

21 February 2020

Attention: James Beban
Director / Planner
Urban Edge Planning Limited
PO Box 39071 Wellington Mail Centre
Lower Hutt 5045

By email: james@uep.co.nz

Project Name: Pinehaven Stream Improvements
Project Number: IZ089000

Subject: Response to section 92 requests for further information

Dear James

Thank you for your letter dated 6 December 2019 setting out the matters about which further information is required under section 92 of the Resource Management Act 1991 by the Upper Hutt City Council to fully assess the notice of requirement for designation for the proposed Pinehaven Stream Improvements.

Responses to the matters raised in the Section 92 letter are addressed in the tables contained in Appendix A.

This letter does not respond to your further section 92 request dated 3 February 2020. That further response will be provided in a separate document.

We trust that the responses above sufficiently satisfy the section 92 request for further information. Please don't hesitate to contact me if you have any other queries or need further clarification.

Yours sincerely



Helen Anderson
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Appendices

Appendix A Response tables

- Planning – Table 1 commencing at page 1; and
- Terrestrial ecology - Table 2, commencing at page 5.

Appendix B Plans showing extent of main works

Appendix C Demolition and reinstatement schedule

Appendix D Updated designation and General Arrangement plan

Appendix E Private vehicle shared accessway bridge concept design

Appendix F Amended proposed designation conditions

Appendix H Draft Riparian Planting Plan

Appendix A. Response tables

Table 1: Planning

#	Requested Information	Response
1.	<p><i>The proposed designation will pass over several existing designations. Can you please provide details on how you will manage the conflict between the proposed and existing designations? Several of the existing designations that the proposed works will pass through do not provide for the proposed flood management works, thereby frustrating the designation sought in this application.</i></p>	<p>There will not be any conflict between existing and proposed designations. Section 177 of the RMA provides that a requiring authority responsible for the later designation must obtain the prior written consent of the authority responsible for the earlier designation. In this instance the Upper Hutt City Council is the requiring authority for all designations. Therefore, the requiring authority for the project (UHCC) will seek written consent from the requiring authority of the earlier designations (UHCC) prior to works located within these earlier designations taking place.</p> <p>Table 4 and section 5.2.3 of the application document detail the existing designations, with UHC61, 62 and 89 all being for recreation purposes, and UHC73 is for Local Purpose (Drainage Reserve). All designations have an underlying Open Space zone and are owned by Upper Hutt City Council. It is noted that overlapping of the existing designations may only be temporary, as the Pinehaven Stream Improvements designation would be amended in accordance with proposed condition 4 and section 182 of the RMA through the removal of those parts of the designation not required for operational purposes.</p> <p>Options to address the overlaps include written consent from the requiring authority, or removal of the existing designation. Advice received from Upper Hutt City Council in relation to methods to address the overlap for each existing designation is provided below:</p> <ul style="list-style-type: none"> • UHC89: UHCC will give written consent for works at Willow Park, and the existing recreation designation will be extended to meet the new footprint of the parks once works are completed; • UHC73: This designation will be removed, once the Pinehaven Stream Improvements NOR has been confirmed; • UHC61: This designation will be removed; • UHC62: UHCC will give written consent for works to occur in Pinehaven Reserve. After completion of the Pinehaven Stream Improvements works UHCC will assess whether the UHC62 designation boundary needs to be amended, with consideration of the potential impact of removal of part of the Pinehaven Stream Improvements designation in accordance with proposed condition 4, and whether any overlapping of the designations will occur during the operational-phase of the project.

<p>2.</p>	<p><i>Several aspects of the proposed works outlined in this application are also covered in the resource consent applications for the Sunbrae Drive and Pinehaven Road culverts. Can you please clearly identify on the plans the works covered under the NOR and the works covered by the resource consent applications?</i></p>	<p>The plans attached at Appendix B show the work extent of the Main Works. Additionally, the plans also provide an outline of the areas covered by the Pinehaven and Sunbrae culvert resource consent applications, which is excluded from the NOR and works covered by the Pinehaven main works application.</p> <p>The intention is for the culverts to be constructed prior to the main works. As the main works will need to tie-in to the culverts, there will be some overlap in the extent of each work project, as shown on the plans attached at Appendix B.</p> <p>It is important to note that the district land use consents issued for the culvert works provide for tree removal associated with the culvert installation works, being five kowhai trees in the vicinity of Sunbrae Drive and one black beech in the vicinity of Pinehaven Road. For completeness, there will also be removal of one oak tree removed in the vicinity of Pinehaven Road, which has negligible ecological value. Therefore, this forms part of the existing environment to be considered in relation to the assessment of effects of the notice of requirement.</p>
<p>3.</p>	<p><i>The proposal makes reference to the relocation of accessory buildings to enable the proposed works. However, no details of where the accessory buildings will be relocated to are provided. Is this information know[n] at this stage and would these works be consistent with the intent of the designation?</i></p>	<p>A demolition and reinstatement schedule for the works is attached at Appendix C. This schedule identifies all accessory buildings to be removed and reinstated. Detail on where these buildings will be located on the site is not currently available and is subject to landowner discussions. If a building is to be relocated outside of the designation footprint, then any RMA necessary approvals will be sought separately.</p> <p>Proposed conditions of consent have been included at Appendix F to address the provision of as-built plans for the removal and reinstatement of accessory buildings, to show compliance with district plan requirements or existing use rights.</p>
<p>4.</p>	<p><i>It is proposed that the fill from the works will be located on the Pinehaven School sports field. This area does not appear to be within the designation. Can you please confirm whether the deposition of the fill resulting from this proposal will be addressed through a separate resource consent application?</i></p>	<p>Pinehaven School is located to the south of Pinehaven Reserve. The application did not propose to deposit any fill on the Pinehaven School sports field.</p> <p>The fill proposed to be deposited on the Silverstream Reformed Church and associated Christian School site, as noted on Sheet 1 of the General Arrangement plans, is no longer proposed to be included in the Project works. Amended designation plans and GA plans reflect this change which are attached at Appendix D. An updated table showing the designation areas for each property is also included. A separate resource consent for these works will be sought at a later date to provide for these works if this activity is progressed.</p>

5.	<p><i>Many of the new bridges will provide access to multiple properties. Can you please confirm how legal access will be provided to the residential properties having access over these bridges and when this legal access will be established?</i></p>	<p>Access to the properties impacted by the works is currently being negotiated with the various owners. All owners have been presented an agreement to provide access to construct the works under section 181 of the Local Government Act 2002. As at the date of this response, only one landowner is yet to sign the necessary agreements, with the expectation that this will be provided prior to commencement of construction. The legal arrangements for new accessways that are required to be created is still being discussed with Upper Hutt City Council and the landowners. It is likely Upper Hutt City Council will retain responsibility for the maintenance and upkeep of the access bridges.</p> <p>Legal access arrangements will be confirmed prior to bridge construction commencing.</p>
6.	<p><i>The Council District Plan has minimum access width requirements for private ways and rights of ways. As details have not been provided on the proposed bridges that provide access to multiple properties, it is difficult to confirm if the proposal meets these requirements. Are there any initial bridge designs available that can be reviewed to confirm if these width standards will be met?</i></p>	<p>The proposed bridges for the private driveway access will be approximately 3.7 metres wide. This is shown on the concept plans attached at Appendix E.</p> <p>The proposed shared access will comply with the requirements of Standard 18.9 - Access standards for subdivision and land use activities. No minimum access width requirements are identified within the Upper Hutt City Council District Plan. The widths stated in Appendix C, Figure 1 of the Code of Practice for Civil Engineering Works relate to road design, rather than private driveway widths. In addition, as stated on the Upper Hutt City Council website, Part C of the CoP forms a means of compliance but remains outside the District Plan.</p> <p>The bridges and accesses will be designed in accordance with the following:</p> <ul style="list-style-type: none"> · UHCC Code of Practice for Civil Engineering Works; and · NZTA Bridge Manual, 3rd Edition <p>Section B1.10.2 of the Code of Practice for Civil Engineering Works states that the minimum width for accessway to Services for Vehicles should be 'adequate for their purpose but in no case less than 3 metres in width.' In neighbouring Hutt City, the standard and minimum width of a residential driveway crossing is 2.5 metres. For the private driveway access bridges, the proposed design width of 3.7 metres is proposed, which is greater than both of these standards.</p>

Please also note that a change to the designation footprint within 30 Blue Mountains Road is proposed to provide for the driveway. Please refer to amended Sheet 3 of the General Arrangement plans and Sheet 4 of the designation plans attached at Appendix D.

7. *There is reference to a site office being established, but no details of the office are provided. Can you please confirm how you propose to manage the effects associated with the siting of the office. This may be through a condition on the designation where a siting and elevation plan is provided prior to construction.*

A proposed site office will be established within one of the existing houses that has been purchased for the project. The likely houses that could be used are 48 Blue Mountains Road or 10a Blue Mountains Road. The effects of providing for the site office will be avoided or mitigated through a site office management plan (SOMP) that confirms likely traffic movements, parking and laydown areas on the property.

We propose the following condition be included:

A Site Office Management Plan (SOMP) shall be prepared and submitted to the CMO at least 15 Working Days prior to the establishment of the site office for certification that it meets the requirements of this condition. The purpose of the SOMP is to outline the requirements for the Project's site office establishment and management and to outline how potential adverse effects will be avoided or mitigated. The SOMP shall address, as a minimum:

- a. the location of the site office;*
- b. proposed working hours;*
- c. traffic movements to and from the site office area;*
- d. on-site and off-site parking for site office staff;*
- e. the location, nature and height of any security fencing;*
- f. light spill from any security lighting proposed; and*
- g. laydown areas on the property.*

This condition is included in the amended proposed condition set attached at Appendix F.

Table 2: Terrestrial ecology

#	Requested Information	Response
8.	<p><i>The ecological report largely concentrates on the effects of the removal of the larger native trees. Council's ecologist has identified that the other vegetation types to be removed will also provide ecological habitat for fauna. As such it would be helpful to improve the understanding of the effects associated with the proposal, including the following:</i></p>	
a.	<p><i>A broadly mapped area of the vegetation types to be removed and retained (native trees, garden plantings, weed species). This can be done at a broad level using aerial photography;</i></p>	<p>A map showing the broad vegetation types to be removed and retained has been prepared and is attached at Appendix G. This map shows the native, garden plantings and weed species vegetation grouped together providing a greater level of differentiation is not possible without undertaking a further site walkover. This mapping does however provide clarity on where existing vegetation is located and where it will be removed.</p> <p>The project team's terrestrial ecologist and landscape architect have visited the site to gain an understanding in broad terms of the potential vegetation loss in addition to the extent of significant vegetation being lost or retained, and this is reflected in the landscape and visual assessment (LVIA, Appendix V of the original application). The assessment notes at section 3.1.3 (page 11) that along the alignment there were considerable areas of weed and exotic species present. There were few areas of native vegetation and in almost all examples the stream bank was modified. Existing trees (particularly the significant trees) along the alignment have been mapped and assessed in the terrestrial ecology report attached to the original application at Appendix S (see section 5.1.2). Additional commentary is provided in response to question b) below.</p> <p>A description of the environment and associated loss of existing vegetation is contained in section 5.8.1.1 (page 55) and 10.7.1.1 (page 120) of the application and further elaborated in subpoint (b and c) below</p>
b.	<p><i>Based on the mapping, providing commentary on the potential ecological effects associated with the proposal, arising from the removal of the other vegetation typologies and whether the proposed mitigation measures addresses these effects;</i></p>	<p>The following description of the values associated with existing vegetation within the riparian corridor was provided by Dr Paul Blaschke, who undertook early site work over two site visits. This information was reviewed and confirmed as appropriate for inclusion in the following assessment of the potential ecological effects arising from the removal of other vegetation typologies provided by Dr Adam Forbes (Forbes Ecology).</p> <p>Prior to describing the vegetation within each reach, Dr Adam Forbes provides the following additional clarification on the significant tree values and mitigation and on the value of existing vegetation that is to be cleared:</p>

Thirteen individual native trees will be removed during the construction phase. Of these, the black beech are assessed as significant in terms of Policy 23 of the Greater Wellington Regional Policy Statement, of which one occurs within Urban Tree Group #99 and one in #102, as described in the Upper Hutt District Plan Chapter 27A. I have assessed the level of effect from removal of significant trees and concluded those levels to be very low for kowhai and kahikatea and low for black beech. In my view, the vegetation loss can be addressed over time by the proposed environmental planting proposed as part of the Pinehaven Stream Improvements. These plantings would be at the species-specific multipliers I have recommended, namely:

- Kowhai – replacement planting ratio 3:1 (nine kowhai would be lost leading to 27 replacements)
- Black beech – ratio of 10:1 (three black beech would be lost leading to 30 replacements)
- Kahikatea – ratio 5:1 (one kahikatea would be lost leading to 5 replacements).

In my opinion, the proposed replacement planting would adequately address the ecological impact of the trees proposed for clearance.

In addition, I note that there is various other types of vegetation along the banks of the stream in the areas proposed for works. This vegetation originates from planting or has established naturally since the Pinehaven residential area was developed. This vegetation comprises both locally common species and weedy species. Following the EIANZ (2018) impact assessment methodology, this relates to features of low or negligible ecological value respectively. A high to moderate magnitude of effect resulting from clearance would result in a low to very low level of effect. The EIANZ (2018) approach to ecological impact assessment states that effects management for low or very low levels of adverse effect are not normally a concern provided that minimisation of effects is exercised. I regard this to be the case with the miscellaneous stream side vegetation with regard to terrestrial ecology values. This said, it could be that the stream side vegetation discussed above provides stream ecological functions (e.g. waterway shading) or amenity values which are beyond the scope of my assessment.

Streamside ecological riparian values are also described in the SEV within Dr Alex James' report. His assessment identifies that the stream channel is currently poorly buffered from the surrounding urban landscape. This is due to numerous stormwater inputs being in the channel and riparian vegetation being limited by existing bank

reinforcement and urban encroachment. Subsequently the values of this vegetation are assessed by Dr Alex James as being low as per Roper-Lindsay et al 2018.

Description of Existing vegetation (prepared by Dr Paul Blaschke)

Stream Reach 1: Sunbrae Drive to Whitemans Rd

Vegetation growing on the riparian margins (streamsides) and associated floodplain areas is more open than in Reaches 2 and 3 and is a mix of mown grass or lawn, residential gardens, weedy areas, exotic and native shrubberies, large exotic and native trees and revegetation plantings. Notable vegetation includes remnant mature and planted black beech, kowhai, titoki and rimu trees on the lots between 48 and 56 Whitemans Road. Exotic trees present include crack willow, sycamore, European oak, eucalypt species and strawberry tree. Many of the larger specimens of the exotic trees occur in Willow Park. The stream is predominantly well shaded by vegetation except within Willow Park.

Weed species are common within the streamsides and include blackberry, pampas, ivy, tradescantia, dock, aluminum weed, Japanese honeysuckle, jasmine, agapanthus and elaeagnus vine.

Stream Reach 2: Pinehaven Rd to Sunbrae Drive

Exotic and native shrubberies, residential gardens, and large exotic trees grow in the riparian margins. Exotic trees include sycamore, Douglas fir, Lebanon cedar, Lombardy poplar, crack willow, flowering cherry, alder and phoenix palm. Native trees include kanuka, kowhai and tree ferns, with revegetation plantings including pittosporum, mahoe and corokia. Most of the stream is shaded except for a section at 28 Blue Mountains Rd.

Weed species are common in the streamside, and the most abundant weeds are blackberry and tradescantia.

Stream Reach 3: Pinehaven Reserve to Pinehaven Road

The reach flows through residential properties and into Pinehaven Reserve. Exotic and native shrubberies, residential gardens, and large exotic and native trees grow in the streamsides. Exotic trees include crack willow, silver birch, European oak, sycamore and conifer species. Native trees including original mature specimens were relatively common in the streamsides, and included stands of black beech, kahikatea,

rimu and kowhai. A couple of black beech trees within the large Birchhaven property at 50 Blue Mountains Road show evidence of old burning, the origin of which could be either natural or human fires (Jones 2017). There are also revegetation plantings for some stream sections where kanuka, karamu, five-finger, lacebark, kowhai, cabbage tree, Hebe spp. and tree ferns are growing.

Weed species are common within the riparian margins and the most abundant weeds in this reach were blackberry, ivy, and tradescantia. An infestation of old man's beard was observed at 1 Pinehaven Road.

Notable native trees in the lower catchment growing alongside the Pinehaven Stream, in parks or residential sections, include mature specimens or stands of beech, kahikatea, rimu, titoki and kowhai. Common exotic trees growing alongside the Pinehaven Stream include crack willow, sycamore, European oak, Lombardy poplar and various conifers. There is regeneration of smaller shrubs and understory species in sections of the streamside, and also revegetation plantings that include pittosporum, cabbage trees, karamu, mahoe and tree ferns.

Weeds are common in the streamside with the most abundant species being blackberry, English ivy, tradescantia and pampas.

Weed species across all reaches

A number of mainly adventive weed species are prominent in the project's proposed designated area and associated floodplain vegetated areas. These weed species include pampas, blackberry, tradescantia, ivy, German ivy, elaeagnus vine, flowering cherry, sycamore, arum lily, agapanthus, jasmine, Japanese honeysuckle, bamboo spp, bear's breeches and karo (New Zealand native but not native to Wellington and weedy there).

A detailed systematic weed survey has not been undertaken, but it is noted that some of the weed species were widespread and some had the appearance of being aggressively spreading. These more widespread and/or spreading species included pampas, blackberry, wandering willie, German ivy, elaeagnus vine, sycamore, and arum lily. Generally, weed species were inhibiting native plant growth and regeneration. Some of these weeds are spread by birds and could increase further if bird populations increase.

Dr Adam Forbes considers that the description of vegetation provided by Dr Blaschke above is consistent with his knowledge of the site's vegetation cover. Effects management relating to removal of vegetation where it

		provides for amenity or riparian shading functions which contributes to stream ecology will be addressed by those experts as relevant.
c.	<i>On the mapped extents of the vegetation to be removed, map the areas where exotic species over 4m in height are to be removed and provide commentary on the resulting ecological effects;</i>	<p>Significant exotic vegetation has been mapped as part of the project and assessed in the landscape and terrestrial and freshwater ecological assessments. These trees are identified in Appendix A of the Terrestrial Ecology report. There are also other trees within the stream corridor that will be over 4m in height, such as at Willow Park which have been identified as being removed in the Landscape and Visual Impact Assessment. Both technical assessments have assumed the total loss of existing vegetation within the identified stream channel where construction works will occur apart from where we have identified significant vegetation will be retained. These have been combined into one vegetation map for the purpose of responding to this section 92 request.</p> <p>The assessment of the potential ecological impact of the removal of vegetation has been addressed in the response to sub question (b) above.</p>
9.	<i>In additional to the above points, several other ecological matters have been raised in the peer review. Some of these can be addressed as conditions on the Notice of Requirement (see where these are noted below) and others just require some commentary or viewpoints from your experts. These matters are as follows:</i>	
a.	<i>Can you please confirm that you are happy to undertake a lizard survey prior to commencing the works on the site?</i>	<p>Yes, Wellington Water is happy to undertake a lizard survey prior to commencing works on the site.</p> <p>We propose that a condition be included that requires a Lizard Management Plan to be prepared and that lizard salvage be carried out in accordance with the Plan.</p> <p>A proposed condition is as follows:</p> <p><i>38. A Lizard Management Plan shall be prepared by a suitably qualified and experienced ecologist and shall be submitted to the CMO at least 15 Working Days prior to Commencement of Construction for certification that it meets the requirements of this condition. The purpose of the LMP is to avoid, remedy or mitigate any potential adverse effects of the Project on lizards. The Lizard Management Plan must:</i></p> <p><i>a. Describe the methodology for survey, salvage, transfer and release, including the identification of potential habitats for survey and planned and opportunistic relocations;</i></p>

		<p><i>b. Identify release sites and confirm any works necessary to protect such sites from predation or disturbance; and</i></p> <p><i>c. Be updated to achieve consistency with any authorisation given by the Director-General of Conservation under section 53 of the Wildlife Act 1953 where any such authorisation is required.</i></p> <p>This is included in the amended set of proposed conditions for the designation attached at Appendix F.</p>
<p><i>b.</i></p>	<p><i>Can you please confirm that the vegetation removal would be undertaken outside of the nesting season?</i></p>	<p>The breeding season period for birds within the Pinehaven catchment spans late winter to late summer, with the breeding season peaking in early summer. To completely avoid the nesting season where birds are on nests, ideally vegetation clearance would occur from late January to mid-winter. However, this would restrict vegetation clearance to a narrow window of opportunity and would potentially push construction works into the wetter winter months.</p> <p>We therefore propose the following condition to address vegetation removal during bird nesting:</p> <p><i>37A. Prior to the commencement of any vegetation clearance, a CEnvP Accredited ecologist with avifauna experience must inspect the project site for the presence of any protected indigenous bird species nesting. No vegetation clearance may occur within 4 metres of any identified nest, until the ecologist confirms that nesting is complete.</i></p> <p>This is included in the amended set of proposed conditions for the designation attached at Appendix F.</p> <p>The new condition would replace proposed condition 37, which simply required preparation of a procedure for the management or relocation of any nesting native birds encountered. Relocation is no longer proposed.</p>
<p><i>c.</i></p>	<p><i>Can you please get your expert to provide commentary on whether they consider there to be any potential effects from bird displacement and whether they consider any mitigation measures are needed?</i></p>	<p>The following commentary has been provided by Alison Davis, Aristos Consultants Ltd, on potential effects from bird displacement and mitigation measures.</p> <p>Tui, NZ fantail and silvereye are known to inhabit well-treed suburban gardens and parks, and grey warbler and kereru will venture into these habitats where there is indigenous forest or scrub in close proximity as is the case in the Pinehaven catchment. Kereru, tui and bellbird are known to forage over considerable distances to seek out seasonal food sources, and are expected to move throughout the Pinehaven catchment when food is in</p>

short supply within their breeding territories. This includes feeding on introduced plants which can be important in winter and early spring food sources.

The proposed removal of vegetation from the Pinehaven Stream corridor has the potential to adversely disturb indigenous birds, but this is likely to be of a temporary minor effect, except where nesting birds are displaced (see (b) above). In total 13 indigenous trees are proposed for removal, including eight kowhai trees, three black beech trees and one kahikatea tree. The kowhai are mature (flowering), but mostly of smaller stature, and one of the black beech trees is large (59.5cm dbh). Mature introduced trees are also proposed for removal, most notably mature willow trees at Willow Park as they are in poor condition.

The removal of 13 mature indigenous trees and mature willows from Willow Park will result in the loss of some food sources. This includes loss of nectar sources (kowhai), fruit (kahikatea), insects supported by the 13 trees (especially black beech), willow shoots or fresh foliage, and insects living in mature introduced trees. The heavily vegetated Pinehaven catchment with indigenous and introduced forests, scrub, trees and shrubs is expected to provide alternative food sources, so the loss of food sources from the proposed vegetation clearance is regarded as negligible.

Loss of breeding pairs of indigenous birds from the catchment is unlikely given the relatively small-scale vegetation clearance or disturbance, compared to the availability of both indigenous and introduced vegetation in the catchment.

To mitigate the effects from the loss of 13 native trees Adam Forbes (Assessment of Terrestrial Ecology - Vegetation, September 2019) proposed replacement of the 13 felled trees by planting 62 native trees (see section 6.2 of the Assessment of Terrestrial Ecology, which is in Appendix S to the NOR). This is proposed to be required through designation condition 33. The Landscape and Visual Impact Assessment plans attached to the original application at Appendix F (David Compton-Moen, September 2019) provide details on the proposed plantings. Indigenous plants will form the majority of the mitigation plantings. Species to be planted will provide food sources for indigenous birds including nectar sources (kowhai, tree fuchsia, mountain flax, kamahi), berries (podocarps, pate, five-finger, Coprosma species, sedge/rush species), and plants known to harbour good insect populations (black beech, Hebe species, pohuehue, toetoe). The introduced pin oaks and weeping willows proposed for planting to retain some of the current landscape character, will provide late winter/spring foliage which kereru feed on, and these plants also support abundant insect populations for tui, fantail and grey warbler.

		<p>The time lag for plants to mature and provide value as a food source and nesting/roosting habitat for indigenous birds will vary depending on the replacement plant species. Plantings in the riparian margins and buffer areas are expected to establish and provide value for indigenous birds within two years of being planted, but the specimen trees (except for the pin oak and weeping willows that will grow rapidly) will take up to five years before providing habitat of value. In the medium-term there will be a greater number and diversity of indigenous plantings along the Pinehaven Stream corridor providing increased habitat area and quality for indigenous birds (as well as in-stream biota).</p> <p>In summary, there is the potential for indigenous birds to be displaced if there is nesting in the trees proposed for removal, or if nests are in close proximity to construction works. After nesting breeding pairs will range more widely in family groups seeking food sources with their fledglings, before the latter become independent and seek home ranges further afield.</p> <p>The effects of displacing foraging birds is regarded as minimal as there are adequate alternative sources of food in the heavily wooded Pinehaven catchment. Adverse effects on the local and regional indigenous bird populations is also regarded as minimal. The proposed mitigation plantings will replace vegetation cleared for the construction works, and in the medium-term provide a greater area and diversity of indigenous vegetation for birds. The scale and nature of the plantings is regarded as more than adequate to mitigate these minimal adverse effects, although there will be a time lag for the full benefits to be realised.</p>
<p>d.</p>	<p><i>Can you please get your expert to provide a brief viewpoint on whether they consider bats are likely to be present or not (please note there have been no surveys undertaken in the local area that suggest this species is present, so only a brief assessment should suffice).</i></p>	<p>The following commentary is provided by Alison Davis, Aristos Consultants Ltd, on presence of bats.</p> <p>The two extant bats species found in the NZ – the long-tailed bat and lesser short-tailed bat are known to prefer indigenous forest habitat, particularly within mature forest trees. Both species are threatened with the lesser short-tailed bat classified as Nationally Critical and the long-tailed bat as At Risk. The only known population of short-tailed bats in the southern North Island is in the Waiohine Valley (Taranua Forest Park) while long-tailed bats have been recorded from a considerable number of locations in NZ. No bats have been recorded from the Hutt Valley.</p> <p>Both bat species are nocturnal, roosting in cavities, crevices and hollows in large mature trees during the day, either alone or sometimes in large colonies. As well as using large indigenous trees long-tailed bats, have been recorded roosting in introduced trees such as large pines, poplars and macrocarpa. Bats have</p>

been recorded roosting in the same location for short periods, then moving to alternative roosts repeatedly over time.

Bats have not been recorded in the Pinehaven catchment, but long-tailed bats could be present in the mature indigenous forest of the nearby Wi Tako Reserve. It is unlikely that lesser short-tailed bats are present given the urban setting, the presence of mammalian predators and disturbance from people. Potentially long-tailed bats could be roosting in mature trees and/or foraging along the Pinehaven Stream corridor.

Standard protocols and equipment have been developed by the Department of Conservation to detect the presence of bats. This involves the deployment of automatic bat monitors that record the date and time of any bat echolocation calls for later analysis. Usually bat monitors are deployed for at least a month in suitable weather conditions (during spring and summer months where temperatures are above 10 degrees). Both bat species can be detected with the equipment, with long-tailed bats having lower frequency calls than the lesser short-tailed bat. Given long-tailed bats could be present in the catchment it is recommended that automatic bat monitors are deployed over the coming summer months targeting larger mature trees including the black beech trees proposed for removal in the Pinehaven Stream corridor.

If bats are recorded at the site then prior to vegetation clearance a survey for potential bat roosts in the larger mature trees proposed for removal should be undertaken by a qualified bat ecologist. Additionally, if bats are recorded procedures should be put in place immediately prior to tree removal to check for presence of roosting bats.

We propose the following condition be included:

Prior to vegetation clearance, automatic bat monitors shall be deployed for at least a month in suitable weather conditions (during spring and summer months where temperatures are above 10 degrees) targeting larger mature trees including the black beech trees proposed for removal in the Pinehaven Stream corridor. Should monitoring detect the presence of bats then, prior to vegetation clearance, a CEnvP Accredited ecologist with bat detection experience must survey the clearance area for the presence of bats and large trees for the presence of roosting bats. Should roosting be detected, a pre-tree felling protocol (PTFP) must be prepared by the accredited bat ecologist in consultation with the Department of Conservation for the purpose of avoiding the injury or

		<p><i>mortality of roosting bats. Any tree removal within the area identified as potentially containing bats must be undertaken in accordance with the PTFP.</i></p> <p>This is included in the amended set of proposed conditions for the designation attached at Appendix F.</p>																
<p>e. <i>Please confirm the area (m²) of replanting that is being undertaken.</i></p>		<p>The project is planting the following:</p> <table border="1" data-bbox="846 456 1677 938"> <thead> <tr> <th>Planting</th> <th>Area / number</th> </tr> </thead> <tbody> <tr> <td>Total area of landscape planting</td> <td>6,181m²</td> </tr> <tr> <td>Specimen trees</td> <td>134 (101 native)</td> </tr> <tr> <td>Total number of plants (excl. trees)</td> <td>7,407</td> </tr> <tr> <td>L2 Riparian mix (wet – 100% native)</td> <td>Removed as no longer planting in active stream</td> </tr> <tr> <td>L3 Riparian mix (rarely wet - 100% native)</td> <td>5,741</td> </tr> <tr> <td>L4 Buffer mix (dry – 100% native)</td> <td>1,486</td> </tr> <tr> <td>L5 Climbers (rarely wet – 100% native)</td> <td>180</td> </tr> </tbody> </table> <p>This mitigation planting is required by condition 1(f) and supported by conditions 33 – 36 of the proposed designation conditions.</p> <p>Overall, considerably more native plants will be planted into the corridor than currently exist, and the loss of significant native species will be mitigated at the ratios recommended in the Terrestrial Ecology report. The exotic species used are positioned either in Willow Park (Willows to replace the current willow trees) or oaks as a street tree adjacent to Blue Mountains Road to provide a deciduous tree of scale.</p>	Planting	Area / number	Total area of landscape planting	6,181m ²	Specimen trees	134 (101 native)	Total number of plants (excl. trees)	7,407	L2 Riparian mix (wet – 100% native)	Removed as no longer planting in active stream	L3 Riparian mix (rarely wet - 100% native)	5,741	L4 Buffer mix (dry – 100% native)	1,486	L5 Climbers (rarely wet – 100% native)	180
Planting	Area / number																	
Total area of landscape planting	6,181m ²																	
Specimen trees	134 (101 native)																	
Total number of plants (excl. trees)	7,407																	
L2 Riparian mix (wet – 100% native)	Removed as no longer planting in active stream																	
L3 Riparian mix (rarely wet - 100% native)	5,741																	
L4 Buffer mix (dry – 100% native)	1,486																	
L5 Climbers (rarely wet – 100% native)	180																	
<p>f. <i>Please provide an updated planting plan for the vegetation on the landward side of the streambank that uses more locally sourced species as outlined in the draft ecological report.</i></p>		<p>The planting plan has been reviewed by the project landscape architect with input from the project ecologist. An updated planting plan is attached at Appendix H. This planting plan has also been updated to take account of the changes in access arrangements at 28-36 Blue Mountains Road and other minor changes in the stream channel design as it has been progressed.</p>																



Appendix B. Plans showing extent of main works

LEGEND

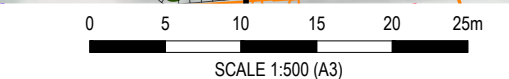
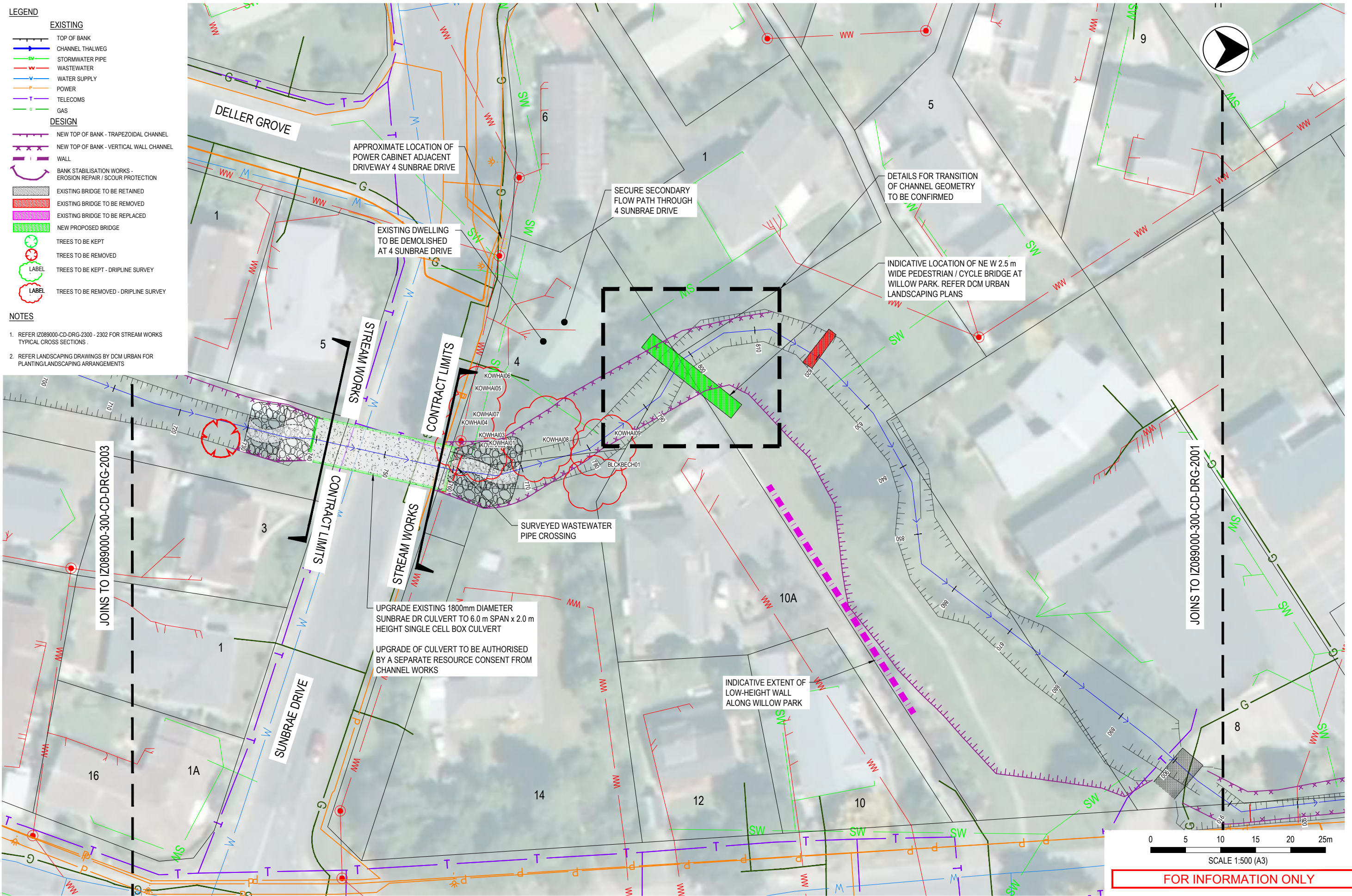
EXISTING

- TOP OF BANK
- CHANNEL THALWEG
- STORMWATER PIPE
- WASTEWATER
- WATER SUPPLY
- POWER
- TELECOMS
- GAS

DESIGN

- NEW TOP OF BANK - TRAPEZOIDAL CHANNEL
- NEW TOP OF BANK - VERTICAL WALL CHANNEL
- WALL
- BANK STABILISATION WORKS - EROSION REPAIR / SCOUR PROTECTION
- EXISTING BRIDGE TO BE RETAINED
- EXISTING BRIDGE TO BE REMOVED
- EXISTING BRIDGE TO BE REPLACED
- NEW PROPOSED BRIDGE
- TREES TO BE KEPT
- TREES TO BE REMOVED
- TREES TO BE KEPT - DRIPLINE SURVEY
- TREES TO BE REMOVED - DRIPLINE SURVEY

- NOTES**
- REFER I2089000-CD-DRG-2300 - 2302 FOR STREAM WORKS TYPICAL CROSS SECTIONS.
 - REFER LANDSCAPING DRAWINGS BY DCM URBAN FOR PLANTING/LANDSCAPING ARRANGEMENTS



SCALE 1:500 (A3)

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F	19.09.19	JWS	JS	IG	FOR INFORMATION ONLY		
E	13.09.19	JWS	JS	IG	FOR INFORMATION ONLY		
D	12.09.19	JWS	JS	IG	FOR INFORMATION ONLY		
C	04.09.19	JWS	JS	IG	FOR INFORMATION ONLY		
B	30.08.19	JWS	JS	IG	FOR INFORMATION ONLY		

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Te Kaitiaki Takekai

Wellington
Water

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CLIENT WELLINGTON WATER		TITTLE STREAM WORKS	
PROJECT PINEHAVEN STREAM IMPROVEMENTS		GENERAL ARRANGEMENT	
DRAWN JWS		DRAWING CHECK DF	REVIEWED JS
DESIGNED JWS		DESIGN REVIEW DF	APPROVED IG
DATE 27.08.19		DATE 27.08.19	DATE 27.08.19

SCALE 1:500 @ A3	DRAWING No. I2089000-300-CD-DRG-2002	REV G
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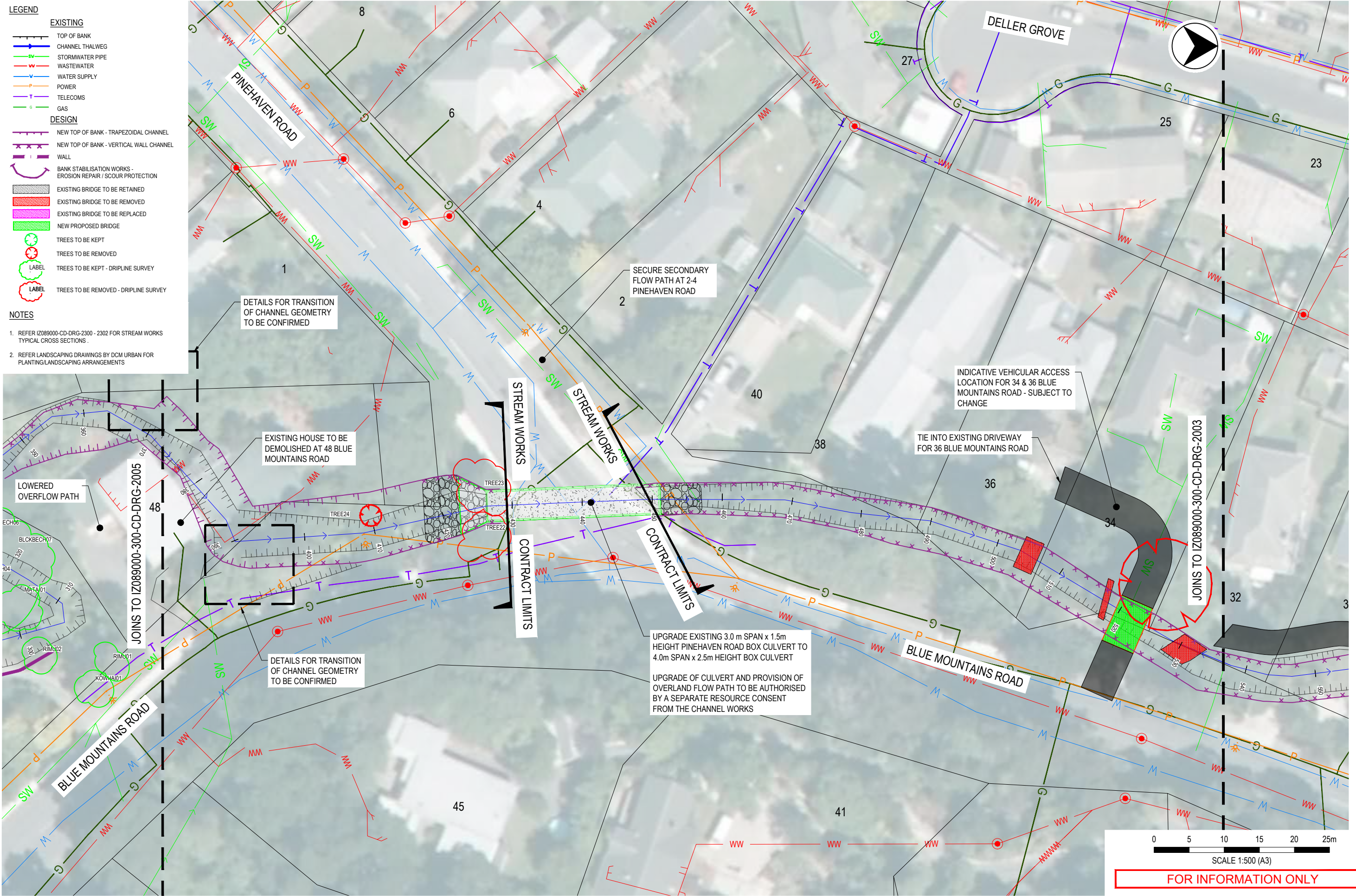
EXISTING

- TOP OF BANK
- CHANNEL THALWEG
- STORMWATER PIPE
- WASTEWATER
- WATER SUPPLY
- POWER
- TELECOMS
- GAS

DESIGN

- NEW TOP OF BANK - TRAPEZOIDAL CHANNEL
- NEW TOP OF BANK - VERTICAL WALL CHANNEL
- WALL
- BANK STABILISATION WORKS - EROSION REPAIR / SCOUR PROTECTION
- EXISTING BRIDGE TO BE RETAINED
- EXISTING BRIDGE TO BE REMOVED
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- NEW PROPOSED BRIDGE
- TREES TO BE KEPT
- TREES TO BE REMOVED
- TREES TO BE KEPT - DRIPLINE SURVEY
- TREES TO BE REMOVED - DRIPLINE SURVEY

- NOTES**
- REFER IZ089000-CD-DRG-2300 - 2302 FOR STREAM WORKS TYPICAL CROSS SECTIONS.
 - REFER LANDSCAPING DRAWINGS BY DCM URBAN FOR PLANTING/LANDSCAPING ARRANGEMENTS



0 5 10 15 20 25m
 SCALE 1:500 (A3)
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E	13.09.19	JWS	JS	IG	FOR INFORMATION ONLY
D	12.09.19	JWS	JS	IG	FOR INFORMATION ONLY
C	04.09.19	JWS	JS	IG	FOR INFORMATION ONLY
B	30.08.19	JWS	JS	IG	FOR INFORMATION ONLY
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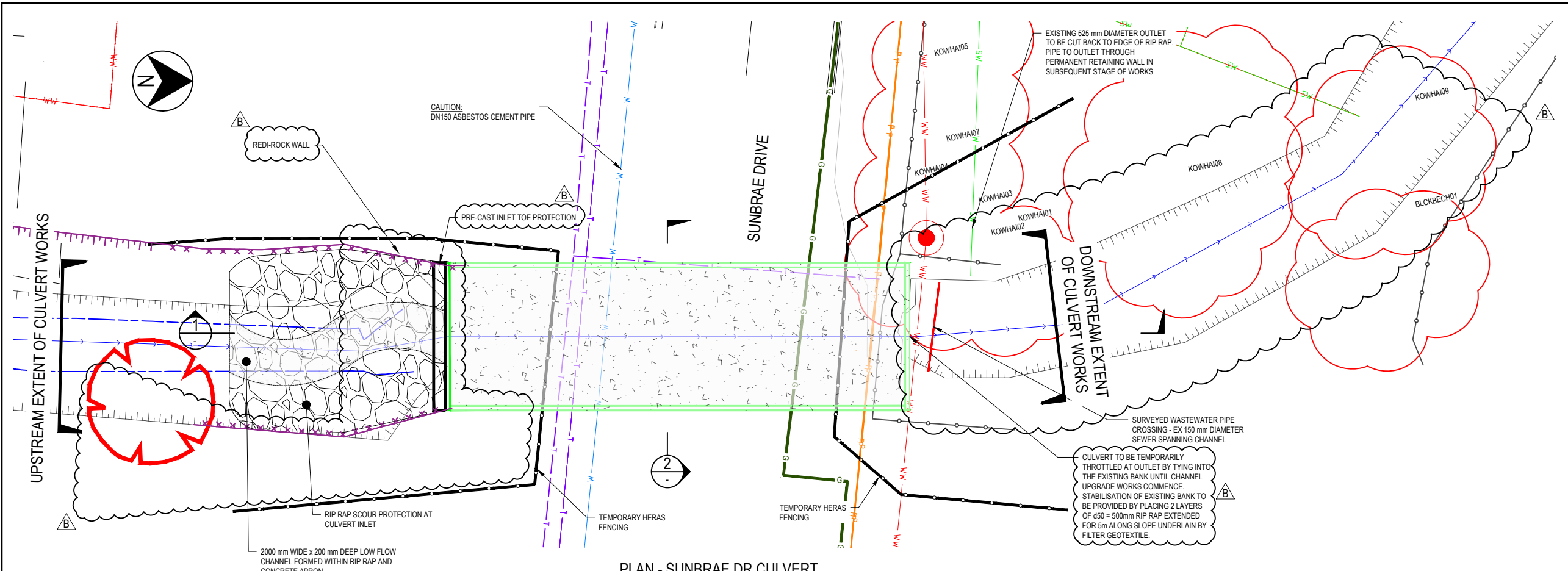
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PROJECT	PINEHAVEN STREAM IMPROVEMENTS		
DRAWN	DRAWING CHECK	REVIEWED	APPROVED
JWS	DF	JS	IG
DESIGNED	DESIGN REVIEW	DATE	DATE
JWS	DF	27.08.19	27.08.19

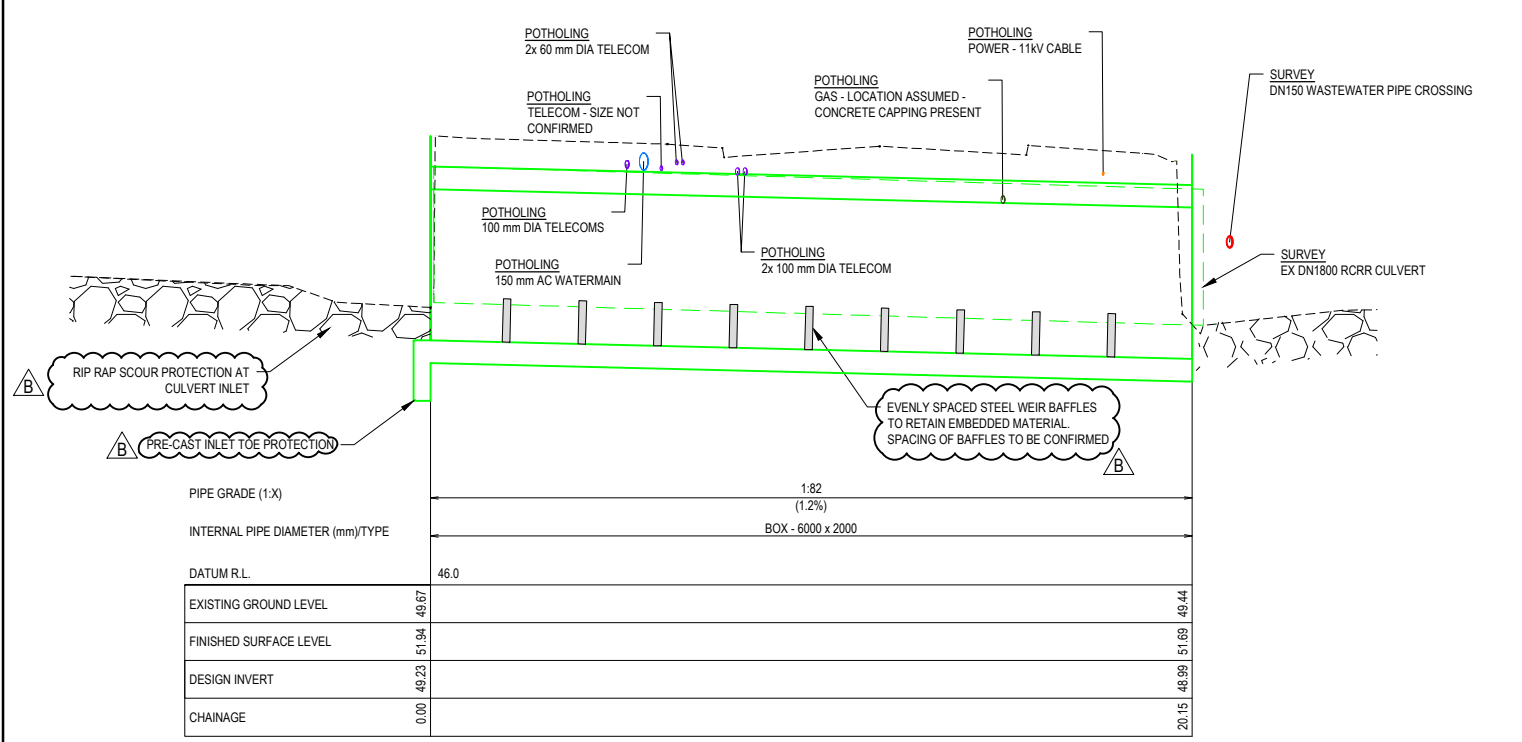
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 GENERAL ARRANGEMENT
 SHEET 4**

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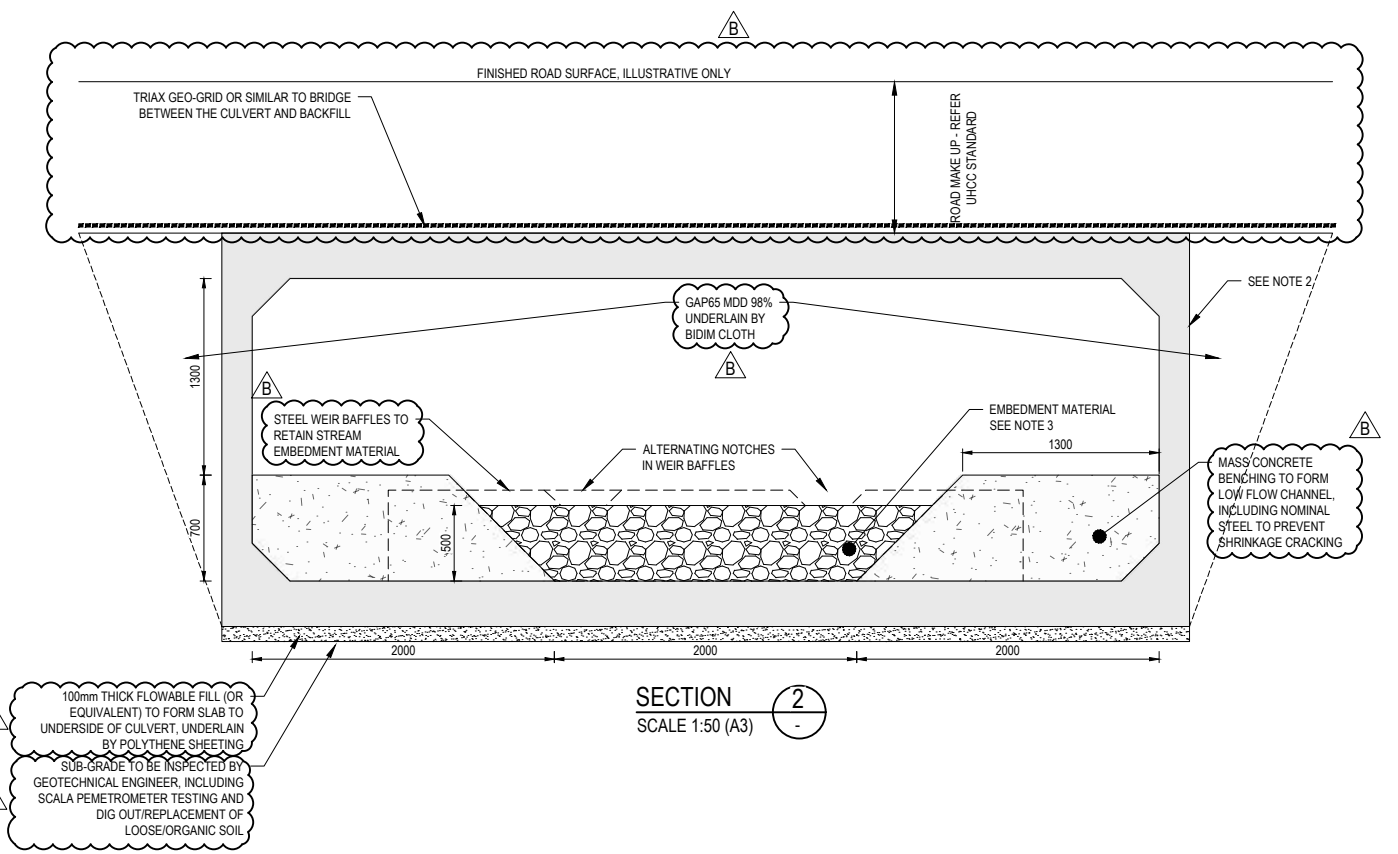
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PLAN - SUNBRAE DR CULVERT
 SCALE 1:200 (A3)



SECTION 1
 SCALE 1:200H 1:100V (A3)



FOR INFORMATION ONLY

REV	DATE	DRAWN	REV'D	APP'D	REVISION	DRAWING NUMBER	REFERENCE DRAWING TITLE
B	16/01/20	CZ	JS	IG	FOR INFORMATION ONLY		
A	04/12/19	JWS	JS	IG	ISSUED FOR TENDER		



CLIENT WELLINGTON WATER			
PROJECT PINEHAVEN STREAM IMPROVEMENTS			
DRAWN JWS	DRAWING CHECK DF	REVIEWED JS	APPROVED IG
DESIGNED JWS	DESIGN REVIEW DF	DATE 04/12/19	DATE 04/12/19

TITLE CULVERTS SUNBRAE DRIVE CULVERT PLAN & LONG SECTION		REV B	
SCALE AS SHOWN	DRAWING NO. I2089000-SP2-400-CD-DRG-2210		

Appendix C. Demolition and reinstatement schedule

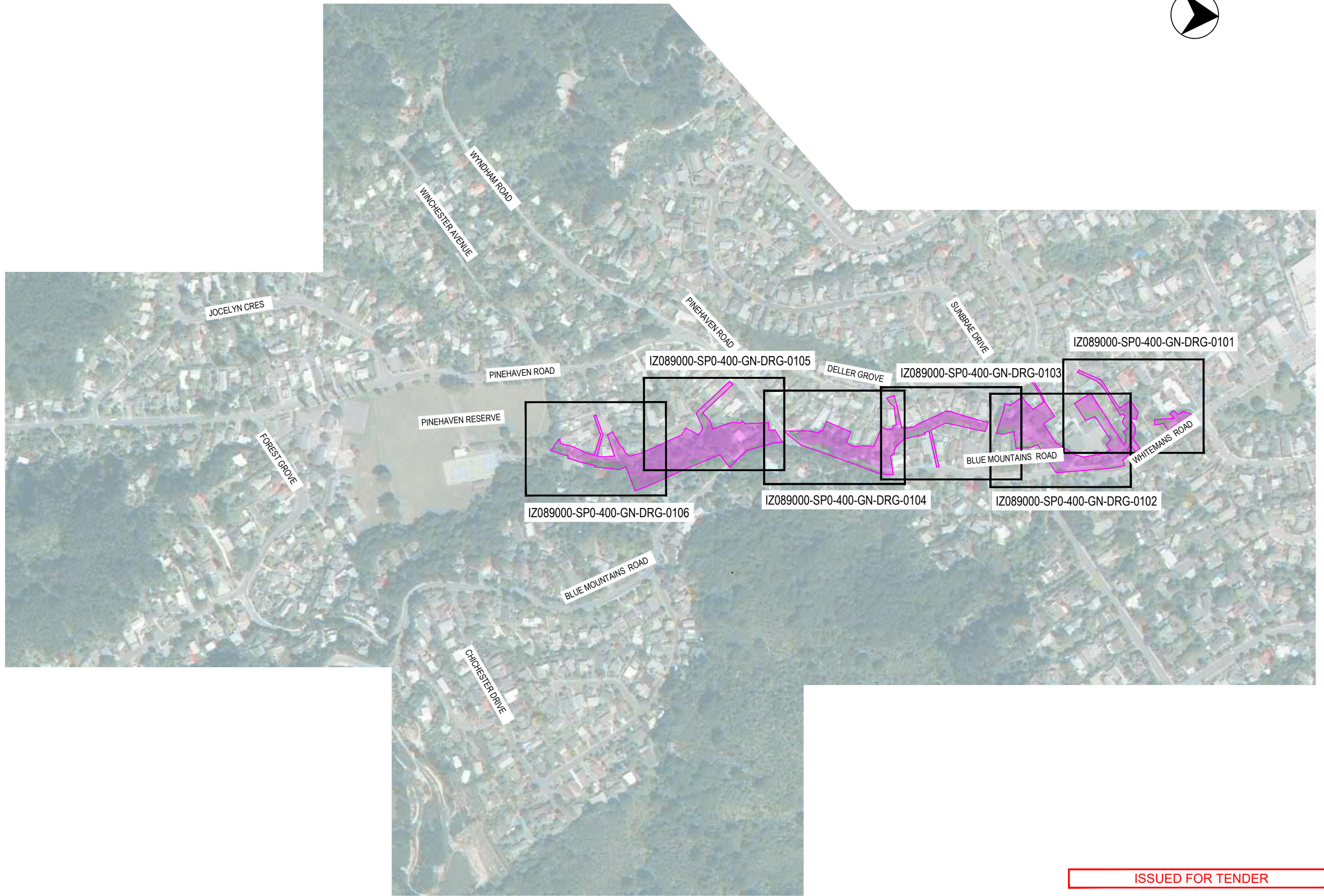
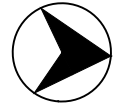
Property Address	Summary of proposed relocation of existing ancillary buildings
12 Birch Grove	The existing garage and sleepout will be removed. The garage will be reinstated with an office within the property boundary.
10A Blue Mountains Rd	Existing garage and shed is to be demolished and replaced within the property, set back from the new proposed Redi-Rock wall.
22 Blue Mountains Rd	The existing greenhouse structure may require removal. It will be relocated on the property.
30 Blue Mountains Rd	Existing carport is to be removed and a new garage will be built at the rear of the property at 28 Blue Mountains Road. A boundary adjustment will be completed to amalgamate these sections of property into 30 Blue Mountains Road.
5 Deller Grove	The existing shed on this property may be removed. If it is removed it will be reinstated within the existing property.
7A & 7B Deller Grove	Top of bank will shift towards the property. Both banks will be cleared of vegetation
9 Deller Grove	Top of bank will shift towards the property. Both banks will be cleared of vegetation
10 Deller Grove	Top of bank will shift towards the property. Both banks will be cleared of vegetation
11 Deller Grove	The storage shed outside of the property boundary will require removal. It will be reinstated within the property boundary.
Unit 1 – 15 Deller Grove	The existing shed on this property may be removed. If it is removed it will be reinstated within the existing property.
17 Deller Grove	The carport may need to be relocated and reinstated within the existing property boundary.

Appendix D. Updated designation and General Arrangement plan

Designation Areas

Reach	Address	Legal Description	Property Land Area (m ²)	Designation Land Area (m ²)	
				As lodged	Revised
1	48 - 50 Whitemans Road	Pt Lot 1 DP 17067, Pt Lot 1 DP 11499	2868	458	212
1	52 Whitemans Road	Lot 1 DP 20082	1339	70	70
1	54 Whitemans Road	Lot 1 DP 24812	809	101	15
1	56 Whitemans Road	Lot 1 DP 44269	523	300	0
1	4 Blue Mountains Road	Lot 1, 2 & 3 DP 26272	3852	2114	880
1	8 Blue Mountains Road	Lot 2 DP 5336	2686	527	527
1	10A Blue Mountains Road	Lot 1 DP 40536	1003	1002	1002
1	14 Blue Mountains Road	Lot 2 DP 29885 and Lot 3 DP 27402	1601	206	206
1	13 Clinker Grove	Lot 4 DP 44269	925	71	71
1	14 Clinker Grove	Lot 3 DP 44269	932	225	225
1	15 Clinker Grove	Lot 2 DP 44269	1005	560	453
1	1 Tapestry Grove	Lot 43 DP 43710	998	331	331
2	5 Sunbrae Drive	Lot 6 DP 27402	506	5	5
2	20A Blue Mountains Road	Lot 6 DP 32985	759	116	116
2	22 Blue Mountains Road	Lot 7 DP 32985	549	6	6
2	24 Blue Mountains Road	Lot 19 DP 16738	942	183	183
2	26 Blue Mountains Road	Lot 18 DP 16738	954	422	422
2	30 Blue Mountains Road	Lot 16 DP 16738	874	292	393
2	32 Blue Mountains Road	Lot 15 DP 16738	874	168	168
2	34 Blue Mountains Road	Lot 14 DP 16738	918	497	497

Reach	Address	Legal Description	Property Land Area (m ²)	Designation Land Area (m ²)	
				As lodged	Revised
2	36 Blue Mountains Road	Lot 13 DP 16738	925	504	504
2	38 Blue Mountains Road	Lot 1 DP 33010	898	113	113
2	5 Deller Grove	Lot 8 DP 27402	506	6	6
2	7 Deller Grove	Lot 9 DP 27402	506	1	1
2	13 Deller Grove	Lot 12 DP 27402 and Lot 1 DP 32931	516	21	21
2	15 Deller Grove	Lot 2 DP 32931	551	143	143
2	17 Deller Grove	Lot 14 DP 27402	551	215	215
3	1 Pinehaven Road	Lot 1 DP 15346	904	31	31
3	3 Pinehaven Road	Lot 2 DP 15346	995	58	58
3	7 Pinehaven Road	Lot 4 DP 15346	1430	804	804
3	9 Pinehaven Road	Lot 5 DP 15346	1429	186	186
3	50 Blue Mountains Road	Lot 3 DP 45182	8164	4770	4770
3	2A Freemans Way	Lot 1 DP 32105, Lot 3 DP 31536	2167	324	324
3	8 Birch Grove	Lot 1 DP 43185	900	68	68
3	9 Birch Grove	Lot 20 DP 15346	1558	457	457
3	10 Birch Grove	Lot 1 DP 27100	607	66	66
3	10A Birch Grove	Lot 2 DP 422324	1025	492	494
3	10B Birch Grove	Lot 1 DP 33755	776	27	27
3	10C Birch Grove	Lot 1 DP 422324, Lot 3 DP 422324	685	202	202
3	11 Birch Grove	Lot 21 DP 15346	1749	695	695
3	12 Birch Grove	Lot 22 DP 15346	1164	762	762
Total			55,179	17,616	15,727



ISSUED FOR TENDER

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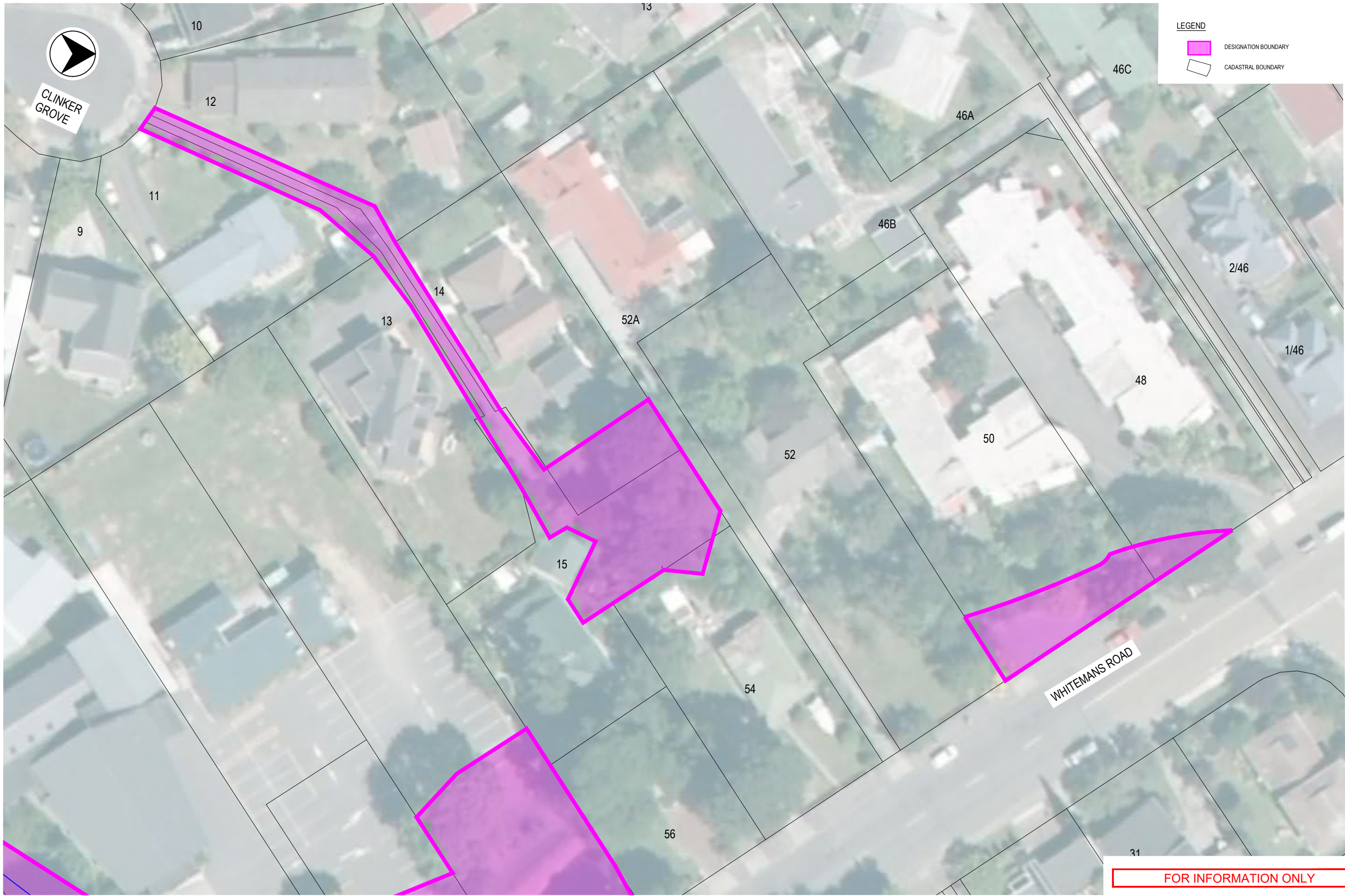





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PROJECT PINEHAVEN STREAM IMPROVEMENTS		DATE 29/11/19	
DRAWN JWS	DRAWING CHECK DF	REVIEWED JS	DATE 29/11/19
DESIGNED JWS	DESIGN REVIEW DF	DATE 29/11/19	DATE 29/11/19

TITLE DESIGNATION PLAN SCHEME OVERVIEW		REV A
SCALE 1:5000 @A3	DRAWING No IZ089000-SP0-400-GN-DRG-0100	



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greater WELLINGTON
WELLINGTON REGIONAL COUNCIL



Wellington Water



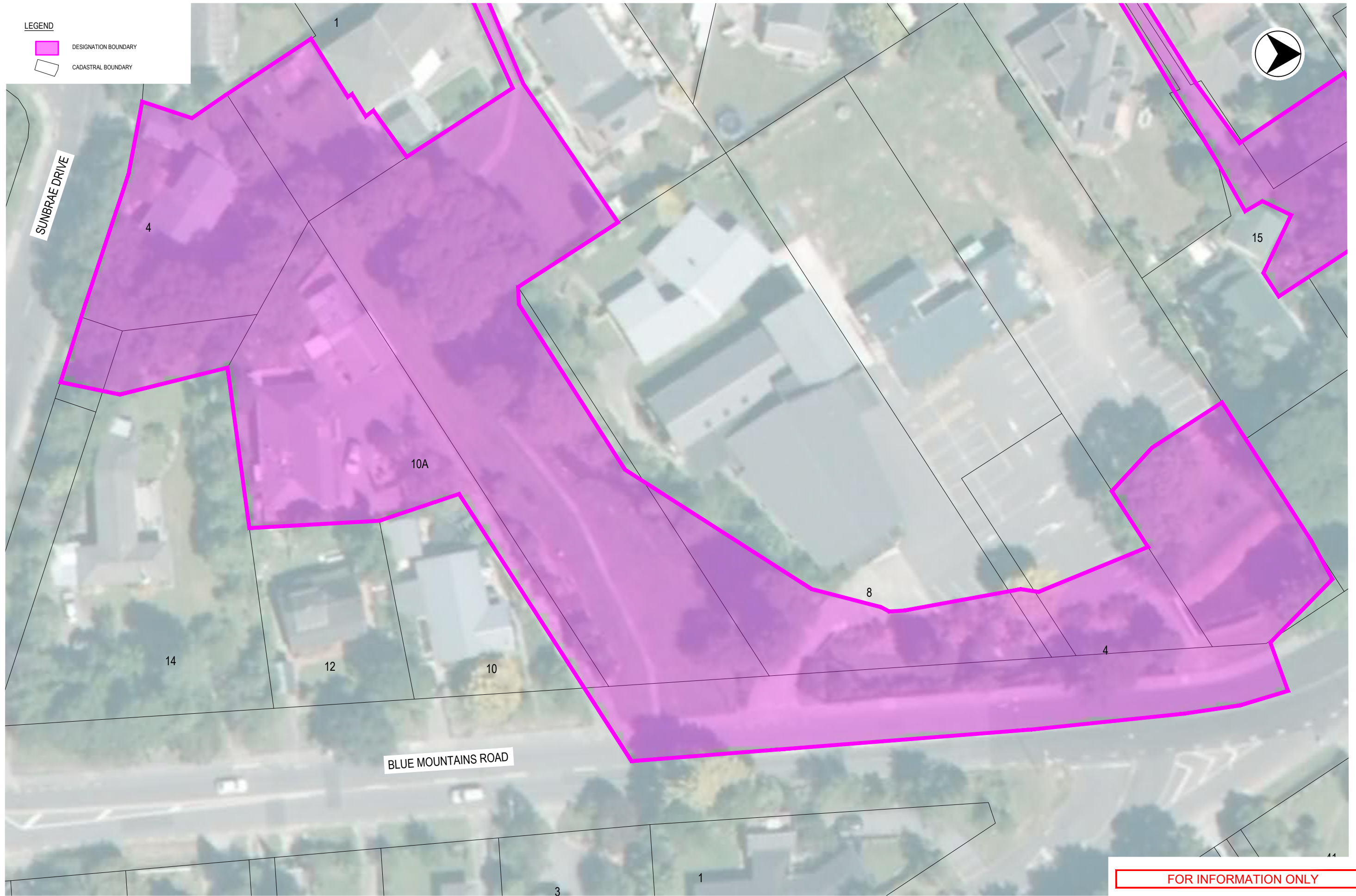
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DESIGNED JWS	DESIGN REVIEW DF	DATE 29/11/19	DATE 29/11/19

TITLE DESIGNATION PLAN SHEET 1		REV C
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LEGEND
 DESIGNATION BOUNDARY
 CADASTRAL BOUNDARY



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greater WELLINGTON
Wairarapa, Hutt Valley & Kapiti Coast



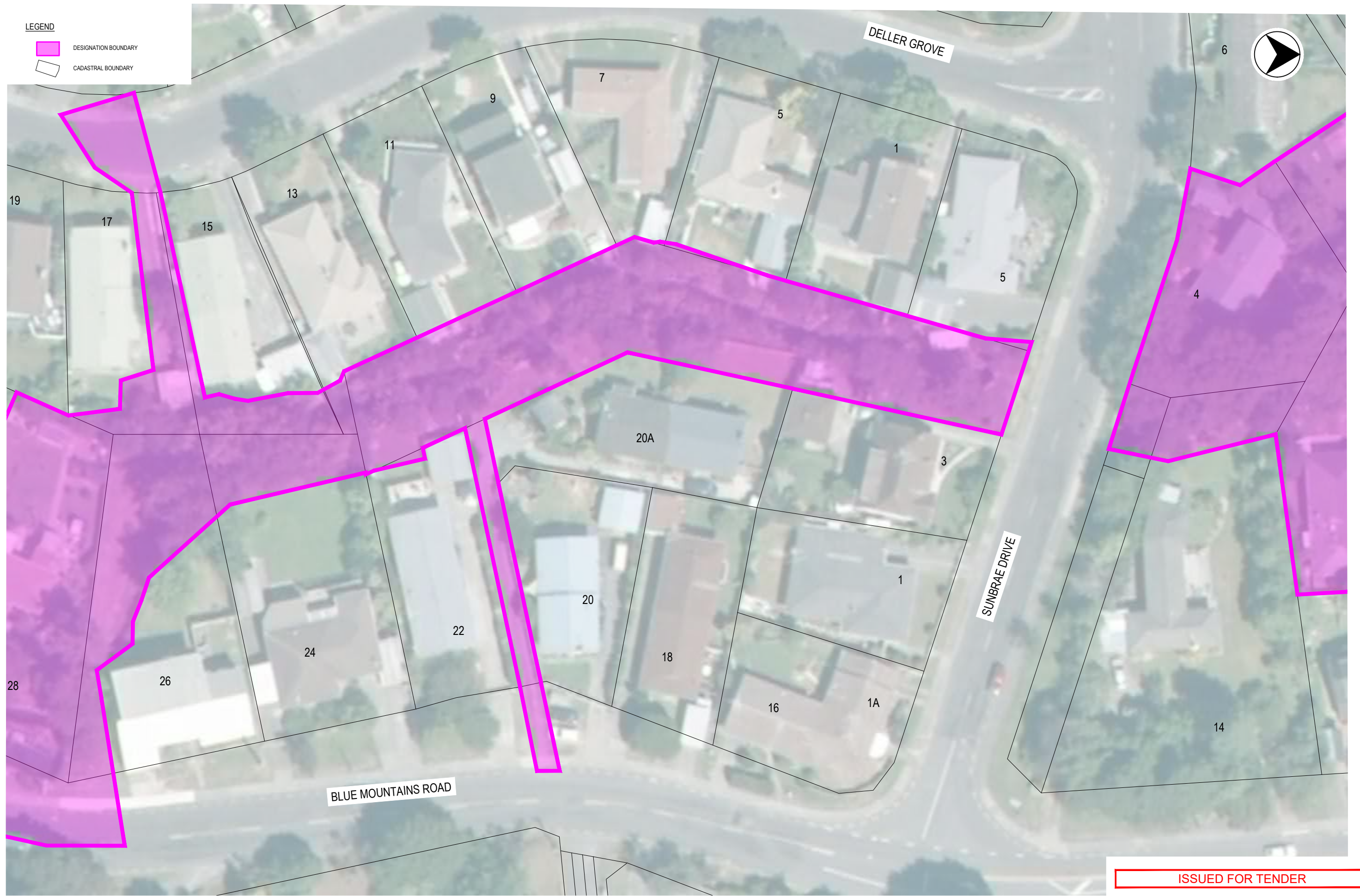
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CLIENT WELLINGTON WATER		APPROVED IG	
PROJECT PINEHAVEN STREAM IMPROVEMENTS		DATE 29/11/19	
DRAWN JWS	DRAWING CHECK DF	REVIEWED DF	DATE 29/11/19
DESIGNED JWS	DESIGN REVIEW DF	DATE 29/11/19	DATE 29/11/19

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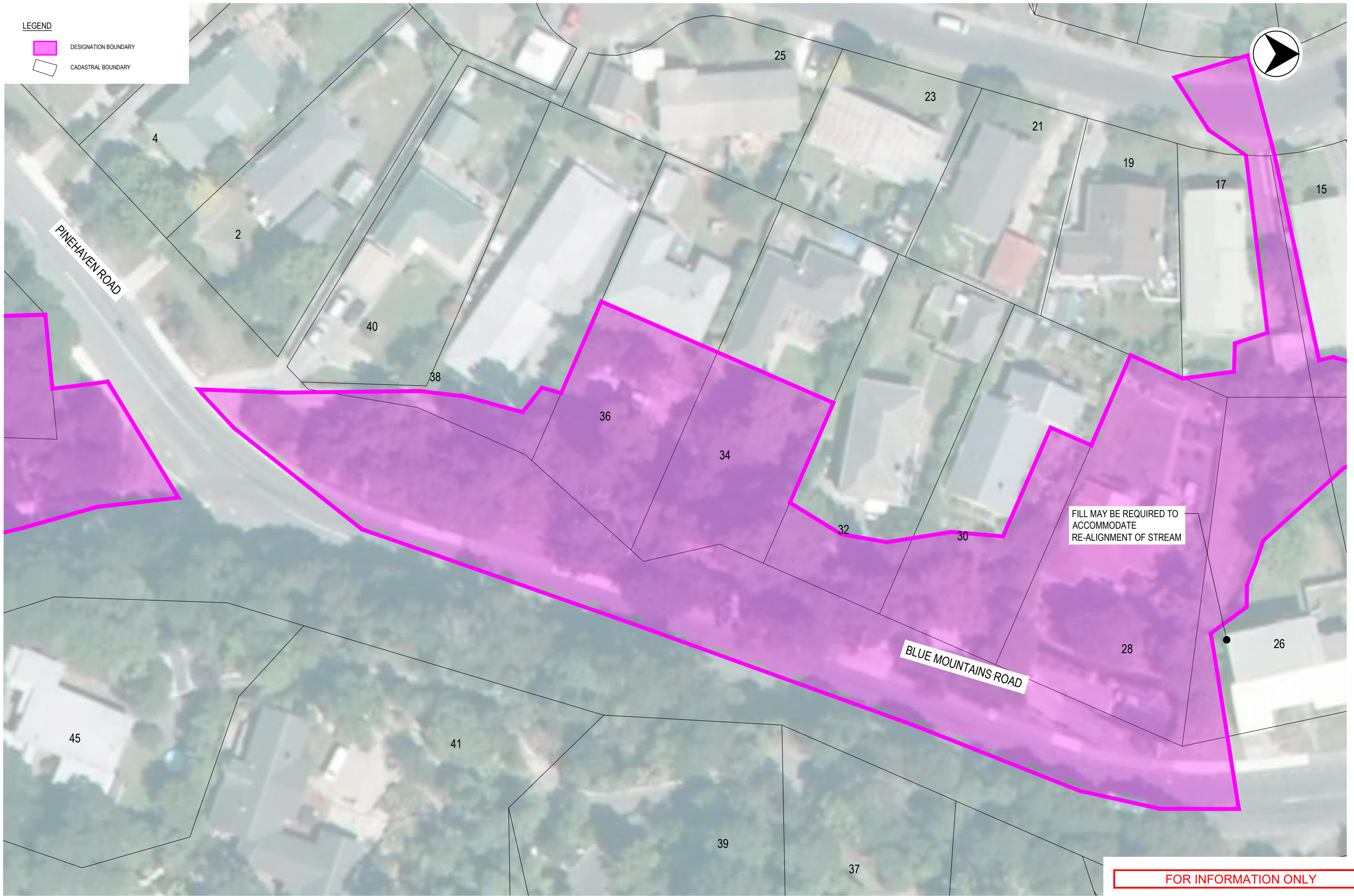
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CLIENT	WELLINGTON WATER		
PROJECT	PINEHAVEN STREAM IMPROVEMENTS		
DRAWN	DRAWING CHECK	REVIEWED	APPROVED
SC	DF	JS	IG
DESIGNED	DESIGN REVIEW	DATE	DATE
JWS	DF	29/11/19	29/11/19

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SCALE	DRAWING No.	REV			
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LEGEND
 DESIGNATION BOUNDARY
 CADASTRAL BOUNDARY



FILL MAY BE REQUIRED TO ACCOMMODATE RE-ALIGNMENT OF STREAM

FOR INFORMATION ONLY

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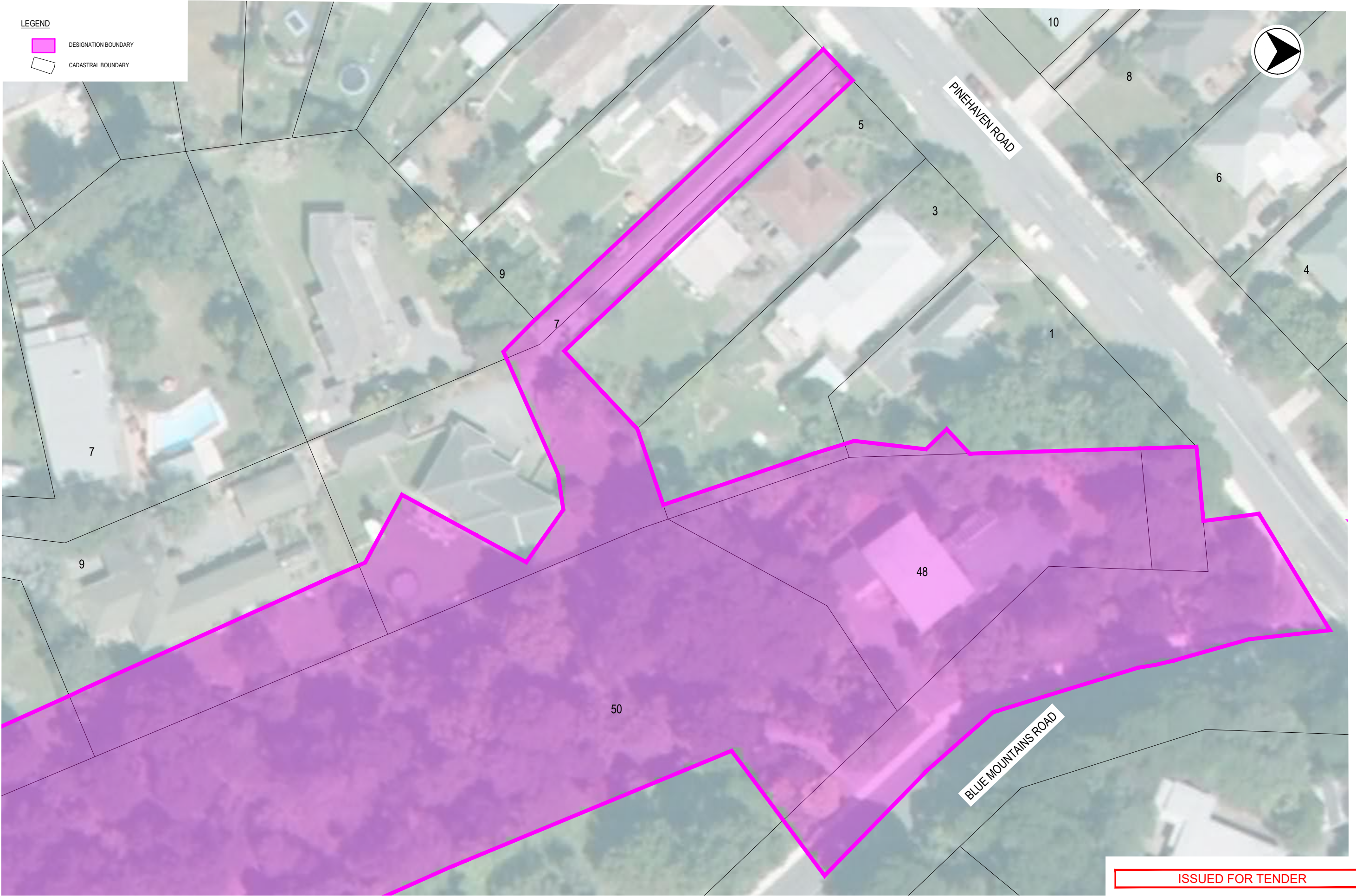

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DESIGNED JWS	DESIGN REVIEW DF	DATE 29/11/19	DATE 29/11/19

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Te Kaitiaki Take Kōwhiri



UPPER HUTT CITY



Wellington Water



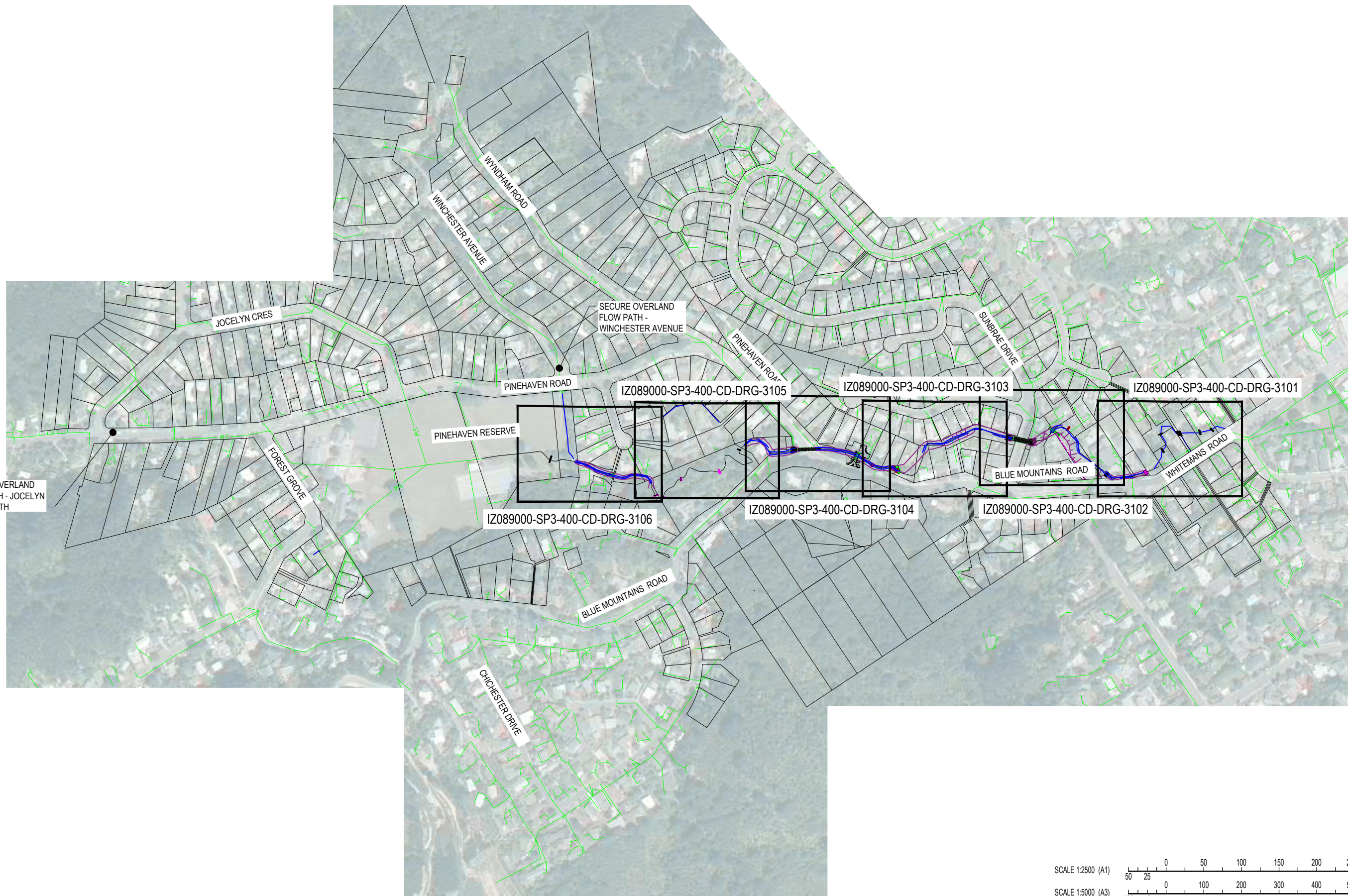
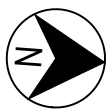
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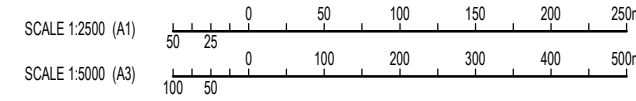
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DESIGNED JWS	DESIGN REVIEW DF	DATE 29/11/19	DATE 29/11/19

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PLAN
 SCALE 1:2500 (A1) 1:5000 (A3)



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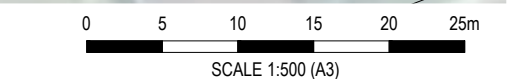
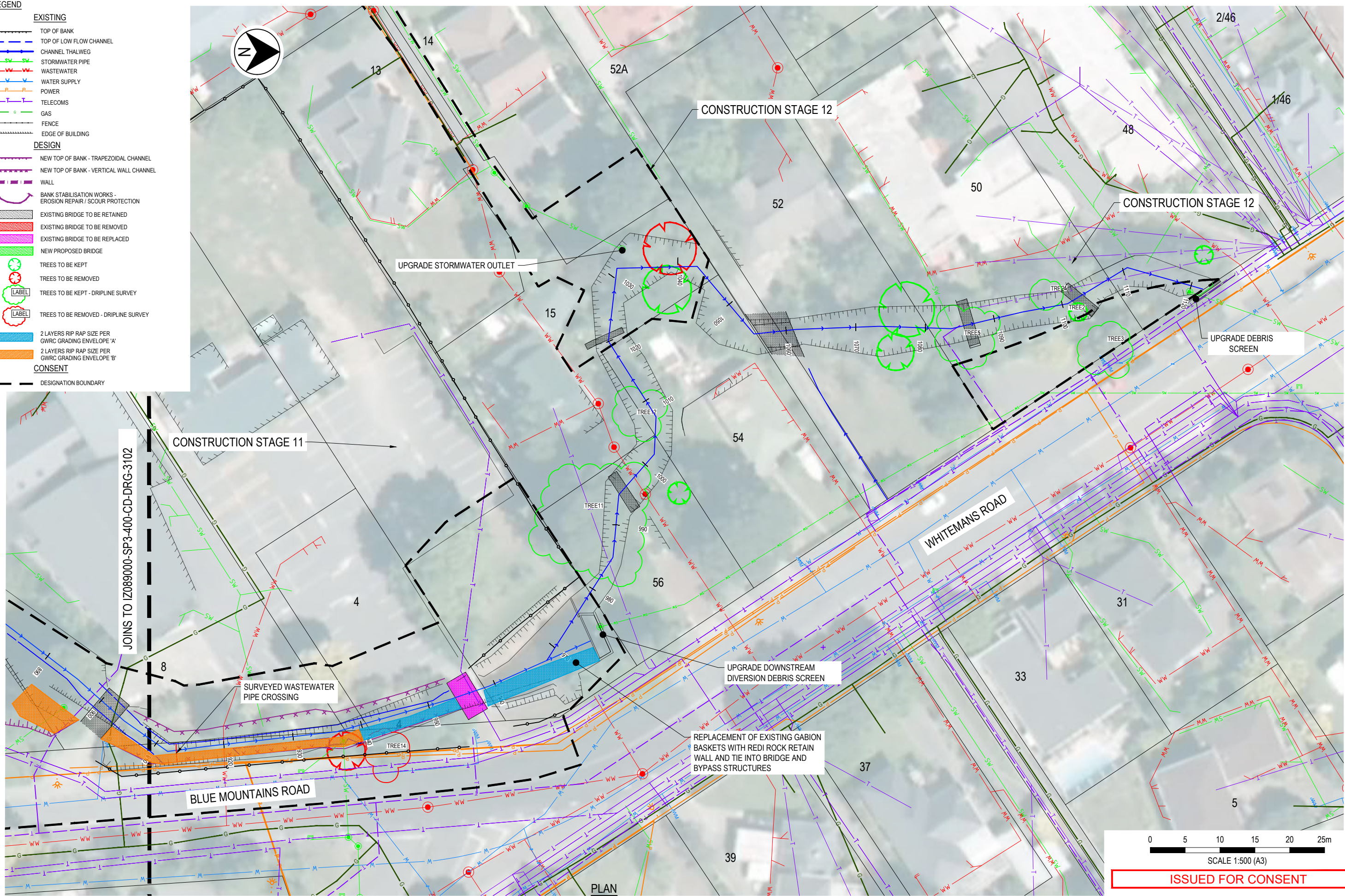
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DRAWN JWS	DRAWING CHECK DF	REVIEWED JS	APPROVED IG
DESIGNED JWS	DESIGN REVIEW DF	DATE 20/02/20	DATE 20/02/20

TITLE CHANNEL WORKS SCHEME OVERVIEW		SCALE 1:2500	DRAWING No IZ089000-SP3-400-CD-DRG-3100	REV B
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LEGEND

EXISTING	
	TOP OF BANK
	TOP OF LOW FLOW CHANNEL
	CHANNEL THALWEG
	STORMWATER PIPE
	WASTEWATER PIPE
	WATER SUPPLY
	POWER
	TELECOMS
	GAS
	FENCE
	EDGE OF BUILDING
DESIGN	
	NEW TOP OF BANK - TRAPEZOIDAL CHANNEL
	NEW TOP OF BANK - VERTICAL WALL CHANNEL
	WALL
	BANK STABILISATION WORKS - EROSION REPAIR / SCOUR PROTECTION
	EXISTING BRIDGE TO BE RETAINED
	EXISTING BRIDGE TO BE REMOVED
	EXISTING BRIDGE TO BE REPLACED
	NEW PROPOSED BRIDGE
	TREES TO BE KEPT
	TREES TO BE REMOVED
	TREES TO BE KEPT - DRIPLINE SURVEY
	TREES TO BE REMOVED - DRIPLINE SURVEY
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'A'
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'B'
CONSENT	
	DESIGNATION BOUNDARY



ISSUED FOR CONSENT

PLAN
SCALE 1:250 (A1), 1:500 (A3)

REV	DATE	DRAWN	REVD	APPD	REVISION	DRAWING NUMBER	REFERENCE DRAWING TITLE
B	02/02/20	JWS	JS	IG	ISSUED FOR CONSENT		
A	02/12/19	JWS	JS	IG	ISSUED FOR TENDER		

greater WELLINGTON
WATER SERVICES
TO HONOUR OUR TANGI

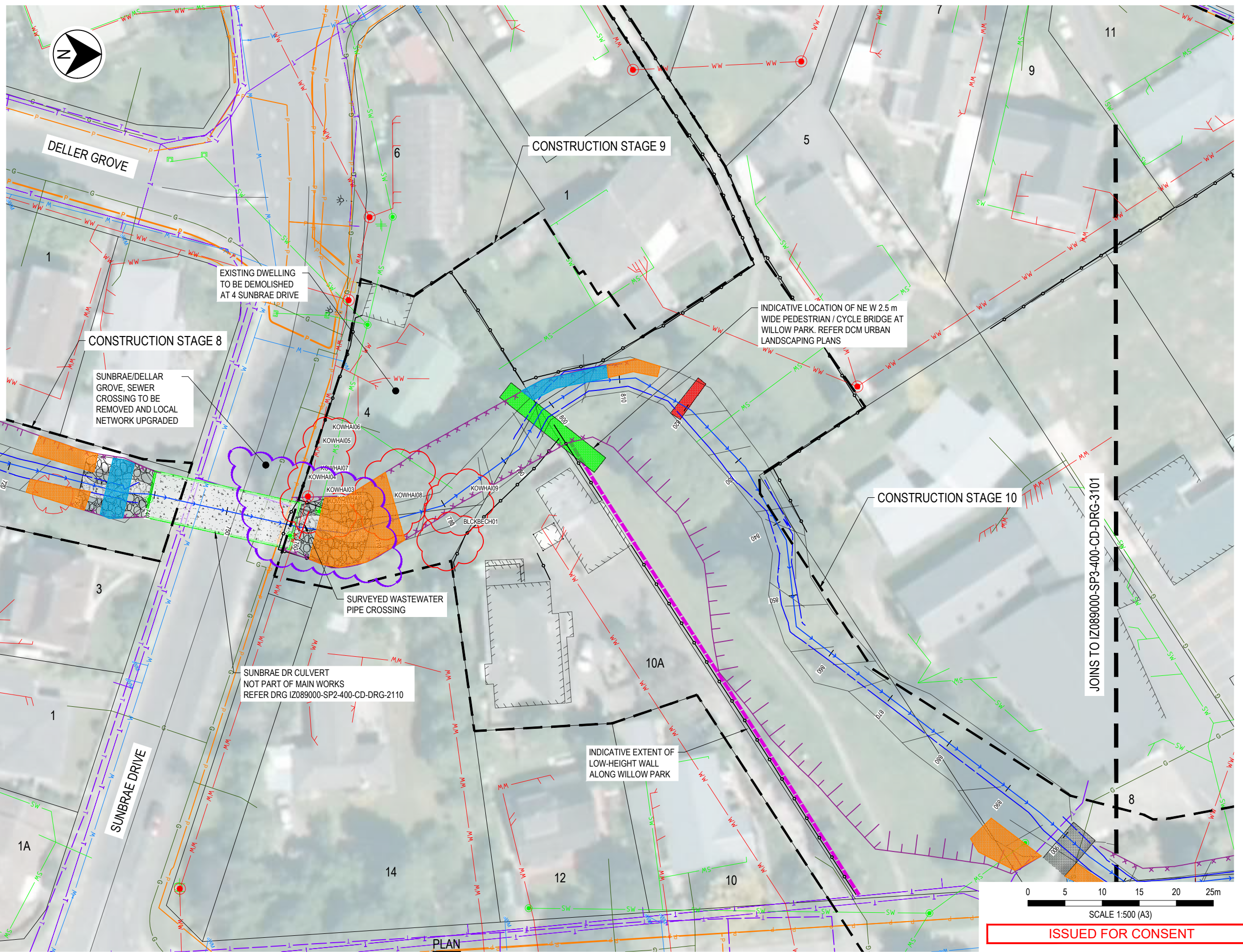
Wellington Water

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CLIENT WELLINGTON WATER		PROJECT PINEHAVEN STREAM IMPROVEMENTS	
DRAWN JWS	DRAWING CHECK DF	REVIEWED JS	APPROVED IG
DESIGNED JWS	DESIGN REVIEW DF	DATE 02/02/20	DATE 02/02/20

TITLE CHANNEL WORKS GENERAL ARRANGEMENT SHEET 1	
SCALE AS SHOWN	DRAWING No IZ089000-SP3-400-CD-DRG-3101
REV B	

LEGEND	
EXISTING	
	TOP OF BANK
	TOP OF LOW FLOW CHANNEL
	CHANNEL THALWEG
	STORMWATER PIPE
	WASTEWATER
	WATER SUPPLY
	POWER
	TELECOMS
	GAS
	FENCE
	EDGE OF BUILDING
DESIGN	
	NEW TOP OF BANK - TRAPEZOIDAL CHANNEL
	NEW TOP OF BANK - VERTICAL WALL CHANNEL
	WALL
	BANK STABILISATION WORKS - EROSION REPAIR / SCOUR PROTECTION
	EXISTING BRIDGE TO BE RETAINED
	EXISTING BRIDGE TO BE REMOVED
	EXISTING BRIDGE TO BE REPLACED
	NEW PROPOSED BRIDGE
	TREES TO BE KEPT
	TREES TO BE REMOVED
	TREES TO BE KEPT - DRIPLINE SURVEY
	TREES TO BE REMOVED - DRIPLINE SURVEY
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'A'
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'B'
CONSENT	
	DESIGNATION BOUNDARY



JOINS TO IZ089000-SP3-400-CD-DRG-3103

JOINS TO IZ089000-SP3-400-CD-DRG-3101

SUNBRAE DRIVE

SUNBRAE DR CULVERT NOT PART OF MAIN WORKS REFER DRG IZ089000-SP2-400-CD-DRG-2110

SURVEYED WASTEWATER PIPE CROSSING

INDICATIVE LOCATION OF NE W 2.5 m WIDE PEDESTRIAN / CYCLE BRIDGE AT WILLOW PARK. REFER DCM URBAN LANDSCAPING PLANS

0 5 10 15 20 25m
SCALE 1:500 (A3)
ISSUED FOR CONSENT

REV	DATE	DRAWN	REVD	APPD	REVISION	DRAWING NUMBER	REFERENCE DRAWING TITLE
B	20/02/20	JWS	JS	IG	ISSUED FOR CONSENT		
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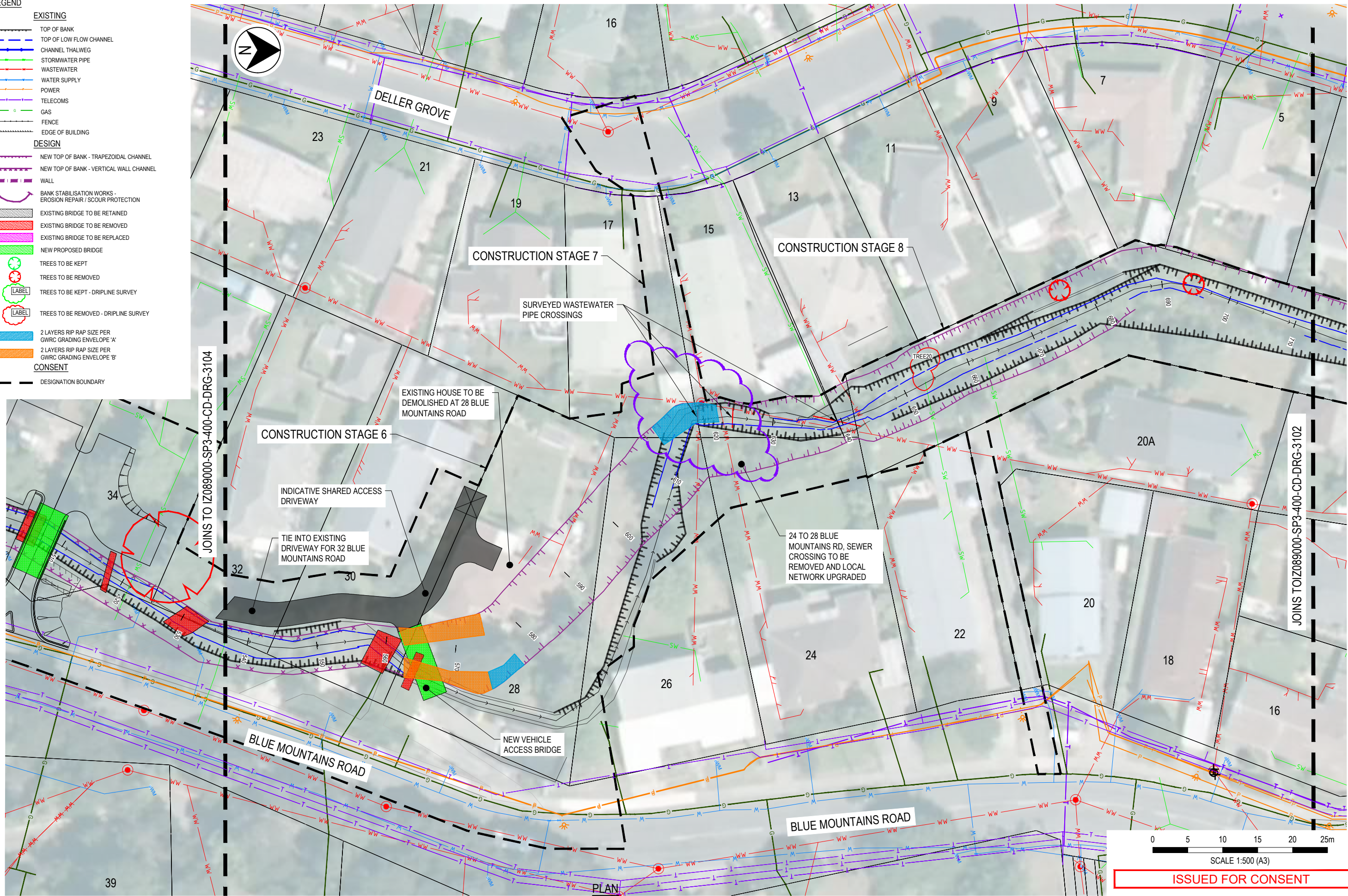


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DRAWN JWS	DRAWING CHECK DF	REVIEWED JS	APPROVED IG
DESIGNED JWS	DESIGN REVIEW DF	DATE 02/02/20	DATE 02/02/20

TITLE CHANNEL WORKS GENERAL ARRANGEMENT SHEET 2		SCALE AS SHOWN	DRAWING No IZ089000-SP3-400-CD-DRG-3102	REV B
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LEGEND	
EXISTING	
	TOP OF BANK
	TOP OF LOW FLOW CHANNEL
	CHANNEL THALWEG
	STORMWATER PIPE
	WASTEWATER
	WATER SUPPLY
	POWER
	TELECOMS
	GAS
	FENCE
	EDGE OF BUILDING
DESIGN	
	NEW TOP OF BANK - TRAPEZOIDAL CHANNEL
	NEW TOP OF BANK - VERTICAL WALL CHANNEL
	WALL
	BANK STABILISATION WORKS - EROSION REPAIR / SCOUR PROTECTION
	EXISTING BRIDGE TO BE RETAINED
	EXISTING BRIDGE TO BE REMOVED
	EXISTING BRIDGE TO BE REPLACED
	NEW PROPOSED BRIDGE
	TREES TO BE KEPT
	TREES TO BE REMOVED
	TREES TO BE KEPT - DRILINE SURVEY
	TREES TO BE REMOVED - DRILINE SURVEY
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'A'
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'B'
CONSENT	
	DESIGNATION BOUNDARY



PLAN
SCALE 1:250 (A1), 1:500 (A3)

0 5 10 15 20 25m
SCALE 1:500 (A3)
ISSUED FOR CONSENT

REV	DATE	DRAWN	REV'D	APP'D	REVISION
B	02/02/20	JWS	JS	IG	ISSUED FOR CONSENT
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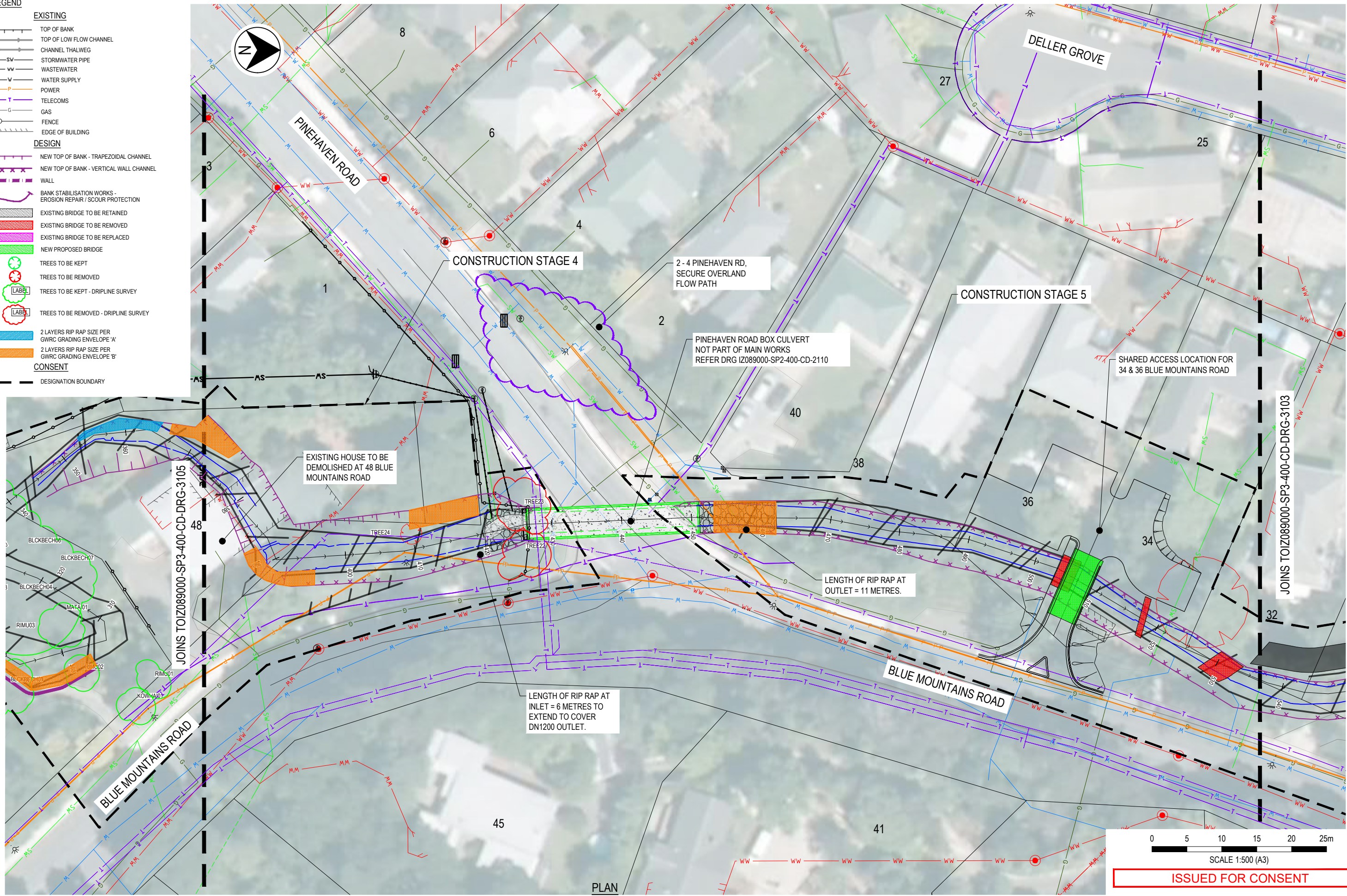
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DESIGNED JWS	DESIGN REVIEW DF	DATE 02/02/20	DATE 02/02/20

TITLE CHANNEL WORKS GENERAL ARRANGEMENT SHEET 3		
SCALE AS SHOWN	DRAWING NO. I2089000-SP3-400-CD-DRG-3103	REV B

LEGEND	
EXISTING	
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	TOP OF LOW FLOW CHANNEL
	CHANNEL THALWEG
	STORMWATER PIPE
	WASTEWATER
	WATER SUPPLY
	POWER
	TELECOMS
	GAS
	FENCE
	EDGE OF BUILDING
DESIGN	
	NEW TOP OF BANK - TRAPEZOIDAL CHANNEL
	NEW TOP OF BANK - VERTICAL WALL CHANNEL
	WALL
	BANK STABILISATION WORKS - EROSION REPAIR / SCOUR PROTECTION
	EXISTING BRIDGE TO BE RETAINED
	EXISTING BRIDGE TO BE REMOVED
	EXISTING BRIDGE TO BE REPLACED
	NEW PROPOSED BRIDGE
	TREES TO BE KEPT
	TREES TO BE REMOVED
	TREES TO BE KEPT - DRIPLINE SURVEY
	TREES TO BE REMOVED - DRIPLINE SURVEY
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'A'
	2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'B'
CONSENT	
	DESIGNATION BOUNDARY



PLAN SCALE 1:250 (A1), 1:500 (A3)

REV	DATE	DRAWN	REVD	APPD	REVISION	DRAWING NUMBER	REFERENCE DRAWING TITLE
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Greater Wellington
Te Whakaranga o Te Ika Māui

Wellington Water

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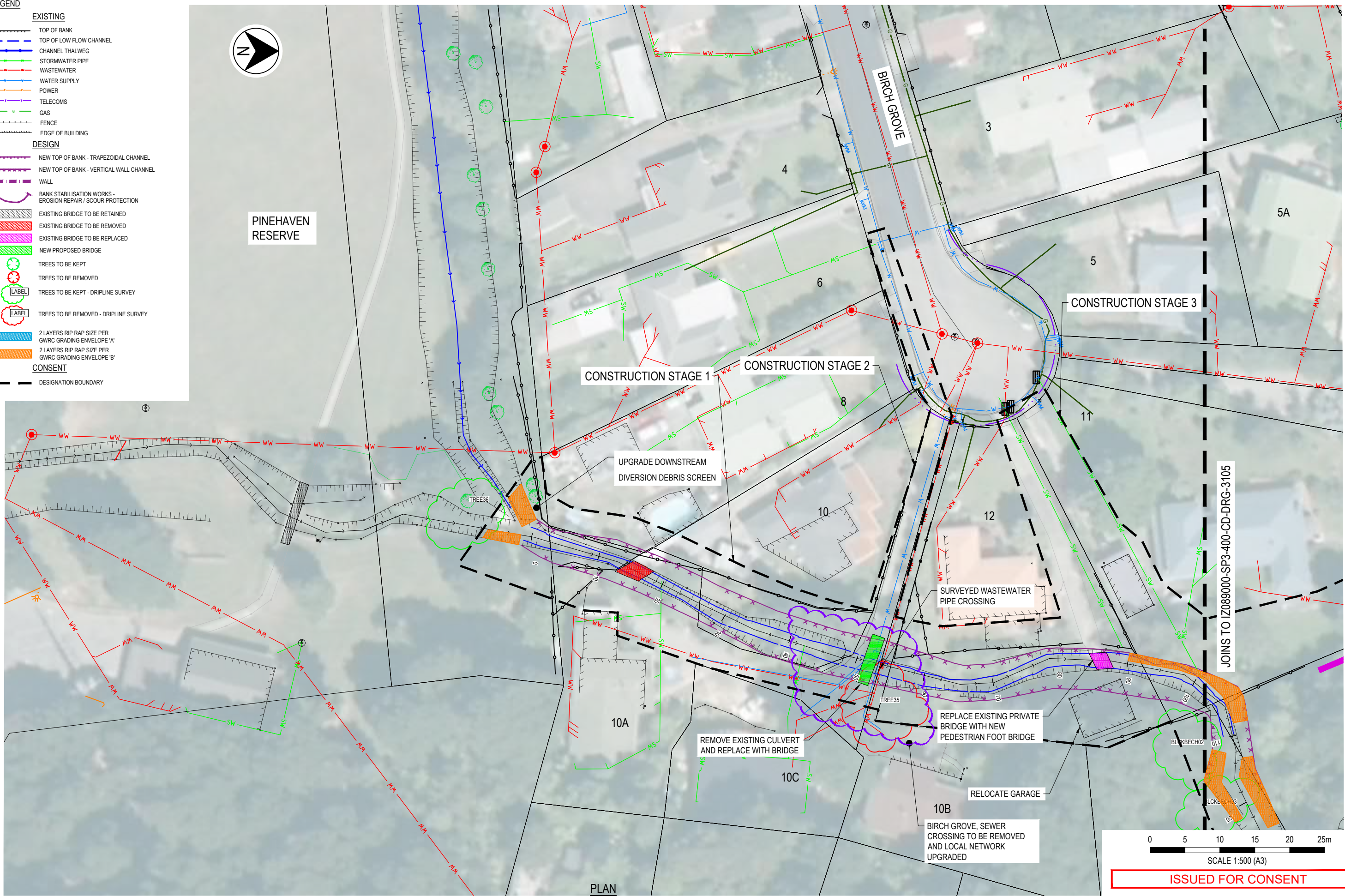
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PROJECT PINEHAVEN STREAM IMPROVEMENTS			
DRAWN JWS	DRAWING CHECK DF	REVIEWED JS	APPROVED IG
DESIGNED JWS	DESIGN REVIEW DF	DATE 02/02/20	DATE 02/02/20

TITLE CHANNEL WORKS GENERAL ARRANGEMENT SHEET 4	
SCALE AS SHOWN	DRAWING No IZ089000-SP3-400-CD-DRG-3104
REV B	

- LEGEND**
- EXISTING**
- TOP OF BANK
 - TOP OF LOW FLOW CHANNEL
 - CHANNEL THALWEG
 - STORMWATER PIPE
 - WASTEWATER
 - WATER SUPPLY
 - POWER
 - TELECOMS
 - GAS
 - FENCE
 - EDGE OF BUILDING
- DESIGN**
- NEW TOP OF BANK - TRAPEZOIDAL CHANNEL
 - NEW TOP OF BANK - VERTICAL WALL CHANNEL
 - WALL
 - BANK STABILISATION WORKS - EROSION REPAIR / SCOUR PROTECTION
 - EXISTING BRIDGE TO BE RETAINED
 - EXISTING BRIDGE TO BE REMOVED
 - EXISTING BRIDGE TO BE REPLACED
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 - TREES TO BE KEPT
 - TREES TO BE REMOVED
 - TREES TO BE KEPT - DRILINE SURVEY
 - TREES TO BE REMOVED - DRILINE SURVEY
 - 2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'A'
 - 2 LAYERS RIP RAP SIZE PER GWRC GRADING ENVELOPE 'B'
- CONSENT**
- DESIGNATION BOUNDARY



PINEHAVEN RESERVE



PLAN
SCALE 1:250 (A1), 1:500 (A3)



SCALE 1:500 (A3)

ISSUED FOR CONSENT

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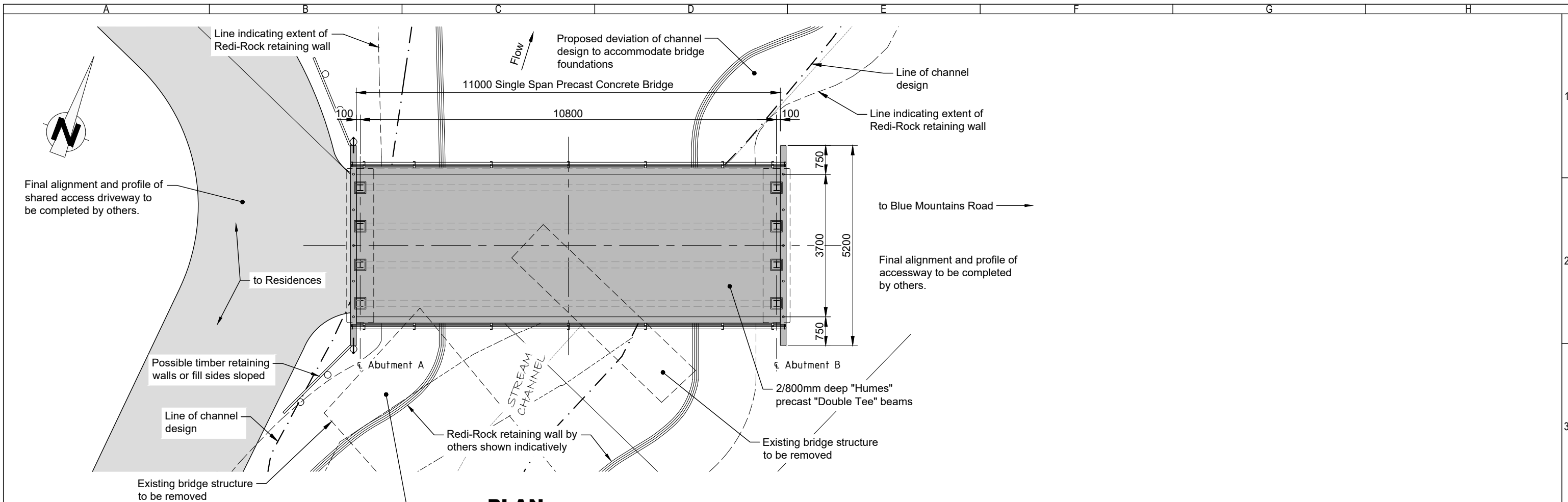
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CLIENT WELLINGTON WATER			
PROJECT PINEHAVEN STREAM IMPROVEMENTS			
DRAWN JWS	DRAWING CHECK DF	REVIEWED JS	APPROVED IG
DESIGNED JWS	DESIGN REVIEW DF	DATE 02/02/20	DATE 02/02/20

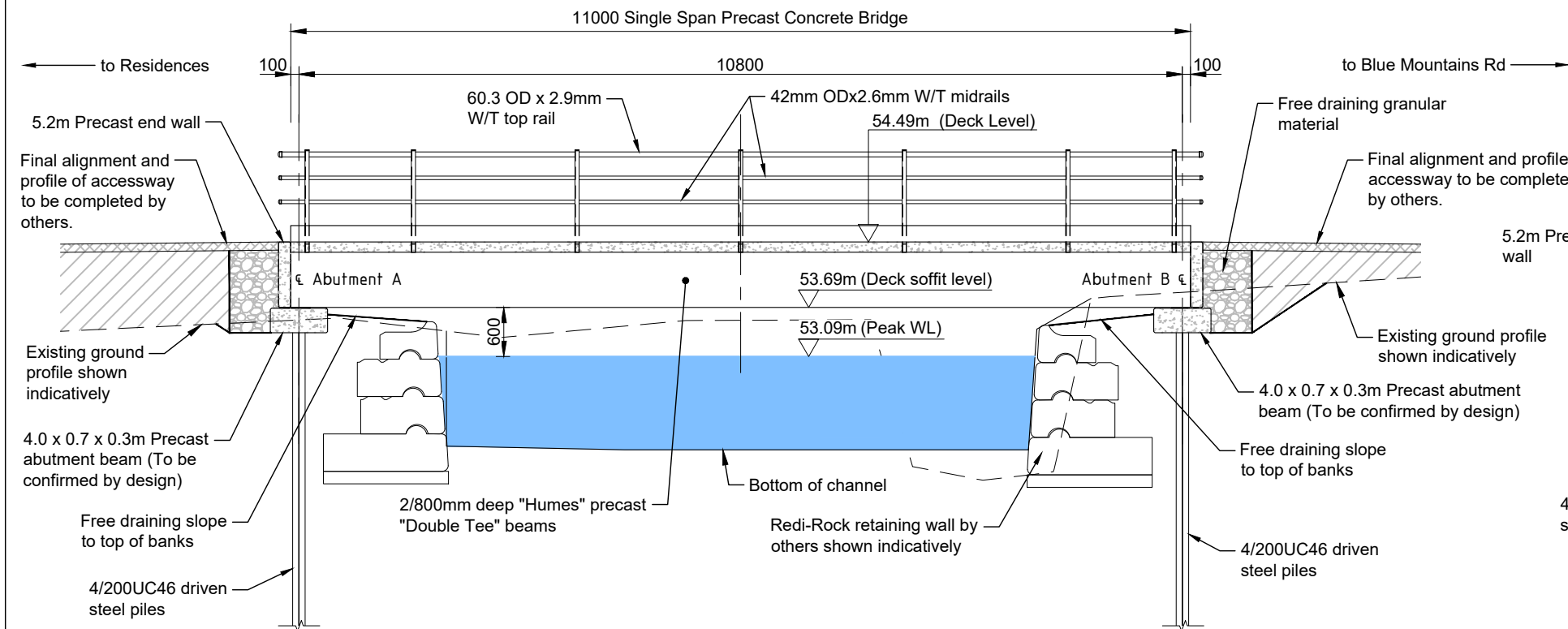
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SCALE AS SHOWN	DRAWING No. I2089000-SP3-400-CD-DRG-3106
REV B	



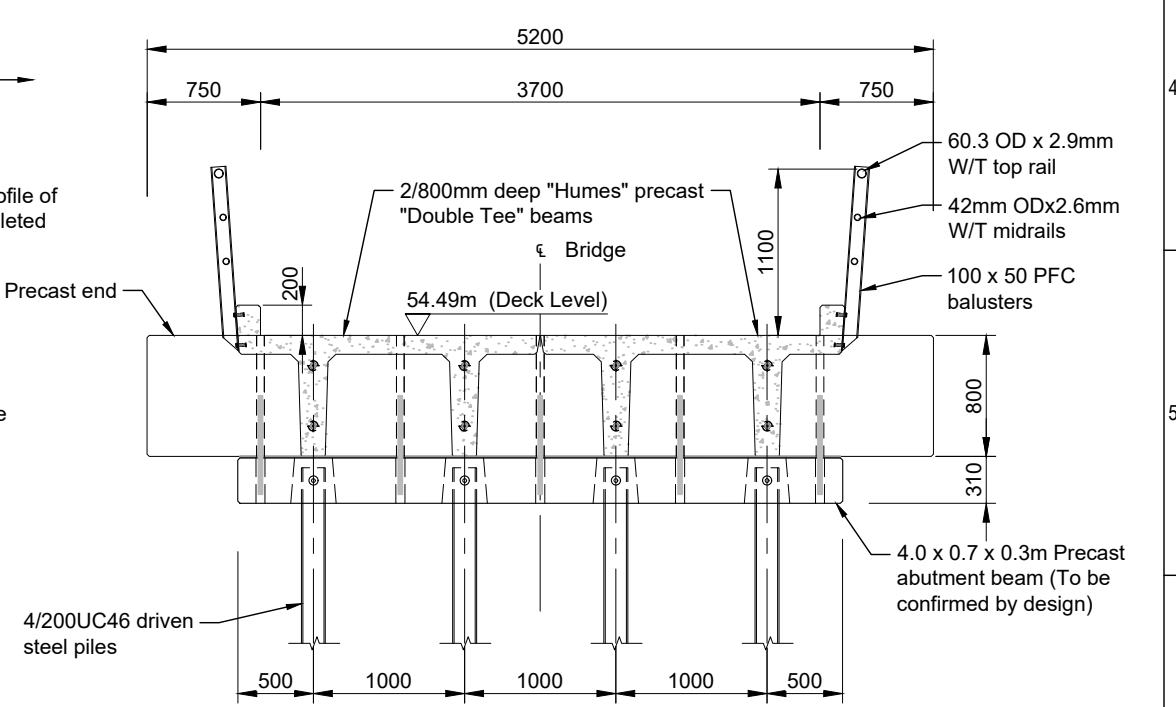
Appendix E. Private vehicle shared accessway bridge concept design



PLAN
Scale 1:100 on A3



LONG SECTION
Scale 1:75 on A3



TYPICAL CROSS SECTION
Scale 1:50 on A3

PRELIMINARY ONLY
FOR CLIENT COMMENTS

Surveyed: ---					
Designed: JLR					
Drawn: GC	A	DRAFT - CLIENT COMMENTS	DVR	<i>JLR</i>	DEC 2019
Reviewed: DVR	Rev	Revision Details	Appd	Signature	Date

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Project Title:

PINEHAVEN STREAM
IMPROVEMENTS,
UPPER HUTT, WELLINGTON

Sheet Title:

28 BLUE MOUNTAINS RD -
CONCEPT GENERAL
ARRANGEMENT

Job #:

14306

Scale (A3 Original):

As Shown

Client Drawing #:

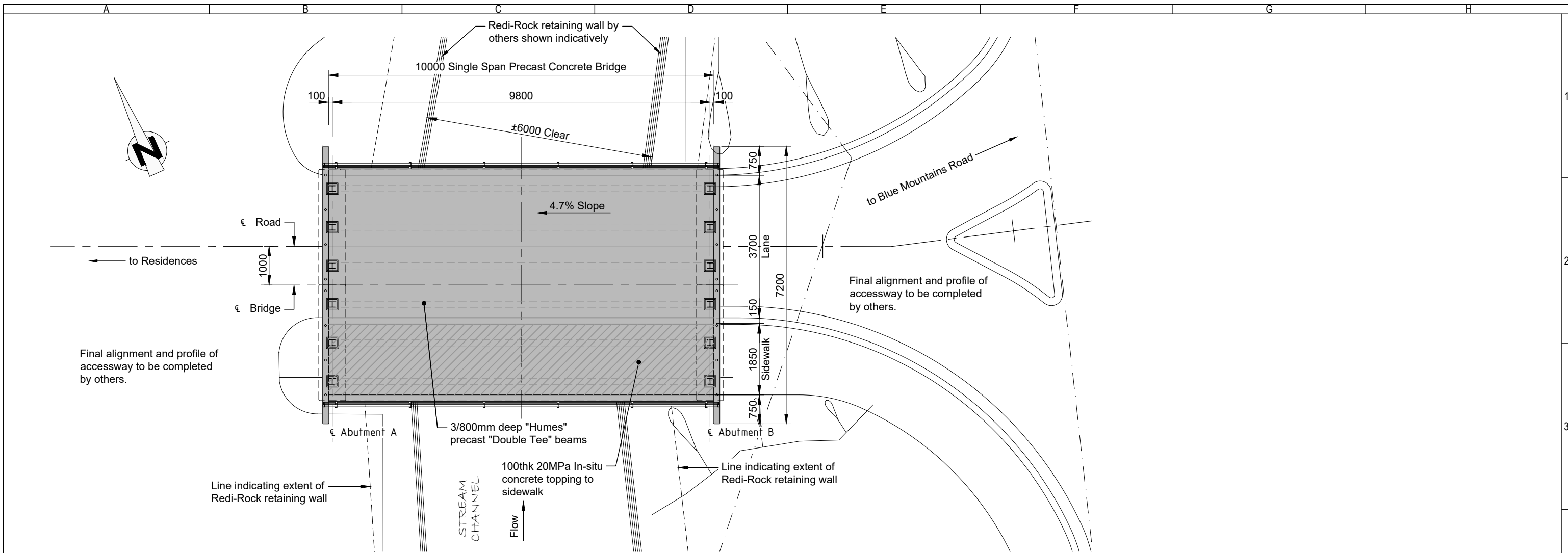
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Sheet #:

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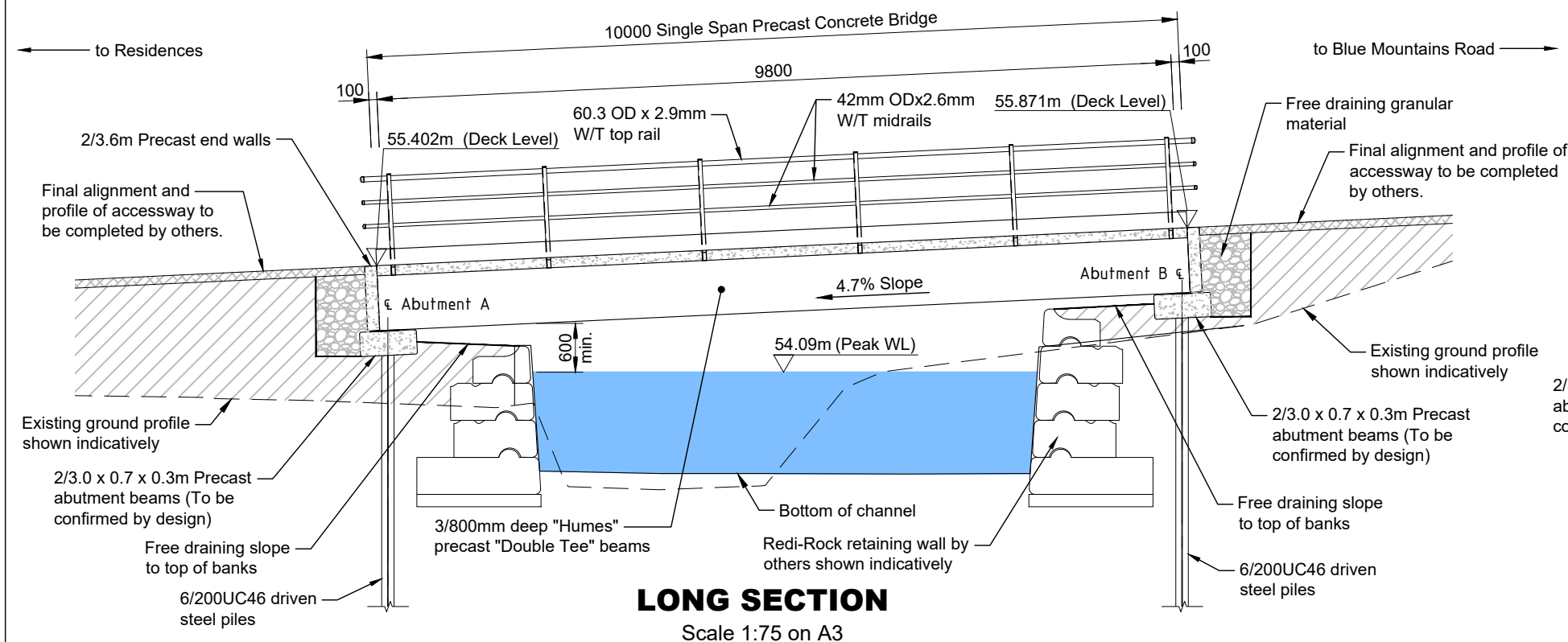
Rev No:

A



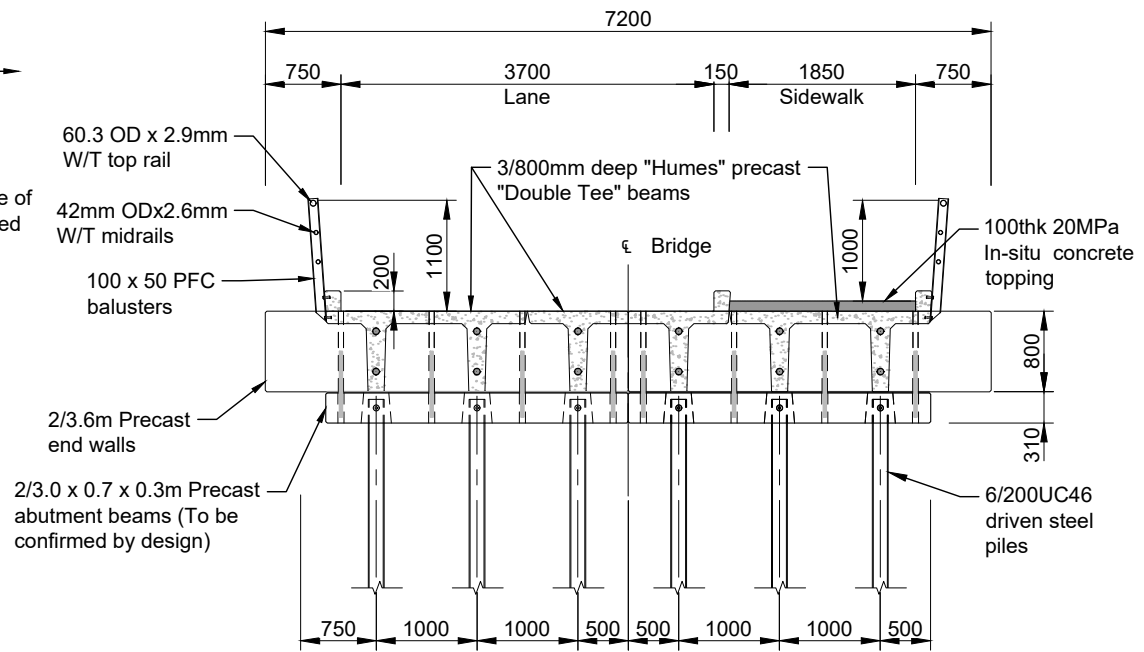
PLAN

Scale 1:100 on A3



LONG SECTION

Scale 1:75 on A3



TYPICAL CROSS SECTION

Scale 1:75 on A3

**PRELIMINARY ONLY
FOR CLIENT COMMENTS**

Surveyed: ---					
Designed: JLR					
Drawn: GC	A	DRAFT - CLIENT COMMENTS	DVR	<i>JLR</i>	DEC 2019
Reviewed: DVR	Rev	Revision Details	Appd	Signature	Date

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Client:
**PINEHAVEN STREAM
IMPROVEMENTS,
UPPER HUTT, WELLINGTON**

Project Title:
**34-36 BLUE MOUNTAINS RD -
CONCEPT GENERAL
ARRANGEMENT**

Job #:	14306	Scale (A3 Original):	As Shown
Client Drawing #:		Sheet #:	02
		Rev No:	A

Appendix F. Amended proposed designation conditions

(Note: amendments are underlined or ~~struckthrough~~)

Notice of Requirement Conditions

General

1. Except as modified by the conditions below, the Project shall be undertaken in general accordance with:
 - a. The Designation Plans, dated [...]
 - b. The General Arrangement plans, dated [...]; noting that the final driveway and private bridge to provide for access and parking at each property from 30-38 Blue Mountains Road will be completed in consultation with each respective land owner.
 - c. The cross-sections dated [...];
 - d. The Site Access and Laydown Scheme plans, dated [...]; and
 - e. Landscape planting plans dated [...].
- 1A. As-built plans showing the location of buildings demolished and reinstated within the designation boundary must be provided to the Upper Hutt City Council District Council within 20 working after the construction of the relocated buildings to certify that these buildings comply with Upper Hutt District Council District Plan permitted activity rules or existing use rights.
2. In the event of conflict between the documents listed above and these designation conditions, these conditions prevail.
3. The designation shall lapse if not given effect to within 5 years from the date on which it is included in the Upper Hutt City Council District Plan under section 175 of the RMA.

Designation boundary

4. As soon as reasonably practicable following the completion of construction of the Project, the Requiring Authority shall:
 - a. Review the area designated for the Project;
 - b. Identify any areas of designated land that are no longer necessary for the on-going operation or maintenance of the Project or for ongoing mitigation measures; and
 - c. Give notice to CMO in accordance with section 182 of the RMA seeking the removal of those parts of the designation identified in 4 b) above.

Management Plans

5. The following Management Plans shall be submitted to the CMO for certification:
 - a. Construction Traffic Management Plan (CTMP) to certify compliance and consistency with conditions [...to ...] of this consent;
 - b. Construction Noise and Vibration Management Plan (CNVMP) to certify compliance and consistency with conditions [...to ...] of this consent; ~~and~~
 - c. Site Office Management Plan (SOMP) to certify compliance and consistency with condition [...to...] of this consent;
 - d. Landscape Plan (LP) to certify compliance and consistency with conditions [...to ...] of this consent; and

- e. Lizard Management Plan to certify compliance and consistency with condition [...to...] of this consent:
6. Works must not commence until certification of the management plans is received in writing.
7. Submitted management plans will be deemed to be certified if no correspondence from the CMO has been received on the specific management plan within 15 Working Days.
8. The Project shall be carried out in general accordance with the certified management plans required by these conditions.
9. The management plans must provide the overarching principles, methodologies, and procedures for managing the effects of the Works to achieve the environmental outcomes and performance standards required by these conditions.
10. The management plans must apply to the entire Project (including all Stages) but may be supplemented by site-specific plans to provide the necessary level of detail to address requirements within each of the Stages.
11. A copy of the certified management plans shall be made publicly accessible on the Requiring Authority's website.
12. During the construction period, a copy of all certified management plans shall be kept on site at all times and be made available to the CMO upon request.
13. The certified management plans may be amended if necessary to reflect any changes in design, construction methods, or management of effects. Any amendments are to be discussed with and submitted to the Council for information without the need for a further certification process, unless those amendments once implemented would result in materially different effects to that described in the original management plans. If the amendments once implemented would result in materially different effects to that described in the original management plans, the amended plans must be re-submitted to the CMO for certification.

Work hours

14. Normal working hours, except in those circumstances exempted under the CNVMP, shall be:
 - a. For on-site construction activities: 7:00am to 7:00pm Monday to Saturday (excluding public holidays)
 - b. For heavy vehicle movements on public roads: 9:00am - 6:00pm Monday to Friday (excluding public holidays).

Construction Noise

15. Noise arising from construction activities shall be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 'Acoustics – Construction Noise' (NZS 6803:1999)
16. A CNVMP shall be prepared by a suitably qualified acoustic specialist and certified as per condition [...] as being consistent with NZS 6803:1999 and meeting the

requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the CNVMP is to provide a framework for the development and implementation of the Best Practicable Option ('BPO') for the management of all construction noise effects, and additionally to define the procedures to be followed when the noise standards in NZS 6803:1999 are not met following the adoption of the BPO. The CNVMP shall be prepared in accordance with the requirements of Annex E2 of NZS 6803:1999 and shall address the following matters as a minimum:

- a. Description of the works, anticipated equipment/processes and their scheduled durations;
- b. Hours of operation and duration for the construction activities;
- c. The construction noise and vibration standards for the Project as set out in NZS 6803:1999 Acoustics - Construction Noise and Table 3 of DIN 4150-3: 1999;
- d. Identification of affected occupied buildings and any other sensitive receivers;
- e. Management and mitigation options to be adopted for all works during the Project (which shall include prohibition of tonal reverse alarms);
- f. Minimum separation distances from receivers for plant and machinery where compliance with the construction noise standards are met;
- g. Methods and frequency for monitoring and reporting on construction noise;
- h. Procedures for engaging with stakeholders, notification of proposed construction activities and responding to noise complaints consistent with conditions; and
- i. Contact details for the Project Manager (or nominee) and the Requiring Authority's Project Liaison Person (phone and email addresses).

17. The construction noise, where practicable, comply with the following criteria at the nearest residential building or sensitive receiver for the purposes of the CNVMP:

Time of Week	Time period	$L_{Aeq(t)}$	L_{AFmax}
Weekdays	0630-0730	60	75
	0730-1800	75	90
	1800-2000	70	85
	2000-0630	45	75
Saturday	0630-0730	45	75
	0730-1800	75	90
	1800-2000	45	75
	2000-0630	45	75
Sundays and public holidays	0630-0730	45	75
	0730-1800	55	85
	1800-2000	45	75
	2000-0630	45	75

Where it is not practicable to achieve those criteria, the CNVMP must describe alternative strategies to achieve the best practicable option to minimise the effects of construction noise on neighbours.

18. The vibration criteria set out in Table 3 of DIN 4150-3: 1999 shall be met, where practicable. Where it is not practicable to achieve those criteria, a suitably qualified expert shall be engaged to assess and manage construction vibration during the activity that exceeds the criteria.
19. Where on-site construction works and/or heavy vehicle movements need to be undertaken outside of normal working hours (as defined in Condition 14), night time work (7:00pm –7:00am) shall be avoided where practicable. Where avoidance is not practicable, the best practicable option shall be adopted to minimise or mitigate noise and vibration effects.

Construction Traffic

20. A CTMP shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction.
21. The purpose of the CTMP is to avoid or mitigate adverse effects on traffic safety and efficiency resulting from the construction works, in order to:
 - a. Protect public safety, including the safe passage of pedestrians and cyclists;
 - b. Minimise delays to road users, pedestrians and cyclists, and particularly public transport at all times, especially bus travel times at peak traffic periods during weekdays (06:30 to 09:30 and 16:00 to 19:00); and
 - c. Inform the public about any potential impacts on the road network.
22. The CTMP shall describe the methods for avoiding, remedying or mitigating the local and network wide transportation effects resulting from the Project works, and shall address the following matters:
 - a. Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the Project;
 - b. Methods to manage the effects of the delivery of construction material, plant and machinery (including oversized trucks);
 - c. The numbers, frequencies, routes and timing of construction traffic movements;
 - d. Traffic management measures to address and maintain traffic capacity and minimise adverse effects;
 - e. Measures to maintain existing vehicle access to private properties, or where the existing property access is to be replaced, measures to provide alternative access arrangements in consultation the affected landowner;
 - f. Measures to maintain pedestrian and cycle access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, (e.g. unless provision of such access is severed by the works or such access will become unsafe as a result of the construction works). Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours; and
 - g. Include measures to avoid road closures, and the restriction of vehicle, cycle and pedestrian movements.

Landscape Plan

23. A Landscape Plan ('LP') shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the LP is to outline the requirements for the Project's permanent landscape mitigation works.
24. The Requiring Authority shall undertake mitigation and enhancement planting in general accordance with the LP. The LP shall include details of proposed mitigation planting including as follows:
- a. Identification of vegetation to be retained, protection measures, and planting to be established along cleared edges, the riparian zone and new floodplain areas;
 - b. Proposed planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods;
 - c. The proposed staging of planting in relation to the construction programme, including provision for planting within each planting season following completion of works in each stage of the Project and detailed specifications relating to (but not limited to) the following:
 - i. Weed control and clearance;
 - ii. Pest animal management;
 - iii. Ground preparation (topsoiling and decompaction);
 - iv. Mulching;
 - v. Plant sourcing and planting, including hydroseeding and grassing;
 - vi. Successional/replacement planting; and
 - vii. Details of a proposed maintenance and monitoring programme.
25. The LP shall include a Reserve Reinstatement Plan for Willow Park. The Reserve Reinstatement Plan shall be prepared in consultation with Council and shall include the following details (as appropriate):
- a. Removal of structures, plant and materials associated with construction;
 - b. Replacement of any boundary fences that require removal;
 - c. Reinstatement of grassed areas;
 - d. Replacement of trees and other planting;
 - e. Any structures proposed to be constructed; and
 - f. Details of way finding interpretation signage within and adjacent to the reserve.
26. The Requiring Authority shall maintain and monitor the mitigation and enhancement planting for a minimum of 5 years following the planting being undertaken.

Stakeholder and Communications

27. The Requiring Authority shall appoint a community liaison person for the duration of the construction phase of the Project to be the main point of contact for persons affected by the Project.
28. A community communication strategy will be developed to ensure the key messages about potential temporary construction effects such as noise and traffic, and the project programme timeline, are well understood.

Complaints process

29. At all times during construction work, the Requiring Authority shall maintain a permanent register of any complaints received relating to the construction works, including the full details of the complainant and the nature of the complaint. The complaints register shall contain the following information:
 - d. The details of the complainant;
 - e. The nature of the complaint;
 - f. The investigations undertaken into the complaint; and
 - g. Any remedial actions undertaken to address the complaint.
30. The Requiring Authority shall respond to any complaint within 24 hours of receipt of the complaint, except where an immediate hazard is present or where the complaint relates to construction noise, in which case the Requiring Authority shall use its best endeavours to respond immediately. A formal written response shall be provided to the complainant and the Council within 10 days of complaint receipt.
31. The Requiring Authority shall keep a copy of the complaints register on site and shall provide a copy to the Council upon request.

Accidental discovery

32. At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall, in consultation with Port Nicholson Block Trust and Te Rūnanga o Toa Rangātira Inc, prepare an accidental discovery protocol and provide a copy to the CMO and GWRC for information. The protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts or features during construction of the Project. The protocol shall include, but not be limited to:
 - a. Identification of parties to be notified in the event of an accidental discovery, who shall include, but need not be limited to Port Nicholson Block Trust, Te Rūnanga o Toa Rangātira Inc, HNZ, UHCC, GWRC, and, if koiwi are discovered, the New Zealand Police;
 - b. Setting out of procedures to be undertaken in the event of an accidental discovery (these shall include immediate ceasing of all construction in the vicinity of the discovery until authorised to proceed); and
 - c. Training procedures for all contractors regarding the possible presence of cultural or archaeological sites or material, what these sites or material may look like, and the relevant procedures if any sites or material are discovered.

Terrestrial Ecology

33. Where ecologically significant trees have been identified and are proposed to be removed the following planting mitigation ratios will be used:
 - a. Kowhai replacement ratio of 3:1
 - b. Black beech replacement ratio of 10:1
 - c. Kahikatea replacement ratio of 5:1
34. Seedlings used for replacement plantings must be sourced from the same Ecological District.
35. All seedlings for replacement planting should be of an advanced grade (>60cm height at planting) and planted into appropriate soil and microclimate conditions.

36. Planting locations should be as close to the point of loss as practicable. Group plantings at Willow Park or Pinehaven Reserve would also be appropriate.

~~A procedure shall be provided prior to construction commencing for the management or relocation of any native birds found nesting within the construction areas during the construction period.~~

37. Prior to the commencement of any vegetation clearance, a CEnvP Accredited ecologist with avifauna experience must inspect the project site for the presence of any protected indigenous bird species nesting. No vegetation clearance may occur within 4 metres of any identified nest, until the ecologist confirms that nesting is complete.

37A Prior to vegetation clearance, automatic bat monitors shall be deployed for at least a month in suitable weather conditions (during spring and summer months where temperatures are above 10 degrees) targeting larger mature trees including the black beech trees proposed for removal in the Pinehaven Stream corridor. Should monitoring detect the presence of bats then, prior to vegetation clearance, a CEnvP Accredited ecologist with bat detection experience must survey the clearance area for the presence of bats and large trees for the presence of roosting bats. Should roosting be detected, a pre-tree felling protocol (PTFP) must be prepared by the accredited bat ecologist in consultation with the Department of Conservation for the purpose of avoiding the injury or mortality of roosting bats. Any tree removal within the area identified as potentially containing bats must be undertaken in accordance with the PTFP.

38. A Lizard Management Plan shall be prepared by a suitably qualified and experienced ecologist and shall be submitted to the CMO at least 15 Working Days prior to Commencement of Construction for certification that it meets the requirements of this condition. The purpose of the LMP is to avoid, remedy or mitigate any potential adverse effects of the Project on lizards. The Lizard Management Plan must:

- a. Describe the methodology for survey, salvage, transfer and release, including the identification of potential habitats for survey and planned and opportunistic relocations;
- b. Identify release sites and confirm any works necessary to protect such sites from predation or disturbance; and
- c. Be updated to achieve consistency with any authorisation given by the Director-General of Conservation under section 53 of the Wildlife Act 1953 where any such authorisation is required.

Site office establishment and management

38. A Site Office Management Plan (SOMP) shall be prepared and submitted to the CMO at least 15 Working Days prior to the establishment of the site office for certification that it meets the requirements of this condition. The purpose of the SOMP is to outline the requirements for the Project's site office establishment and management and to outline how potential adverse effects will be avoided or mitigated. The SOMP shall address, as a minimum:











- a. The location of the site office;
- b. Proposed working hours;
- c. Traffic movements to and from the site office area;
- d. On-site and off-site parking for site office staff;
- e. The location, nature and height of any security fencing;
- f. Light spill from any security lighting; and
- g. Laydown areas on the property.













Advice Note: All conditions, except for conditions 23- 26, relate to construction only, and will not apply to any works which take place after partial withdrawal of the designation pursuant to condition 4.



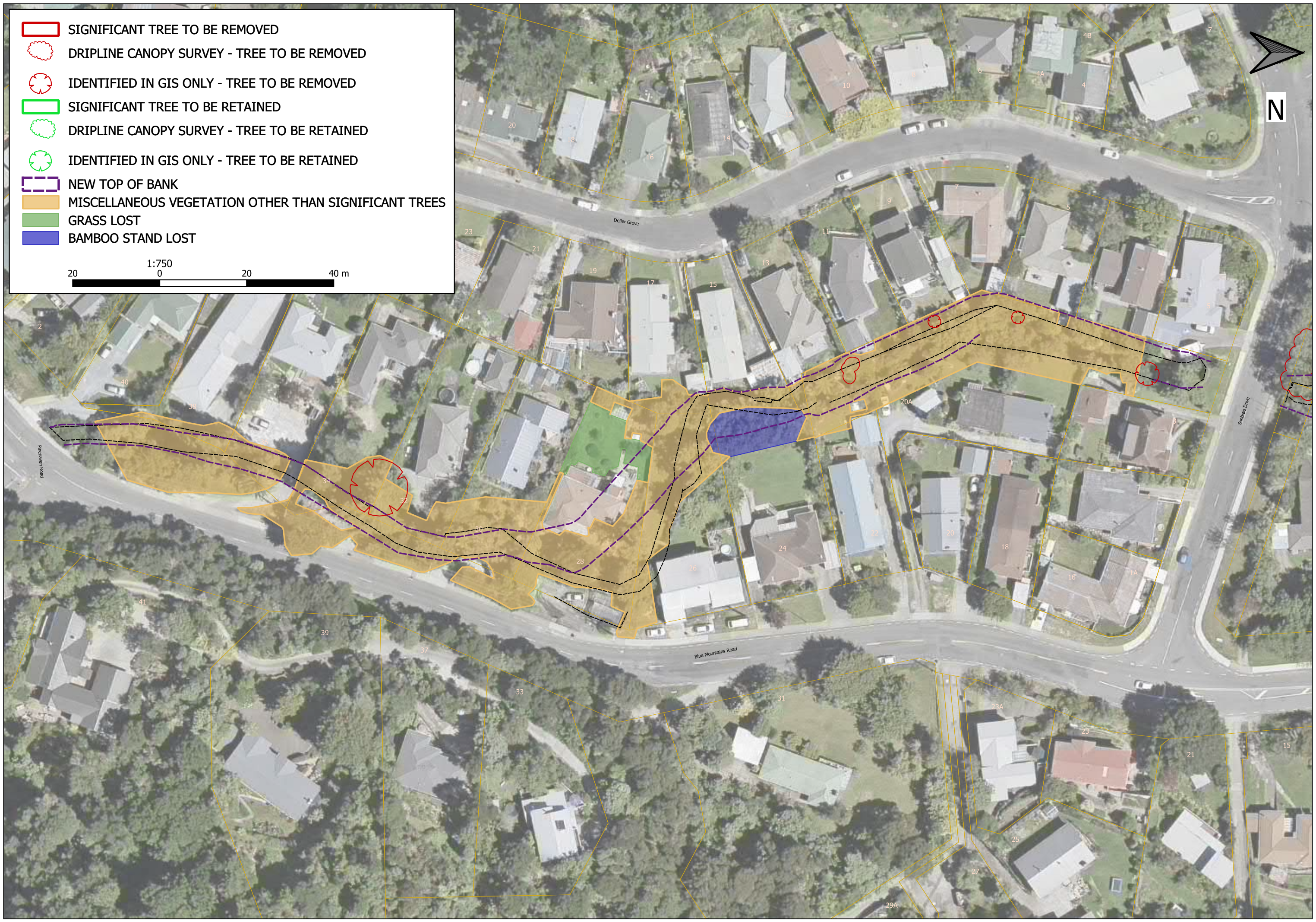
Appendix G. Existing Vegetation Map









-  SIGNIFICANT TREE TO BE REMOVED
-  DRIPLINE CANOPY SURVEY - TREE TO BE REMOVED
-  IDENTIFIED IN GIS ONLY - TREE TO BE REMOVED
-  SIGNIFICANT TREE TO BE RETAINED
-  DRIPLINE CANOPY SURVEY - TREE TO BE RETAINED
-  IDENTIFIED IN GIS ONLY - TREE TO BE RETAINED
-  NEW TOP OF BANK
-  MISCELLANEOUS VEGETATION OTHER THAN SIGNIFICANT TREES
-  GRASS LOST
-  WILLOW STAND LOST

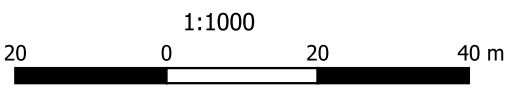


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-  DRIPLINE CANOPY SURVEY - TREE TO BE RETAINED
-  IDENTIFIED IN GIS ONLY - TREE TO BE RETAINED
-  NEW TOP OF BANK
-  MISCELLANEOUS VEGETATION OTHER THAN SIGNIFICANT TREES
-  GRASS LOST
-  BAMBOO STAND LOST

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-  SIGNIFICANT TREE TO BE REMOVED
-  DRIPLINE CANOPY SURVEY - TREE TO BE REMOVED
-  IDENTIFIED IN GIS ONLY - TREE TO BE REMOVED
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-  NEW TOP OF BANK
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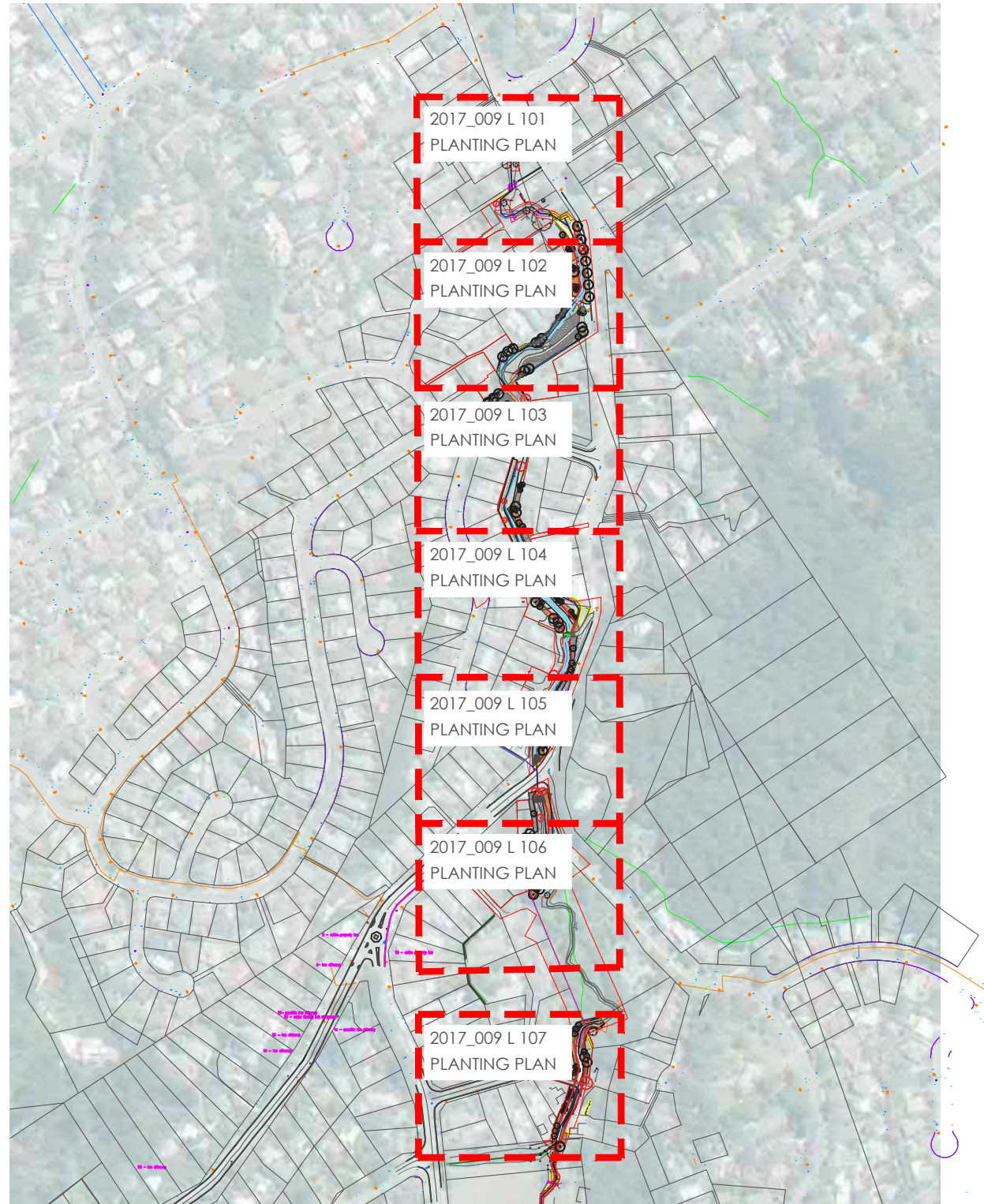




Appendix H. Draft Riparian Planting Plan

PINEHAVEN STREAM IMPROVEMENTS

LANDSCAPE WORKS



○ SITE PLAN - Sheet 1 of 1
1:5000 @ A3

DRAWING SCHEDULE - REV 7

Date	Sheet	Rev
05/02/2020	2017_009 L 100 Cover Sheet	7
05/02/2020	2017_009 L 101 Planting Plan - Sheet 1	5
05/02/2020	2017_009 L 102 Planting Plan - Sheet 2	6
05/02/2020	2017_009 L 103 Planting Plan - Sheet 3	6
05/02/2020	2017_009 L 104 Planting Plan - Sheet 4	5
05/02/2020	2017_009 L 105 Planting Plan - Sheet 5	5
05/02/2020	2017_009 L 106 Planting Plan - Sheet 6	6
05/02/2020	2017_009 L 107 Planting Plan - Sheet 7	6
05/02/2020	2017_009 L 108 Plant Schedule	7

legend:

revision:

rev no.	date	description	approved
0	26/09/2017	Client Approval	DCM
4	16/09/2019	For Resource Consent	DCM
5	18/09/2019	For Resource Consent	DCM
6	24/09/2019	For Resource Consent	DCM
7	05/02/2020	Removal of L2 Planting	DCM

note:
Contractors to verify all dimensions on site prior to commencing work. Contractors are responsible for confirming the location of all underground services on site prior to commencing work. Figured dimensions to be taken in preference to scaled dimensions

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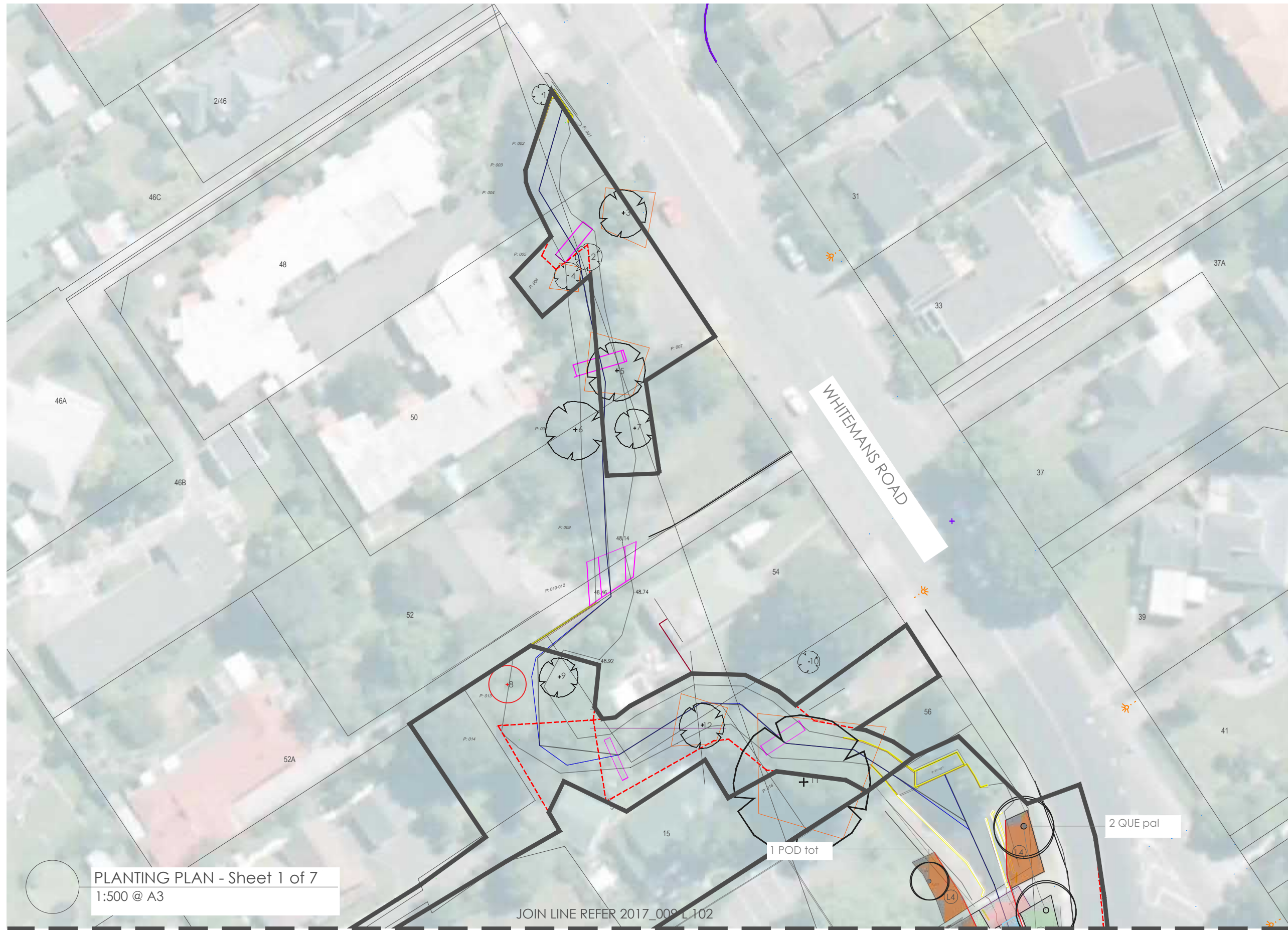
JACOBS

drawing name:
LANDSCAPE WORKS COVER SHEET















drawing sheet:
Sheet 1 of 1

original issue date : 26 SEPT 17
designed by : DCM
drawn by : BD
scale : 1:5000 @ A3

project no / drawing no / revision:
2017_009 / L 100 / 7



legend:

-  Tree to be Retained
Refer to tree survey
-  Tree to be Removed
-  L1 Specimen Tree
-  L3 Riparian 2 - Rarely Wet
-  L4 Buffer
-  L5 Climber
-  Existing Retaining Wall
-  Existing Bridge Deck
-  Proposed Bridge Deck
-  Proposed Timber Boardwall
-  Concrete Pathway
-  Gravel Pathway TBC
-  Turf
-  Designation Boundary


revision:

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drawing sheet:
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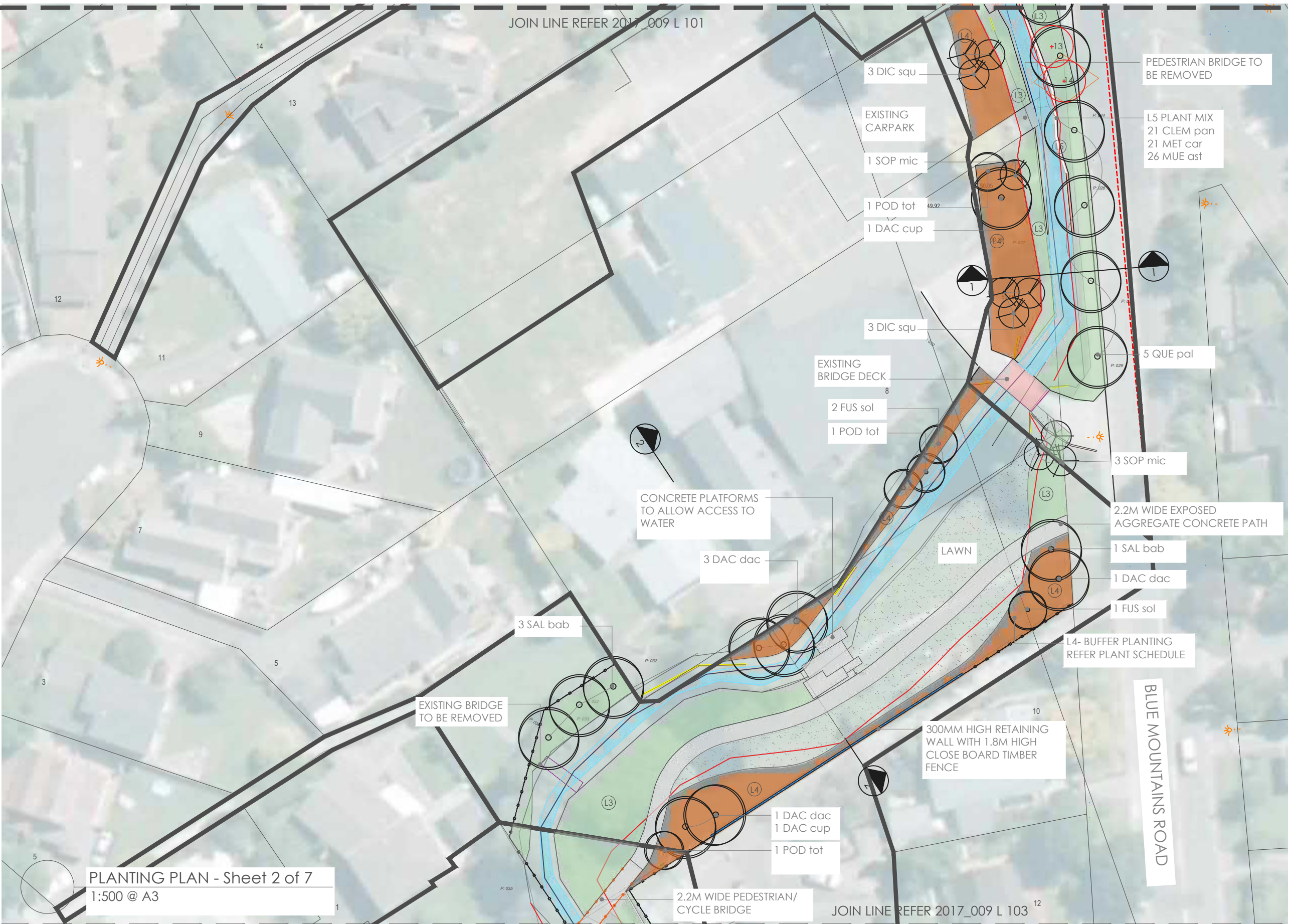
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PLANTING PLAN - Sheet 1 of 7
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- legend:
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 - L5 Climber
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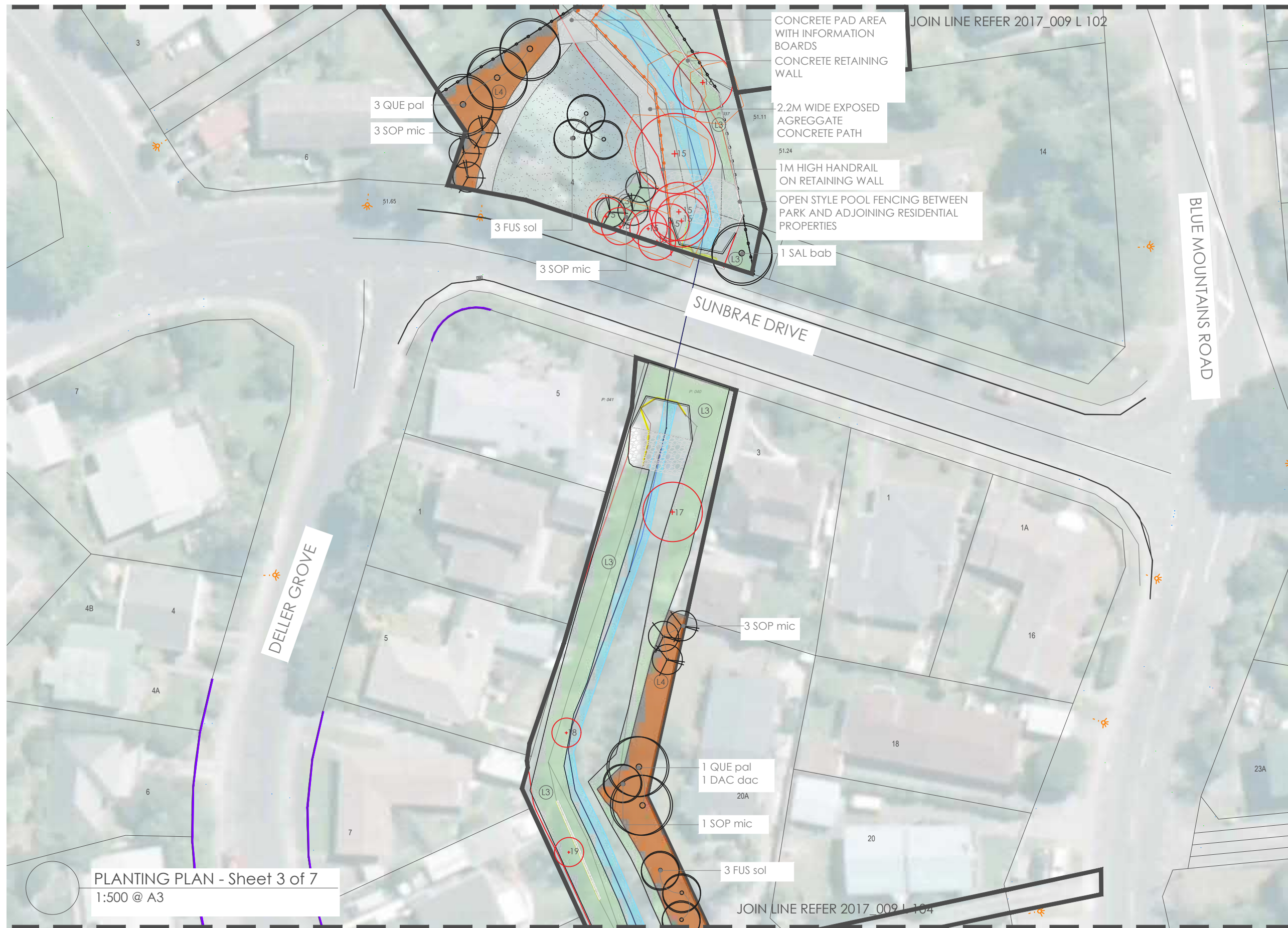
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LANDSCAPE WORKS PLANTING PLAN

drawing sheet:
Sheet 2 of 7

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2017_009 / L 102 / 6

PLANTING PLAN - Sheet 2 of 7
1:500 @ A3



legend:

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Refer to tree survey
- Tree to be Removed
- L1 Specimen Tree
- L3 Riparian 2 - Rarely Wet
- L4 Buffer
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drawing name:
LANDSCAPE WORKS PLANTING PLAN

drawing sheet:
Sheet 3 of 7

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project no / drawing no / revision:
2017_009 / L 103 / 6



PLANTING PLAN - Sheet 4 of 7
1:500 @ A3

legend:

- Tree to be Retained
Refer to tree survey
- Tree to be Removed
- L1 Specimen Tree
- L3 Riparian 2 - Rarely Wet
- L4 Buffer
- L5 Climber
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2017_009 / L 104 / 5



PLANTING PLAN - Sheet 5 of 7
1:500 @ A3

- legend:
- Tree to be Retained
Refer to tree survey
 - Tree to be Removed
 - L1 Specimen Tree
 - L3 Riparian 2 - Rarely Wet
 - L4 Buffer
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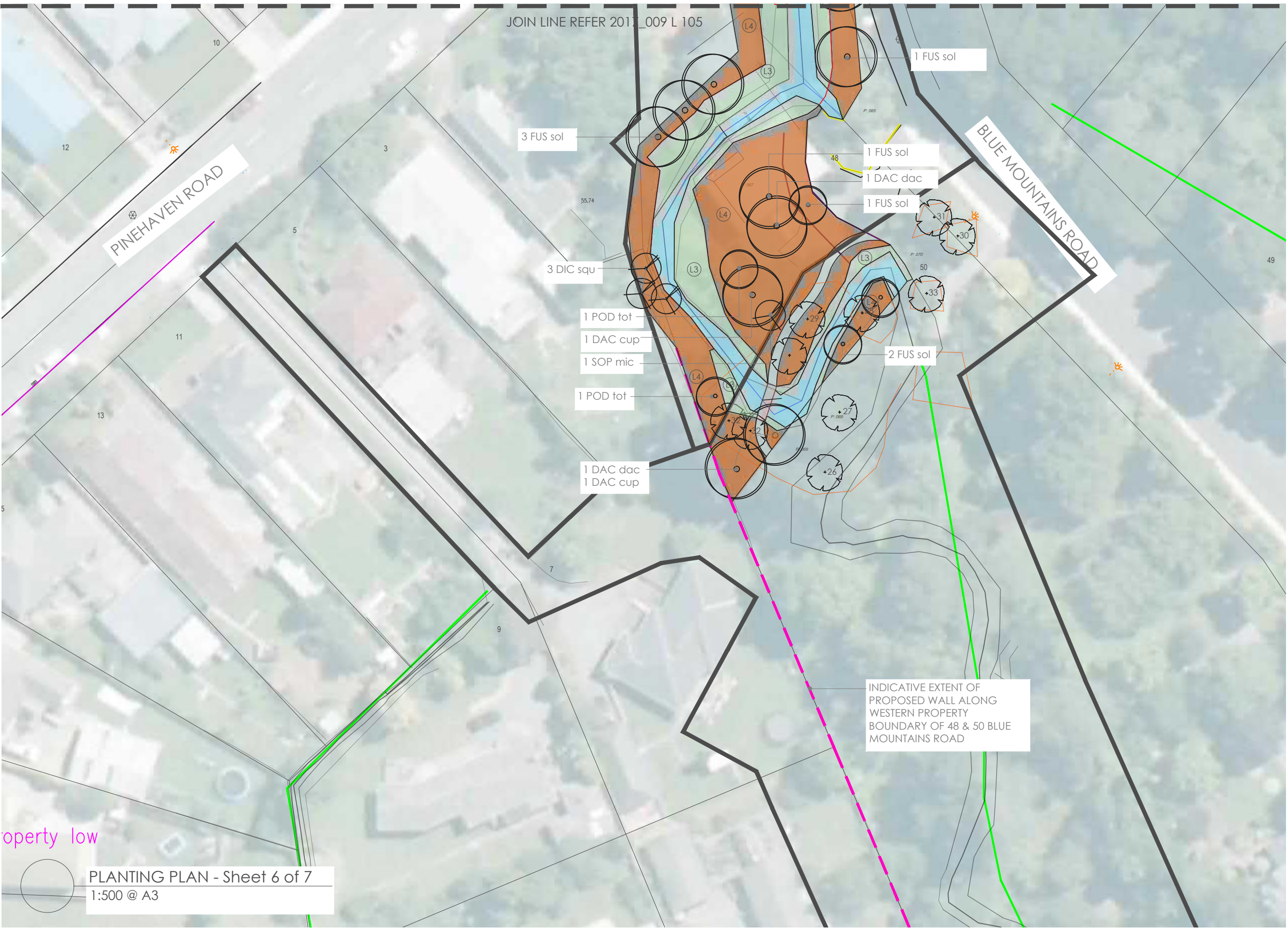
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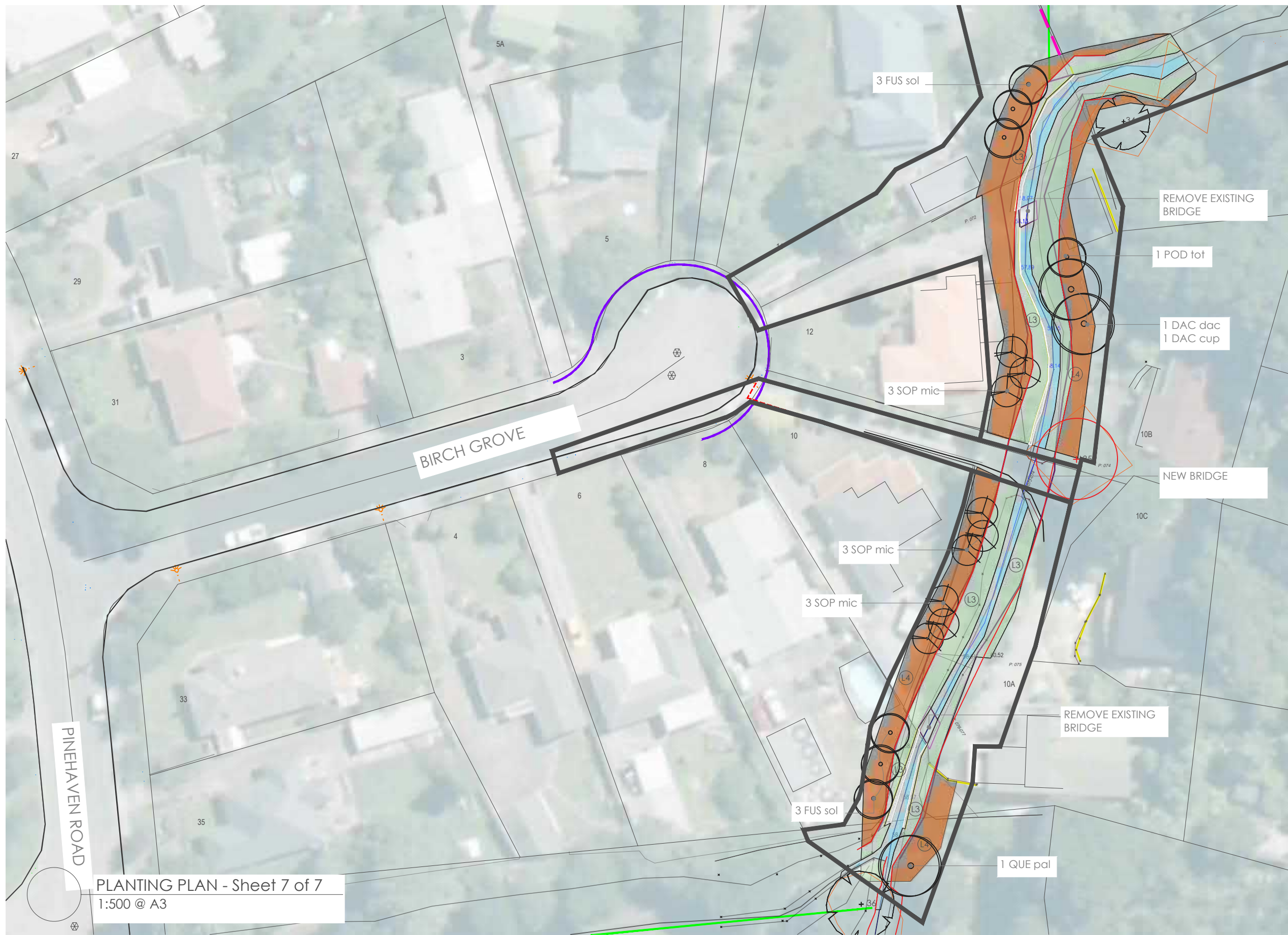
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Sheet 6 of 7

original issue date : 26 SEPT 17
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PLANTING PLAN - Sheet 6 of 7
1:500 @ A3



PLANTING PLAN - Sheet 7 of 7
1:500 @ A3

- legend:
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Refer to tree survey
 - Tree to be Removed
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Sheet 7 of 7

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project no / drawing no / revision:
2017_009 / L 107 / 6

L1 Specimen Trees									
SP ITEM	Code	Botanical name	Common name	Habit (Low, Medium, High)	Size / Height	Spacing	Unit	Percentage of Mix	Quantity
S.01	DAC.dac	<i>Dacrycarpus dactyloides</i>	Kahikatea	High	45L	as shown		n/a	12
S.02	DAC.cup	<i>Dacrydium cupressinum</i>	Rimu	High	45L	as shown		n/a	6
S.03	DIC.squ	<i>Dicksonia squarrosa</i>	Whāki	Medium	1m high	as shown		n/a	15
S.04	IUS.sol	<i>Fuscospora solandri</i>	Black Beech	High	45L	as shown		n/a	30
S.05	POD.tot	<i>Podocarpus totara</i>	Totara	High	45L	as shown		n/a	10
S.06	QUE.pal	<i>Quercus palustris</i>	Pin Oak	High	45L	as shown		n/a	28
S.07	SAL.bab	<i>Salix babingtonii</i>	Weeping Willow	High	45L	as shown		n/a	5
S.08	SOP.mic	<i>Sophora microphylla</i>	Si Kowhai	Medium	45L	as shown		n/a	28
L3 Riparian 2 - Rarely wet									
					Area (m ²)				2013
	Code	Botanical name	Common name		Size	Spacing (m)		Percentage of Mix	Quantity
S.21	AST.ban	<i>Astelia banksii</i>	whāra whāra	Low	0.5L	0.7		10%	574
S.22	AUS.til	<i>Austroderia fulvida</i>	Tokeo	Low	0.5L	0.7		10%	574
S.23	CAR.tor	<i>Carex testacea</i>	Orange sedge	Low	0.5L	0.7		15%	861
S.24	CAR.sec	<i>Carex secta</i>	purei	Low	0.5L	0.7		5%	287
S.25	RIC.nod	<i>Richtia nodosa</i>	Knobby club-rush	Low	0.5L	0.7		15%	861
S.26	HEB.sti	<i>Hebe stricta</i> var. <i>atkinsonii</i>	Koamiko	Low	0.5L	0.7		5%	287
S.27	LIB.per	<i>Lilium perigrinum</i>	NZ Iris	Low	0.5L	0.7		10%	574
S.28	MLC.ast	<i>Muehlenbeckia astonii</i>	Shrubby Torararo	Low	0.5L	0.7		15%	861
S.29	PHO.coo	<i>Phormium cookianum</i>	Mountain flax	Low	0.5L	0.7		15%	861
L4 Buffer									
					Area (m ²)				3344
	Code	Botanical name	Common name		Size	Spacing (m)		Percentage of Mix	Quantity
S.31	AUS.til	<i>Austroderia fulvida</i>	Small Inelae	Medium	0.5L	1.5		10%	149
S.32	BRG.rep	<i>Brachyglottis repanda</i>	Rangiora	Medium	0.5L	1.5		5%	74
S.33	COP.luc	<i>Coprosma lucida</i>	Shiny Karamu	Medium	0.5L	1.5		5%	74
S.34	COP.pro	<i>Coprosma propinqua</i>	Mingimingi	Medium	0.5L	1.5		5%	74
S.35	FUC.exc	<i>Fuchsia excorticata</i>	Tree Fuchsia	Medium	0.5L	1.5		5%	74
S.36	GRI.lit	<i>Griselinia littoralis</i>	Broadleaf	Medium	0.5L	1.5		0%	149
S.37	LLA.hoo	<i>Flacocarpus hookianus</i>	Pokaka	Medium	0.5L	1.5		5%	74
S.38	MEL.tam	<i>Melaleuca tamnifolia</i>	Mahoe	Medium	0.5L	1.5		5%	74
S.39	PIT.leug	<i>Pittosporum rugosoides</i>	Lemonwood	Medium	0.5L	1.5		5%	74
S.40	PIT.ten	<i>Pittosporum tenax</i>	Kohuhu	Medium	0.5L	1.5		5%	74
S.41	PHO.coo	<i>Phormium cookianum</i>	Mountain flax	Low	0.5L	1.5		5%	74
S.42	PHO.ten	<i>Phormium tenax</i>	Flax	Medium	0.5L	1.5		5%	293
S.43	POD.tot	<i>Podocarpus totara</i>	Totara	High	0.5L	1.5		5%	74
S.44	PSY.arb	<i>Pseudopanax arborous</i>	Five finger, Fuchsia	Medium	0.5L	1.5		5%	74
S.45	SCH.dig	<i>Schefflera digitata</i>	Pale	Medium	0.5L	1.5		5%	74
S.46	WEI.rac	<i>Weinmannia racemosa</i>	Karohi	Medium	0.5L	1.5		5%	74
L5 Climber / Bench									
					Area (m ²)				24
	Code	Botanical name	Common name		Size	Spacing (m)		Percentage of Mix	Quantity
S.51	CAR.pan	<i>Clematis paniculata</i>	Puwāhanganui	Medium	0.5L	0.7		30%	54
S.52	MET.cir	<i>Metrosideros cuneata</i>	Climbing rata	Medium	0.5L	0.7		30%	54
S.53	MLL.aus	<i>Muehlenbeckia australis</i>	Pohutukawa	Low	0.5L	0.7		40%	71

PLANT SCHEDULE - REV 0A

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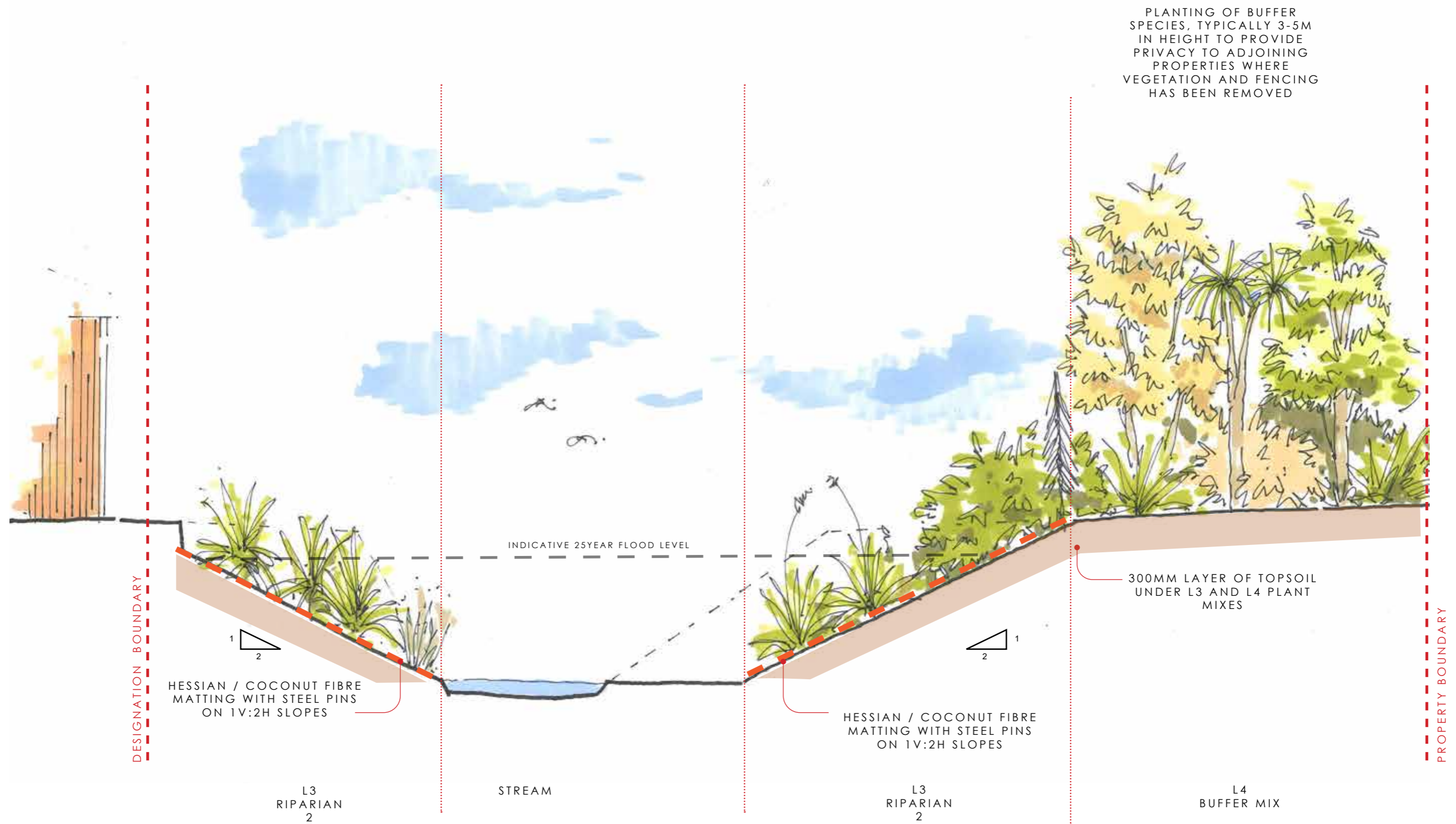
client / project name:
PINEHAVEN STREAM IMPROVEMENTS
JACOBS Wellington Water

drawing name:
LANDSCAPE WORKS
PLANT SCHEDULE

drawing sheet:
Sheet 7 of 7

original issue date : 26 SEPT 17
designed by : DCM
drawn by : BD
scale : NTS

project no / drawing no / revision:
2017_009 / L 108 / 7



A. INDICATIVE LANDSCAPE CROSS SECTION TREATMENT

Client / project name: JACOBS/PINEHAVEN STREAM IMPROVEMENT WORKS
 Drawing name: **LANDSCAPE CROSS SECTION_TYPICAL**
 Designed by: Dave Compton-Moen
 Drawn by: DAVE COMPTON-MOEN
 Original issue date: 9 DECEMBER 2019
 Scales: 1:50

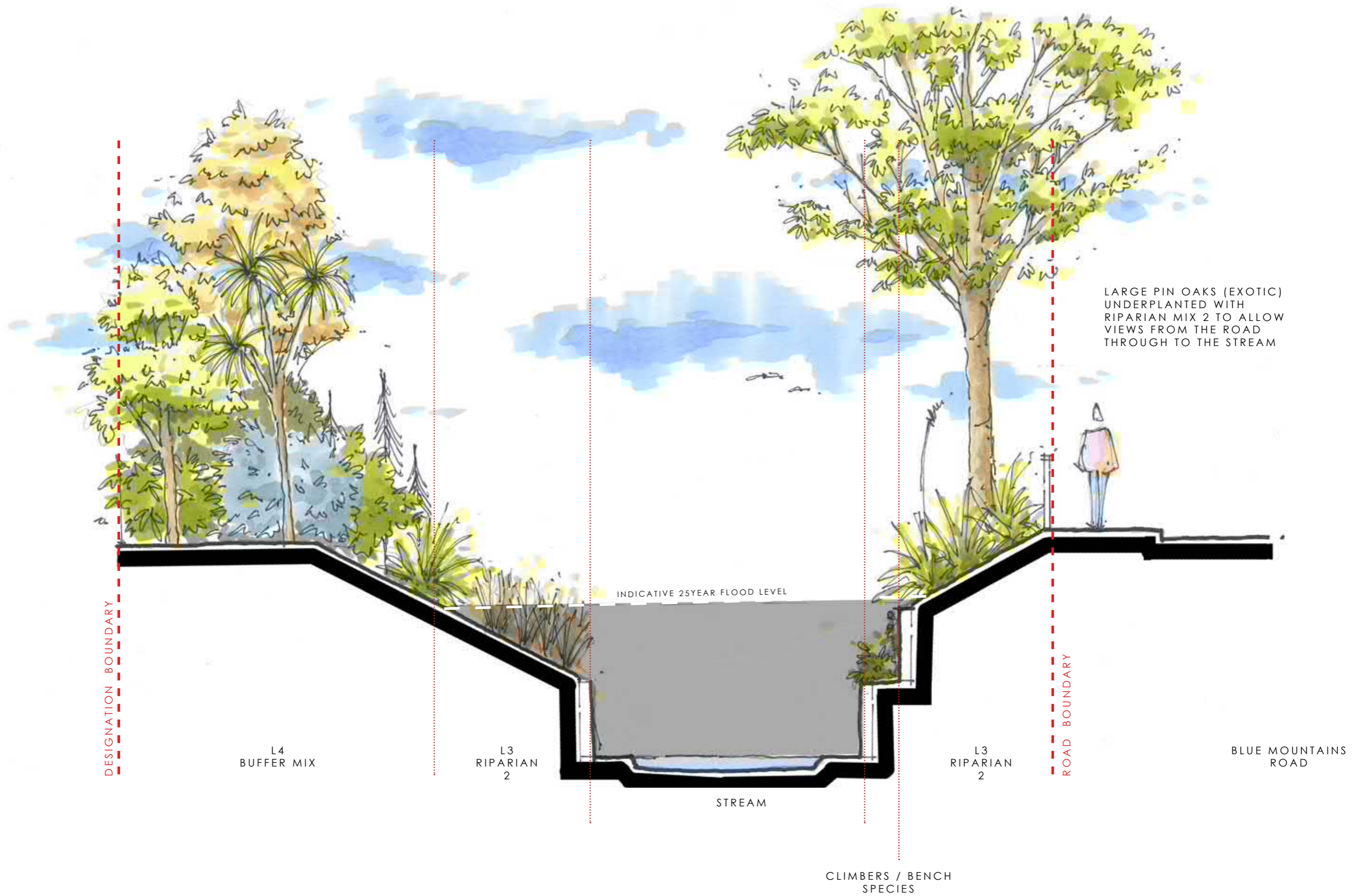
Revision no:	Amendment	Approved	Date
1	Initial issue for construction	DCM	9.12.2019
2	Removal of L2 planting	DCM	5.02.2020



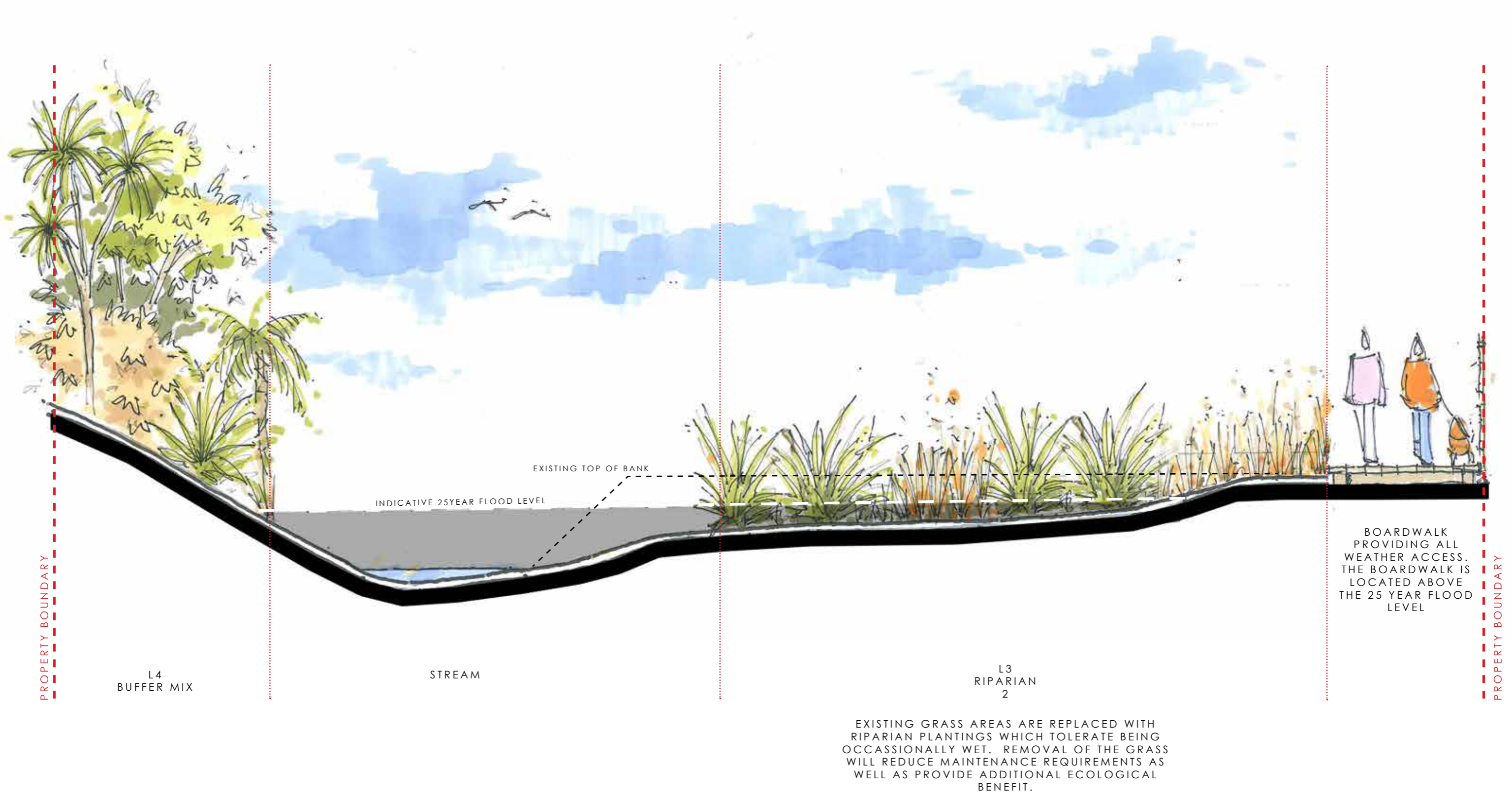
DCM URBAN DESIGN LIMITED
 3/329 DURHAM STREET NORTH
 CHRISTCHURCH 8013
 WWW.DCMURBAN.COM
 021 114 0337

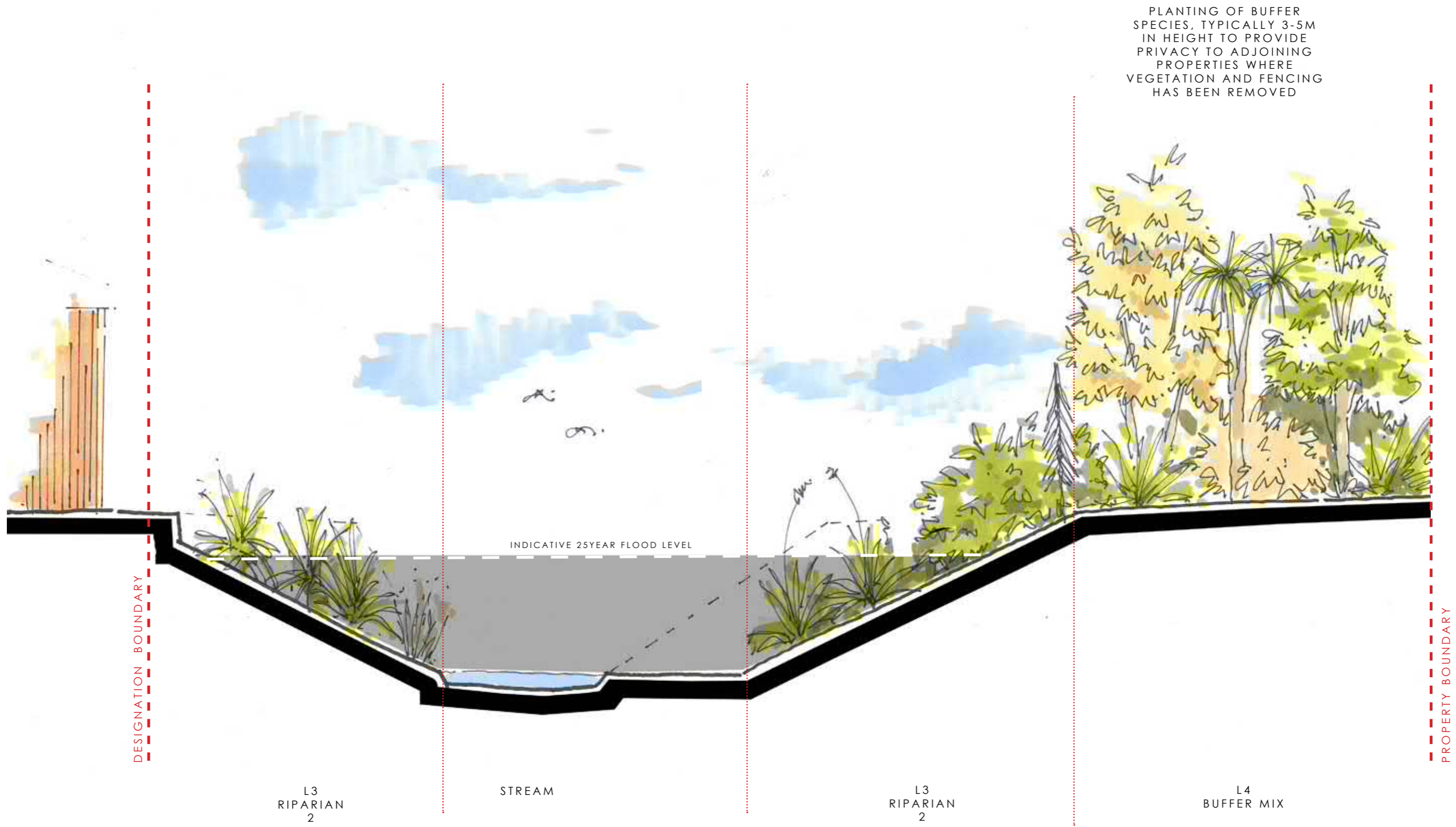
Project no / drawing no: **2017_009 / L101**

Revision: **2**



LANDSCAPE AND VISUAL IMPACT ASSESSMENT FIGURES
 MITIGATION MEASURES - LANDSCAPE CROSS SECTION (1)





LANDSCAPE AND VISUAL IMPACT ASSESSMENT FIGURES
 MITIGATION MEASURES - LANDSCAPE CROSS SECTION (3)