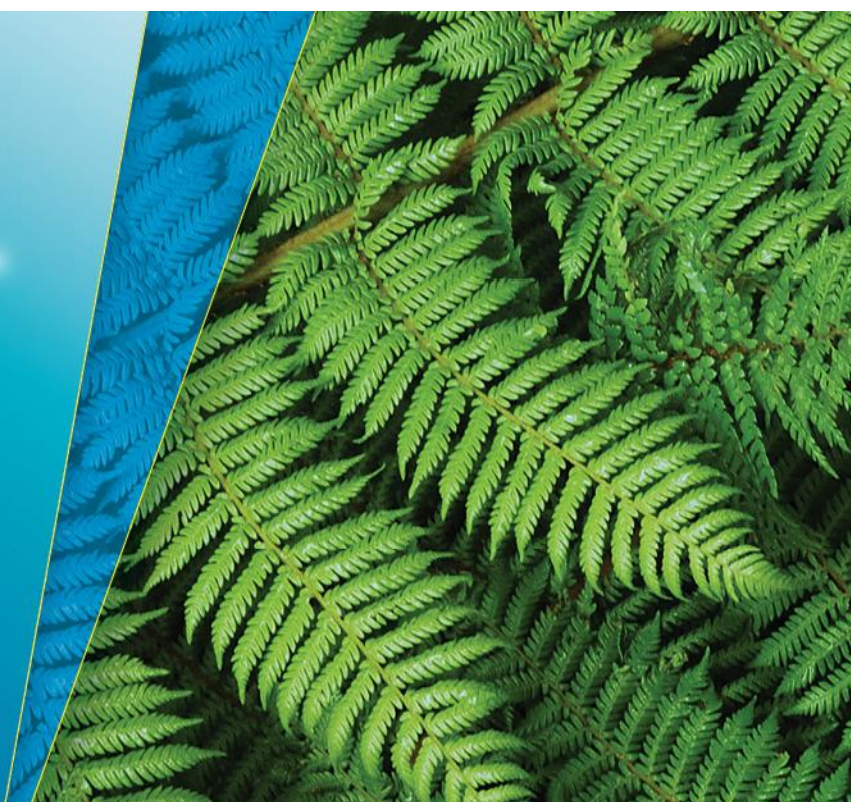


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## Executive summary

Watercare Services Limited (Watercare) is seeking resource consent for minor infrastructure that is located within flood plains, overland flow paths, or areas of coastal inundation. This minor infrastructure is ancillary to the Central Interceptor (CI) Project, a wastewater collector tunnel that runs between Grey Lynn and the Māngere Wastewater Treatment Plant (MWTP), collecting and transferring wastewater for treatment and safe disposal.

At the time of the CI application in 2013 there were no rules in the legacy plans in relation to works in these natural hazard areas and therefore this component of the works was not addressed as either a permitted activity or through a consent requirement<sup>1</sup>. The Auckland Unitary Plan – Operative in Part (AUP) subsequently included rules in relation to works in natural hazards areas. Auckland Council has advised that a further resource consent is required in accordance with the rules in Chapter E36 '*Natural hazards and flooding*' for works within a floodplain, overland flow path or coastal inundation area if the works are either new infrastructure (developed during detailed design) or where infrastructure has increased in size by more than 10% from concept design and is located outside Watercare's designation 9466.

CI wastewater infrastructure, including construction and associated earthworks, is authorised under Designation 9466 and a suite of regional and district resource consents. This consent application is therefore very narrow and relates to the requirements under Chapter E36 of the AUP only.

To date applications under Chapter E36 have been made on a site-by-site basis. This is due to construction programme constraints i.e. works were about to commence at the sites. However a project-wide approach is considered to be more efficient going forward, as set out in this consent application.

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<sup>1</sup> There were rules in relation to land subject to instability and this was addressed through the CI consent process.

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# 1 Introduction

## 1.1 Introduction and overview

This Assessment of Effects on the Environment (AEE) report has been prepared on behalf of Watercare Services Ltd (Watercare) to support a resource consent application to authorise minor wastewater infrastructure ancillary to the Central Interceptor (CI) project.

CI is a fundamental part of Watercare's long-term strategy to effectively manage wastewater within the Auckland region and provide for growth. The CI is a 14.7 kilometre long and 4.5 metre diameter tunnel that runs between Grey Lynn and the Māngere Wastewater Treatment Plant (MWTP), collecting and transferring wastewater for treatment and safe disposal. The CI works are authorised under Designation 9466 and a suite of regional and district resource consents.

This current resource consent application is limited to minor infrastructure in a floodplain, overland flow path or coastal inundation area under Chapter E36 '*Natural hazards and flooding*' of the Auckland Unitary Plan (AUP) only. Watercare is seeking a project-wide consent under restricted discretionary activity Rule E36.4.1 (A56) of the Auckland Unitary Plan (AUP)<sup>2</sup>.

This AEE report has been prepared in fulfilment of section 88 of the Resource Management Act 1991 (RMA), and in accordance with Tonkin & Taylor Ltd's (T+T) letter of engagement dated 23 September 2021.

## 1.2 Applicant and property details

**Table 1.1: Applicant and property details**

<b>Applicant</b>	Watercare Services Ltd
<b>Address / owner of application site / legal description / Record of Title reference</b>	Refer to <b>Appendix A</b>
<b>Council / Plans</b>	Auckland Unitary Plan – Operative in Part
<b>Address for service during consent processing</b>	Tonkin & Taylor Ltd, 1 Fanshawe Street, Auckland Attention: Keeley Clayton Phone: 09 362 1727 Email: KClayton@tonkintaylor.co.nz
<b>Address for service during consent implementation and invoicing</b>	Watercare Services Ltd, 73 Remuera Road, Newmarket, Auckland Attention: Xenia Meier Phone: 021 574 585 Email: xenia.meier@water.co.nz

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<sup>2</sup> Auckland Council has agreed in principle to this project-wide consenting approach during a meeting with Watercare on 15 September 2021.

## 2 Sites covered by this application

The sites to which this application applies are located along the CI main tunnel and link sewer alignment, as shown in Figure 3.1 below. The CI tunnel runs from Grey Lynn through Western Springs and Mount Albert, Mount Roskill, Hillsborough and under the Manukau Harbour before reaching the Māngere WWTP.

The majority of the work area and infrastructure for CI will be located within designation 9466 'Central Interceptor Main Works' in the AUP. These include the following designated areas (in geographical order travelling from Western Springs following the CI tunnel to Mangere WWTP)<sup>3</sup>:

- Western Springs
- Mt Albert War Memorial Reserve
- Rawalpindi Reserve
- Norgrove Avenue
- Lyon Avenue
- Haverstock
- Miranda Reserve (Pump Station 25 & Miranda Reserve)
- Whitney Street
- Dundale Avenue
- Haycock Avenue
- Walmsley Park
- May Road
- Keith Hay Park
- Keith Hay Park (Frost Road)
- Pump Station 23 (Frederick Street).

This application relates to the CI sites identified above which were assessed in detail in the original CI AEE<sup>4</sup>.

As this current consent application is limited to infrastructure within natural hazard areas, the site maps and descriptions are limited to these aspects. Relevant site information for these sites is contained within the following appendices: Property details provided in **Appendix A**, site details including AUP zoning and overlays included in **Appendix B**, and site descriptions included in **Appendix C**.

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<sup>3</sup> The Grey Lynn Tunnel between Tawariki Street and Western Springs was consented under the AUP and therefore is not included within this application / all relevant consent triggers under the AUP were addressed at the time.

<sup>4</sup> "Central Interceptor Main Project Works: Resource Consent Applications and Assessment of Effects on the Environment" prepared by Watercare Services Ltd, dated August 2012.

## 3 Description of works

### 3.1 Background and approach

At the time of the CI application in 2013, there were no rules in the Auckland Council Regional Plan: Air, Land and Water (ALW Plan) or Auckland Council District Plan (Isthmus Section) specifically in relation to works in flood prone areas<sup>5</sup>. Therefore, this component of the works was not addressed as either a permitted activity or through a consent requirement. The AUP subsequently included rules in relation to works in natural hazards areas, and Auckland Council has advised that a further resource consent is required in accordance with the rules in Chapter E36 '*Natural hazards and flooding*' of the AUP for works within a floodplain, overland flow path or coastal inundation area if the works are either new (developed during detailed design) or have increased in size by more than 10% from concept design and steps outside of the Watercare's designation (9466).

There are several sites outside of Watercare's designation where minor infrastructure is required to support the wider CI works<sup>6</sup>. Due to the nature of Watercare's assets, this infrastructure is often within flood plains and overland flow paths, as identified in Auckland Council GeoMaps, or within an area of coastal inundation within the AUP.

To date applications under Chapter E36 have been made on a site-by-site basis. This is due to programme constraints i.e. works were about to commence at the sites. However a project-wide approach is considered to be more efficient as set out in this consent application.

### 3.2 CI designation and consents

Designation 9466 applies to seventeen sites in total located along the CI main tunnel and link sewer alignments outlined in Section 2 above. These are designated by Watercare for wastewater purposes.

Comprehensive district and regional consents to authorise the wider site works associated with CI, including a range of permanent wastewater infrastructure, stormwater discharges, site establishment works and associated earthworks, were also granted in 2013<sup>7</sup>. These provide for CI related activities on a project-wide basis as set out in Table 3.1 below<sup>8</sup>. In respect of district land use consents, this includes the disturbance of contaminated land and earthworks beyond permitted activity levels on a project-wide basis outside of the designation footprint.

**Table 3.1: Consented works across all sites**

Activity	Consent Ref	RMA Ref	Geographic Extent
<b>'District plan' land use consents</b>			
Earthworks above permitted activity thresholds and on land subject to instability (district)	R/LUC/2012/2846 and PRC40962	Section 9(3)	Project wide

<sup>5</sup> There were rules in relation to land subject to instability and this was addressed through the CI consent process.

<sup>6</sup> Consent is not required under Chapter E36 for works within the designation (Works in accordance with a designation do not require land use consent under section 9(3) of the RMA 1991).

<sup>7</sup> R/LUC/2012/2846, R/LUC/2012/2846/1, PRC40962, PRC40963, 40834, 40835, 40836, 40837, 40838, 40839, 40840, 40841, 40842, 40843, 40844, 40845, 40846, 40848, 40849 and 40850

<sup>8</sup> In addition to these consents, works within a watercourse were a permitted activity under the ALW Plan and therefore no consent was required for this activity. Works within a watercourse were included in the CI application and form part of the overall package of works that was provided for as part of the CI works.

Activity	Consent Ref	RMA Ref	Geographic Extent
Disturbance of contaminated sites	R/LUC/2012/2846/1 and PRC40963	NES Soil Reg 11	Project wide
<b>'Regional' consents</b>			
Earthworks above permitted activity levels (regional)	40834	Section 9(2)	Project wide
Emergency overflow – CI Catchment Network - Comprehensive Network Discharge Permit	R/REG/2013/3763	Section 15	Project wide
Taking/diverting groundwater due to construction and dewatering	40836	Section 14	Project wide
Stormwater discharge from construction works	40841	Section 15	Project wide
Discharge of contaminants into or onto land or water (from construction related activities e.g., tunnel dewatering, wheel wash, etc).	40845	Section 15	Project wide
Disturbance of contaminated sites (regional)	40843	Section 15	Project wide

### 3.3 This application

Wastewater infrastructure located outside of Designation 9466 is authorised through the CI consents identified above (including land use consents R/LUC/2012/2846 and PRC40962; and R/LUC/2012/2846/1 and PRC40963). This consent application is therefore very narrow and relates to the requirements under Chapter E36 of the AUP only.

As noted above, to date applications under Chapter E36 have been made on a site-by-site basis due to time constraints, with the following consents granted:

- Taylors Bay<sup>9</sup> - two manholes (1.5 m in diameter and approximately 2 m deep, lid diameter of approximately 600 mm flush with ground level).
- Haverstock<sup>10</sup> - two manholes and connection pipelines located approximately 50 m outside of Designation 9466 (external diameters of 6 -5 m, at a depth of approximately 3.6 m, two manhole access hatches with lids approximately 600mm in external diameter. As designed, the final lid level for MH01 is approximately 200mm above existing ground level).
- Haycock Ave<sup>11</sup> - rebuilding/upgrading an existing manhole (1 m by 1.8 m external rectangular lid and a 600 mm diameter lid which are both flush with ground level i.e. up to approximately 2 m<sup>2</sup> total area at ground level).
- Keith Hay Park<sup>12</sup> - diversion chamber (approximately 7 m by 6 m by 4 m deep) and air, power and control ducts located approximately 10 m outside of Designation 9466.

The infrastructure provided for by these consents is minor / small scale infrastructure such as manholes, connection pipelines, chambers and ducts. Further detail on this infrastructure is

<sup>9</sup> Consent reference LUC60375823

<sup>10</sup> Consent reference LUC60387629

<sup>11</sup> Consent reference LUC60364574

<sup>12</sup> Consent reference LUC60370906

contained within the application documents lodged in support of these consents. To account for future detailed design and any minor amendments and for consistency purposes, the sites outlined above are included within this consent application.

In addition, detailed design has progressed for two sites at May Road and Keith Hay Park. This includes the following proposed works:

- New manhole (MH04) at the northern end of Keith Hay Park, outside of the current designation. This will be flush with ground level;
- New chamber, ducting and stairs located on May Road, adjacent to the designation. Works will be largely underground or flush with ground with the exception of the aboveground stairs.

Drawings of these works are included in **Appendix E**.

The infrastructure provided for through this current project-wide application will be confirmed through the detailed design process for each of the sites. It will be similar in nature and scale to the infrastructure described above, including already consented works and the proposed works at Keith Hay Park and May Road. This approach is considered appropriate on the basis that that:

- Flooding effects from infrastructure that is below ground or flush with the ground are *de minimis*;
- Structures and buildings up to 10m<sup>2</sup>, and new structures and buildings designed to accommodate flood tolerant activities up to 100m<sup>2</sup>, are permitted in these areas; and,
- A high-level application is appropriate given the scale of effects.

### 3.4 Proposed conditions of consent

Section 108AA sets out the requirements for conditions of resource consents. The proposed conditions of consent are set out below. These conditions limit the extent of works provided for under this application and have been developed based on existing permitted activities set out in Chapter E36 of the AUP.

In particular, Condition 2 below establishes thresholds based on specific permitted activities (the permitted baseline) that has been used to inform these conditions as detailed in Section 5.2. Where consent is required under Chapter E36, the 'special information requirements' identified in this chapter require the preparation of a hazard risk assessment, proportionate to the hazard risk and nature of the hazard, to determine the effects of any works / structures and outline mitigation measures. The requirements of the hazard risk assessment are mirrored in the proposed conditions.

#### Proposed consent conditions

- 1 The infrastructure to be located in natural hazard areas shall be in general accordance with the information submitted with this application detailed below, and referenced by council as consent number [xxx]

Report title and reference	Author	Rev	Dated
Central Interceptor Connection Works: Project-wide land use consent for minor infrastructure in natural hazard areas	Tonkin & Taylor Ltd	1	Feb 2021

- 2 For infrastructure that:
  - exceeds 10 m<sup>2</sup> above ground level (this does not apply to infrastructure at or below ground level); or
  - diverts the entry or exit point or reduces the capacity of an overland flow path

A hazard risk assessment that is proportionate to the hazard risk and nature of the hazard shall be prepared and submitted to Auckland Council for certification prior to the commencement of works on any infrastructure provided for under this consent.

The hazard risk assessment shall include, as relevant:

- i the type, frequency and scale of the natural hazard and whether adverse effects on the infrastructure will be temporary or permanent;
  - ii the consequences of a natural hazard event in relation to the proposed activity;
  - iii the potential effects on public safety and other property;
  - iv any exacerbation of an existing natural hazard risks or creation of a new natural hazard risks;
  - v whether any infrastructure located on land subject to natural hazards near the coast can be relocated in the event of severe coastal erosion, coastal storm inundation or shoreline retreat;
  - vi the design and construction of infrastructure to mitigate the effects of natural hazards;
  - vii the effect of structures used to mitigate hazards on landscape values and public access;
  - viii any measures and/ or plans proposed to mitigate the natural hazard or the effects of the natural hazard.
- 3 Where a hazard risk assessment has been prepared as required by Condition 2, Watercare will notify council of the completion of work and any mitigation measures undertaken within 30 working days of completion.
- 4 Aboveground infrastructure provided for under this consent shall not exceed 100 m<sup>2</sup>.

### **3.5 Management of works**

CI is being undertaken in accordance with a suite of approved management plans and mitigation measures. All of the works will be undertaken with the applicable management plans. These include (but are not limited to the following):

- Construction Management Plan (CMP) (Doc No. GAVJV-PLN-00017, Version 2.3 Final, approved 6 May 2020);
- Construction Traffic Management Plan (CTMP)(Doc No. GAVJV-PLN-00129, Version 0.4 Final, approved 11 December 2019); and
- Contaminated Land Site Management Plan – Main Project Works (CLSMP) (Doc No. GAVJV-PLN-00026, Revision 2.0 Final, approved 30 April 2021).



Figure 3.1: Central Interceptor pipeline location

Source: Watercare



## 4 Resource consent requirements

### 4.1 Auckland Unitary Plan – Operative in Part

The requirements for resource consents set out in Chapter E36 are identified below. As detailed above in Section 2, the infrastructure and associated construction and earthworks is already authorised under the existing regional and district consents.

**Table 4.1: Resource consents required**

Proposed activity	Rule reference / description	Activity status
Construction of wastewater infrastructure within a floodplain, overland flow paths and coastal inundation areas, outside of the 9466 designated areas	<b>Activity Table E36.4.1 (A52)</b> Operation, maintenance, renewal, repair and minor infrastructure upgrading, of infrastructure in areas listed in the heading above that complies with Standard E36.6.1.13	The permitted activity standards allow for a wide range of works which include minor realignments and upgrades of pipes and ancillary structures.
	<b>Activity Table E36.4.1 (A56) [dp]</b> All other infrastructure in areas listed in the heading above not otherwise provided for	<b>Restricted discretionary</b> Infrastructure proposed within floodplains, overland flow paths and coastal inundation areas that does not meet the relevant Permitted Activity Standards in E36.6.1.13(h) and (i)

Under Rule E36.4.1 (A56) the Council has restricted its discretion to the following matters:

- (a) *the functional and/or operational need to locate within the hazard area;*
- (b) *the risk of adverse effects to other people, property and the environment including all of the following:*
  - i *risk to public health and safety;*
  - ii *impacts on landscape values and public access associated with the proposed activity including a need for hard protection structures to be required to protect the utility from the natural hazard;*
  - iii *the management or regulation of other people and property required to mitigate natural hazard risks resulting from the location of the infrastructure;*
  - iv *the storage or use of hazardous substances in relation to the activity;*
  - v *any exacerbation of an existing natural hazard or creation of a new natural hazard as a result of the structure;*
  - vi *the use of non-structural solutions instead of hard engineering solutions; and*
  - vii *the ability to relocate or remove structures.*

Section 5 contains an assessment of the proposed works against the relevant matters of discretion and assessment criteria contained in the AUP.

### 4.2 Special information requirements (E36.9)

Under E36.9 of the AUP a hazard risk assessment is required for works within the 1 per cent annual exceedance probability (AEP) floodplain and overland flow paths. As noted in E36.9(1) the level of information to be provided should be proportionate to the hazard and appropriate to the scale, nature and location. As the proposed works within these overlays are minor and will be underground or largely flush with the existing ground level, or otherwise reflect existing AUP permitted activity thresholds as noted in Section 2.4 above, the hazard risk is considered extremely

low and therefore does not require an independent assessment. Hazard and flooding effects are addressed in Section 5 below.

### 4.3 Permitted activities

Chapter E26 of the AUP establishes a broad range of permitted activities in relation to infrastructure. Those relevant to the proposed works include:

- *Activity Table E26.2.3.1 (A49)*: Underground pipelines and ancillary structures for the conveyance of water, wastewater and stormwater (including above ground ancillary structures associated with underground pipelines)
- *Activity Table E26.2.3.1 (A56)*: Water, wastewater and stormwater outfalls and ancillary structures
- *Activity Table E26.2.3.1 (A57)*: Ventilation facilities, drop shafts and manholes
- *Activity Table E26.5.3.1 (A94) [dp]*: Earthworks for maintenance, repair, renewal, minor infrastructure upgrading and service connections
- *Activity Table E26.5.3.1 (A95) [dp]*: Earthworks up to 2500m<sup>2</sup> other than for maintenance, repair, renewal, minor infrastructure upgrading
- *Activity Table E26.5.3.1 (A96) [dp]*: Earthworks up to 2500m<sup>3</sup> other than for maintenance, repair, renewal, minor infrastructure upgrading
- *Activity Table E26.5.3.2 (A100) [rp]*: Earthworks for maintenance, repair, renewal, minor infrastructure upgrading, service connections
- *Activity Table E26.5.3.2 (A105) [rp]*: Up to 2,500m<sup>2</sup> within the Sediment Control Protection Area other than for maintenance, repair, renewal, minor infrastructure upgrading

These are permitted activities across all zones and the proposed minor connecting infrastructure that is addressed as part of this application would meet the relevant permitted activity standards. Notwithstanding this, with the exception of infrastructure in a flood plain / overland flow path and coastal inundation area, these works are provided for by the CI consents and designation and do not need to rely on the permitted activities identified above.

## 5 Assessment of effects on the environment

### 5.1 Introduction

The following assessment identifies and assesses the types of effects that may arise from the proposed works. This assessment is limited to the matters of discretion that are identified in Section 4.1 above.

### 5.2 Permitted baseline

Within Chapter 36 of the AUP, to which this application is limited to, there are a number of activities and structures that are permitted which form a permitted baseline for the proposed works. The rules are identified in Table E36.4.1. These include:

- New structures and buildings (excluding dwellings) ancillary to farming activities up to an area of 100 m<sup>2</sup> within areas of coastal storm inundation (A8)
- Additions of habitable rooms up to 25 m<sup>2</sup> within areas of coastal storm inundation plus 1 per cent AEP area (A11)
- Fences and walls within an overland flow path that do not obstruct the overland flow path (A39)
- Flood mitigation works within an overland flow path (A40)
- Parking areas, fences and walls and storage of goods and materials within a flood plain (A23 and A24)
- Private roads and accessways in a flood plain (A27)
- Minor infrastructure and drainage works within a flood plain (A31)
- Structures and buildings up to 10 m<sup>2</sup> within a flood plain (A34)
- New structures and buildings designed to accommodate flood tolerant activities up to 100 m<sup>2</sup> within a flood plain (A35)<sup>13</sup>

These permitted structures and works are similar, if not larger scale than the infrastructure proposed as part of this application. This is considered to form part of the permitted baseline for the proposed works and has informed the proposed conditions of consent in Section 2.4. In accordance with section 104(2) of the RMA when determining the adverse effects of an activity on the environment a council may disregard an adverse effect if a rule or national environmental standard permits an activity with that effect.

### 5.3 Positive effects

The works required within the identified overland flow paths, flood sensitive areas and flood plains will contribute to the wider CI project. This has significant numerous positive effects which include:

- Providing network capacity for growth and development;
- Addressing asset risk due to the ageing Western Interceptor; and
- Reducing overflows to stream environments in the catchments it serves.

The CI main works will be integral to the ongoing operation of the wastewater network in Auckland over the next 50 years and beyond. The wastewater network enables the communities of Auckland to provide for their ongoing health and wellbeing and for continued economic growth and

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<sup>13</sup> The definition of flood tolerant activities includes buildings for network utilities.

development across Auckland. The wastewater network is fundamental to the health and operation of Auckland.

#### **5.4 Natural hazard and flooding effects**

Due to the nature of the proposed works for wastewater infrastructure, CI is often located close to or within identified natural hazard areas. The proposed infrastructure to be authorised as part of this consent is required to support CI and therefore there is a functional and operational need to be in these specified locations.

Works and infrastructure within floodplains, overland flow paths or coastal inundation areas have the potential to exacerbate natural hazards if this is not managed or designed correctly with mitigation in place. The infrastructure included within this application is limited to minor infrastructure that is located outside of the designated areas and will be small-scale (i.e. works outside of the main shaft and work sites which is minor ancillary and connecting infrastructure). Examples of these are provided in Section 3 and **Appendix E**.

As indicated by the site-by-site consents granted to date (refer Section 3.2), this infrastructure is typically underground, flush or close to flush with the ground. In these instances the topography of the site will not change due to this infrastructure. Therefore, the conveyance of overland flow paths will not be affected and there are no effects in terms of flood plains or coastal inundation areas. Where the works exceed the permitted threshold of 10 m<sup>2</sup>, a hazard risk assessment as required by proposed Condition 2 will be prepared to ensure that the effects remain minor or less than minor, through either the design or appropriate mitigation that is to be in place.

Where aboveground infrastructure is required (e.g. stairs proposed at May Road), the proposed conditions of consent set out in Section 3.4 above ensure that the effects of this infrastructure are minor or less than minor. This is ensured through either compliance with existing permitted activity thresholds contained within the AUP (i.e. less than 10 m<sup>2</sup>), or through the requirement for a hazard risk assessment which addresses the relevant restricted discretionary criteria and will identify and ensure appropriate mitigation is in place.

Conversely, as outlined in Section 5.3, CI is expected to reduce flooding risk due to the increased capacity and conveyance of wastewater, reducing flooding risk at the sites.

Overall, any effects from the proposed infrastructure outside of Designation 9466 will be appropriately managed through the proposed conditions of consent. The natural hazard and flooding effects are therefore assessed as negligible.

#### **5.5 Landscape values**

The majority of the proposed works are not located within any notable landscapes or in proximity to any notable landscape features.

As detailed in Section 3, the proposed infrastructure will be flush, or close to flush with the ground or underground and will be small in nature. In instances where infrastructure may be aboveground, this will be in the context of the wider CI works that are being undertaken within the designations adjacent to them. Therefore, the impact on landscape values is negligible at most and in any case there are no effects beyond the existing consented CI works.

#### **5.6 Public access**

Public access will be restricted to the sites for health and safety requirements during construction. The works within these overland flow paths, floodplains and coastal inundation areas will be undertaken at the same time as the wider consented CI works, therefore there are no additional restrictions to public access beyond those already consented. When works are complete public

access will be re-established and long-term access will not be affected. Therefore, there are no additional effects from the infrastructure.

## **5.7 Conclusion**

Due to the nature and requirements of the proposed infrastructure, there is a functional need for it to be located within the identified flood hazard areas, flood plains and overland flow paths. Infrastructure that is underground, flush, or close to flush with the ground will have negligible (if any) effects on the risk of natural hazards. Aboveground structures will be small-scale ancillary or connecting infrastructure. The proposed conditions of consent ensure effects are minor or less than minor, consistent with permitted activity thresholds. There will be no long-term effect to flood hazard areas, flood plains and overland flow paths and the infrastructure will be designed to ensure that these have no impact on the resilience of infrastructure.

Overall, the works will have a negligible effect / no effect. The proposed works also support the CI tunnel and will more broadly have significant positive effects in relation to improving wastewater infrastructure in Auckland and reducing overflows and flooding.

## **6 Statutory assessment**

### **6.1 RMA assessment**

Section 104 of the RMA sets out the matters to which a consent authority must have regard to, subject to Part 2 of the RMA, when considering an application for resource consent. These are:

- Any actual and potential effects on the environment of allowing the activity (refer to Secyion 5 above);
- Any relevant provisions of:
  - a national environmental standard;
  - a national policy statement;
  - coastal policy statement; and
  - the AUP
- Any other matter the consent authority considers relevant and reasonably necessary to determine the application.

#### **6.1.1 Part 2 of the RMA**

Part 2 of the RMA sets out the purpose and principles of the Act. The purpose of the RMA is to promote the sustainable management of natural and physical resources. The AUP has been prepared recently and is clear and directive, and clearly deals with Part 2 subject matter such that recourse to Part 2 is not likely to add anything to the assessment.

### **6.2 National Environmental Standards**

#### **6.2.1 Resource Management (National Environmental Standards for Freshwater) Regulations 2020**

The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-FW) regulates activities that pose risks to the health of freshwater and freshwater ecosystems. The standards apply to activities in relation to farming activities, natural wetlands, instream structures and the reclamation of rivers.

As discussed in Section 3, consideration of instream structures was assessed through the CI consent process. In any case, Section 43B(6) of the RMA applies and the existing CI consent prevails over the regulations of the NES-FW. On that basis, there are no applicable standards relevant to this application.

#### **6.2.2 Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011**

As discussed in Section 3, the requirements of the NES Soil have previously been addressed through the CI resource consents and associated conditions.

#### **6.2.3 National Policy Statements**

##### **6.2.3.1 National Policy Statement for Freshwater Management 2020**

The National Policy Statement for Freshwater Management 2020 (NPS-FM) provides guidance on how freshwater is to be managed in a manner that gives effect to Te Mana o te Wai.

As discussed in Section 5, the proposed works will contribute to the wider CI project, which will include positive effects such as reducing overflows to the stream environment. The proposed works are considered consistent with the overall objective of the NPS-FM, in terms of providing firstly for the health of freshwater ecosystems as well as the social, economic and cultural well-being of communities.

### 6.2.3.2 New Zealand Coastal Policy Statement 2010

The New Zealand Coastal Policy Statement 2010 (NZCPS) sets out objectives and policies in order to achieve the purpose of the RMA in regard to the coastal environment of New Zealand. It contains objectives and policies which include those aimed at safeguarding the integrity, form, functioning and resilience of the coastal environment and sustaining its ecosystems, and preserving the natural character of the coastal environment. Local authorities are required by the RMA to give effect to the NZCPS through plans and policy statements.

There are two sites located within the coastal environment (Taylors Bay and Pump Station 23 at Frederick Street) and the NZCPS is applicable. The NZCPS addresses infrastructure directly in Policy 6. This recognises the provision of infrastructure and the need to consider the rate that public infrastructure should be enabled to provide for the needs of population growth without compromising the other values of the coastal environment. The proposed works that may be within the coastal environment as authorised by this consent will be very minor in nature and will not affect the coastal environment (noting the structures are already consented anyway). The structures are also required in relation to the CI works that provides overall positive effects for the Auckland region including the coastal environment.

## 6.3 Auckland Unitary Plan policy assessment

An assessment against the key relevant objectives and policies of the AUP is set out in Table 6.1 below.

**Table 6.1: Objectives and policies assessment**

Reference	Comment
<b>Chapter B3 – Ngā pūnaha hanganga, kawekawe me ngā pūngao – Infrastructure, transport and energy</b>	
<b>B3.2.1 Objective (2)</b> The benefits of infrastructure are recognised, including: <ul style="list-style-type: none"> <li>a Providing essential services for the functioning of communities, businesses and industries within and beyond Auckland;</li> <li>b .....</li> <li>d Providing for public health, safety and the well-being of people and communities</li> </ul>	The proposed works will contribute to the wider CI project – regionally significant infrastructure which will directly support the social, economic, environmental and cultural wellbeing of communities within Auckland.
<b>B3.2.1 Objective (4)</b> The functional and operational needs of infrastructure are recognised	The proposed infrastructure has a functional and operational need to be located within the proposed areas due to the proximity to the wider CI project.
<b>B3.2.2 Policy (1)</b> Enable the efficient development, operation, maintenance and upgrading of infrastructure	The proposed works are required in order to provide infrastructure as part of the CI wastewater infrastructure upgrade.
<b>B3.2.2 Policy (9)</b>	The proposed works have a functional and operational need to be located in a floodplain and



Reference	Comment
<p>Ensure where there is a functional or operational need for infrastructure to be located in areas subject to natural hazards:</p> <p>....</p> <p>b That risk that cannot be avoided by location or design should be mitigated to the extent possible</p>	<p>overland flow path / coastal inundation area in order to connect to existing wastewater infrastructure. As discussed in Section 5, effects from the infrastructure will be negligible and existing hazards, including flooding, will reduce with the construction of the CI main tunnel.</p>
<b>Chapter B10 – Ngā tūpono ki te taiao - Environmental risk</b>	
<p><b>B10.2.1 Objective (5)</b></p> <p>The functions of natural systems, including floodplains, are protected from inappropriate subdivision, use and development</p>	<p>As discussed in Section 5 the functions of the identified coastal inundation areas, flood plains and overland flow paths will not be affected by the infrastructure to be located within these locations as the works will be underground or flush with the ground and very minor in scale. Where works are expected to be over a larger area or above ground, a hazard impact assessment will be undertaken to confirm the effects and identify any mitigation effects if required.</p>
<p><b>B10.2.1 Objective (6)</b></p> <p>The conveyance function of overland flow paths is maintained</p>	<p>The majority of the works will be underground, flush with the ground or close to flush the conveyance of overland flow paths will not be affected by the infrastructure located within these. Where infrastructure may be above ground and therefore change overland flow paths, these will be appropriately managed through the draft conditions.</p>
<p><b>B10.2.2 Policy (7)</b></p> <p>Avoid or mitigate the effects of activities in areas subject to natural hazards, such as earthworks, changes to natural and built drainage systems, vegetation clearance and new or modified structures, so that the risks of natural hazards are not increased.</p>	<p>As discussed in Sections 3 and 5 the proposed conditions of consent will manage any effects from the proposed infrastructure. Therefore the risks from natural hazards will not be increased by the proposed structures within these locations. Conversely the CI project is expected to reduce flooding and risks from these natural hazards.</p>
<b>Chapter E26 – Infrastructure</b>	
<p><b>E26.2.1 Objective (4)</b></p> <p>Development, operation, maintenance, repair, replacement, renewal, upgrading and removal of infrastructure is enabled.</p>	<p>The proposed works are required in order to provide for wastewater infrastructure, specifically CI.</p>
<p><b>E26.2.2 Policy (1)</b></p> <p>Recognise the social, economic, cultural and environmental benefits that infrastructure provides, including:</p> <p>...</p> <p>b providing for public health and safety;</p> <p>...</p> <p>f protecting and enhancing the environment</p>	<p>The proposed works contribute to the wider CI works that is providing an improved wastewater network in Auckland. This will include reducing overflows from the wastewater network which will reduce the effects on the environment and provides for public health and safety.</p>
<p><b>E26.2.2 Policy (2)</b></p> <p>Provide for the development, operation, maintenance, repair, upgrade and removal of infrastructure throughout Auckland by recognising:</p> <p>a Functional and operational needs;</p>	<p>The proposed works have a functional and operational need to be located in a coastal inundation area, floodplain and overland flow path in order to connect to the wastewater network.</p>

Reference	Comment
<p>b Location, route and design needs and constraints;</p> <p>c The complexity and interconnectedness of infrastructure services;</p> <p>d The benefits of infrastructure to communities within Auckland and beyond.</p>	<p>The proposed works contribute to the wider CI project, which will have numerous benefits in terms of providing an improved wastewater network for the communities within Auckland.</p>
<b>Chapter E36 Natural hazards and flooding</b>	
<p><b>E36.2 Objective (4)</b></p> <p>Where infrastructure has a functional or operational need to locate in a natural hazard area, the risk of adverse effects to other people, property, and the environment shall be assessed and significant adverse effects are sought first to be avoided or, if avoidance is not able to be totally achieved, the residual effects are otherwise mitigated to the extent practicable.</p>	<p>The proposed works have a functional and operational need to be located in a coastal inundation area, floodplain and overland flow path, due to the location of the existing infrastructure. Overall, flood risk is expected to reduce with the construction of the CI main tunnel.</p>
<p><b>E36.3 Policy (35)</b></p> <p>Allow for the operation, maintenance, upgrading and construction of infrastructure, in areas subject to natural hazards when:</p> <p>a infrastructure is functionally or operationally required to locate in hazard areas or it is not reasonably practicable that it be located elsewhere;</p> <p>b ...</p> <p>c in all flood hazard areas risks to people, property and the environment are mitigated to the extent practicable.</p>	

### 6.3.1 Assessment criteria

Table 6.2 contains an assessment of the proposed works against the relevant assessment criteria contained in the plans.

**Table 6.2: Assessment criteria**

*Rule E36.8.2 (17) – for the operation, maintenance, renewal, repair and minor infrastructure upgrading of infrastructure in the coastal erosion hazard area; or in the coastal storm inundation 1 percent annual exceedance probability (AEP) area; or in the coastal storm inundation 1 percent annual exceedance probability (AEP) plus 1m sea level rise area; or in the 1 percent annual exceedance probability (AEP) floodplain; or in overland flow paths; or on land which may be subject to land instability:*

Relevant Criteria	Assessment
a the long-term management, maintenance and monitoring of any mechanisms associated with managing the risk of adverse effects resulting from the placement of infrastructure within a hazard area to other people, property and the environment including the management of hazardous substances;	The very minor nature of the works means that no particular long-term management or monitoring is required beyond Watercare's standard procedures.  There will be no storage of hazardous substances.
b the extent to which residual risks to people, property and the environment resulting from any mitigation measures implemented to manage the hazard;	There are no residual risks associated with a natural hazard.
c the extent to which an existing hazard is exacerbated or a new hazard is created as a result of the structure;	The majority of infrastructure is buried below ground or flush or close to flush with the ground. The flood level, flows, velocities and overland flow path routes will not change as a consequence of the infrastructure within these areas, hence there will be no exacerbation of existing flood risk. Where infrastructure may be above ground, effects will be appropriately managed through the draft conditions, therefore managing flooding risk. In any case, the infrastructure is small-scale ancillary or supporting infrastructure. Overall, flood risk is expected to decrease as a consequence of the construction of the CI main tunnel.
d the extent to which the proposal includes non-structural solutions to protect infrastructure from the hazard and resulting adverse effects; and	Not applicable to this application.
e the extent to which landscape values and/ or public access are affected by the proposed structure or structures associated with the mitigation of the hazard.	The proposed works are not located within any notable landscapes or in proximity to any notable landscape features. There are no anticipated adverse effects on landscape values.  Public access will not be affected more than what is already identified and allowed for under the existing CI consented works

## 7 Notification assessment

Section 95A of the RMA is relevant when a consent authority is considering whether a consent application should be considered with or without public notification.

Section 95A identifies a four step process. In relation to these steps we note the following:

- The applicant does not request public notification of the application;
- There is no rule or national environmental standard that precludes or requires public notification of this application;
- An assessment of effects on the environment is provided in Section 5 of this AEE report. This assessment concludes that the adverse effects on the environment are likely to be no more than minor (and are in fact negligible / no effect);
- No special circumstances are considered to exist in relation to the application.

Based on this assessment, we consider that this proposal meets the tests of the RMA to be processed without public notification.

For applications that are not publicly notified, under section 95B, the consent authority must determine whether to give limited notification of an application to any affected parties. Section 95B identifies a four step process. In relation to these steps we note the following:

- The application does not need to be notified to any parties under section 95B(4). The proposed change will not affect any customary rights;
- The proposed activity is not on or adjacent to, or does not affect, land that is the subject of a statutory acknowledgement;
- There are no applicable rules or national environmental standards precluding limited notification;
- No special circumstances are considered to exist in relation to the application

Section 95E(1) states that a consent authority must consider a person to be an affected person if the activity's adverse effects on the person are minor or more than minor (but not less than minor). In terms of section 95E(1), this application is limited to infrastructure that is located within coastal inundation areas, floodplains and overland flow paths.

These structures are a very minor component of the wider CI project. The effects from this infrastructure in relation to coastal inundation areas, overland flow paths and floodplains will be less than minor as the infrastructure will be largely underground with limited infrastructure located flush or close to flush with the ground (i.e. manholes). Aboveground structures will either be in accordance with permitted baseline thresholds under the AUP or will be managed appropriately through the preparation of a hazard risk assessment. In any case, these structures will be small-scale ancillary or connecting infrastructure as detailed in Section 3. Furthermore, with the exception of their location withing a natural hazard area, this infrastructure and associated physical works, including earthworks outside of Designation 9466, are already provided for under district and regional consents. Therefore there are no adversely affected parties.

Following the steps set out in sections 95A and 95B, we consider that the application should be processed without public or limited notification.

## **8 Conclusion**

This AEE report has been prepared on behalf of Watercare to accompany a resource consent application for infrastructure within identified natural hazard areas. This infrastructure requires resource consent from Auckland Council as a restricted discretionary activity under Rule E36.4.1 (A56) of the AUP.

As discussed in Section 3, the existing designation and regional and district consents already authorise the works associated with CI, including the infrastructure and associated earthworks. Therefore, the proposed works are already provided for under the existing regional and district consents with the exception of their location in a natural hazard area outside of Designation 9466 as advised by Auckland Council.

The works which are the subject of this application are very minor in nature and the scope of this application is very narrow and limited to the establishment of wastewater infrastructure within flood prone areas, flood plains, overland flow paths and coastal inundation areas. The structures themselves will have negligible (if any) effects in terms of flood risk, and the CI works at the sites more broadly will have positive effects both on water quality as well as on flood risk. The works are therefore consistent with the relevant objectives and policies of the AUP.

Accordingly, we consider that this resource consent application should be granted on a non-notified basis, subject to the proposed conditions set out in Section 3.4.

## 9 Applicability

This report has been prepared for the exclusive use of our client Watercare Services Ltd, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that Watercare Services Ltd will submit this report to Auckland Council in support of an application for resource consent for the works described herein and that Auckland Council will rely on this report for the purpose of assessing that application.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:

Authorised for Tonkin & Taylor Ltd by:



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Keeley Clayton  
Planner



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Peter Roan  
Project Director

18-Feb-22

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## Appendix A: Property details

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Site	Address	Legal description and owner	Record of Title reference
Western Springs	731 Great North Road, Grey Lynn Auckland 1021	Lot 12 Deposited Plan 168863	NA103A/1
Mt Albert War Memorial Reserve	751-773 New North Road ST LUKES 1025	Part Allotment 170-171 Section 10 Suburbs of Auckland and Part Allotment 38 Parish of Titirangi and Defined On Deposited Plan 6763 (Auckland Council) Part Allotment 38 Parish of Titirangi and Part Allotment 171 Section 10 Suburbs of Auckland (Auckland Council) Lot 14 Deposited Plan 7029 and Part Lot 15 Deposited Plan 7029 (Auckland Council)	NA217/108 NA988/61 NA1999/21
Rawalpindi Reserve	9A Rawalpindi Street Mount Albert Auckland 1025	Lot 32 Deposited Plan 41107 (Auckland Council)	NA26B/398
Norgrove Avenue	17C Verona Avenue Mount Albert Auckland 1025	Lot 13 Deposited Plan 17247 and Lot 15 Deposited Plan 20455 and Lot 1 Deposited Plan 22047 and Part Marked Plantation Reserve Deposited Plan 16371 (Auckland Council) Road Reserve	NA740/40
Lyon Avenue	36 Alberton Avenue Mount Albert Auckland 1025	Section 1-2 Survey Office Plan 34849 (Her Majesty the Queen)	834013
Haverstock	118 Mt Albert Road, Mount Albert 10 Camden Road, Mount Albert 98-102 Haverstock Road, Mount Albert Road Reserve	Section 1 SO 528085 (Watercare Services Ltd) Section 2-3 SO 528085 (New Zealand Institute for Plant and Food Research Limited) Section 1 SO 69377 (Department of Conservation)	868508 4931569 139490

		Lot 3 Deposited Plan 334046 (Horticulture and Food Research Institute of New Zealand Ltd)	
Miranda Reserve	32B Miranda Street Avondale Auckland 0600	Lot 90 Deposited Plan 39331 (Auckland Council)	NA26B/363
Whitney Street	Whitney Street	Road Reserve	N/A
Dundale Avenue	N/A	Road Reserve	N/A
Haycock Avenue	2 Haycock Avenue, Mt Roskill	Lot 79 Deposited Plan 48241 (Watercare Services Ltd) Road Reserve	NA1875/79
Walmsley Park	26A Beagle Avenue Owairaka Auckland 1025	Recreation Reserve New Zealand Gazette 1958	N/A
May Road	54 Roma Road, Mt Roskill, Auckland 1041	Section 1 Survey Office Plan 468523 (Watercare Services Limited)	635749
Keith Hay Park	660 Richardson Road, Mount Roskill 1041	Allotment 77 Section 13 Suburbs of Auckland (Auckland Council)	NA8D/230
Keith Hay Park (Frost Road)	Null	Section 108 SO 419816 Section 51 Survey Office Plan 419816 and Section 65-66 Survey Office Plan 421305 (Her Majesty the Queen)	560735
Pump Station 23 (Frederick Street)	39 Frederick Street Hillsborough Auckland 1042	Lot 1 Deposited Plan 161858 (Watercare Services Ltd)	NA97C/394

## Appendix B: AUP zones and overlays

### Western Springs

Zoning/planning notation	Comment
Special Purpose – Major Recreation Facility Zone	Applies to entire designation and land immediately surrounding
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Designations – 518, Carpark, Designations, Auckland Council	Applies to the entire site, including designation 9466 and sports field area
Western Springs Stadium, Sub-precinct	Applies to entire designation and land immediately surrounding, including stadium to the north
Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] – Western Springs Volcanic Aquifer	Applies to part of the designated area to the south west
Controls: Macroinvertebrate Community Index – Native	Applies to the entire site.
Controls: Macroinvertebrate Community Index – Urban	

### Mt Albert War Memorial

Zoning/planning notation	Comment
Open Space – Informal Recreation Zone	Applies to the majority of the designated site and area to the north
Open Space – Community Zone	Applies to a section of the designated area and park to the south
Residential – Mixed Housing Suburban Zone	Applies to the residential houses directly adjacent to the designation
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] – Western Springs Volcanic Aquifer	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	Applies to the entire site

### Rawalpindi Reserve

Zoning/planning notation	Comment
Open Space – Informal Recreation Zone	Applies to the designated site and golf course to the east
Residential – Mixed Housing Urban Zone	Applies to the residential properties surrounding the designated site

Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] – Western Springs Volcanic Aquifer	Applies to the majority of the designated sites, golf course and residential properties
Natural Heritage: Outstanding Natural Features Overlay [rcp/dp] – ID 95, Meola Creek and estuary	Located on the riparian margin of Meola Creek to the east of the site
Controls: Macroinvertebrate Community Index – Exotic	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	

## Norgrove Avenue

Zoning/planning notation	Comment
Open Space – Informal Recreation Zone	Applies to the designated area and golf course
Road Reserve	Applies to part of the designation located on Norgrove Road
Residential – Single House Zone	Applies to the residential properties to the east of the site
Residential – Mixed Housing Urban Zone	Applies to the residential sites to the west and south of the designation
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the work area
Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] – Western Springs Volcanic Aquifer	Applies to the entire site
Natural Heritage: Outstanding Natural Features Overlay [rcp/dp] – ID 95, Meola Creek and estuary	Applies to part of the designated site and part of the golf course to the north
Controls: Macroinvertebrate Community Index – Exotic	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	

## Lyon Avenue

Zoning/planning notation	Comment
Residential – Mixed Housing Suburban Zone	Applies to the designation and the surrounding school property
Business – Mixed Use Zone	Applies to the north and west of the designated area
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area

Designations: Designations – 9422, Wastewater Purposes – Overflow Structure, Designations, Watercare Services Ltd	Applies to the north of the designated area
Designations: Designations – 4743, Educational purposes – secondary school years 7-13 and may include residential accommodation for students (Mt Albert Grammar School), Designations, Minister of Education	Applies to the designation and the surrounding school property
Designations: Airspace Restriction Designations – ID 1102, Protection of aeronautical functions – obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Natural Resources: Significant Ecological Areas Overlay – SEA_T_6020, Terrestrial	Applies to part of the designation and surrounding site
Natural Heritage: Regionally Significant Volcanic Viewshafts And Height Sensitive Areas Overlay [rcp/dp] – A10, Mount Albert, Viewshafts	Applies to the entire site
Controls: Macroinvertebrate Community Index – Exotic	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	

## Haverstock

Zoning/planning notation	Comment
Residential – Mixed Housing Urban Zone	Applies to a small area of the designation to the north and surrounding residential properties
Business – Business Park Zone	Applies to the majority of the designated area and the site around this
Residential – Mixed Housing Suburban Zone	Applies to residential properties to the east of the designation
Road	Applies to small area of the designation and Camden Road
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Airspace Restriction Designations – ID 1102, Protection of aeronautical functions – obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	Applies to the entire site
Controls: Business Park Zone Office Control – Mt Albert, 5000 m2 GFA	Applies to the Business Park area

## Miranda Reserve

Zoning/planning notation	Comment
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Open Space – Conservation Zone	Applies to the area around the creek
Open Space – Informal Recreation Zone	Applies to the majority of the reserve area and the designated areas
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works are with one part of the designation located within the middle of the reserve, accessed from Miranda Street and the second located on the edge of the reserve adjacent to Blockhouse Bay Road
Designations: Designations – 9436, Wastewater Purposes – Trunk Pump Station, Designations, Watercare Services Ltd	Applies to the same area as the middle designation
Designations: Airspace Restriction Designations – ID 1102, Protection of aeronautical functions – obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Natural Resources: Significant Ecological Areas Overlay – SEA_T_6011, Terrestrial	Applies to the riparian margin around the creek
Infrastructure: National Grid Corridor Overlay – National Grid Yard Uncompromised	Traverses the length of the site
Infrastructure: National Grid Corridor Overlay – National Grid Subdivision Corridor	
Controls: Macroinvertebrate Community Index – Exotic	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	

## Whitney Street

Zoning/planning notation	Comment
Road	Applies to the designation and surrounding road corridor
Residential – Mixed Housing Suburban Zone	Applies to the residential properties surrounding the designation
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Airspace Restriction Designations – ID 1102, Protection of aeronautical functions – obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	Applies to the entire site

## Dundale

Zoning/planning notation	Comment
Road	Applies to the designated site and land directly adjacent

Residential – Mixed Housing Suburban Zone	Applies to the residential properties surrounding the designation
Designations: Designations – 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to majority of the works area
Designations: Airspace Restriction Designations – ID 1102, Protection of aeronautical functions – obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Infrastructure: National Grid Corridor Overlay – National Grid Yard Uncompromised	Located to the north of the site
Infrastructure: National Grid Corridor Overlay – National Grid Subdivision Corridor	
Controls: Macroinvertebrate Community Index – Urban	Applies to the entire site

## Haycock Avenue

Zoning/planning notation	Comment
Residential – Mixed Housing Suburban Zone	Applies to the designation and surrounding residential properties
Road	Applies to Haycock Road
Designations: Designations - 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Airspace Restriction Designations - ID 1102, Protection of aeronautical functions - obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	Applies to the entire site

## Walmsley Park

Zoning/planning notation	Comment
Open Space - Informal Recreation Zone	Applies to the designation and surrounding Walmsley Park
Residential - Terrace Housing and Apartment Building Zone	Applies to the properties south of the designation
Road	Applies to Sandringham Road Extension to the east
Designations: Designations - 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Airspace Restriction Designations - ID 1102, Protection of aeronautical functions - obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site



Controls: Macroinvertebrate Community Index - Urban	Applies to the entire site
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## May Road

Zoning/planning notation	Comment
Business - Light Industry Zone	Applies to the entire designation and sites to the north, east and south
Residential – Mixed Housing Urban Zone	Applies to the residential properties to the west of the designation
Designations: Designations - 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Airspace Restriction Designations - ID 1102, Protection of aeronautical functions - obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] - Auckland Isthmus Volcanic	Applies to the majority of the designated site and areas to the north, east and southeast of the designation
Controls: Macroinvertebrate Community Index - Urban	Applies to the entire site

## Keith Hay Park

Zoning/planning notation	Comment
Open Space - Sport and Active Recreation Zone	Applies to the designated sites and surrounding areas
Residential - Mixed Housing Suburban Zone	Applies to the residential areas to the east
Designations: Designations - 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Airspace Restriction Designations - ID 1102, Protection of aeronautical functions - obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Controls: Macroinvertebrate Community Index – Urban	Applies to the entire site

## Keith Hay Park (Frost Road)

Zoning/planning notation	Comment
Road	Applies to entire site
Strategic Transport Corridor Zone	Applies to entire site
Designations: Designations - 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area

Designations: Designations - 6303, Avondale Southdown Railway Line, Designations, KiwiRail	Applies to the southern section of the designation 9466 and a portion to the west and east
Designations: Designations - 6731, Extension of State Highway 20 from Hillsborough Road to Maioro Street: To undertake maintenance, operation, use and improvement to the State Highway network., Designations, New Zealand Transport Agency	Applies to the majority of designation 9466 and area majority of the area surrounding the designation
Designations: Designations - 6729, State Highway 20 and Railway - Mt Roskill, Designations, New Zealand Transport Agency	Applies to the majority of designation 9466 and area majority of the area surrounding the designation
Designations: Airspace Restriction Designations - ID 1102, Protection of aeronautical functions - obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire site
Controls: Macroinvertebrate Community Index - Urban	Applies to the entire site

## Frederick Street PS23

Zoning/planning notation	Comment
Open Space - Informal Recreation Zone	Applies to the designated area and small sections to the south west and south east of the site
Coastal - General Coastal Marine Zone	Applies to the coastal area to the south east
Residential - Mixed Housing Suburban Zone	Applies to the residential areas surrounding the designation
Designations: Designations - 9466, Construction, operation and maintenance of wastewater infrastructure, Designations, Watercare Services Ltd	Applies to the majority of the works area
Designations: Designations - 9440, Wastewater Purposes - Trunk Pump Station, Designations, Watercare Services Ltd	Applies to the same location as designation 9466
Designations: Airspace Restriction Designations - ID 1102, Protection of aeronautical functions - obstacle limitation surfaces, Auckland International Airport Ltd	Applies to the entire works area
Infrastructure: National Grid Corridor Overlay - National Grid Yard Uncompromised	Located to the north of the site
Infrastructure: National Grid Corridor Overlay - National Grid Subdivision Corridor	
Controls: Coastal Inundation 1 per cent AEP Plus 1m Control - 1m sea level rise	Located on the coastal margin to the south east of the site
Controls: Macroinvertebrate Community Index – Urban	Applies to the entire site
Controls: Stormwater Management Area Control - HILLSBOROUGH 1, Flow 2	Applies to the majority of the designation and areas to the north east

## Appendix C: Site descriptions

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Site	General Description	Natural Hazards Description
<b>Western Springs</b>	The Western Springs site is on the main tunnel alignment and is required as a construction base and to provide a connection to the existing Branch 7 Sewer. The site is bordered by Western Springs Stadium and Park to the north, residential zones to the east and MOTAT and Great North Road to the south west. The site itself is utilised for events and as sports fields.	A number of overland flow paths traverse the site. These are shown in Figure 2.5 below. The largest overland flow paths are located along Stadium Road and across the fields. A number of smaller overland flow paths branch off from these.
<b>Mt Albert Memorial Reserve</b>	The Mt Albert War Memorial Reserve is on the main tunnel alignment and is required to provide connections to the existing Branch 8 sewer. The site is located within the Mt Albert War Memorial Park carpark. The area surrounding the park is characterised by a residential neighbourhood, with a small shopping area to the south across New North Road.	There is one larger overland flow path (100 ha and above) that traverses the site, entering from the northwest, traversing through the centre and exiting to the southwest. There are a number of smaller overland flow paths that branch off this (2000 m <sup>2</sup> to 1 ha). The entire area is also identified as a flood prone area and flood plain.
<b>Rawalpindi Reserve</b>	The Rawalpindi Reserve site is on the Link Sewer B alignment and is required to provide connections to the Orakei Main Sewer, the Branch 8 sewer and a local reticulation overflow. The site is located within Rawalpindi Reserve to the southwest corner of Chamberlain Park Public Golf Course. The site is bounded by the golf course to the east and residential homes to the north, west and south.	Meola Creek is a permanent open water course that flows along the east of the site within the Chamberlain Golf Course. This water course is identified as an overland flow path and includes smaller overland flow paths that branch off this to the south and along the north of the site. A flood plain is located around the stream and is located within the reserve and Chamberlain Golf Course.
<b>Norgrove Avenue</b>	The Norgrove Avenue site is on the Link Sewer B alignment and is required to connect to the Branch 8 Sewer and collect a local reticulation overflow. The site is located within Norgrove Reserve, to the south of Chamberlain Golf Course. The site is bounded by the golf course to the north and residential properties to the west, south and east.	Meola Creek is located to the north of the site, this is partly an open watercourse and transitions to a piped watercourse across part of the site. The creek is also identified as an overland flow path which extends over the piped locations and branches off the site towards the east of the site. There are also a number of smaller overland flow paths that branch off this, one within the road reserve and another to the east. In addition, the riparian margins of the stream and along the overland flow path to the southeast is identified as a flood prone area and flood plain.
<b>Lyon Avenue</b>	The Lyon Avenue site is on the main tunnel alignment and is required to connect to the existing Edendale Branch sewer. The site is located adjacent to Meola Creek along the Roy Clements Treeway. The site is bounded by Mt Albert Grammar School fields, Morning Star Place and St Lukes Mega Centre in Mt Albert.	Meola Creek is a permanent open water course that traverses the site. This water course is also identified as an overland flow path. There are two smaller overland flow paths located within the potential works area. The entire area is also identified as a flood prone area and flood plain.

<b>Haverstock</b>	The Haverstock Road site is on the main tunnel alignment and is required to provide a connection to the existing Branch 8 sewer. It is a secondary construction site which provides for inspection of the main tunnel TBM during construction.	The majority of the designated Haverstock site is within a flood plain. This extends to the north and south of the site. Overland flow paths traverse along the northern and east of the site with a smaller flow path travelling through the middle of the site.
<b>Miranda Reserve (Pump Station 25 &amp; Miranda Reserve)</b>	There are two sites located within Miranda Reserve. The first site to the west is on the Link Sewer C alignment and is required to provide connections to the existing Western Interceptor, Titirangi Diversion Sewer, local reticulation and local. The second site is also on the Link Sewer C alignment and is required for link sewer construction and to connect to CSO Collector CC7 reticulation overflows. These are bounded by the park and residential properties with an unnamed open stream through the site.	There is one unnamed watercourse that traverses along the south of the site. Two separate sections of this watercourse are piped flowing from Miranda Street. The unknown watercourse is also identified as an overland flow path with several smaller overland flow paths branching off this. The immediately adjacent areas to these overland flow paths are also identified as a flood prone area and flood plain.
<b>Whitney Street</b>	The Whitney Street site is on the Link Sewer C alignment and is required as a temporary construction shaft for construction only. and to provide a connection to the Avondale Diversion Sewer. The site is located within the road reserve of Whitney Street, south of Trevola Street and north of Mulgan Steet. The site is bounded by residential properties.	There are three smaller overland flow paths identified at the site and within the surrounding properties.
<b>Dundale Avenue</b>	The Dundale site is on the Link Sewer C alignment and is required for construction of the main tunnel. The site is located within a road reserve and bounded by residential properties.	There is one unnamed open watercourse located north of the designated site. This is also identified as an overland flow path with smaller overland flow paths branching off this. A flood plain is also located surrounding this waterway which is located within and to the north of the designation.
<b>Haycock Avenue</b>	The Haycock Avenue site is on the Link Sewer C alignment and is required to provide connections to the Western Interceptor, Lynfield Branch Sewer and CSO Collector CC-8. It is a secondary construction site and will be used for the retrieval of the MTBM for Link Sewer C.	Floodplains surround the Haycock designated site and is within the designation to the north and south. Overland flow paths are located within these flood plains to the north and south of the designated sites.
<b>Walmsley Park</b>	The Walmsley Park site is on the main tunnel alignment and is required to connect to the existing Branch 9 sewer. This site is located adjacent to Oakley Creek at the eastern edge of Walmsley Park. The site is bounded by residential homes to the south, Walmsley Park to the west and north and Sandringham Road	Oakley Creek is a permanent open water course that traverses the north of the designation. This water course is also identified as an overland flow path. There are two smaller overland flow paths located within the potential works area. The entire area is also identified as a flood prone area and flood plain.

	Extension to the east. Walmsley Park is part of an open space network that surrounds Oakley Creek, which extends from Mt Roskill War Memorial Park to the southeast through Alan Wood Reserve to New North Road in the north west. The works area is located to the south of Oakley Creek.	
<b>May Road</b>	The May Road site is on the main tunnel alignment and is required to provide a connection to the existing Branch 9A sewer and nearby local reticulation. This site is located off Roma Road and is within a wider commercial business zone with residential properties to the southwest.	There are two unnamed, open stream tributaries located within the designated site and along the northern border of the property. There are a number of overland flow paths that branch from this water course, these located adjacent to the designated site. The designated site and the land directly adjacent are also identified as flood prone and flood sensitive area.
<b>Keith Hay Park</b>	The Keith Hay Park sites are on the main tunnel alignment and are required to provide connections to the existing Branch 9 and Branch 9B sewers. There are three designated sites within Keith Hay Park located along the eastern edge of the park. The northern site is located adjacent to Oakley Creek to the north of the park, the middle site is located within the sports fields and the southern site is partially located within Keith Hay Park and 53 Arundel Street.	Oakley Creek, identified as an open water course, runs along the eastern boundary of Keith Hay Park. This is identified as an overland flow path. There are a number of other overland flow paths located around the eastern edge of the park. The entire area is also identified as a flood prone area and flood plain.
<b>Keith Hay Park (Frost Road)</b>	The Keith Hay Park site is on the main tunnel alignment and is required to provide connections to the existing Branch 9 and Branch 9B sewers. Keith Hay Park Frost Road site is located within the road reserve at the corner of Frost and Somerset Road. Mount Roskill Grammar School is located to the west and industrial premises to the east.	There is one smaller overland flow path that flows from the north and traverses along the southern edge of the designated site. The entire designation and the surrounding area are also identified as a flood plain. This is shown in Figure 2.20 below.
<b>Pump Station 23 (Frederick Street)</b>	The Pump Station 23 site is on the main tunnel alignment and is required to connect to the existing Onehunga Branch Sewer. This site is located adjacent to Manukau Harbour within an area of open space and is bordered by residential homes to the west and east.	There is one overland flow path traversing the middle of the designated site, with three smaller overland flow paths branching off this. In addition, there is another larger overland flow path to the southwest of the site. In addition, coastal inundation is identified along the coastline of the site.

## **Appendix D: Natural hazard maps**

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# E36 Western Springs



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A4 Scale: 1:2500  
 Created: 8/12/2021

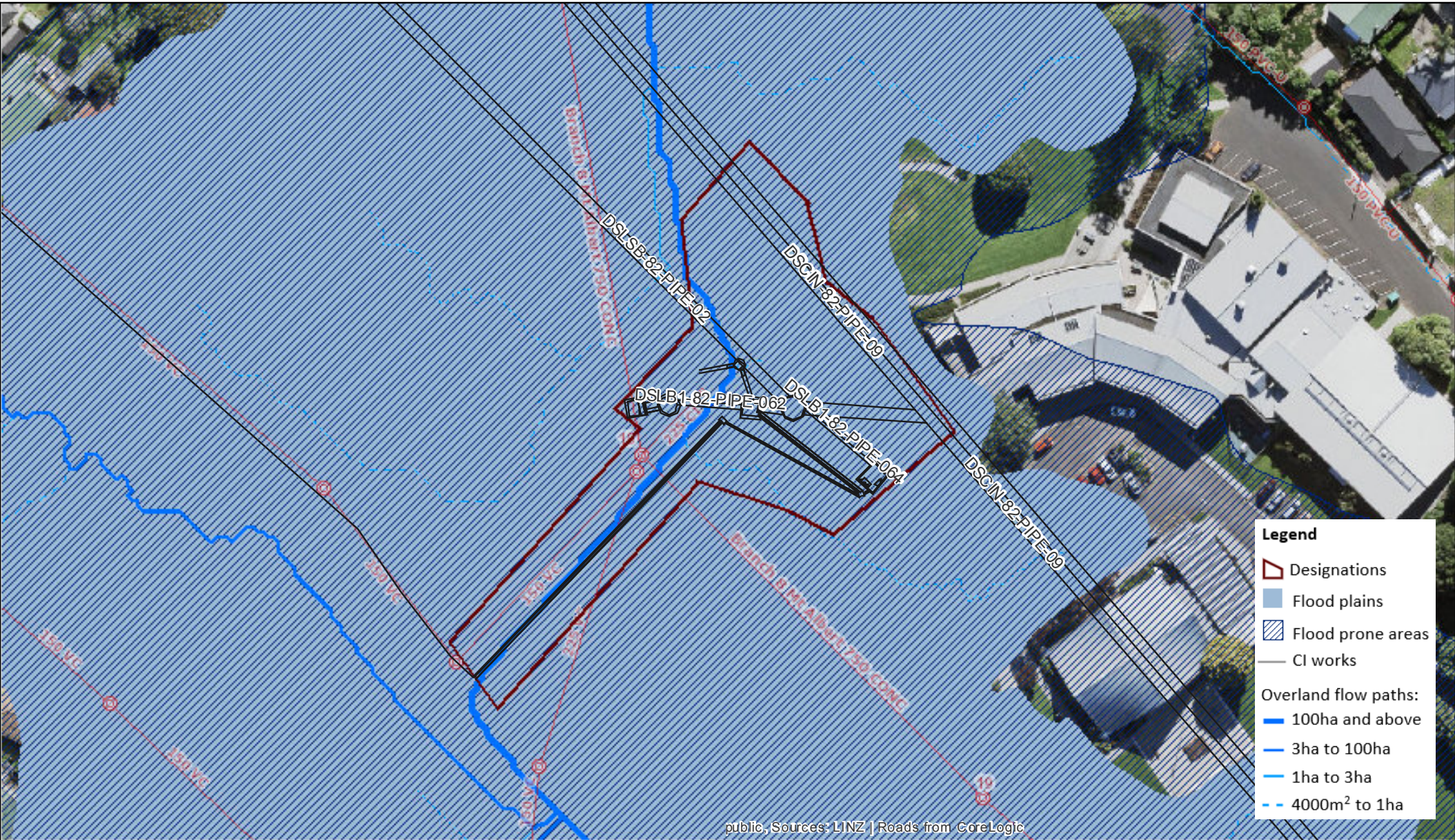


NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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## E36 Mt Albert War Memorial Reserve



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A4 Scale: 1:1000  
Created: 8/12/2021

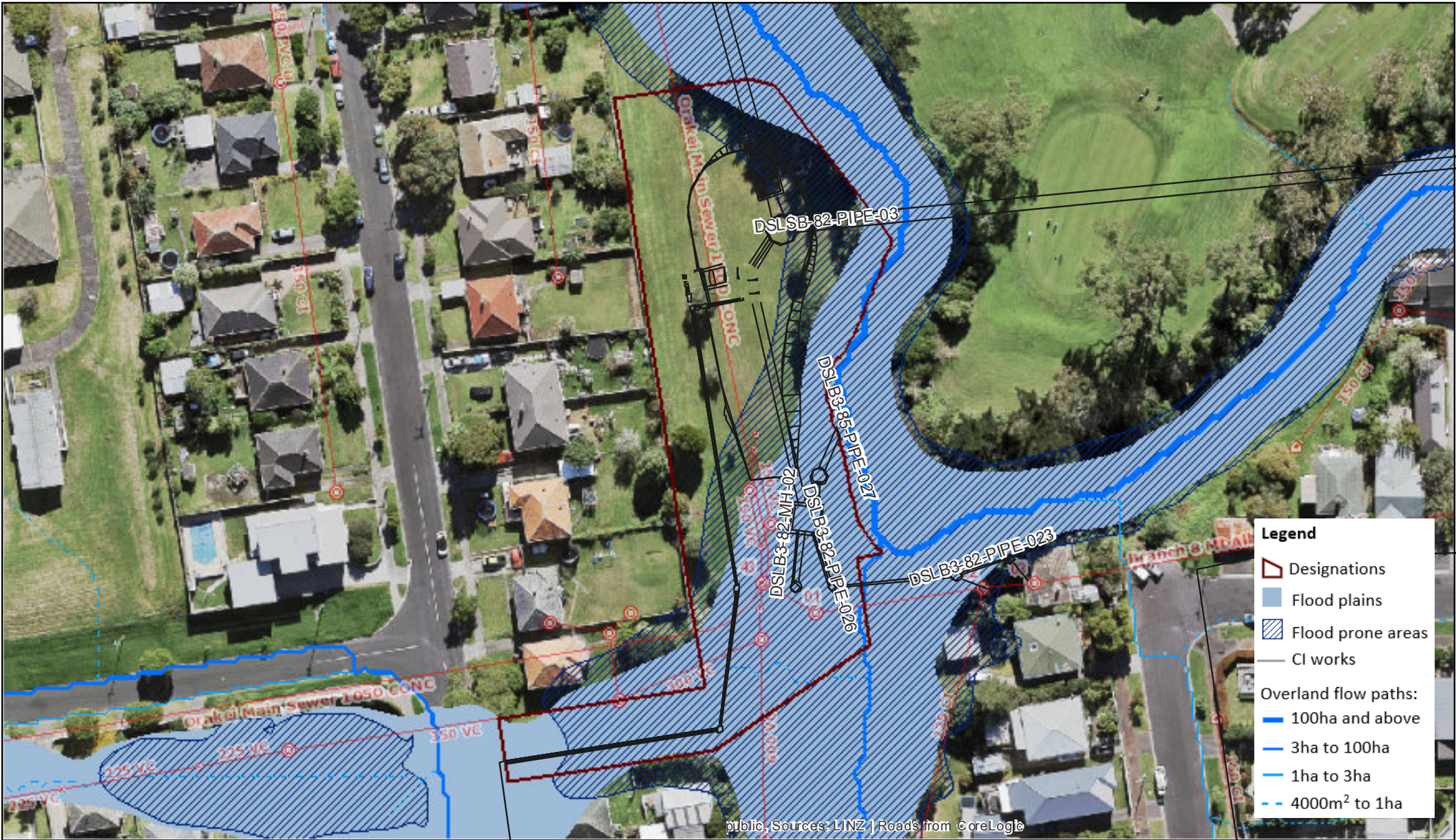


NOTE: Where applicable, Water supply is shown in **BLUE**, Wastewater is shown in **RED** and Stormwater in **GREEN**

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# E36 Rawalpindi Reserve



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A4 Scale: 1:1000  
Created: 8/12/2021



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# E36 Norgrove Avenue



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A4 Scale: 1:1000  
 Created: 8/12/2021

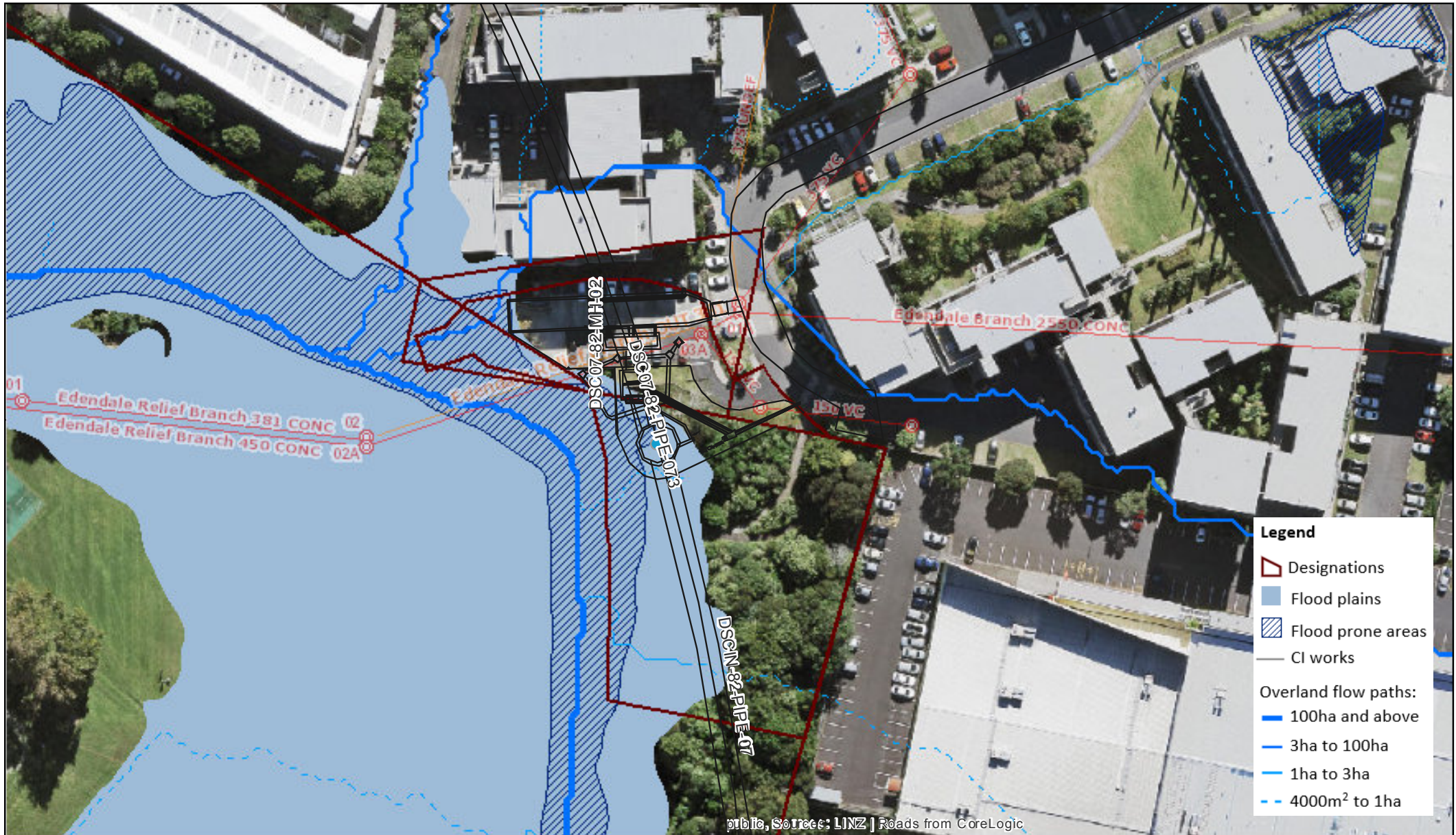
0 10 20 30  
 m

NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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# E36 Lyon Avenue



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A4 Scale: 1:1000  
 Created: 9/12/2021

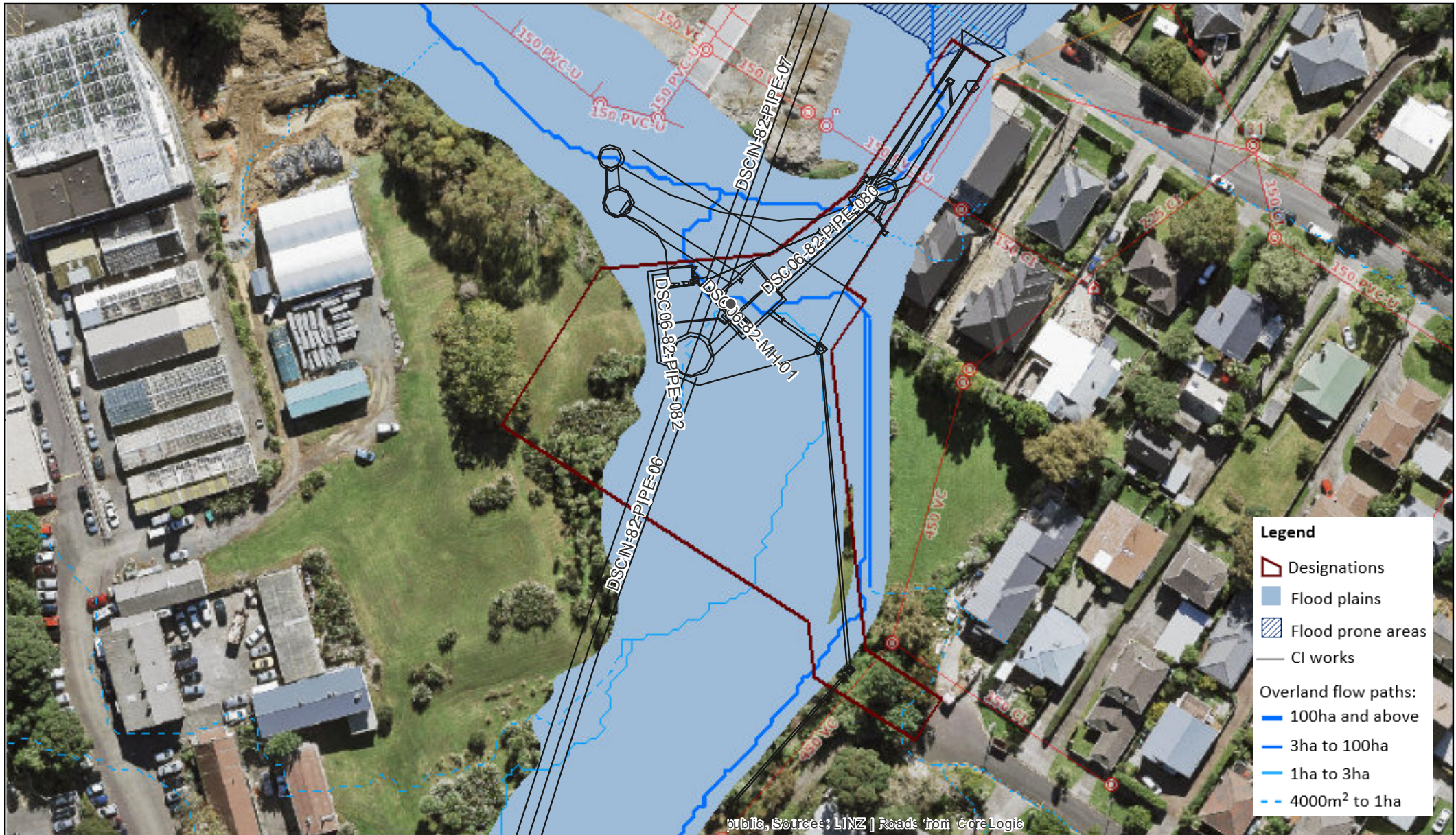


NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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# E36 Haverstock



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 Created: 8/12/2021

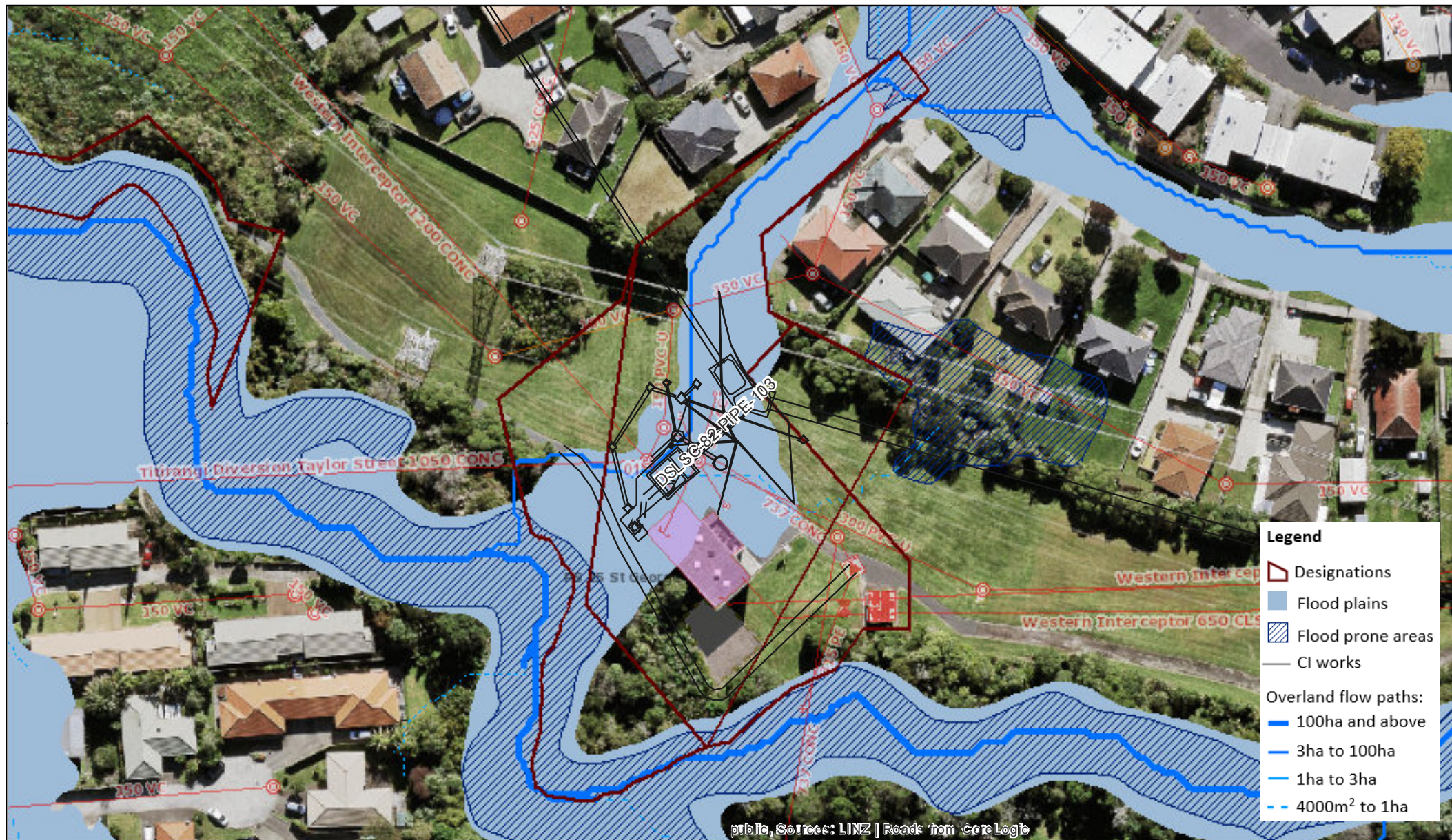
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NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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# E36 PS25



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A4 Scale: 1:1000  
 Created: 8/12/2021

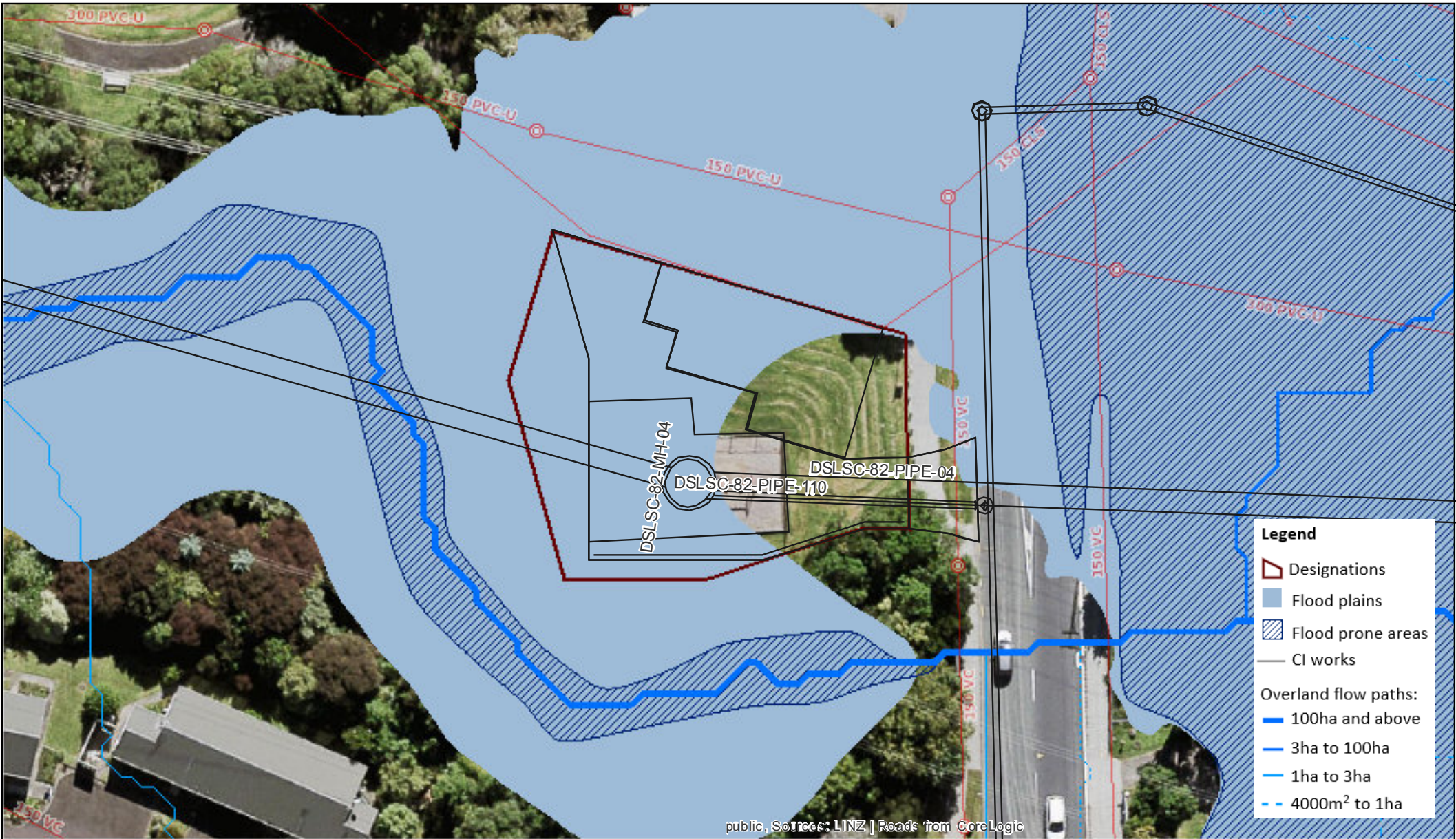


NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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E36 Miranda Reserve



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A4 Scale: 1:500  
Created: 8/12/2021



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# E36 Whitney Street



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 information on this map/plan and accepts no liability for any error, omission or use of the information. Height datum: Auckland 1946.



A4 Scale: 1:500  
 Created: 8/12/2021

0 6.5 13 19.5  
 m

NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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E36 Dundale Avenue



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A4 Scale: 1:500  
Created: 8/12/2021



NOTE: Where applicable, Water supply is shown in **BLUE**, Wastewater is shown in **RED** and Stormwater in **GREEN**

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# E36 Haycock Avenue



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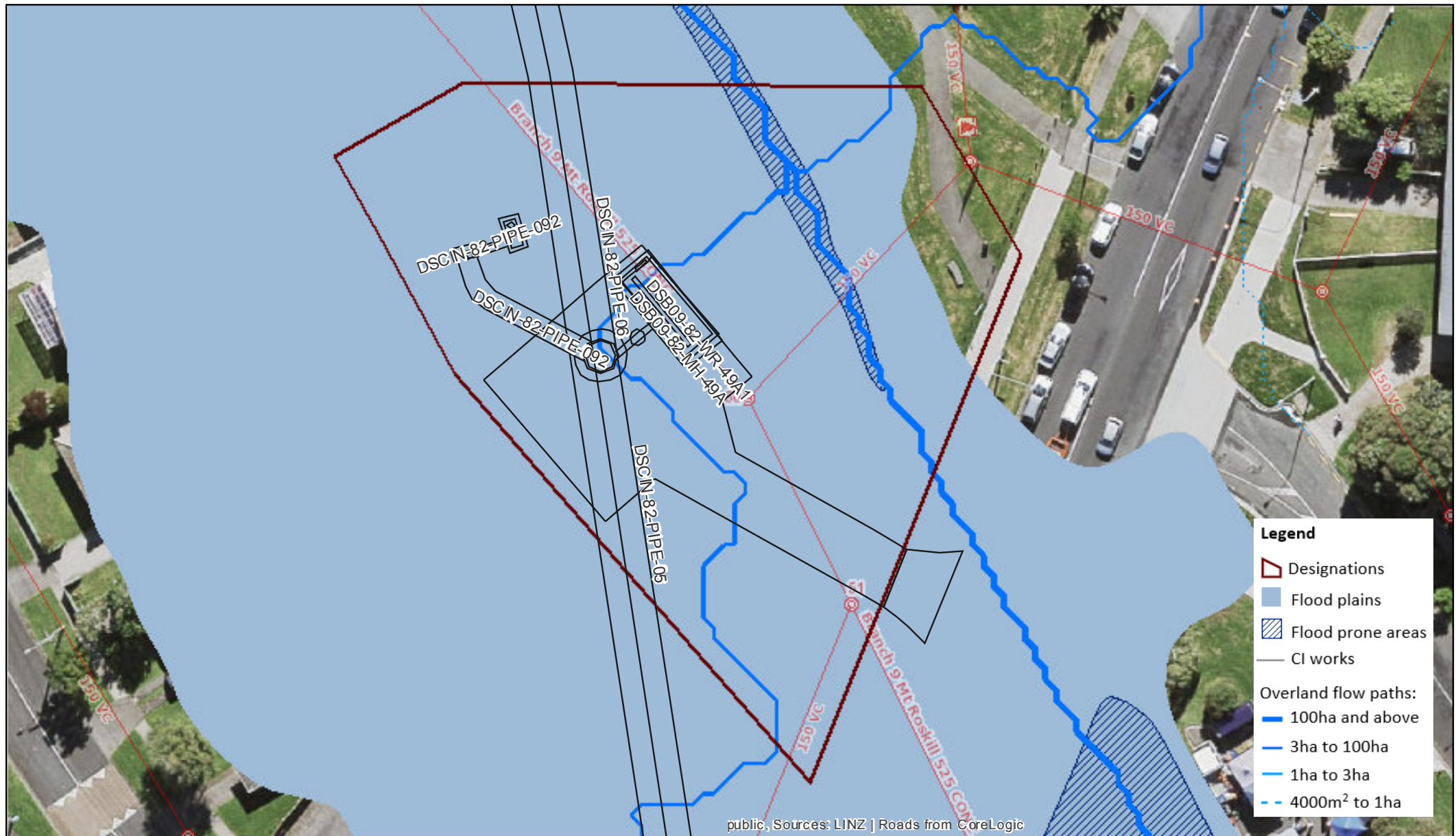


NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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# E36 Walmsley Park



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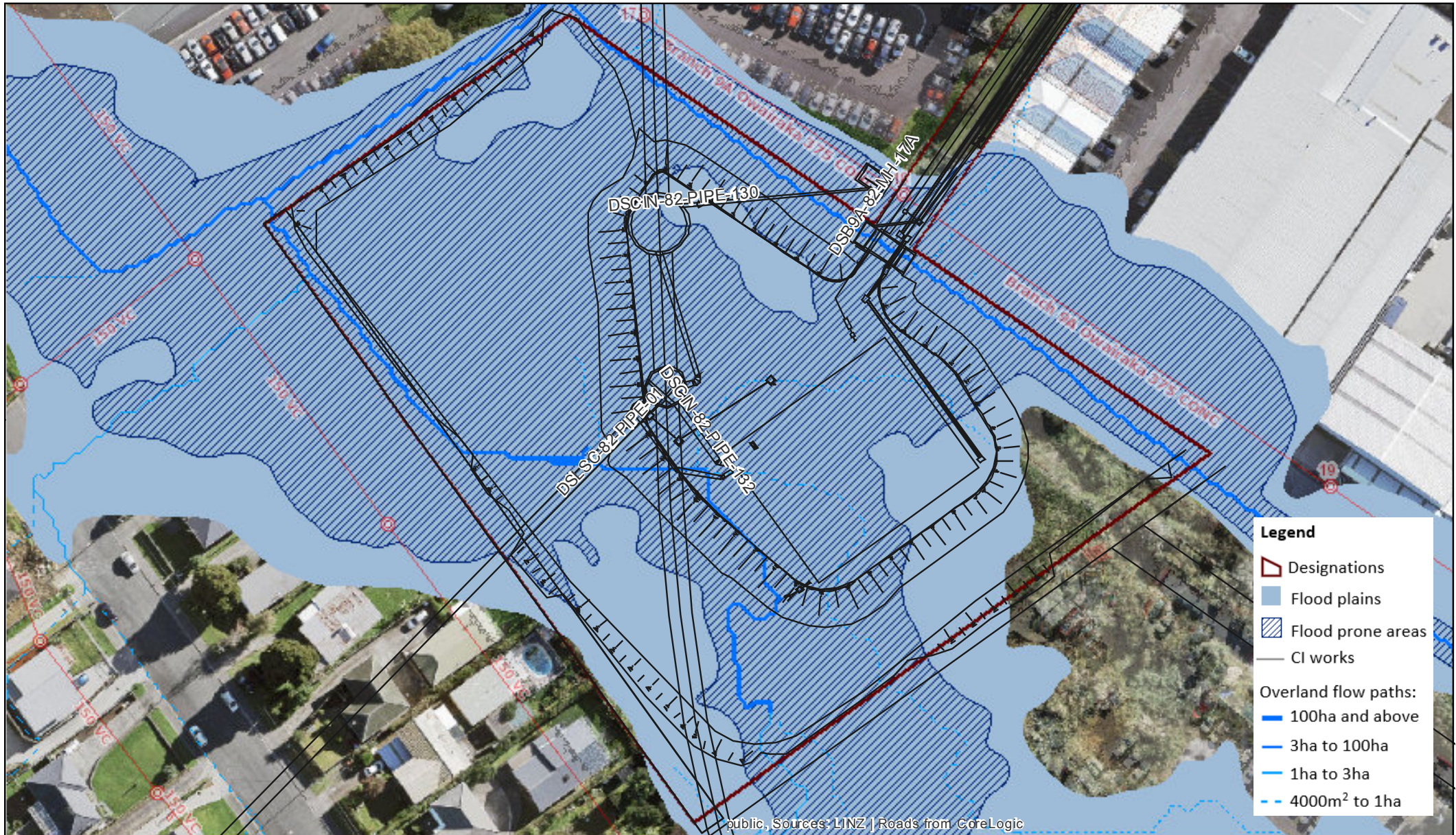
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NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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# E36 May Road



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 Created: 8/12/2021

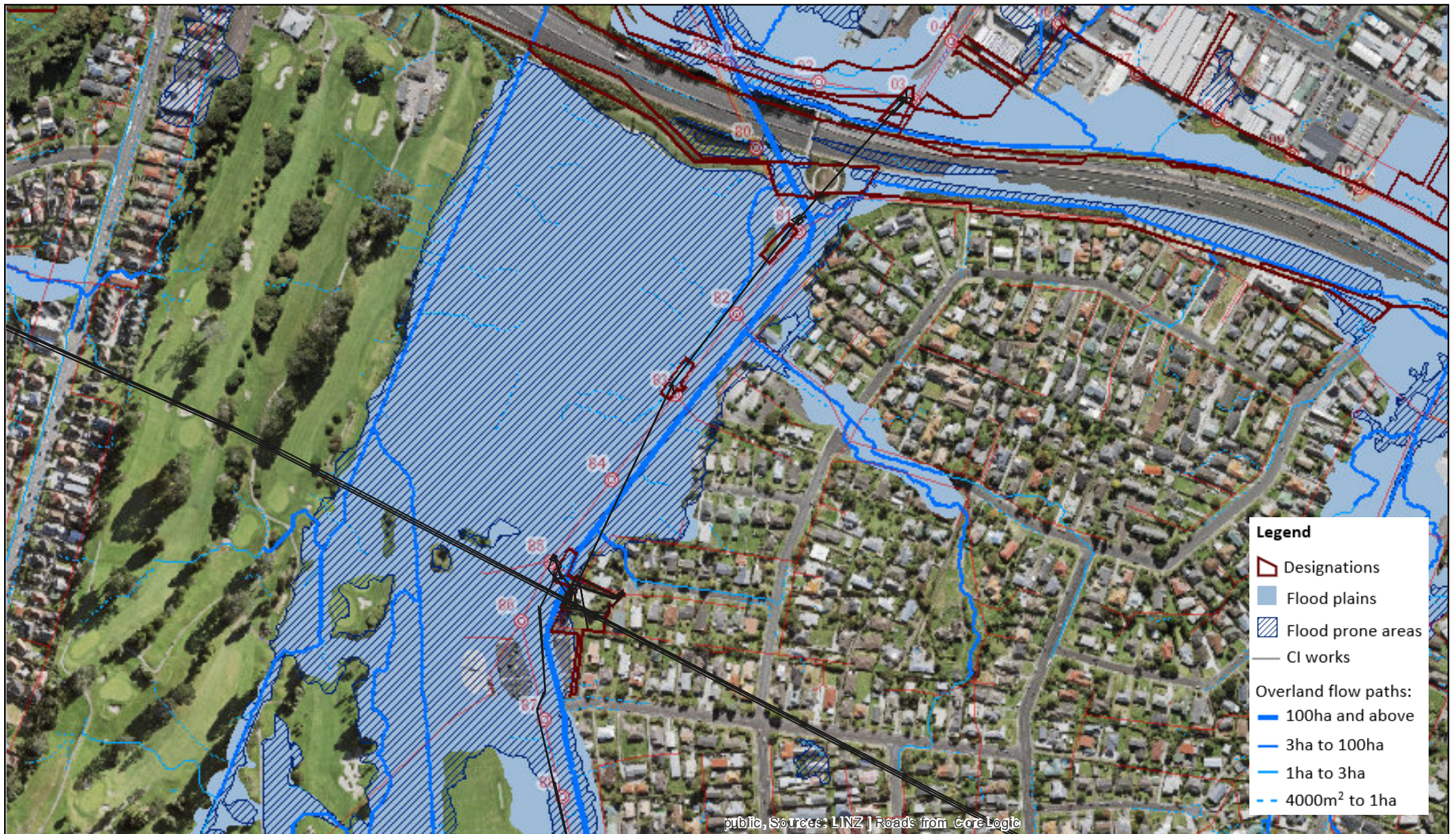
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NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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# E36 Keith Hay Park overview



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 Created: 9/12/2021

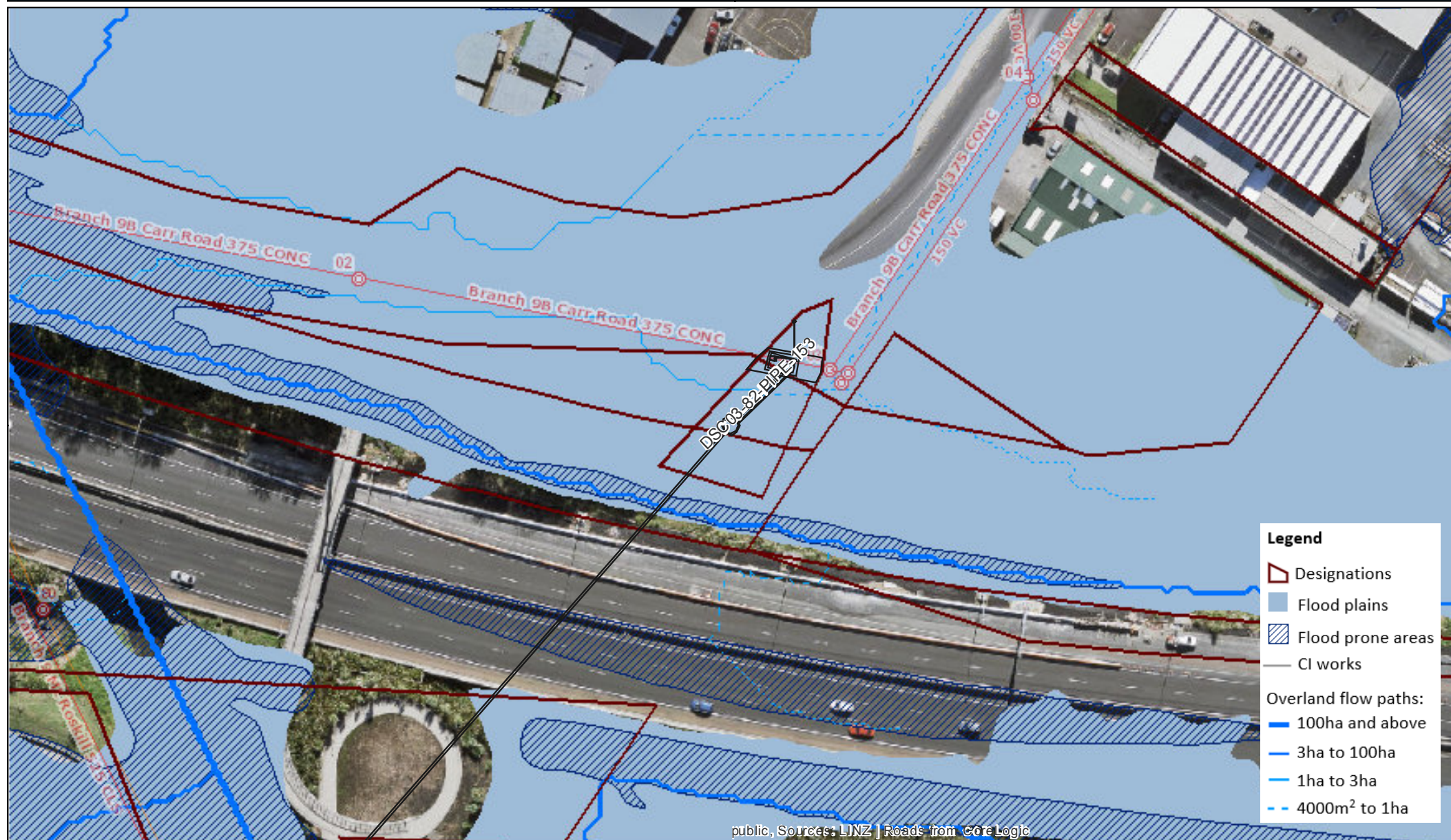
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NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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## E36 Keith Hay Park and Branch 9B Diversion Sewer Foster Road



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Created: 9/12/2021

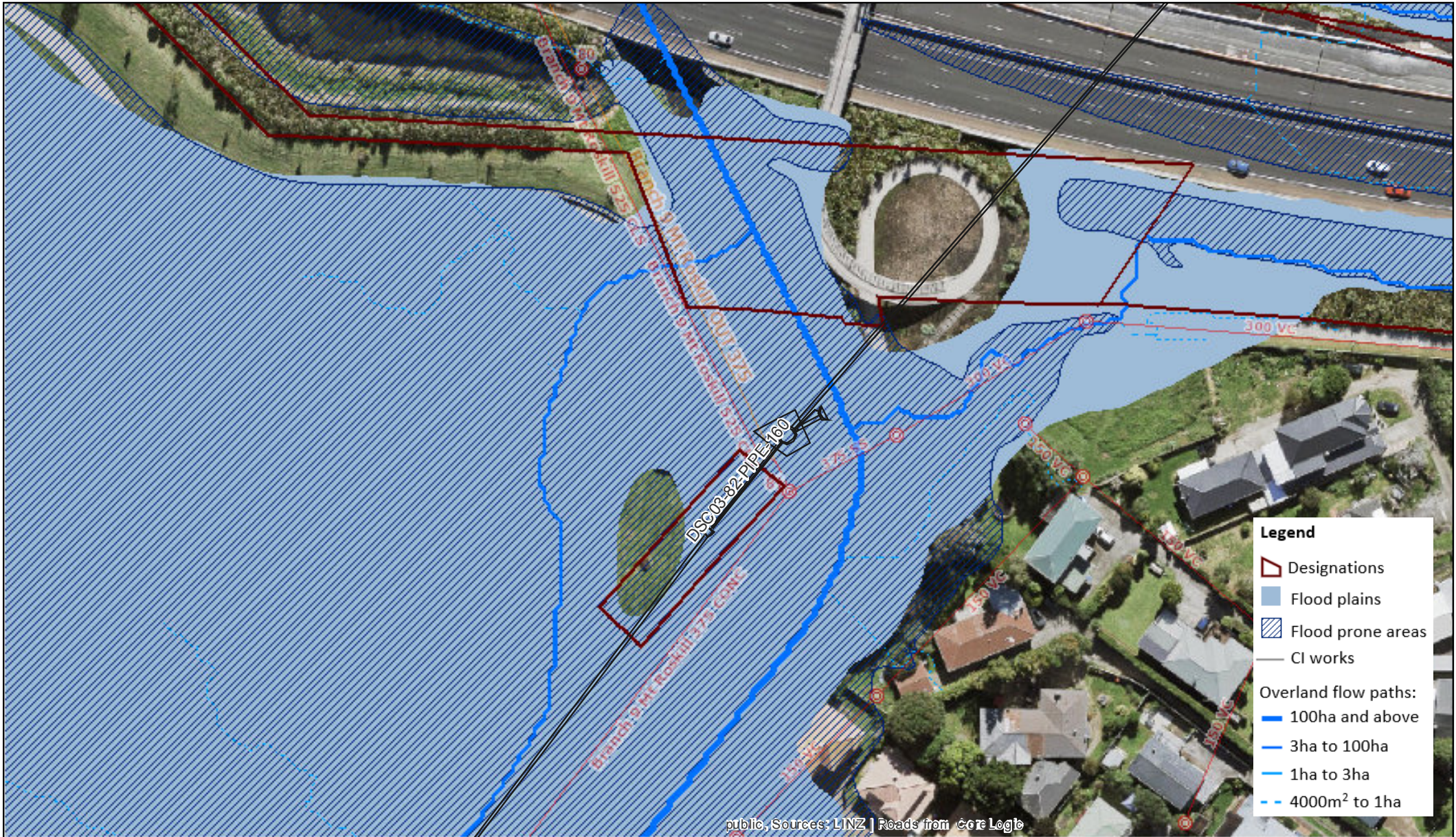


NOTE: Where applicable, Water supply is shown in **BLUE**, Wastewater is shown in **RED** and Stormwater in **GREEN**

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**E36 Keith Hay Park and Branch 9B Diversion Sewer North**



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A4 Scale: 1:1000  
Created: 9/12/2021

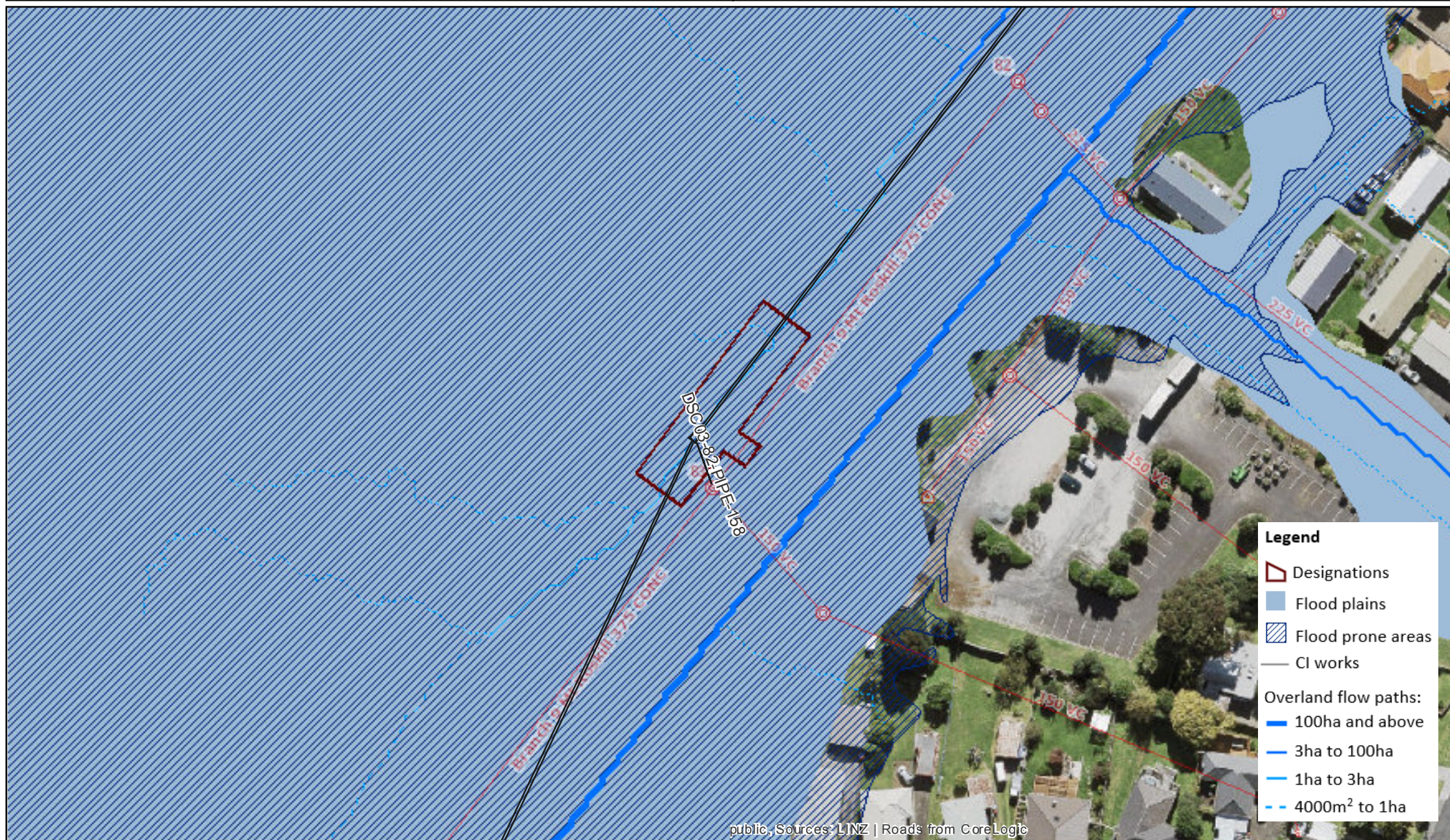


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# E36 Keith Hay Park and Branch 9B Diversion Sewer South



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A4 Scale: 1:1000  
 Created: 9/12/2021

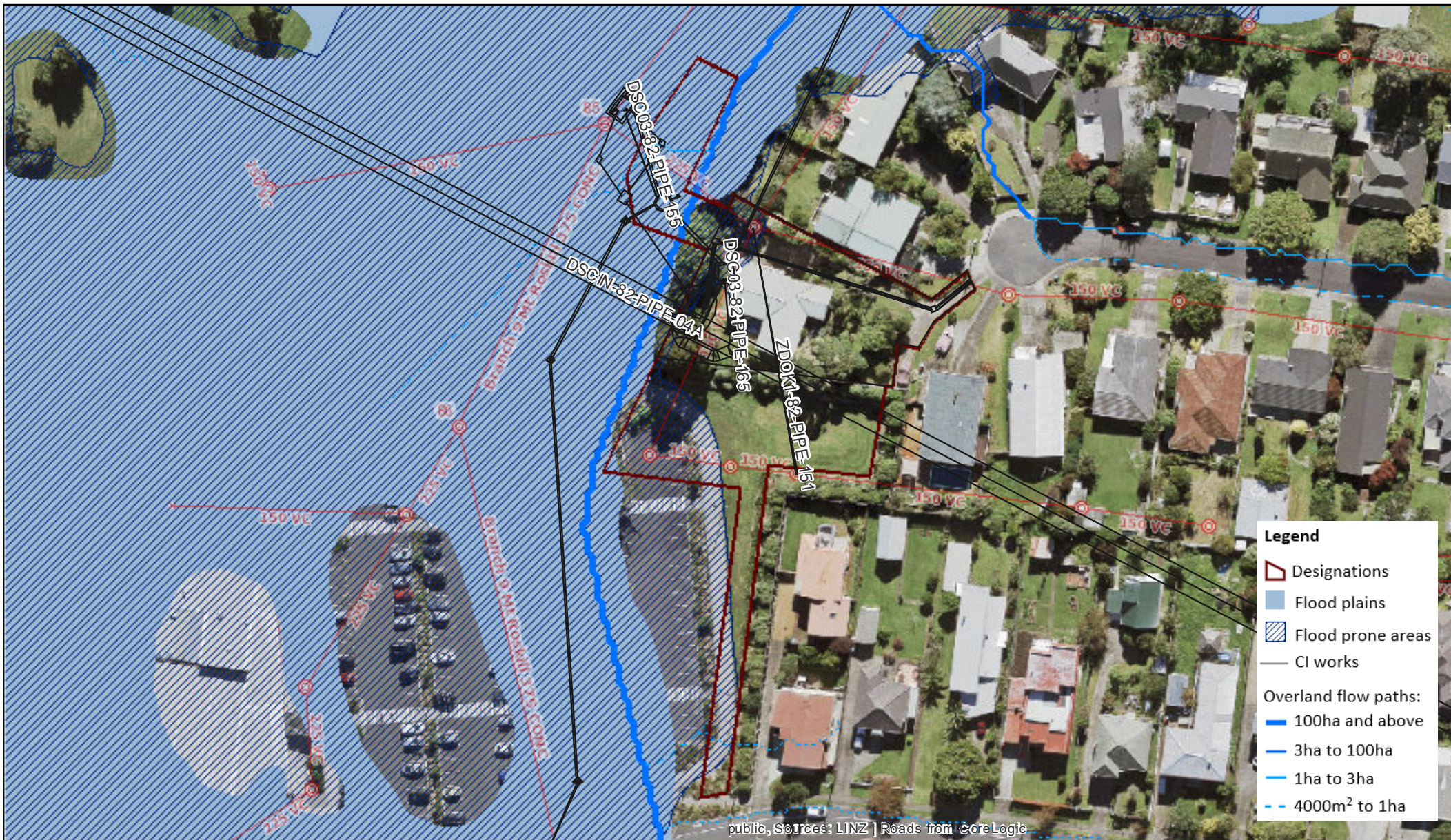


NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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## E36 Keith Hay Park



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A4 Scale: 1:1000  
Created: 8/12/2021



NOTE: Where applicable, Water supply is shown in **BLUE**, Wastewater is shown in **RED** and Stormwater in **GREEN**

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# E36 PS23



**Legend**

- Designations
- Flood plains
- Flood prone areas
- CI works

Overland flow paths:

- 100ha and above
- 3ha to 100ha
- 1ha to 3ha
- 4000m² to 1ha

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A4 Scale: 1:1000  
 Created: 8/12/2021



NOTE: Where applicable, Water supply is shown in BLUE, Wastewater is shown in RED and Stormwater in GREEN

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## Appendix E: Proposed work plans

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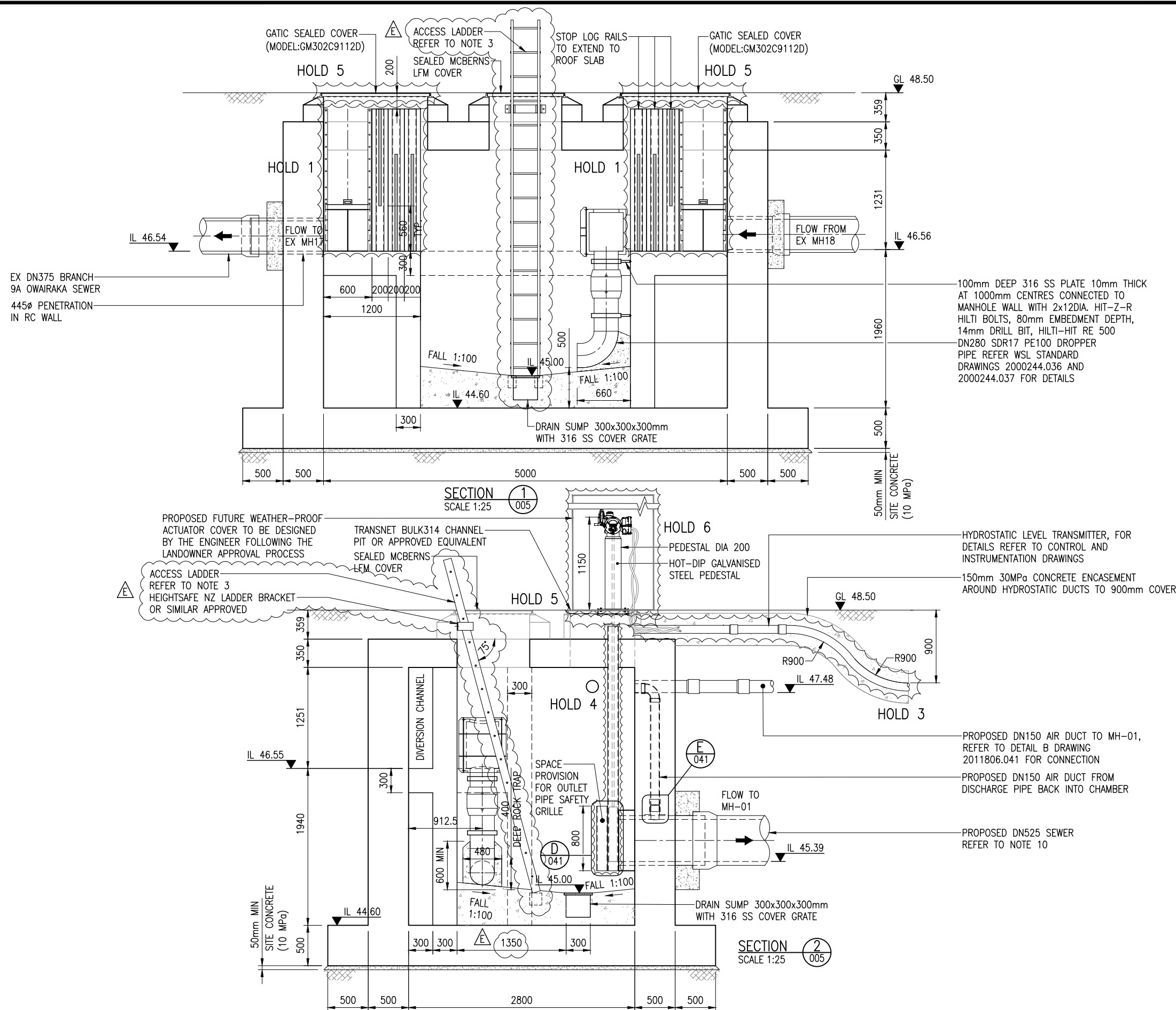
## **Proposed May Road works**







C:\pwwork\ssolamh\watercare\lms52365\ 201806.006.dwg  
Plot Date: Jan 15, 2021 - 11:19pm



#### NOTES:

- ALL LEVELS ARE IN METRES AND DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
- CONCRETE COVER SLABS ON MANHOLES AND CHAMBERS SHALL BE HN-HO-72 RATED.
- HEIGHTSAFE NZ LADDER BRACKET OR SIMILAR APPROVED. ALCO AL-101 LADDER OR APPROVED EQUIVALENT COMPLYING WITH AS/NZS 1892, LOAD RATING OF 150Kg OR HIGHER.
- DELETED.
- BENCHING FALL SHALL BE 1:12 UNLESS OTHERWISE STATED.
- DELETED.
- STOP LOG RAILS TO EXTEND TO UNDERSIDE OF COVER SLAB.
- ALL INTERNAL AND EXTERNAL CONCRETE ANGLES SHALL HAVE 25mm CHAMFERS OR FILLETS UNLESS OTHERWISE STATED.
- REFER TO WATERCARE STANDARD DRAWINGS 2000244.001 TO 2000244.044 FOR GENERAL MANHOLE DETAILS.
- REFER TO WATERCARE STANDARD DRAWING 2000244.014 FOR PIPE CONNECTION DETAILS AND DRAWING 2011806.010 FOR ROCKER PIPE DETAILS.
- FINAL SIZE OF COVERS OVER STOP LOGS TO BE CONFIRMED FOLLOWING CONFIRMATION OF STOP PLATE DIMENSIONS BY SUPPLIER.
- ALL FIXINGS TO BE STAINLESS STEEL AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ALL FIXINGS TO BE 316 STAINLESS STEEL AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE STATED.
- ALL WELDED STEEL WORK TO BE 316 STAINLESS STEEL UNLESS OTHERWISE STATED.
- ALL COVERS TO BE BOLT-DOWN TYPE WITH IN-BUILT SAFETY GRILLE FEATURE.

#### HOLDS:

- STOP LOG DIMENSIONS AND INSTALLATION DETAILS TO BE CONFIRMED BY CONTRACTOR DURING PROCUREMENT AND DESIGN OF GATES.
- DELETED.
- PVC DUCT SIZES TO BE CONFIRMED UPON SELECTION OF GATE TYPE.
- ALL GATE DIMENSIONS ARE BASED ON FONTAINE FABRICATED STAINLESS SLIDE GATES FOR DESIGN PURPOSES. FINAL GATE IS SUBJECT TO ENGINEER'S ACCEPTANCE.
- FINAL SIZE OF COVERS AND FRAMES OVER STOP LOGS AND GATES SUBJECT TO CONFIRMATION OF STOP LOG AND GATE DIMENSIONS.
- COVER FOR THE ACTUATOR TO BE SPECIFIED DURING LANDOWNER AGREEMENT PROCESS.
- DELETED.

SCALE 1:25 (A1)  
500 1000 1500 2000 2500mm

CONSTRUCTION ISSUE

JACOBS AECOM

ISSUE	DATE	AMENDMENT	BY	APPD.
E	22.01.21	REVISED CONSTRUCTION ISSUE	WIS	DJK
D	14.09.20	IFC - ASSET TAG NUMBERS UPDATED, REVISED AS INDICATED	WIS	CW
C	21.07.20	REVISED CONSTRUCTION ISSUE	SS	CW
B	22.05.20	REVISED CONSTRUCTION ISSUE	SS	CW
A	31.05.19	CONSTRUCTION ISSUE	PMF	EB

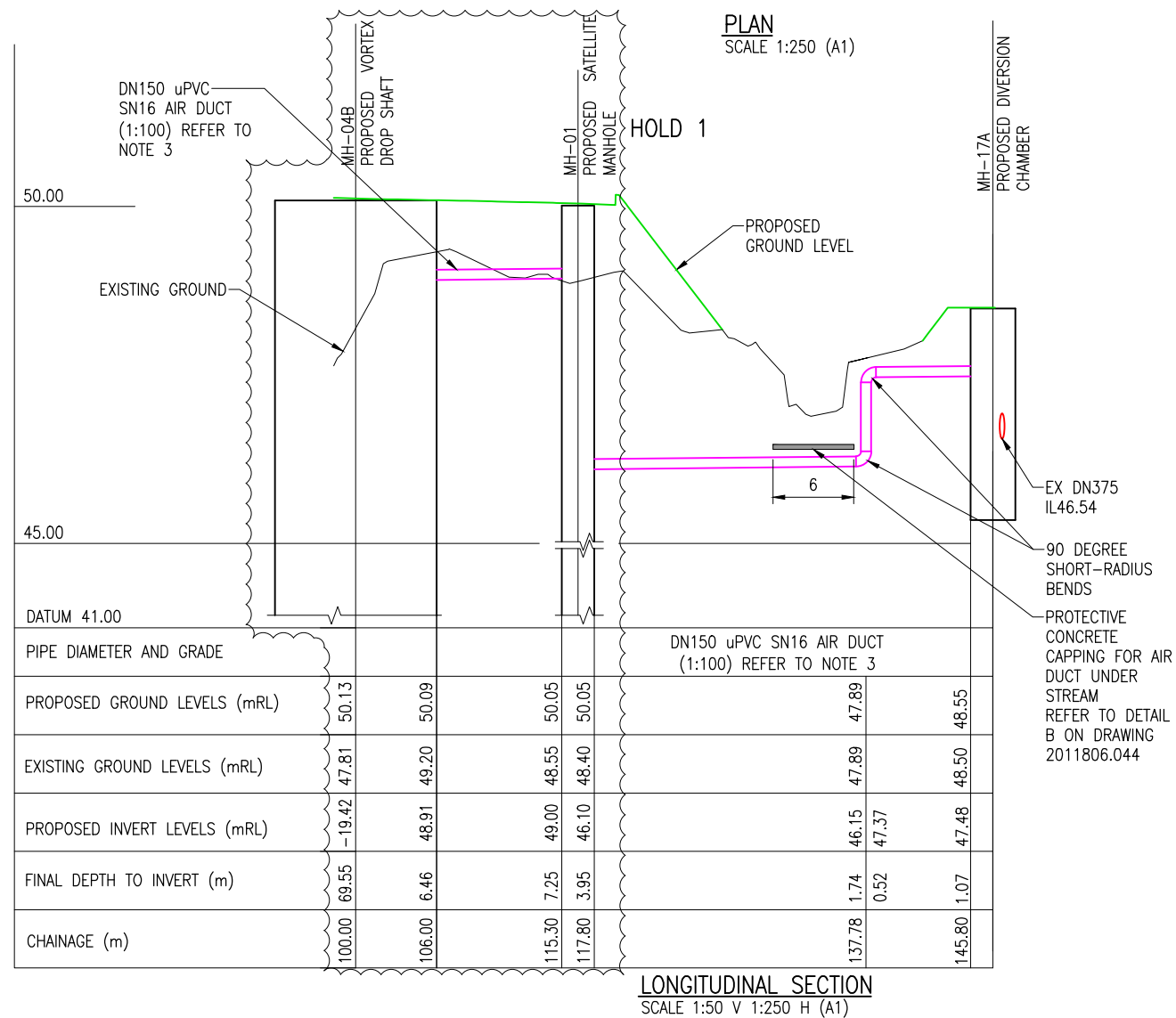
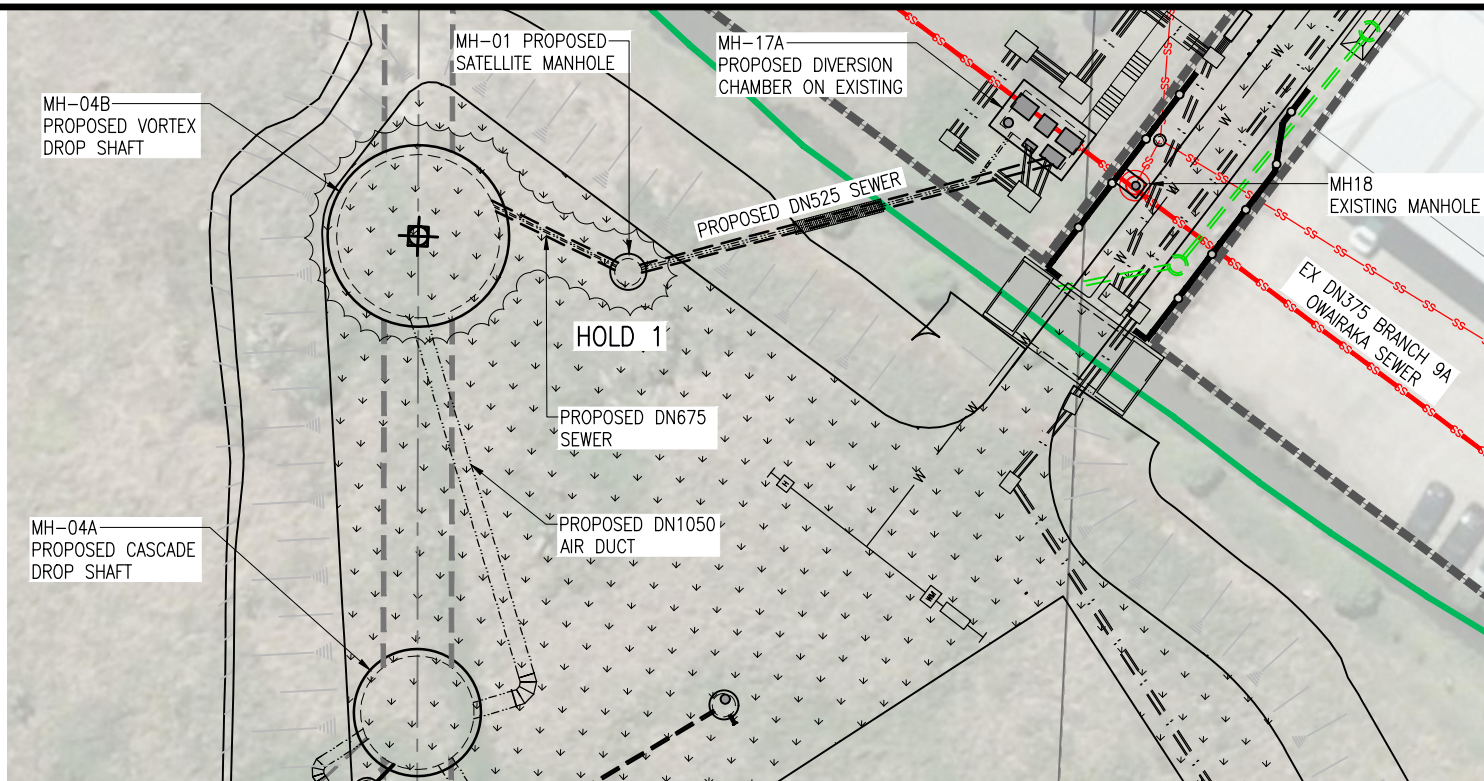
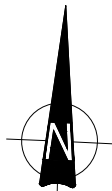
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DES. CHECKED	DJK	11.15
DRAWN	AP	04.15
DWG. CHECKED	CW	11.15
PROJECT LEADER	NK	08.17
INFRASTR APP'D	SG	08.17

OPERATIONS
INFRASTRUCTURE

**Watercare**  
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MAY RD - BRANCH 9A OWAIRAKA (DSB9A)  
82 GRAVITY SEWER INCLUDING MANHOLES  
MH-17A DIVERSION CHAMBER - SECTIONS

CAD FILE 2011806.006	DATE 22.01.21
ORIGINAL SCALE A1 AS SHOWN	CONTRACT No. 6661
REF. No. CI-CIVIL	ISSUE
DWG. No. 2011806.006	E



#### NOTES:

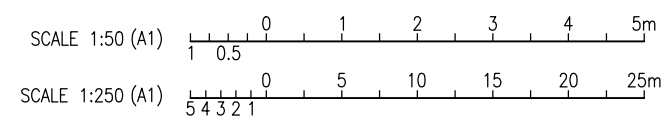
- CO-ORDINATES ARE IN NZTM AND LEVELS ARE TO AUCKLAND L&S 1946 DATUM.
- LOCATION OF EXISTING SERVICES HAVE BEEN EXTRACTED FROM AUCKLAND COUNCIL GIS AND UTILITIES PLANS AND ARE INDICATIVE. PHYSICAL LOCATION OF AFFECTED SERVICES WILL BE REQUIRED PRIOR TO CONSTRUCTION. ALL AFFECTED SERVICES SHALL BE PROTECTED DURING CONSTRUCTION.
- REFER TO WATERCARE STANDARD DRAWING 2000244.021 FOR PIPE BEDDING DETAILS.
- REFER TO DRAWING 2011806.044 FOR PIPE EMBEDMENT DETAILS.

#### LEGEND

- PROPOSED MAIN TUNNEL
- PROPOSED LINK SEWER
- FUTURE CSO COLLECTOR SEWER AND MANHOLE
- PROPOSED SEWERAGE
- PROPOSED STORMWATER
- PROPOSED POWER/CONTROL DUCT
- EXISTING STORMWATER
- EXISTING STORMWATER STREAM
- EXISTING NETWORK WASTEWATER
- EXISTING TRANSMISSION WASTEWATER
- EXISTING WATERMAIN
- LV POWER CABLE
- HV POWER CABLE
- MV POWER CABLE
- FIBRE OPTIC CABLE
- TRANSPOWER LINE
- VECTOR TRANSMISSION LINE
- COMM CABLES
- TELECOM
- GAS LINE
- TO BE ABANDONED
- EXISTING SEWER PREVIOUSLY ABANDONED
- DESIGNATION BOUNDARY
- PROPOSED ALL WEATHER TRAFFICABLE ACCESS
- PROPOSED AIR DUCT
- PROPOSED WATERMAIN
- BANK SLOPE
- PROPOSED RETAINING WALL

#### HOLDS:

- DESIGN OF VORTEX SHAFT, LOCATION OF SATELLITE MANHOLE AND DISCHARGE PIPE TO SHAFT TO BE CONFIRMED BY THE EMPLOYER.



CONSTRUCTION ISSUE

JACOBS AECOM JACOBS

Plot Date: Jan 15, 2021 - 11:46am C:\p\w\as\m\h\o\dms2365 - 2011806.045.dwg

ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	AC	08.20	DES. CHECKED	CW	08.20	DRAWN	SS	08.20	DWG. CHECKED	PMF	08.20	PROJECT LEADER	EB	08.20	INFRASTR. APP'D	SG	08.20	BY	DATE
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-	19.08.20	CONSTRUCTION ISSUE	SS	CW																				

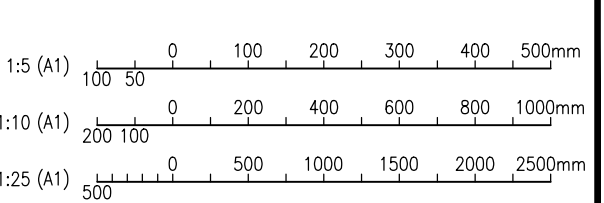
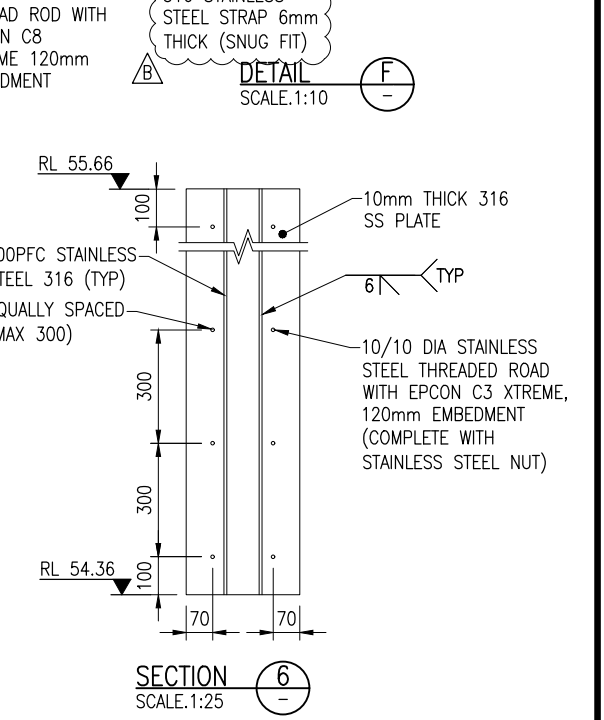
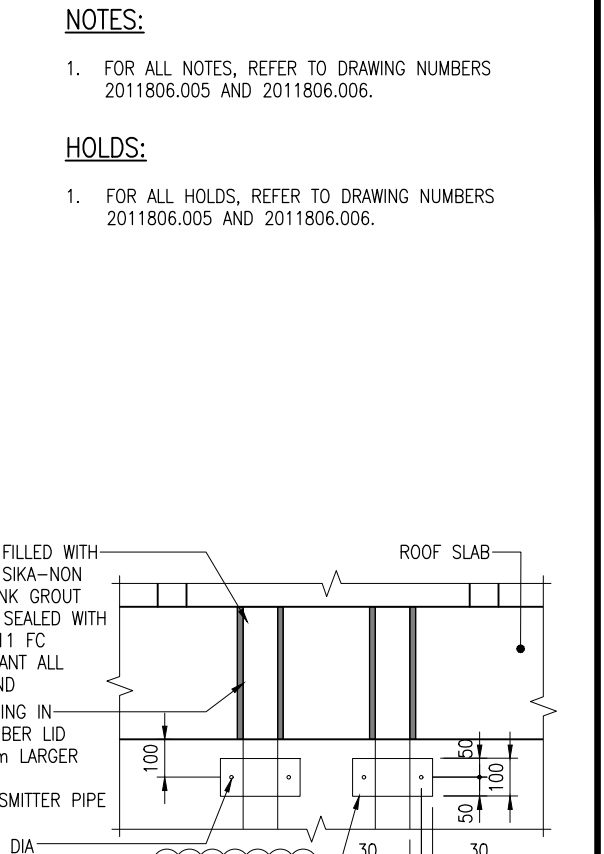
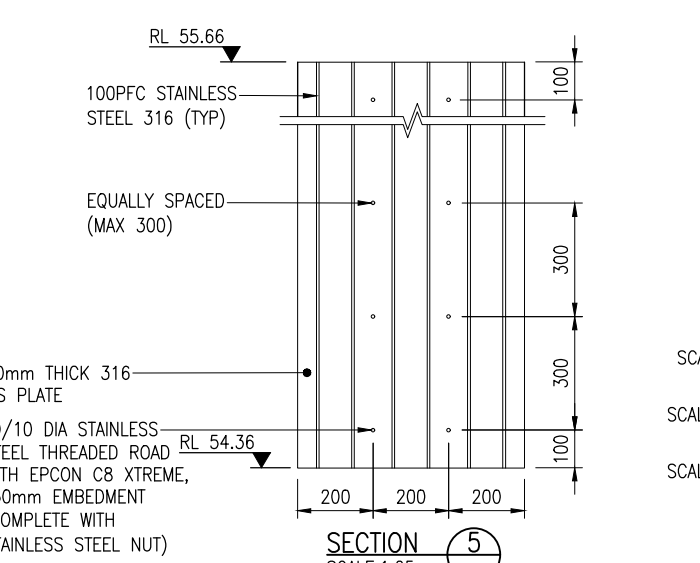
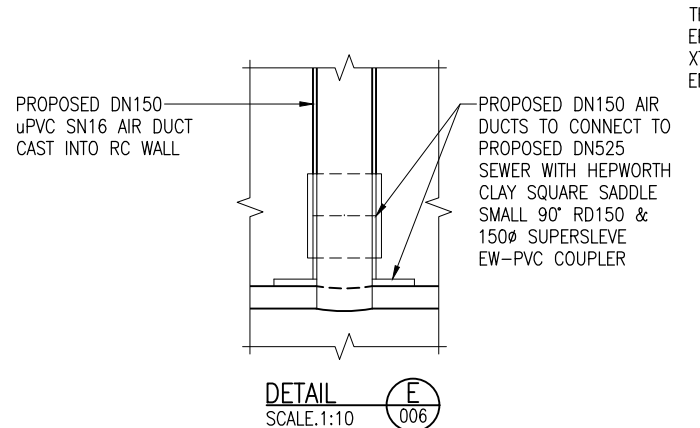
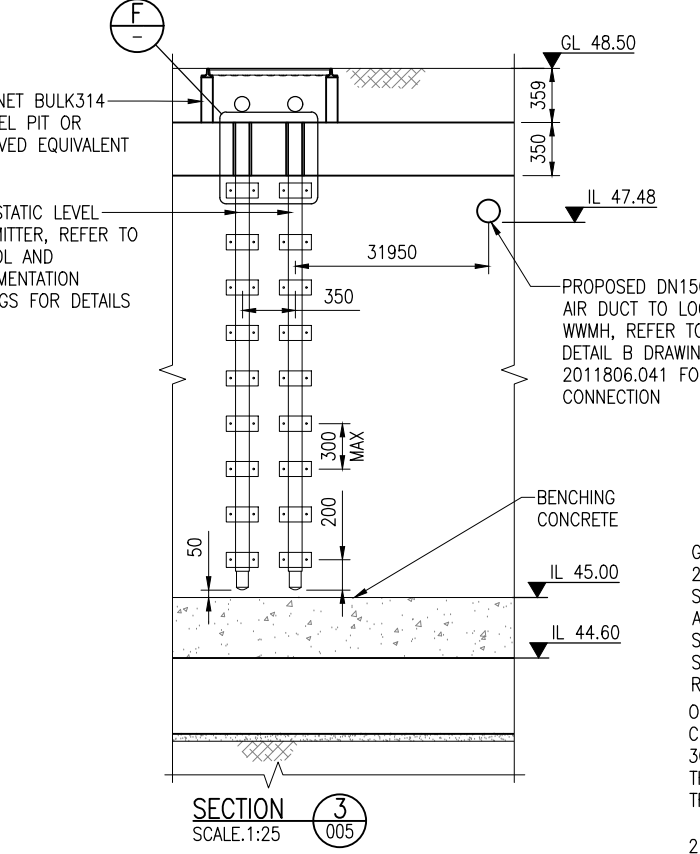
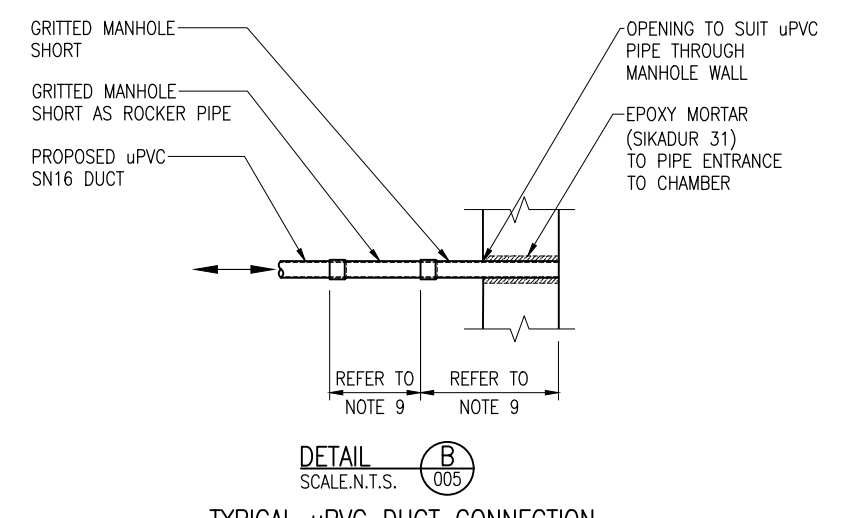
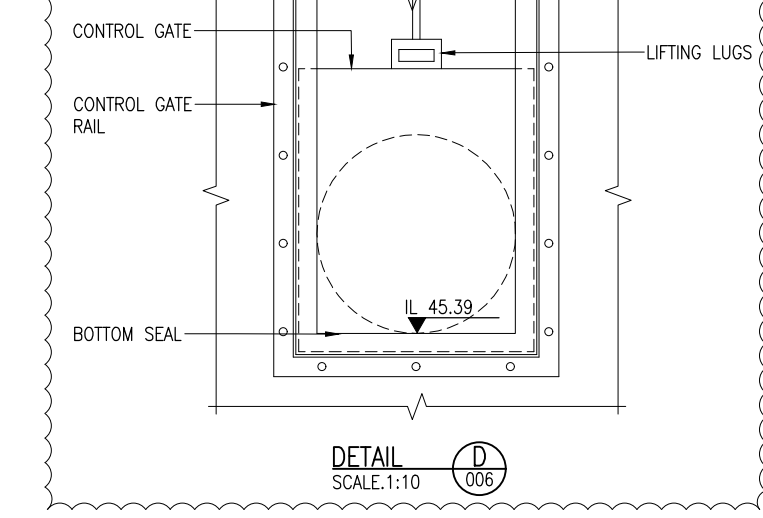
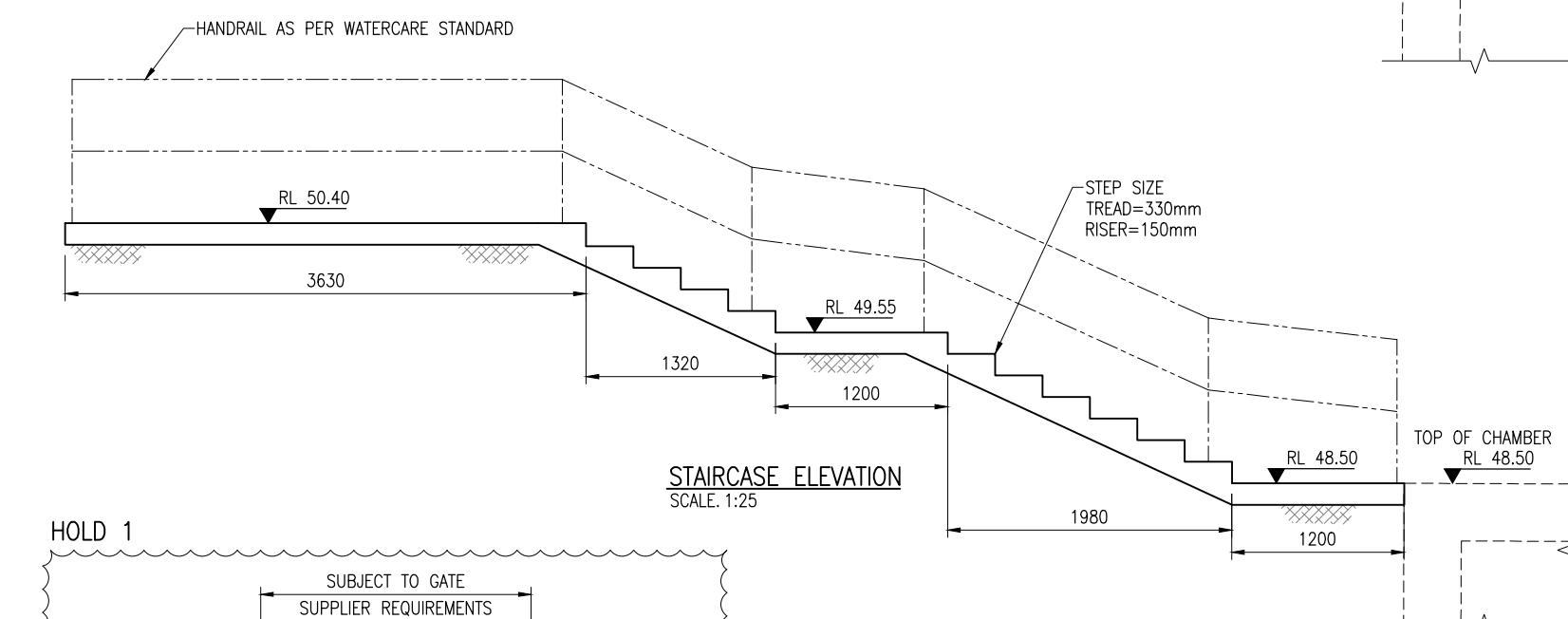
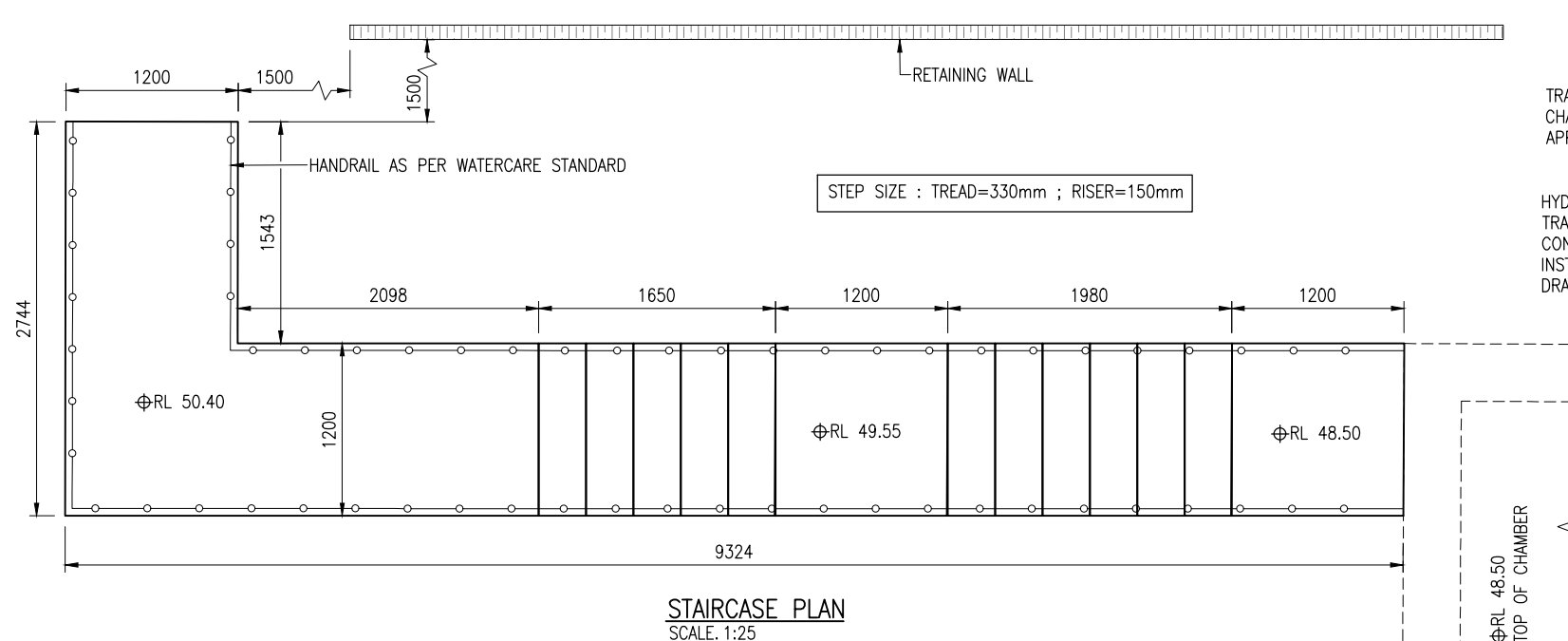
**Watercare**

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MAY RD - CENTRAL INTERCEPTOR (DSCIN)  
00 SITE GENERAL

PROPOSED AIR DUCT FROM MH-17A TO MH-04B PLAN AND LONGITUDINAL SECTION


CAD FILE 2011806.049	DATE 11.01.21
ORIGINAL SCALE A1	CONTRACT No. 6661
REF. No. CI-CIVIL	ISSUE
DWG. No. 2011806.049	A



- NOTES:**
- FOR ALL NOTES, REFER TO DRAWING NUMBERS 2011806.005 AND 2011806.006.
- HOLDS:**
- FOR ALL HOLDS, REFER TO DRAWING NUMBERS 2011806.005 AND 2011806.006.

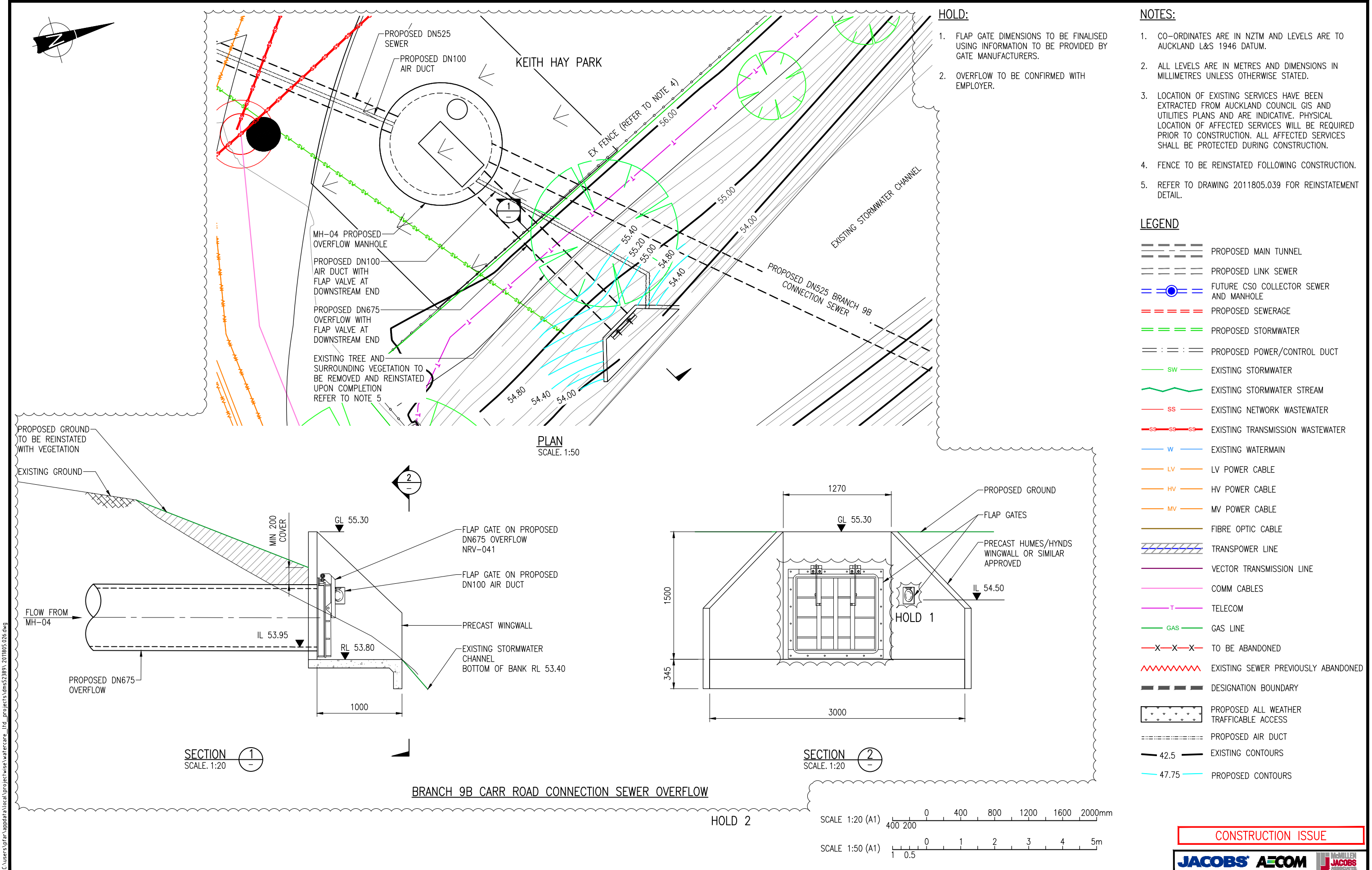
**CONSTRUCTION ISSUE**

**JACOBS AECOM**

				DESIGNED		CW	12.15	OPERATIONS	 <b>Watercare</b> <small>COPYRIGHT – This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.</small>	CAD FILE 2011806.041		DATE 11.01.21	
				DES. CHECKED		DJK	12.15			ORIGINAL SCALE A1 AS SHOWN		CONTRACT No. 6661	
				DRAWN		RLH	09.15						
B	11.01.21	IFC – ASSET TAG NUMBERS UPDATED, REVISED AS INDICATED		WIS	DJK	DWG. CHECKED		CW	12.15	INFRASTRUCTURE	REF. No. CI-CIVIL		ISSUE
A	21.07.20	REVISED CONSTRUCTION ISSUE		SS	CW	PROJECT LEADER		NK	08.17		DWG. No. 2011806.041		B
–	22.05.20	REVISED CONSTRUCTION ISSUE		SS	CW	INFRASTR'R APP'D		SG	08.17				
ISSUE	DATE	AMENDMENT		BY	APPD.		BY	DATE					



## **Proposed Keith Hay Park works**



**HOLD:**

1. FLAP GATE DIMENSIONS TO BE FINALISED USING INFORMATION TO BE PROVIDED BY GATE MANUFACTURERS.
2. OVERFLOW TO BE CONFIRMED WITH EMPLOYER.

**NOTES:**

1. CO-ORDINATES ARE IN NZTM AND LEVELS ARE TO AUCKLAND L&S 1946 DATUM.
2. ALL LEVELS ARE IN METRES AND DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
3. LOCATION OF EXISTING SERVICES HAVE BEEN EXTRACTED FROM AUCKLAND COUNCIL GIS AND UTILITIES PLANS AND ARE INDICATIVE. PHYSICAL LOCATION OF AFFECTED SERVICES WILL BE REQUIRED PRIOR TO CONSTRUCTION. ALL AFFECTED SERVICES SHALL BE PROTECTED DURING CONSTRUCTION.
4. FENCE TO BE REINSTATED FOLLOWING CONSTRUCTION.
5. REFER TO DRAWING 2011805.039 FOR REINSTATEMENT DETAIL.

**LEGEND**

- PROPOSED MAIN TUNNEL
- PROPOSED LINK SEWER
- FUTURE CSO COLLECTOR SEWER AND MANHOLE
- PROPOSED SEWERAGE
- PROPOSED STORMWATER
- PROPOSED POWER/CONTROL DUCT
- EXISTING STORMWATER
- EXISTING STORMWATER STREAM
- EXISTING NETWORK WASTEWATER
- EXISTING TRANSMISSION WASTEWATER
- EXISTING WATERMAIN
- LV POWER CABLE
- HV POWER CABLE
- MV POWER CABLE
- FIBRE OPTIC CABLE
- TRANSPOWER LINE
- VECTOR TRANSMISSION LINE
- COMM CABLES
- TELECOM
- GAS LINE
- TO BE ABANDONED
- EXISTING SEWER PREVIOUSLY ABANDONED
- DESIGNATION BOUNDARY
- PROPOSED ALL WEATHER TRAFFICABLE ACCESS
- PROPOSED AIR DUCT
- EXISTING CONTOURS
- PROPOSED CONTOURS

**CONSTRUCTION ISSUE**

**JACOBS AECOM**

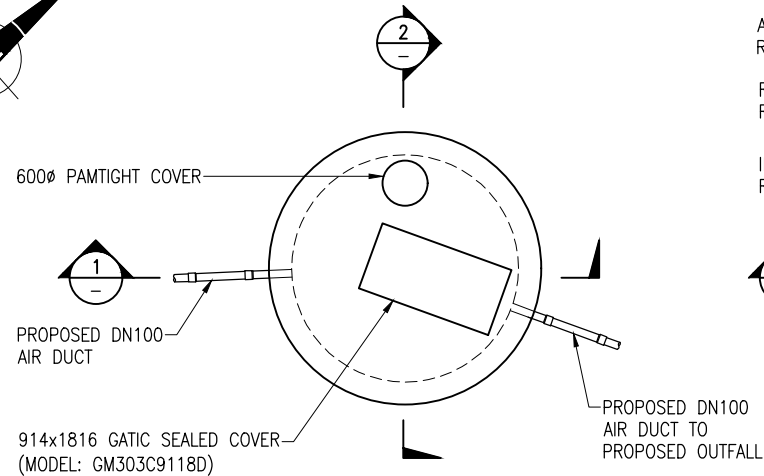
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DRAWN			RKH			11.16					
DWG. CHECKED			CW			11.16					
PROJECT LEADER			NK			08.17					
INFRASTR APP'D			SG			08.17					
BY			BY			DATE					
AMENDMENT			BY			DATE					
1			23.10.20			IFC - ASSET TAG NUMBERS UPDATED					
2			30.08.17			TENDER ISSUE					
3			19.05.17			ISSUED FOR CLIENT REVIEW					
4			09.12.16			RKH					
ISSUE			DATE			AMENDMENT					

KEITH HAY PARK – CI BRANCH SEWER 3 (DSC03)

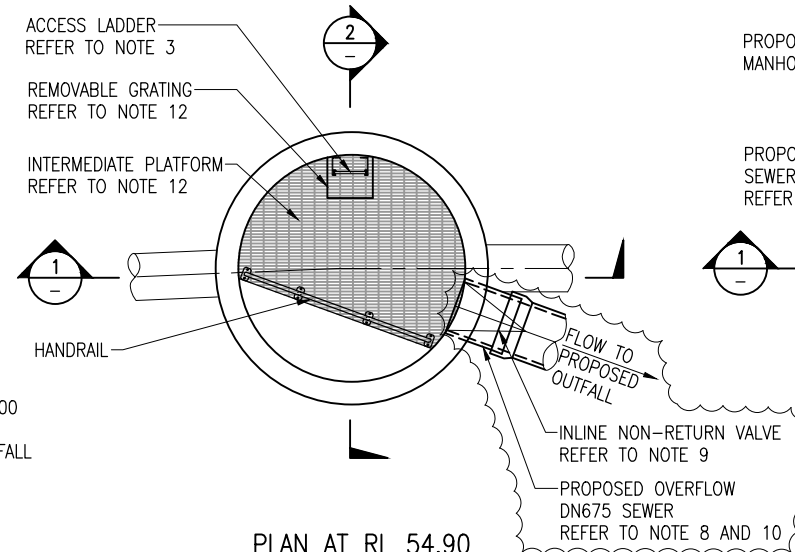
85 OVERFLOW

MH-04 OVERFLOW OUTFALL – PLAN AND SECTIONS

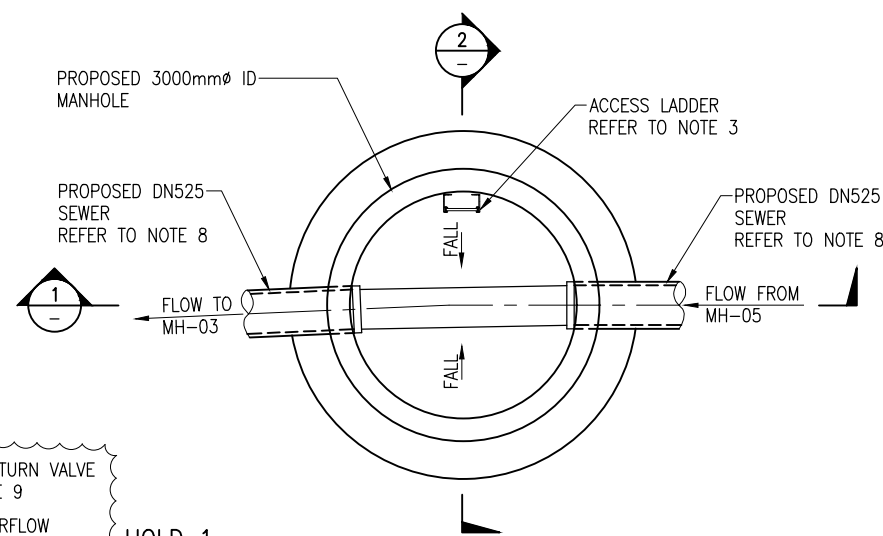
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ORIGINAL SCALE A1		CONTRACT No.	
AS SHOWN		6661	
REF. No.		CI-CIVIL	
DWG. No.		2011805.026	
		A	



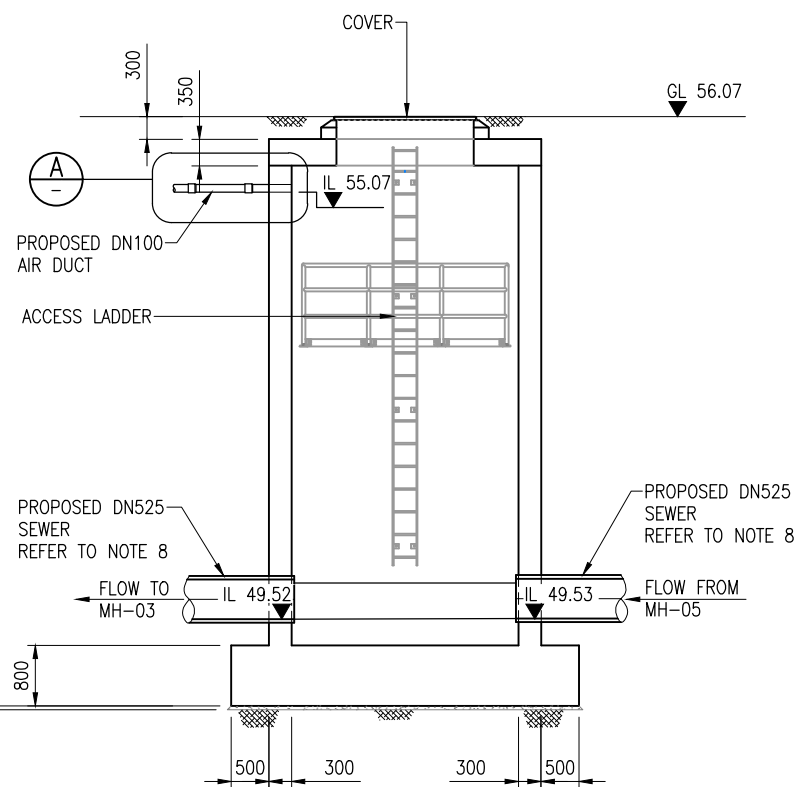
PLAN ON COVER SLAB  
SCALE: 1:50



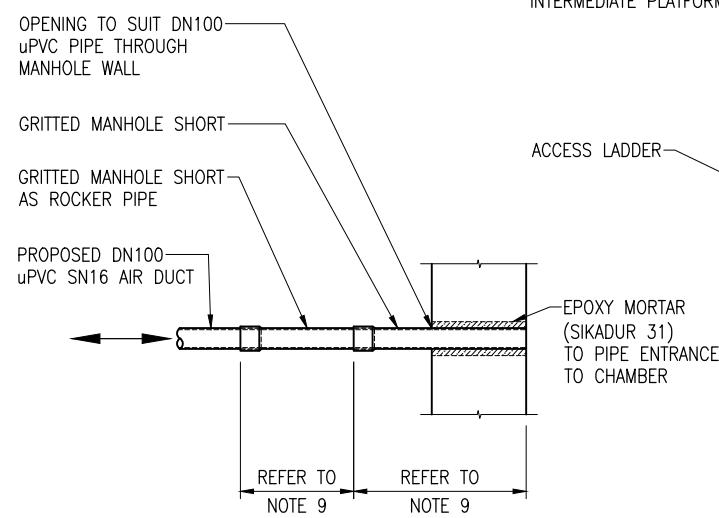
PLAN AT RL 54.90  
SCALE: 1:50



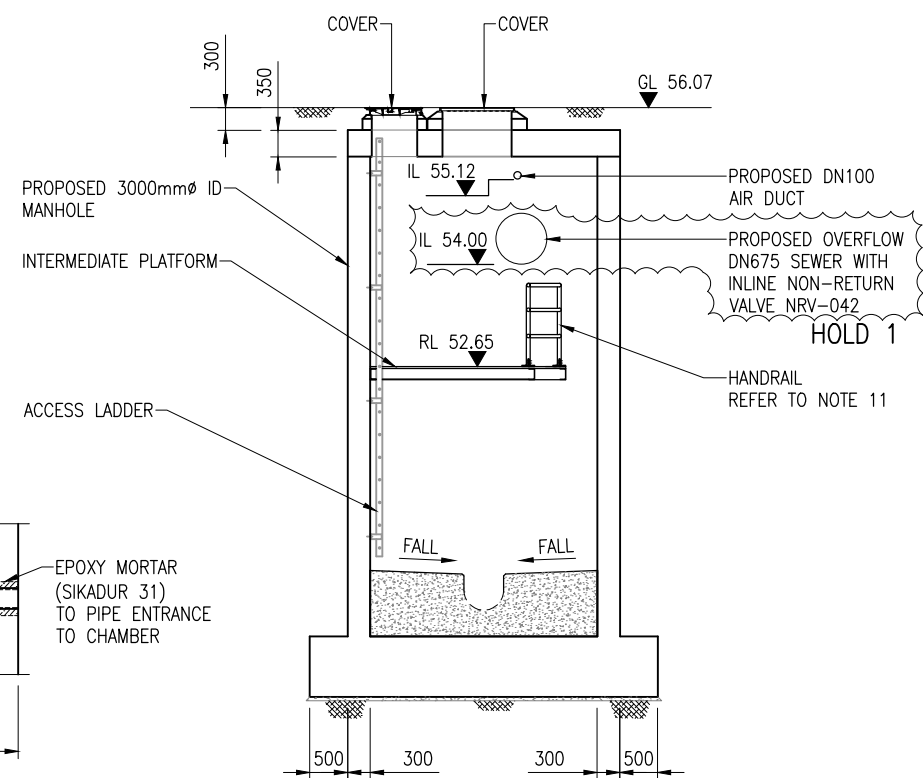
PLAN AT IL 49.44  
SCALE: 1:50



SECTION 1-1  
SCALE: 1:50



DETAIL A  
SCALE: 1:20



SECTION 2-2  
SCALE: 1:50

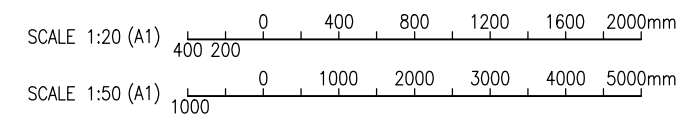
BRANCH 9B CARR ROAD CONNECTION SEWER

NOTES:

1. ALL LEVELS ARE IN METRES AND DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
2. CONCRETE COVER SLABS ON MANHOLES AND CHAMBERS SHALL BE HN-HO-72 RATED.
3. REFER TO WATERCARE STANDARD DRAWING 2000244.003 FOR DETAILS OF GALVANISED STEEL ACCESS LADDER.
4. ALL COVERS SHALL BE TRAFFICABLE AND HAVE INTEGRAL SAFETY GRILLES UNLESS OTHERWISE STATED.
5. BENCHING FALL SHALL BE 1:12 UNLESS OTHERWISE STATED.
6. ALL INTERNAL AND EXTERNAL CONCRETE ANGLES SHALL HAVE 25mm CHAMFERS OR FILLETS UNLESS OTHERWISE STATED.
7. REFER TO WATERCARE STANDARD DRAWINGS 2000244.001 TO 2000244.044 FOR GENERAL MANHOLE DETAILS.
8. REFER TO WATERCARE STANDARD DRAWING 2000244.014 FOR PIPE CONNECTION DETAILS.
9. FIXING DETAIL OF INLINE NON-RETURN VALVE TO BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
10. REFER TO DRAWING 2011805.033 FOR ROCKER PIPE DETAILS.
11. REFER TO WATERCARE STANDARD DRAWING 2001979.049 FOR HANDRAIL DETAILS.
12. REFER TO STRUCTURAL DRAWINGS FOR PLATFORM AND REMOVABLE GRATING DETAILS.


HOLD:

1. OVERFLOW TO BE CONFIRMED WITH EMPLOYER.



CONSTRUCTION ISSUE

JACOBS AECOM

B 23.10.20 IFC - ASSET TAG NUMBERS UPDATED - DRAWING REINSTATED			WIS	CW	DESIGNED	CW	08.16	OPERATIONS	 COPYRIGHT - This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.	KEITH HAY PARK - CI BRANCH SEWER 3 (DSC03)			CAD FILE 2011805.025		DATE 23.10.20	
A 07.06.19 CONSTRUCTION ISSUE			PMF	EB	DES. CHECKED	DJK	08.16			82 GRAVITY SEWER INCLUDING MANHOLES			ORIGINAL SCALE A1 AS SHOWN		CONTRACT No. 6661	
- 30.08.17 TENDER ISSUE			PJG	NK	DRAWN	PJG	08.16			MH-04 OVERFLOW MANHOLE - PLANS AND SECTIONS			REF. No. CI-CIVIL		ISSUE	
2 19.05.17 ISSUED FOR CLIENT REVIEW			PJG	DK	DWG. CHECKED	CW	08.16						DWG. No. 2011805.024		B	
1 09.12.16 ISSUED FOR CLIENT REVIEW			AP	DJK	PROJECT LEADER	NK	08.17									
ISSUE	DATE	AMENDMENT	BY	APPD.			DATE	INFRASTRUCTURE								

