the relevant stage, as set out on the Structure Plans and Rangiuru Financial Contributions Schedule, plus any off site infrastructure, shall be in place before any industrial land use, the first application for building consent, or issuing of a Section 224 certificate for any subdivision is undertaken.

Once 50% of the land in Stage 1 is in industrial use, is subject to building consent or 224c certificate issued then infrastructure may be developed in in

Stages 2,3 or 4 in part as long as it is demonstrated that infrastructure provision for the whole of the stage is not compromised.

Note: Subsequent stages must provide infrastructure generally in accordance with the designs and other specifications in Appendix 7 and using the option determined in accordance with 12.4.13.3 and 12.4.13.4. This Infrastructure must be connected to existing infrastructure at the Park.

Industrial

21. Industrial

21.3.2 Additional Permitted Activities (Rangiuru Business Park only)

(a) Takeaway food outlets with a maximum floor area of 350m². Such outlets can include dine in facilities where aligned to a permitted use in 21.3.1(g).

(b) Handling, storage, processing, consignment and transportation of cargo.

~~(c) In the Community Service Area of the Business Park only;~~

Within 250m of the intersections marked "Community Service Area" on the Rangiuru Business Park Structure Plans the following activities are also permitted:

(i) *Offices* (not covered by 21.3.1(p));

(ii) *Retailing* (not covered by 21.3.1(c)) and involving a maximum floor area of 100m²;

(iii) Places of assembly.

~~(iv) *Educational Facilities* (limited to childcare/day-care/pre-school facilities)~~

The maximum *net land area* collectively of activities pursuant to this rule shall be 2.6ha. Any individual development within this 2.6ha shall have a minimum *net land area* of 6,000m² and a maximum *net land area* of 20,000m². There shall be up to one such development within each Community Service Area.

Explanatory Note:

For clarification, this rule allows for smaller individual land uses but requires that activities are bundled together in a comprehensive manner of at least 6,000m² *net land area* so as to function as a Service Area rather than individual uses. The individual uses can be held in smaller lots but these must have contiguous boundaries.

21.3.11 Additional Discretionary Activities – Rangiuru Business Park

(a) Offices accessory to activities 21.3.1 and 21.3.2 (b) which are not on the same lot as the Permitted Activities.

- (c) Any individual activity or land use which exceeds the Maximum Daily Demand for water (54m³/ha/day).

21.6.5 Assessment Criteria for Discretionary Activities

The assessment and management of effects should include the following:

- (d) The equitable provision and funding of *infrastructure* and the need for full recovery of *infrastructure* costs (as set out in the financial contributions schedules). For ~~Rangiuru Business Park~~ and the Te Puke West Industrial Zone this will be done on the basis of available areas able to be developed as opposed to actual site utilisation or building area, and notwithstanding that different activities place different actual demand on *infrastructure* networks. Developers wishing to occupy land within these areas must make their decisions on location in full awareness that financial contributions are payable on the basis of site area without refinements for specific proposals unless in exceptional circumstances.
- (i) For the Rangiuru Business Park, offices as provided for in 21.3.11(a), with a demonstrated need to be located in the Business Park including a locational requirement to be near an associated Permitted Activity within the park.
- (j) For any activity that requires consent pursuant to 21.3.11(c) an assessment shall be provided in respect to the impacts on the balance of the relevant stage of development (and measures to address these impacts) in regards water supply and limits on other uses and equitable funding of water supply infrastructure.

Appendix 7 Structure Plans

11. Rangioru Business Park

~~Metroplex~~ Rangioru Financial Contribution Schedule

~~November 2005-August 2015~~

Rates include allowance for land purchase, contingencies plus design, ~~and~~ supervision and interest. Rates are based on ~~June 2005~~ costs in August 2015, for current values refer to Councils Annual Plan.

Delete and replace

Item	Description	Unit	Quantity	Rate	Amount Total Construction	Percentage of Public/ Network Benefit	Rangioru Contribution
1.00	ROADING INFRASTRUCTURE						
1.01	Eastern Arterial Interchange	LS	1	9,788,000	9,788,000	0%	9,788,000
1.02	SH2/Pah Road Intersection Upgrade	LS	1	2,217,000	2,217,000	0%	2,217,000
1.03	Young Road/Pah Road Roundabout	LS	1	364,000	364,000	0%	364,000
1.04	Young Road Upgrade Within Site	m	1850	2,350	4,347,500	0%	4,347,500
1.05	Young Road Upgrade Outside Site	m	850	700	595,000	0%	595,000
1.06	Pah Road Upgrade	m	1250	800	1,000,000	0%	1,000,000
1.07	Entrance Road	m	520	1,450	754,000	0%	754,000
1.08	Collector roads	m	2420	1,000	2,420,000	0%	2,420,000
1.09	Roundabouts	ea	3	600,000	1,800,000	0%	1,800,000
	Young Road Bylaw		1	10,000	10,000		10,000
					23,295,500		23,295,500
2.00	STORMWATER						
2.01	Stormwater Pond 1 (Carrs)	LS	1	4,996,000	4,996,000	0%	4,996,000
2.02	Stormwater Pond 2 (Diagonal)	LS	1	361,000	361,000	0%	361,000
2.03	Walkways/Boardwalks	m	1500	65	97,500	0%	97,500
2.04	Stormwater Reticulation						
	(a) 900 dia	m	330	460	151,800	0%	151,800
	(b) 1050 dia	m	305	545	166,225	0%	166,225
	(c) 1350 dia	m	170	670	113,900	0%	113,900
	(d) 1500 dia	m	391	750	297,750	0%	297,750
	(e) 1650 dia	m	662	830	549,460	0%	549,460
	(f) 1800 dia	m	165	950	156,750	0%	156,750
2.05	Roading related Stormwater						
	Type 3 < 500m	m	2850	330	940,500	0%	940,500
2.06	Open Channel Drainage						
2.06.1	Type A (4m base width)	m	470	1,040	488,800	0%	488,800
2.06.2	Type B1 (9m base width, south of TEA)	m	940	1,240	1,165,600	0%	1,165,600
2.06.3	Type B2 (9m base width north of TEA)	m	180	320	57,600	0%	57,600
2.06.4	Type C (13m base width)	m	250	1,530	382,500	0%	382,500
2.06.5	Type D (35m base width, north of TEA)	m	440	740	325,600	0%	325,600
2.07	Multiple Culverts under TEA						
	7 x 1.5m x 1.5m box culverts	m	595	1,000	595,000	0%	595,000
	2 x 1.2m x 1.2m box culverts	m	170	900	153,000	0%	153,000
2.08	Culverts under internal roads						
2 November 2015		m	170	1,250	212,500	0%	212,500
							1
2.09	Investigation and Preliminary design	LS	1	31,500	31,500	0%	31,500

Item	Description	Unit	Quantity	Rate	Amount Total Construction	Percentage of Public/ Network Benefit	Rangioru Contribution
3.00	SANITARY SEWER						
3.01	Sanitary Sewer Pumping Stations	ea	3	250,000	750,000	0%	750,000
3.02	Major Pump Station	ea	1	800,000	800,000	0%	800,000
3.03	Emergency Generator	ea	1	190,000	190,000	0%	190,000
3.04	Emergency Storage, major pumpstation	ea	1	280,000	280,000	0%	280,000
3.05	Emergency Storage, minor pumpstation	ea	3	75,000	225,000	0%	225,000
3.06	Sanitary Sewer Rising Main (400 dia)	m	5800	400	2,320,000	0%	2,320,000
3.07	Kaituna River Thrust	LS	1	380,000	380,000	0%	380,000
3.08	Waiari River Thrust	LS	1	170,000	170,000	0%	170,000
3.09	Internal Trunk Main (225dia)	m	350	145	50,750	0%	50,750
3.10	Internal Trunk Main (300dia)	m	760	160	121,600	0%	121,600
3.11	Internal rising mains (150 dia)	m	910	95	86,450	0%	86,450
3.12	Internal rising mains (200 dia)	m	430	140	60,200	0%	60,200
3.13	Fencing along rising main route	m	900	16	14,400	0%	14,400
3.14	Replace trench spoil with on site sand	LS	1	38,500	38,500	0%	38,500
3.15	Metal Race on Vercoe property	LM	930	36	33,480	0%	33,480
3.16	Te Puke STP capacity upgrade	LS	1	8,500,000	8,500,000	0%	8,500,000
3.17	Investigation and Preliminary design	LS	1	37,400	37,400	0%	37,400
					<u>14,057,780</u>		<u>14,057,780</u>
4.00	WATER RETICULATION						
4.01	Supply and lay 450mm DI/CLMS Gravity Trunk	m	7850	400	3,140,000	0%	3,140,000
4.02	Supply and lay 225mm uPVC pumped main	m	9000	175	1,575,000	0%	1,575,000
4.03	Primary Water Supply Bores adjacent to site	ea	1	1,400,000	1,400,000	0%	1,400,000
4.04	Secondary Water Supply Bores adjacent to site	ea	0	1,000,000	0	0%	-
4.05	Temporary Pump Stage 1	ea	1	300,000	300,000	0%	300,000
4.06	Primary Water Supply Bores adjacent to Rangioru Road	ea	1	1,400,000	1,400,000	0%	1,400,000
4.07	Secondary Water Supply Bores adjacent to Rangioru	ea	1	1,000,000	1,000,000	0%	1,000,000
4.08	Treatment Plant adjacent to Rangioru Road	ea	1	1,500,000	1,500,000	0%	1,500,000
4.09	Reservoir Rangioru Road 5500m ³	ea	1	2,000,000	2,000,000	30%	1,400,000
4.10	Supply and lay 375mm uPVC	m	5250	350.00	1,837,500	0%	1,837,500
4.11	Supply and lay 300mm uPVC	m	3000	235.00	705,000	0%	705,000
4.12	Investigation and Preliminary design	LS	1	47,200.00	47,200	0%	47,200
4.13	Proof testing of supply bore	LS	1	250,000.00	250,000	0%	250,000
					<u>15,154,700</u>		<u>14,554,700</u>
5.00	RESERVES						
	LP Reserves and Cycleways						
5.01	Landscaping	ha	3.96	80,000	316,800	0%	316,800
5.02	Walkways/Cycleways	m	820	65	53,300	0%	53,300
5.03	Fencing (Timber board and batten)	m	420	65	27,300	0%	27,300
5.04	Fencing (Post and Wire)	m	6900	15	103,500	0%	103,500
5.05	Land Purchase	ha	4.04	300,000	1,212,000	0%	1,212,000
					<u>1,712,900</u>		<u>1,712,900</u>
TOTAL					65,463,865		64,863,865
	Development Area (ha)		148.60				
	Advice Note						
	The cost per square meter is based on June 2005 cost						
	The contributions listed are as at June 2005						
	For current values refer to Councils current Annual Plan						

Financial Contributions Schedule – Roading (3 Legged Interchange)

TABLE 1: FINANCIAL CONTRIBUTIONS SCHEDULE – ROADING (3 LEGGED INTERCHANGE)							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	
1.1	Tauranga Eastern Arterial (TEL) Interchange	LS	1.0	7,100,000.00	7,100,000.00	100%	0%	0%	0%	
1.2	Tauranga Eastern Arterial (TEL) Land Purchase	Ha	1.1	53,750.00	59,125.00	100%	0%	0%	0%	
1.3	Pah Rd / State Highway Roundabout Upgrade	Ls	1.0	2,397,500.00	2,397,500.00	0%	0%	100%	0%	
1.4	Pah Rd / State Highway Roundabout Land Purchase and Legal	m	0.2	107,500.00	25,800.00	0%	0%	100%	0%	
1.5	Pah Rd - Initial - Full Rebuild to Rural Standard (8.5m)	m	1486.0	280.85	417,343.10	100%	0%	0%	0%	
1.6	Pah Rd - Ultimate - Upgrade (10m)	LS	1486.0	205.50	305,373.00	0%	0%	100%	0%	
1.7	Pah Rd - cycle track	LS	1486.0	123.30	183,223.80	100%	0%	0%	0%	
1.8	Pah Rd Rail Crossing Barrier Arms	m	1.0	254,000.00	254,000.00	100%	0%	0%	0%	
1.9	Pah Rd / Young Rd Intersection Upgrade	m	1.0	109,600.00	109,600.00	0%	0%	100%	0%	
1.10	Young Rd - Western Roundabout to Eastern Edge - Overlay & widen existing to Rural standard (8.5m)	m	1450.0	342.50	496,625.00	100%	0%	0%	0%	
1.11	Young Rd - Eastern Edge to Maketu - Upgrade to Rural standard (8.5m)	m	1045.0	342.50	357,912.50	100%	0%	0%	0%	
1.12	Young Rd - Eastern Edge to Maketu - Widen to final width (10m)	Ha	1045.0	219.20	229,064.00	0%	0%	100%	0%	
1.13	Young Rd - Cycle Track	LS	2495.0	123.30	307,633.50	100%	0%	0%	0%	
1.14	Entrance Road; from TEL to first roundabout (Type A)	m	125.0	2,740.00	342,500.00	100%	0%	0%	0%	
1.15	Entrance Road: from first roundabout to Young Road (Type A1)	Ha	360.0	2,192.00	789,120.00	100%	0%	0%	0%	

TABLE 1: FINANCIAL CONTRIBUTIONS SCHEDULE – ROADING (3 LEGGED INTERCHANGE)						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4
1.16	Entrance Road; from TEL to Young Rd Land purchase and Legal	LS	1.3	107,500.00	135,450.00	100%	0%	0%	0%
1.17	Entrance Road; from TEL - Road Drainage	m	485.0	164.40	79,734.00	100%	0%	0%	0%
1.18	Collector Roads (Type B) excl. Young Road	Ha	3064.0	1,739.90	5,331,053.60	32%	20%	24%	23%
1.19	Collector Roads (Type B) excl. Young Rd. Land Purchase and Legal	LS	8.0	107,500.00	856,345.00	32%	21%	24%	23%
1.20	Collector Roads (Type B) excl. Young Rd - Road Drainage	LS	3064.0	767.20	2,350,700.80	32%	20%	24%	23%
1.21	Young Rd Ultimate Upgrade - Western Roundabout to Eastern Edge (Type B)	LS	1450.0	856.25	1,241,562.50	0%	0%	100%	0%
1.22	Young Rd Ultimate Upgrade - Western Roundabout to Eastern Edge Land Purchase and Legal	LS	0.9	107,500.00	93,525.00	0%	0%	100%	0%
1.23	Young Rd Ultimate Upgrade - Western Roundabout to Eastern Edge (Type B) - Road Drainage	m	1.0	592,251.00	592,251.00	0%	0%	100%	0%
1.24	Young Road / Western Collector Road Intersection	LS	1.0	274,000.00	274,000.00	0%	100%	0%	0%
1.25	Young Rd / Collector Road Roundabout	LS	1.0	548,000.00	548,000.00	0%	0%	100%	0%
1.26	Young Road / Entrance Road Intersection	LS	1.0	274,000.00	274,000.00	100%	0%	0%	0%
1.27	Young Rd / Entrance Road Roundabout	LS	1.0	548,000.00	548,000.00	0%	0%	100%	0%
1.28	Entrance Road / Collector Roundabout (adjacent TEL)	LS	1.0	753,500.00	753,500.00	100%	0%	0%	0%
1.29	Young Rd/ Maketu Rd Left Turn-out Slip Lane Upgrade	LS	1.0	479,500.00	479,500.00	0%	0%	100%	0%
Total Cost of Roading					\$26,932,411.80				
Total area		148.60ha							
Per square metre rate		\$ per m ²			\$18,12				

Financial Contributions Schedule – Roading (4 Legged Interchange Option)

TABLE 1: FINANCIAL CONTRIBUTIONS SCHEDULE – ROADING (4 LEGGED INTERCHANGE)							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	
1.1	Tauranga Eastern Arterial (TEL) Interchange	LS	1.0	9,950,000.00	9,950,000.00	100%	0%	0%	0%	
1.2	Tauranga Eastern Arterial (TEL) Land Purchase	Ha	1.1	53,750.00	59,125.00	100%	0%	0%	0%	
1.3	Pah Rd / State Highway Roundabout Upgrade	LS	1.0	2,397,500.00	2,397,500.00	0%	0%	100%	0%	
1.4	Pah Rd / State Highway Roundabout Land Purchase and Legal	m	0.2	107,500.00	25,800.00	0%	0%	100%	0%	
1.5	Pah Rd - Initial - Full Rebuild to Rural Standard (8.5m)	m	1486.0	280.85	417,343.10	100%	0%	0%	0%	
1.6	Pah Rd - Ultimate - Upgrade (10m)	LS	1486.0	205.50	305,373.00	0%	0%	100%	0%	
1.7	Pah Rd - cycle track	LS	1486.0	123.30	183,223.80	100%	0%	0%	0%	
1.8	Pah Rd Rail Crossing Barrier Arms	m	1.0	254,000.00	254,000.00	100%	0%	0%	0%	
1.9	Pah Rd / Young Rd Intersection Upgrade	m	1.0	109,600.00	109,600.00	0%	0%	100%	0%	
1.10	Young Rd - Western Roundabout to Eastern Edge - Overlay & widen existing to Rural standard (8.5m)	m	1450.0	342.50	496,625.00	100%	0%	0%	0%	
1.11	Young Rd - Eastern Edge to Maketu - Upgrade to Rural standard (8.5m)	m	1045.0	342.50	357,912.50	100%	0%	0%	0%	
1.12	Young Rd - Eastern Edge to Maketu - Widen to final width (10m)	Ha	1045.0	219.20	229,064.00	0%	0%	100%	0%	
1.13	Young Rd - Cycle Track	LS	2495.0	123.30	307,633.50	100%	0%	0%	0%	

TABLE 1: FINANCIAL CONTRIBUTIONS SCHEDULE – ROADING (4 LEGGED INTERCHANGE)						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4
1.14	Entrance Road; from TEL to first roundabout (Type A)	m	125.0	2,740.00	342,500.00	100%	0%	0%	0%
1.15	Entrance Road: from first roundabout to Young Road (Type A1)	Ha	360.0	2,192.00	789,120.00	100%	0%	0%	0%
1.16	Entrance Road; from TEL to Young Rd Land purchase and Legal	LS	1.3	107,500.00	135,450.00	100%	0%	0%	0%
1.17	Entrance Road; from TEL - Road Drainage	m	485.0	164.40	79,734.00	100%	0%	0%	0%
1.18	Collector Roads (Type B) excl. Young Road	Ha	3064.0	1,739.90	5,331,053.60	32%	20%	24%	23%
1.19	Collector Roads (Type B) excl. Young Rd. Land Purchase and Legal	LS	8.0	107,500.00	856,345.00	32%	21%	24%	23%
1.20	Collector Roads (Type B) excl. Young Rd - Road Drainage	LS	3064.0	767.20	2,350,700.80	32%	20%	24%	23%
1.21	Young Rd Ultimate Upgrade - Western Roundabout to Eastern Edge (Type B)	LS	1450.0	856.25	1,241,562.50	0%	0%	100%	0%
1.22	Young Rd Ultimate Upgrade - Western Roundabout to Eastern Edge Land Purchase and Legal	LS	0.9	107,500.00	93,525.00	0%	0%	100%	0%
1.23	Young Rd Ultimate Upgrade - Western Roundabout to Eastern Edge (Type B) - Road Drainage	m	1.0	592,251.00	592,251.00	0%	0%	100%	0%
1.24	Young Road / Western Collector Road Intersection	LS	1.0	274,000.00	274,000.00	0%	100%	0%	0%
1.25	Young Rd / Collector Road Roundabout	LS	1.0	548,000.00	548,000.00	0%	0%	100%	0%
1.26	Young Road / Entrance Road Intersection	LS	1.0	274,000.00	274,000.00	100%	0%	0%	0%
1.27	Young Rd / Entrance Road Roundabout	LS	1.0	548,000.00	548,000.00	0%	0%	100%	0%
1.28	Entrance Road / Collector Roundabout (adjacent TEL)	LS	1.0	753,500.00	753,500.00	100%	0%	0%	0%
1.29	Young Rd/ Maketu Rd Left Turn-out Slip Lane Upgrade	LS	1.0	479,500.00	479,500.00	0%	0%	100%	0%
Total Cost of Roading					\$29,782,441.80				
Total area		148.60ha							

TABLE 1: FINANCIAL CONTRIBUTIONS SCHEDULE – ROADING (4 LEGGED INTERCHANGE)							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	
	Per square metre rate	\$ per m ²			\$20.04					

Financial Contributions Schedule - Water Option (on-site)

TABLE 3: FINANCIAL CONTRIBUTIONS SCHEDULE – WATER OPTION – ONSITE							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	
2.1	150 mm uPVC/PE Watermain	m	1,070	109.60	117,272.00	100%	0%	0%	0%	
2.2	200 mm uPVC/PE Watermain	m	620	184.95	114,669.00	0%	100%	0%	0%	
2.3	250 mm uPVC/PE Watermain	m	4,180	239.75	1,002,155.00	32%	33%	19%	16%	
2.4	Isolation Valves/Fittings (150-200 mm Watermain)	No.	9	3,151.00	28,539.00	67%	33%	0%	0%	
2.5	Isolation Valves/Fittings (250 mm Watermain)	No.	16	4,110.00	65,760.00	31%	38%	19%	13%	
2.6	Air/Scour Valves (150-200 mm Watermain)	No.	4	4,110.00	16,440.00	75%	25%	0%	0%	
2.7	Air/Scour Valves (250 mm Watermain)	No.	6	4,795.00	28,770.00	33%	33%	17%	17%	
2.8	Fire Hydrants	No.	54	3,425.00	184,950	44%	26%	15%	15%	
2.9	WTP Earthworks, Sitework and Access, Power and Genset	LS	1	1,233,000.00	1,233,000.00	100%	0%	0%	0%	

TABLE 3: FINANCIAL CONTRIBUTIONS SCHEDULE – WATER OPTION – ONSITE						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4
2.10	Water Treatment Plant (WTP)	LS	1	8,910,000.00	8,910,000.00	45%	28%	0%	27%
2.11	Balance Tank	LS	1	274,000.00	274,000	100%	0%	0%	0%
2.12	Storage Reservoir Tanks	No.	4	274,000.00	1,096,000	50%	0%	25%	25%
2.13	Booster Pump Station	LS	1	246,600.00	411,000.00	100%	0%	0%	0%
2.14	Bore, Pumps and Pipework	LS	1	904,000.00	800,000	100%	0%	0%	0%
2.15	Back Up Bore	LS	1	904,000.00	904,000	0%	100%	0%	0%
2.16	Land Purchase and Legal	Ha	1.6	53,750.00	84,387.50	0%	100%	0%	0%
Total Cost of Water					15,210,362.50				
Total area		148.60ha							
Per square metre rate		\$ per m ²			10.44				

Financial Contributions schedule - Water Option (off site)

TABLE 4: FINANCIAL CONTRIBUTIONS SCHEDULE – WATER OPTION – OFF-SITE (EASTERN WATER SUPPLY NETWORK)						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)				
3.1	200 mm uPVC/PE Watermain	m	270	184.95	49,936.50	100%	0%	0%	0%

TABLE 4: FINANCIAL CONTRIBUTIONS SCHEDULE – WATER OPTION – OFF-SITE (EASTERN WATER SUPPLY NETWORK)						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANT ITY	RATE (\$)	COST (\$)				
3.2	300 mm uPVC/PE Watermain	m	4,390	349.35	1,533,646.50	23%	46%	15%	16%
3.3	375 mm uPVC/PE Watermain	m	740	493.20	364,968.00	100%	0%	0%	0%
3.4	450 mm uPVC/PE Watermain	m	260	712.40	185,224.00	100%	0%	0%	0%
3.5	500 mm uPVC/PE Watermain	m	400	890.50	356,200.00	100%	0%	0%	0%
3.6	500 mm uPVC/PE Gravity Trunk Watermain - Offsite	m	8,950	890.50	7,969,975.00	100%	0%	0%	0%
3.7	Isolation Valves/Fittings (200-375 mm Watermain)	No.	17	5,480.00	93,160.00	41%	35%	12%	12%
3.8	Isolation Valves/Fittings (450-500 mm Watermain)	No.	8	8,220.00	65,760.00	100%	0%	0%	0%
3.9	Air/Scour Valves (200-375 mm Watermain)	No.	6	6,850.00	41,100.00	33%	50%	17%	0%
3.10	Air/Scour Valves (375-500 mm Watermain)	No.	2	9,590.00	19,180.00	100%	0%	0%	0%
3.11	Fire Hydrants	No.	66	4,110.00	271,260.00	45%	33%	11%	11%
3.12	WTP Earthworks, Sitework and Access, Power and Genset	LS	1	1,233,000.00	1,233,000.00	100%	0%	0%	0%
3.13	Water Treatment Plant (WTP) Rangiuru Road	LS	1	8,910,000.00	8,910,000.00	45%	28%	0%	27%
3.14	Break / Balance Tank	LS	1	753,500.00	753,500.00	100%	0%	0%	0%
3.15	Rangiuru Storage Reservoir (5,500m3)	LS	1	2,740,000.00	2,740,000.00	60%	0%	40%	0%
3.16	Booster Pump Station	LS	1	411,000.00	411,000.00	100%	0%	0%	0%
3.17	225 mm PE pumped main - Offsite	m	10,250	219.20	2,246,800.00	100%	0%	0%	0%
3.18	Primary Bore, Pumps and Pipework - Offsite	LS	1	959,000.00	959,000.00	0%	0%	100%	0%

TABLE 4: FINANCIAL CONTRIBUTIONS SCHEDULE – WATER OPTION – OFF-SITE (EASTERN WATER SUPPLY NETWORK)							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)					
3.19	Secondary Bore, Pumps and Pipework - Offsite	LS	1	959,000.00	959,000.00	0%	0%	0%	100%	
3.20	Bore, Pumps and Pipework - Onsite	LS	1	959,000.00	959,000.00	100%	0%	0%	0%	
3.21	Land Purchase and Legal	Ha.	0.82	53,750.00	44,075.00	100%	0%	0%	0%	
Total Cost of Water					30,165,785.00					
Total area		148.60ha								
Per square metre rate		\$ per m ²			20.30					

Financial Contributions Schedule - Wastewater Option (on site)

TABLE 5: FINANCIAL CONTRIBUTIONS SCHEDULE – WASTEWATER – OPTION (ON-SITE)							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	
4.1	90 mm OD PE	m	610	61.65	37,606.50	100%	0%	0%	0%	
4.2	110 mm OD PE	m	670	75.35	50,484.50	68%	32%	0%	0%	
4.3	160 mm OD PE	m	1,240	109.60	135,904.00	0%	73%	0%	27%	
4.4	250 mm OD PE	m	2,230	239.75	534,642.50	13%	36%	36%	16%	
4.5	315 mm OD PE	m	600	260.30	156,180.00	100%	0%	0%	0%	

TABLE 5: FINANCIAL CONTRIBUTIONS SCHEDULE – WASTEWATER – OPTION (ON-SITE)						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4
4.6	355 mm OD PE	m	400	287.70	115,080.00	100%	0%	0%	0%
4.7	Isolation Valves/Fittings (90-160 mm)	No.	20	2,877.00	57,540.00	45%	40%	0%	15%
4.8	Isolation Valves/Fittings (250-355 mm)	No.	19	5,480.00	104,120.00	63%	16%	16%	5%
4.9	Operational Valves (90-160 mm)	No.	3	6,165.00	18,495.00	33%	33%	0%	33%
4.10	Wastewater Treatment Plant (WWTP) includes siteworks and Wetland Construction	LS	1	38,797,650.00	38,797,650.00	28%	21%	33%	18%
4.11	WWTP and Wetlands Land Purchase and Legal	Ha	12.10	53,750.00	648,762.50	100%	0%	0%	0%
4.12	Power supply, Transformer and Genset	LS	1	548,000.00	548,000.00	100%	0%	0%	0%
Total Cost of Wastewater					41,204,465.00				
Total area		148.60ha							
Per square metre rate		\$ per m ²			27.73				

Financial Contributions Schedule - Wastewater Option (off site)

TABLE 6: FINANCIAL CONTRIBUTIONS SCHEDULE – WASTEWATER – OPTION (TE PUKE WWTP)						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4
5.1	225 mm uPVC Gravity Main	m	3,220	232.90	749,938.00	33%	29%	21%	18%
5.2	300 mm uPVC Gravity Main	m	2,400	253.45	608,280.00	41%	40%	0%	19%
5.3	Manhole 1050 dia.	No.	56	6,165.00	345,240.00	36%	34%	13%	18%

TABLE 6: FINANCIAL CONTRIBUTIONS SCHEDULE – WASTEWATER – OPTION (TE PUKE WWTP)						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4
5.4	SS Pump Station 1	LS	1	527,450.00	527,450.00	100%	0%	0%	0%
5.5	SS Pump Station 2	LS	1	315,100.00	315,100.00	0%	100%	0%	0%
5.6	Major SS Pump Station 3	LS	1	1,205,600.00	1,205,600.00	90%	0%	10%	0%
5.7	Emergency Generator	LS	1	301,400.00	301,400.00	100%	0%	0%	0%
5.8	Emergency Storage , major Pump Station	m ³	420	1,130.25	474,705.00	17%	17%	17%	50%
5.9	Emergency Storage , minor Pump Station	m ³	750	1,130.25	847,687.50	32%	37%	31%	0%
5.10	SS Rising Main to WWTP 350 mm (400 OD) PE	m	4,900	616.50	3,020,850.00	100%	0%	0%	0%
5.11	Onsite Rising Main 220 mm ID (250 OD) PE	m	1,550	239.75	371,612.50	100%	0%	0%	0%
5.12	Onsite Rising Main 140 mm ID (160 OD) PE	m	260.00	109.60	28,496.00	0%	100%	0%	0%
5.13	Sewer Pump Station and Rising Main Land Purchase	Ha	0.30	107,500.00	32,250.00	67%	33%	0%	0%
5.14	Easement for Rising Main (6m wide)	Ha	0.75	85,140.00	63,855.00	100%	0%	0%	0%
5.15	New Resource Consent for WWTP	LS	1	1,250,000.00	1,250,000.00	100%	0%	0%	0%
5.16	Te Puke WWTP capacity Upgrade - Stage 1	LS	1	10,230,654.76	10,230,654.76	100%	0%	0%	0%
5.17	Te Puke WWTP capacity Upgrade - Stage 2	LS	1	8,370,535.71	8,370,535.71	0%	0%	100%	0%
Total Cost of Wastewater					28,743,654.48				
Total area		148.60ha							
Per square metre rate		\$ per m ²			19.34				

Financial Contributions Schedule - Stormwater

TABLE 7: FINANCIAL CONTRIBUTIONS SCHEDULE - STORMWATER							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	
6.1	Stormwater Pond 2 (Carrs) including landscaping/fencing	LS	1	5,335,465.00	5,335,465.00	49%	29%	22%	0%	
6.2	Stormwater Pond 2 (Carrs) Land Purchase and Legal	Ha.	36.80	53,750.00	1,978,000.00	100%	0%	0%	0%	
6.3	Stormwater Pond 1 (Diagonal) including landscaping/fencing	LS	1	1,174,946.25	1,174,946.25	0%	0%	0%	100%	
6.4	Stormwater Pond 1 (Diagonal) Land Purchase and Legal	Ha.	5.40	107,500.00	575,125.00	0%	0%	0%	100%	
6.5	Walkways/ Boardwalks	m	1,500	137.00	205,500.00	33%	33%	17%	17%	
6.6	Stormwater Reticulation 825 dia RCRRJ	m	130	739.80	96,174.00	0%	100%	0%	0%	
6.7	Stormwater Reticulation 900 dia RCRRJ	m	270	835.70	225,639.00	100%	0%	0%	0%	
6.8	Stormwater Reticulation 1050 dia RCRRJ	m	330	1,175.46	387,901.80	0%	56%	0%	44%	
6.9	Stormwater Reticulation 1200 dia RCRRJ	m	100	1,438.50	143,850.00	100%	0%	0%	0%	
6.10	Stormwater Reticulation 1350 dia RCRRJ	m	180	1,709.76	307,756.80	0%	100%	0%	0%	
6.11	Stormwater Reticulation 1500 dia RCRRJ	m	530	1,986.50	1,052,845.00	0%	0%	65%	35%	
6.12	Stormwater Reticulation 1650 dia RCRRJ	m	380	2,253.65	856,387.00	0%	47%	0%	53%	
6.13	Stormwater Reticulation 1800 dia RCRRJ	m	270	3,425.00	924,750.00	0%	100%	0%	0%	
6.14	Stormwater Reticulation 2100 dia RCRRJ	m	120	4,589.50	550,740.00	0%	0%	0%	100%	
6.15	Stormwater Reticulation manholes/structures	No.	16	13,700.00	219,200.00	25%	38%	65	31%	
6.16	Stormwater Reticulation Land Purchase and Legal	Ha.	1.3	107,500.00	144,050.00	27%	58%	0%	15%	

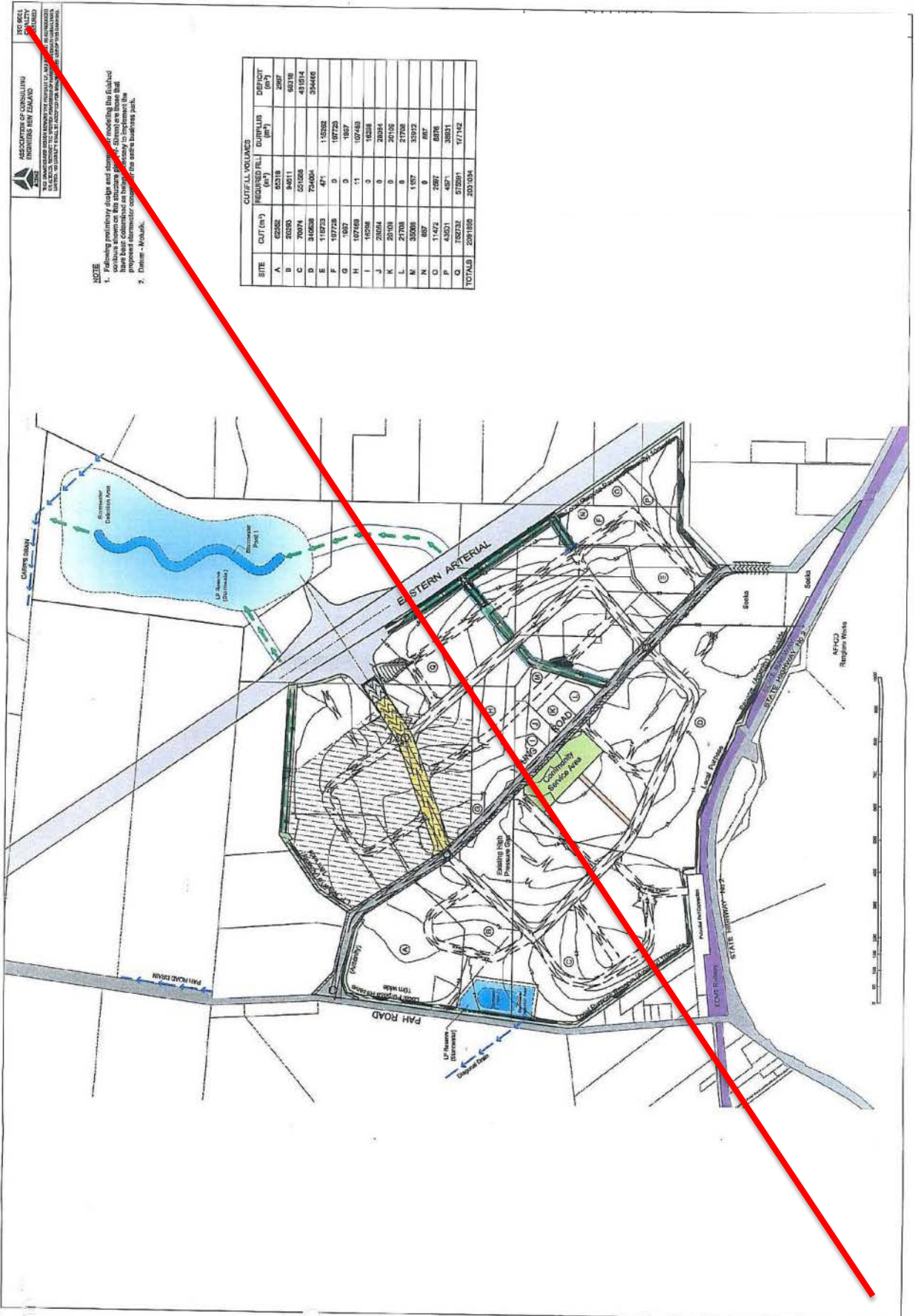
TABLE 7: FINANCIAL CONTRIBUTIONS SCHEDULE - STORMWATER							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	
6.17	Stormwater Swale - Type A (18m Reserve)	m	980	372.64	365,187.20	0%	66%	34%	0%	
6.18	Stormwater Swale - Type B (21m Reserve)	m	800	431.55	345,240.00	100%	0%	0%	0%	
6.19	Stormwater Swale - Type C (23m Reserve)	m	1,135	489.09	555,117.15	100%	0%	0%	0%	
6.20	Stormwater Swale Land Purchase and Legal	Ha.	7.70	107,500.00	823,450.00	72%	20%	8%	0%	
6.21	TEL Box Culverts	LS	1	3,140,000.00	3,047,838.00	100%	0%	0%	0%	
6.22	Box Culverts (4m wide x 0.9m high)	m	180	6,850.00	1,233,000.00	67%	0%	33%	0%	
6.2	Box Culverts (4m wide x 1.2m high)	m	70	8,905.00	623,350.00	100%	0%	0%	0%	
6.24	Headwalls/ Embankment protection	No.	18	13,700.00	246,600.00	56%	11%	22%	11%	
Total Cost of Stormwater					\$21,418,112.00					
Total area		148.60ha								
Per square metre rate		\$ per m ²			14.41					

Financial Contributions Schedule – Reserves

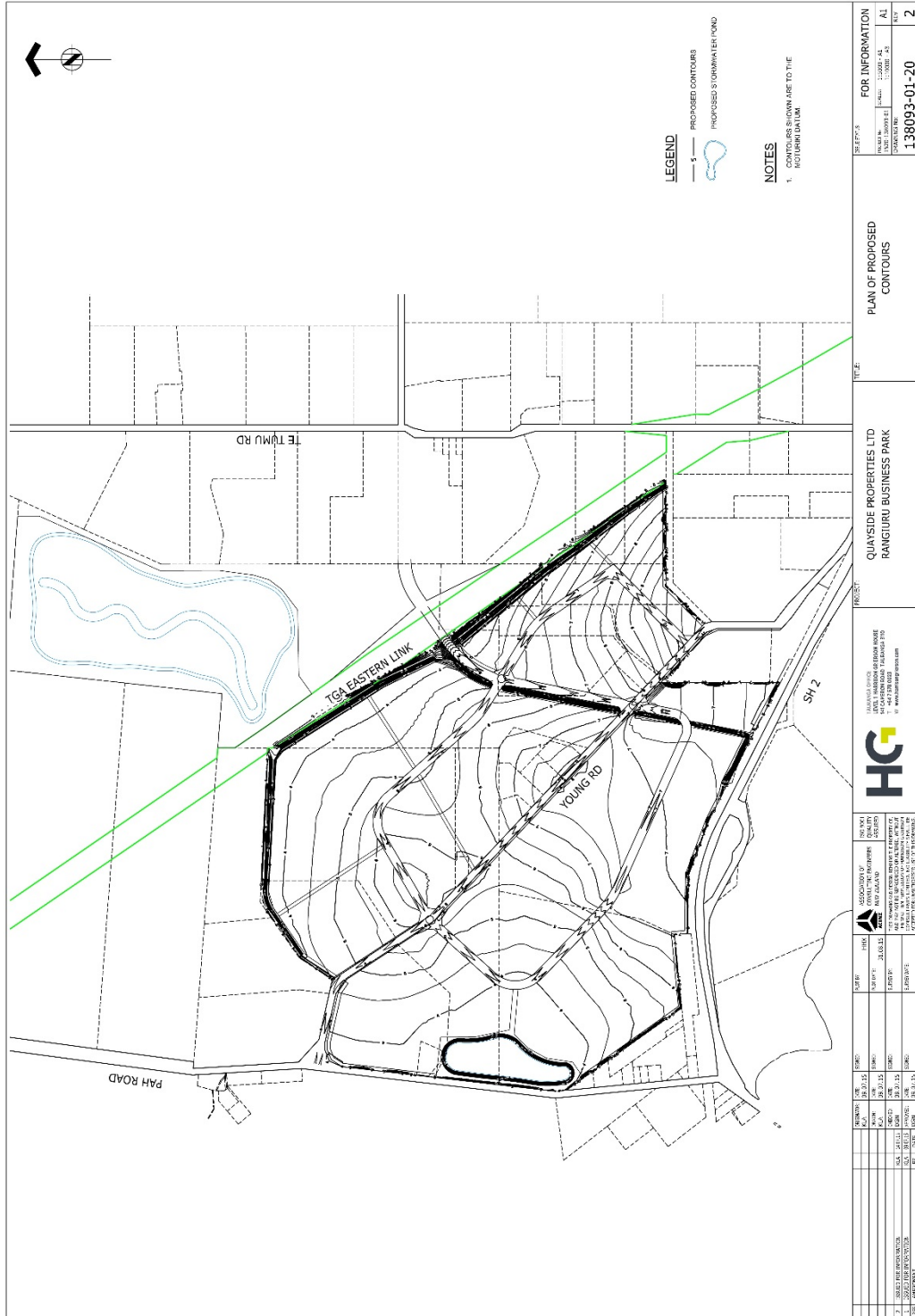
TABLE 8: FINANCIAL CONTRIBUTIONS SCHEDULE – RESERVES							ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4	

TABLE 8: FINANCIAL CONTRIBUTIONS SCHEDULE – RESERVES						ESTIMATED PERCENTAGE OF WORKS TO BE COMPLETED IN STAGE			
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (\$)	COST (\$)	1	2	3	4
7.1	Landscaping	m ²	29,700	27.40	813,780.00	15%	0%	46%	39%
7.2	Walkways/cycleways	m	820	123.30	101,106.00	10%	0%	50%	40%
7.3	Fencing Timber Board and Batton)	m	860	308.25	265,095.00	0%	14%	0%	86%
7.4	Fencing (post and wire)	m	6,900	20.55	141,795.00	48%	29%	17%	7%
7.5	1.2m high noise bund	m	860	109.60	94,256.00	0%	14%	0%	86%
7.6	Land purchase and Legal	Ha	2.97	107,500.00	319,275.00	15%	0%	46%	39%
Total Cost of Reserves					1,735,307				
Total area		148.60ha			\$1.17				
Per square metre rate		\$ per m ²			1.10				

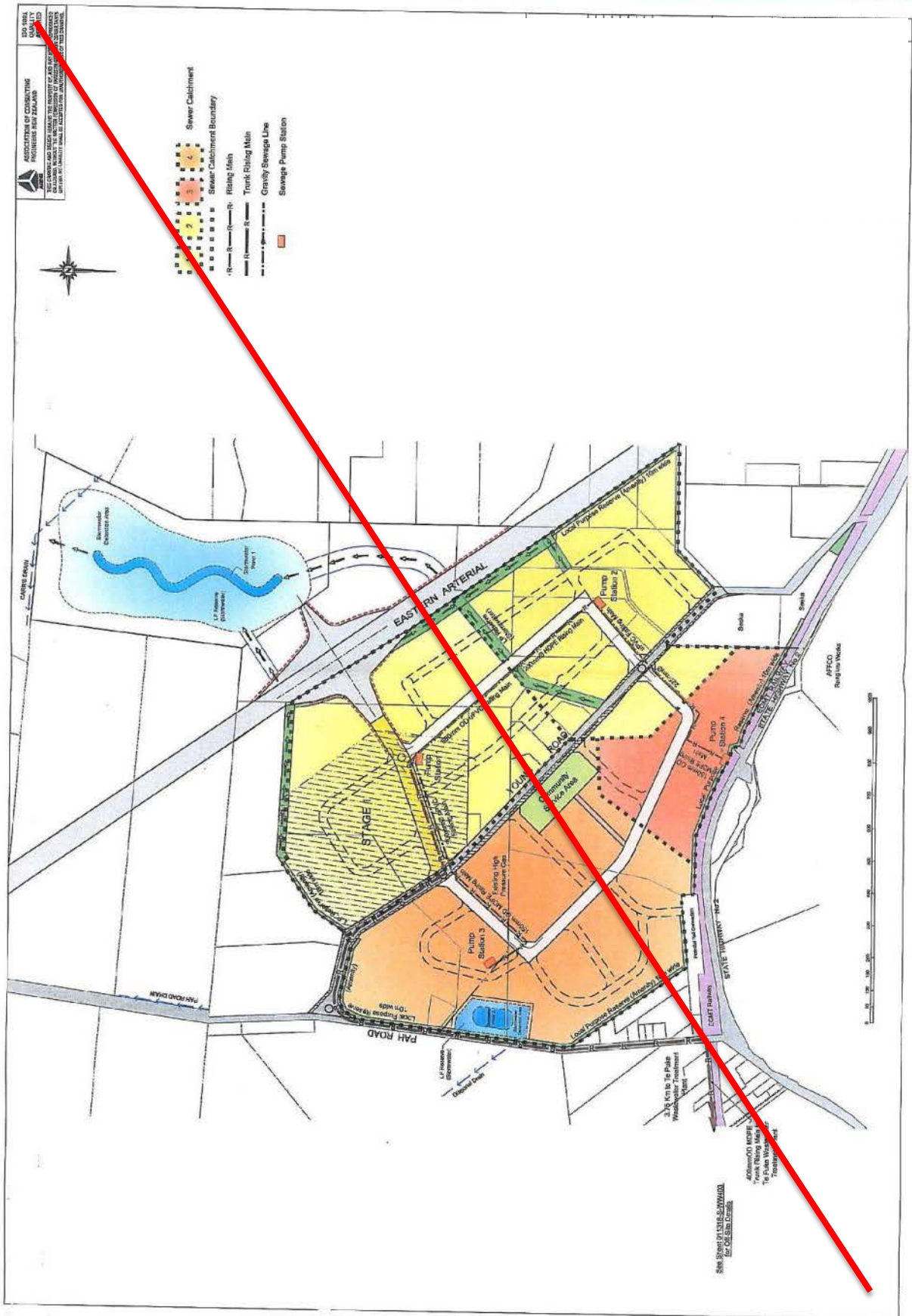
11.2 Proposed Contours with Proposed Layout Details – Delete drawing and replace



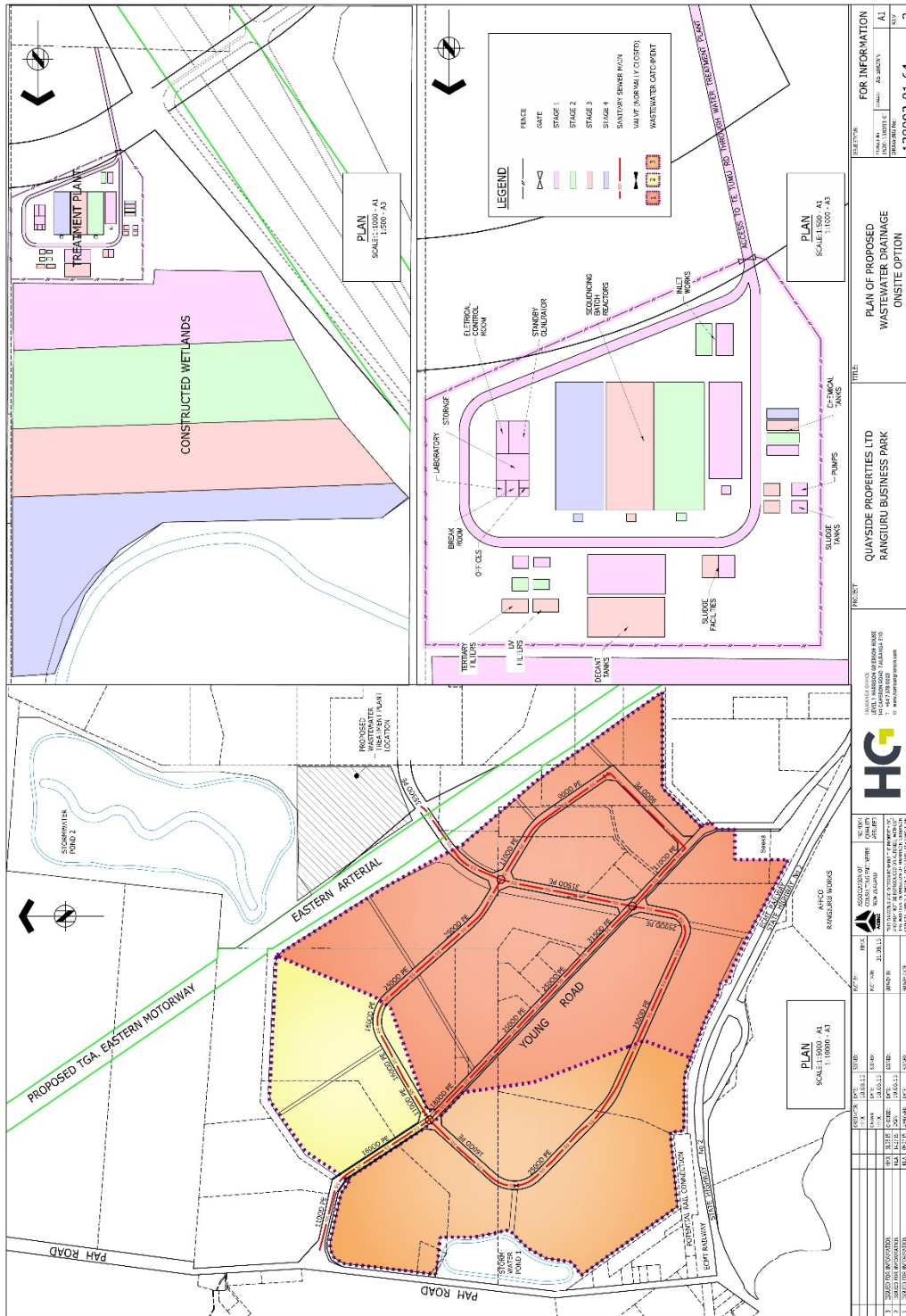
11.2 Proposed Contours



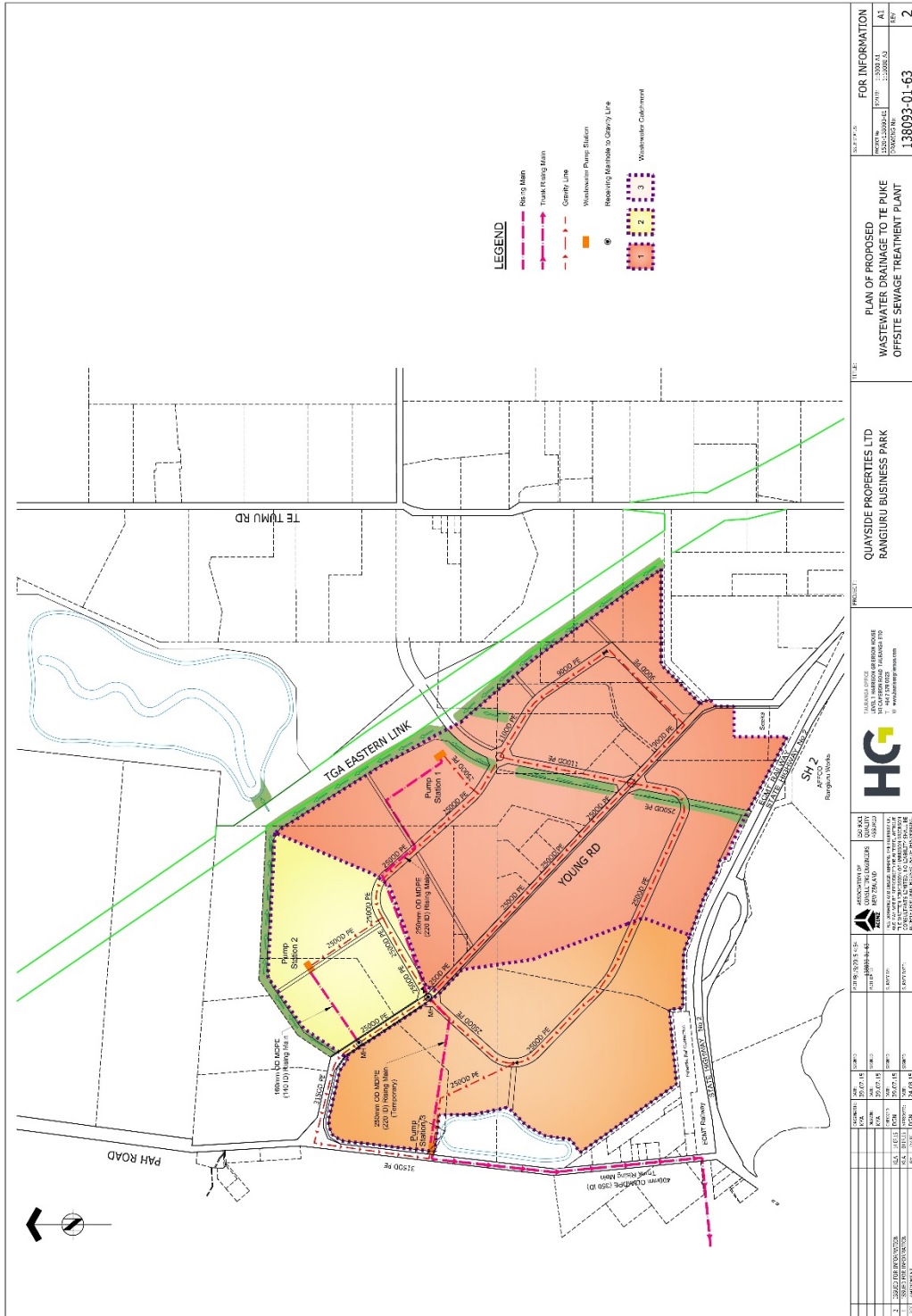
11.3 Sewer Reticulation Layout – Delete and replace



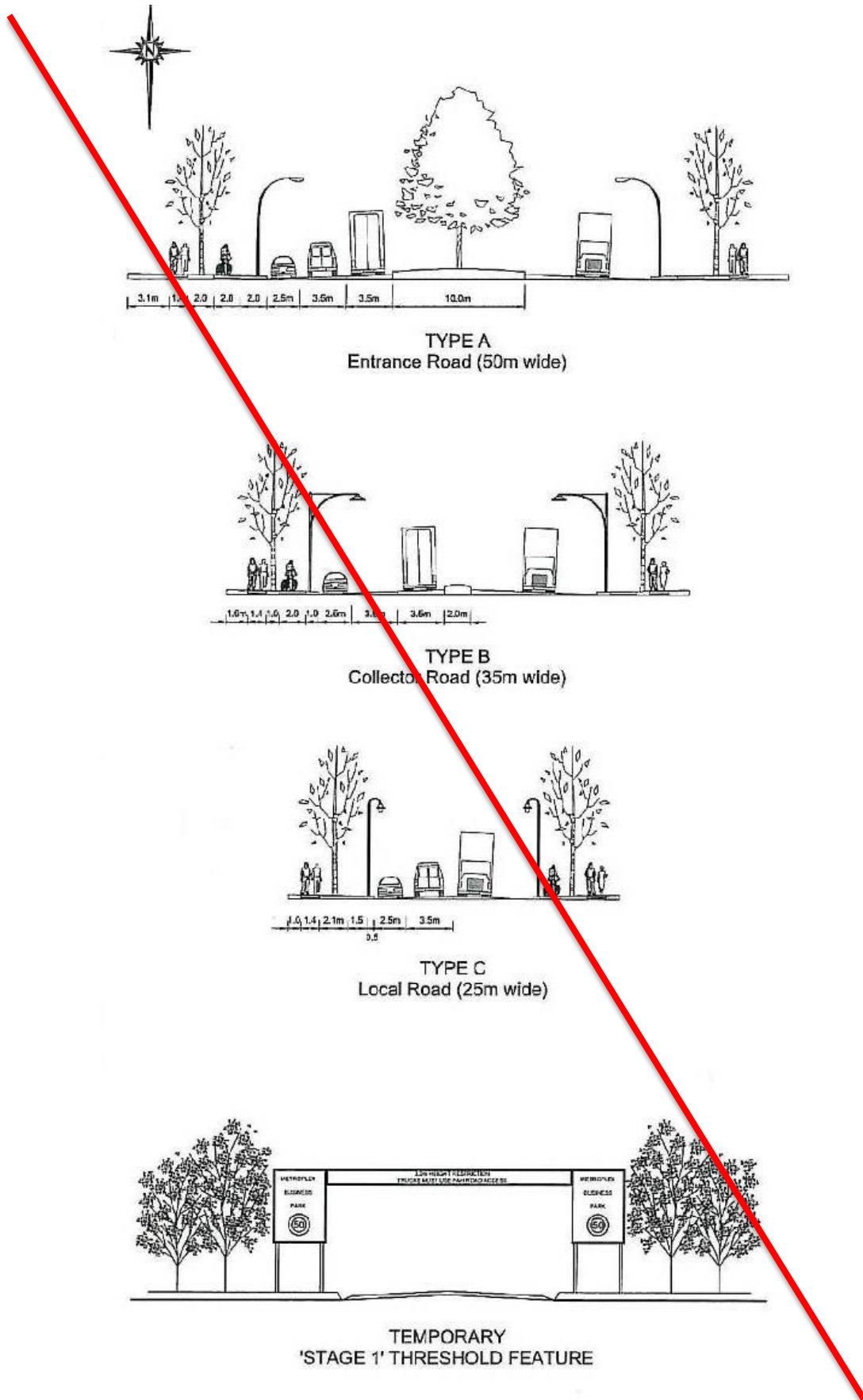
11.3a Sewer Reticulation Layout – On site Option



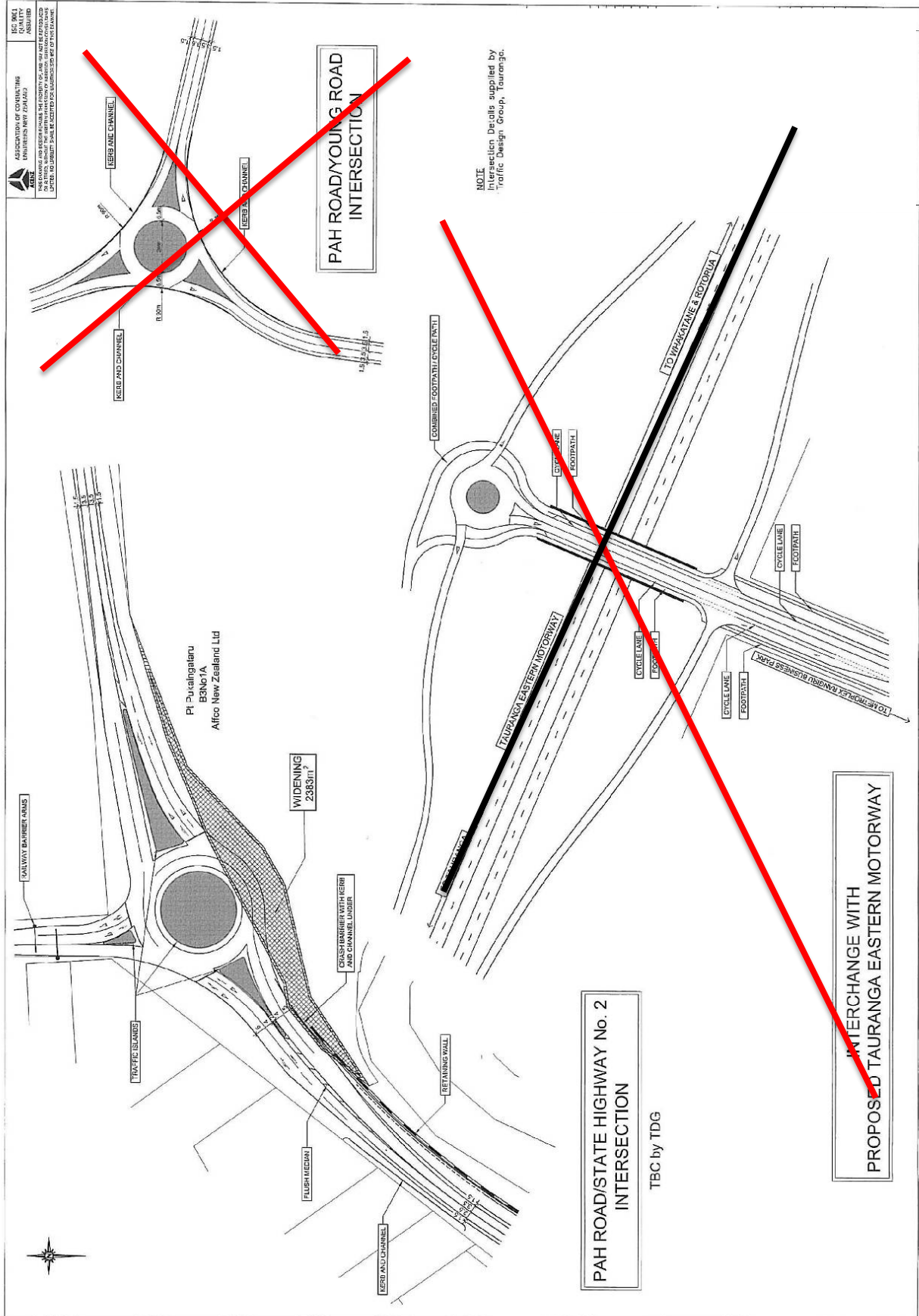
11.3b Sewer Reticulation Layout – Off Site Option



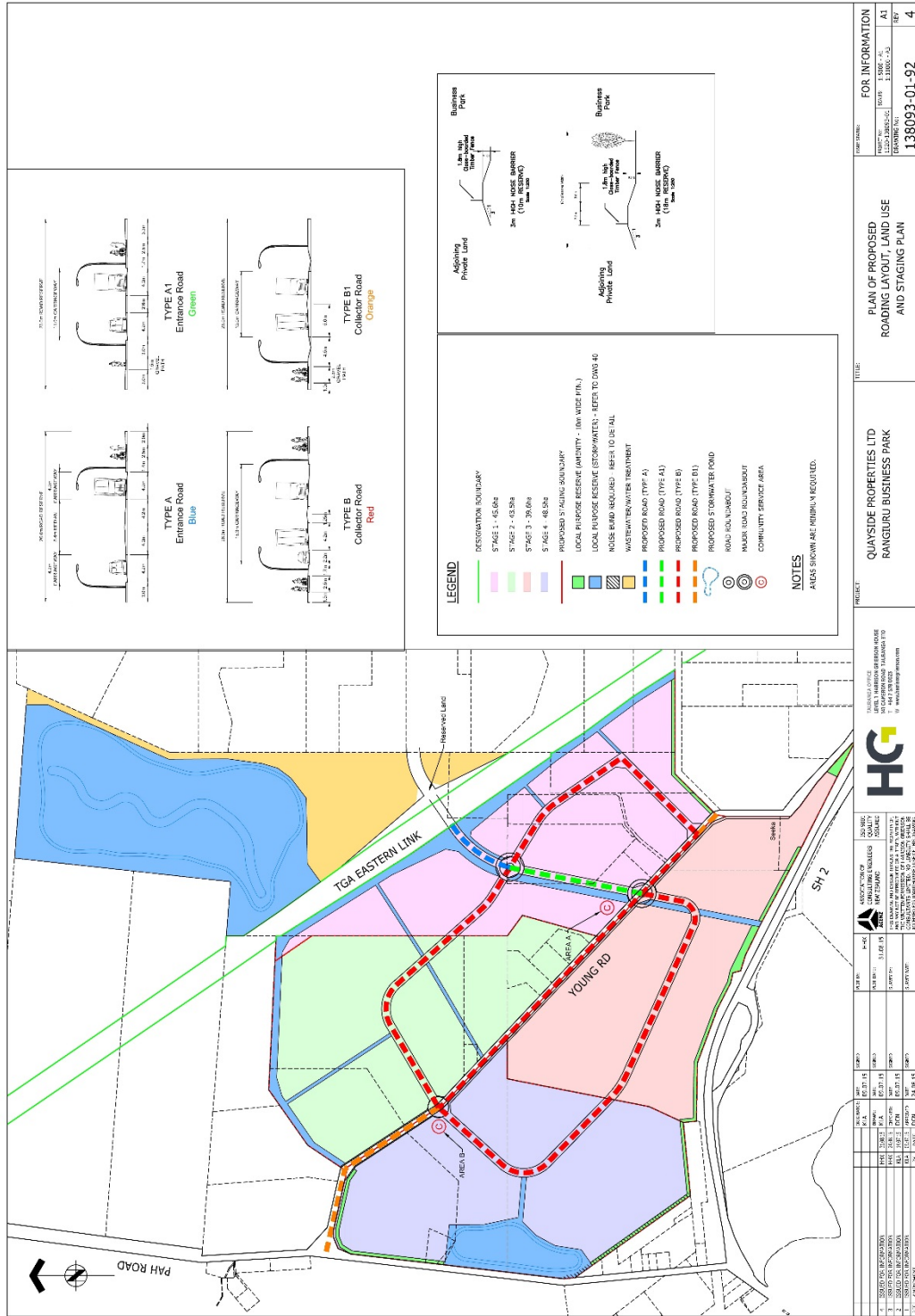
11.4 Roading Features – Delete



11.5 Intersections – Delete in part



11.6 Rooding Layout and Land Use



APPENDIX 3

TRANSPORTATION REPORTS



**Western Bay of Plenty
District Council**

Rangiuru Business Park: Te Puke
Highway Access

Intersection Assessment Report

July 2015

Western Bay of Plenty District Council

Rangiuru Business Park: Te Puke Highway Access

Intersection Assessment Report Quality Assurance Statement

Prepared by:

Ian Carlisle

Technical Director



Reviewed by:

Duncan Wilson

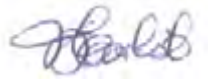
Principal Engineer



Approved for Issue by:

Ian Carlisle

Technical Director



Status: Final

Date: 2 July 2015

PO Box 13-268, Tauranga, 3141
New Zealand

P: +64 7 577 0555

www.tdg.co.nz

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Appendix A

TTM Modelled Traffic Flows

Appendix B

Crash Predictive Modelling

Appendix C

SIDRA Capacity Analysis

Appendix D

Te Puke Highway Speed Surveys West of Pah Road

Executive Summary

This report has been commissioned by Western Bay of Plenty District Council (WBOPDC) to assess the effects of proposed changes to the District Plan access requirements to serve the currently zoned Rangiuru Business Park (RBP). While the focus of the report is for the period up to 2026, consideration has also been given to the effects of the proposed changes on the longer term options.

RBP comprises a large rural block of land of approximately 243ha which is zoned in the Western Bay of Plenty District Council (WBOPDC) District Plan (DP) as Industrial.

The Tauranga Eastern Link (TEL) is currently under construction and programmed to open by the end of 2015. Primary access to the business park is expected to be from the TEL, by way of the proposed interchange, with a secondary linkage to the Te Puke Highway (formerly State Highway 2 (SH2)).

At the time of the plan change for RBP, it was expected that the industrial development would proceed prior to the completion of the TEL and certainly in advance of any interchange on the TEL. As the TEL is near complete, it is feasible to provide access to RBP from the TEL from the outset providing construction of the interchange is advanced accordingly.

This report considers the implications of completing the RBP / TEL interchange concurrently with the development of the park and provides a preliminary assessment of the necessary mitigation measures that may be required on Te Puke Highway to accommodate RBP.

Traffic modelling has been undertaken on the basis that the interchange would have two north facing ramps (on and off-ramps) and one south facing ramp (off-ramp only). Traffic destined for the south would be able to make use of the existing Te Puke Highway. It is further proposed to delay the timing of the construction of the roundabout at the intersection of Pah Road and Te Puke Highway (or other mid-block location to be determined) until 2026 or later depending on monitoring of the actual performance of the network.

Advancing the construction of an interchange that provides a direct link between the TEL and RBP allows the majority of traffic associated with the business park to use the TEL and therefore results in a considerable reduction in traffic on the existing Te Puke Highway on comparison with the base scenario.

Both safety and capacity effects of the proposed RBP principal connections to Te Puke Highway have been modelled.

The safety performance of the intersection of Te Puke Highway and Pah Road has been assessed with reference to the NZTA High Risk Intersections Guide (July 2013) and it is concluded that the intersections will likely perform at an acceptable level of safety risk up to 2026.

The capacity of the Te Puke Highway / Pah Road intersection has been assessed and average delays are expected to be tolerable for a development up to between 2021 and 2026 depending on the rate of development.

While the modelling provides some guidance in terms of timing, the actual performance of an individual intersection can differ in accordance with the numerous variables such as trip generation, trip distribution (including effect of any TEL toll), mode of travel, type of activity and driver behaviour. It is recommended that a base level of development is approved based on the above assessment with the subsequent timing of further development and / or infrastructure improvement subject to monitoring of the actual effects of traffic generated by RBP.

Consideration has been given to some draft rules including monitoring regimes and trigger thresholds and these are provided as amendments to the existing District Plan provisions for the Rangiuru Business Park.

1. Introduction

This report has been commissioned by Western Bay of Plenty District Council (WBOPDC) to assess the effects of proposed changes to the District Plan access requirements to serve the currently zoned Rangiuru Business Park (RBP). While the focus of the report is for the period up to 2026, consideration has also been given to the effects of the proposed changes on the longer term options.

RBP comprises a large rural block of land of approximately 243ha which is zoned in the WBOPDC District Plan (DP) as Industrial. The block is located south-east of Te Puke and bounded by the Tauranga Eastern Link (TEL) to the north, Pah Road to the west and Te Puke Highway to the south. Young Road bisects the site and is proposed to be upgraded to function as one of the internal access roads.

The TEL is currently under construction and programmed to open by the end of 2015. Primary access to the RBP is expected to be from the TEL, by way of the proposed interchange, with a secondary linkage to the Te Puke Highway.

At the time of the plan change for RBP, it was expected that the industrial development would proceed prior to the completion of the TEL and certainly in advance of any interchange on the TEL. As the TEL is near complete, it is feasible to provide access to RBP from the TEL from the outset providing construction of the interchange is advanced accordingly. If access to RBP is provided from the TEL prior to the commencement of any development activity, then there is opportunity to revise the access rules with respect to the existing Te Puke Highway roading infrastructure required for Interim Development (Stage 1).

This report considers the implications of completing the RBP / TEL interchange concurrently with the development of the park and provides a preliminary assessment of the necessary mitigation measures that may be required on Te Puke Highway to accommodate RBP.

While this report does not assess the form or location of the proposed TEL interchange - which is understood to have been previously agreed with NZTA and comprises of two north facing on / off ramps and one south facing off-ramp - it does consider the effects of the interchange form on the existing Te Puke Highway infrastructure.

This report is based on the following key expectations that form the basis of this assessment:

- RBP has been modelled based on a net area available for future development of 145 ha which is the area adopted by NZTA for use in the Tauranga Transportation Model (TTM5.9);
- The TEL interchange will be constructed prior to giving effect to any development activity within the RBP zone;
- The TEL interchange form (three legs) and location has been separately agreed with NZTA;
- It is understood that the bylaw restriction on the use of Young Road to the east of the Seeka packhouse by RBP traffic applied to the "Interim Development (Stage 1)" as defined in the District Plan and was to be uplifted following completion of the TEL; and

- Following completion of the TEL the existing SH2 will be revoked and will revert to local road that is understood will be called the “Te Puke Highway”.

1.1 RBP Structure Plan Rules

The RBP Structure Plan Roading Layout and associated intersection upgrades are contained in Appendix 7 of the DP and these are reproduced in Figures 1 and 2 below. The rules governing the staging of development are set out in Section 12.4.13 of the DP and key transport issues are:

- Interim Development (Stage 1) may comprise 25ha (gross) subject to completion of the following infrastructure:
 - (i) *Collector and entrance roads within the interim development area, including associated roundabouts and associated road reserve widening for Young Road and an ‘entrance threshold’ feature and associated signage to advise of a Bylaw restricting Business Park traffic from using Young Road east of the Seeka packhouse site (including the Maketu Road / State Highway 2 intersection);*
 - (ii) *Upgrading of Young Road between the interim development area and the Pah Road intersection, including associated road reserve widening;*
 - (iii) *Pah Road / Young Road intersection upgrade (roundabout);*
 - (iv) *Upgrade of Pah Road to 10m wide sealed rural road standard;*
 - (v) *Upgrade of the Pah Road / State Highway 2 intersection to a roundabout subject to final design and construction methodology being approved by the New Zealand Transport Agency;*
 - (vi) *Installation of barrier arms at the Pah Road railway crossing;*
 - (vii) *The area of road subject to the “access restriction” notation on the Structure Plans in Appendix 7 cannot be used to provide direct access from the Tauranga Eastern Motorway or Entrance Road to adjacent land.”*
- Subsequent Development (Stage 2) may be undertaken subject to completion of the following work:
 - (i) *The Tauranga Eastern Motorway and its associated interchange and portion of entrance road to join with that in the interim development area (also see stormwater infrastructure below for multiple box culverts to be installed under Tauranga Eastern Motorway at time of construction). The location of the Tauranga Eastern Motorway interchange as shown on the Structure Plans in Appendix 7 may not be the optimal location in terms of access to the business park development and the wider transport network. Therefore, following further analysis, the affected parties may agree to alter the location of the interchange. A further plan change or variation, and associated notice of requirement, may be required to give effect to such agreement.*

Provided that: The area of road subject to the “access restriction” notation on the Structure Plans in Appendix 7 cannot be used to provide direct access from the Tauranga Eastern Motorway or Entrance Road to adjacent land;

- (ii) Collector and entrance roads within the relevant development stage area, including associated roundabouts and road reserve widening for Young Road;
- (iii) Upgrade of Young Road from the Business Park to Maketu Road to 10m wide sealed rural road standard.

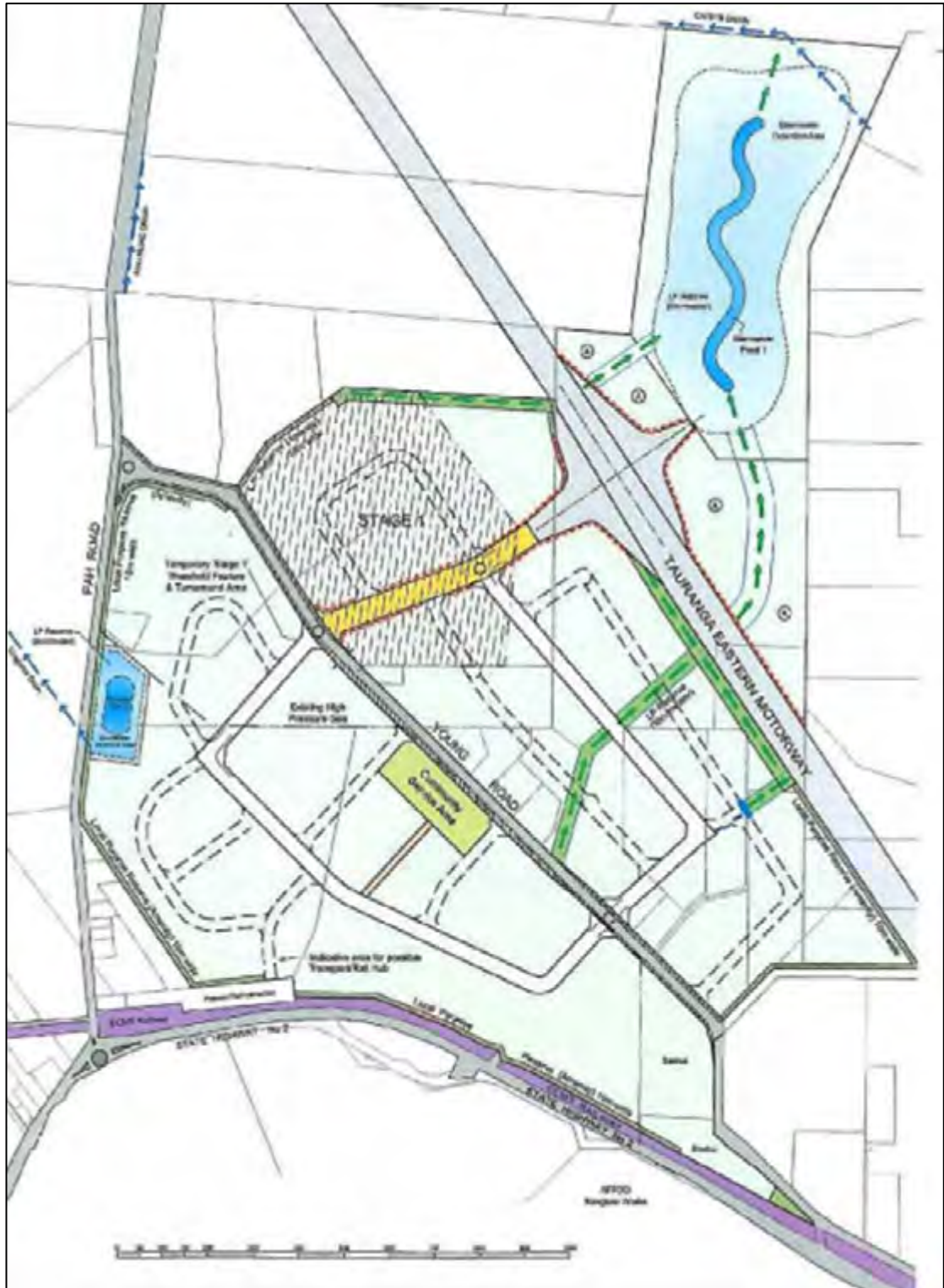


Figure 1: Rangiuru Business Park Structure Plan (WBOPDC District Plan)

2. Existing Te Puke Highway Intersections

2.1 Te Puke Highway / Pah Road Intersection

2.1.1 Existing Layout

The Te Puke Highway / Pah Road intersection is currently a 3-legged “T” intersection located in a 100km/h speed zone approximately 800m north-east of the settlement of Waitangi as depicted in Figure 3. Immediately west of Pah Road, Te Puke Highway is situated between the Kaituna River to the south-east and rural-residential properties to the north-west. Pah Road intersects with Te Puke Highway on the outside of a horizontal curve with a radius of approximately 400m. The layout comprises a priority “stop” control on the side road leg and a single lane in each direction on the state highway.



Figure 3: Aerial Photo showing Pah Road Location

There is currently some shoulder widening on both the north and south sides of the highway west of Pah Road. On the north-west side of the highway there is a nominal 2.5 to 3.0m sealed shoulder over the full length from the Kaituna River Bridge to Pah Road. On the south-east side of the highway there is a nominal 2.0- 2.5m shoulder¹ approximately 130m to the east and 90m to the west where the shoulder narrows to 1.5 – 1.7m due to the proximity of the river. Therefore the existing shoulder meets the requirements of Austroads Guide to Road Design Part 4A in terms of length for a basic rural right turn treatment but falls short on the recommended width of 3.0m (as New Zealand shoulder widening has historically been 2.5m at intersections).

¹ Guardrail was installed adjacent to this shoulder in 2013 and it is understood that shoulder widths were not reduced.

Available sight distance from Pah Road to the east is in excess of the 300m corresponding to the recommended safe intersection sight distance (SISD) for a 110km/h design speed. To the west the available sight line is restricted by vegetation on the inside of the curve and has been measured from aerial photography at 205m, which corresponds to a safe stopping speed of 87 km/h. Existing operating speeds of eastbound traffic is assessed at 90km/h due, in part, to the proximity of the Rangiuru speed restricted zone of 70km/h immediately to the west². The available sight line could be improved with the removal of vegetation on the inside of the curve and on the banks of the Kaituna River. Photographs 1 and 2 below show the available sight lines at the intersection.



Photograph 1: Te Puke Highway / Pah Road Intersection Facing West



Photograph 2: Te Puke Highway / Pah Road Intersection Facing East

The East Coast Main Trunk (ECMT) railway crosses Pah Road approximately 65m north of the Te Puke Highway intersection. The crossing has warning bells with flashing lights in place.

2.1.2 Existing Crash Record

The crash history at the intersection of Te Puke Highway and Pah Road and adjacent approaches has been investigated for the most recent five year period (2010-2014 inclusive) using the NZTA Crash Analysis System. The crash history for this period is depicted below in Figure 4.

² Subsequent speed surveys have been undertaken on Te Puke Highway approximately 200m west of Pah Road intersection and the 85%ile speed of all vehicles was found to be 89km/h eastbound and 90km/h westbound (see Appendix D).

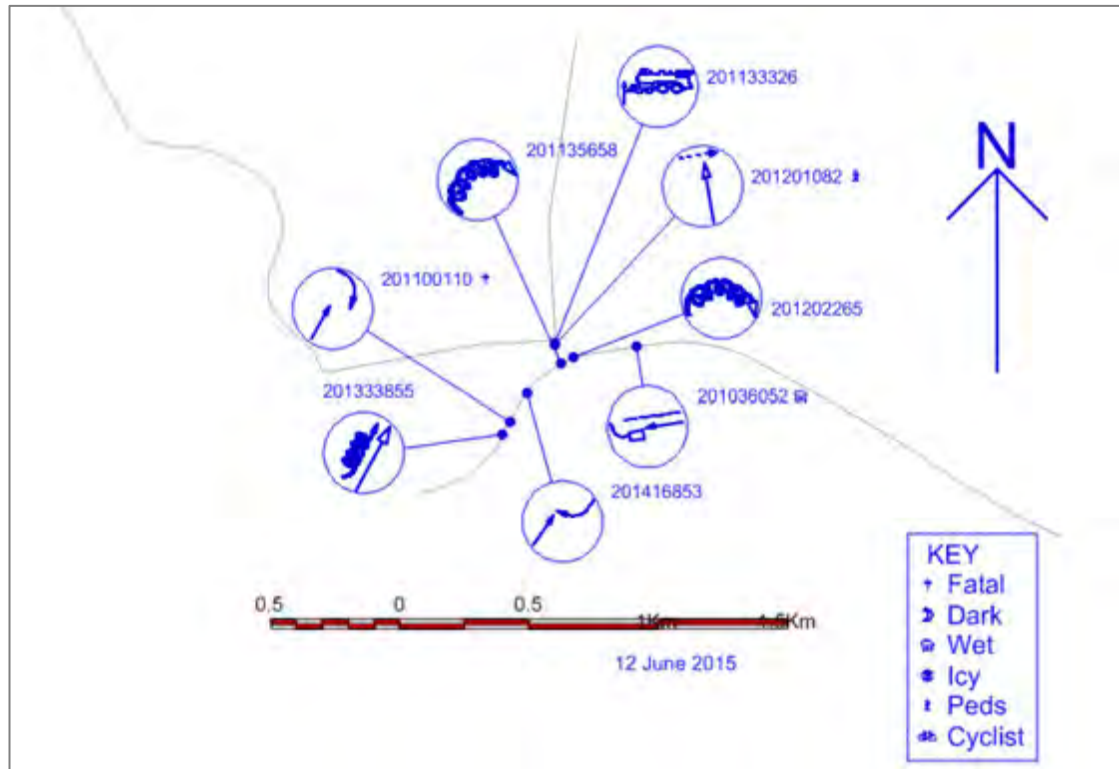


Figure 4: Te Puke Highway / Pah Road Collision Diagram 2010 – 2014

In the five year crash period for the area within 250m of the intersection, there have been two non-injury crashes at the intersection and three injury crashes all unrelated to intersection movements (two loss of control, one at the rail crossing, overtaking, one at an entrance and one pedestrian).

There were a further three crashes (two non-injury, one fatal injury) that occurred beyond the immediate intersection environment. The fatal injury crash related to an entranceway manoeuvre on SH2 300m west of Pah Road.

Of this crash history, no crashes related to a turning vehicle at the intersection and therefore the current intersection is not considered to have an atypical crash record (i.e. is currently performing better than the national average for intersection type).

The two crashes relating to entrance manoeuvres both occurred in the area between Pah Road and Waitangi which has several dwellings on the northwest side of the highway and highlights the risk with entranceways in high speed areas.

2.2 Te Puke Highway / Maketu Road Intersection

The intersection of Te Puke Highway and Maketu Road is a priority controlled cross roads with a 'stop' control on Maketu Road as the north leg and a 'stop' control on Showground Road as the south leg.

Immediately north (around 20m) of Te Puke Highway is the railway crossing of the ECMT railway line after which Maketu Road curves to the north-east. Young Road intersects with Maketu Road on the outside of this curve and Te Tumu Road intersects with Young Road

within 25m of that intersection. Priority movement is afforded to Maketu Road traffic at the Young Road intersection and Te Tumu Road traffic at its intersection with Young Road. The existing layout is depicted in Figure 5.



Figure 5: Aerial Photo showing Maketu Road / Te Puke Highway Intersection Location (image: Google Earth)

A right turn bay on Te Puke Highway provides separation for right turn-in movements into Maketu Road from through movements on the highway. However due to the cross-roads layout the right turn bay does not have any provision for right turn-out traffic to accelerate clear of the westbound traffic. A left turn slip lane into Maketu Road provides for left turning traffic to decelerate clear of following through traffic on Te Puke Highway.

The assessed operating speed of traffic on Te Puke Highway in the vicinity of the intersection is 100 km/h or greater. Available sight distance has been measured based on a combination of available aerial photography and site measurement. To the east the sight distance exceeds 300m corresponding to the recommended safe intersection sight distance (SISD) for a 110km/h operating speed. To the west the sight distance is partially limited by a vertical curve in Te Puke Highway due to the crossing of a railway box culvert beneath Te Puke Highway, and the assessed available sight line is also in excess of 300m.

The intersection has been the subject of crash investigations in the past as the intersection has historically exhibited a poor crash record, although remedial options have been limited by constraints including the ECMT railway line. It is understood that sun strike has been noted as a potential factor in previous crash records.

2.2.1 Existing Crash Record

The crash history at the intersection of Te Puke Highway and Maketu Road and adjacent approaches has been investigated for the most recent five year period (2010 -2014 inclusive) using the NZTA Crash Analysis System. The collision diagram for the period is shown in Figure 6.

For the area within 250m of the intersection, in the five year crash period, there have been one serious injury, one minor injury and 14 non-injury crashes as follows:

- The serious injury involved a cyclist about 130 east of the intersection;
- One minor injury involved a westbound vehicle merging with a right turning vehicle from Maketu Road (failed to give way);
- Of the balance of non-injury crashes, seven crashes involved turning or crossing movements and five crashes involved rear end type collisions with vehicles slowing or stopped for the intersection.

Overall the injury crash record does not indicate any unexpected safety performance at this intersection; however the number of non-injury crashes involving traffic associated with intersection manoeuvres is of potential concern in this high speed environment.

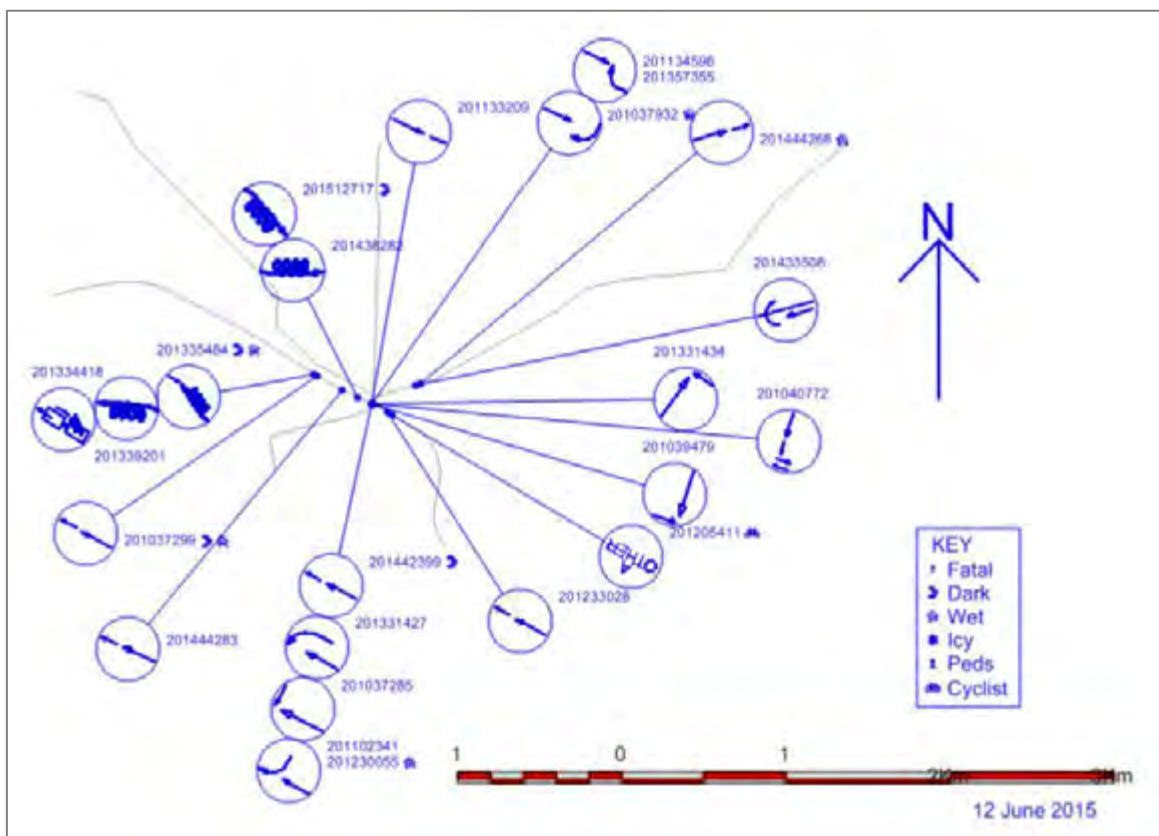


Figure 6: Collision Diagram for the Intersection of Te Puke Highway and Maketu Road

3. Proposed RBP Access

RBP is currently enabled by the District Plan and the first stage (25 ha gross) is able to proceed without the construction of an interchange on the TEL providing a roundabout is constructed at the intersection of SH2 and Pah Road. This forms the base scenario for modelling.

As the TEL is currently programmed for opening prior to the end of 2015, it is feasible to advance the construction of the RBP interchange to provide access to RBP from the TEL from the outset, for all stages of development.

If access to RBP is provided from the TEL prior to the commencement of any development activity, then there is opportunity to revise the access rules with respect to the existing Te Puke Highway roading infrastructure required for Interim Development (Stage 1).

It is now proposed to commence some initial development of RBP (Stage 1 and a portion of Stage 2) whilst retaining the current intersections of Te Puke Highway with Pah Road and Maketu Road in their current form, subject to the completion of an interchange on TEL. A staging plan has been developed as shown in Figure 7 with the focus on early development centred around the proposed interchange. Access to the RBP zone for the later stages and ultimately the full development is currently expected to remain principally in accordance with the current DP (although noting a modification to the interchange south facing ramps which is considered further below).

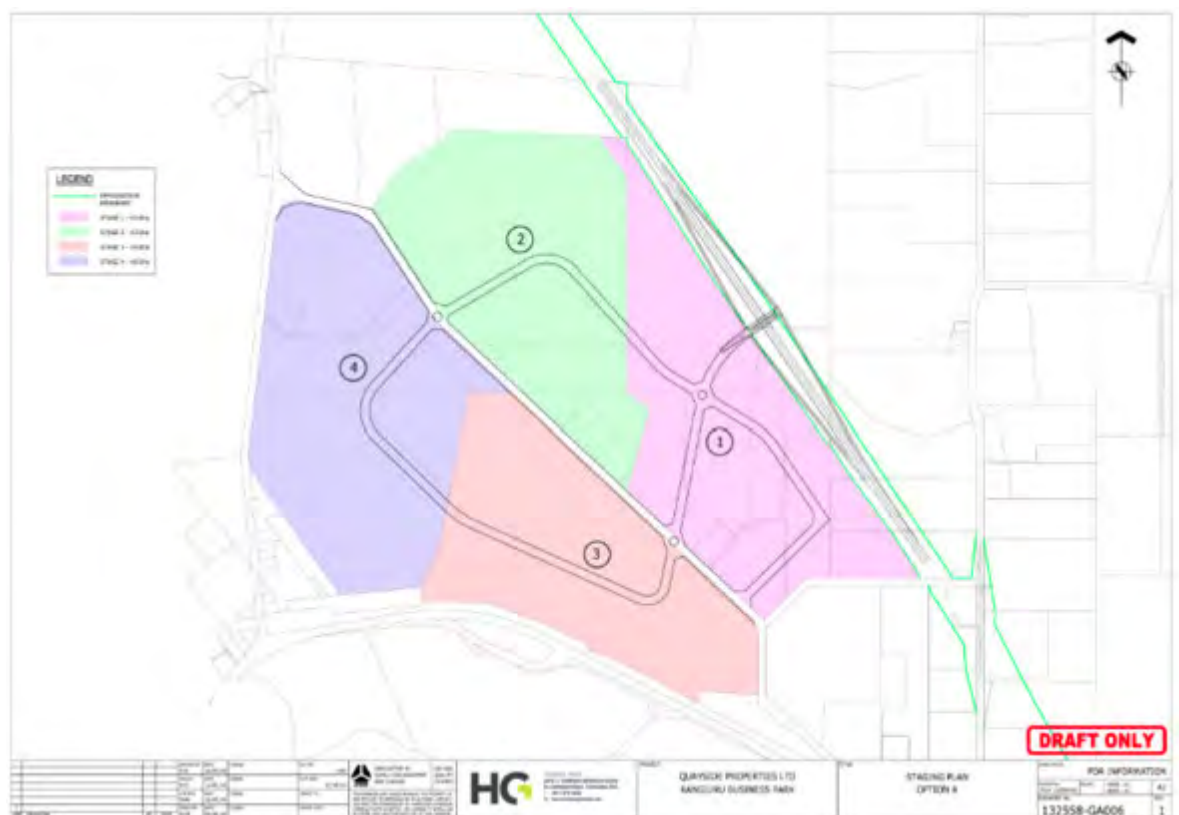


Figure 7: RBP Development Staging Plan

The DP includes a Stage 1 provision requiring restriction of RBP traffic movement on Young Road east of the site. While this restriction could be implemented for heavy vehicles it would be very difficult to implement for all traffic without total road closure. Therefore the base scenario has been modelled both with and without the effects of a Young Road traffic restriction.

The completion of the TEL and RBP interchange will reduce traffic flows on the existing Te Puke Highway and eliminate the reliance of RBP traffic on the existing highway and its associated intersections.

On this basis it is proposed to delay the timing of the construction of the roundabout at the intersection of Pah Road and Te Puke Highway (or other mid-block location to be determined³) until completion of the initial development stages depending on monitoring of the actual performance of the network.

The proposed RBP access scenario which includes the TEL interchange has been modelled using the Tauranga Transportation Model (TTM5.9) for the first development stages (one and two) which are expected to cater for demand up to 2026 or beyond.

The rate of initial development of RBP that has been modelled in the TTM includes the following expected take up of industrial land as provided by Quayside Properties and which has been adopted in this assessment:

- 2021:16% (23ha);
- 2026:48% (70ha); and
- 2031:81% (117 ha).

The 2021 expected net area of 23 ha is understood to be the net area permitted under the existing DP rules for Interim Development (Stage 1).

In summary, the proposed road network and access strategy for RBP comprises:

- RBP interchange on the TEL with two north facing ramps (on and off-ramps) and one south facing ramp (off-ramp only). Traffic destined for the south would instead be able to make use of the existing Te Puke Highway;
- To cater for initial development stages, links to the existing Te Puke Highway would be available by way of the existing intersections at Pah Road and Maketu Road i.e. no restriction on RBP traffic flows as required by the current DP rules for Interim Development;
- Subject to monitoring of intersection safety performance, following completion of the initial stages of development the proposed upgrade of the intersection of Pah Road and Te Puke Highway would be undertaken in accordance with the current DP provisions; and
- Full development of RBP would proceed as currently catered for in the DP provisions subject to the mitigation of any effects due to the omission of the southbound on-ramp at the interchange.

³ Alternative locations for a Te Puke Highway intersection to provide access with RBP have been explored by Quayside, Council and NZTA. A "mid-block" location between Pah Road and Maketu Road would provide an opportunity to access all of RBP from a central intersection with linkage through to the interchange and potentially enable closure of the Pah Road and /or Maketu Road intersections with Te Puke Highway.

The traffic modelling summarised in the following sections is based on the above defined scenario. The purpose of the safety and capacity modelling is to determine the effects of the proposed access strategy and any mitigation measures in the form of traffic thresholds or physical works required to cater for the expected traffic volumes.

4. TTM Modelling

The scenarios for the stages of development described in Section 3 above have been modelled using the NZTA / Tauranga City Council / WBOPDC model TTM5.9 for the years 2021 and 2026. Model outputs include the intersection turning volumes for Pah Road / Te Puke Highway, Affco / Te Puke Highway, Maketu Road / Te Puke Highway and the TEL interchange with RBP. Select link plots have also been extracted from the model for the RBP traffic movements and the Affco traffic movements. The modelled traffic flows as provided from the TTM are included as Appendix A.

Average daily traffic movements have been derived from the peak period flows (am, inter-peak and pm) using the factors provided by Beca Consultants namely, $(2*am+7*ip+2*pm)/0.79$.

All modelling runs provided both with and without RBP are based on the same network and have included a TEL interchange even though the connecting infrastructure would not be there in the scenario without RBP.

The traffic volumes for the base scenario, as predicated by the current DP rules, have been determined from the modelled runs with adjustment by transferring all traffic flows modelled at the interchange to the intersection of Te Puke Highway and Pah Road. In the event that the proposed flow restriction on Young Road was not implemented a second base scenario has been considered based on transferring all north related flows at the interchange to the Te Puke Highway / Pah Road intersection and all south related flows at the interchange to the Te Puke Highway / Maketu Road intersection. The Affco related traffic flows have been transferred to the same intersections as relevant to each scenario.

5. Intersection Safety Performance Modelling

Safety prediction models have been applied to the Te Puke Highway intersections at Pah Road and Maketu Road with a comparison made between the base (as enabled by the current District Plan) and proposed scenarios. No crash prediction models have been applied to the interchange and while it is expected that the interchange will be constructed to best engineering practice, it is acknowledged that the associated movement of traffic through the interchange will generate some safety risk⁴.

Two sets of crash prediction models have been analysed and compared for the purpose of this assessment.

The intersection crash prediction models included in the NZTA Economic Evaluation Manual (EEM) have been used to examine and compare the safety performance of intersections for both the base, as consented, environment and the proposed interim access arrangement for RBP to 2026.

To examine the expected safety performance of the proposed environment based on the forecast traffic volumes for RBP, reference has also been made to the most recent version of the NZTA High Risk Intersections Guide (HRIG), dated July 2013, which contains generic crash models for various rural intersection types as well as a recommended risk assessment tool for identifying desirable intersection treatment strategies. The HRIG aligns with the safe system approach which focusses on reducing the incidence of Death and Serious Injury (DSI) crashes.

This methodology and, in particular, application of the HRIG models has been agreed with the NZTA.

5.1 Te Puke Highway / Pah Road Intersection

5.1.1 EEM Crash Models

The EEM crash prediction models used in the assessment of this intersection include:

- Rural high speed roundabout (conflict model 8).
- High-speed priority T-junction (model 10).

In all cases the High-speed priority T-junction model is based on a factor Vd (sum of visibility deficiency) being less than 2, and SL (mean free speed of vehicles approaching from the left of minor road) at 100km/h.

The safety performance of the intersection has been modelled for the base (DP) layout (a roundabout) and proposed access provision (T- intersection). For comparison purposes, the base scenario is modelled to show the effect of any restriction on the use of Young Road by RBP traffic⁵. The crash model analysis is included in Appendix B and summarised in Table 1 below:

⁴ The risk will be low at the interchange with northbound traffic having no conflicting movements at the ramp intersections and the conflict on the northbound off ramp being restricted to left turn only. No NZ prediction models are currently available for the modelling of on- ramp merge crash rates.

⁵ Scenario modelled for Young Road restriction includes a restriction of all traffic associated with the RBP

CRASH PREDICTION MODEL COMPARISON (EEM)				
Model Scenario	With Young Road Restriction		Without Young Road Restriction	
	Injury Crashes/yr	DSI Casualties ⁶ /yr	Injury Crashes /yr	DSI Casualties ⁷ /yr
2021 Base (Roundabout based on High Speed roundabout model)	0.63	0.10	0.58	0.09
2021 Proposed (T-junction)	0.46	0.17	0.22	0.08
2021 Proposed (factored by 20%)	-	-	0.25	0.09
2026 Proposed (T-junction)	-	-	0.66	0.25
2031 (2026 Proposed (T-junction) plus 68% RBP growth)	-	-	1.16	0.43

Table 1: Te Puke Highway / Pah Road EEM Crash Models Base and Proposed Scenarios

The key conclusions that can be drawn from the crash model results in Table 1 above are:

- The proposed interchange construction in conjunction with retaining the Te Puke Highway / Pah Road T-junction may result in a lower injury crash rate than for the base with roundabout and also a lower number of high severity casualties in the proposed scheme. However, if a restriction was imposed on Young Road which required traffic to right turn into Pah Road instead of using Maketu Road (such as Affco traffic and Maketu township traffic) then the high severity crashes would be elevated.
- Using the District Plan consented baseline as a target performance measure with respect to high severity crashes, the 2021 traffic volumes through the intersection from RBP could be increased by 20% for the ‘without’ Young Road restrictions in place scenario.
- The predicted injury crash rate at 2026 at 0.66 crashes per year (or 0.25 high severity casualties per year) has reached the medium-high risk level as defined by in the HRIG (see risk analysis below).

⁶ DSI Casualty equivalent factors based on HRIG

⁷ DSI Casualty equivalent factors based on HRIG

5.1.2 HRIG Crash Models

The HRIG includes crash models in the appendices based on large datasets of New Zealand intersections. Application of these crash models indicates the following expected crash rates and casualties for the existing T-intersection. The input parameters are tabulated in Appendix B.

CRASH PREDICTION MODEL COMPARISON (HRIG)		
Model Scenario	Without Young Road Restriction (except base)	
	Injury Crashes/5yr	DSI Casualties/5yr
2021 Base (Roundabout DP)	1.74	0.3
2021 Proposed (T-junction)	2.00	0.7
2026 Proposed (T-junction)	2.96	1.1
2031 (2026 Proposed (T-junction) plus 68% RBP growth)	3.78	1.4

Table 2: Te Puke Highway / Pah Road HRIG Crash Models Base and Proposed Scenarios

Table 2 indicates the crash and injury rates are 1.1 DSI casualties per 5 years or 0.22 DSI casualties per year in 2026 in comparison to the EEM rate of 0.25 DSI casualties per year.

5.1.3 Personal and Collective Risk Analysis

In order to quantify the acceptability of the crash risk from the predictive models outlined above for the proposed T- intersection layout, the approach outlined in the HRIG has been followed. This involves analysis of a Personal Risk and a Collective Risk for a five year period. For the purposes of this assessment the five year periods adopted are based on the predictive crash models contained in Appendix 4 of the guide, for years 2021, 2026 and 2031 as summarised in Section 5.1.2. Table 3 below indicates the resultant overall risk levels as defined in the HRIG, while Figure 8 shows the risk level thresholds and recommended treatment for each level of crash risk.

COLLECTIVE AND PERSONAL RISK PROFILES					
Crash Prediction Model Year	Collective Risk (DSI casualties / 5 years)	Collective Risk Level	Personal Risk (DSI Casualties adjusted for exposure)	Personal Risk Level	Treatment Philosophy
2021	0.74	Medium	36	High	Safety Management
2026	1.10	Medium	36	High	Safety Management
2031	1.40	Medium-High	36	High	Transformation Works

Table 3: Te Puke Highway / Pah Road Collective and Personal Risk Levels and Treatment Philosophy 2021 - 2031

Table 3 demonstrates that while the crash numbers increase with the addition of the RBP traffic, the crash risk does not exceed “medium” and the intersection on this basis would not be considered a “high risk” intersection (defined in section 4.2.3 of the HRIG⁸).

Based on the treatment thresholds presented in the HRIG, it is not until beyond the modelled period of 2026 that it would be appropriate to intervene with “transformation works” such as a change of intersection form to a roundabout.

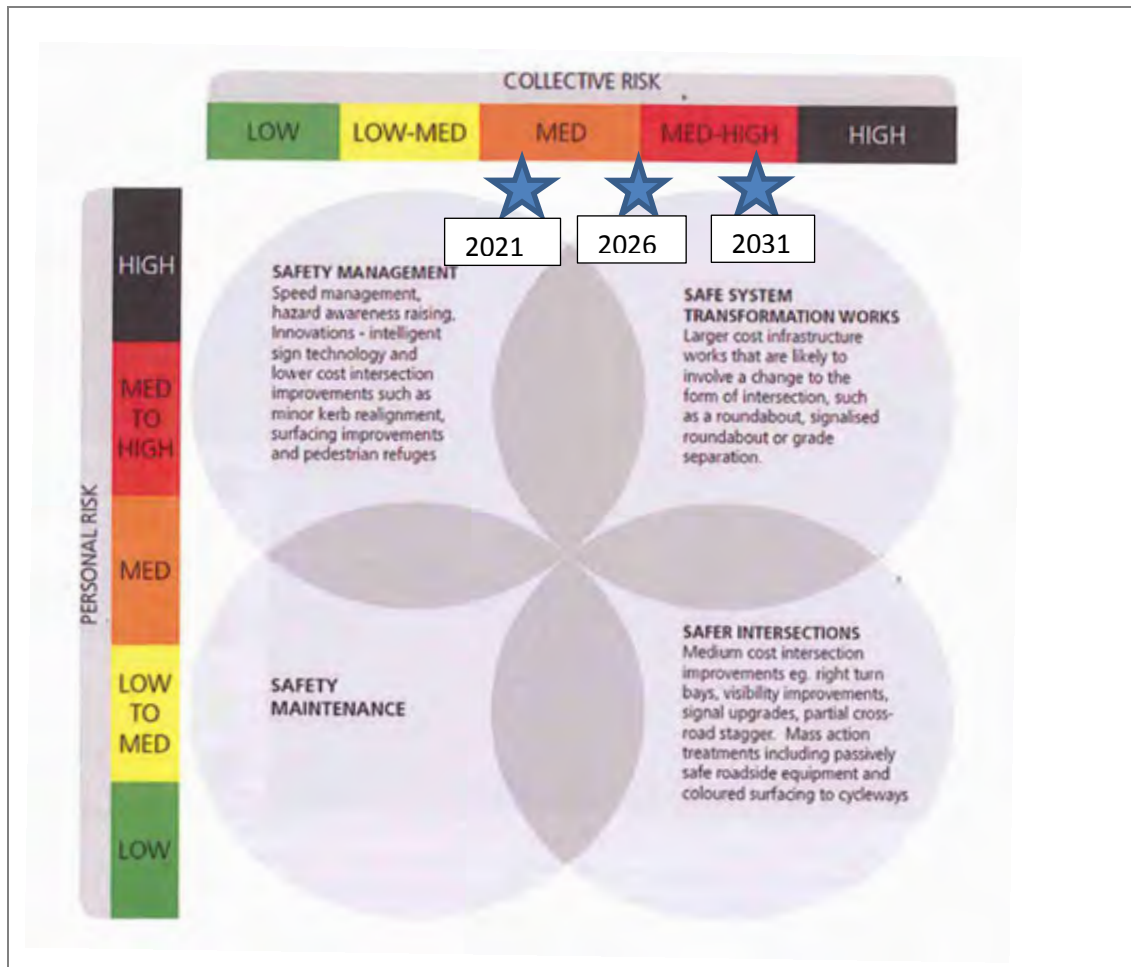


Figure 8: Intersection Treatment Philosophy 2021 – 2031 (Based on High Risk Intersections Guide)

⁸ High risk intersection has either: Personal Risk of >16 DSI/100M VKT /5 years AND more than 4 injury crashes /5 years, OR Collective Risk of >1.1 DSI casualties /5 years.

5.2 Te Puke Highway / Maketu Road Intersection

5.2.1 EEM Crash Models

The crash predication model used in the assessment of this intersection is the high-speed priority T-junction (model 10). It is acknowledge that Showground Road is located opposite Maketu Road however the traffic volumes using Showground Road are low and changes in those volumes associated with RBP traffic are expected to be insignificant⁹.

The crash model analysis is included in Appendix B and summarised in Table 3 below:

CRASH PREDICTION MODEL COMPARISON				
Model Scenario	With Young Road Restriction		Without Young Rd Restriction	
	Injury Crashes/yr	DSI Casualties/yr	Injury Crashes/yr	DSI Casualties/yr
2021 Base	0.65	0.24	0.77	0.28
2021 Proposed (T-junction)	0.61	0.23	0.58	0.21
2021 Proposed (factored by 70%)	0.65	0.24	0.58	0.21
2026 Proposed (T-junction)	-	-	0.50	0.19
2031 (2026 Proposed (T-junction) plus RBP growth – stages 1 and 2 only)	-	-	0.50	0.19

Table 4: Te Puke Highway / Maketu Road Crash Models Base and Proposed Scenarios

The key conclusions that can be drawn from the crash model results in Table 4 above are:

- The proposed interim access arrangements result in an improved safety performance at the Te Puke Highway / Maketu Road intersection for all analysis periods on comparison with the baseline model (this is due to the inclusion of the TEL interchange providing for access to RBP from the south and minimises the prospect of additional right turn movements at the Maketu Road intersection).
- The addition of increased traffic from RBP in future years 2026 and 2031 is balanced in part by the expected modelled decrease in Te Puke Highway through traffic and the increase in left turning traffic has no impact on the predictive crash rates once a minimum volume threshold has been reached.

Overall, on the basis of the above crash models, it is concluded that the inclusion of the proposed RBP traffic with or without the interim access arrangements does not have any adverse safety impact at the intersection of Te Puke Highway and Maketu Road. It is acknowledged that this conclusion relies on the traffic distribution indicated by the TTM modelling which shows no increase in right turn movements into or out of Maketu Road (which is influenced by the location of the first development stages in close proximity to the interchange and the use of Young Road by traffic to /from Maketu).

⁹ And the TTM outputs did not include Showgrounds Road. The EEM conflict crash models for cross-roads do not include right turn out right side (JA) crashes and therefore for this intersection with unequal volumes the T intersection model is adequate.

5.2.2 HRIG Crash Models

As for the Pah Road intersection, the HRIG includes crash models in the appendices based on large datasets of New Zealand intersections. Application of these crash models indicates the following expected crash rates and casualties for the existing T-intersection. The input parameters are tabulated in Appendix B.

CRASH PREDICTION MODEL COMPARISON (HRIG)					
Model Scenario			Without Young Road Restriction (except base)		
			Injury Crashes /5yr	DSI Casualties/5yr	
2021	Base (includes Young Rd restriction)		2.74	1.01	
2021	Proposed (T-junction)		2.65	0.98	
2026	Proposed (T-junction)		2.58	0.95	
2031	(2026 Proposed (T-junction) plus RBP growth)		2.78	1.03	

Table 5: Te Puke Highway / Maketu Road HRIG Crash Models Base and Proposed Scenarios

Table 5 indicates the crash and injury rates are 0.95 DSI casualties /5 years or 0.19 DSI casualties/year in 2026 in comparison to the EEM rate of 0.19 DSI casualties per year showing good correlation.

5.2.3 Collective / Personal Risk Analysis

As for Pah Road intersection in 5.1.3 above, in order to quantify the acceptability of the crash risk from the predictive models outlined above for the proposed T- intersection layout, the approach outlined in the HRIG has been followed. Table 6 below indicates the resultant overall risk levels as defined in the HRIG.

COLLECTIVE AND PERSONAL RISK PROFILES					
Crash Prediction Model Year	Collective Risk (DSI casualties/5 years)	Collective Risk Level	Personal Risk (DSI Casualties adjusted for exposure)	Personal Risk Level	Treatment Philosophy
2021 (Consented)	1.01	Medium	36	High	Safety Management
2021	0.98	Medium	36	High	Safety Management
2026	0.95	Medium	36	High	Safety Management
2031 (Stages 1 and 2 only)	1.03	Medium	36	High	Safety Management

Table 6: Te Puke Highway / Maketu Road Collective and Personal Risk Levels and Treatment Philosophy 2021 – 2031

Table 6 demonstrates that while the crash numbers do not increase with the addition of the RBP traffic and Section 5.2.1 outlines some of the underlying reasons for this. While the Personal Risk is high the intersection is not classified as a high risk intersection¹⁰ (defined in section 4.2.3 of the HRIG¹¹) as it does not have 4 or more injury crashes in the last 5 years (see crash record above) nor is it predicted to have 4 or more injury crashes in any 5 year period up to 2031 based on the prediction modelling.

Based on the intersection personal high risk and collective medium risk, the appropriate intersection treatment fits the Safety Management category that is, lower cost intersection improvements.

¹⁰ A sensitivity test using the cross-roads model indicates that the intersection would be a medium-high collective risk (and therefore high risk overall) for the existing and future scenarios. However this model does not consider that the increase in movements is for left turn out only and the increase in traffic is therefore expected to have less effect than the model would indicate. Notwithstanding the need for improvements may need to be advanced.

¹¹ High risk intersection has either: Personal Risk of >16 DSI/100M VKT /5 years AND more than 4 injury crashes /5 years, OR Collective Risk of >1.1 DSI casualties /5 years.

6. Te Puke Highway Intersections Capacity Assessment

A capacity assessment of the two relevant Te Puke Highway intersections has been undertaken using the SIDRA intersection modelling software based on the turning volumes from the TTM.

Standard default values have been adopted where site specific parameters are not available, and the SIDRA capacity model used is the “SIDRA Standard”. The SIDRA modelling is particularly sensitive to a number of the input parameters and the standard parameters are known as conservative in comparison to the alternative models. In a recent paper to the 25th ARRB conference, Rahmi Akcelik (SIDRA Solutions) concluded that more research was required to support the modelling of priority controlled intersections with a focus on: calibration of gap acceptance factors for NZ conditions taking into account intersection geometry, differences in control type, decreases in gap acceptance with opposing volume changes, speed, grade and sight distance. These recommendations highlight the variable nature of the model outputs which must be considered when drawing conclusions from SIDRA modelling noting that the capacity model used is more conservative (lower capacity) than others.

6.1 Te Puke Highway / Pah Road Intersection

Table 5 below sets out the key intersection performance measures for the design periods 2021 and 2026. Full detailed outputs are appended. The turning volumes in the morning peak period are lower than in the pm peak (both right turning and total through traffic are less) and therefore the pm peak period only has been reported.

TE PUKE HIGHWAY / PAH ROAD INTERSECTION PM PEAK HOUR MODELLING				
Design Year	Right Turn Demand Volume (veh/h)	95%ile Queue (m)	Average Delay (s)	Level of Service
2021 (23ha)	79	9	31	D
2021 (46ha)	158	25	41	E
2026 (70ha)	214	42	48	E

Table 7: Te Puke Highway / Pah Road Intersection Performance Measures Right Turn Out

Table 8 indicates that the existing intersection layout is able to accommodate the traffic from RBP up to 23ha without exceeding a Level of Service D¹². It is noted that the right turning volume for 23ha is less than 100veh/h.

Using average delay of traffic on the Pah Road approach as a guide to acceptable performance (45sec delay is a level of tolerance often adopted) then at some stage between 2021 and 2026, it would be appropriate to implement some intersection improvements.

¹² Level of Service criteria is subjective. SIDRA user manual (based on HCM) suggests LOS D/E threshold is around 35sec for priority controlled intersection but 50 sec for signals.

6.2 Te Puke Highway / Maketu Road Intersection

Table 9 below sets out the key intersection performance measures for the 2026 design period for the intersection of Te Puke Highway and Maketu Road. Full detailed outputs are appended. The turning volumes in the morning peak period are lower than in the pm peak (both right turning and total through traffic are less) and therefore the pm peak period only has been reported.

It is noted that the model used does not include Showground Road as the turning flows were not provided from the TTM. However the traffic volumes on Showground Road are typically not significant (although it is acknowledged that the presence of the offset leg has the potential to influence driver gap acceptance parameters).

TE PUKE HIGHWAY / MAKETU ROAD INTERSECTION PM PEAK HOUR MODELLING				
Design Year	Right Turn Demand Volume (veh/h)	95%ile Queue (m)	Average Delay (s)	Level of Service
Right Turn Out Movement				
2026 (No RBP)	124	11	25	D
2026 (70ha RBP)	124	9	22	C
Left Turn Out Movement				
2026 (No RBP)	31	1	17	C
2026 (70ha RBP)	159	6	17	C

Table 8: Te Puke Highway / Maketu Road Intersection Performance Measures Right and Left Turn Out

As demonstrated in the above table, the effect of the RBP at this intersection is an increase in left turn out movements. Overall there is a net improvement in the intersection performance as a result of including RBP (right turn out delays decrease) which is a consequence of network re-distribution reducing through volumes on Te Puke Highway.

7. ECMT Rail Crossings

The effect of additional traffic associated with RBP using at-grade crossings of the ECMT railway has been analysed and reported for varying options in the past, with a focus on the roundabout scenario for access from Te Puke Highway.

The current interim proposal for access to RBP from Te Puke Highway involves retaining T-junction layouts at both Te Puke Highway intersections with Pah Road and Maketu Roads. The railway crossing of these side roads is approximately 65m and 25m from Te Puke Highway, for Pah Road and Maketu Road respectively and NZTA have previously requested analysis of queuing associated with the at-grade crossings.

Information from Ontrack¹³ indicates that for design purposes a typical long train (900m) will prevent passage of motor vehicles over the tracks for up to approximately 77 seconds under normal operating conditions, and by up to 4 minutes when being delayed by speed restrictions.

It is highlighted that the base case (approved NZTA layout included in the District Plan) involves a roundabout at the intersection of Te Puke Highway and Pah Road with an at-grade railway crossing and up to 23ha of RBP developed. Hence, queuing at the railway crossing forms part of the approved baseline scenario. With the inclusion of the interchange and up to 23ha, results in less traffic using Pah Road than the base case. Furthermore, the inclusion of the TEL interchange will allow traffic to take alternative routes if desired to avoid any delays associated with the railway.

An assessment of the queuing that the traffic flow scenarios evaluated will create at the rail line has been undertaken as shown in Table 7. The highest 2026 modelled flows have been evaluated to understand the nature of queuing on both sides of the railway line:

Crash Prediction Model Year	MORNING PEAK		EVENING PEAK		Worst Case 95%ile Queue From Te Puke Highway (m)	Worst Case 95%ile Queue To Te Puke Highway (m)
	From Te Puke Highway veh/h	To Te Puke Highway veh/h	From Te Puke Highway veh/h	To Te Puke Highway veh/h		
Pah Road Intersection	213	103	114	209	71	69
Maketu Road Intersection	151	179	132	293	48	103

Table 9: Queuing at ECMT Railway Crossing 2026 with RBP

The queues on the south side of the railway crossings are of primary concern given the potential for queuing to spill back to Te Puke Highway and interfere with through traffic. Table 7 shows that the queue at Pah Road extends to a vehicle length beyond the queue capacity between the rail crossing and Te Puke Highway. However as the RBP traffic is principally all left turning at this intersection, and there is already adequate shoulder to accommodate left turning traffic, this queue extent is not considered a significant safety concern.

¹³ Information was collected in 2009 and is not expected to have changed significantly

Similarly, while the queue on Maketu Road extends back to Te Puke Highway there are currently left and right turn bays at this intersection, and furthermore, RBP is not contributing additional demand to this left turn in traffic stream.

Queues on the north approaches to the railway crossings and Te Puke Highway are of less concern as traffic is queued away from the state highway. The worst case 95thile queues are 69m and 103m for Pah Road and Maketu Roads respectively and these queues, while inconvenient, are not of significant safety concern at the intersection, although barrier arms with hatched markings are recommended for both crossings to ensure no vehicles waiting at the intersections are trapped at the crossing point.

Beyond 2026 traffic implications at the rail crossings are expected to mirror those enabled by the current DP with the exception of the omission of the interchange southbound on-ramp. This results in additional traffic using the Maketu Road crossing but as the increase in traffic is southbound direction only the effects are limited to the east side of the crossing. The capacity implications at the intersection are linked to the crossing performance and are considered further below.

8. Stages 3 and 4 Development

The current staging plan for RBP is based on Stages 3 and 4 commencing between 2026 and 2031. At this time, it is expected that the road infrastructure provisions as anticipated by the current DP will have been implemented, these being:

- RBP interchange on the TEL will be in complete, but with the southbound on-ramp omitted;
- Intersection of Te Puke Highway and Pah Road will have been upgraded or a suitable alternative access arrangement provided, subject to the monitoring of intersection performance; and
- Temporary access restrictions on Young Road (not now proposed) would have been uplifted.

On this basis the proposed RBP access provisions beyond 2026 are expected to mirror those enabled by the current DP with the exception of the interchange southbound on-ramp.

The proposed omission of the interchange ramp will result in a re-distribution of traffic and will necessitate southbound traffic using the existing Te Puke Highway to travel south. The majority of this re-distributed traffic is expected to use the Maketu Road intersection with Te Puke Highway to make a left-out turn. Using a similar methodology as adopted above for the earlier stages of development the safety and capacity of the intersection for the fully developed RBP development has been modelled¹⁴.

The EEM crash prediction conflict model does not indicate any increase in crashes as a result of an increase in left turning traffic. The HRIG crash model is based on approach volumes and does increase with change in volume and indicates that the intersection would approach the threshold of “medium-high” risk for collective risk, and would be a “high” personal risk as for earlier periods. This places the intersection at the threshold of the “high” risk intersection classification and is accordingly sensitive to any variation in the forecast traffic volumes.

The capacity performance of the intersection has been modelled with the increase in left-out turning movements. The expected average delays and level of service are expected to be acceptable for this increase in movement (average delay of 20 s and LOS C), however the left turn queue is expected to extend back beyond the railway line which will block at times restrict access to the intersection for right turning traffic. Due to the need to keep the railway crossing clear, at times the queue will likely extend back to the intersection of Maketu Road and Te Tumu Road which will add to the queuing at this intersection. In consideration of the expected queues, the presence of the railway crossing, the higher potential proportion of heavy vehicles and complicated intersection layout with side roads, it is recommended that that a left turn slip lane is constructed onto Te Puke Highway to enable free movement of the left turning traffic. The left turn slip lane will require adequate acceleration length and taper according to the prevailing operating speeds at that time.

¹⁴ Modelling has been undertaken on the basis

While the above recommended mitigation is targeting at addressing the increase in left turning movements at this intersection, it is possible that right turning movements will also increase as the later stages of RBP development expand along the Maketu Road end of Young Road. Based on the understanding of current DP provisions described in Section 1, these right turn movements are enabled by the current DP and therefore considered part of the base environment. Notwithstanding, any increase in right turn movements at this intersection is of potential safety concern, and desirably any upgrading of the intersection would consider improvements to address safety for all movements. Alternative improvements that may be considered in the future include a change to the form of the intersection or construction of a new “mid-block” Te Puke Highway intersection (see Pah Road intersection alternative) and associated potential closure of the Maketu Road intersection.

The effect of the re-distribution of traffic on the intersection of Young Road / Te Tumu Road / Maketu Road has also been considered. The full development of RBP will result in up to 350 vph turning right into Te Tumu Road and then Maketu Road which will become the predominant flow. Typically the intersection layout would be reconfigured to improve the priority for the predominant flow from Young Road or an alternative intersection form could be considered. Modelling of the existing intersection layout shows that the traffic exiting the RBP will have an “acceptable” level of service (LOS B) based on modelled flows. Furthermore, right turning traffic into Young Road from Maketu Road would benefit from being separated from the following through traffic but this movement is not affected by the proposed plan changes.

9. Discussion / Recommendation

RBP is currently enabled by the District Plan and the first stage (25 ha gross) is able to proceed without the construction of an interchange on the TEL providing a roundabout is constructed at the intersection of Te Puke Highway and Pah Road. This forms the base scenario for modelling.

The proposal intends to advance the construction of a TEL interchange and postponement of any intersection upgrade improvements on the Te Puke Highway. Advancing the construction of an interchange that provides a direct link between the TEL and RBP allows the majority of traffic associated with the business park to use the TEL and therefore results in a considerable reduction in traffic on the existing Te Puke Highway on comparison with the base scenario.

Both safety and capacity effects of the proposed RBP interim access have been modelled.

Safety modelling of the Te Puke Highway intersections is based on the EEM Crash Prediction Models and the High Risk Intersections Guide (July 2013). The safety performance of both Te Puke Highway intersections with Pah Road and Maketu Road, is enhanced in 2021 with the proposed access arrangements on comparison to the base scenario, based on the EEM models. The HRIG crash models indicate a slight degradation of safety performance at the Te Puke Highway / Pah Road intersection and a modest improvement for Maketu Road. The Maketu Road intersection model is not significantly influenced by the left turn out flows and as the proposed access arrangements result in an increase in left turn out movements only at this junction for Stages 1 and 2, and therefore these stages are able to be accommodated at this junction.

At both intersections, while the HRIG “Personal Risk” is high at all stages, the intersections is not classified as high risk as they are not forecast to meet the threshold required of 4 injury crashes in a five year period.

By 2026 the injury crash rate at the Pah Road intersection increases in proportion to the increase in side road flows resulting in the “Collective Risk” reaching the threshold for “medium-high” risk indicating that beyond this level, the crash rate is expected to make the intersection a high risk and require transformational works. The Maketu Road intersection at 2026 shows little change in forecast safety performance.

Capacity modelling has been undertaken and delays on the side road legs assessed. As above, with respect to safety, the capacity of Maketu Road is not unduly influenced by an increase in left turn out flows from RBP and it is concluded that the intersection will not be adversely affected by the proposed access arrangements to 2026.

The capacity of the Te Puke Highway / Pah Road intersection operates with acceptable delay (as measured in comparison to a suggested 45sec threshold) up to a development size of 46ha which is modelled to occur sometime between 2021 and 2026. However noting the conservative nature of the SIDRA modelling adopted, the threshold may be reached at a different time depending on actual driver behaviour. In this respect monitoring the intersection performance as the initial stages progress would enable the timing of intersection improvements to be refined.

While the length of potential queues on the approaches to the ECMT railway crossings has been assessed, the crossings form part of the permitted scenario and the current proposal does not result in any interim effect at the crossings that is not already permitted by the District Plan, albeit the distribution patterns to the various intersections will be changed.

The safety and capacity assessments exhibit some consistency with respect to the timing and type of improvement recommended. While the modelling provides some guidance in terms of timing, the actual performance of an individual intersection can differ in accordance with the numerous variables such as trip generation, trip distribution (including effect of any TEL toll), mode of travel, type of activity and driver behaviour. It is recommended that a base level of development is approved based on the above assessment with the subsequent timing of further development and / or infrastructure improvement subject to monitoring of the actual effects of traffic generated by RBP.

While not considered in detail in this assessment, it is likely, once the TEL is complete and SH2 reverts to the Te Puke Highway with a predominate access function servicing Te Puke, that consideration will be given to a strategy for the Te Puke Highway appropriate to its proposed function. This will likely include consideration of appropriate speeds, cross-section and consideration to all modes of travel. Any future reduction in speeds along this route will further mitigate safety concerns and potentially extend the timing of any future upgrades and / or enable consideration of different intersection improvement options.

It is therefore recommended that amendments are made to the District Plan to enable development of RBP and delaying the construction of a roundabout on Te Puke Highway in accordance with the following (with relevant provisions relating to internal road and existing roads as for the current plan):

- (i) To enable development of up to 70ha of RBP within Stages 1 and 2, completion of the following infrastructure:
- The RBP interchange on the Tauranga Eastern Link highway;
 - Entrance access road from TEL interchange to Young Road including associated roundabouts and associated road reserve widening for Young Road;
 - Collector and internal roads within the relevant development stage area;
 - Upgrading of Young Road between the Pah Road intersection and Te Tumu Road, including associated road reserve widening;
 - Pah Road / Young Road intersection upgrade (roundabout);
 - Upgrade of Pah Road to 10m wide sealed rural road standard between Young Road and Te Puke Highway;
 - Installation of barrier arms at the Pah Road railway crossing;
 - The area of road subject to the “access restriction” notation on the Structure Plans in Appendix 7 cannot be used to provide direct access from the Tauranga Eastern Link or Entrance Road to adjacent land.”;
 - Biennial monitoring of the safety and capacity performance of the Te Puke Highway intersections with Pah Road and Maketu Road. Upgrade of the Pah Road / Te Puke Highway intersection to a roundabout, or alternative intersection treatment, subject to final design and construction methodology being approved by the Road Controlling Authority, should the following

thresholds be met: If either intersection is classified as a “High Risk” intersection in terms of the NZTA High Risk Intersection Guide, or (for Pah Road only) if the average peak hour delays to side road traffic exceed 45s.

(ii) To enable development of greater than 70 ha of RBP, completion of the following infrastructure in addition to i) above:

- Upgrade of the intersection of Pah Road with Te Puke Highway to a roundabout or, other suitably designed form or, other suitable Te Puke Highway access provided (that eliminates the need to use Pah Road intersection), subject to the road controlling authorities approval.
- A left turn out slip lane shall be installed at the Maketu Road intersection with Te Puke Highway or, other suitably designed form or, other suitable Te Puke Highway access provided that eliminates RBP traffic from the Maketu Road intersection.

Alternatively, the upgrade of either intersection may be delayed subject to annual monitoring of the safety and capacity performance of the intersections to demonstrate the following thresholds have not been met: If either intersection is classified as a “High Risk” intersection in terms of the NZTA High Risk Intersection Guide or, in the case of Pah Road intersection, if the average peak hour delays to side road traffic exceed 45s or, in the case of Maketu Road intersection, if the peak hour queues on Maketu Road prevent right turning traffic from approaching the intersection.

If the threshold trigger for intersection treatment is reached at any of the above stages of development the council will, within 18 months, implement appropriate measures designed to improve the performance of the intersection.

TDG

Appendix A

TTM Modelled Traffic Flows

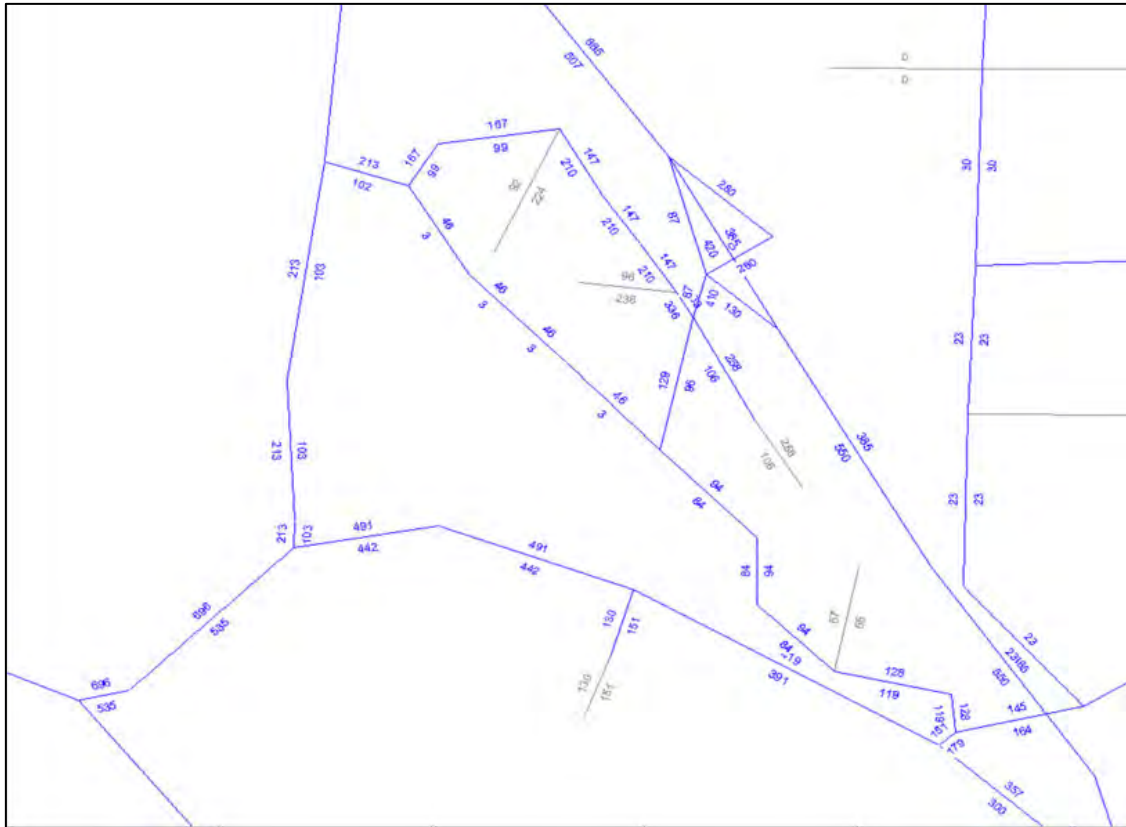


Figure 9: Indicative Network Links (RBP with TEL Interchange)

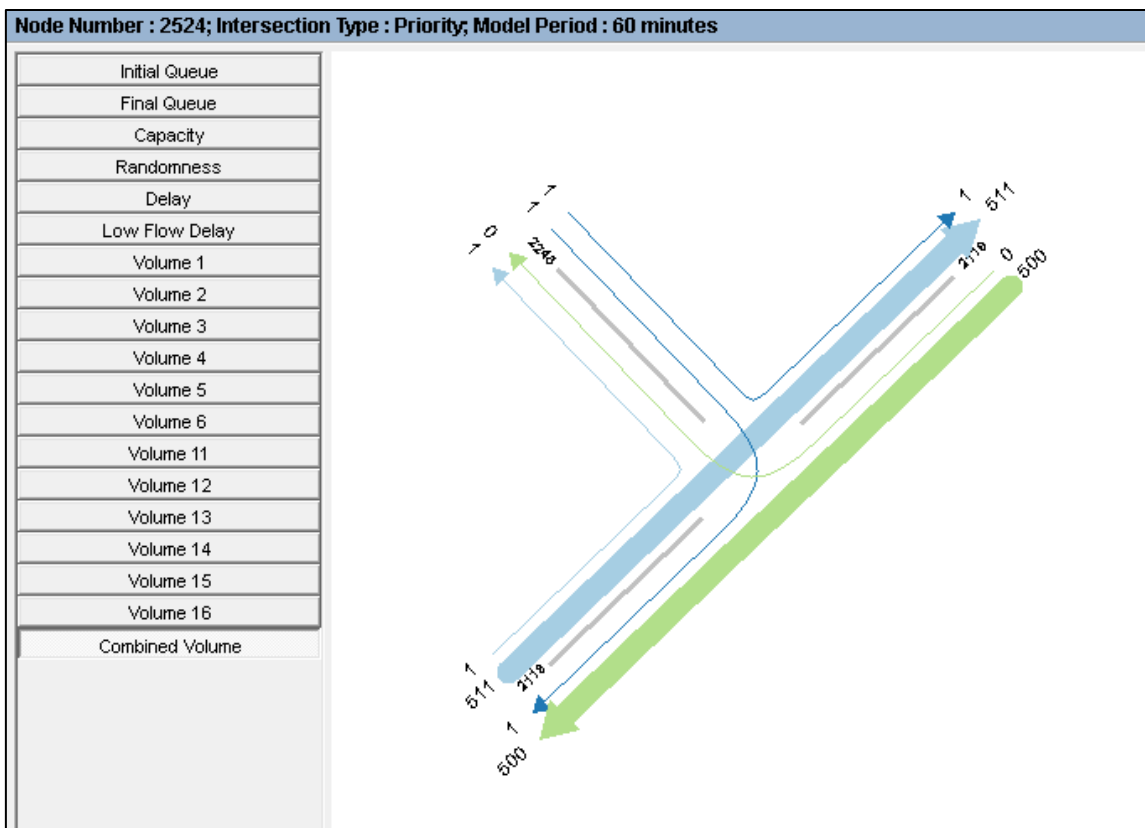


Figure 10: Pah Road / Te Puke Highway Intersection AM Peak 2021 No RBP

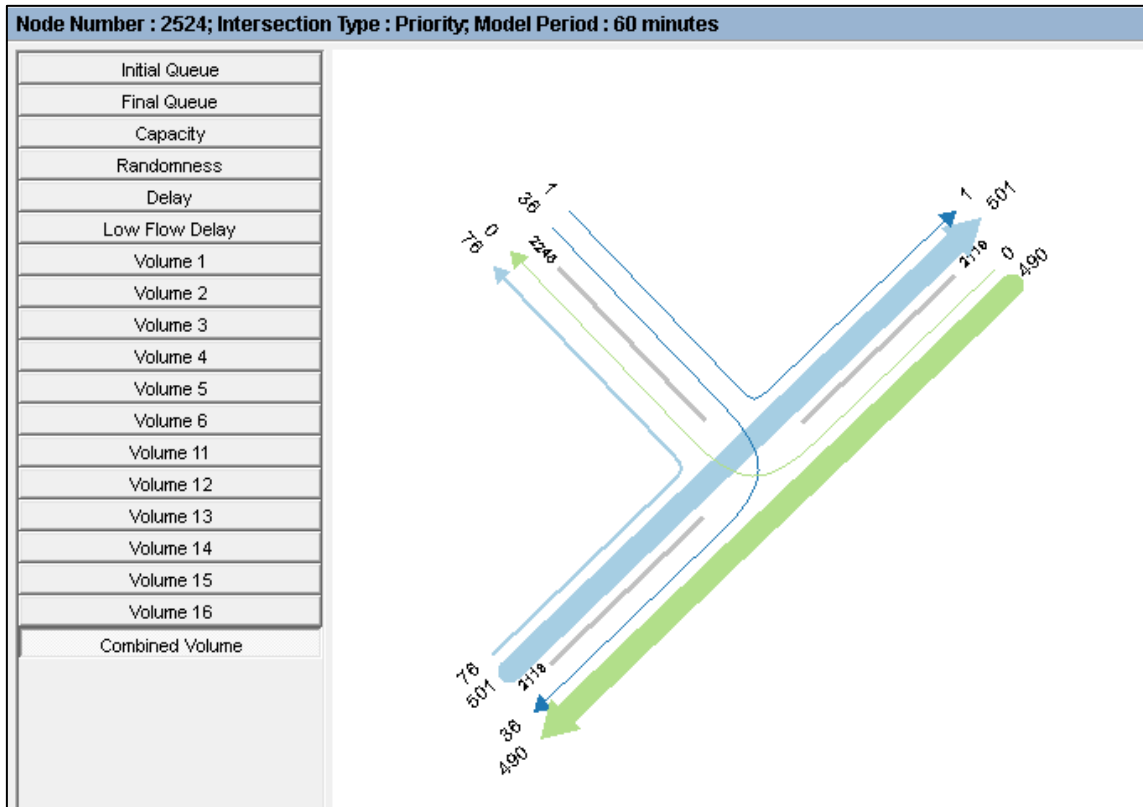


Figure 11 Pah Road / Te Puke Highway Intersection AM Peak 2021 With RBP

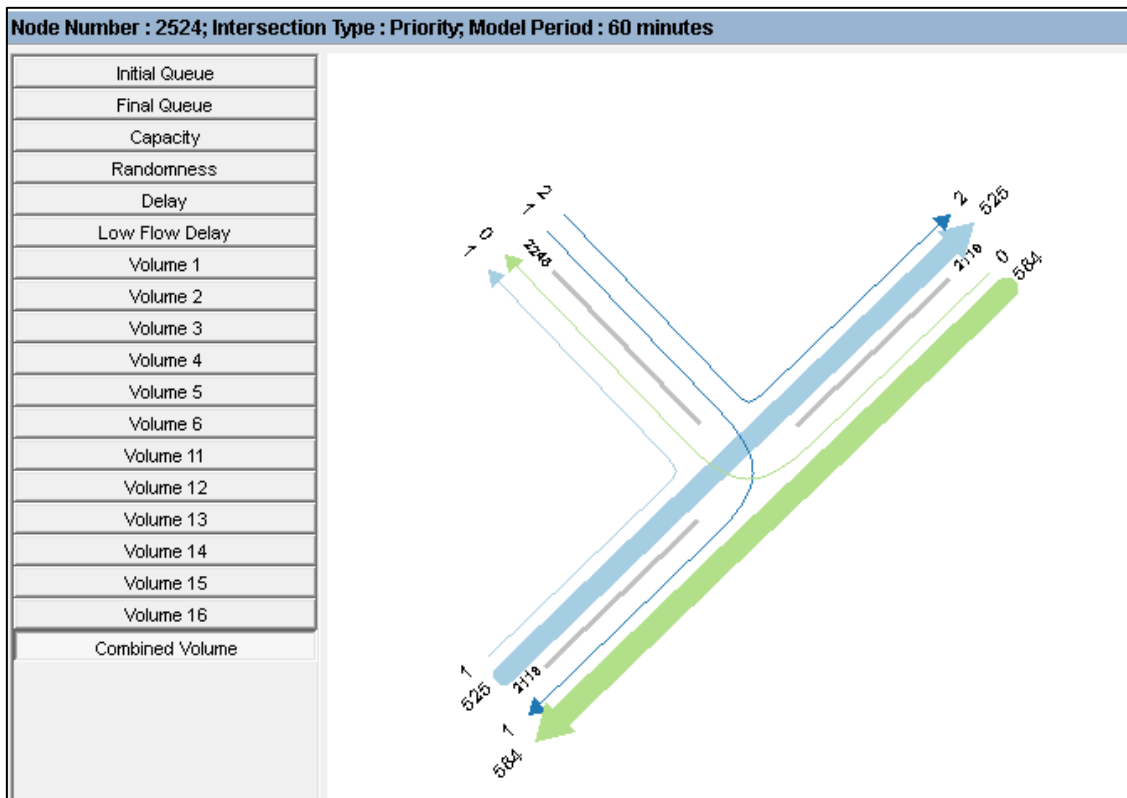


Figure 12 Pah Road / Te Puke Highway Intersection PM Peak 2021 No RBP

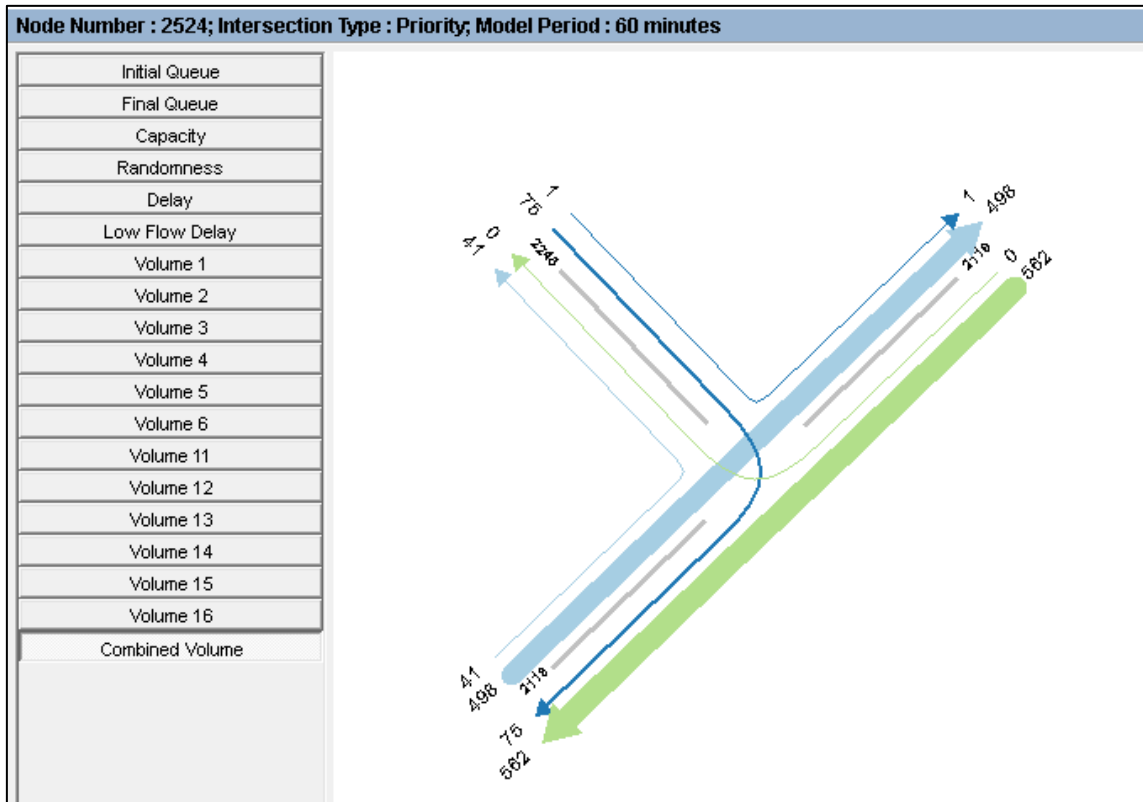


Figure 13 Pah Road / Te Puke Highway Intersection PM Peak 2021 With RBP

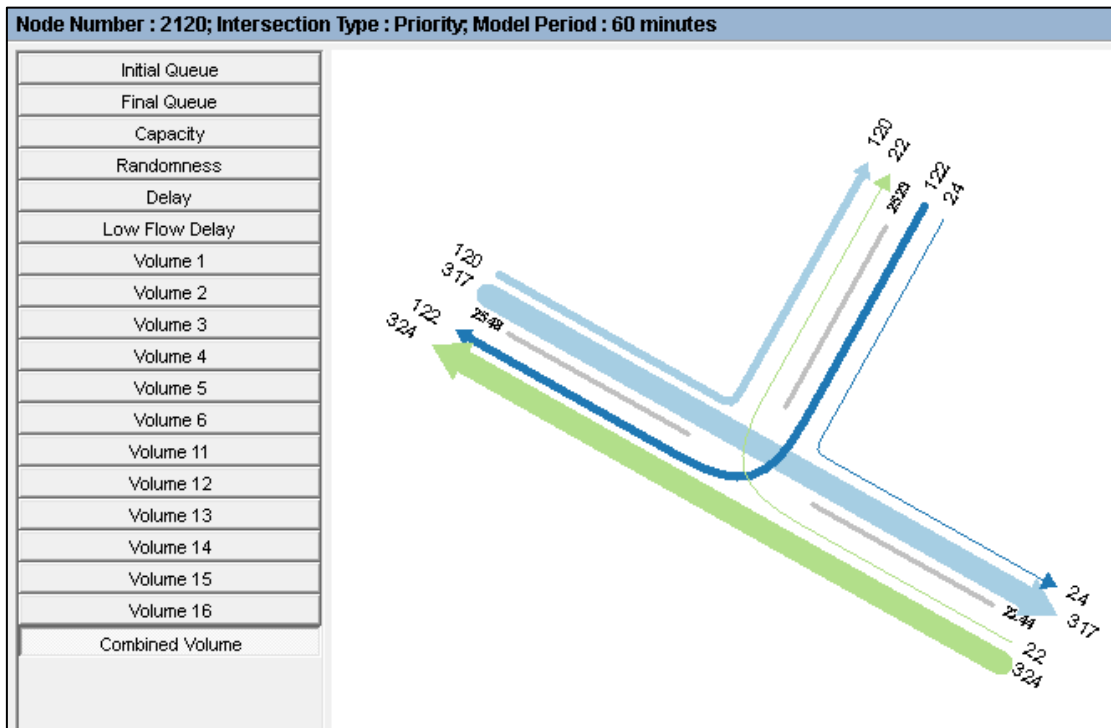


Figure 14 Maketu Road / Te Puke Highway Intersection AM Peak 2021 No RBP

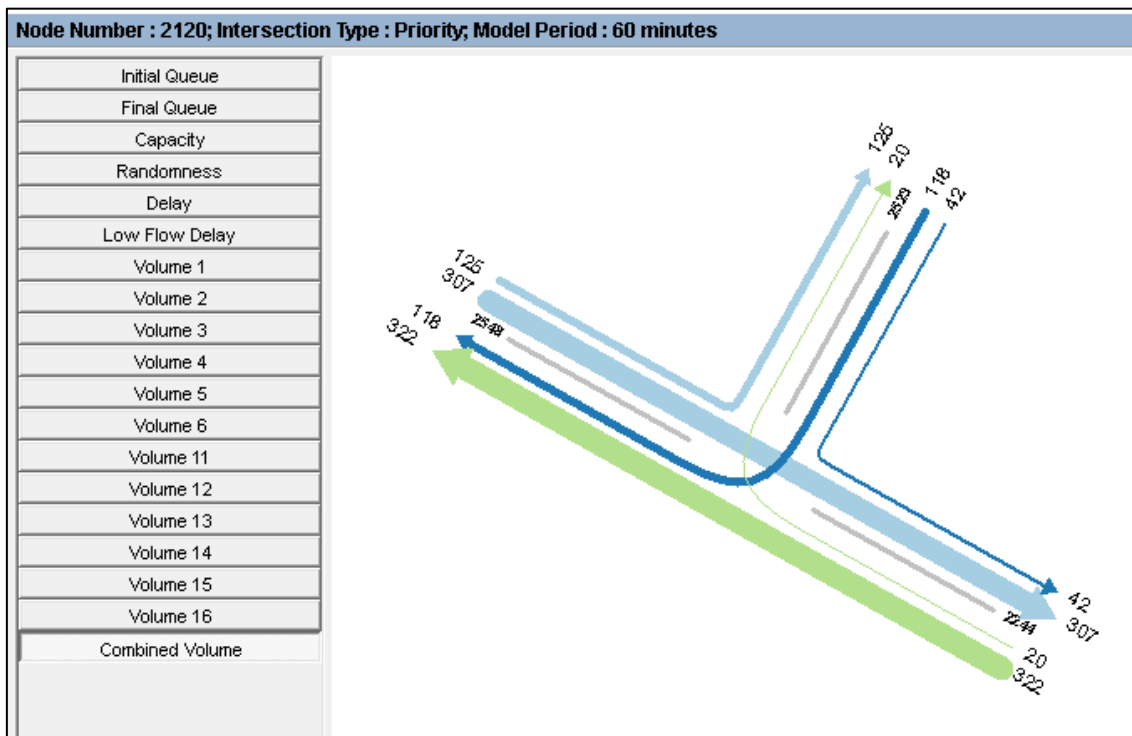


Figure 15 Maketu Road / Te Puke Highway Intersection AM Peak 2021 With RBP

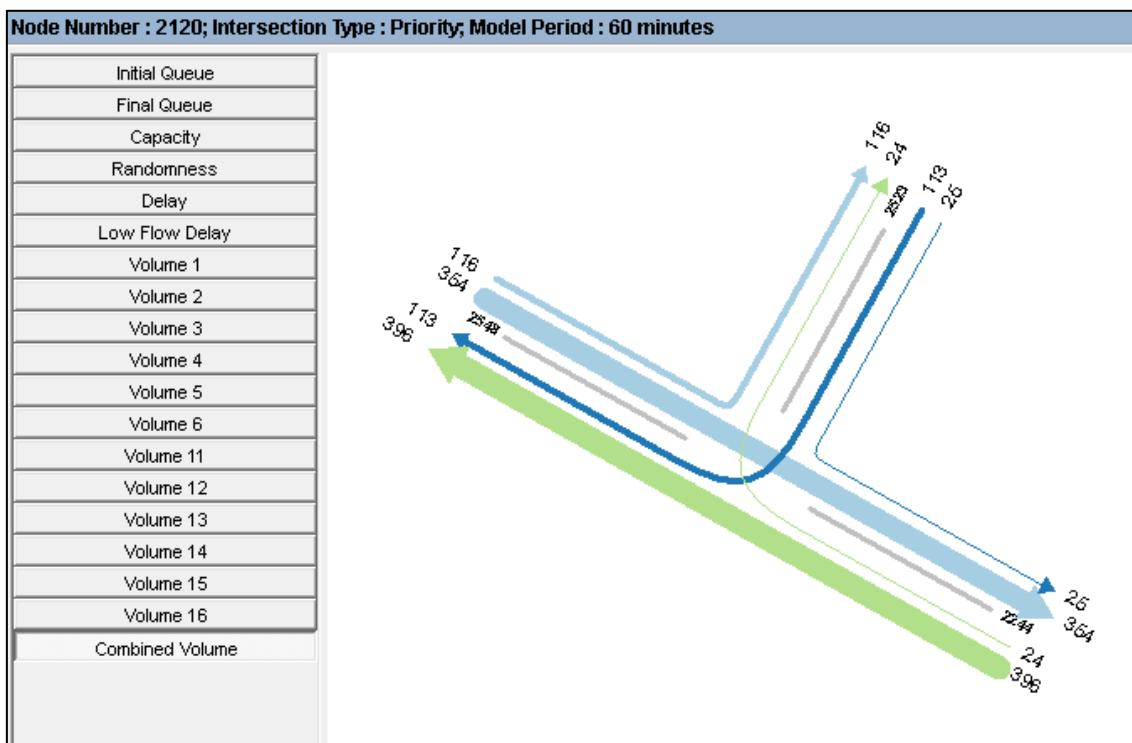


Figure 16 Maketu Road / Te Puke Highway Intersection PM Peak 2021 No RBP

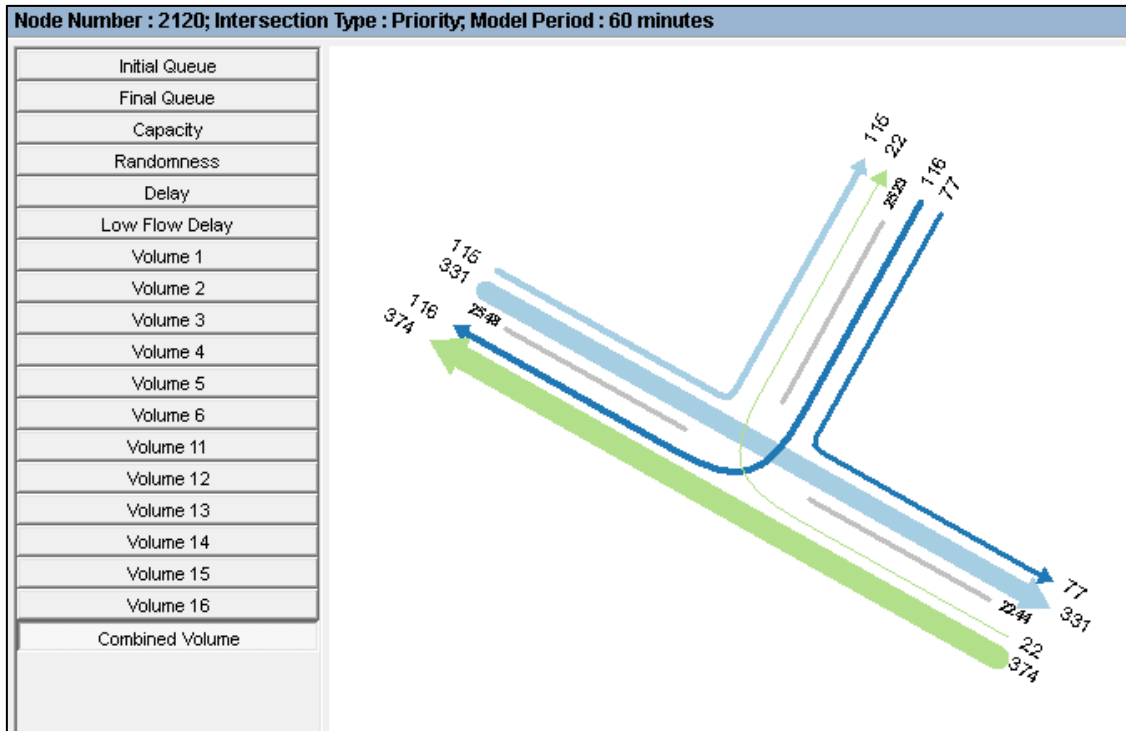


Figure 17 Maketu Road / Te Puke Highway Intersection PM Peak 2021 With RRB

Appendix B

Crash Predictive Modelling

(read Te Puke Highway where SH2 referred to)

High-Risk Intersections Guide December 2013: Collective and Personal Risk Analysis													
Year	Intersection Type	Appendix 4 (m)	Appendix 4 (c)	Proportion F&S	Avg DSI casualties per	Qmaj(1)	Qmaj(2)	Qmin(1)	Qmin(2)	Product of Flow	Injury crashes (5)	Collective Risk Avg DSI	Personal Risk Level
2021	Priority T	0.00299	0.002	0.27	0.37	15683	14154	1557	0	670	2.00	0.74	36
2026	Priority T	0.00299	0.002	0.27	0.37	16281	12138	4335	0	989	2.96	1.10	36
2031	Priority T	0.00299	0.002	0.27	0.37	19195	12138	7249	0	1264	3.78	1.40	36

EEM High Speed Roundabout - Conflict Model (8)(DSI factors from HRIG)

Treat as a 3 leg roundabout

2021 Pah Road Consented Development (no interchange with restriction on Young Road)

Intersection	Range Approach	Qapproach	bo	b1	Crash Rate	dsi ratio	dsi/yr equivalent	dsi/5 years
Approach 1	800 - 29,000	4030	1.50E-03	0.530	0.12			
Approach 2	800 - 29,000	16034	1.50E-03	0.530	0.25			
Approach 3	800 - 29,000	16276	1.50E-03	0.530	0.26			
Approach 4	800 - 29,000	0	1.50E-03	0.530	0.00			
Total					0.63	0.16	0.10	0.51

EEM High Speed Roundabout - Conflict Model (8)(DSI factors from HRIG)

Treat as a 3 leg roundabout

2021 Pah Road Consented Development (no interchange but without restriction on Young Road)

Intersection	Range Approach	Qapproach	bo	b1	Crash Rate (lnj crashes /yr)	dsi ratio	dsi/yr equivalent	dsi/5 years
Approach 1	800 - 29,000	2150	1.50E-03	0.530	0.09			
Approach 2	800 - 29,000	14154	1.50E-03	0.530	0.24			
Approach 3	800 - 29,000	16276	1.50E-03	0.530	0.26			
Approach 4	800 - 29,000	0	1.50E-03	0.530	0.00			
Total					0.58	0.16	0.09	0.47

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

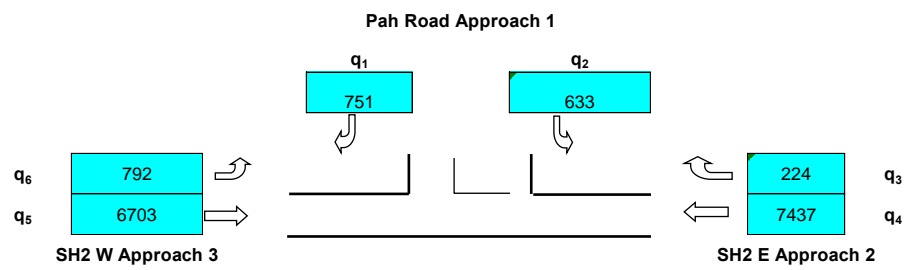
Project: Rangiuru Business Park
AADT Year/Scenario: 2021: With RBP and restriction on Young Road
Intersection: Pah Road /SH2



Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).



Reported Injury Accidents (by movement)

0.46 injury crashes per year **7.60** per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total Inj crashes/yr	DSI Ratio (HRIG)	DSI eq /yr
		1	2	3			
Crossing vehicle turning	JA			0.127	0.127		
Right turn plus following vehicle	GC,GD,GE		0.240		0.240		
Other major road approach to right of side road				0.051	0.051		
Other major road approach to left of side road			0.027		0.027		
Other side road approach		0.012			0.012		
Total					0.459	0.37	0.17



High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

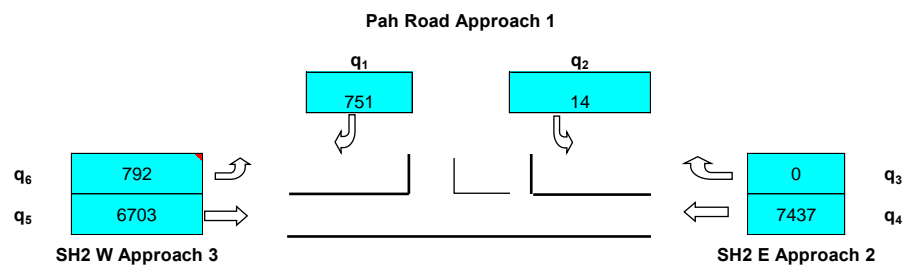
Project: Rangiuru Business Park
AADT Year/Scenario: 2021: With RBP no Young Road restriction
Intersection: Pah Road /SH2



Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).



Reported Injury Accidents (by movement)

0.22 injury crashes per year 3.80 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.127	0.127		
Right turn plus following vehicle	GC,GD,GE		0.000		0.000		
Other major road approach to right of side road				0.051	0.051		
Other major road approach to left of side road			0.027		0.027		
Other side road approach		0.012			0.012		
Total					0.218	0.37	0.08



High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

Project: Rangiuru Business Park



AADT Year/Scenario 2021: With RBP no Young Road restriction equivalent flows

Intersection: Pah Road /SH2

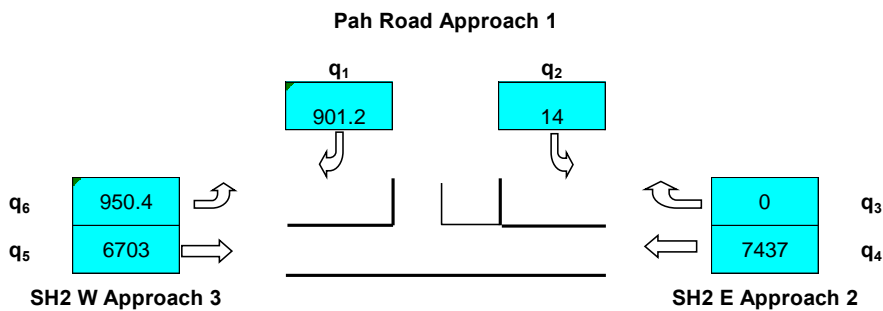
Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).

% increase

1.2



Reported Injury Accidents (by movement)

0.25 injury crashes per year **4.34** per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.162	0.162		
Right turn plus following vehicle	GC,GD,GE		0.000		0.000		
Other major road approach to right of side road				0.052	0.052		
Other major road approach to left of side road			0.027		0.027		
Other side road approach		0.012			0.012		
Total					0.254	0.37	0.09

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

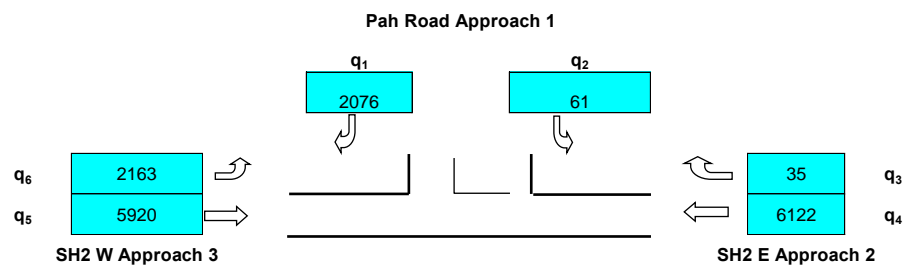
Project: Rangiuru Business Park
AAOT Year/Scenario: 2026: With RBP
Intersection: Pah Road /SH2



Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).



Reported Injury Accidents (by movement)

0.66 per year 11.11 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.483	0.483		
Right turn plus following vehicle	GC,GD,GE		0.090		0.090		
Other major road approach to right of side road				0.055	0.055		
Other major road approach to left of side road			0.025		0.025		
Other side road approach		0.012			0.012		
Total					0.664	0.37	0.25



High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

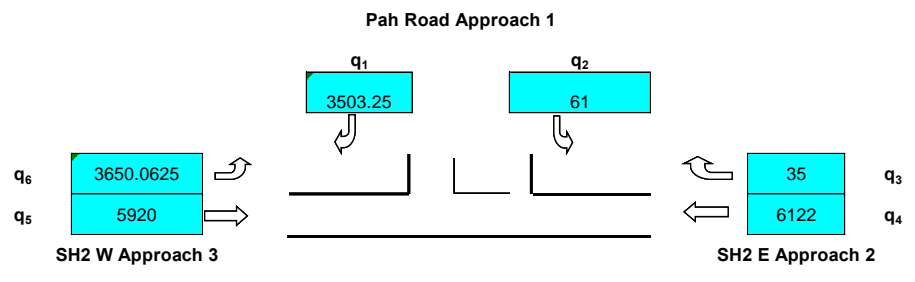
Project: Rangiuru Business Park
AADT Year/Scenario: 2031: With RBP
Intersection: Pah Road /SH2



Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).



Reported Injury Accidents (by movement)

1.16 per year 16.45 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.968	0.968		
Right turn plus	GC,GD,GE		0.090		0.090		
Other major road				0.064	0.064		
Other major road			0.025		0.025		
Other side road		0.012			0.012		
Total					1.158	0.37	0.43



High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

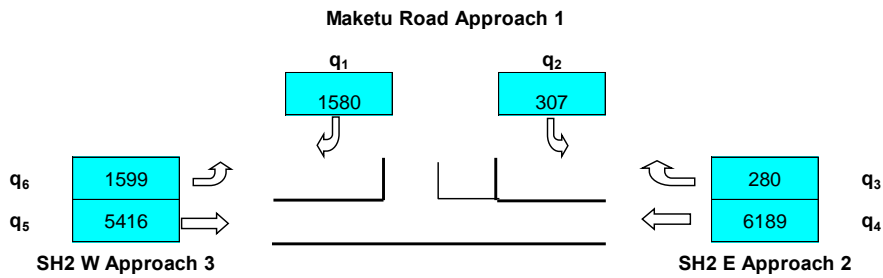
Project: Rangiuru Business Park
AADT Year/Scenario: 2021: Base Consented Layout with RBP
Intersection: Maketu Road /SH2



Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).



Reported Injury Accidents (by movement)

0.65 per year, 11.63 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.331	0.331		
Right turn plus following vehicle	GC,GD,GE		0.235		0.235		
Other major road approach to right of side road				0.048	0.048		
Other major road approach to left of side road			0.025		0.025		
Other side road approach		0.012			0.012		
Total					0.652	0.37	0.24

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

Project: Rangiuru Business Park



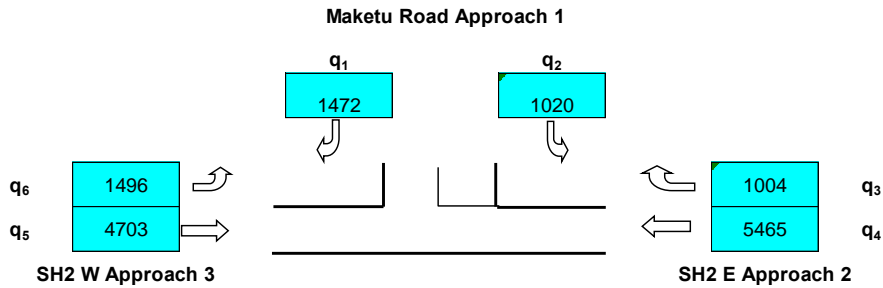
AADT Year/Scenario: 2021: Base (no Young Road restriction) Consented Layout with RBP no int

Intersection: Maketu Road /SH2

Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).




Reported Injury Accidents (by movement)

0.77 per year 13.83 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.295	0.295	0.37	0.28
Right turn plus following vehicle	GC,GD,GE		0.390		0.390		
Other major road approach to right of side road				0.043	0.043		
Other major road approach to left of side road			0.025		0.025		
Other side road approach		0.012			0.012		
Total					0.765		

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

Project: Rangioru Business Park 

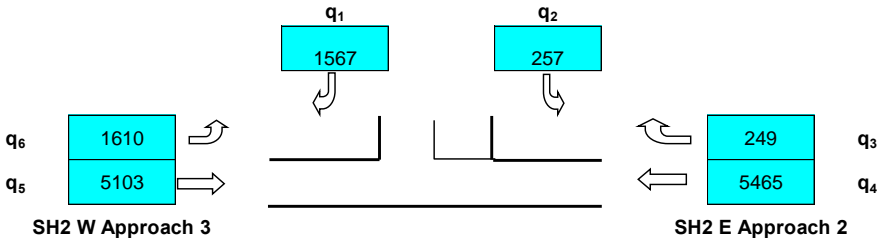
AADT Year/Scenario: 2021: with RBP and interchange (with Young Road restriction)

Intersection: Maketu Road /SH2

Models: NZTA EEM Volume 1 Model 10

Movement Counts
 Flows are average annual daily traffic flows (veh/day).

Maketu Road Approach 1



Reported Injury Accidents (by movement)
0.61 injury crashes per year 11.77 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.325	0.325		
Right turn plus following vehicle	GC,GD,GE		0.205		0.205		
Other major road approach to right of side road				0.046	0.046		
Other major road approach to left of side road			0.024		0.024		
Other side road approach		0.012			0.012		
Total					0.612	0.37	0.23

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

Project: Rangioru Business Park



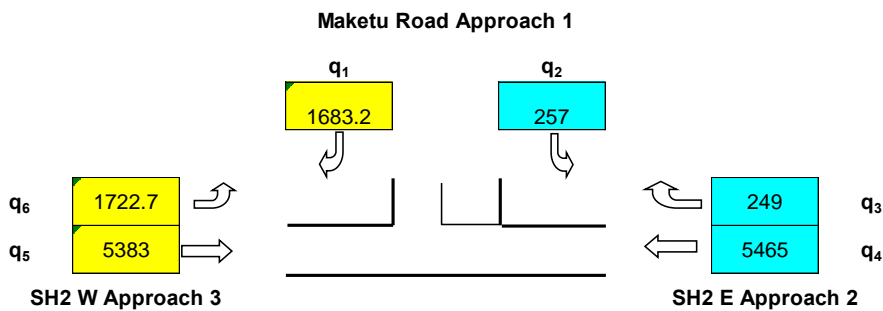
AADT Year/Scenario 2021: with RBP *1.7 and interchange with Young Road restriction

Intersection: Maketu Road /SH2

Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).



Reported Injury Accidents (by movement)

0.65 injury crashes per year
 12.06 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.360	0.360		
Right turn plus following vehicle	GC,GD,GE		0.205		0.205		
Other major road approach to right of side road				0.049	0.049		
Other major road approach to left of side road			0.024		0.024		
Other side road approach		0.012			0.012		
Total					0.650	0.37	0.24

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

Project: Rangiuru Business Park **TDG**

AADT Year/Scenario: 2021: Proposed (no Young Road restriction) with RBP with int

Intersection: Maketu Road /SH2

Models: NZTA EEM Volume 1 Model 10

Movement Counts
 Flows are average annual daily traffic flows (veh/day).

Maketu Road Approach 1

Reported Injury Accidents (by movement)
0.58 per year 11.24 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.292	0.292		
Right turn plus following vehicle	GC,GD,GE		0.205		0.205		
Other major road approach to right of side road				0.043	0.043		
Other major road approach to left of side road			0.024		0.024		
Other side road approach		0.012			0.012		
Total					0.576	0.37	0.21

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

Project: Rangioru Business Park



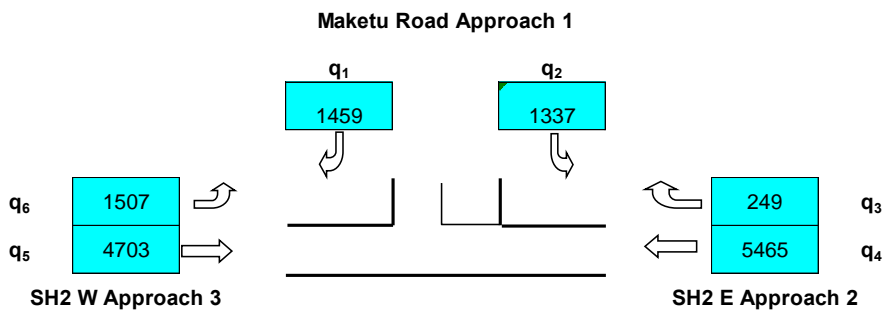
AADT Year/Scenario 2021: Proposed (no Young Road restriction) with RBP *1.7

Intersection: Maketu Road /SH2

Models: NZTA EEM Volume 1 Model 10

Movement Counts

Flows are average annual daily traffic flows (veh/day).



14720

Reported Injury Accidents (by movement)

0.58 per year **10.72** per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.292	0.292		
Right turn plus following vehicle	GC,GD,GE		0.205		0.205		
Other major road approach to right of side road				0.043	0.043		
Other major road approach to left of side road			0.024		0.024		
Other side road approach		0.012			0.012		
Total					0.576	0.37	0.21

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)

Project: Rangiuru Business Park **TDG**

AADT Year/Scenario: 2026: Proposed (no Young Road restriction) with RBP with int

Intersection: Maketu Road /SH2

Models: NZTA EEM Volume 1 Model 10

Movement Counts
 Flows are average annual daily traffic flows (veh/day).

Maketu Road Approach 1

Reported Injury Accidents (by movement)
0.50 per year 11.23 per 100 million vehicles

ACCIDENTS BY TYPE AND APPROACH

Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.272	0.272		
Right turn plus following vehicle	GC,GD,GE		0.159		0.159		
Other major road approach to right of side road				0.037	0.037		
Other major road approach to left of side road			0.020		0.020		
Other side road approach		0.012			0.012		
Total					0.500	0.37	0.19

High Speed (Rural >70km/h) Priority T-Junction Accident Prediction Model (Conflict Model)							
Project:	Rangiuru Business Park						
AADT Year/Scenario	2026: Proposed (no Young Road restriction) with RBP plus growth						
Intersection:	Maketu Road /SH2						
Models: NZTA EEM Volume 1 Model 10							
Movement Counts							
Flows are average annual daily traffic flows (veh/day).							
Maketu Road Approach 1							
		q₁		q₂			
		1416		6075			
		↓		↓			
q₆	1481	↶			↷ q₃		
q₅	3803	→			← q₄		
SH2 W Approach 3				SH2 E Approach 2			
Reported Injury Accidents (by movement)							
	0.50 per year			8.03 per 100 million vehicles			
ACCIDENTS BY TYPE AND APPROACH							
Accident Type	CAS Codes	Approach			Total	DSI ratio	DSI casualties /yr
		1	2	3			
Crossing vehicle turning	JA			0.272	0.272		
Right turn plus following vehicle	GC,GD,GE		0.159		0.159		
Other major road approach to right of side road				0.037	0.037		
Other major road approach to left of side road			0.020		0.020		
Other side road approach		0.012			0.012		
Total					0.500	0.37	0.185

High-Risk Intersections Guide December 2013: Collective and Personal Risk Analysis													
Year	Intersection Type	Appendix 4 (m)	Appendix 4 (c)	Proportion F&S	Avg DSI casualties	Qmaj(1)	Qmaj(2)	Qmin(1)	Qmin(2)	Product of Flow	Injury crashes	Collective Risk-	Personal Risk
2021	Base Consented (no interchange)	0.00299	0.002	0.27	0.37	14784	12192	3766	0	916	2.74	1.01	36
2021	Base with no Young Rd restriction	0.00299	0.002	0.27	0.37	13136	12192	4992	0	1000	2.99	1.11	36
2021	With Interchange and Young Rd restriction	0.00299	0.002	0.27	0.37	13745	11074	3683	0	878	2.63	0.97	36
2021	With Interchange and no Young Rd restriction	0.00299	0.002	0.27	0.37	13134	11074	3872	0	887	2.65	0.98	36
2026	With Interchange and no Young Rd restriction	0.00299	0.002	0.27	0.37	10766	9303	4331	0	861	2.58	0.95	36
2031	With Interchange and no Young Rd restriction	0.00299	0.002	0.27	0.37	10766	10015	5043	0	928	2.78	1.03	36

Appendix C

SIDRA Capacity Analysis

(read Te Puke Highway where SH2 referred to)

MOVEMENT SUMMARY

Site: SH2 - Pah Road 2021 PM
With RBP

SH2 - Pah Road
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV %	Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h	%	v/c	sec		veh	m	per veh	km/h	
East: SH2 east											
5	T	592	10.0	0.324	4.2	LOS A	4.0	30.6	0.74	0.00	64.9
6	R	1	10.0	0.324	16.7	LOS C	4.0	30.6	0.74	1.15	66.5
Approach		593	10.0	0.324	4.2	NA	4.0	30.6	0.74	0.00	64.9
North: Pah Rd											
7	L	2	10.0	0.005	17.4	LOS C	0.0	0.1	0.52	0.81	58.9
9	R	79	10.0	0.323	31.0	LOS D	1.2	9.0	0.84	1.03	45.5
Approach		81	10.0	0.323	30.7	LOS D	1.2	9.0	0.84	1.03	45.8
West: SH2 west											
10	L	43	10.0	0.025	12.6	LOS B	0.0	0.0	0.00	0.75	64.0
11	T	524	10.0	0.286	0.0	LOS A	0.0	0.0	0.00	0.00	90.0
Approach		567	10.0	0.286	1.0	NA	0.0	0.0	0.00	0.06	87.4
All Vehicles		1241	10.0	0.324	4.4	NA	4.0	30.6	0.41	0.09	71.4

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: SH2 - Pah Road 2026 PM
With RBP

SH2 - Pah Road
Stop (Two-Way)
Design Life Analysis (Practical Capacity): Results for 3 years

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
							Vehicles veh	Distance m			
East: SH2 east											
5	T	560	10.0	0.309	4.4	LOS A	3.8	29.2	0.75	0.00	64.7
6	R	3	10.0	0.309	16.9	LOS C	3.8	29.2	0.75	1.15	66.1
Approach		563	10.0	0.309	4.5	NA	3.8	29.2	0.75	0.01	64.7
North: Pah Rd											
7	L	6	10.0	0.014	17.4	LOS C	0.0	0.2	0.52	0.84	58.8
9	R	227	10.0	0.793	42.7	LOS E	5.2	39.2	0.94	1.26	37.9
Approach		233	10.0	0.793	42.0	LOS E	5.2	39.2	0.93	1.25	38.3
West: SH2 west											
10	L	124	10.0	0.071	12.6	LOS B	0.0	0.0	0.00	0.75	64.0
11	T	479	10.0	0.262	0.0	LOS A	0.0	0.0	0.00	0.00	90.0
Approach		603	10.0	0.262	2.6	NA	0.0	0.0	0.00	0.15	83.2
All Vehicles		1399	10.0	0.793	9.9	NA	5.2	39.2	0.46	0.28	63.6

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: SH2 - Maketu Road 2026
PM No RBP

SH2 - Maketu Road
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: SH2 east											
5	T	431	10.0	0.235	0.0	LOS A	0.0	0.0	0.00	0.00	90.0
6	R	25	10.0	0.027	14.5	LOS B	0.1	0.8	0.50	0.72	61.1
Approach		456	10.0	0.235	0.8	NA	0.1	0.8	0.03	0.04	87.8
North: Maketu Rd											
7	L	26	10.0	0.054	16.7	LOS C	0.1	0.9	0.47	0.87	59.6
9	R	125	10.0	0.344	25.1	LOS D	1.4	10.8	0.77	1.04	50.6
Approach		152	10.0	0.344	23.7	LOS C	1.4	10.8	0.71	1.01	51.9
West: SH2 west											
10	L	122	10.0	0.070	12.6	LOS B	0.0	0.0	0.00	0.75	64.0
11	T	371	10.0	0.202	0.0	LOS A	0.0	0.0	0.00	0.00	90.0
Approach		493	10.0	0.202	3.1	NA	0.0	0.0	0.00	0.19	81.9
All Vehicles		1100	10.0	0.344	5.0	NA	1.4	10.8	0.11	0.24	78.0

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: SH2 - Maketu Road 2026
PM with RBP

SH2 - Maketu Road
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: SH2 east											
5	T	364	10.0	0.199	0.0	LOS A	0.0	0.0	0.00	0.00	90.0
6	R	22	10.0	0.023	14.2	LOS B	0.1	0.6	0.47	0.71	61.4
Approach		386	10.0	0.199	0.8	NA	0.1	0.6	0.03	0.04	87.7
North: Maketu Rd											
7	L	167	10.0	0.331	17.0	LOS C	0.8	6.4	0.48	0.93	59.4
9	R	131	10.0	0.299	22.4	LOS C	1.2	9.3	0.70	1.03	53.3
Approach		298	10.0	0.331	19.3	LOS C	1.2	9.3	0.58	0.97	56.5
West: SH2 west											
10	L	117	10.0	0.067	12.6	LOS B	0.0	0.0	0.00	0.75	64.0
11	T	320	10.0	0.175	0.0	LOS A	0.0	0.0	0.00	0.00	90.0
Approach		437	10.0	0.175	3.4	NA	0.0	0.0	0.00	0.20	81.3
All Vehicles		1121	10.0	0.331	6.7	NA	1.2	9.3	0.16	0.35	74.7

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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Appendix D

Te Puke Highway Speed Surveys West of Pah Road

Speed Summary Report

Road Name: SH2 - Te Puke
 Location: Approx 200m west of Pah Rd <100kph> Te Puke
 GPS Location: E1896684 N5812107
 Council: Western Bay of Plenty District Council
 Direction: To Pah Rd
 Scheme: NZTA Classification Scheme 2011
 Data for week ending: Sun 18-Aug-13

Date	< 10 kph	11-20 kph	21-30 kph	31-40 kph	41-50 kph	51-60 kph	61-70 kph	71-80 kph	81-90 kph	91-100 kph	101-110 kph	111-120 kph	121-130 kph	131-140 kph	141-150 kph	151-160 kph	Daily Total
Aug-13																	
Mon 12-Aug-13	0	1	2	30	25	28	253	2019	3454	1061	67	3	0	0	0	0	6943
Tue 13-Aug-13	0	2	4	9	4	39	322	2521	3733	867	56	1	1	0	1	1	7961
Wed 14-Aug-13	1	2	3	8	8	43	457	2993	3356	795	74	5	1	0	0	0	7746
Thu 15-Aug-13	0	2	5	7	6	50	476	3168	3357	649	47	3	1	0	0	0	7771
Fri 16-Aug-13	1	2	8	8	13	55	448	3057	3092	774	70	4	0	1	1	0	8134
Sat 17-Aug-13	1	0	3	4	3	42	327	2162	2813	591	37	1	2	0	0	1	5987
Sun 18-Aug-13	0	2	3	4	2	19	262	1810	2456	598	35	7	2	0	1	0	5201
Total	3	11	28	70	61	276	2545	17730	22801	5335	386	24	7	1	3	2	49337

<<< SPEED STATISTICS SUMMARY >>>

Direction:	To Pah Rd																		
Posted Speed				100 kph														Total Vehicles Surveyed	49343
Mean Speed				81.30 kph														Vehicles Exceeding Posted Speed	423
Standard Deviation				7.88 kph														Percentage Exceeding Posted Speed	0.8%
85th Percentile Speed				89 kph														S/Day (Av) =	7631
																		T/Day (Av) =	7049

Prepared by Data Traffic - Tauranga

Speed Summary Report

Road Name: SH2 - Te Puke
 Location: Approx 200m west of Pah Rd <100kph> Te Puke
 GPS Location: E1896684 N5812107
 Council: Western Bay of Plenty District Council
 Direction: From Pah Rd
 Scheme: NZTA Classification Scheme 2011
 Data for week ending: Sun 18-Aug-13

Date	< 10 kph	11-20 kph	21-30 kph	31-40 kph	41-50 kph	51-60 kph	61-70 kph	71-80 kph	81-90 kph	91-100 kph	101-110 kph	111-120 kph	121-130 kph	131-140 kph	141-150 kph	151-160 kph	Daily Total
Aug-13																	
Mon 12-Aug-13	0	2	7	10	10	55	320	1946	3620	872	50	1	1	1	0	0	6895
Tue 13-Aug-13	1	3	5	11	12	127	414	2211	3798	914	58	1	2	0	0	0	7557
Wed 14-Aug-13	1	2	7	11	13	53	390	2326	3892	962	58	2	1	0	0	0	7718
Thu 15-Aug-13	2	0	7	9	13	61	401	2434	3938	856	39	8	3	0	1	0	7774
Fri 16-Aug-13	0	0	1	11	29	83	494	2540	3855	912	49	5	0	1	1	0	7581
Sat 17-Aug-13	2	0	1	5	13	35	208	1368	3141	1169	69	0	0	2	0	0	6013
Sun 18-Aug-13	1	0	3	6	6	57	262	1323	2781	938	60	2	0	0	1	0	5440
Total	7	7	31	63	96	471	2489	14148	25025	6625	383	19	7	4	3	0	49371

<<< SPEED STATISTICS SUMMARY >>>

Direction:	From Pah Rd																		
Posted Speed				100 kph														Total Vehicles Surveyed	49378
Mean Speed				82.30 kph														Vehicles Exceeding Posted Speed	416
Standard Deviation				8.30 kph														Percentage Exceeding Posted Speed	0.8%
85th Percentile Speed				90 kph														S/Day (Av) =	7585
																		T/Day (Av) =	7054

Prepared by Data Traffic - Tauranga

Memo

To: Scott Hamilton

Cc: Project Team

From: Ian Carlisle

Date: 31 August 2015

Job N^o: 9993.10

Subject: RBP Internal Roads Cross-Sections

TDG has been requested to provide an assessment of the minimum standard of internal road cross – sections that may be supported to provide access to RBP. This memo sets out the findings of this assessment as it relates to the proposed arterial and collector road network within RBP.

Forecast Traffic Flows

The modelled traffic flows for RBP with the TEL for 2021 and 2026 are appended (TTM 5.9). The network is based on the existing road network with a connection to the TEL by way of a three legged interchange. All development in RBP is in either Stage 1 or 2 areas which are to the north and east of Young Road.

The rate of initial development of RBP that has been modelled in the TTM includes the following expected take up of industrial land as provided by Quayside Properties and which has been adopted in this assessment:

- 2021: 16% (23ha); and
- 2026: 48% (70ha).

Forecast traffic flows beyond 2026 have been assessed with reference to the modelled flows for 2026 as above factored to full development on a proportionate basis. This assessment method for the “ultimate” traffic volumes for each road will likely over-estimate flows as the scale of development in future years would result in a reduced trip rate external to the development. Daily flows have been generated using applied factors to peak hour flows as previously supplied for the TTM in this area.

Furthermore, the growth has been applied to all traffic volumes which includes traffic associated with Maketu and Affco for example, for which the traffic growth would be expected to be minimal. In this respect the roads expected to carry this traffic (Young Road for example) will have elevated forecasts and overall overestimate background traffic growth on the network.

References

In developing the recommended road cross-sections for the internal road network, reference has been made to the following established standards, guidelines and statutory documents, in approximate order of relevance. Recommendations below relate to considerations for traffic and



additional allowance should be made within the road corridor for other features to be accommodated including landscaping/trees, utilities, and streetlighting. In the absence of specific assessment it is recommended that the minimum berm widths currently specified in the District Plan are provided for.

- WBOPDC Development Code
 - Rural: 8.5m carriageway 1,000 – 2500 vpd
 - Specific Design >2,500 vpd
 - Urban: 11m <1,000 pce (industrial)
 - 13m >1,000pce (industrial)
 - 2.5m shared path width
- TCC Development Code
 - Rural: 9.0m > 1,000 vpd (level terrain)
 - Urban: 12.4m <5,000 vpd (industrial)
 - 2*6.7m (2.2m pk;1.5m cycle;3.0m traffic)<12,000vpd
- Austroads Guide to Road Design
 - Rural: 11.0m carriageway 1,000 to 3,000 vpd
 - 12.0m carriageway > 3,000 vpd
 - Urban: 3.3 - 3.5m general traffic lane
 - 4.2m kerbside lane (high truck volumes)
- NZTA State Highway Design Manual
 - 8.5m carriageway 2,000 to 4,000 vpd
 - 10.0 m carriageway >4,000 vpd

Main Entrance Road (First Internal Roundabout to TEL)

- 2026 Flow: 4,910 veh/day (vpd)
- “Ultimate” Flow: 10,200 vpd (peak hour single direction 853 veh/h (vph))

This entrance road provides the main access to RBP and links the TEL to the first internal roundabout intersection located approximately 170m from the TEL ramps. This section of road will be subject to an access restriction with no direct access from the adjacent land to the TEL or the Entrance Road.

Based on the forecast traffic volumes a single lane in each direction is adequate for the foreseeable future. Parking will not be permitted on this section of road and cycle movements will be accommodated on an off-road facility. As the adjacent sites will not have direct access to the road, no parking will be permitted and the west side of the road has a drainage reserve, a pedestrian / cycle facility will only be necessary on the one side of the road providing that adequate crossing points are located at intersections.

Council have advised that in the longer term a potential Kaituna Link road may provide a connection from the TEL interchange to the Papamoa coast. In this instance traffic volumes on the Entrance Road may increase and Council wish to future proof the corridor should future four-laning of this section be necessary. The future widening has been allowed for in the central median for this purpose.

Based on the above description of use and future proofing the minimum recommended cross-section for this section has been developed as: 4.2m kerbside lanes; 2.5m shared path on east side and 10m



median (with 8.4 physical median island and the ability to reduce to 2.4m island should two additional lanes be required in the future).

Main Entrance Road (First Internal Roundabout to Young Road)

- 2026 Flow: 2,281 veh/day (vpd)
- “Ultimate” Flow: 4,744 vpd (peak hour single direction 466 veh/h (vph))

This entrance road provides the main access to RBP and forms the southern section of the link from the TEL to Young Road (first internal roundabout to Young Road). This section of road was previously considered to be access restricted in the District Plan. However, based on the expected ultimate flows any form of restriction is not considered essential. Indeed a drainage reserve on the west side of the road will provide a natural restriction to the formation of access to the adjacent land.

Based on the forecast traffic volumes a single lane in each direction is adequate for the foreseeable future with allowance for turning movements, property access and parallel parking. Parking is not likely to be well utilised on the west side due to the drainage reserve separate to adjacent development and parking is able to be accommodated on the east side without undue effect on the proposed traffic flows. Cycle movements will be accommodated on an off-road facility. With no parking permitted and the west side of the road and the drainage reserve separation, a pedestrian / cycle facility will only be necessary on the one side of the road providing that adequate crossing points are located at intersections.

Council have advised that in the longer term a potential Kaituna Link road may provide a connection from the TEL interchange to the Papamoa coast. In this instance traffic volumes on the Entrance Road may increase and Council wish to future proof the corridor should future four-laning of this section be necessary. The future widening will need to be allowed for on either side of the road noting that future widening on one side of the road would likely require reshaping the majority of the majority of the carriageway at that time, although also noting that future traffic volumes may or may not warrant a four lane cross-section (which will be heavily influenced by other factors such as the inclusion of a mid-block intersection on Te Puke Highway.

Based on the above description of use and future proofing the minimum recommended cross-section for this section has been developed as: 4.2m traffic lanes; 3.0m flush median; 2.2m parking lane east side; and 2.5m shared path on east side.

Collector Roads (within industrial area with property access)

- 2026 Flow: Up to 2,535 veh/day (vpd)
- “Ultimate” Flow: Up to 5,274 vpd (peak hour single direction 451 veh/h (vph))

These collector roads provide for both through traffic and property access to adjacent lots.

Based on the forecast traffic volumes a single lane in each direction is adequate for the foreseeable future with allowance for turning movements, property access and parallel parking. Cycle movements will be accommodated on an off-road facility. It is noted that future traffic volumes will be heavily influenced by other factors such as the inclusion of a mid-block intersection on Te Puke Highway.

Based on the above description of use the minimum recommended cross-section for this section has been developed as: 2.2m parking lanes; 4.2m traffic lanes; 2.5m flush median; and 2.5m shared paths each side.



The ‘urbanisation’ of the road corridor is able to be staged in conjunction with the adjacent land development. In this respect the Young Road corridor north and south sides could be completed in conjunction with the north and south stages of industrial development, providing the full lane widths in each direction are achieved, although in practice it may be more efficient to complete at one time.

Collector Roads (with no property access to industrial lots)

- 2026 Flow: Up to 4,353 veh/day (vpd)
- “Ultimate” Flow: Up to 9,055 vpd (peak hour single direction 443 veh/h (vph))

These collector roads provide for through traffic but not intended to provide for access to industrial sites. These roads are intended to remain as rural type with any adjacent industrial activity to be serviced from other internal roads. No roadside parking will be permitted and an off-road cycle and pedestrian facility is intended on one side of the road.

Based on the forecast traffic volumes with reference to New Zealand standards listed above and application of engineering assessment, it is recommended that the collector roads should be upgraded a minimum width of 8.5m to 2026 (ie 70ha of RBP), with further upgrade to 10 m carriageway width to cater for the ultimate traffic volumes.

This rural collector standard will also be applicable to Pah Road (from Young Road to Te Puke Highway) and Young Road (from RBP zone to Maketu Road). It is noted that future traffic volumes will be heavily influenced by other factors such as the inclusion of a mid-block intersection on Te Puke Highway.

Intersection of Entrance Road and Young Road

Young Road Traffic Flow: 274 vph (2026 east leg)

Entrance Road: 296 vph (2026 - north leg)

Based on the forecast traffic volumes for the intersection of the Entrance Road and Young Road for 2026 (ie development only on the north side of Young Road), a standard “t” intersection with a right turn bay facility would be appropriate to cater for the expected traffic. The intersection will be required to be designed to meet Council’s intersection standards including and importantly the safe intersection sight line requirements.

The ultimate intersection form which is a proposed roundabout is therefore able to be delayed until such a time as the proposed collector road is developed as the fourth intersection leg to the south.

Intersection of Northern Collector Road and Young Road

Young Road Traffic Flow: 323 vph (2026 west leg)

Northern Collector Road: 299 vph (2026 - north leg)

Based on the forecast traffic volumes for the intersection of the Entrance Road and Young Road for 2026 (ie development only on the north side of Young Road), a standard “t” intersection with a right turn bay facility would be appropriate to cater for the expected traffic. The intersection will be required to be designed to meet Council’s intersection standards including and importantly the safe intersection sight line requirements.



The ultimate intersection form which is a proposed roundabout is therefore able to be delayed until such a time as the proposed collector road is developed as the fourth intersection leg to the south.

Intersection of Southern Collector Road and Young Road

Young Road Traffic Flow: 274 vph (2026 east leg)

570 vph ('ultimate')

Southern Collector Road: <194 vph (2026 and "ultimate"- estimate¹ north leg)

Based on the forecast traffic volumes for the intersection of the Entrance Road and Young Road for 2026 (ie development only on the north side of Young Road), a standard "t" intersection with a right turn bay facility would be appropriate to cater for the expected traffic. The intersection will be required to be designed to meet Council's intersection standards including and importantly the safe intersection sight line requirements (noting that the indicative intersection location is close to a curve in the road which will require a sight line to be secured and/or appropriate speed management).

The forecast traffic volumes for this intersection are not based on a traffic model and there is expected to be some variation depending on route choice. However, as the proposed roundabout at the intersection of the Entrance Road and Young Road provide an alternative choice for traffic based on the southern collector road, should the intersection delay and /or safety performance exceed acceptable limits, then drivers will likely adopt the alternative routes with roundabouts at the intersections.

Intersection of Pah Road and Young Road

Young/Pah Road Sth traffic flow: 323 vph (2026)

672 vph ("ultimate")

Pah Road Nth Leg: <10 vph

While the expected traffic volumes on the Pah Road North leg of its intersection with Young Road are very light, the current District Plan includes provision for a roundabout at the intersection of Pah Road and Young Road.

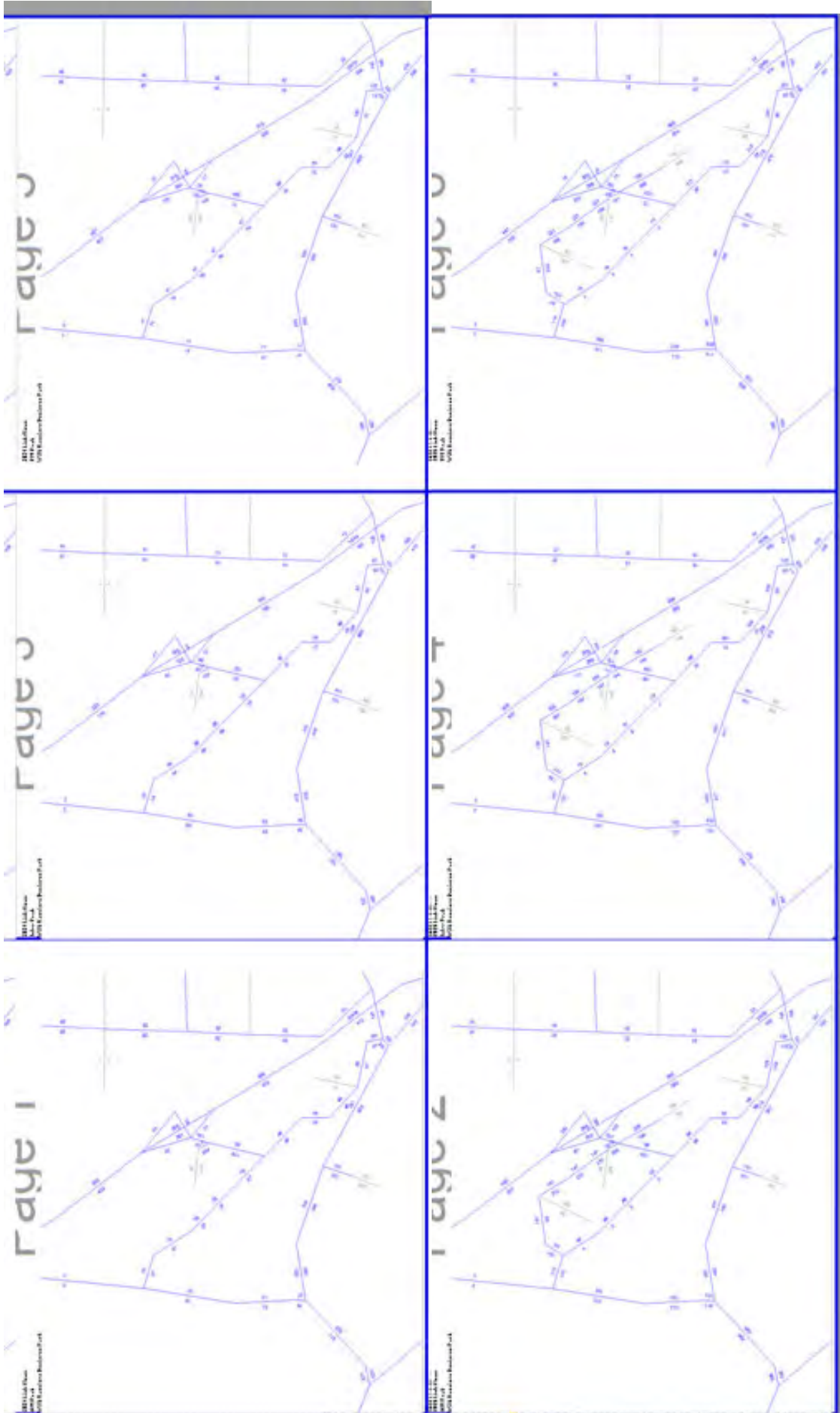
From a traffic capacity perspective the intersection would operate adequately as a standard "t" intersection. While the turning volumes are very low, with the expected high through volume on the priority leg approaching 10,000 vpd, it is recommended that a right turn bay or flush median be incorporated to eliminate any restriction on through flow.

Moreover, the existing intersection and any relocated "t" intersection has less than desirable sight lines which are constrained by existing and potentially future vegetation growth on the property on the inside of the curve opposite the intersection. All options require a sight line which crosses the existing boundary. In addition, ideally the curve would be eased and as a minimum will require widening.

¹ Based 50:50 directional split between Entrance Road and Young Road



It is recommended that a rule is developed that requires the construction of an appropriate intersection form (incorporating provision for right turning traffic) and designed in accordance with the standards set out in Council's Development Code.

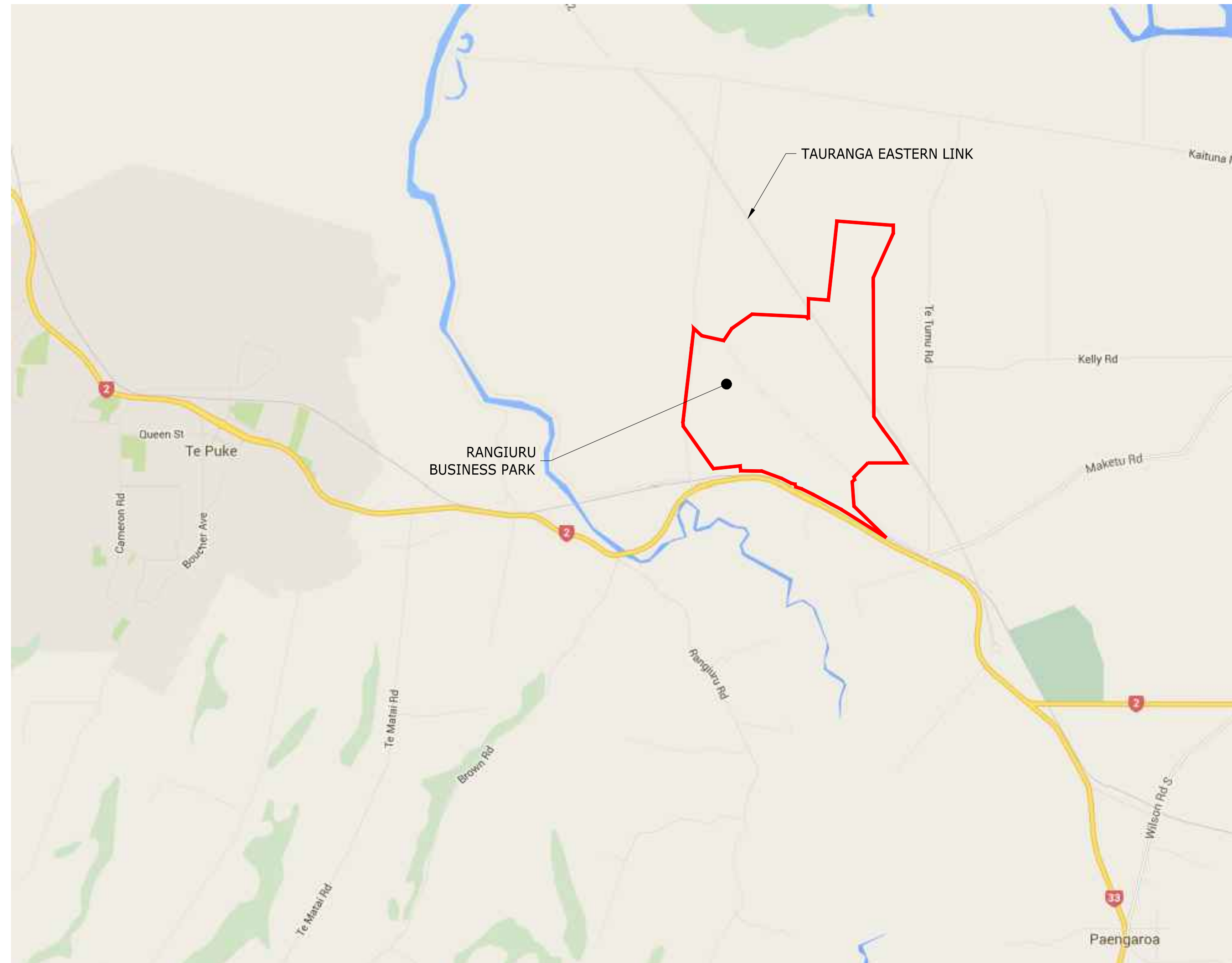


APPENDIX 4
VARIOUS SERVICES PLANS

QUAYSIDE PROPERTIES LTD

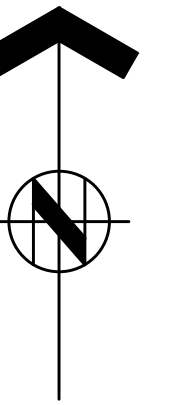
RANGIURU BUSINESS PARK

RANGIURU, BAY OF PLENTY



DRAWING INDEX

138093-01-10	PLAN OF EXISTING CONTOURS
138093-01-20	PLAN OF PROPOSED CONTOURS
138093-01-30	PLAN OF PROPOSED ROADING LAYOUT
138093-01-40	PLAN OF PROPOSED STORMWATER DRAINAGE
138093-01-41	PLAN OF PROPOSED STORMWATER DRAINAGE CATCHMENTS
138093-01-60	PLAN OF PROPOSED WASTEWATER DRAINAGE
138093-01-61	WASTEWATER TREATMENT PLANT OVERALL SITE LAYOUT
138093-01-62	WASTEWATER TREATMENT PLANT FACILITY LAYOUT
138093-01-63	PLAN OF PROPOSED WASTEWATER DRAINAGE TO TE PUKE SEWAGE TREATMENT PLANT
138093-01-64	PLAN OF PROPOSED WASTEWATER DRAINAGE ONSITE OPTION
138093-01-70	PLAN OF PROPOSED WATER RETICULATION
138093-01-71	STAGING PLAN WATER TREATMENT PLANTS
138093-01-72	LOCALITY PLAN OFFSITE INFRASTRUCTURE WATER RETICULATION
138093-01-73	PLAN OF PROPOSED WATER RETICULATION WITH SUPPLY FROM THE EASTERN WATER TREATMENT PLANT
138093-01-74	LOCALITY PLAN OFFSITE INFRASTRUCTURE WATER RETICULATION OPTION A
138093-01-75	PLAN OF PROPOSED WATER RETICULATION ONSITE OPTION
138093-01-90	PLAN OF PROPOSED LAND USE
138093-01-91	PLAN OF PROPOSED COMMUNITY SERVICE AREA
138093-01-92	PLAN OF PROPOSED ROADING LAYOUT, LAND USE AND STAGING PLAN



LEGEND

—→— GULLY WATER FLOW DIRECTION

NOTES

1. CONTOURS SHOWN ARE EXISTING CONTOURS TO MOTURIKI DATUM.

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
KLA	20.05.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
KLA	20.05.15		27.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
KLA	14.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
KLA	09.07.15		
BY	DATE	DGN	

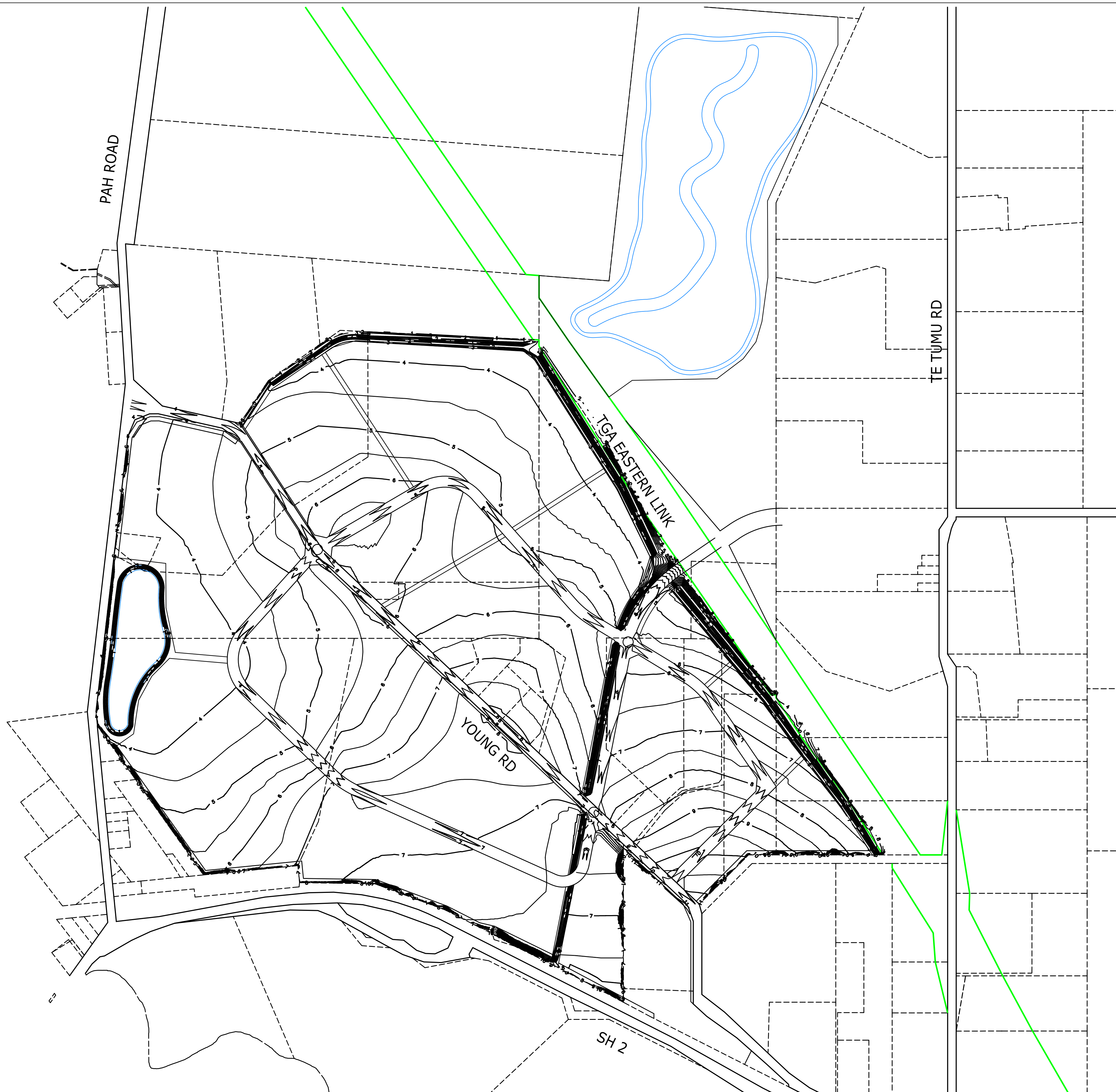
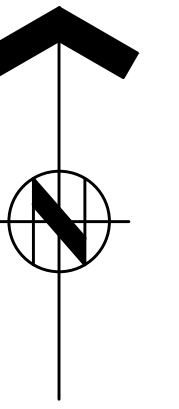
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ACENZ
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 W www.harrisongrierson.com

PROJECT: **QUAYSIDE PROPERTIES LTD RANGIURU BUSINESS PARK**

TITLE: **PLAN OF EXISTING CONTOURS**

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	SCALES: 1:5000 - A1 1:10000 - A3	A1
DRAWING No:		REV
138093-01-10		2



LEGEND

- 5 PROPOSED CONTOURS
- PROPOSED STORMWATER POND

NOTES

1. CONTOURS SHOWN ARE TO THE MOTURIKI DATUM.

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
KLA	09.07.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
KLA	09.07.15		27.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	09.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
DGN	09.07.15		
REF	AMENDMENT	BY	DATE
2	ISSUED FOR INFORMATION	KLA	14.07.15
1	ISSUED FOR INFORMATION	KLA	09.07.15

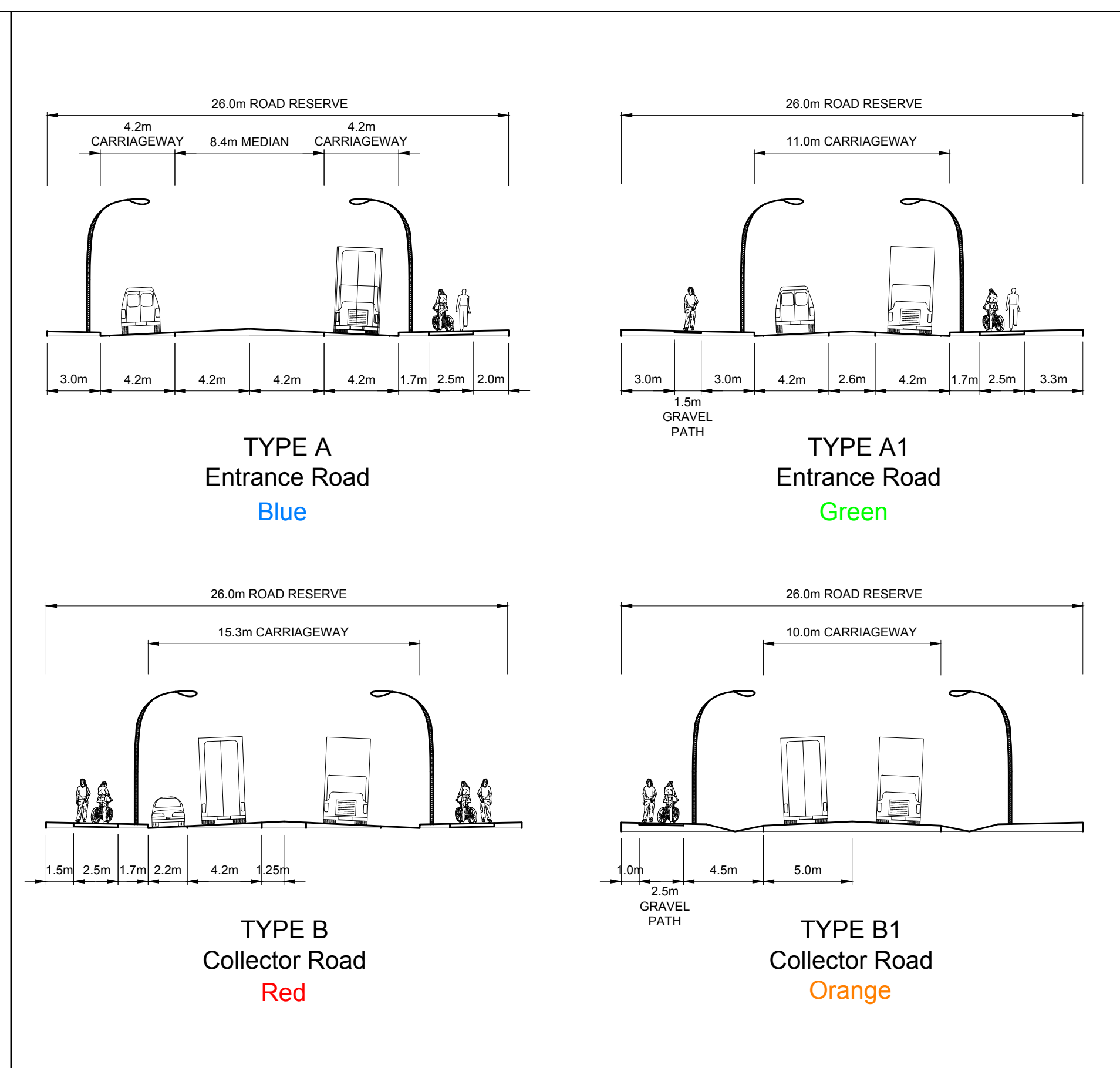
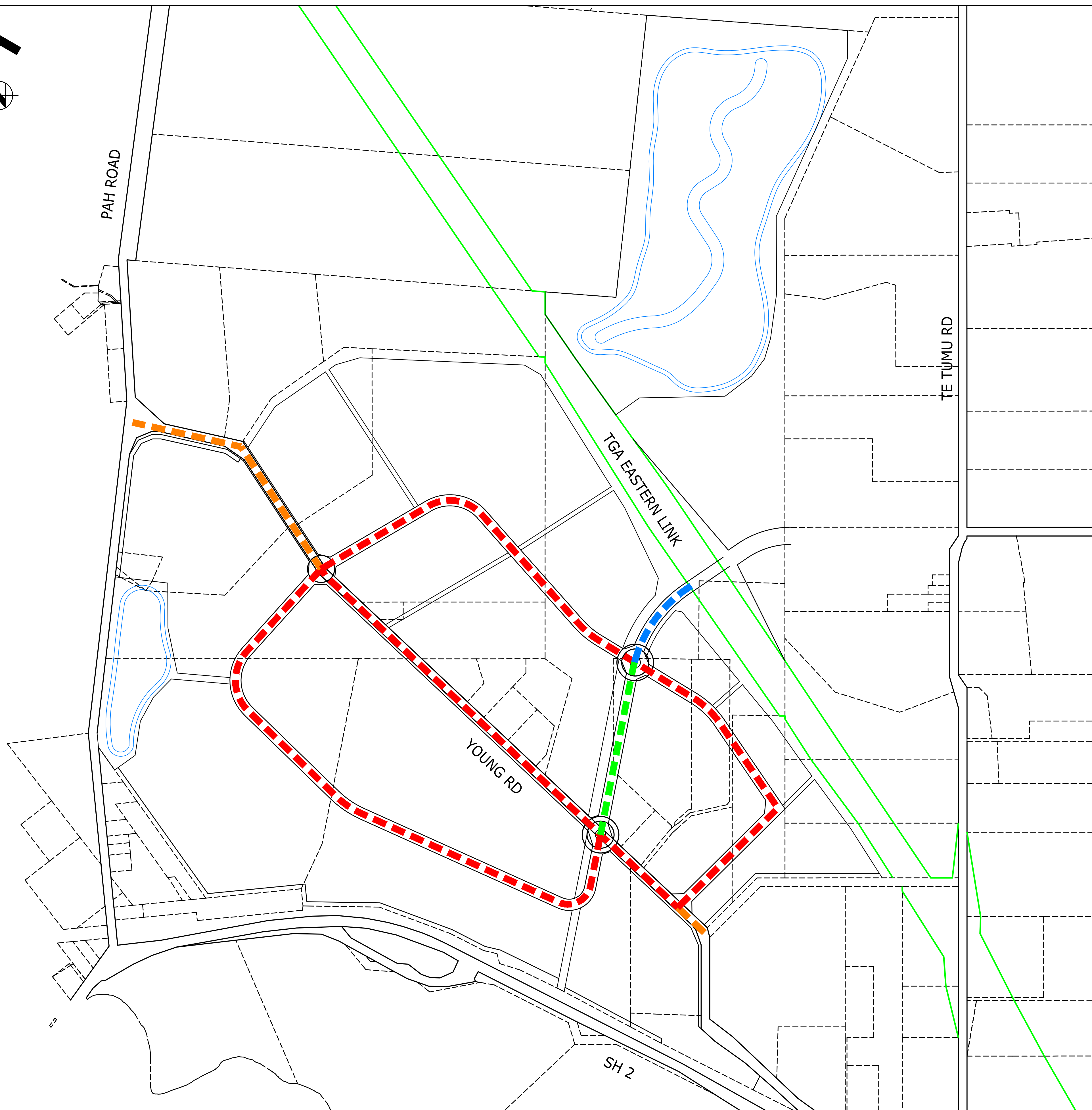
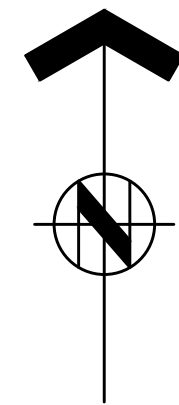
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PROJECT:
**QUAYSIDE PROPERTIES LTD
 RANGIURU BUSINESS PARK**

TITLE:
**PLAN OF PROPOSED
 CONTOURS**

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	SCALES: 1:5000 - A1 1:10000 - A3	A1
DRAWING No:	138093-01-20	REV 2



LEGEND

- PROPOSED ROAD (TYPE A)
- PROPOSED ROAD (TYPE A1)
- - - PROPOSED ROAD (TYPE B)
- - - PROPOSED ROAD (TYPE B1)
- PROPOSED STORMWATER POND
- ROAD ROUNDABOUT
- MAJOR ROAD ROUNDABOUT

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
KLA	09.07.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
KLA	09.07.15		31.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
KLA	14.07.15		
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BY	DATE	DGN	
	24.08.15		

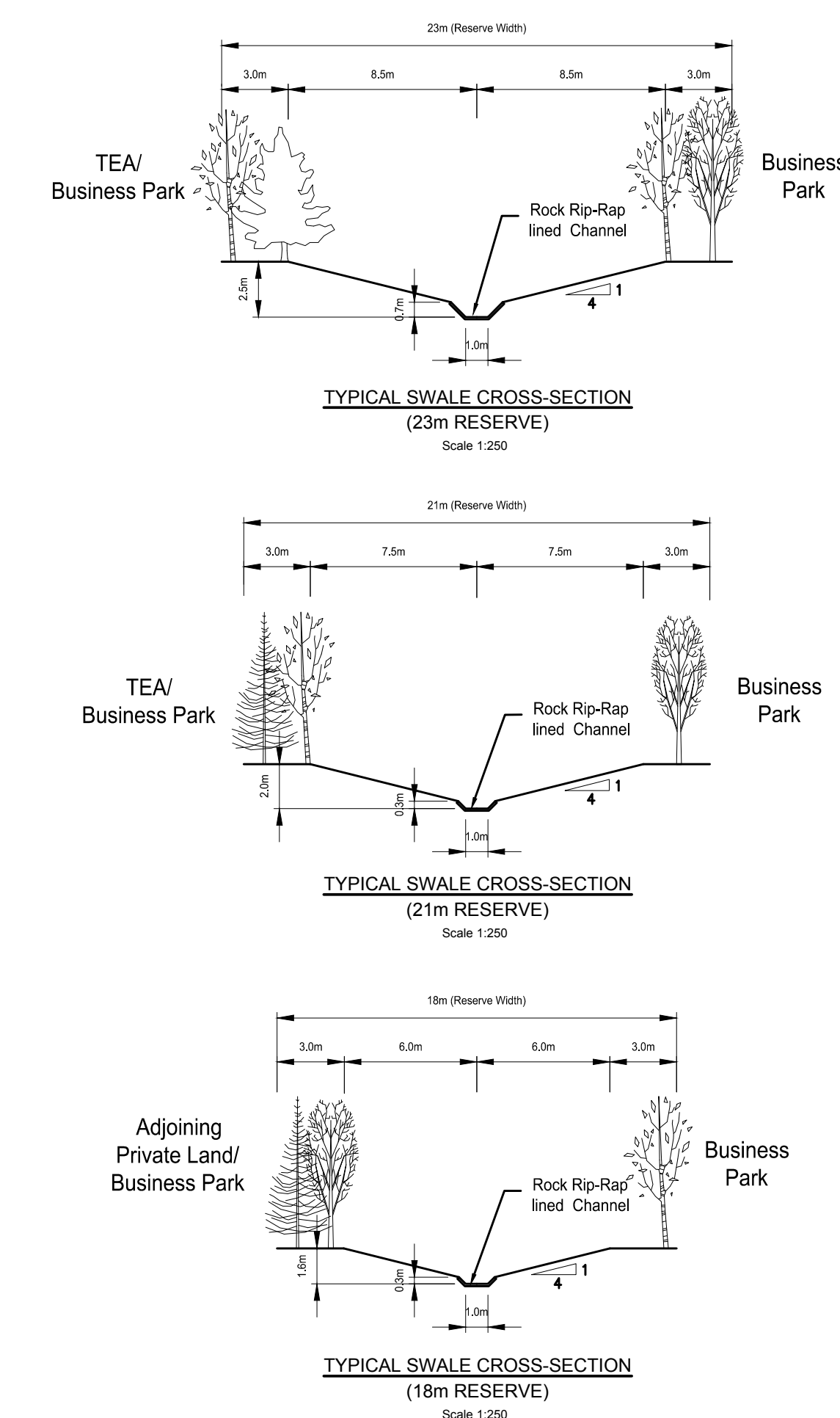
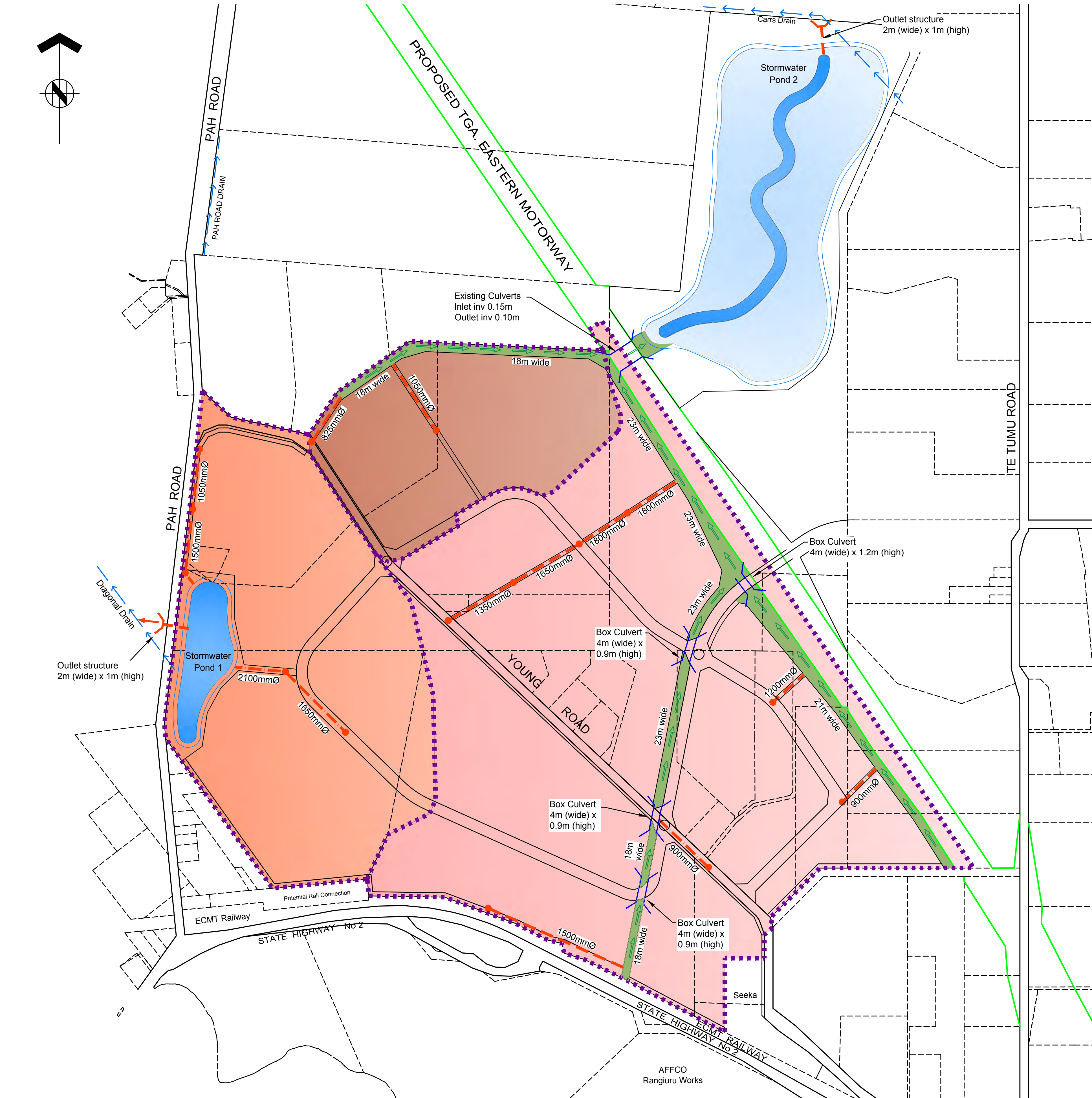
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PROJECT: **QUAYSIDE PROPERTIES LTD RANGIURU BUSINESS PARK**

TITLE: **PLAN OF PROPOSED ROADING LAYOUT**

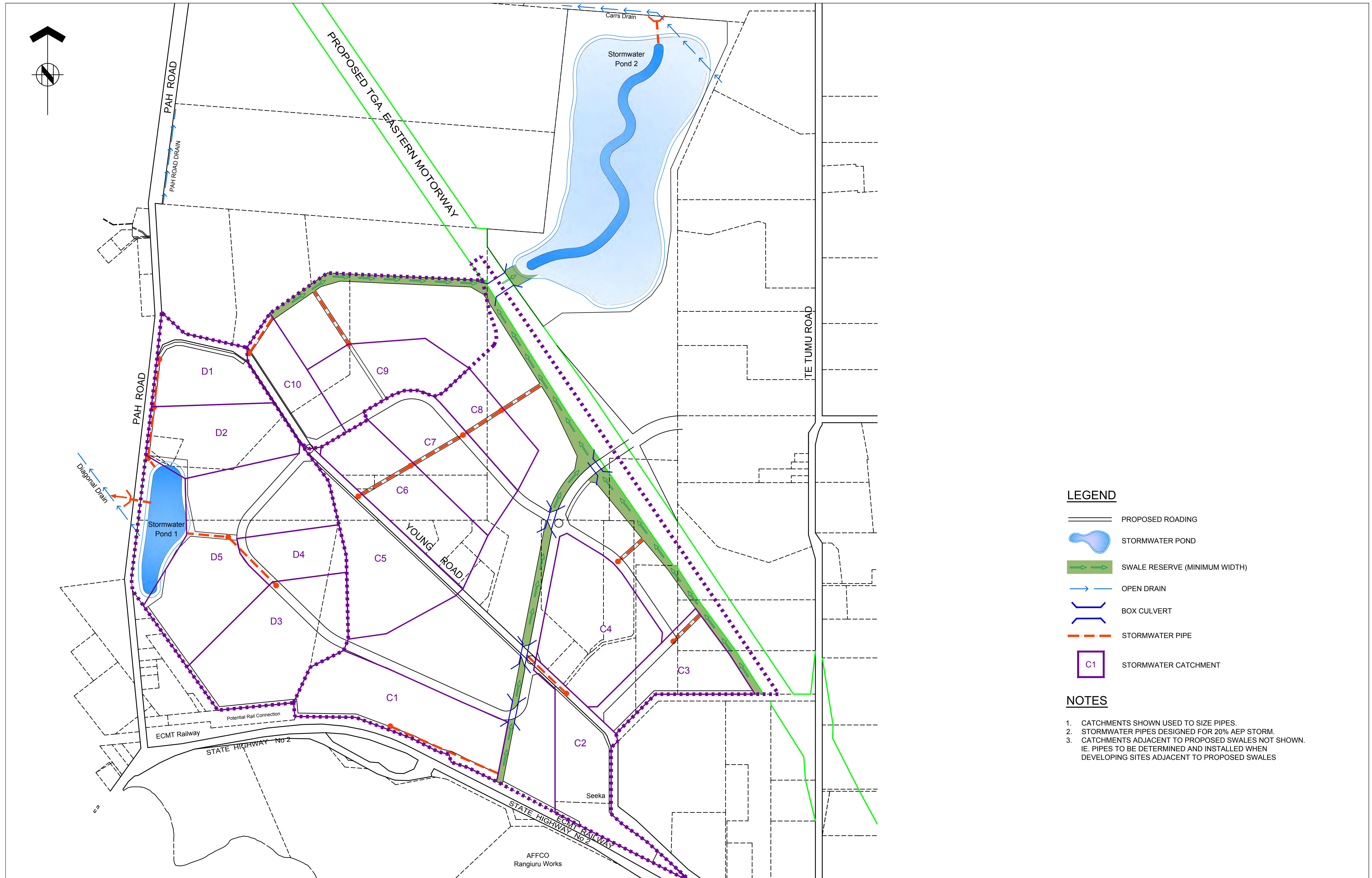
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1520-138093-01	1:5000 - A1 1:10000 - A3	
DRAWING No:		REV
138093-01-30		4



- LEGEND**
- PROPOSED ROADING
 - STORMWATER POND
 - SWALE RESERVE (MINIMUM WIDTH)
 - OPEN DRAIN
 - BOX CULVERT
 - STORMWATER PIPE
 - STORMWATER CATCHMENT

- NOTES**
1. ALL PIPES DESIGNED FOR 20% AEP STORM UNLESS NOTED OTHERWISE.
 2. ALL OPEN DRAINS DESIGNED FOR 2% AEP STORM.
 3. ALL CULVERTS UNDER EASTERN ARTERIAL DESIGNED FOR 1% AEP STORM.
 4. MAXIMUM PERMITTED FLOOD LEVEL AT EASTERN ARTERIAL RL=2.80M, MOTURIKI DATUM.
 5. REFER TO STORMWATER CONSENTS HELD BY COUNCIL FOR DISCHARGES FROM STORMWATER PONDS 1 & 2 AND TO STORMWATER MANAGEMENT PLAN.
 6. LANDSCAPING WITHIN LOCAL PURPOSE RESERVES (STORMWATER) IS TO BE WITHIN THE BERM AREA IN SUCH A MANNER THAT ALLOWS ACCESS FOR MAINTENANCE VEHICLES.

ORIGINATOR: KLA DATE: 09.07.15 DRAWN: KLA DATE: 09.07.15		DATE: 09.07.15 SIGNED: [Signature]		PLOT BY: HHX PLOT DATE: 27.08.15		ASSOCIATION OF CONSULTING ENGINEERS NEW ZEALAND Tauranga Office 141 CAMERON ROAD TAURANGA 3110 T +64 7 578 0023 W www.harrisongrierson.com		PROJECT: QUAYSIDE PROPERTIES LTD RANGIORA BUSINESS PARK		TITLE: PLAN OF PROPOSED STORMWATER DRAINAGE		ISSUE STATUS: FOR INFORMATION	
CHECKED: KLA DATE: 14.07.15 APPROVED: KLA DATE: 09.07.15		DATE: 09.07.15 SIGNED: [Signature]		SURVEY BY: [Name]		ISO 9001 QUALITY ASSURED		REFER TO APPROVED MASTER DRAWINGS FOR ORIGINAL SIGNATURES		PROJECT No: 1520-138093-01 SCALES: 1:5000 - A1 1:10000 - A3 DRAWING No: 138093-01-40		A1	
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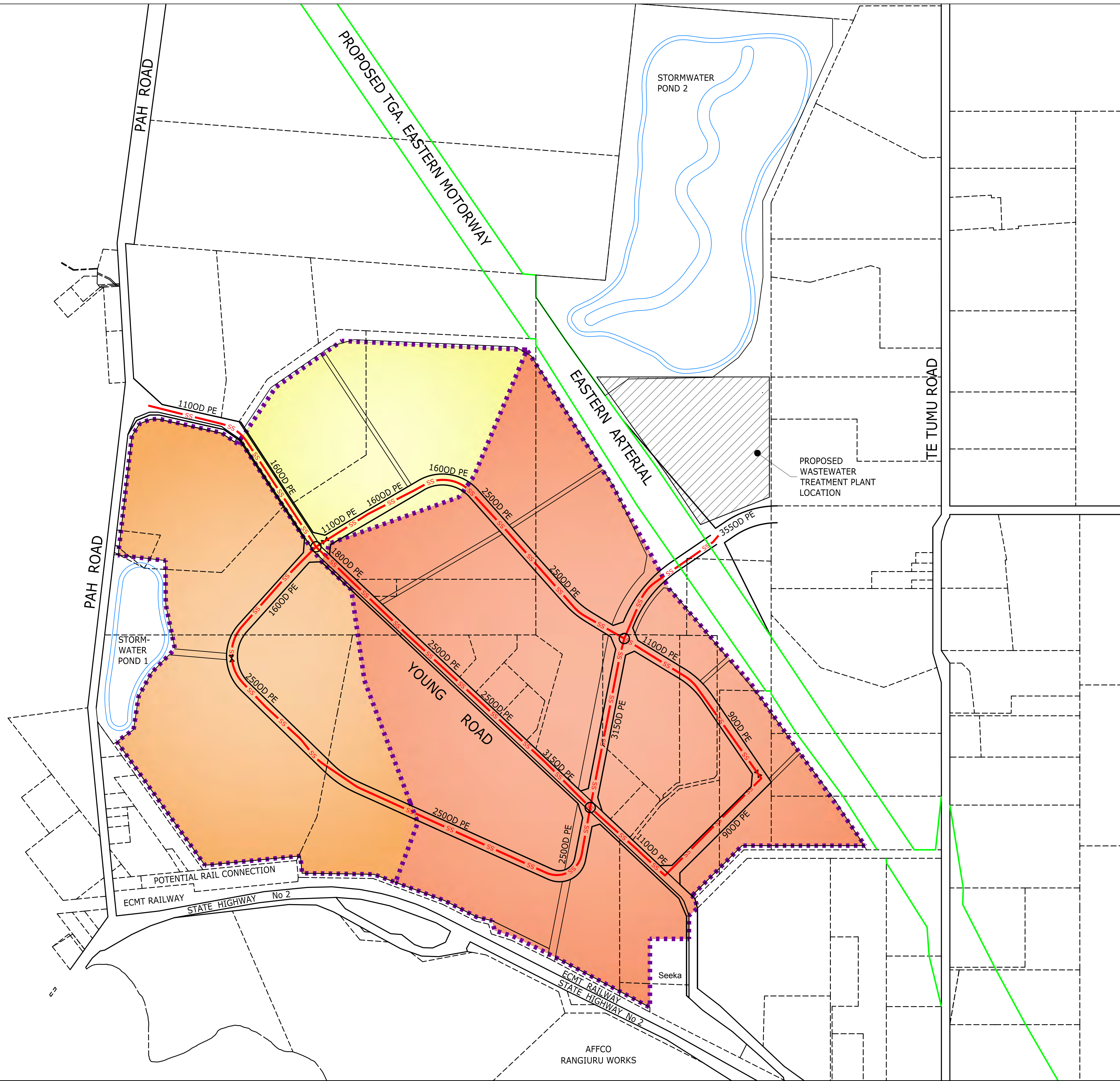
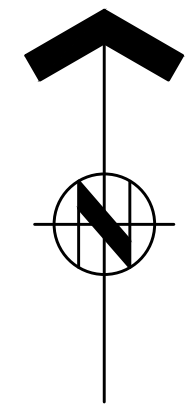
LEGEND

- PROPOSED ROADING
- STORMWATER POND
- SWALE RESERVE (MINIMUM WIDTH)
- OPEN DRAIN
- BOX CULVERT
- STORMWATER PIPE
- STORMWATER CATCHMENT

NOTES

1. CATCHMENTS SHOWN USED TO SIZE PIPES.
2. STORMWATER PIPES DESIGNED FOR 20% AEP STORM.
3. CATCHMENTS ADJACENT TO PROPOSED SWALES NOT SHOWN. IE. PIPES TO BE DETERMINED AND INSTALLED WHEN DEVELOPING SITES ADJACENT TO PROPOSED SWALES

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ORIGINATOR:	DATE:	SIGNED:	PLOT BY:																																						
KLA	09.07.15		HHX																																						
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1	ISSUED FOR INFORMATION	KLA	09.07.15	APPROVED:	DATE:	SIGNED:	SURVEY DATE:																																		
REF	AMENDMENT	BY	DATE	DGN	24.08.15																																				
						PROJECT: QUAYSIDE PROPERTIES LTD RANGIORU BUSINESS PARK		TITLE: PLAN OF PROPOSED STORMWATER DRAINAGE CATCHMENTS		ISSUE STATUS: FOR INFORMATION																															
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LEGEND

- SANITARY SEWER MAIN
- VALVE (NORMALLY CLOSED)
- WASTEWATER CATCHMENT

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
HHX	18.06.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
HHX	18.06.15		27.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	19.06.15		
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DGN	24.08.15		
2	ISSUED FOR INFORMATION	KLA	14.07.15
1	ISSUED FOR INFORMATION	KLA	09.07.15
REF	AMENDMENT	BY	DATE

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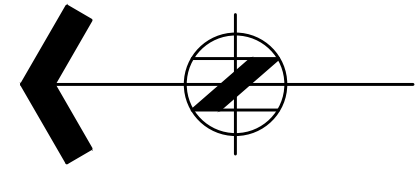
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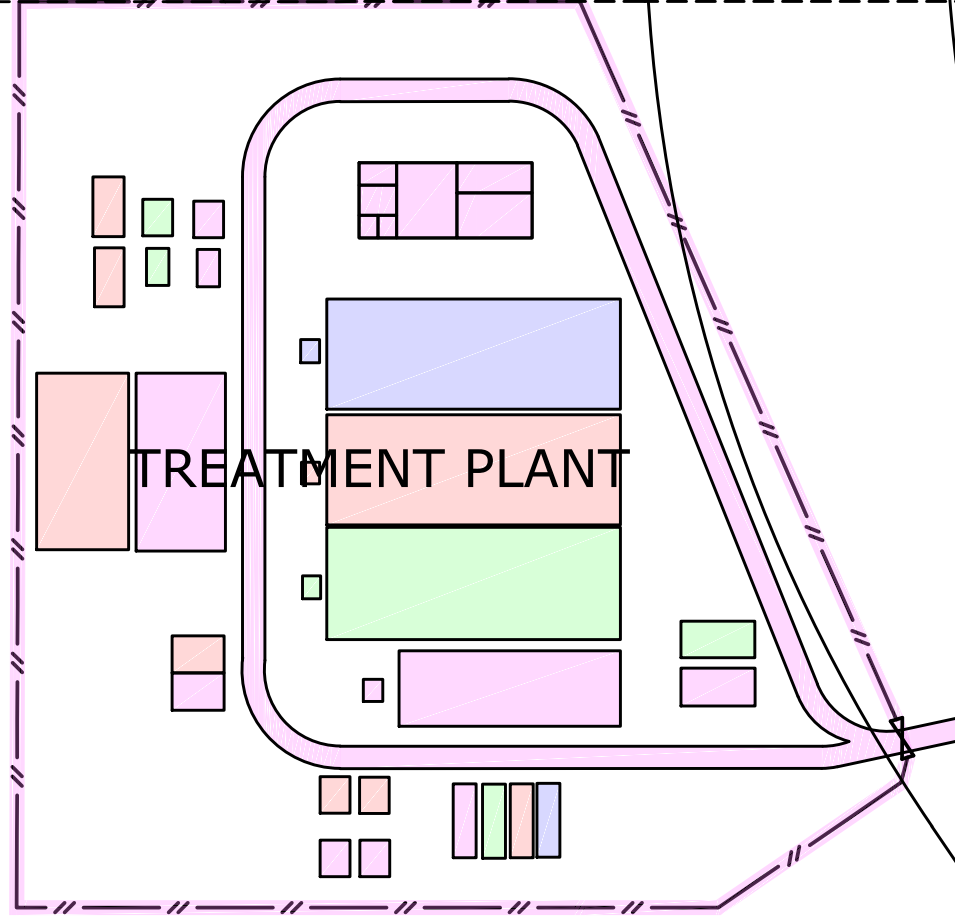
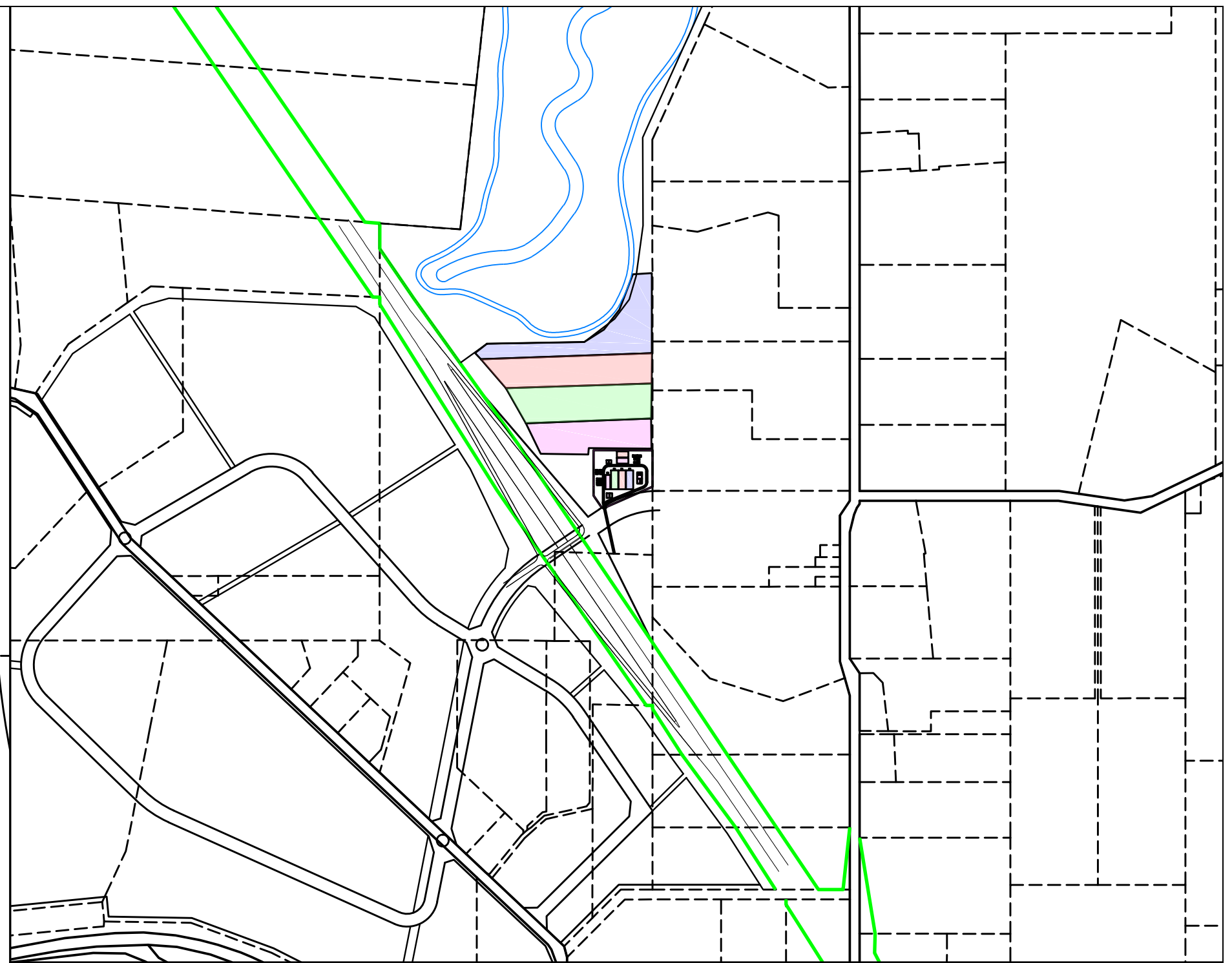
PROJECT: QUAYSIDE PROPERTIES LTD RANGIORU BUSINESS PARK

TITLE: PLAN OF PROPOSED WASTEWATER DRAINAGE

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	SCALES: 1:5000 - A1 1:10000 - A3	A1
DRAWING No:		REV
138093-01-60		2

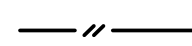







REFER TO DRAWING 138093-01-62 FOR DETAIL



CONSTRUCTED WETLANDS

LEGEND

-  FENCE
-  GATE
-  STAGE 1
-  STAGE 2
-  STAGE 3
-  STAGE 4

ORIGINATOR:	DXC	DATE:	18.06.15	SIGNED:		PLOT BY:	HHX
DRAWN:	DXC	DATE:	18.06.15	SIGNED:		PLOT DATE:	27.08.15
CHECKED:	DGN	DATE:	09.07.15	SIGNED:		SURVEY BY:	
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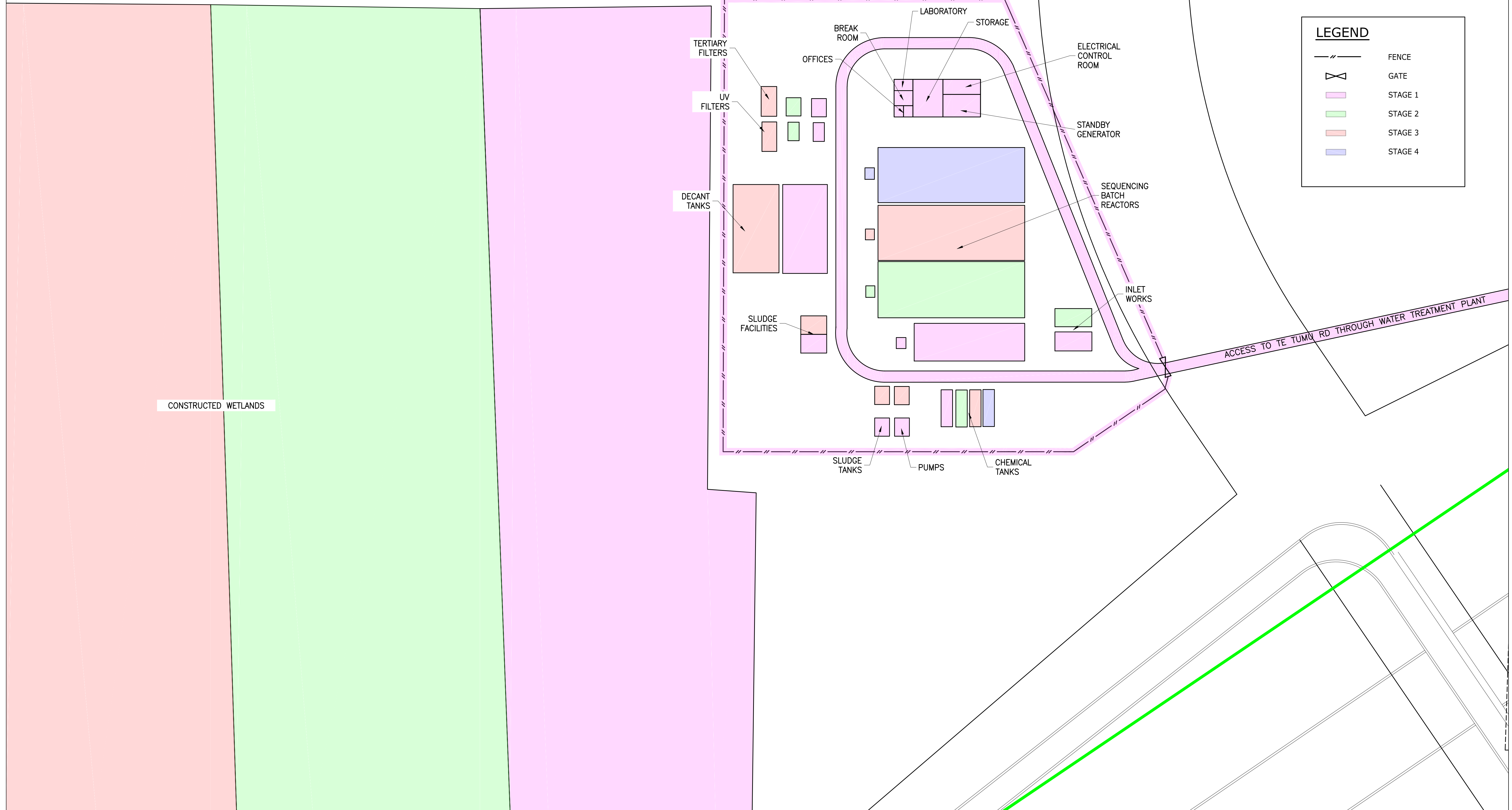
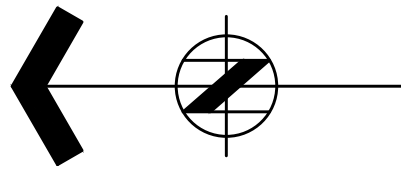
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PROJECT:
**QUAYSIDE PROPERTIES LTD
 RANGIURU BUSINESS PARK**

TITLE:
**WASTEWATER TREATMENT PLANT
 OVERALL SITE LAYOUT**

ISSUE STATUS:			FOR INFORMATION		
PROJECT No:	1520-138093-01	SCALES:	1:1000 - A1 1:2000 - A2	REV	A1
DRAWING No:	138093-01-61			REV	2



LEGEND	
	FENCE
	GATE
	STAGE 1
	STAGE 2
	STAGE 3
	STAGE 4

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
DXC	18.06.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
DXC	18.06.15		27.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	09.07.15		
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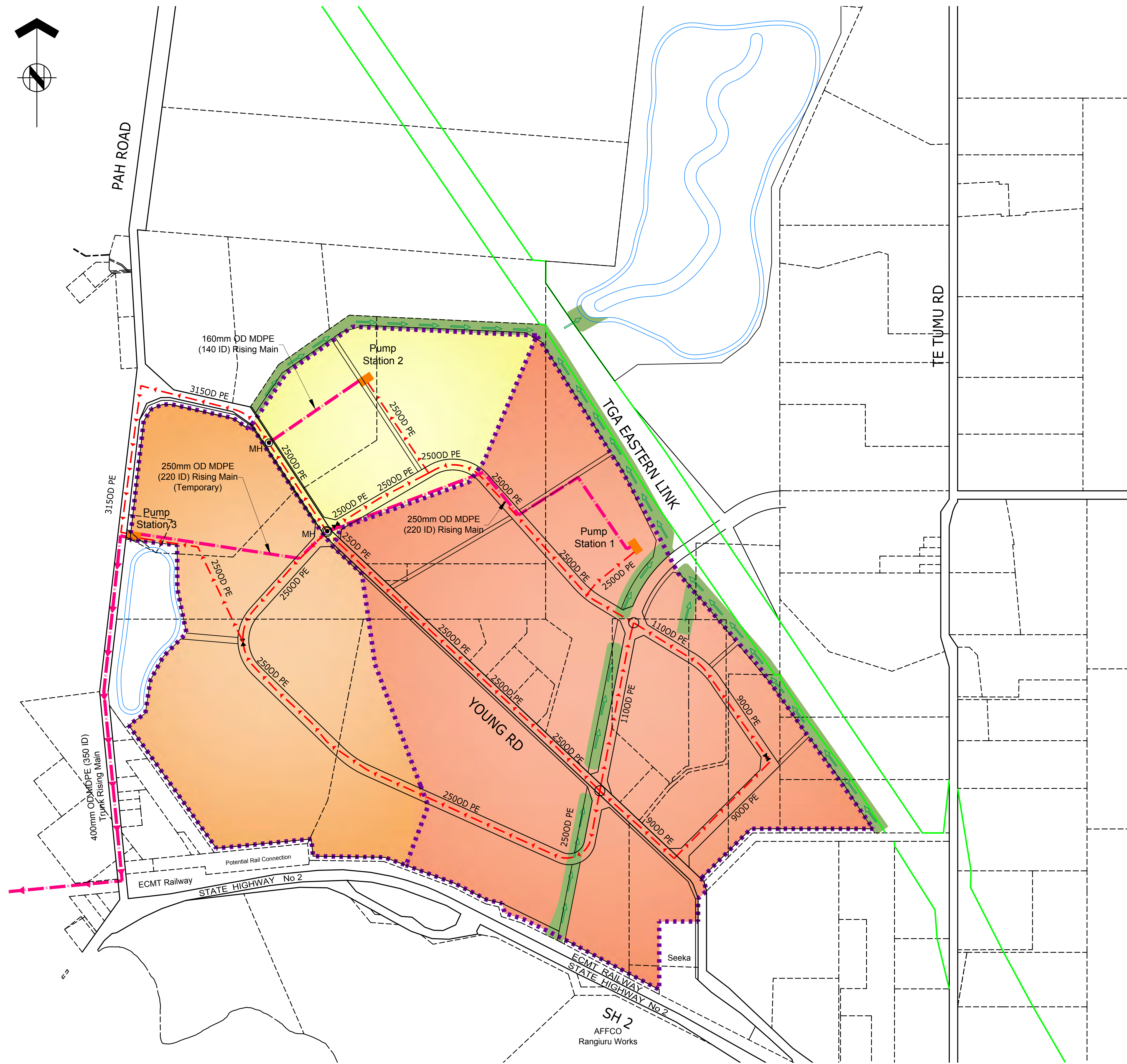
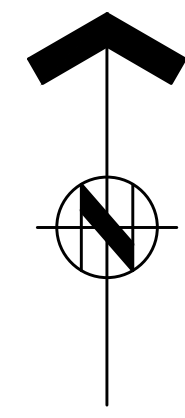
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PROJECT:
**QUAYSIDE PROPERTIES LTD
 RANGIURU BUSINESS PARK**

TITLE:
**WASTEWATER TREATMENT PLANT
 FACILITY LAYOUT**

ISSUE STATUS:		
FOR INFORMATION		
PROJECT No:	SCALES:	A1
1520-138093-01	1:500 - A1 1:1000 - A2	
DRAWING No:		REV
138093-01-62		2



LEGEND

- Rising Main
 - Trunk Rising Main
 - Gravity Line
 - Wastewater Pump Station
 - Receiving Manhole to Gravity Line
 - 1
 - 2
 - 3
- Wastewater Catchment

ORIGINATOR:	KYA	DATE:	09.07.15	SIGNED:		PLOT 27/8/2015 12:27
DRAWN:	KYA	DATE:	09.07.15	SIGNED:		138093-01-63
CHECKED:	KLA	DATE:	14.07.15	SIGNED:		
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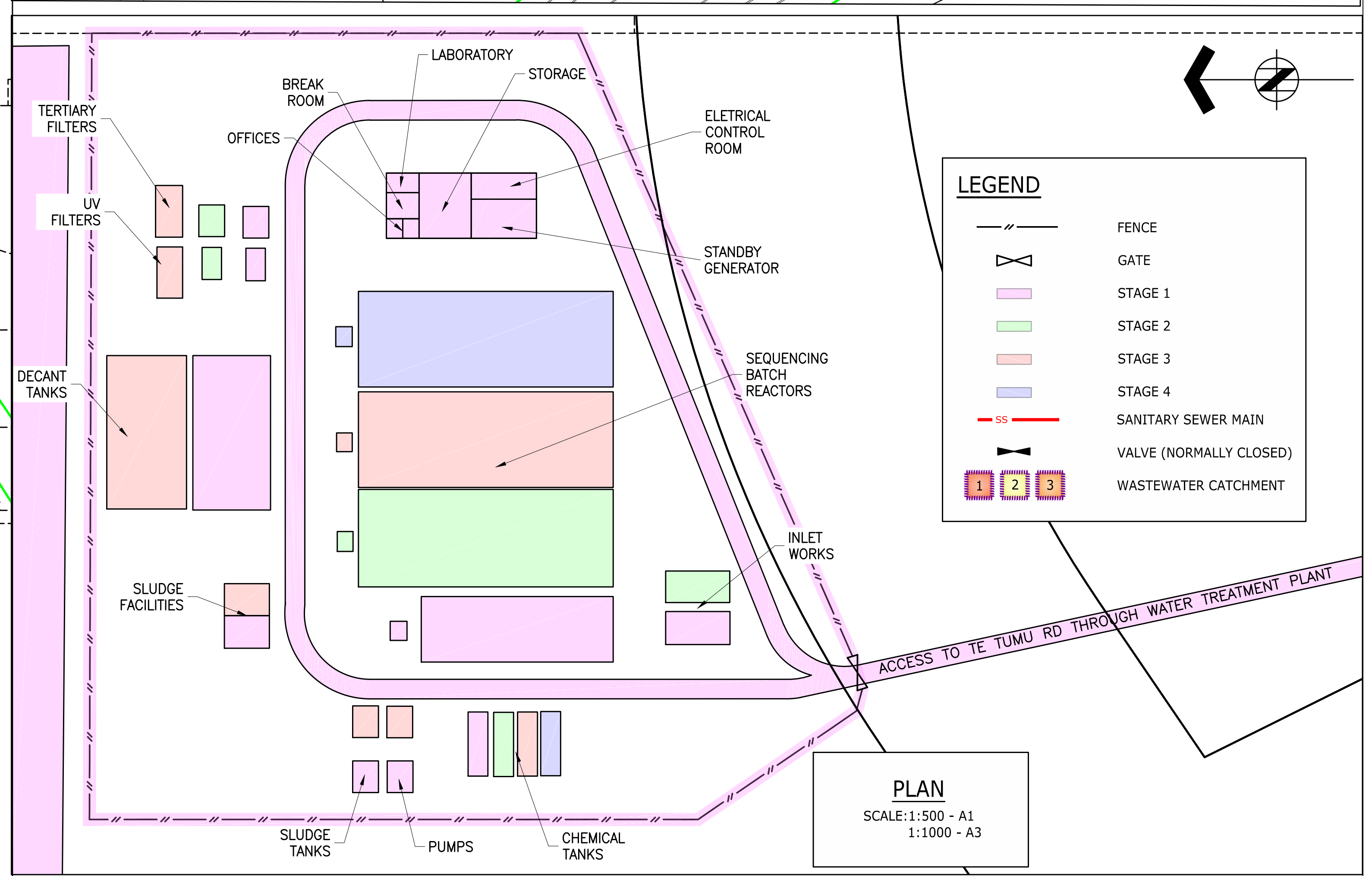
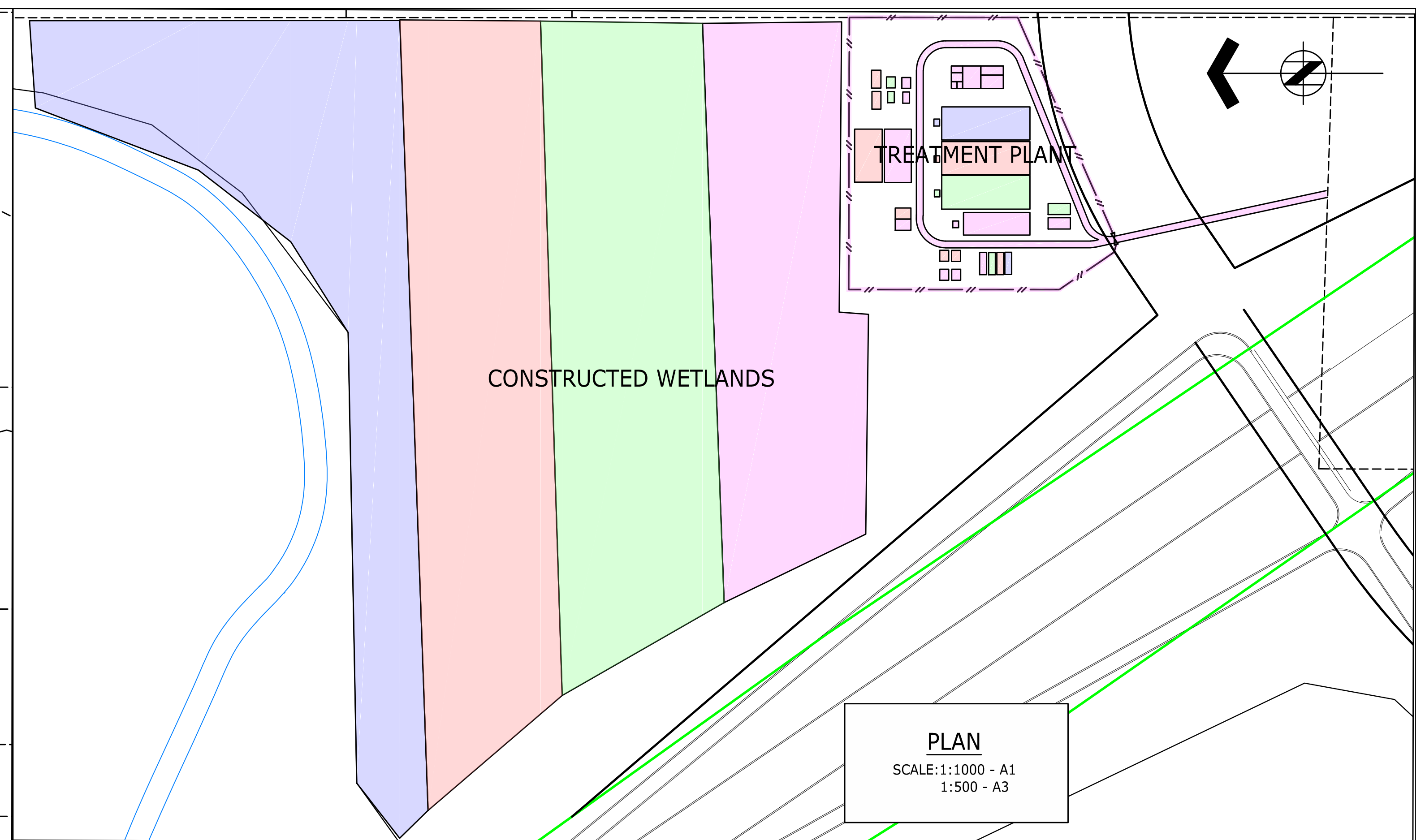
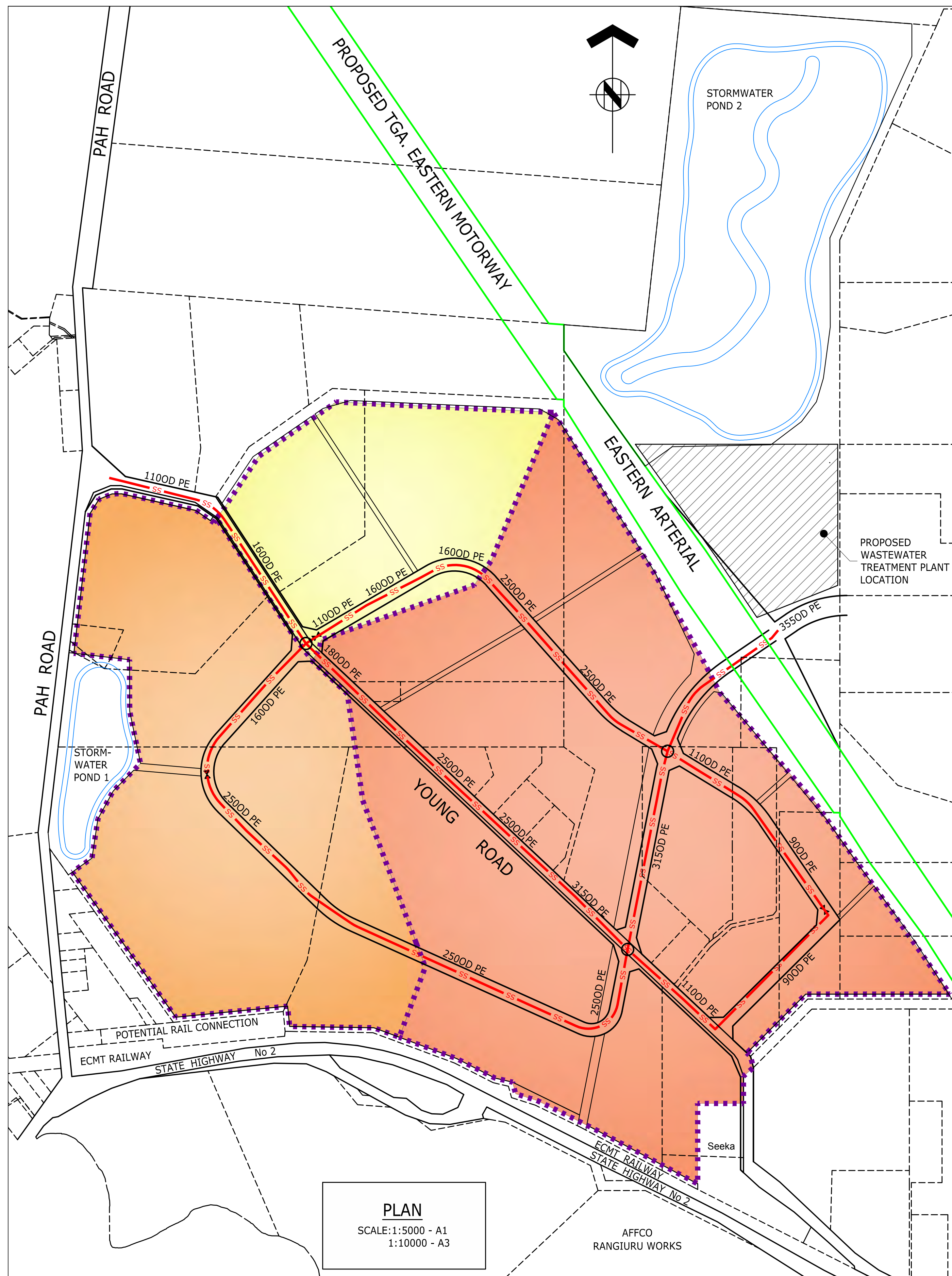
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PROJECT: QUAYSIDE PROPERTIES LTD
 RANGIUURU BUSINESS PARK

TITLE: PLAN OF PROPOSED
 WASTEWATER DRAINAGE TO TE PUKE
 OFFSITE SEWAGE TREATMENT PLANT

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	1520-138093-01	SCALE: 1:5000 A1 1:10000 A3
DRAWING No:	138093-01-63	REV 2



3	ISSUED FOR INFORMATION	HHX	31.08.15	CHECKED:	DATE:	SIGNED:	SURVEY BY:
2	ISSUED FOR INFORMATION	KLA	14.07.15	DGN	19.06.15		
1	ISSUED FOR INFORMATION	KLA	09.07.15	APPROVED:	DATE:	SIGNED:	SURVEY DATE:
REF	AMENDMENT	BY	DATE	DGN	24.08.15		

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
HHX	18.06.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
HHX	18.06.15		31.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	19.06.15		HHX
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
DGN	24.08.15		

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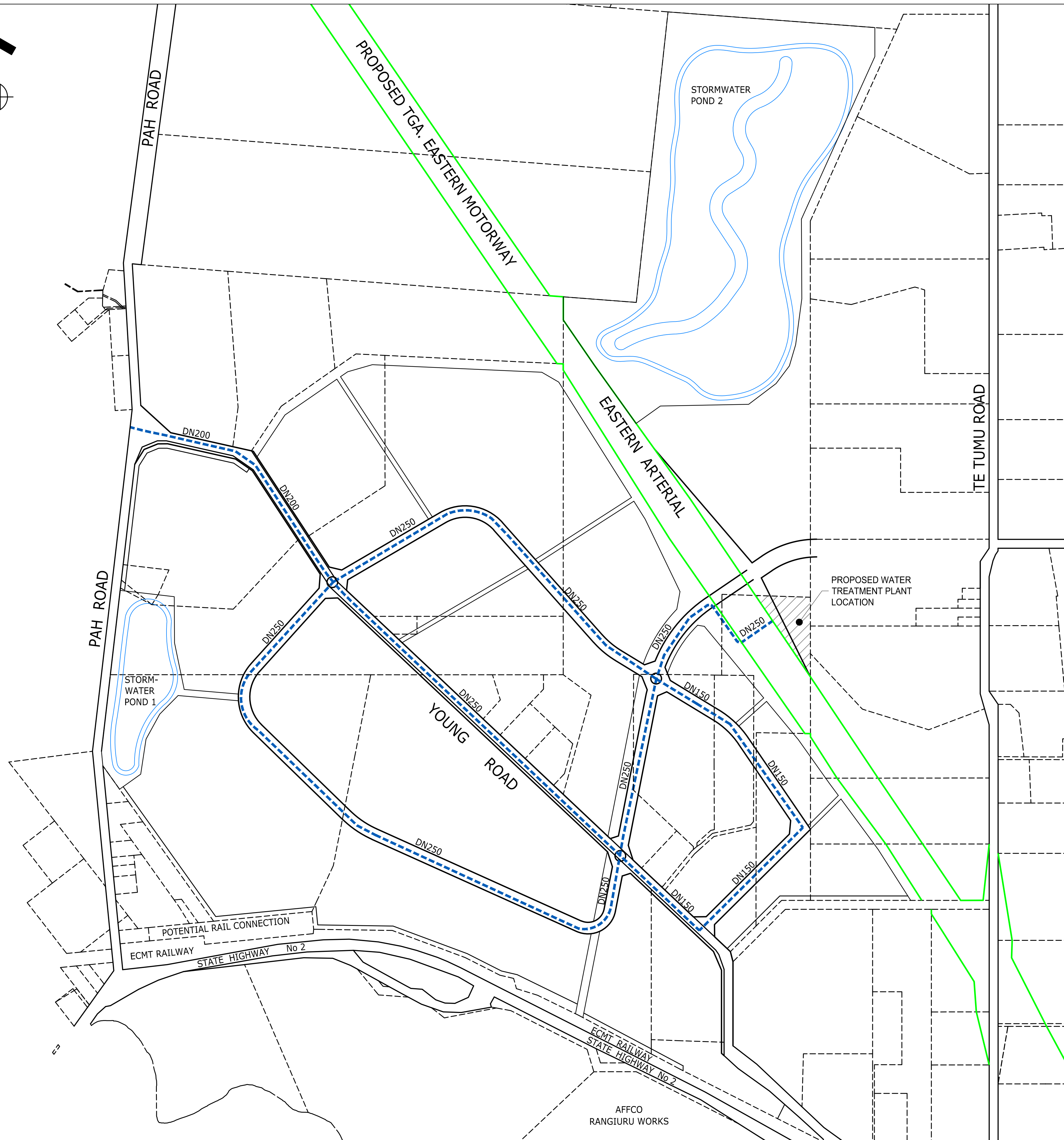
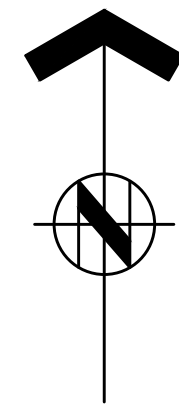
PROJECT:

**QUAYSIDE PROPERTIES LTD
RANGIURU BUSINESS PARK**

TITLE:

**PLAN OF PROPOSED
WASTEWATER DRAINAGE
ONSITE OPTION**

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	1520-138093-01	SCALE: AS SHOWN
DRAWING No:	138093-01-64	REV 3



LEGEND

— — — — — WATER MAIN (INTERNAL DIAMETER)

NOTE - ASSUMES FW3 WATER RETICULATION STANDARD

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
HHX	18.06.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
HHX	18.06.15		27.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	19.06.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
DGN	19.06.15		
REF	AMENDMENT	BY	DATE
2	ISSUED FOR INFORMATION	KLA	14.07.15
1	ISSUED FOR INFORMATION	KLA	09.07.15

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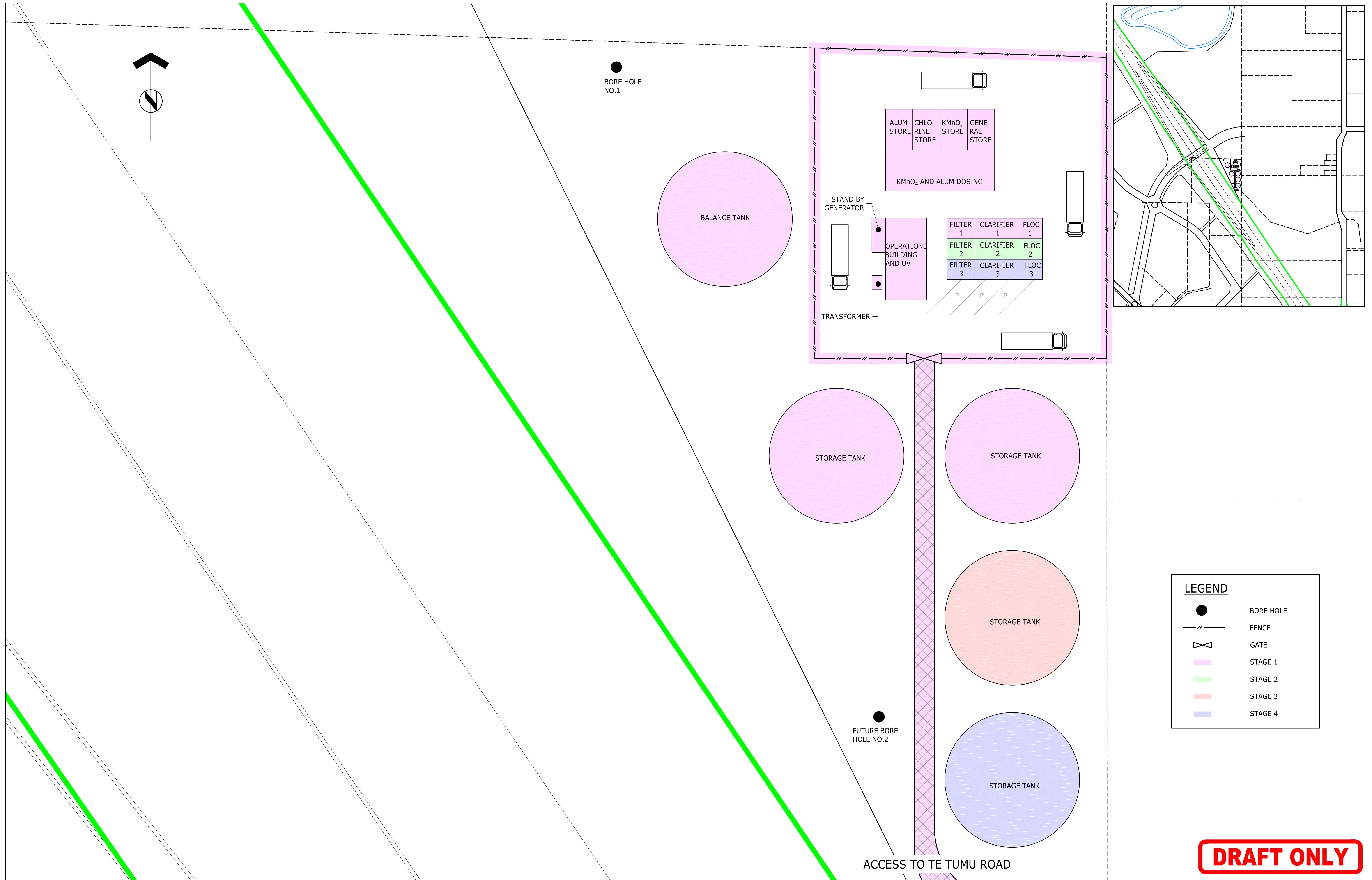
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141 CAMERON ROAD TAURANGA 3110
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PROJECT: QUAYSIDE PROPERTIES LTD RANGIORU BUSINESS PARK

TITLE: PLAN OF PROPOSED WATER RETICULATION

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	SCALES: 1:5000 - A1 1:10000 - A3	A1
DRAWING No:		REV
138093-01-70		2



LEGEND	
●	BORE HOLE
- - -	FENCE
⋈	GATE
■ (Purple)	STAGE 1
■ (Green)	STAGE 2
■ (Pink)	STAGE 3
■ (Blue)	STAGE 4

DRAFT ONLY

REF	REVISIONS	BY	DATE	DGN	DATE	SIGNED:
3	ISSUED FOR INFORMATION	HHX	31.08.15	CHECKED:	DATE:	SIGNED:
2	ISSUED FOR INFORMATION	KLA	14.07.15	DGN	12.05.14	
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		BY	DATE	DGN	09.06.14	

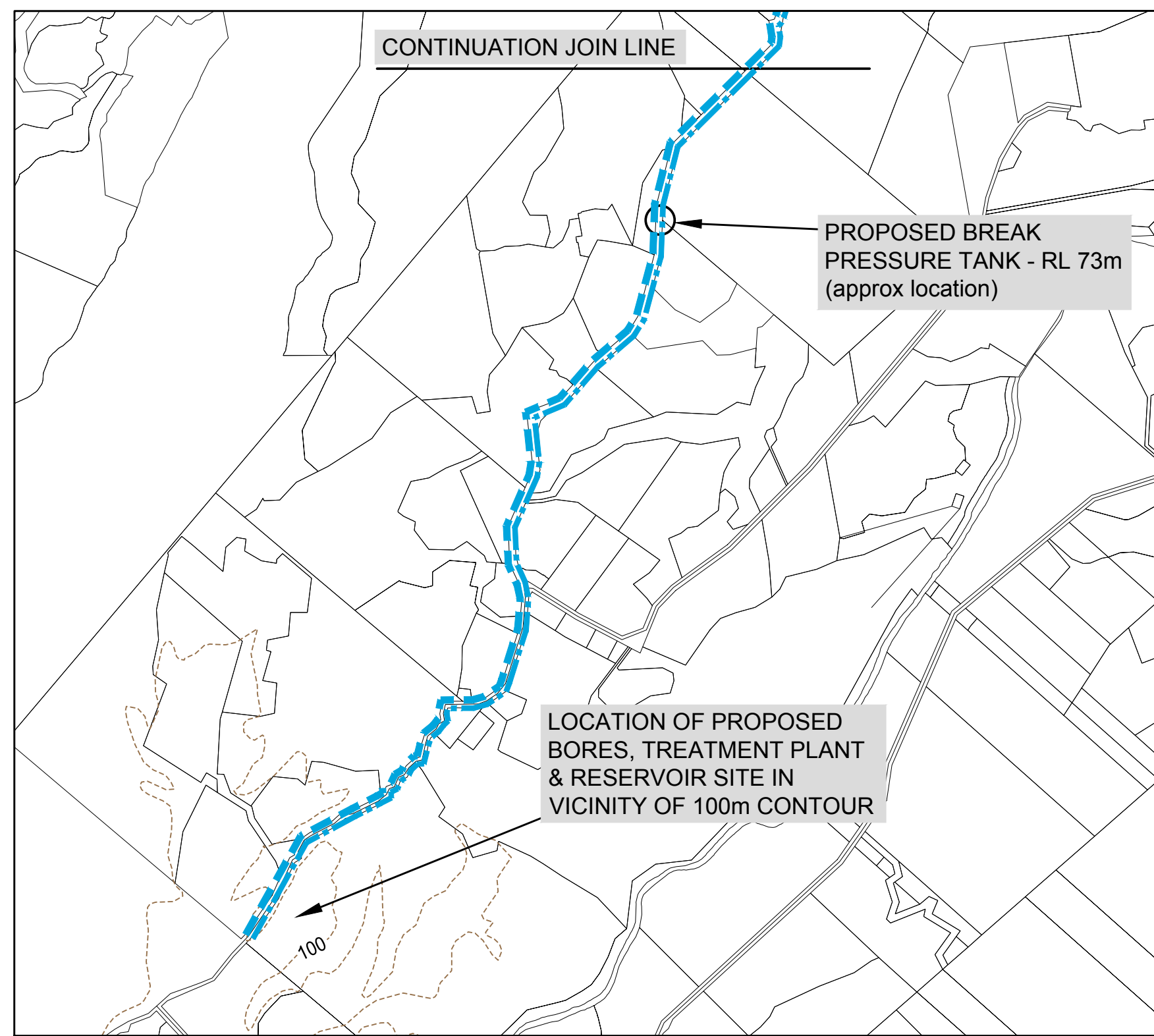
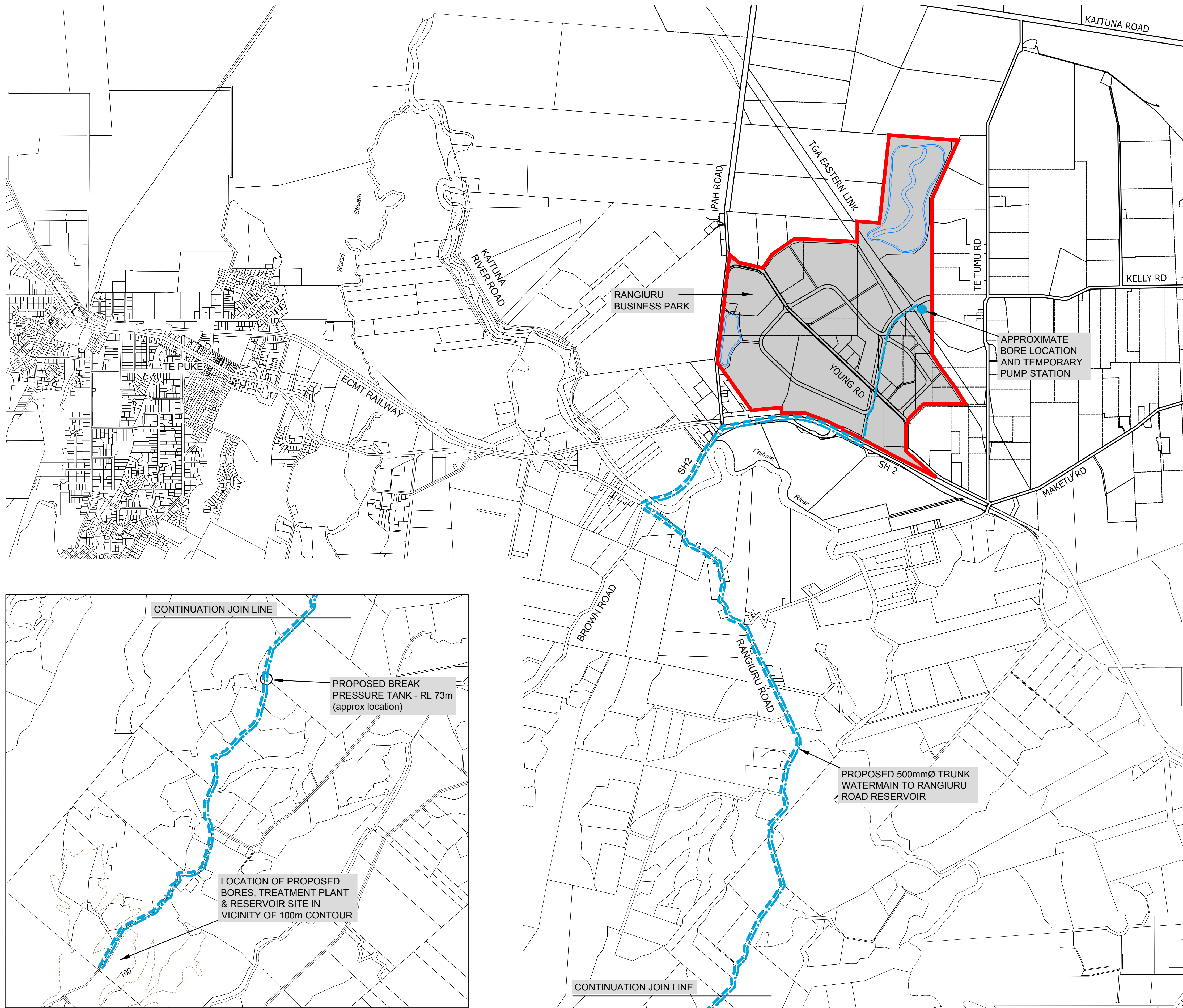
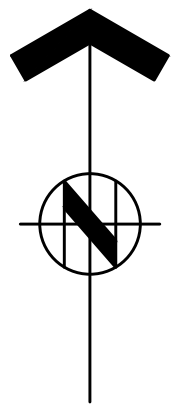
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PROJECT: QUAYSIDE PROPERTIES LTD
 RANGIURU BUSINESS PARK

TITLE: STAGING PLAN
 WATER TREATMENT PLANTS

ISSUE STATUS:		
FOR INFORMATION		
PROJECT No: 1520-138093-01	SCALES: 1:250 - A1 1:500 - A3	A1
DRAWING No: 138093-01-71		REV 3



LEGEND

- EXISTING ZONE BOUNDARY
- - - 500 DIA. TRUNK WATERMAIN
- · - · 225 DIA. PUMPED MAIN

NOTES

1. ALL PIPE DIAMETERS SHOWN ARE INTERNAL DIAMETERS.

ORIGINATOR:	DATE:	SIGNED:	PLOT 27/8/2015 12:25
KLA	09.07.15		
DRAWN:	DATE:	SIGNED:	138093-01-72
KLA	09.07.15		
CHECKED:	DATE:	SIGNED:	SURVEY BY:
KLA	14.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
KLA	09.07.15		
BY	DATE	DGN	
			24.08.15

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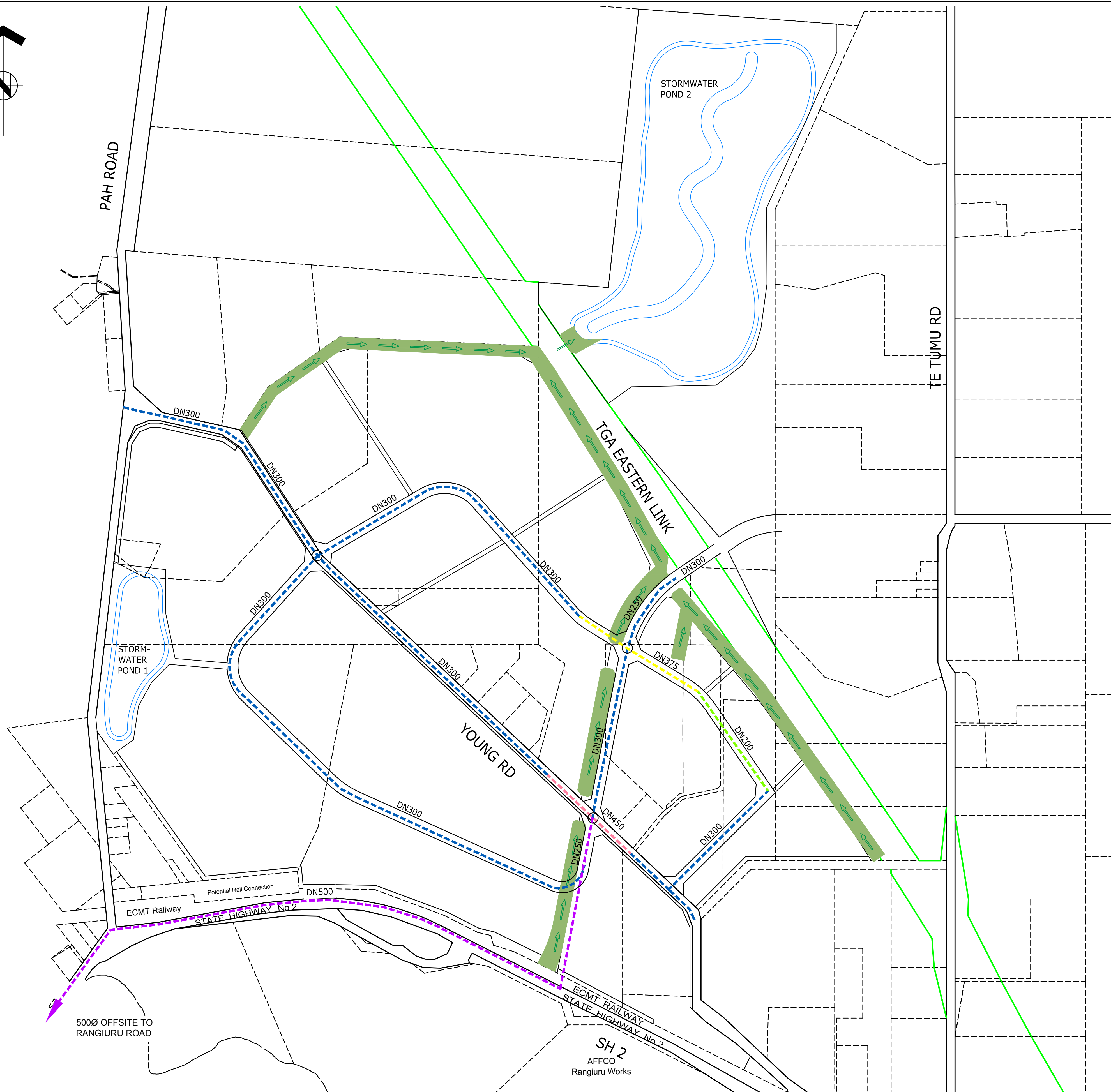
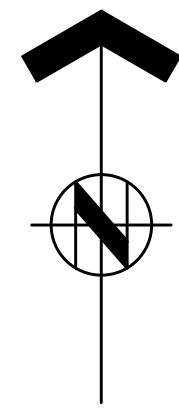
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PROJECT: QUAYSIDE PROPERTIES LTD
 RANGIORU BUSINESS PARK

TITLE: LOCALITY PLAN
 OFFSITE INFRASTRUCTURE
 WATER RETICULATION

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	SCALES: 1:15 000 (A1) 1:30 000 (A3)	A1
DRAWING No:		REV
138093-01-72		3



LEGEND

- 200mm Watermain
- 300mm Watermain
- 375mm Watermain
- 450mm Watermain
- 500mm Watermain
- Stormwater Pond
- Stormwater Swale Reserve

NOTES

1. All Pipe Diameters shown are Internal Diameters.

ORIGINATOR:	DATE:	SIGNED:	PLT 27/8/2015 12:28
KLA	09.07.15		
DRAWN:	DATE:	SIGNED:	138093-01-73
KLA	09.07.15		
CHECKED:	DATE:	SIGNED:	SURVEY BY:
KLA	14.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
KLA	09.07.15		
BY	DATE	DGN	
	24.08.15		

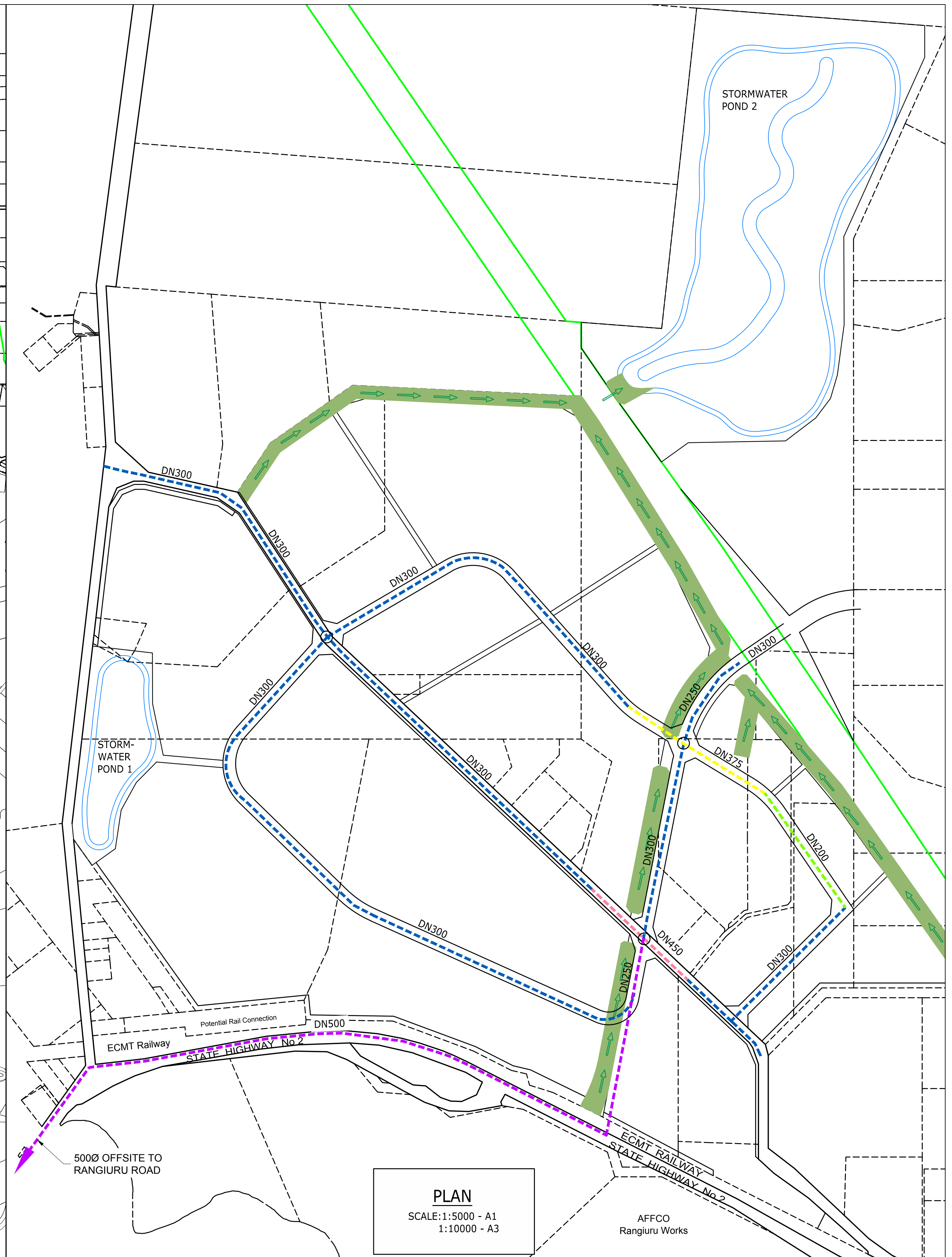
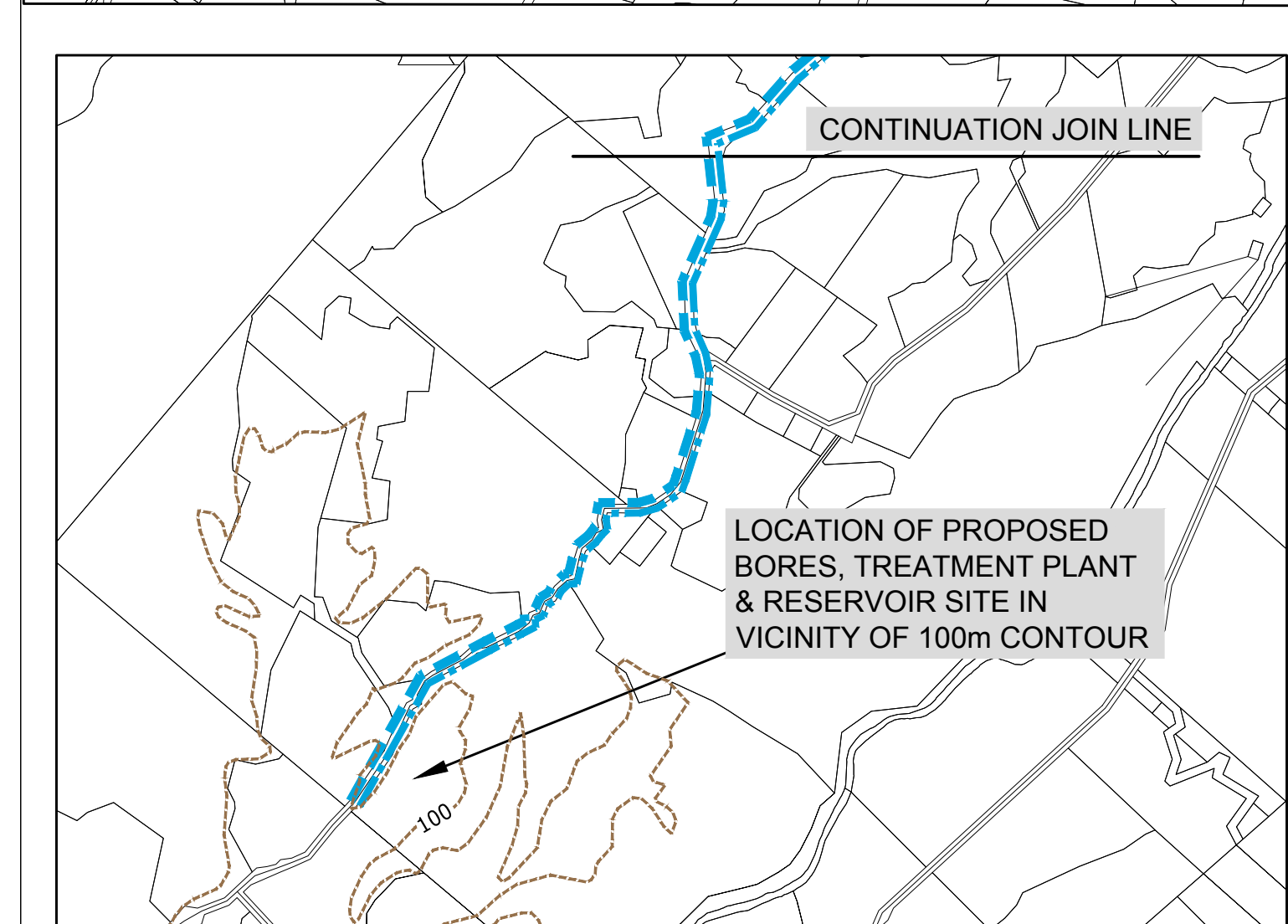
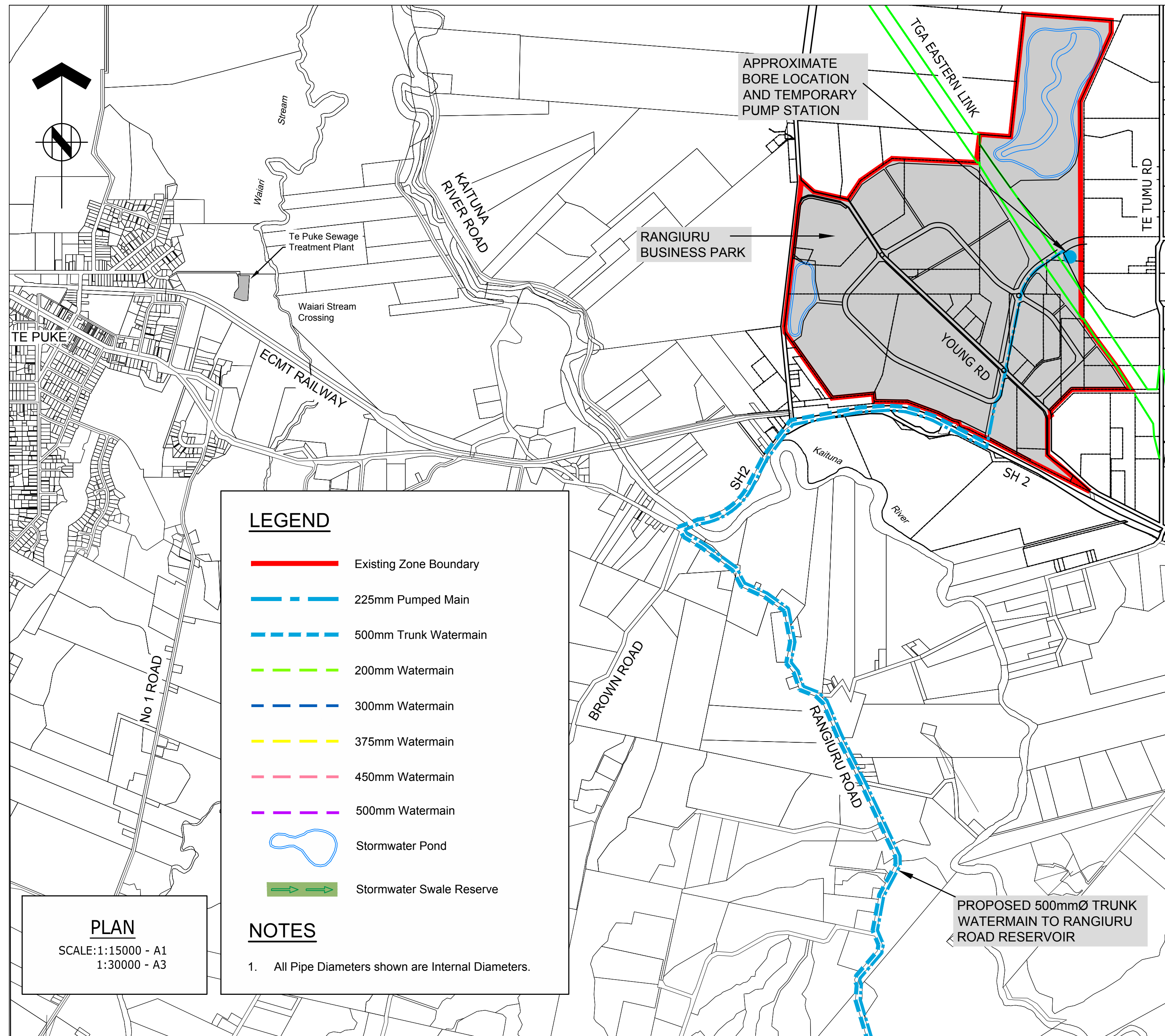
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PROJECT: **QUAYSIDE PROPERTIES LTD RANGIURU BUSINESS PARK**

TITLE: **PLAN OF PROPOSED WATER RETICULATION WITH SUPPLY FROM THE EASTERN WATER TREATMENT PLANT**

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	1520-138093-01	SCALES: 1:5000 A1 1:10000 A3
DRAWING No:	138093-01-73	
REV	3	



ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
KYA	09.07.15		
DRAWN:	DATE:	SIGNED:	PLOT DATE:
KLA	09.07.15		
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	09.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
DGN	24.08.15		

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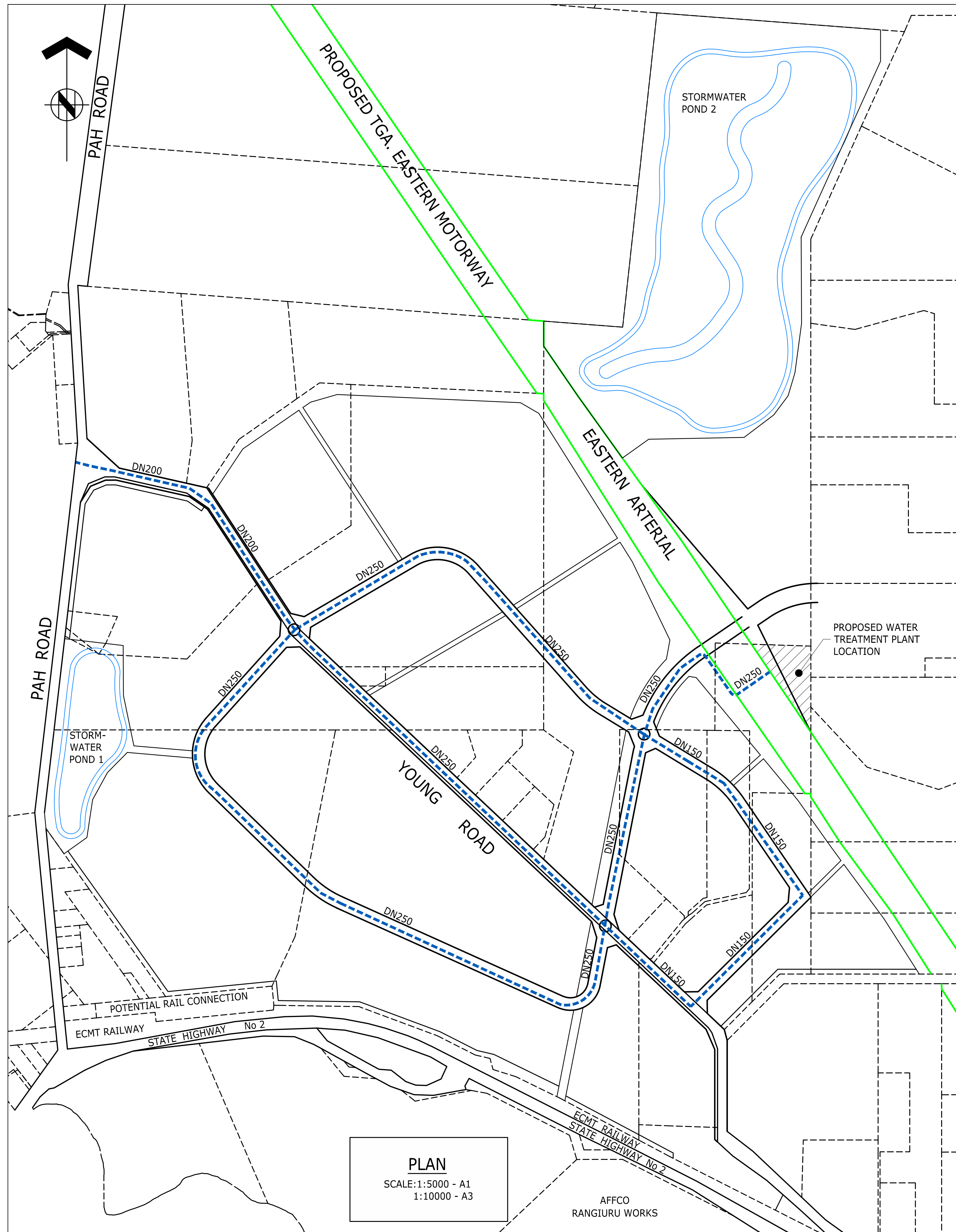
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PROJECT: QUAYSIDE PROPERTIES LTD RANGIORU BUSINESS PARK

TITLE: LOCALITY PLAN OFFSITE INFRASTRUCTURE WATER RETICULATION PLAN OPTION A

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	SCALES:	A1
1520-138093-01	AS SHOWN	
DRAWING No:		REV
138093-01-74		3



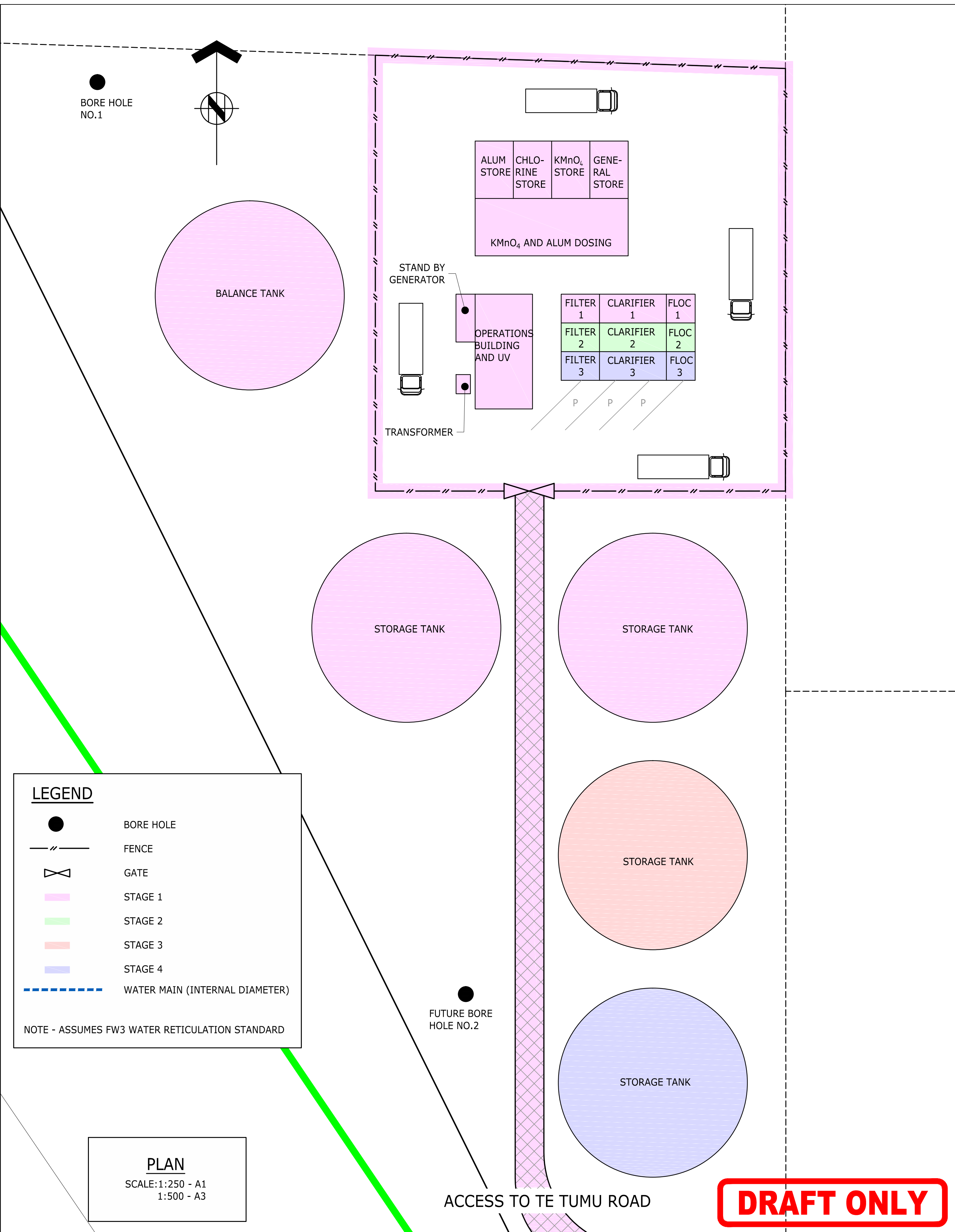
PLAN
SCALE: 1:5000 - A1
1:10000 - A3

LEGEND

- BORE HOLE
- - - FENCE
- ⊘ GATE
- STAGE 1
- STAGE 2
- STAGE 3
- STAGE 4
- - - WATER MAIN (INTERNAL DIAMETER)

NOTE - ASSUMES FW3 WATER RETICULATION STANDARD

PLAN
SCALE: 1:250 - A1
1:500 - A3



DRAFT ONLY

ORIGINATOR:	HHX	DATE:	18.06.15	SIGNED:		PLOT BY:	HHX
DRAWN:	HHX	DATE:	18.06.15	SIGNED:		PLOT DATE:	31.08.15
CHECKED:	HHX	DATE:	31.08.15	SIGNED:		SURVEY BY:	
DGN:	KLA	DATE:	14.07.15	SIGNED:		SURVEY DATE:	
APPROVED:	KLA	DATE:	09.07.15	SIGNED:			
DGN:		DATE:	19.06.15	SIGNED:			
BY:		DATE:	19.06.15	SIGNED:			

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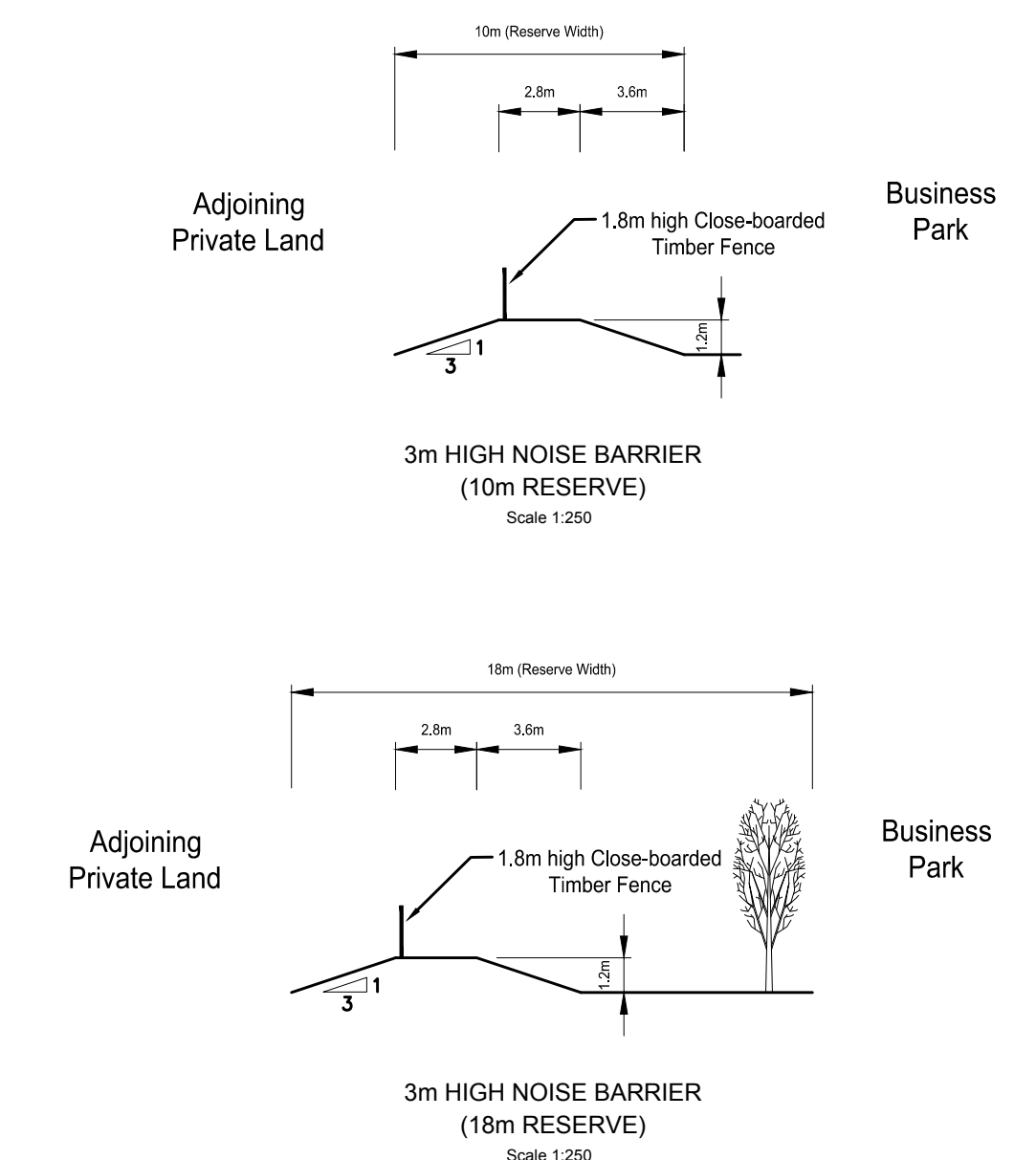
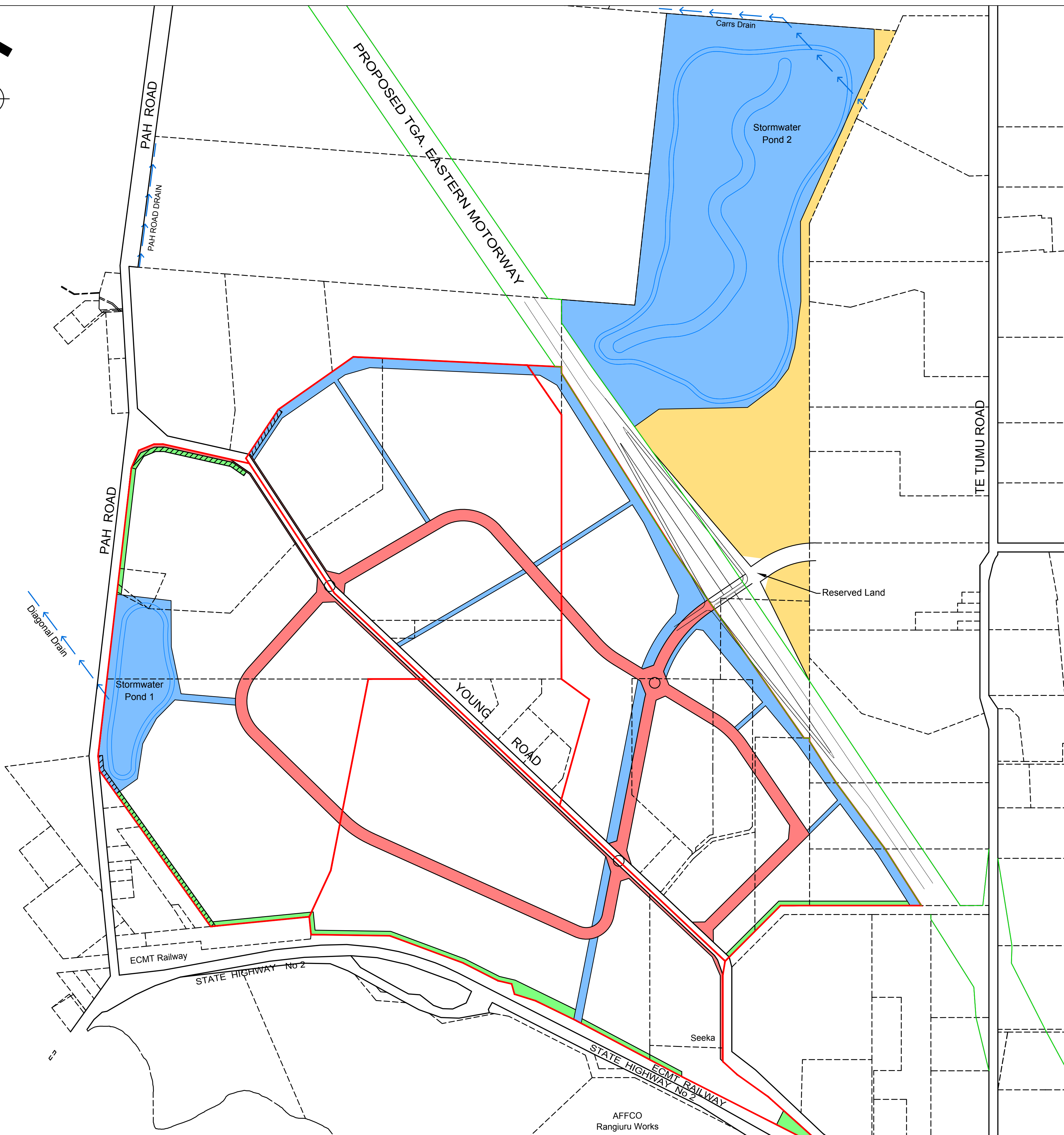
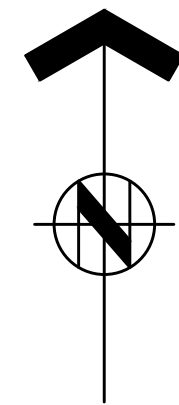


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PROJECT: QUAYSIDE PROPERTIES LTD RANGIURU BUSINESS PARK

TITLE: PLAN OF PROPOSED WATER RETICULATION ONSITE OPTION

ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	1520-138093-01	SCALE: AS SHOWN
DRAWING No:	138093-01-75	REV 3



LEGEND

- PROPOSED STAGING BOUNDARY
- STORMWATER POND
- ROAD RESERVE
- LOCAL PURPOSE RESERVE (AMENITY - 10m WIDE MIN.)
- LOCAL PURPOSE RESERVE (STORMWATER) - REFER TO DWG 40
- NOISE BUND REQUIRED - REFER TO DETAIL
- WASTEWATER/WATER TREATMENT PLANT

NOTES

AREAS SHOWN ARE MINIMUM REQUIRED.

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
KLA	09.07.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
KLA	09.07.15		27.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
KLA	14.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
KLA	09.07.15		
BY	DATE	DGN	
			24.08.15

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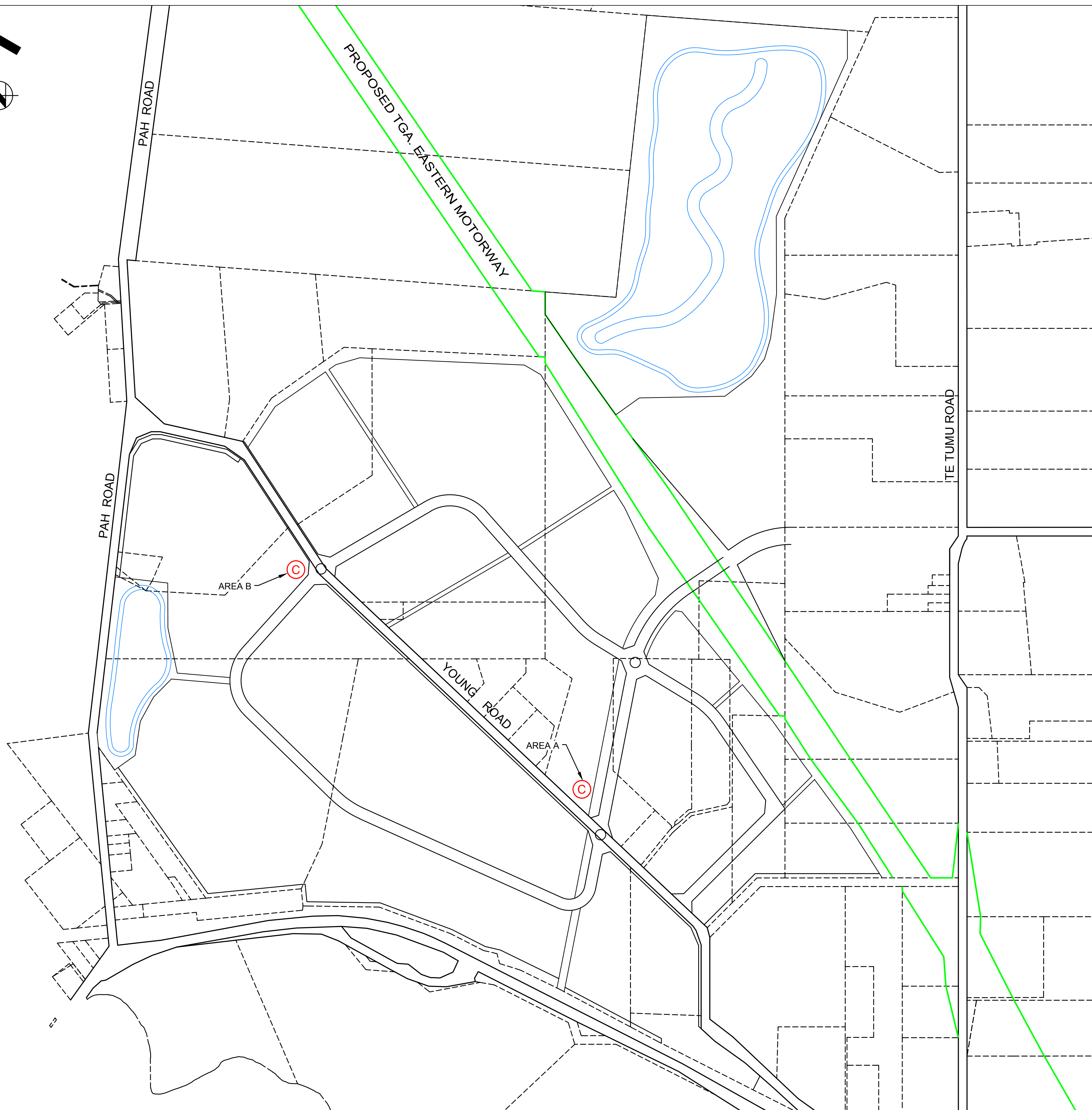
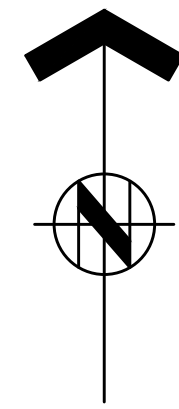
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PROJECT: QUAYSIDE PROPERTIES LTD RANGIURU BUSINESS PARK

TITLE: PLAN OF PROPOSED LAND USE


ISSUE STATUS: FOR INFORMATION		
PROJECT No:	SCALES:	A1
1520-138093-01	1:5000 - A1 1:10000 - A3	
DRAWING No:		REV
138093-01-90		3



LEGEND

 COMMUNITY SERVICE AREA

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
KLA	09.07.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
KLA	09.07.15		27.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	09.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
KLA	09.07.15		
BY	DATE	DGN	
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REF	AMENDMENT	BY	DATE

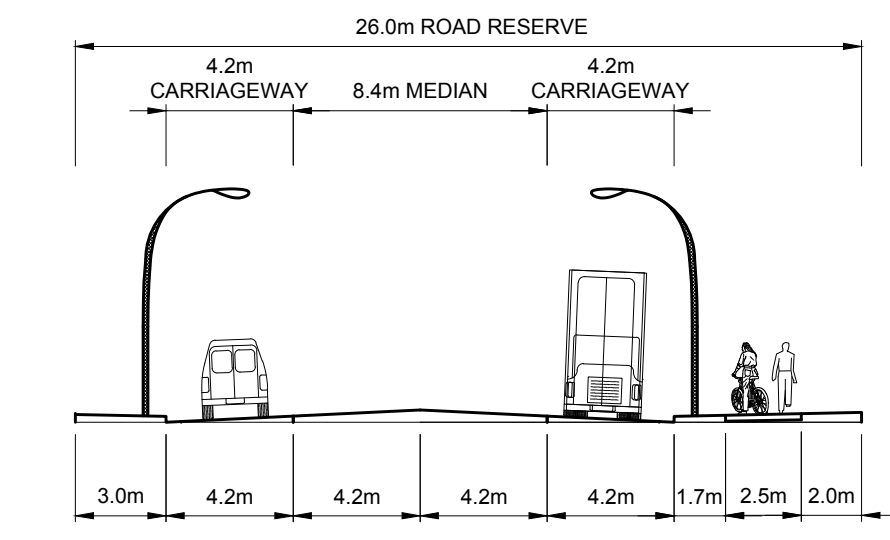
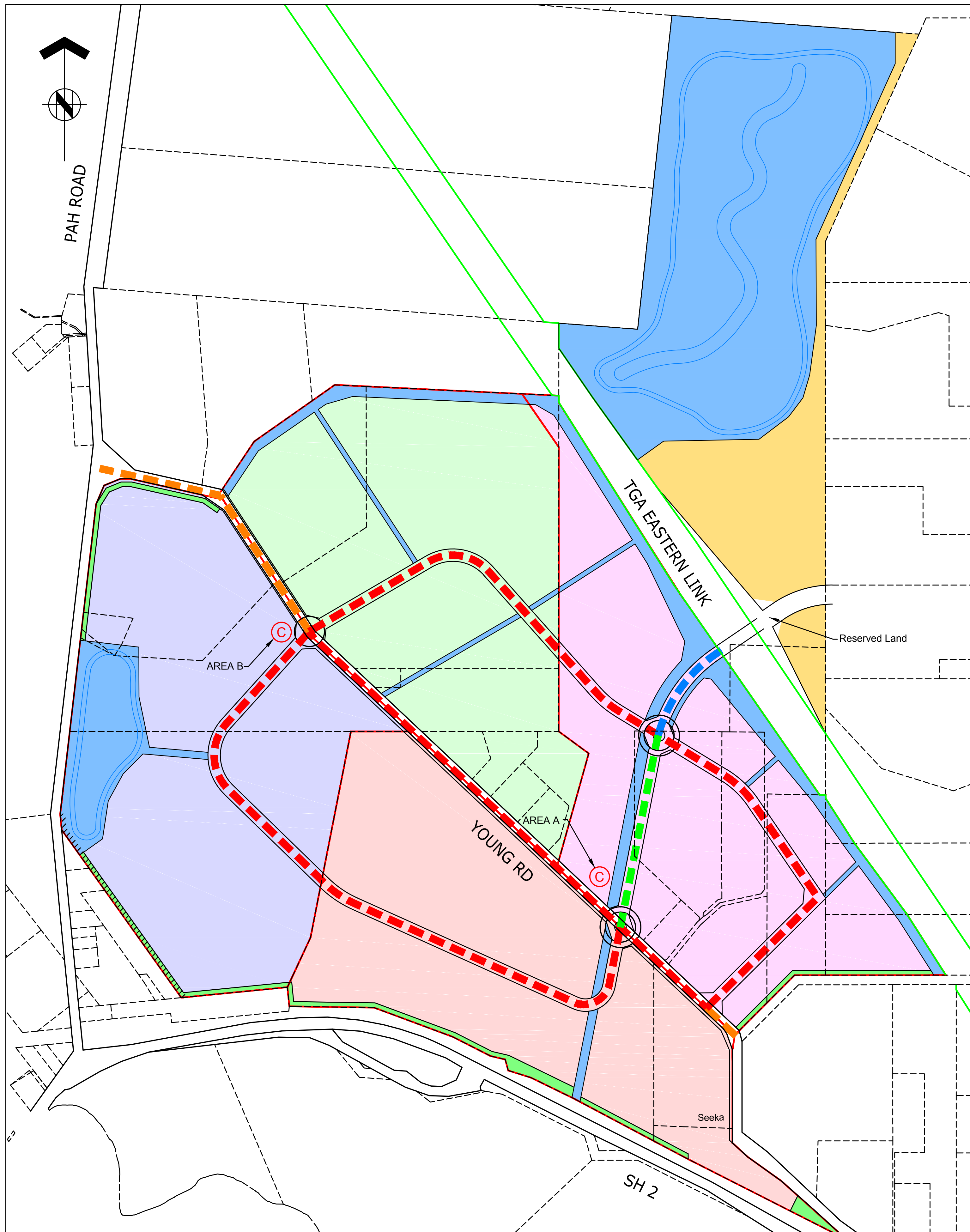
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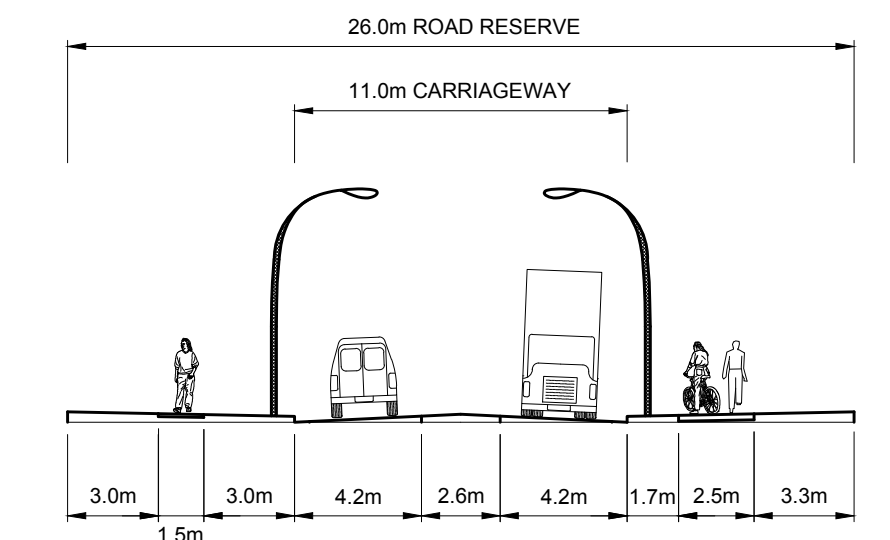
PROJECT:
**QUAYSIDE PROPERTIES LTD
 RANGIURU BUSINESS PARK**

TITLE:
**PLAN OF PROPOSED
 COMMUNITY SERVICE AREA**

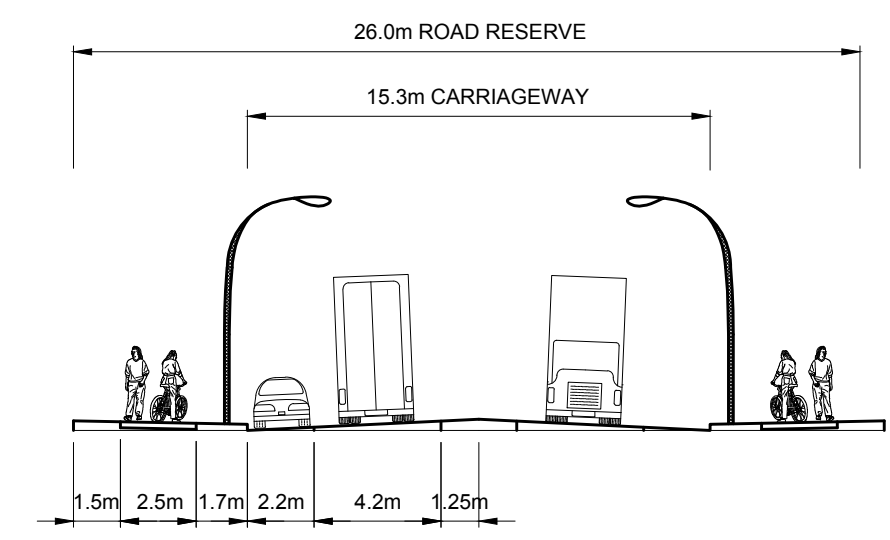
ISSUE STATUS:	FOR INFORMATION	
PROJECT No:	SCALES: 1:5000 - A1 1:10000 - A3	A1
DRAWING No:		REV
138093-01-91		2



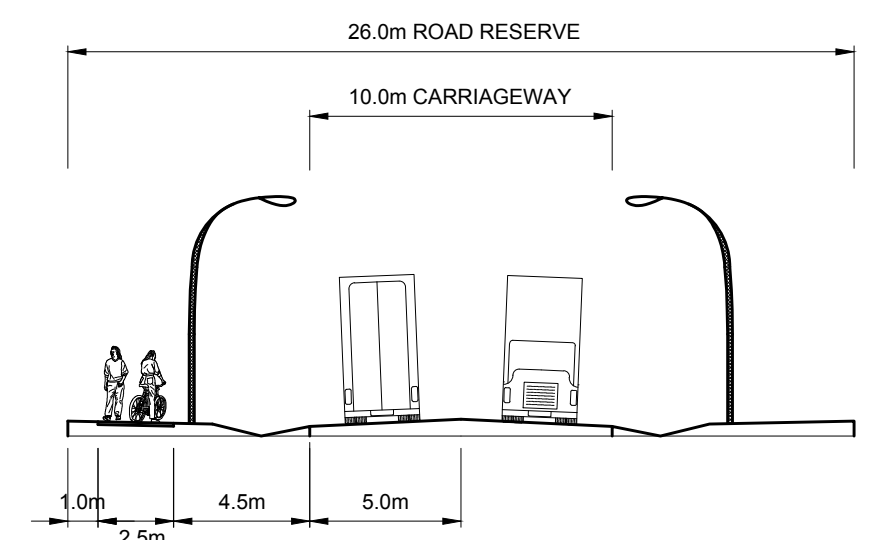
TYPE A
Entrance Road
Blue



TYPE A1
Entrance Road
Green



TYPE B
Collector Road
Red



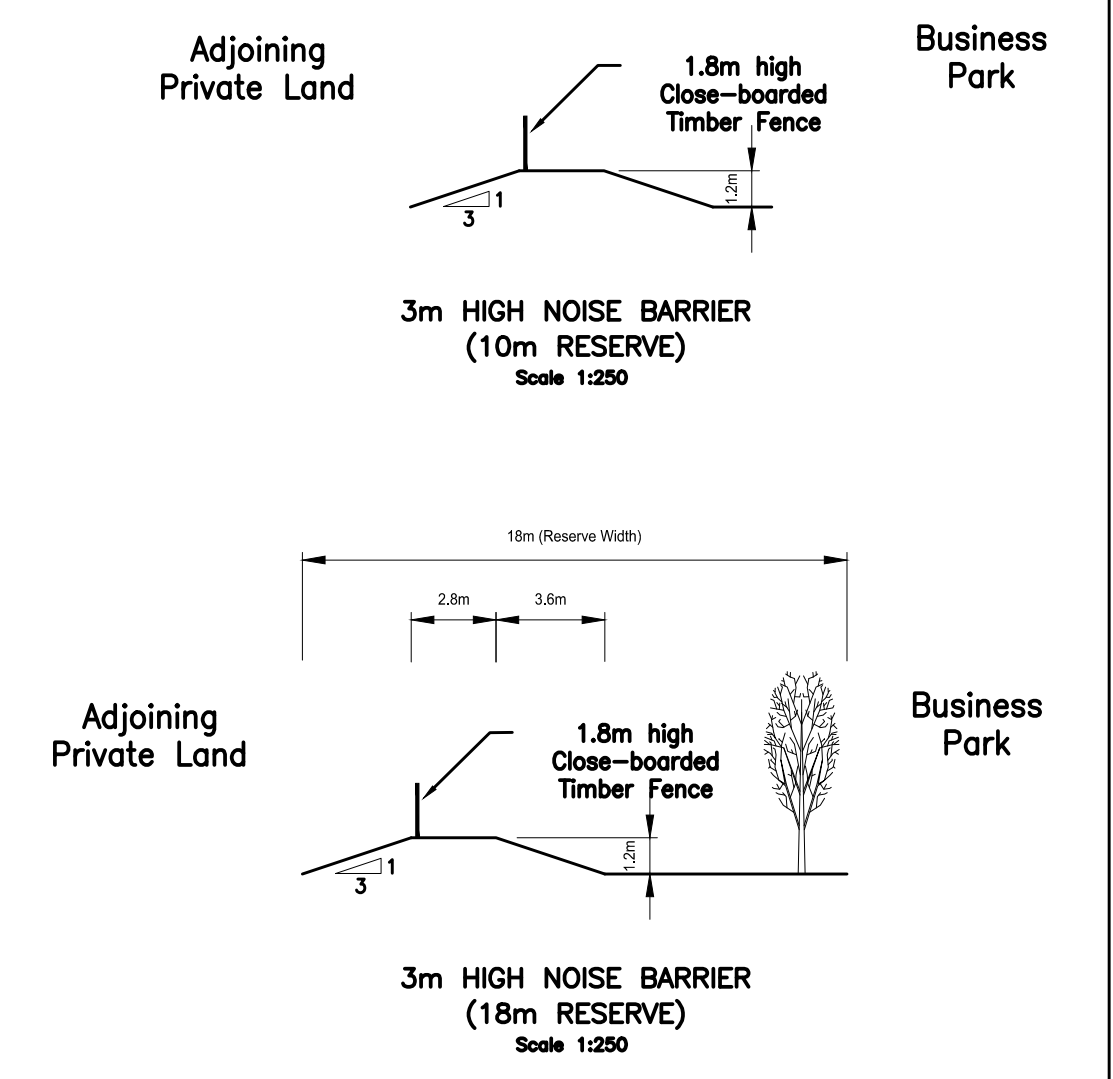
TYPE B1
Collector Road
Orange

LEGEND

- DESIGNATION BOUNDARY
- STAGE 1 - 45.6ha
- STAGE 2 - 43.5ha
- STAGE 3 - 39.6ha
- STAGE 4 - 48.5ha
- PROPOSED STAGING BOUNDARY
- LOCAL PURPOSE RESERVE (AMENITY - 10m WIDE MIN.)
- LOCAL PURPOSE RESERVE (STORMWATER) - REFER TO DWG 40
- NOISE BUND REQUIRED - REFER TO DETAIL
- WASTEWATER/WATER TREATMENT
- PROPOSED ROAD (TYPE A)
- PROPOSED ROAD (TYPE A1)
- PROPOSED ROAD (TYPE B)
- PROPOSED ROAD (TYPE B1)
- PROPOSED STORMWATER POND
- ROAD ROUNDABOUT
- MAJOR ROAD ROUNDABOUT
- COMMUNITY SERVICE AREA

NOTES

AREAS SHOWN ARE MINIMUM REQUIRED.



REF	AMENDMENT	BY	DATE	DGN	DATE	SIGNED:
4	ISSUED FOR INFORMATION	HHX	31.08.15	KLA	09.07.15	
3	ISSUED FOR INFORMATION	HHX	24.08.15	KLA	14.07.15	
2	ISSUED FOR INFORMATION	KLA	14.07.15	DGN	09.07.15	
1	ISSUED FOR INFORMATION	KLA	09.07.15	APPROVED:	DATE:	SIGNED:
			24.08.15			

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
KLA	09.07.15		HHX
DRAWN:	DATE:	SIGNED:	PLOT DATE:
KLA	09.07.15		31.08.15
CHECKED:	DATE:	SIGNED:	SURVEY BY:
DGN	09.07.15		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
	24.08.15		

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PROJECT: QUAYSIDE PROPERTIES LTD
RANGIURU BUSINESS PARK

TITLE: PLAN OF PROPOSED
ROADING LAYOUT, LAND USE
AND STAGING PLAN

ISSUE STATUS:		
FOR INFORMATION		
PROJECT No: 1520-138093-01	SCALES: 1:5000 - A1 1:10000 - A3	A1
DRAWING No: 138093-01-92		REV 4

APPENDIX 5

CONSULTATION RECORDS

Quayside Properties Limited – Plan Change 72 Consultation Records

Item	Who?	When?	How?	Meeting Type
1	Tapuika Iwi Authority	7 May 2015	Meeting held at the Tapuika Iwi Authority office, Te Puke	Consultation
2	David Regional Planning BOPRC Phizacklea, Integrated Manager,	14 May 2015	Meeting held at the Quayside office, Tauranga	Consultation
3	Michael Tucker, Manager: City Planning & Growth, and Andrew Mead, Strategic Planner, Tauranga City Council	21 May 2015	Meeting held at the Quayside office, Tauranga	Consultation
4	Landowners within the Business Park zone	25 May 2015	By letter (Appendix A attached)	Correspondence
5	Nancy Carlyle & Howard Reid, Directors of Monida Ltd	4 June 2015	Meeting held at the Quayside office, Tauranga	Consultation
6	Te Puke Community Board	18 June 2015	Meeting held at the Te Puke Boardroom (Library building)	Briefing
7	Local community & landowners within the business park zone	21 June 2015	Meeting held at Kiwi 360	Consultation

8	Mark Archbold, landowner 150 Young Road	2 July 2015	Individual meeting held at Kiwi 360	Follow Up meeting
9	SmartGrowth Field Trip Attendees	10 April 2015	Site visit to Somerset Orchard, Young Road, Te Puke	Briefing
10	TCC Field Trip Attendees	16 June 2015	Site visit to Somerset Orchard, Young Road, Te Puke	Briefing
11	CEO and GM, Western Bay of Plenty District Council	6 May 2015	Meeting held at the WBOPDC office, Tauranga	Briefing
12	Seeka Limited	18 June 2015	Meeting held at the Seeka Offices	Consultation

Appendix A

Mailing List for Landowners within the Business Park zone

Name	Address 1	Address 2	City	Postcode
Miro Farms Limited	C/- GB Abbott	185 Pah Road	Te Puke	3189
The Executors Estate A K Potiki	C/- Roberta Maxwell	PO Box 97151, Manukau City	Auckland	2241
Mr Christopher John Campny	PO Box 515		Te Puke	3153
Brenda Ann Archbold	150 Young Road	RD9	Te Puke	3189
HEB Land Holding Limited	PO Box 226	Drury	Auckland	2247
Wrightson Limited	C/- PGG Wrightson	Private Bag 1961	Dunedin	9054
Seeka Kiwifruit Industries Limited Attention: Michael Franks	PO Box 47		Te Puke	3153
Mr Colin George Nicholson	160 Young Road	RD9	Te Puke	3189
Monida Estate Limited	148 Young Road	RD9	Te Puke	3189
Mr Colin Webber	110 Young Road	RD9	Te Puke	3189
Mr John Magee	PO Box 59		Te Puke	3153
NZ Transport Agency	C/- Colliers International		Hamilton	3244
	PO Box 19093			
Noeline Elizabeth Attwood	C/- Mike Attwood 5 Kiri Place		Te Puke	3119

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #1

WHO:	Tapuika Iwi Authority
WHERE:	Meeting at the offices of Tapuika Iwi Authority, Jellicoe Street, Te Puke
NATURE OF MEETING:	Consultation
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Mike Horsley (Quayside Consultant)▪ Tony Wihapi (Tapuika, Operations Manager)▪ Carol Biel (Tapuika, Chair)▪ Helen Biel (Tapuika Staff)▪ Hohepa Maxwell (Tapuika Consultant)
WHEN:	Thursday, 7 th May 2015
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ General catch up and follow up on prior meetings between parties.▪ It was noted that Quaysides role is one of facilitation, to enable a developer to commence the first stage of the park with a reasonable degree of certainty.▪ Walked through presentation (attached). Noted on site alternatives being looked at for water and waste water. Also noted that additional regional consents would be needed as part of any alternative infrastructure.▪ The significance of the local area to Tapuika was noted.▪ Broad support for the business park and the employment opportunity it presents.
ISSUES RAISED:	<ul style="list-style-type: none">▪ Keen to understand what other activities may be planned with Industrial Park▪ Asked if Quayside had any interest in utilising adjacent Tapuika land as part of the storm water processing. Quayside noted this is outside of the zone and unlikely to be added under the proposed plan change.
QUAYSIDE RESPONSE:	<ul style="list-style-type: none">▪ To have a follow up meeting to discuss plans and proposed activities once better understood.

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #2

WHO	Bay of Plenty Regional Council
WHERE:	Meeting at the offices of Quayside Holdings Limited, Level 2, Regional House, 1 Elizabeth Street, Tauranga
NATURE OF MEETING:	Consultation
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Mike Horsley (Quayside Consultant)▪ David Phizacklea (BOPRC, Regional Integrated Planning Manager)
WHEN:	Thursday, 14 th May 2015
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ It was noted that Quaysides role is one of facilitation, to enable a developer to commence the first stage of the park with a reasonable degree of certainty.▪ Walked through presentation (attached). Noted on site alternatives being looked at for water and waste water. Also noted that additional regional consents would be needed as part of any alternative infrastructure.▪ Quayside asked whether the proposed plan change was in accordance with the regional plan. Agreed it was.
ISSUES RAISED:	None
QUAYSIDE RESPONSE:	None

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #3

WHO	Tauranga City Council
HOW:	Meeting at the offices of Quayside Holdings Limited, Level 2, Regional House, 1 Elizabeth Street, Tauranga
NATURE OF MEETING:	Consultation
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Mike Horsley (Quayside Consultant)▪ Michael Tucker (TCC, Manager City Planning & Growth)▪ Andrew Mead (TCC, Strategic Planner, TCC)
WHEN:	Thursday, 21 st May 2015
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ It was noted that Quaysides role is one of facilitation, to enable a developer to commence the first stage of the park with a reasonable degree of certainty.▪ Walked through presentation (attached). Noted on site alternatives being looked at for water and waste water. Discussion around water drilling and progress to date.▪ Discussion on future Kaituna Link provisioning and what was being done to achieve this. Quayside noted Reserved Land was an intention.▪ Discussion on proposed changes to Permitted Activities. Quayside noted likely changes to food areas and community service area location.
ISSUES RAISED:	<ul style="list-style-type: none">▪ TCC noted desire not to see big box retail at Rangiuru. TCC also noted the proposed commercial sites at Wairakei and Te Tumu as future zones.
QUAYSIDE RESPONSE:	<ul style="list-style-type: none">▪ Proposed changes to activities schedule to be sent to TCC once more fully settled.

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #5

WHO	Monida Estate Limited
WHERE:	Meeting at the offices of Quayside Holdings Limited, Level 2, Regional House, 1 Elizabeth Street, Tauranga
NATURE OF MEETING:	Consultation
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Mike Horsley (Quayside Consultant)▪ Necia Carlyle (Landowner)▪ Howard Reid (Landowner)
WHEN:	Thursday, 4 th June 2015
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ General catch up and discussion on business park progress.▪ Noted that Monida Estate was for sale.▪ It was noted that Quayside's role is one of facilitation, to enable a developer to commence the first stage of the park with a reasonable degree of certainty.▪ Walked through presentation (attached).
ISSUES RAISED:	<ul style="list-style-type: none">▪ Understood proposal.
QUAYSIDE RESPONSE:	None

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #6

WHO	Te Puke Community Board
HOW:	Meeting held at the Te Puke Boardroom, Library Building at 6pm
NATURE OF MEETING:	Information sharing
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Peter Miller (Chairperson)▪ Grant Dally (Deputy Chairperson)▪ Ronald Spratt (Member)▪ Sue Matthews (WBOPDC Councillor, Te Puke Ward)▪ Gary Allis (WBOPDC, GM Engineering Services)▪ Media (Te Puke Times)
WHEN:	Thursday, 18 th June 2015
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ Thanked Board for opportunity to come and talk to them.▪ Outlined challenges to date in terms of achieving the business park and the work being done behind the scenes to progress the park.▪ Powerpoint presentation to Board (attached).
ISSUES RAISED:	<ul style="list-style-type: none">▪ Numerous questions raised and answered.▪ Question raised on waste water plant in Te Puke and separation of Business Park and WBOPDC contributions. Mr Hamilton and Mr Allis noted that the Business Park was expected to pay for additional capacity, while WBOPDC was to pay for existing quality. If an alternate water treatment plant was applied at Rangiuru than no contribution was expected for the Te Puke plant.
QUAYSIDE RESPONSE:	No follow up issues.

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #7

WHO	Local Community & Land owners within the Business Park Zone
HOW:	Meeting held at Kiwi 360
NATURE OF MEETING:	Consultation
NAME OF PRESENTERS:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ David Needham (Quayside Consultant)▪ Mike Horsley (Quayside Consultant)▪ Philip Martelli (WBOPDC, Resource Management Manager)
WHEN:	Sunday, 21 st June 2015 at 2pm
ATTENDING PARTIES:	<ul style="list-style-type: none">▪ Graeme Crossman – Kiwi 360 (Neighbouring Property)▪ Mark & Brenda Archbold – 150 Young Road (Landowners)▪ Colin & Catherine Nicholson – 160 Young Road (Landowners)▪ Necia & Howard (Monida Estate Ltd) – 148 Young Road (Landowners)▪ Gordon Abbott – Miro Farms (Landowner)
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ A series of maps and documentation was presented on the walls of Kiwi360 with opportunity for individual parties to discuss with any presenting party.
ISSUES RAISED:	<ul style="list-style-type: none">▪ Some landowners noted the requirement to retain existing activity rights.▪ One landowner noted the challenges in selling land in the industrial zone.▪ The current state of Young Road was noted and the deterioration as a result of the traffic from the TEL construction.
QUAYSIDE RESPONSE:	<ul style="list-style-type: none">▪ Quayside was requested to attend a follow up meeting on 2 July.

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #8

WHO	Local Community & Land owners within the Business Park Zone
HOW:	Individual meeting held at Kiwi 360
NATURE OF MEETING:	Consultation Follow Up
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ David Needham (Quayside Consultant)▪ Philip Martelli (WBOPDC, Resource Management Manager)▪ Mark & Brenda Archbold – 150 Young Road (Landowners)▪ Mr and Mrs Webber – 110 Young Road (Landowners)▪ Necia & Howard (Monida Estate Ltd) – 148 Young Road (Landowners)▪ Gordon Abbott – Miro Farms (Landowner)
WHEN:	Thursday 2 nd July 2015 at 4.30pm
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ Meeting called to hear concerns of residents following June 21st consultation
ISSUES RAISED:	<ul style="list-style-type: none">▪ Some residents were opposed to the original rezoning of the park and those concerns remained.▪ It was noted that one resident has been unable to sell their land inside the business park and asked what could be done in this regard.▪ The Council was also asked what changes to existing dwellings landowners could do under the current zoning (WBOPDC to respond).▪ Landowners requested that if services passed their gate, that they were not obliged to connect under their existing use rights. This was confirmed as the case, unless they undertook an industrial activity.▪ Questions were raised as to whether stage one could be expanded to include specific additional land blocks.▪ Could any other party go first.
QUAYSIDE RESPONSE:	<ul style="list-style-type: none">▪ Quayside noted that the staging change was required to give effect to the park given the location of the TEL interchange, culverts, and likely water source.▪ The first infrastructure requirement is the TEL interchange and connectivity to the storm water culverts and water. This infrastructure is costly. Quayside as facilitator would talk to any parties wished to undertake the lead infrastructure regardless of their respective land interest.

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- Zone one reflects a best endeavours to facilitate the park starting soon.
 - It was noted that Quayside is not in the business of developing land or acquiring land for development. Individual opportunities are assessed on a case by case basis.
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**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #9

WHO	SmartGrowth Field Trip Attendees
HOW:	Field visit to Somerset Orchard, Young Road, Te Puke
NATURE OF MEETING:	Information Session
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ 34 Field Trip Attendees – (See attached including representatives from NZTA, WBOPDC, TCC, BOPRC, and SmartGrowth)
WHEN:	Friday 10th April 2015 at 11.00am
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ Attendees were brought onto site (144 Young Road) on a bus.▪ Attendees were given a two page flyer in advance (attached).▪ Commentary was provided noting<ul style="list-style-type: none">○ The outer edges of the park○ The area proposed for stage 1○ The location of the 3 legged interchange to the TEL○ Potential provisioning of reserved land for a future Kaituna link○ The location of the culverts○ The drilling for water through deep water bores○ The nearness of completion of the TEL
ISSUES RAISED:	<ul style="list-style-type: none">▪ A generic question and answer session was held.
QUAYSIDE RESPONSE:	<ul style="list-style-type: none">▪ No open issues

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #10

WHO	Tauranga City Council Field Trip Attendees
HOW:	Field visit to Somerset Orchard, Young Road, Te Puke
NATURE OF MEETING:	Information Session
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Field Trip Attendees representing Councillors and Staff from Tauranga City Council.▪ Mirrored SmartGrowth session of 10th April 2015.
WHEN:	Tuesday 16th June 2015 at 4.00pm
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ Attendees were brought onto site (144 Young Road) on a bus.▪ Commentary was provided noting<ul style="list-style-type: none">○ The outer edges of the park○ The area proposed for stage 1○ The location of the 3 legged interchange to the TEL○ Potential provisioning of reserved land for a future Kaituna link○ The location of the culverts○ The drilling for water through deep water bores○ The nearness of completion of the TEL
ISSUES RAISED:	<ul style="list-style-type: none">▪ A generic question and answer session was held.
QUAYSIDE RESPONSE:	<ul style="list-style-type: none">▪ No open issues

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #11

WHO	Western bay District Council Staff
HOW:	Meeting and WBOPDC Council
NATURE OF MEETING:	Information Session
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Michael Smith (Quayside Chairman)▪ Miriam Taris (WBOPDC CEO)▪ Gary Allis (WBOPDC, GM Engineering Services)
WHEN:	Wednesday 6th May 2015 at 4.00pm
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ Proposed Process of Plan Change 72 discussed▪ Discussion on Staging required▪ Discussion on potential use of alternate infrastructure for water and waste water
ISSUES RAISED:	<ul style="list-style-type: none">▪ Noted timeframe was tight but Quayside and WBOPDC had been collectively working together towards this for some time.
QUAYSIDE RESPONSE:	<ul style="list-style-type: none">▪ No open issues

**RECORD OF A MEETING
FOR THE PURPOSES OF CONSULTATION ON PLAN CHANGE 72, RANGIURU BUSINESS PARK**

Consultation Details #12

WHO	Seeka Limited
WHERE:	Meeting at the offices of Seeka, Queens Street, Te Puke
NATURE OF MEETING:	Consultation (landowner with a pack house in the zone)
NAME OF ATTENDEES:	<ul style="list-style-type: none">▪ Scott Hamilton (Quayside CEO)▪ Michael Franks (Seeka CEO)▪ Stewart McKinstry (Seeka CFO)
WHEN:	Thursday, 18 th June 2015 at 4:00pm
DISCUSSION POINTS:	<ul style="list-style-type: none">▪ General catch up and discussion on business park progress.▪ It was noted that Quaysides role is one of facilitation, to enable a developer to commence the first stage of the park with a reasonable degree of certainty.▪ Walked through presentation that was to be used for Community Board that evening (attached).▪ Staging process was noted.
ISSUES RAISED:	<ul style="list-style-type: none">▪ Seeka noted they were very supportive of Rangiuru zone and getting it started.
QUAYSIDE RESPONSE:	None