

INFRASTRUCTURE REPORT

COVID-19 RECOVERY FAST TRACK ACT 2022 - CONSENTING REFERRAL APPLICATION

105-107 TOTARA ROAD, WHENUAPAI, AUCKLAND

October 2022

1. Introduction

This infrastructure report is to accompany a Covid-19 Recovery Fast-track Consenting referral application for a site located at 105-107 Totara Road, Whenuapai, Auckland. Its purpose is to document the initial civil infrastructure investigations and concept design to outline how the site can be developed and should be read in conjunction with the other specialist site reports.

This report will reference the “Whenuapai Green” development, being another Neil Group Covid-19 Recovery Fast-track project accepted in May 2022 (Order No9, Schedule 53). Currently this Whenuapai Green development is being prepared for Resource Consent lodgement and puts in place much of the infrastructure which will be extended to also service this 105-107 Totara Road located development.

2. Earthworks

Existing Site

The 14.6ha site’s developable area currently has a rolling topography falling 9m in total from RL:15m in the south, to RL:8m & 6m in the north and west respectively.



Site outline and contours. (AC GIS and Google Maps)

Generally, the site has two equal sized topography catchments. The eastern side of the site’s catchment falls from the south to the north to the neighbouring 99 Totara Road, via a contoured shallow valley that contains a wetland. The western side of the site’s catchment generally falls from the north-south mid-line of the site to the west, directly to the Waitemata harbour.

Proposed Earthworks.

To develop the site, earthworks are required to form the graded roading network, undertake allotment shaping and manage stormwater and wastewater flows. It is proposed the site will still have two topographical catchments, with the site still generally grading from south to the north and west.

No earthworks are proposed in the vicinity of the existing wetland.

A cut to fill earthworks balance of 60,000m³ is expected, with no fill material being imported or exported from the site. Details of the proposed earthworks are shown on drawing GN-210 in Appendix A.

Earthwork methodologies and procedures in accordance with Auckland Council Erosion and Sediment Control Guidelines (GD05) will be adhered to.

3. Stormwater

Existing Stormwater

The site has two stormwater catchments, being an eastern area that contains a wetland and drains towards 99 Totara Road and ultimately the Waitemata Harbour, and the western catchment, that drain directly to the Waitemata Harbour Rarawaru Creek.

As expected, given the size and topography of the site, existing flood prone and plain areas are present on and adjacent the site, as shown on drawing GN-494 in Appendix A.

Existing stormwater infrastructure in the area is limited to roading table drains and piped road crossings on McKean and Totara Road, as shown on drawing GN-494 in Appendix A.

Proposed Stormwater*Stormwater management:*

The site when developed will still have two stormwater catchments, and as they discharge to different locations and environments, they have different stormwater volume retention and detention management requirements. Despite the two catchments, stormwater management will be undertaken to meet SMAF 1 requirements of the Auckland unitary Plan E10, as detailed on drawing GN-494 in Appendix A.

Wetland stormwater management:

For wetland protection, the existing eastern catchment size is proposed to be modified to ensure pre and post development stormwater base flows are similar, as detailed on drawing GN-494 in Appendix A

Primary stormwater network:

Irrespective of the stormwater catchment, a new public 10yrAEP piped primary stormwater network is proposed to service all new allotments, existing and new roads.

Secondary / 100yr stormwater network:

Irrespective of the stormwater catchment, new and existing roads are proposed to convey overland flows. The proposed development roading layout and earthworks also will allow for the containment and conveyance of the existing overland flows, flood prone and plain areas within and through the site.

Stormwater treatment:

As this is a residential development, the only area needing stormwater treatment is the existing Totara Road upgrade, as this is a high-use road with over 5000 vehicle movements per day.

Existing stormwater network:

Existing roading table drains and piped road crossings on McKean and Totara Road will be removed or replaced where necessary as part of the roading upgrade works.

Details of the proposed stormwater strategy and works are shown on drawing GN-492 and GN-494 in Appendix A.

4. Roding

Existing Roding

McKean Road to the south of the site is a narrow dead-ended rural road with no kerbs or footpaths. Totara Road to the east is the main road servicing this northern part of Whenuapai, has two sealed travel lanes, table drainage and a narrow concrete shared path used by cyclists and pedestrians on its western side.



McKean Road – looking west from Totara Road intersection. (Google Maps)



Totara Road – looking north from McKean Road intersection. (Google Maps)

Both McKean and Totara Road in the vicinity of this development have a posted speed limit of 80km/hr.

It is noted that Totara Road is already an Auckland Transport bus route.

Proposed Roding

It is proposed to upgrade and rebuild the existing Totara and McKean Roads where adjacent the site to urban road Auckland Transport standards. McKean Road would be upgraded to have two traffic lanes, kerbs, and a pedestrian footpath. Totara Road would be upgraded to have two traffic lanes, a central flush median, kerbs, cycleway, and pedestrian footpaths. New public internal development roads are proposed to be 16m and 18m wide urban roads. These upgraded and new roads are similar to the existing urban roads and upgrade sections of Totara Road in the Whenuapai area. Details of the proposed road cross sections are shown on drawing GN-311 in Appendix A.

Speed limits:

The Whenuapai Green development proposes to reduce the speed limit of Totara Road to a maximum of 50km/h to the northern boundary of its development. This development proposes to further extend this maximum 50km/h speed zone past the development site along Totara Road to its northern boundary. It is also proposed to reduce the speed limit of McKean Road to a maximum of 50km/h. All new development roads would have a maximum speed limit of 30km/h.

Bus stops:

It is expected additional bus stops will be added as part of the Totara Roads upgrade to service the development.

Details of the proposed roading works are shown on drawings GN-310 and GN-311 in Appendix A.

5. Waterwater

Existing Wastewater

Existing wastewater in the area is limited to private septic system servicing individual dwellings.

Proposed Wastewater

It is proposed to service the development via a public gravity network to the proposed Whenuapai Green Pumping Station, sized for this development and located at the end of McKean Road. The new public reticulated wastewater network will be designed to Watercare Standards and vested in Council. It is also proposed to remove and remediate all the existing septic systems on the development site.

Details of the proposed wastewater works are shown on drawing GN-592 in Appendix A.

6. WATER SUPPLY

Existing Water Supply

Existing reticulated public water supply is installed along McKean Road and Totara Road adjacent the site. However, this existing system is undersized for new development.

Proposed Water Supply

To supply the development, it is proposed to extend the proposed 315mmdia watermain installed as part of Whenuapai Green along Totara Road to the development's northern boundary. It is also proposed to replace the existing McKean Road watermain and install new reticulated watermains within the development site. All new water mains will be located within public road reserves, designed to Watercare Standards and vested in Council.

We are also aware of external watermain upgrades needed to provide further capacity to the existing 315mm watermain along Totara Road, being a pipe upgrade near the intersection of Brigham Creek and Hobsonville Road and on Fred Taylor Drive.

We have been told by Watercare that these capacity works are needed for all future new development in the Whenuapai area, therefore, at time of development of this site, if these works have not already been undertaken by others, The Neil Group will fund and undertake these works to provide the necessary capacity relief.

Details of the proposed water supply works are shown on drawing GN-692 in Appendix A.

7. Other Utility Services

Electrical:

Discussions and details of the development have been provided to Vector. They have confirmed they are able to service this development with confirmation provided in Appendix B.

Existing overhead power supplies would be underground and upgraded as part of any adjacent road upgrades.

Telecommunications:

Discussions and details of the development have been provided to Chorus, as shown in Appendix B. Although still awaiting formal written confirmation, we are confident this development can be serviced via a network extension along Totara Road from the Whenuapai Green developments new telecommunications network.

Existing overhead telecommunication supplies would be undergrounded and upgraded as part of any adjacent road upgrades.

Gas:

Existing reticulated gas is not available in the area. It is not proposed to install reticulation gas within this development.

Street lighting:

This development will have street lighting on new and adjacent existing roads in accordance with Auckland Transport standard and requirements.

8. CONCLUSION

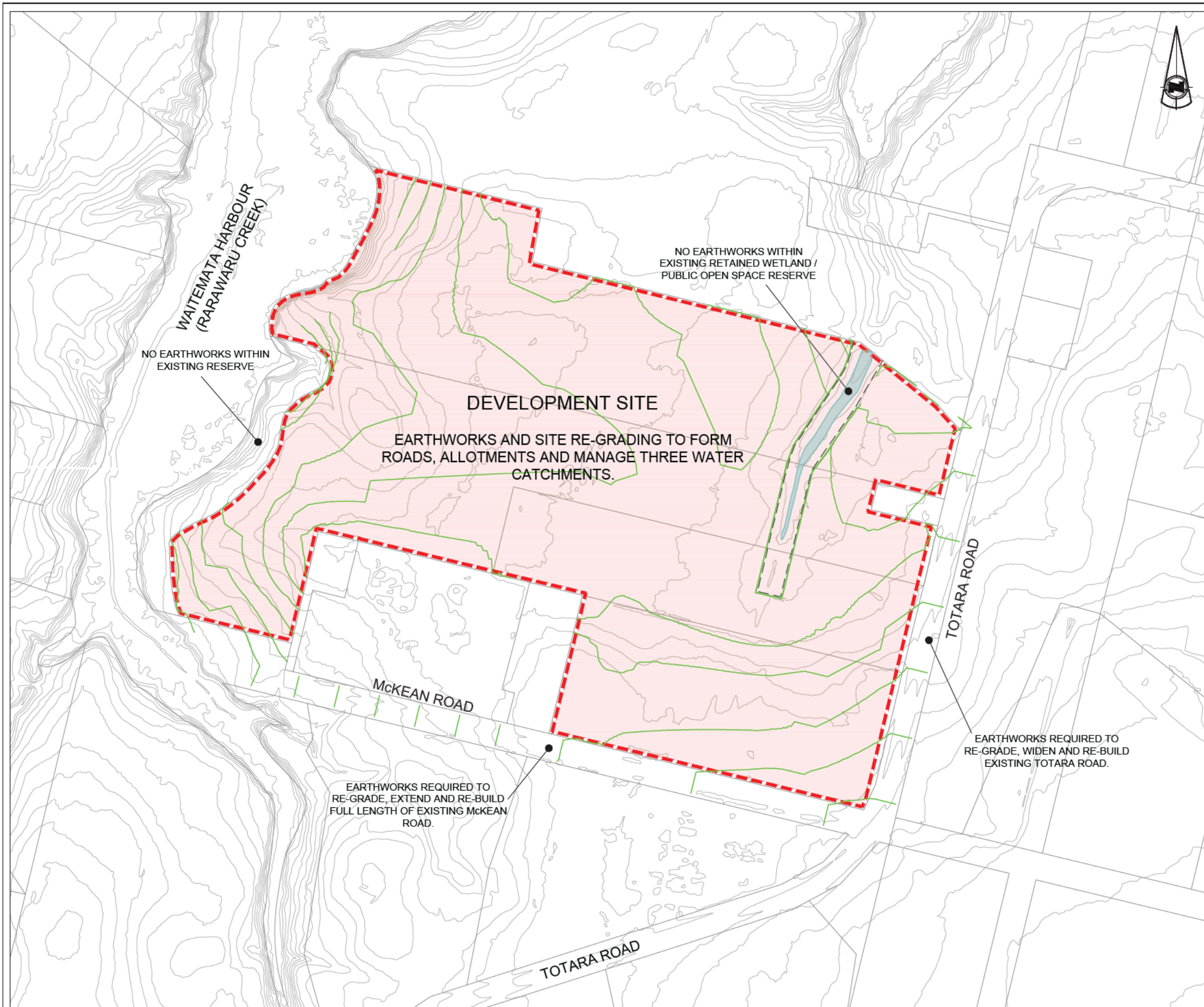
The purpose of this report is to accompany a Covid-19 Recovery Fast-track Consenting referral application. In undertaking the initial civil infrastructure investigation and concept design, on the assumption the Whenuapai Green development progresses, nothing has been uncovered to suggest the site cannot be serviced or developed.

Report prepared by:

Chris Kennedy
Engineering Design Manager
Neil Construction Ltd.
PH: 09 918 6565 / s 9(2)(a)

APPENDIX A

DRAWINGS



LEGEND:

- DEVELOPMENT SITE
- EXISTING CONTOURS (1m)
- PROPOSED CONTOURS (1m)

TOTAL EARTHWORKS AREA: (INCL EX ROADS)	16.2ha
TOTAL EARTHWORKS VOLUME: (CUT TO FILL / SITE BALANCE)	60,000m3

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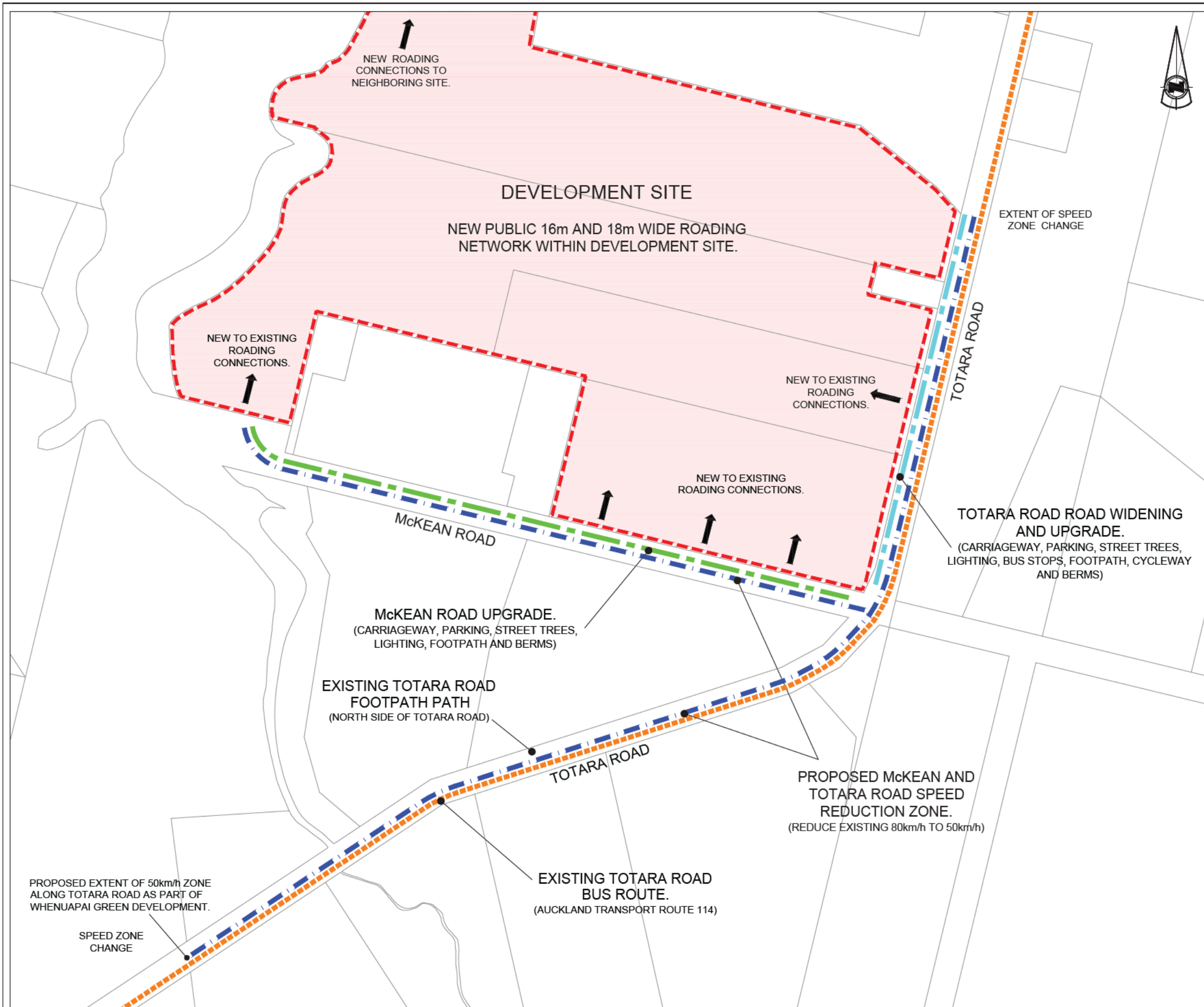
PO BOX 8751, SYMONDS STREET
AUCKLAND, NEW ZEALAND

TELEPHONE: +64 9 918 8565
FACSIMILE: +64 9 918 8567
WEB: www.neilgroup.co.nz

Job Title
105-107 TOTARA ROAD

Drawing Title
EARTHWORKS

By	Date	Scale	Job No.	Rev
Surveyed: -		1:3000@A3	Drawing No.	
Designed: CK			4340-01-GN-210	A
Drawn: CK	09/22			
Approved: CK				
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LEGEND:

- DEVELOPMENT SITE
- - - PROPOSED SPEED ZONE CHANGE
- PROPOSED EXISTING McKEANS AND TOTARA ROAD UPGRADES
- EXISTING AUCKLAND TRANSPORT BUS ROUTE

NOTES:

SEE ROADING TYPICAL CROSS SECTIONS FOR FURTHER ROADING, ROAD WIDENING AND UPGRADE DETAILS.

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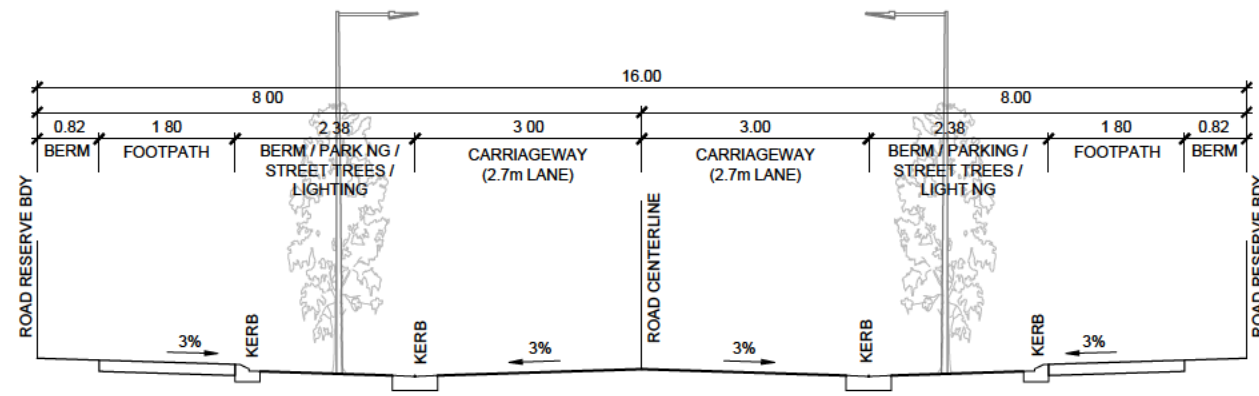
Job Title

105-107 TOTARA ROAD

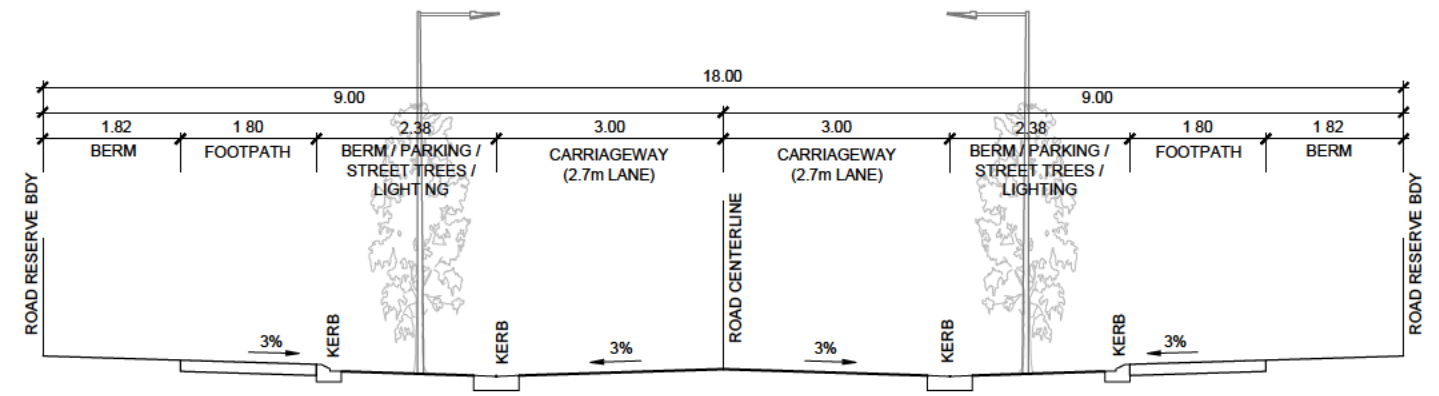
Drawing Title

ROADING
LOCATION PLAN

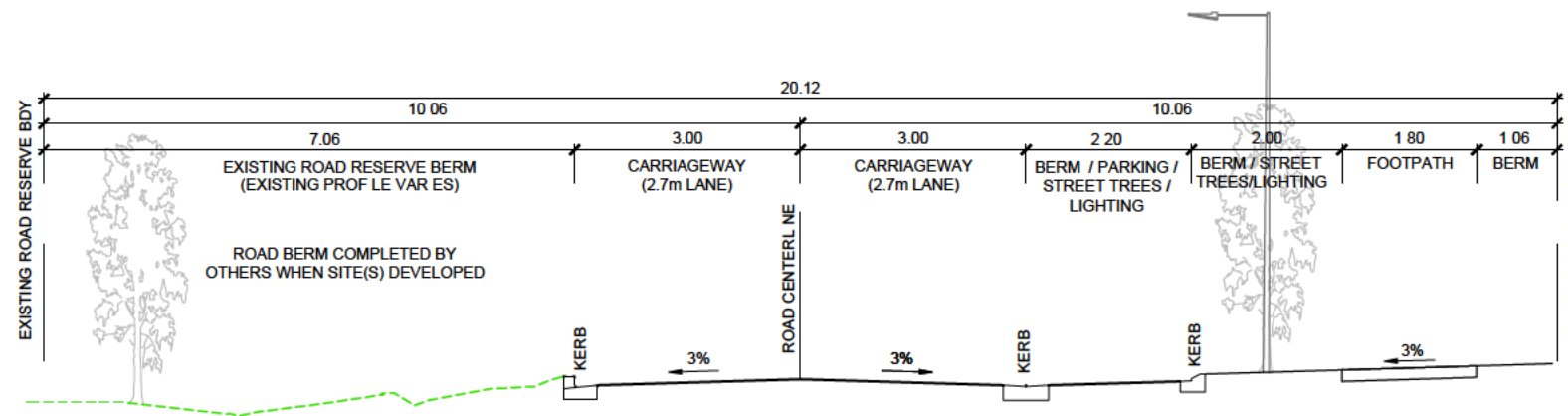
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PROPOSED NEW 16m WIDE LOCAL ROAD
(NEW INTERNAL ROADS)



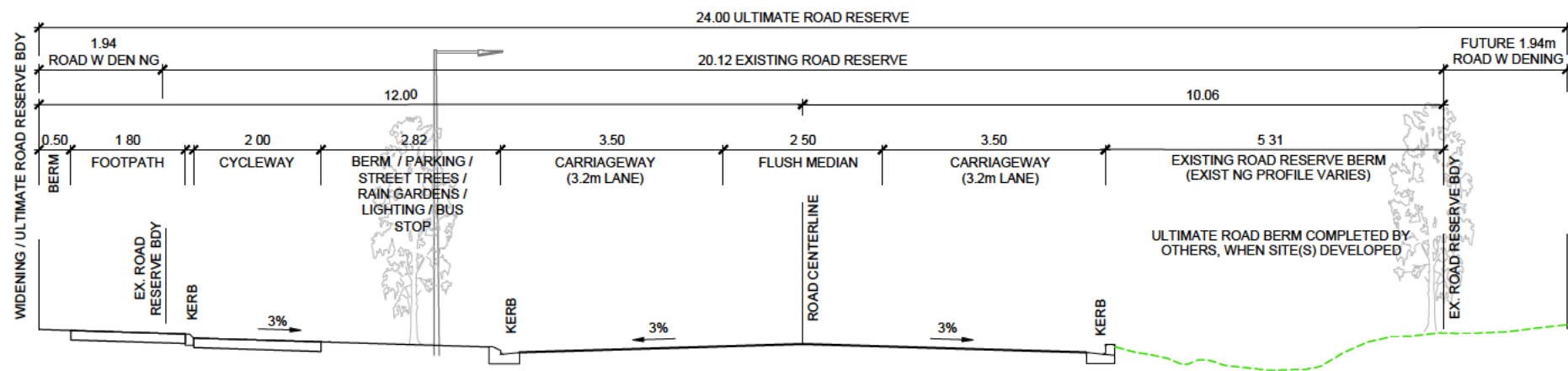
PROPOSED NEW 18m WIDE LOCAL ROAD
(NEW INTERNAL ROADS)



(SOUTHERN SIDE)

EXISTING McKENAN ROAD UPGRADE
(EXISTING 20.12m WIDE ROAD)

(NORTHERN / DEVELOPMENT SIDE)



(WESTERN / DEVELOPMENT SIDE)

EXISTING TOTARA ROAD WIDENING AND UPGRADE
(EXISTING 20.12m WIDE ROAD,
ULTIMATELY WIDENED TO 24m)

(EASTERN SIDE)

NOTES:

SEE ROADING LOCATION PLAN FOR ADDITIONAL ROADING DETAILS.

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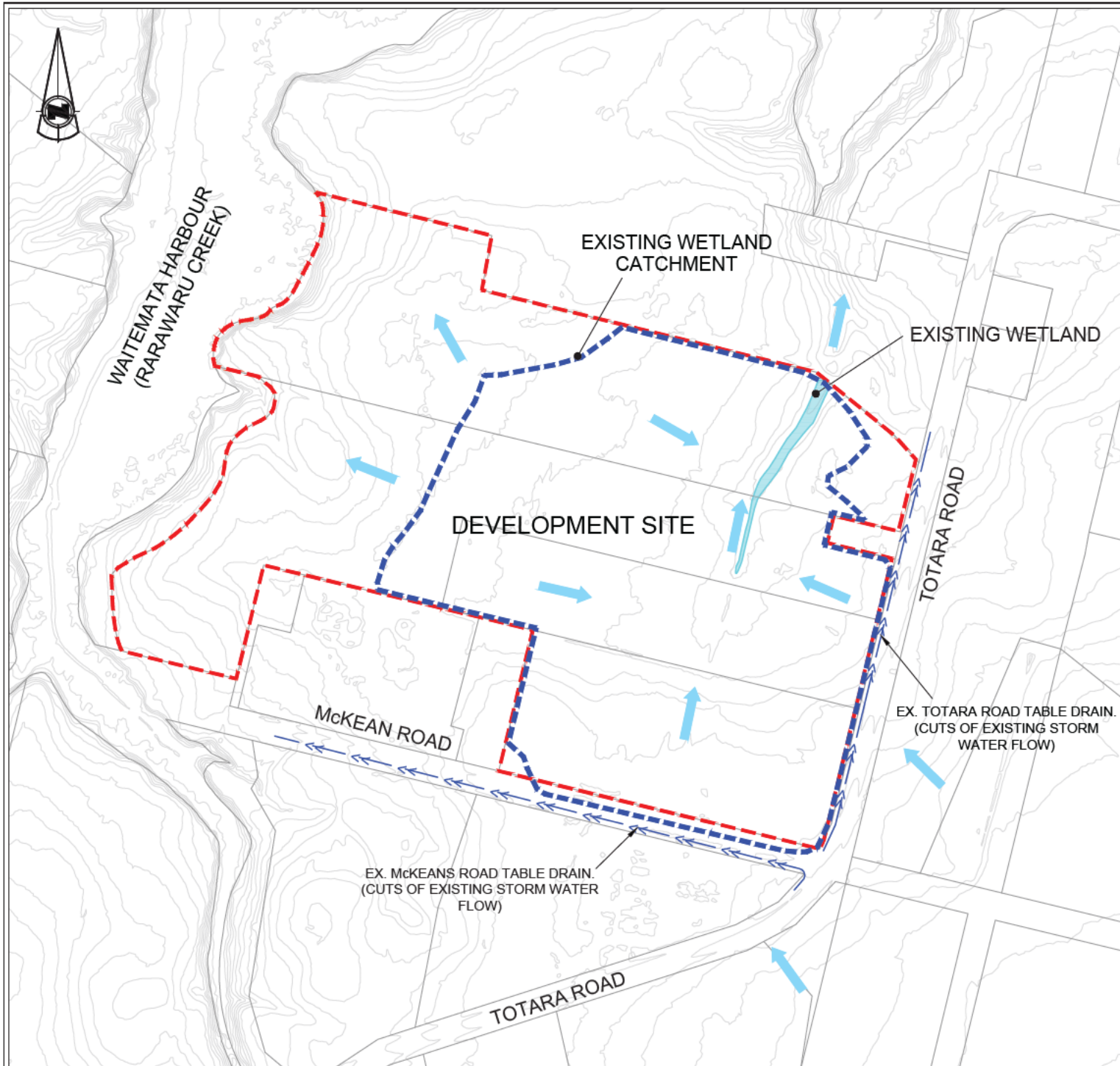
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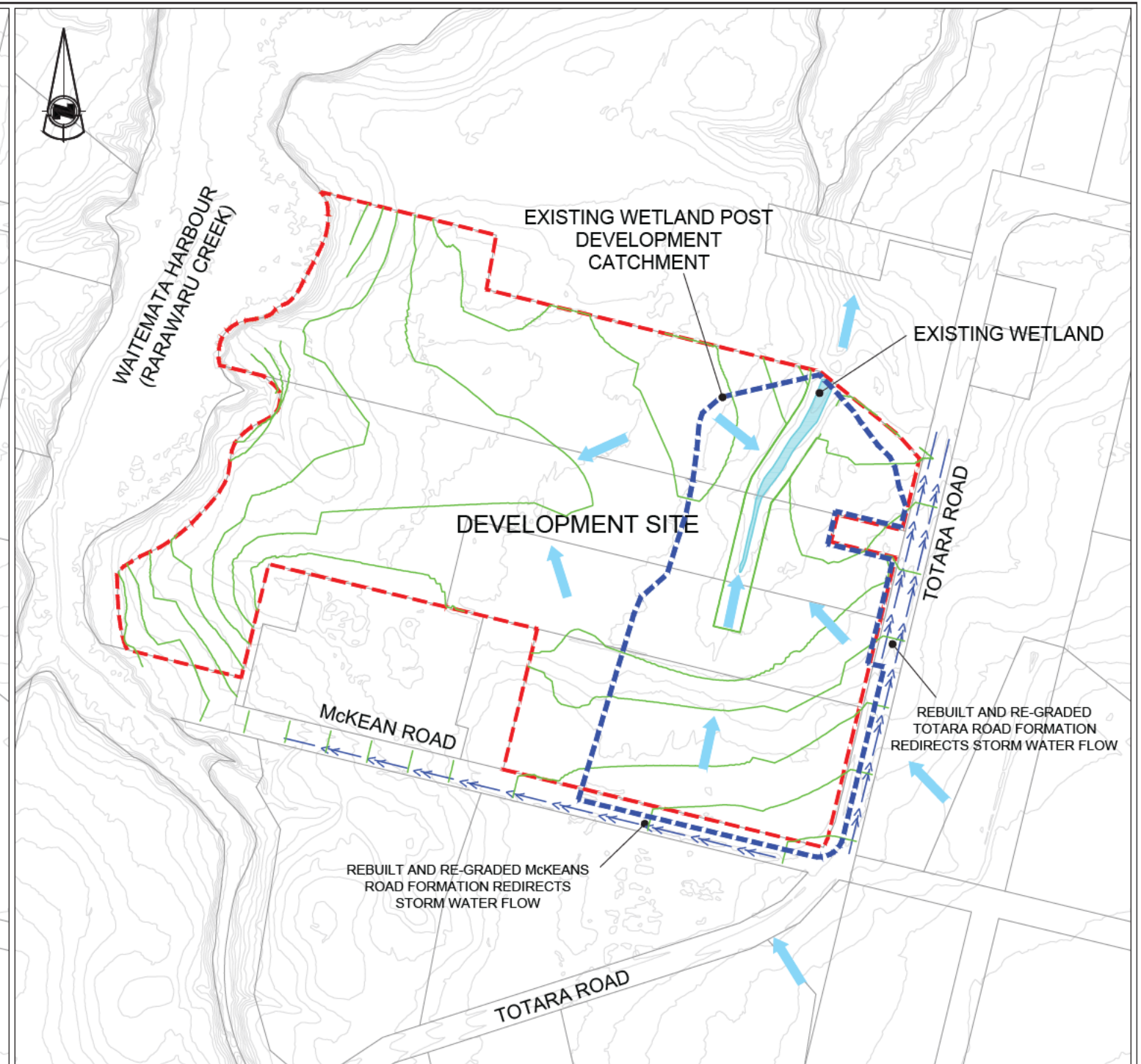
Job Title
105-107 TOTARA ROAD

Drawing Title
ROADING TYPICAL CROSS SECTIONS

By	Date	Scale	Job No.	Rev
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EXISTING / PRE DEVELOPMENT WETLAND CATCHMENT



PROPOSED / POST DEVELOPED WETLAND CATCHMENT

Flows to Wetland Assessment:

Storm Event:	Pre Development Flows	Post Development Flows
10 Year (10% AEP)	1.2 m3/s	1.3 m3/s

Wetland Flow Commentary: Pre and Post Development Storm Water Inflows are similar, therefore not drying out or inundating the existing wetland.

Legend:

- EXISTING CONTOURS (1m)
- DEVELOPMENT BOUNDARY
- PRE AND POST WETLAND CATCHMENT BOUNDARY
- PROPOSED CONTOURS (1m)
- PRE AND POST CATCHMENT CHANNELS
- STORM WATER FLOW DIRECTIONS

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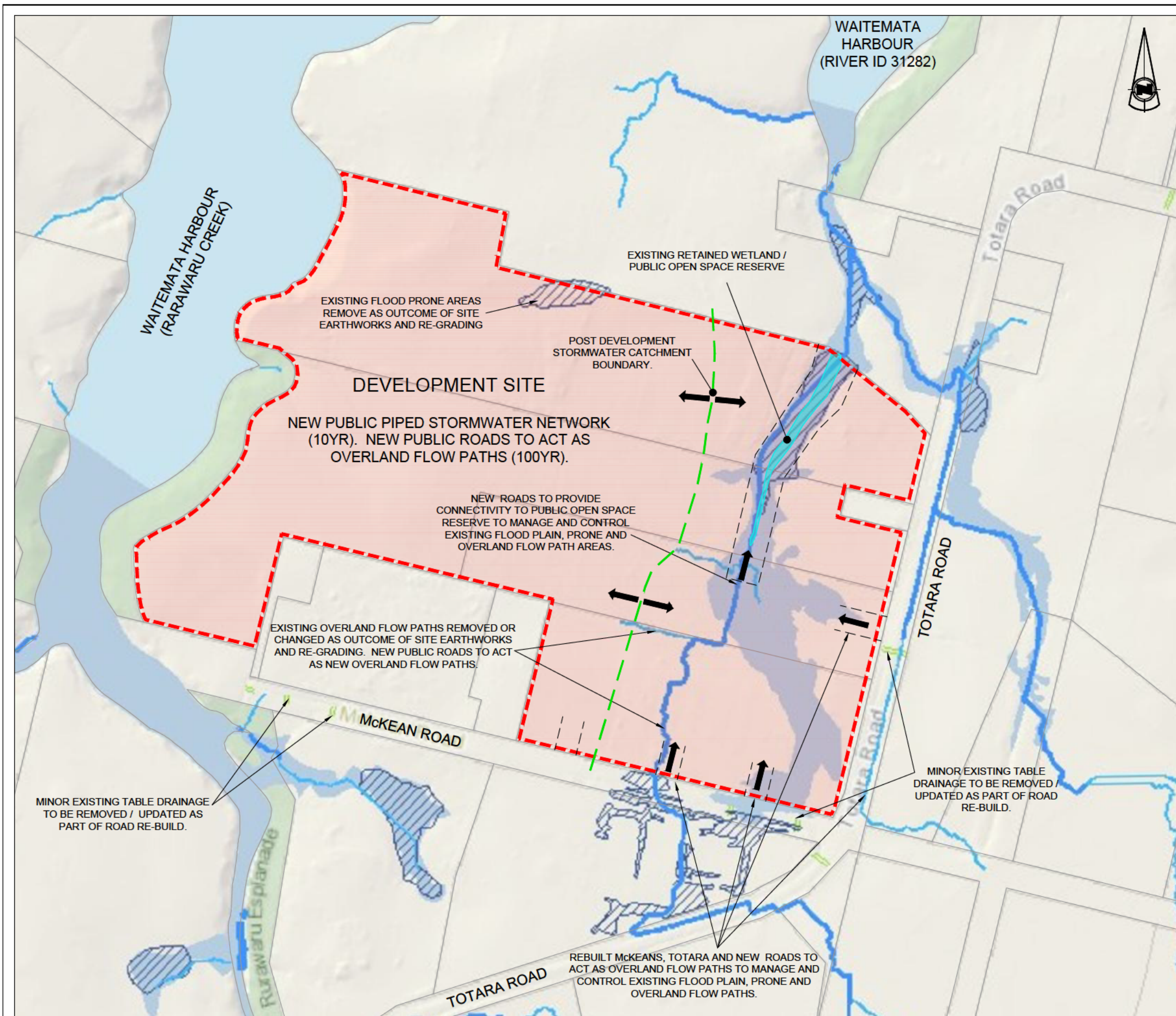
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Job Title
105-107 TOTARA ROAD

Drawing Title
STORMWATER EXISTING WETLAND CATCHMENT WITHIN DEVELOPMENT AREA

By	Date	Scale	Job No.	Rev
Survised: -		1:4000@A3	Drawing No.	
Designed: CK			4340-01-GN-492	A
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LEGEND:

--- DEVELOPMENT SITE

FLOOD PLAIN AREAS

THE FLOOD PLAINS INDICATE THE AREA OF LAND INUNDATED BY RUNOFF IN A 100 YEAR (1% AEP) STORM EVENT ASSUMING MAXIMUM PROBABLE DEVELOPMENT (MPD) AND FUTURE CLIMATE CHANGE. DATA, DETAILS AND MODEL FROM AUCKLAND COUNCIL GIS STORMWATER HYDRAULIC MODELING TEAM.

FLOOD PRONE AREAS

FLOOD PRONE AREAS ARE POTENTIAL PONDING AREAS THAT MAY FLOOD AND COMMONLY COMPRISE OF TOPOGRAPHY DEPRESSION AREAS. THESE AREAS CAN BE NATURALLY OCCURRING OR AS A RESULT OF CONSTRUCTED FEATURES WHICH ACT AS EMBANKMENTS. DATA, DETAILS AND MODEL FROM AUCKLAND COUNCIL GIS, HEALTHY WATERS, GEOSPATIAL, WSP.

OVERLAND FLOW PATHS (>1ha)

OVERLAND FLOW PATHS MAPPED BY AUCKLAND COUNCIL LIDAR DATA USING GIS TECHNIQUES AND NOT BASED ON HYDRAULIC MODELING. EXISTING AND FUTURE DEVELOPMENT SCENARIOS WITH CLIMATE CHANGE ARE CONSIDERED. DETAILS FROM AUCKLAND COUNCIL GIS, HEALTHY WATERS, GEOSPATIAL.

STORMWATER MANAGEMENT SUMMARY:

EXISTING STORMWATER INFRASTRUCTURE:
APART FROM EXISTING MINOR ROAD TABLE DRAINAGE ON MCKEANS AND TORARA ROAD, THE DEVELOPMENT DOES NOT PROPOSE OR NEED TO UPGRADE ANY EXISTING STORMWATER INFRASTRUCTURE.

NEW STORMWATER INFRASTRUCTURE:
PUBLIC 10YR (10% AEP) PIPED STORMWATER INFRASTRUCTURE TO BE CONSTRUCTED IN THE DEVELOPMENT TO SERVICE ALLOTMENTS, NEW AND EXISTING ROADS.

100 YEAR OVERLAND FLOWS:
UNCHANGED EXISTING OVERLAND FLOW PATHS OR NEW AND EXISTING ROADS WILL ACT AS THE PRIMARY 100yr (1% AEP) OVERLAND FLOW PATHS IN THE DEVELOPMENT.

STORMWATER DISCHARGE AND CATCHMENTS:
SITES STORMWATER DISCHARGES TO TWO CATCHMENTS:

1. NORTH VIA AN EXISTING STREAM TO THE WAITEMATA HARBOUR RIVER ID 31282.
2. WEST DIRECTLY TO THE WAITEMATA HARBOUR RARAWARA CREEK.

WITH EACH CATCHMENTS NEEDING STORMWATER TO BE MANAGED FOR RETENTION AND DETENTION DIFFERENTLY, IN ACCORDANCE WITH AUP SMAF 1 REQUIREMENTS.

WHEN DISCHARGING TO 1. THE WAITEMATA HARBOUR RIVERID 31282:

VOLUME REDUCTION (5mm):
FROM LOTS WILL NEED TO BE MANAGED ON SITE
FROM ROADS WILL NEED TO BE MANAGED ON SITE

EXTENDED DETENTION VOLUME (APPROX 35mm):
FROM LOTS WILL NEED TO BE MANAGED ON SITE
FROM ROADS WILL NEED TO BE MANAGED ON SITE

100YR:
WILL NEED TO BE INVESTIGATED TO NOT IMPACT EXISTING DOWNSTREAM HABITABLE SPACES.

WHEN DISCHARGING TO 2. THE WAITEMATA HARBOUR RARAWARA CREEK:

VOLUME REDUCTION (5mm):
FROM LOTS WILL NEED TO BE MANAGED ON SITE
FROM ROADS WILL DISCHARGE DIRECT TO COAST

EXTENDED DETENTION VOLUME (APPROX 35mm):
FROM LOTS WILL DISCHARGE DIRECT TO COAST
FROM ROADS WILL DISCHARGE DIRECT TO COAST

100YR:
WILL NOT HAVE TO BE DETAINED, AS DISCHARGES DIRECT TO COAST

STORMWATER TREATMENT:
AS THE DEVELOPMENT IS RESIDENTIAL, THE ONLY AREA TREATMENT IS REQUIRED IS FOR TOTARA ROAD, BEING A HIGH USE ROAD (>5000 VEHICLES PER DAY)

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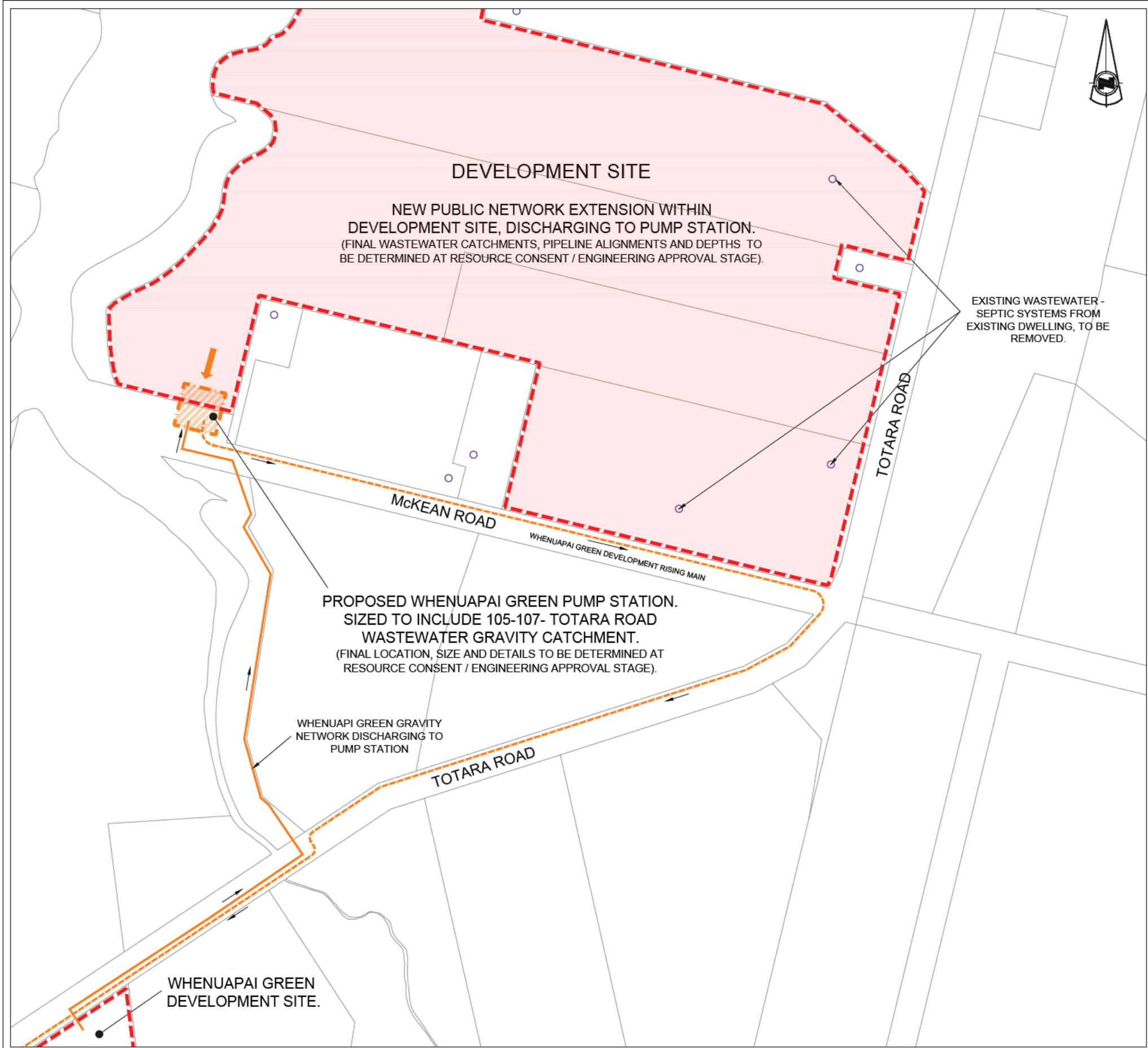
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AUCKLAND, NEW ZEALAND

TELEPHONE: +64 9 918 8865
FACSIMILE: +64 9 918 8867
WEB: www.neilgroup.co.nz

Job Title
105-107 TOTARA ROAD

Drawing Title
STORMWATER FLOOD PLAIN, FLOOD PRONE & OVERLAND FLOW PATHS

By	Date	Scale	Job No.	Rev
Survised: -		1:3000@A3	Drawing No.	
Designed: CK			4340-01-GN-494	A
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LEGEND:

- DEVELOPMENT SITE
- PROPOSED WHENUAPI GREEN DEVELOPMENT WASTE WATER GRAVITY / RISING MAIN / PUMP STATION INFRASTRUCTURE.
- EXISTING WASTEWATER INFRASTRUCTURE (TYPICALLY SEPTIC SYSTEMS)

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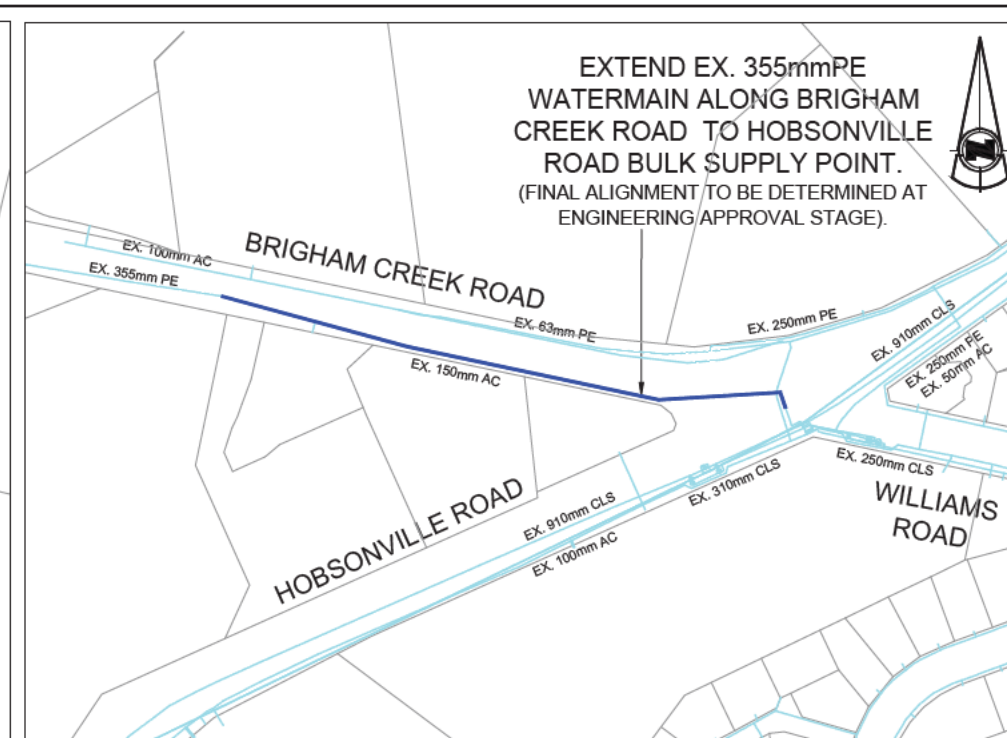
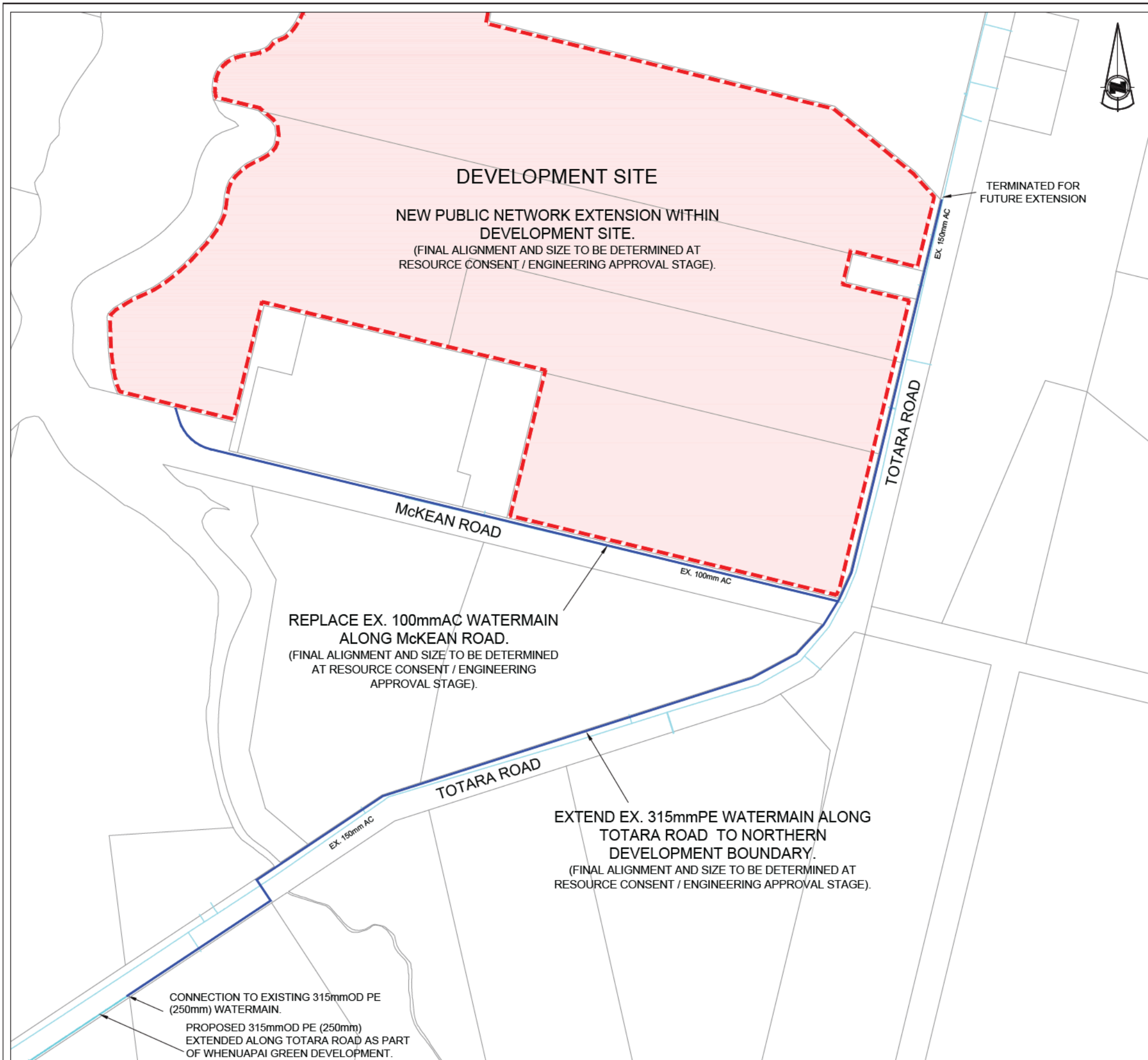
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105-107 TOTARA ROAD

Drawing Title
WASTEWATER

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OFFSITE ENABLING WATERMAIN WORKS

LEGEND:

- PROPOSED WATERMAIN (VARIES mmDIA)
- EXISTING WATERMAINS
- DEVELOPMENT BOUNDARY

NOTES:

THIS PLAN COVERS EXTERNAL WATER SUPPLY WORKS ONLY. NEW WATER MAIN NETWORK TO ALSO BE INSTALLED AS PART OF DEVELOPMENT.

REGARDING THE TOTARA ROAD 315mm WATER MAIN, IT IS ANTICIPATED THIS WILL BE INSTALLED AS PART OF STAGE 1 OF THIS DEVELOPMENT.

REGARDING THE BRIGHAM CREEK ROAD 355mm WATERMAIN, IT IS ANTICIPATED THIS IS INSTALLED AS PART OF STAGE 1 OF THIS DEVELOPMENT, OR PRIOR BY OTHERS, IF REQUIRE BY OTHER DEVELOPMENTS IN THE WHENUAPAI AREA.

OTHER OFFSITE ENABLING WATER MAIN WORKS ARE POSSIBLY REQUIRED ON FRED TAYLOR DRIVE, WHEN THE WHENUAPAI PENSULAR EXCES 1000 DWELLING UNITS. WATERCARE TO CONFIRM THESE WORKS DURING CONSENTING PHASES.

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PO BOX 8751, SYMONDS STREET
AUCKLAND, NEW ZEALAND

TELEPHONE: +64 9 918 8565
FACSIMILE: +64 9 918 8567
WEB: www.neilgroup.co.nz

Job Title
105-107 TOTARA ROAD

Drawing Title
WATER SUPPLY

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Designed: CK			4340-01-GN-692	A
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APPENDIX B

SERVICE AUTHORITY CORRESPONDENCE

23 September 2022

The Neil Group
PO Box 8751
Symonds Street, Auckland 1150

Vector Limited
101 Carlton Gore Rd
PO BOX 99882
Auckland 1149
New Zealand
+64 9 978 7788 / vector.co.nz

Reference Number
1-5397824940

Attention:

Chris Kennedy

s 9(2)(a)

Thank you for your request for an Indicative Cost to provide 247 x single phase 60Amps connection at 105 Totara Road, Whenuapai.

We have made an initial high-level assessment of the following estimated scope of work and the Indicative Cost is approximately s 9(2)(b)(ii) **plus GST**. There is a design fee applicable of s 9(2)(b)(ii) **plus GST**.

Based on our current pricing policy, Vector may contribute towards the transformer and transformer installation cost. This contribution is estimated to be s 9(2)(b)(ii) and has been provided for budgetary purposes only. Vector is not bound by this estimated contribution.

Scope of Work:

- Supply and install high voltage cable to the new development
- Supply and install 5 x switch units and 5 x 300kVA transformers
- Supply and install low voltage cable from the transformer(s) to the new development
- Supply and install service pits and pillars to facilitate 247 x single phase 60Amps connection
- Test and commission as per Vector standards

No allowance has been made for network approval, temporary generation, traffic management, civil works, consents, arborists, boundary survey, easement surveys and after hours/weekend work.

This indicative cost does not include works to connect your service cables. It is your responsibility to bring your own service cables to the point of supply in service pits/pillars where it will be terminated by your electrical inspector.

An easement in favour of Vector Limited is required for any equipment installed in private property for the ownership and maintenance of the assets. The cost of surveying these easements has not been included in this offer.

The proposed transformer(s) must be at least 3m away from any non-fire rated building or structure and at least 2m away from the boundary of any adjoining property. If these clearances cannot be achieved you will be responsible for providing fire rated walls in accordance with Vector Standard 'ESE 502' available upon request.

This indicative cost is based on information available during a desktop exercise at the time of high-level costs being provided. If scope or requirements changes in detail design stage, any additional costs will be added in final design and pricing. Please note that only **one** indicative price will be provided prior to design fee payment. If you require a second indicative price this can be accommodated during the design stage.

This Indicative Cost is a non-binding estimate based on Vector's current pricing policy.

If we have not heard back from you in writing within **90 days**, this project will be cancelled. You will need to make a new request by emailing customerdevelopments@vector.co.nz and provide the above project number as reference.

Kind regards,



Vinita Ram
Senior Customer Contracts Advisor

[Create new request](#)

clear search

My developments

Address	Project name	Stage name	Chorus ref	Status	View request
105 Totara Road , Whenuapai, Auckland, 0618	105 Totara Road, Whenuapai 0618		10321159	Chorus assessing request	View request

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10321159

105 Totara Road , Whenuapai, Auckland, 0618

[Status](#) [Documents](#) [Contact with Chorus](#)

Other documents

File	Name	Document type	Document description	Created date/time	File size
	105 Totara Road...	Other document ▾	Request and background details.	02/09/2022 08:48 AM	38.42 KB
	105 Totara Road...	Scheme plan ▾	Draft Scheme plan	02/09/2022 08:47 AM	2311.07 KB

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Financial documents

View	Document number	Document type	Reference	Document date
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There are no financial documents currently available for this case