In the Environment Court of New Zealand
Auckland Registry

I Mua I Te Kōti Taiao O Aotearoa
Ki Tāmaki Makaurau

ENV-2023-AKL-160

Under	the Resource Management Act 1991
In the matter of	An application for a direct referral to the Environment Court under section 87G of the Act for an order granting the applicant's resource consent applications to construct and operate a new asphalt plant at 54 Aerodrome Road, Mt Maunganui, together with an application for consent to authorise the continued operation of the existing asphalt plant on the site pending construction of the new plant
Between	**Allied Asphalt Limited**
	Applicant
And	**Bay of Plenty Regional Council and Tauranga City Council**
	Consent Authorities

Statement of Evidence of Jandre van Zyl

(Flood Hazards and Infrastructure/Services)

Date 29 February 2024

Counsel acting:
Stephen Christensen
Project Barrister
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Qualifications and experience

1 My full name is Jandre van Zyl.

2 I hold a Bachelor of Engineering Technology (Civil) - ENZ Knowledge Assessment – Washington Accord (equivalent) Diploma in Engineering (Civil). I am a Chartered Professional Civil Engineer with a wide range of experience in master planning, design, and construction. I have over 16 years' experience as a consultant in New Zealand.

3 I am currently employed as a Technical Director in Civil Engineering with Beca Infrastructure Limited and have held that position since 2022.

4 My previous work experience includes Project / Design Management, Contract Management and Design experience in a range of civil, industrial, commercial, roading, airport and three waters projects.

5 My role in relation to Allied Asphalt Limited's (**Allied**) application for resource consents for a new asphalt plant and the continued operation of an existing plant pending construction of the new plant at 54 Aerodrome Road, Mt Maunganui (**The Application**) has been to provide advice in relation to ***Flood Hazards & Infrastructure/Services***. I drafted the Infrastructure and Service Assessment Report (22/11/2022) which is referenced in Appendix 8 of The Application (19/12/2022). I have also considered the adjoining Fulton Hogan Limited proposed site redevelopment as shown on Drawing 20-1666 C-100 Rev A (dated 14 08 2023). The proposed redevelopment of this adjoining site by Fulton Hogan Limited has no impact on my assessment of the Allied site. My role does not include assessment of the effects on water quality (Refer to statement of evidence provided by Jim Maddock).

6 My assessment is based upon the project description attached to the planning evidence of Mr Craig Batchelor as Appendix 1.

7 In preparing this statement of evidence, I have considered the following documents:

(a) the AEE accompanying The Application;

(b) submissions relevant to my area of expertise;

(c) the section 87F report;

(d) Infrastructure and Service Assessment Report; Beca; 22/11/2022

8 I have visited the Application Site on one occasion on 19/01/2022.

Code of Conduct for Expert Witnesses

9 I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

10 I have prepared evidence in relation to:

(a) the existing environment of the Application Site as it is relevant to my area of expertise;

(b) the key findings of my assessment of effects;

(c) matters raised by submitters on the Application;

(d) matters raised in the Bay of Plenty Regional Council (BoPRC) and Tauranga City Council (TCC) s87F report; and

(e) Proposed conditions of consent.

Executive Summary

11 The proposed development of a new asphalt plant at 54 Aerodrome Road, Mt Maunganui by Allied Asphalt Limited has minor effects on the Flood Hazards & Infrastructure/Services.

12 The effects associated with the generation of stormwater over the site are addressed by the proposed stormwater management systems. There is no change in the impervious coverage and overland flow paths of the proposed site. TCC have confirmed that as there will be no difference in the volume of stormwater generated over the site, there will be no effect on the capacity of the piped stormwater network.

13 My evidence concludes that the proposed development can be undertaken in a way that appropriately addresses and mitigates potential effects on Flood Hazards & Infrastructure/Services.

The existing environment

14 Site Description

(a) The site is currently operating as an asphalt manufacturing plant and is located in the Mount Maunganui industrial area at 54 Aerodrome Road (Lot 2 DPS 36408), occupying a rectangular area of approximately 70m by 100m. Access to the site is through Lot 1 DPS 36408 (owned by Fulton Hogan) from Aerodrome Road. The proposed asphalt plant is intended to replace the existing asphalt plant when completed.

(b) The site is located approximately 675m north of the Tauranga Airport main runway and 150m south of SH2. Businesses in the surrounding area are mainly light industry and transport logistics.

15 Existing Stormwater Network

(a) The internal stormwater network of the Allied Asphalt site conveys surface water from the site and connects to the adjacent Fulton Hogan yard site stormwater system. This discharges in two locations to the local stormwater system in Aerodrome Road (refer to **Attachment 1, Figure 1).**

(b) These discharge locations are via stormwater interceptors[1] located at the Allied Asphalt boundary and at the end of the stormwater dish drain channel running along the property's northern boundary (within the Fulton Hogan site) before entering the Council owned stormwater system.

(c) The subject site stormwater flows discharge to the public stormwater pipe network as indicated on MAPI[2]. This pipe extends westward for approximately 1.1km before discharging to a stormwater swale at the end of Seawind Lane. The swale then discharges to Tauranga Harbour a further 800m away (refer to **Attachment 1, Figure 2**).

16 Existing Flood Hazard Assessment

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[1] A stormwater interceptor is an underground (typically) chamber with a set of vertical baffles that isolate floating debris and oils/grease/fluids with lower density than water. These systems are typically installed at sites where petrochemical materials are stored , handled or where spills are possible.

[2] Tauranga City Council GIS web map viewer MAPI (https://www.tauranga.govt.nz/exploring/maps/council-map-viewer-mapi)

(a) MAPI shows existing flood-prone areas to a depth of 100-300mm present at the northern area of the site (refer to **Attachment 1, Figure 3**). In addition, there are minor overland flow paths in the north-east leading to a major overland flow path through the site towards Aerodrome Road. MAPI notes outline the flood extents are based upon flooding from rainfall 1% AEP[3] (1 in 100-year ARI[4] storm), year 2130 RCP[5] 8.5 median scenario. This is a standard engineering approach to address the changes in rainfall which are a result of climate change.

17 Existing infrastructure/utilities

(a) Refer to **Attachment 2** Concept Infrastructure Drawings: 3936642-CA-010 for the available details of the existing services and utilities and 3936244-CA-040 for details of the proposed services and utilities. Refer to items 17, 18 and 19 for details of the existing services.

18 Existing Wastewater Network

(a) The existing private wastewater network connects the site office to the public wastewater network on Aerodrome Road through the adjacent Fulton Hogan site. The wastewater network runs to the north of the site where a cabin was previously located. The existing asphalt plant does not have a dedicated trade waste line.

19 Existing Potable Water Supply Network

(a) Potable water is supplied to the asphalt plant, site office and spray platform from a 50mm PVC-U pipe on the public network on Aerodrome Road through the adjacent Fulton Hogan site. The location of the existing watermain within the redevelopment site is not shown on the existing service plans.

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[3] AEP is the Annual Exceedance Probability and represents the percent chance of a rainfall event of a particular magnitude being exceeded in any given year.

[4] ARI is the Average Recurrence Interval and is the statistically derived number of years that would pass between rainfall events of a given magnitude.

[5] RCP is a Representative Concentration Pathway as defined by the Intergovernmental Panel on Climate Change (5th Edition). RCP 8.5 represents the future pathway that leads to an atmosphere that has 8.5 Watts per square metre more energy in the form of heat by a defined year in the future.

(b) A rainwater reuse tank (from the covered aggregate storage) is used for various non-potable water needs to reduce the demand for public water supply.

20 Existing Utilities

(a) A power transformer is located on the eastern boundary near the control cabin. The electrical line runs across the adjacent Fulton Hogan site and connects into the power network on Aerodrome Road.

(b) There is an existing gas connection from Aerodrome Road running through the adjacent Fulton Hogan site.

(c) There is an existing communication connection to the site office. The location of the existing communications line is not shown on the existing service plans.

21 Overview of Proposed Works

(a) A master plan for the proposed asphalt plant was approved by Allied Asphalt in May 2022 (refer to **Attachment 2** Proposed Master Plan Drawing 3936244-SK2). The civil infrastructure design is based on this master plan layout.

22 Proposed Philosophy for Stormwater Management

(a) The stormwater management system for the redevelopment site is based on the Tauranga City Infrastructure Development Code DS-5 Stormwater Design Standard (TCC IDC DS-5), Stormwater Management Guidelines for the Bay of Plenty Region (2012/01) and the Hydrological and Hydraulic Guidelines (2012/02).

(b) Primary Stormwater System[6]

(i) Refer to **Attachment 2** Concept Infrastructure Drawings: 3936642-CA-040 for the proposed stormwater network on the site.

(ii) The management approach will identify risk areas and adopt the treatment train approach to avoid, remedy and mitigate adverse effects associated with stormwater. Quality treatment

[6] A primary drainage system is defined by the Tauranga City Council Infrastructure Development Code (DS-5). This system is required to be sized to convey the 1 in 10 year Average Recurrence Interval (ARI) or 10% Annual Exceedance Probability (AEP) rainfall event.

is proposed via a proprietary treatment device that removes suspended solids (to a limit) and reduces hydrocarbons. (Refer to statement of evidence provided by Jim Maddock for Water Quality effects).

(iii) Surface run-off from the hardstand areas will be collected by catchpits at low points or similar. The pipe network will be designed for a 10-year ARI rainfall event for the post-development peak flow discharges. The downstream discharge location is the Tauranga Harbour as illustrated in **Attachment 1, Figure 2.**

(iv) Surface run-off from the covered aggregate storage bins will be collected via roof gutters and directed into rainwater reuse tanks with an overflow system. Water will be reused as non-potable supply.

(v) The post-development stormwater run-off rate does not exceed the pre-development run-of rate for both the 10-year ARI rainfall event and 100-year ARI rainfall event.

(c) Secondary Stormwater System

(i) There are minor and major overland flow paths in the north-east leading to a major overland flow path towards Aerodrome Road. The existing overland flow paths will be maintained by diverting them around the proposed infrastructure (aggregate storage bins, relocated site office). In general, the majority of the proposed development will not affect the capacity of the overland flow paths.

(ii) The existing site office will be relocated alongside the northern boundary within the existing minor overland flow path. The building will be elevated on piles to achieve a minimum freeboard of 0.3m above the 1% AEP design storm (as specified in Table 2 TCC IDC DS-5 and in accordance with Building Code Clause E1 Surface Water E1.3.2). The ground level at the proposed location of the building will be similar pre-development and post-development. The 1% AEP flood depth has been calculated as 250mm by using MAPI taking spot heights at the boundary of the flood extent. The building floor (office) level above ground level = 250mm (flood depth) + 300mm (freeboard) = 550mm.

(iii) Plan Change 27 proposed framework requirements (overland flow path) – the changes to the overland path will be limited to the site with no additional impact to the people or buildings.

(iv) Plan Change 27 proposed framework requirements (flooding) – flooding in area is below 300mm and as noted above the building floor (office) levels have been set accordingly.

23 Proposed Private Wastewater Network

(a) The site office will require a wastewater connection. A new connection to the public wastewater network is required as Fulton Hogan and Allied Asphalt have agreed to operate independent sewer systems. The connection to the public wastewater network is proposed along the northern boundary of the Fulton Hogan shared accessway.

(b) As part of the redevelopment, a trade waste connection is proposed to the asphalt plant weighbridge and bunded areas surrounding the bitumen and oil tanks. The trade waste will be routed through a treatment device (proposed to be an oil and grit separator, or similar) to achieve required discharge quality (Refer to statement of evidence provided by Jim Maddock for Water Quality effects).

24 Proposed Private Water Network

(a) A water connection is proposed to the asphalt plant, site office and spray platform with a new connection from the public water network along the southern boundary of the adjacent Fulton Hogan site. The existing rainwater reuse tank for the covered aggregate bins is to be relocated to the south and will continue to be used for various non-potable water source.

(b) A backflow prevention device will be installed on the water supply line at the boundary. The exact arrangement and location of the backflow prevention device will need to be confirmed in future design stages. A hazard assessment will need to be completed in accordance with Building Code clause G12.

25 Firefighting Demands

(a) Based on the New Zealand Fire Service Firefighting Water Supplies Code of Practice (SNZ PAS 4509:2008), the proposed site water supply classification is FW4 based on the floor area of largest fire cell of the building being 0 to 199m^2.

(b) Based on a classification of FW4, the required hydrant water flow:

(i) Within 135m of site buildings = 50 L/s

(ii) Within 270m of site buildings = 50 L/s

(c) There is no restriction on access for fire service vehicles as the site is relatively flat, having substantial hardstand surfaces and being designed for use by truck and trailer units.

(d) Based on information from other asphalt sites (Fulton Hogan Hamilton and Higgins Silverdale), the site is not expected to require an internal sprinkler system however this should be confirmed by a suitably qualified fire specialist in future design stages.

26 Proposed Dry Services Corridor (Electrical, Gas and Communications)

(a) It is proposed that a new dry services corridor (power, gas, communications) will be installed along the southern boundary of the adjacent Fulton Hogan site, from Aerodrome Road to Allied Asphalt. The electricity will be distributed to the proposed asphalt plant and habitable buildings on site. Gas will connect from the dry services trench to the proposed asphalt plant location. The size of the gas main required will be developed in future design stages. The communications line will connect at the plant and relocated site office.

Assessment of effects

27 Stormwater discharge flow rate exceeds acceptable limit of permitted activity standard Rule DW R20 (d) of the Bay of Plenty Regional Natural Resource Plan (RNRP).

(a) The discharge flow rates for pre-development and post-development have been calculated using the rational method and are dependent on the site imperviousness. There is no change in the pre-development and post-development impervious surface areas. Refer to Infrastructure and Service Assessment Report (22/11/2022) for details.

(b) The proposed stormwater primary discharge flow rate does not comply with the permitted activity standard Rule DW R20 (d) of the RNRP, which sets out that the rate of discharge shall not exceed 125 litres per second for a 10-year return period storm. The calculated

discharge rate is 210 litres per second for a 10-year return period storm.

(c) The proposed development has minor impact on the stormwater discharge flow rate, as summarized below:

(i) There is no change to the site imperviousness.

(ii) There is minor change to ground levels and existing flow paths are maintained.

(iii) There is no effect to the rate or volume of stormwater discharging from the site (pre and post development are similar).

(iv) The primary flow discharge from the site to the TCC local stormwater system in Aerodrome Road is proposed to be conveyed via a piped or channel system (or similar) at the northern end of the site, utilising an existing connection point.

(d) Given there is no significant change to the stormwater discharge post-development, I assess the effects to stormwater discharge flow rates to be minor.

28 Stormwater Flood Hazards

(a) As detailed in paragraph 16 above, there are existing flood-prone areas present at the northern area of the site, as well as minor and major overland flow paths.

(b) The proposed development has minimal impact on flood hazards, as summarized below:

(i) There is no increase to the site imperviousness.

(ii) Development of the new plant will not alter the entry and exit points of overland flowpaths.

(iii) There is minor change to ground levels. The site office, aggregate bins and surface levels will have minor displacement effects to the flood prone area (depth 100-300mm) on the northern boundary. The displacement will be towards the center of the asphalt yard.

(iv) Building finished floor levels have appropriate freeboard.

(c) I assess the effects on stormwater flood hazards to be minor. The development of the new plant will result in no discernable increase in the amount of stormwater displacement onto adjacent neighbouring properties; and the capacity of overland flowpaths will not be impacted by development of the new plant.

29 Effects on infrastructure and services

(a) There are no adverse effects on the wastewater network due to the proposed wastewater connection.

(b) I assess the effects on the potable water supply network to be minor. There is no anticipated increase in the water demand for the proposed development. The use of the existing rainwater harvesting tank (from the covered aggregate storage) is continued and reduces the demand for public water supply.

Matters raised by submitters

30 Two submissions were received which related to Flood Hazards or Infrastructure/Services. I have summarised the submissions and responded as follows.

31 One submission (Submission 3) neither supports or opposes the application in its current form, provided there are adequate and effective conditions of consent that will protect public wellbeing moving forward. The submitter requests the following conditions in relation to stormwater:

(a) Onsite stormwater management improvements are not delayed until completion of the plant upgrades, but that stormwater improvements that may be made now are progressed without unnecessary delay.

(b) Requirements for regular stormwater discharge monitoring which demonstrates that the discharge is meeting the requirements of TCC and BOPRC.

My response to this submission:

(c) Some of the stormwater management improvements are not feasible until the proposed plant upgrades are complete, as the stormwater management improvements are related to the physical changes related to the new plant.

(d) The monitoring requirements are detailed in the Recommended Consent Conditions for Stormwater Discharge (2-year existing plant /

35-year new plant) which can be found in Appendix D of the s87F report. I consider these conditions to be appropriate and I have no objections or comments.

32 One submission (Submission no. 41) opposed the discharge of stormwater into wastewater.

My response to this submission: The stormwater from the proposed development is discharged to the stormwater network, except for specific bunded areas surrounding the bitumen and oil tanks which are discharged to a dedicated Tradewaste connection. (Refer to statement of evidence provided by Jim Maddock for Water Quality effects).

Matters raised by s87F report

33 Section 7.3.2 of the s87F report notes that the stormwater discharge flow rate exceeds acceptable limits as defined in standard Rule DW R20 (d) of the RNRP.

(a) The officer notes that a technical assessment of the proposal was undertaken by BOPRC contract engineers. The assessment noted that there will be no appreciable change to the rate of stormwater discharging from the site, because the site is already impervious, and the proposal maintains existing flow paths. Furthermore, the site will still drain to Aerodrome Road, and into the comprehensive network, therefore, there will be no change to the volume entering the piped network.

(b) The officer is satisfied that the proposed stormwater discharge will not give rise to any unacceptable effects on the environment, given there will be no fundamental change to the volume of stormwater generated over the site, or the means by which it is disposed.

(c) The officer noted that TCC have confirmed that as there will be no difference in the volume of stormwater generated over the site, there will be no effect on the capacity of the piped stormwater network.

34 In Section 7.5 of the s87F report, the officer is satisfied that any adverse effects associated with displacement of stormwater will be avoided and agrees with the overall assessment in the AEE. It is noted that the AEE concludes that flood hazard effects arising from the proposal will be negligible or positive, given there will be no increase in the existing risk and the proposed office will be protected from flooding. It is also noted that TCC

development engineer has reviewed the Infrastructure and Services Report.

35 Section 7.10 of the s87F report notes that the proposed development is not expected to create any adverse effect on the capacity or functioning of the reticulated wastewater and water networks. The officer notes that the TCC development engineer has reviewed the proposal and has not raised any concerns.

Proposed consent conditions

36 The recommended consent conditions are detailed in Section 9 of the S87F report and associated appendices. I consider these conditions (as they relate to the matters I have addressed in this evidence) to be appropriate and I have no objections or comments.

Conclusion

37 The effects associated with the generation of stormwater over the site are addressed by the proposed stormwater management systems. There is no change in the impervious coverage and overland flow paths of the proposed site. TCC have confirmed that as there will be no difference in the volume of stormwater generated over the site, there will be no effect on the capacity of the piped stormwater network.

38 Therefore, in my opinion the construction and operation of a new asphalt plant as proposed by Allied Asphalt at 54 Aerodrome Road, Mt Maunganui, can be undertaken in a way that appropriately addresses and mitigates potential effects on Flood Hazards & Infrastructure/Services.

Jandre van Zyl

Dated this 29th day of February 2024

Attachment 1

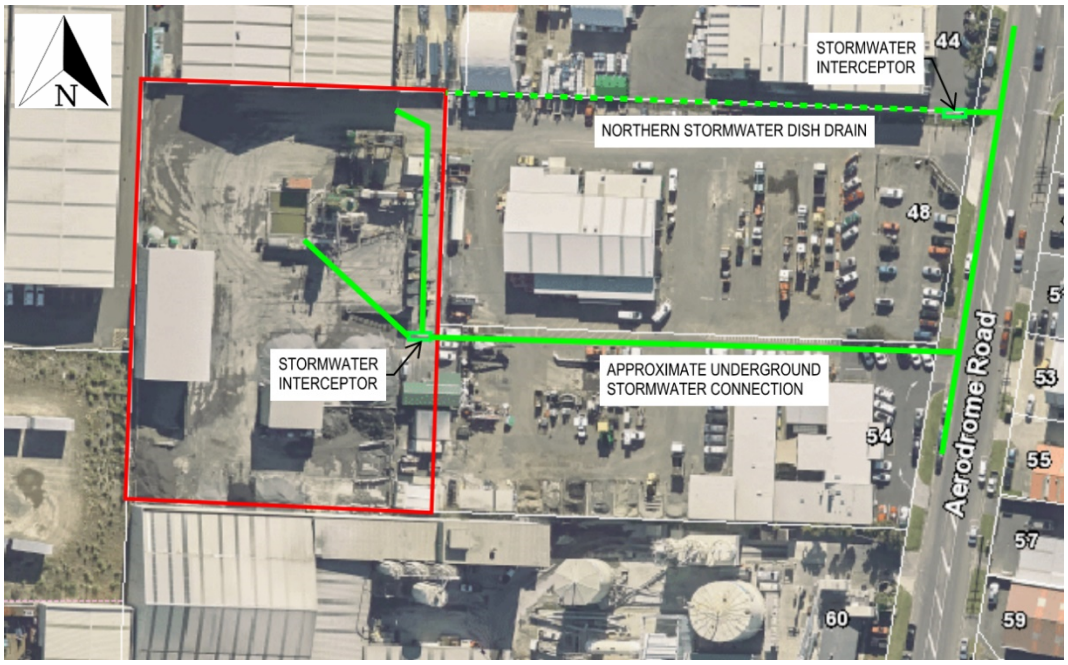

Figure 1: Existing stormwater network at 54 Aerodrome Road with Allied Asphalt site boundary in red.

Figure 2: Stormwater discharge location

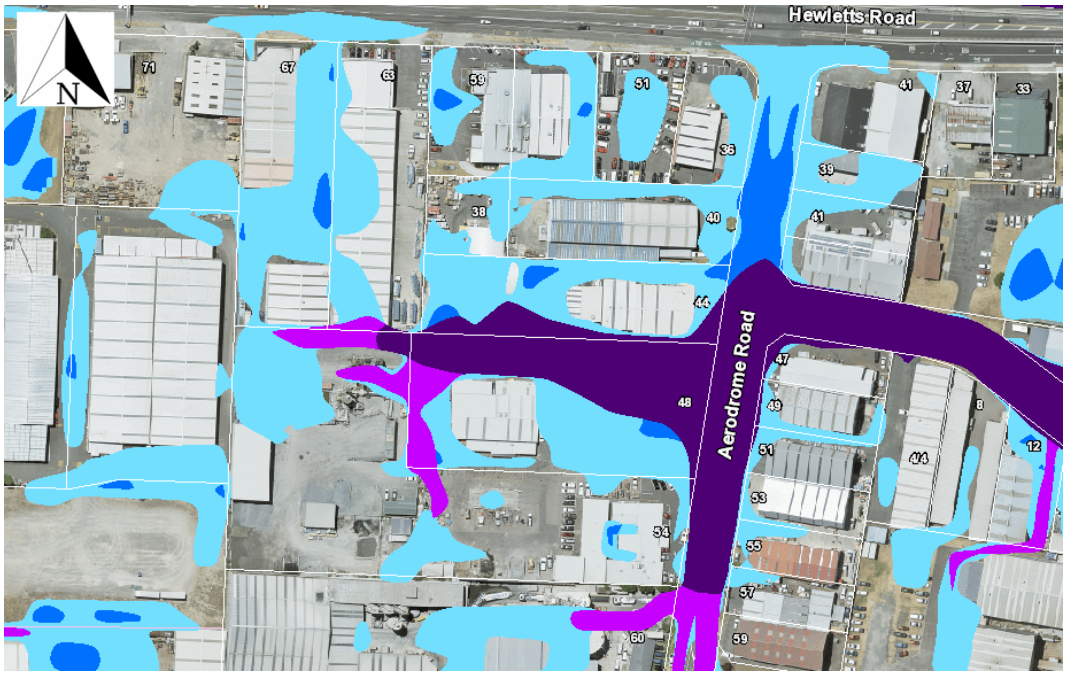

Figure 3: Tauranga City Council GIS map viewer flooding

Attachment 2

- Concept Infrastructure Drawing: 3936642-CA-010
- Concept Infrastructure Drawing: 3936244-CA-040
- Proposed Master Plan Drawing 3936244-SK2

Drawing Plotted: 23 Nov 2022 11:45 am

LEGEND

- CADASTRAL SITE BOUNDARY
- REDVELOPMENT SITE BOUNDARY
- MAJOR CONTOURS (1m)
- MINOR CONTOURS (100mm)

EXISTING SERVICES

- SS — SEWER LINE
- W — WATER LINE
- G — GAS
- E — POWER
- SW — STORMWATER LINE
- STORMWATER CHANNEL
- STORMWATER MANHOLE
- STORMWATER SUMP

NOTES

1. REFER TO DRAWING 3936244-CA-001 FOR GENERAL NOTES.

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RESOURCE CONSENT
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
B	FOR RESOURCE CONSENT	JS	JVZ	JVZ	18.11.22
A	DRAFT FOR CLIENT REVIEW	JS	KW	JVZ	07.07.22

Original Scale (A1) 1:250
Reduced Scale (A3) 1:500

Design | Drawn | Dsg Verifier | Drg Check | Approved For Construction* | Date

* Refer to Revision 1 for Original Signature

Client: ALLIED ASPHALT

Project: MOUNT MAUNGANUI ASPHALT PLANT CONSENTING

Title: EXISTING SITE PLAN

Discipline: CIVIL

Drawing No. 3936244-CA-010 Rev. B

Document No. 3936244-CA-010.DWG

DO NOT SCALE FOR SET OUT DIMENSIONS

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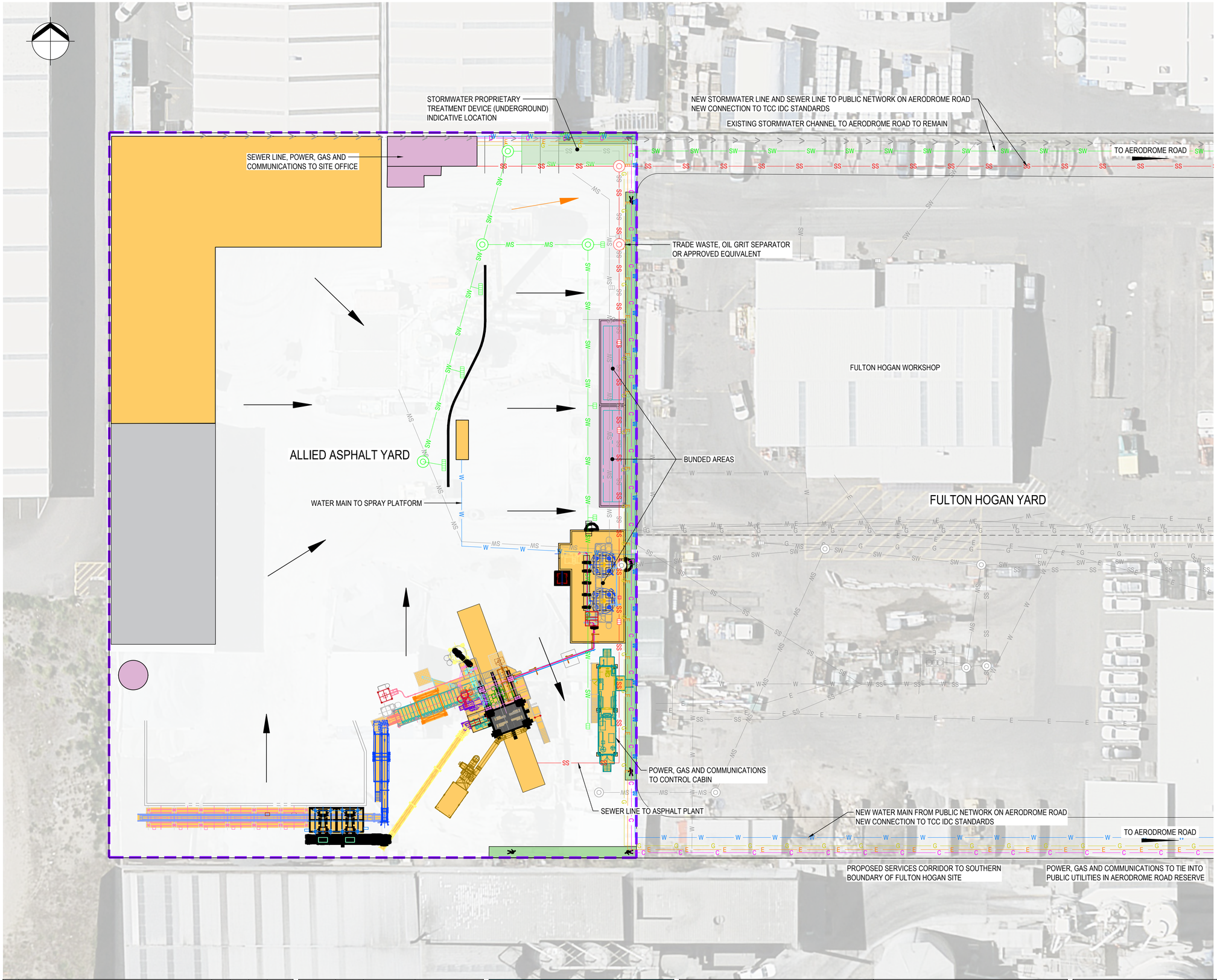
Drawing Plotted: 23 Nov 2022 3:11 pm



LEGEND

- CADASTRAL SITE BOUNDARY
- REDVELOPMENT SITE BOUNDARY

EXISTING SERVICES

- SS — SEWER LINE
- W — WATER LINE
- G — GAS
- E — POWER
- SW — STORMWATER LINE
- STORMWATER CHANNEL
- STORMWATER MANHOLE
- STORMWATER SUMP

PROPOSED SERVICES

- SS — SEWER LINE
- SEWER MANHOLE
- TRADE WASTE SUMP
- W — WATER LINE
- G — GAS
- E — POWER
- C — COMMUNICATIONS
- SW — STORMWATER LINE
- STORMWATER CHANNEL
- STORMWATER MANHOLE
- STORMWATER SUMP

- SLOPE ARROW
- OVERLAND FLOW

NOTES

1. REFER TO DRAWING 3936244-CA-001 FOR GENERAL NOTES.

RESOURCE CONSENT
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
B	FOR RESOURCE CONSENT	JS	JVZ	JVZ	18.11.22
A	DRAFT FOR CLIENT REVIEW	JS	KW	JVZ	07.07.22

Original Scale (A1) 1:250
Reduced Scale (A3) 1:500
Design / Drawn / Dsg Verifier / Drg Check
Approved For Construction* / Date
* Refer to Revision 1 for Original Signature

Beca

Client: ALLIED ASPHALT

Project: MOUNT MAUNGANUI ASPHALT PLANT CONSENTING

Title: PROPOSED SERVICES PLAN

Discipline: CIVIL

Drawing No. 3936244-CA-040 Rev. B

Document No. 3936244-CA-040.DWG

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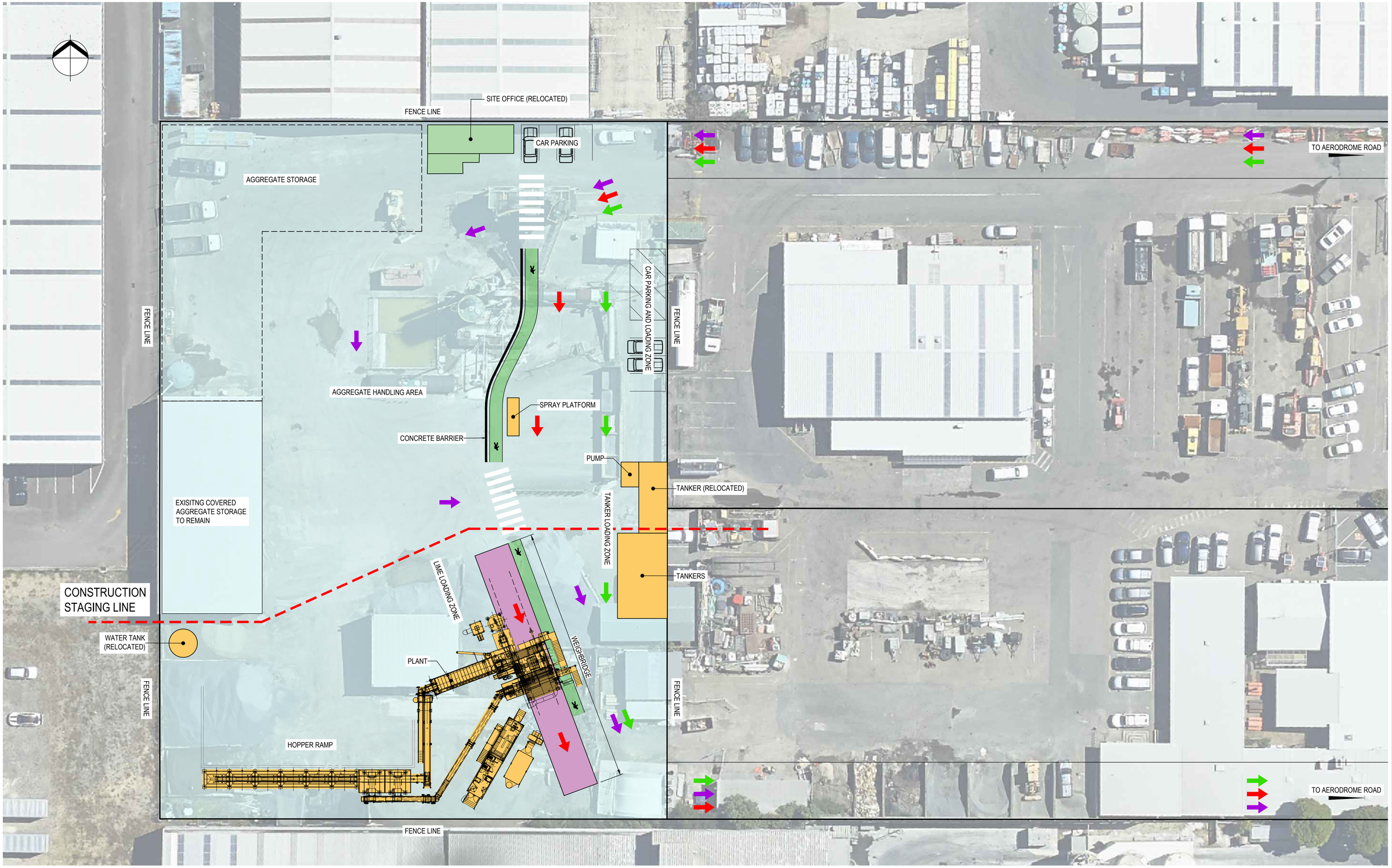
Drawing Plotted: 20 May 2022 3:22 pm



TANKER TRUCK FLOW
AGGREGATE TRUCK FLOW
ASPHALT TRUCK FLOW

CONCEPT DESIGN
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	JWS	JVZ	JVZ	06.05.22

Original Scale (A1) 1:250	Design	JWS	APR 22	Approved For Construction*
	Drawn	JWS	APR 22	
Reduced Scale (A3) 1:500	Dsg Verifier	JVZ	APR 22	
	Drg Check	JVZ	APR 22	Date
	* Refer to Revision 1 for Original Signature			

Beca

Client: ALLIED ASPHALT

Project: MT MAUNGANUI ASPHALT PLANT

Title: SITE LAYOUT CONSTRUCTION PHASING STAGE 2 - OPTION 1

Discipline: CIVIL

Drawing No. 3936244-SK2

Rev. A

Document No. 3936642 SITE MASTERPLAN.DWG

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