



WALKER
ENGINEERING
CONSULTANTS

17 April 2026

WECL Project Reference: 24106

Attention: Planning Officer

Site Address: 142 Konini Rd, Auckland

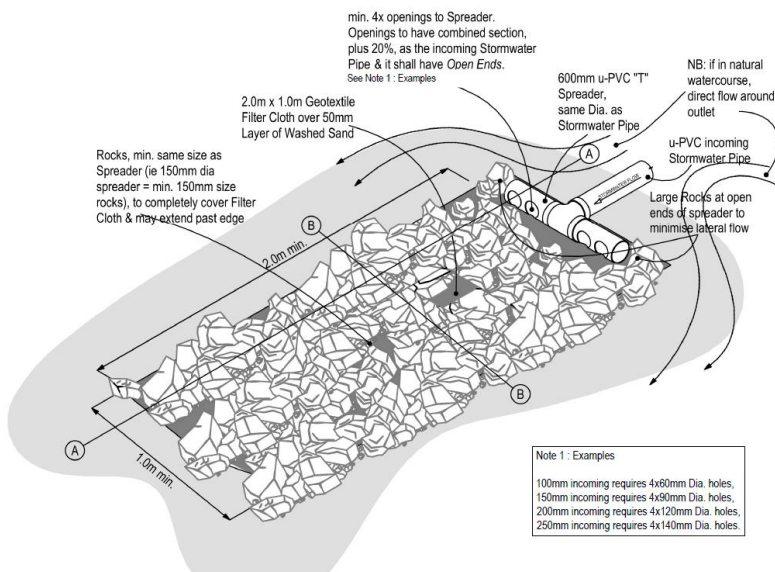
Description: Proposed Extensions & Upgrades of an Existing Dwelling – Stormwater Aspects

Subject: Response to Request for Information 03 – Engineering Aspects

Walker Engineering Consultants Limited (WEC) have been engaged to complete engineering services for the proposed extensions and upgrades of an existing dwelling located at 142 Konine Road, Auckland. A submission was previously made to the council regarding the proposed works. Drawings describe the works. This letter and associated documents aim to resolve and clarify requests for information to demonstrate that compliance is being achieved. A formal response to the council's request for information is provided below. Updated documentation is attached or submitted separately.

1. The rainwater tank filtration systems appear to be rip-raps. Please provide riprap outlet calculations and design, to help determine scouring effects downstream – ie energy dispersal and other factors. If this isn't intended as a rip-rap then please confirm that as well

Engineer Response: It is noted that the primary stormwater management devices are two detention tanks that control stormwater through a small orifice size of 20 mm. The stormwater assessments illustrate that the peak outflow through the orifice is below 1.1 L/s for the design stormwater event (refer to page 5 of the original stormwater report or PDF page 43 of the 22 Sep 2025 stormwater memo submission). This is less than the peak flow rate of the existing site, which was determined as 1.24 L/s. The water outflow from the designed orifice for the proposed works then discharges into a 100 mm diameter pipe and trickles onto the riprap system, which is 2 m long by 1 m wide. The riprap system helps to avoid any localised erosion and serves as a natural system that spreads the flow. The velocity of the water within the downstream 100 mm diameter pipe will be well below 1 m/s (approximately 0.14 m/s for 1.1 L/s outflow), and therefore the discharge is considered to be very low energy. On this basis, the potential for scour is not applicable. We have provided illustrations below as well as the design table for riprap rocks (Ref: Regional Council Guideline 2012/02 – Hydrological and Hydraulic Guidelines prepared by Environmental Hazards Group). The specified category of rock is below facing (150 mm minimum), and velocities below 2 m/s are noted as acceptable. Noting the low outflow, the selected rock sizing is considered conservative and appropriate to ensure no localised scouring effects and to assist with spreading of the discharge.



Note 1: Examples
 100mm incoming requires 4x60mm Dia. holes.
 150mm incoming requires 4x90mm Dia. holes.
 200mm incoming requires 4x120mm Dia. holes.
 250mm incoming requires 4x140mm Dia. holes.

RIP-RAP ROCK PROTECTION DESIGN TABLE:

VELOCITY (M/S)	CLASS OF ROCK PROTECTION W _c (TONNE)	CHAPTER THICKNESS, T (M)
<2	NONE	---
2.0 - 2.6	FACING	0.6
2.6 - 2.9	LIGHT	0.85
2.9 - 3.9	1/4	1.15
3.9 - 4.5	1/2	1.35

ROCK CLASS	ROCK SIZE * (M)	ROCK MASS (KG)	MINIMUM PERCENTAGE OF ROCK LARGER THAN
FACING	0.4	100	0
	0.3	35	50
	0.15	2.5	90
LIGHT	0.55	250	0
	0.40	100	50
	0.20	10	90
1/4 TONNE	0.75	500	0
	0.55	250	50
	0.30	35	90
1/2 TONNE	0.90	1000	0
	0.70	450	50
	0.40	100	90

*ASSUMING A SPECIFIC GRAVITY OF 2.65, SPHERICAL SHAPE AND BATTER SLOPE OF 1.5 HORIZONTAL TO 1 VERTICAL.

2. The design of the on-site stormwater piping and tanks is different between the architectural plans (Proposed Site Plan) and the stormwater mitigation report (stormwater system markup of the proposed site plan). The main difference is the discharge of stormwater to the west (site plan) or east (stormwater markup). Additionally, please provide additional assessment to demonstrate that discharge of stormwater from the proposed outlets, but in particular at the top of the site, meet the general standards under E8.6.1, including that they will not cause or increase scouring or erosion at the point of discharge of downstream, or damage to other properties. The differences is with regard to this T-bar, which isn't present on the archi plans:



Engineer Response: We agree that the T outlet for the subsoil drainage behind the retaining wall (low catchment) was not captured on the architectural drawings. The architectural plans have now been updated accordingly to align with the stormwater design.

Regarding the stormwater layout, the stormwater assessment reflects the intended design, including discharge direction. The new impermeable areas at the top of the site are collected and diverted to a detention tank system located below the deck. The controlled discharge from this system is limited via a low-flow orifice, with peak outflows below 1.1 L/s as outlined in the stormwater report.

These low flows are then directed to the riprap system, which provides localised energy dissipation and spreading of flow, as outlined in response to Point 1. Given the low controlled discharge rate and resulting low velocities, the potential for scouring or erosion at the discharge point is considered minimal.

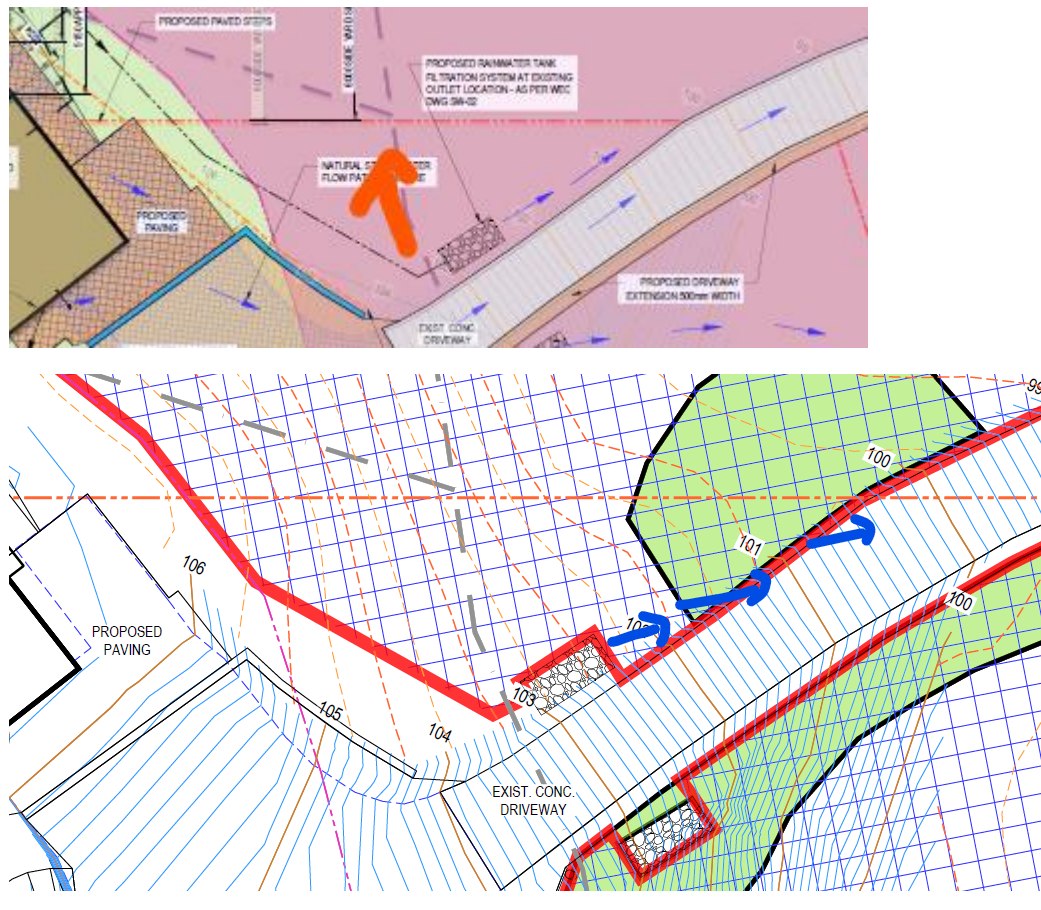
Overall, the proposed system results in a reduction in peak discharge compared to the existing site (1.24 L/s), and therefore will not increase erosion potential or cause adverse effects on downstream areas or neighbouring properties. The design is therefore considered to meet the intent of E8.6.1 in terms of avoiding adverse effects such as scour, erosion, or damage to other properties.

3. Lastly, based on contours it looks like runoff from the western outlet will fall west and potentially through 144 Konini Road. I believe we have enough information to assess where it will fall, so I am not asking for further information here – just letting you know my thoughts. I will await for a memo from the engineer for assessment purposes on this.

Engineer Response: Previously, the riprap system was positioned closer to the boundary (as indicated by the orange arrow shown in the Figure below), as the owner intended to locate it within the dense vegetation in that area to minimise visibility. However, based on the CPEng site visit described in the stormwater assessment documentation, we advised that this location was not appropriate. It was recommended that the riprap system be relocated closer to the driveway area so that the low-flow discharge can link into the driveway flow path and follow the natural fall of the site.

The system was shifted accordingly as per the plans. This ensures that the discharged water is directed toward and near the driveway and does not flow toward 144 Konini Road. It is also noted that the discharge is a very low, controlled flow (via the detention tank orifice), which further reduces any potential for adverse effects.

Based on the site contours and revised outlet location, the flow path will follow the driveway and will not be directed toward 144 Konini Road. Refer to contour and arrow illustrations below.



If you have any questions, please feel free to contact the undersigned.

Kind Regards,

Peter Walker
Chartered Professional Engineer
CPEng, CMEngNZ, IntPE, BEng(Civil)(Hons), M.EngNZ (Civil) (1st Class Hons)

M: 022 534 4973
E : peter@walkereng.co.nz