



Erosion and Sediment Control Plan

Aerodrome Road Asphalt Plant Upgrades

Prepared for Allied Asphalt Ltd

Prepared by Beca Limited

17 November 2022



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Appendices

Appendix A – Preliminary Design Plans

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Revision History

Revision N°	Prepared By	Description	Date
A	Curtis Blyth	Final for Resource Consent	17/11/2022

Document Acceptance

Action	Name	Signed	Date
Prepared by	Curtis Blyth		17/11/2022
Reviewed by	Ross Winter		17/11/2022
Approved by	Jandre van Zyl		17/11/2022
on behalf of	Beca Limited		

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1 Introduction

1.1 Scope and Purpose

This Erosion and Sediment Control Plan (ESCP) has been prepared on behalf of Allied Asphalt Ltd. The purpose of this document is to clearly describe how earthworks associated with the construction of a new Asphalt Plant within the Aerodrome Road site can be effectively managed to mitigate any potential sediment discharge risk and avoid adverse impact on the environment from land disturbance activities.

The works associated with the Asphalt Plant upgrades include shallow earthworks. The project includes limited earthworks as the site is flat and consists of an already established hardfill, asphalt or concrete surface.

This plan details the principles and practices of erosion and sediment control methodology and sediment devices that may be utilised in various areas of the site to support the project and meet relevant district and regional performance standards for earthworks.

It is envisioned that any resource consent granted for the development will require the contractor appointed for the project to prepare a site-specific (or final) ESCP (SSESCP) which will detail design specifications of erosion and sediment control devices outlined in this plan aligned with the finalised design and contractor's earthworks methodology.

1.2 Responsibilities

The consent holder (Allied Asphalt) will have overall responsibility of the site. A lead contractor will be appointed to undertake site earthworks and civil works associated with this project, therefore routine maintenance and management of the site will be delegated to. Contact details of personnel responsible for onsite implementation of the erosion and sediment controls will be provided in the SSESCP.

2 Site and Works Description

2.1 Site Overview

An overview of the site and select preliminary design drawings for the project are provided as **Appendix A**.

The proposed asphalt plant upgrades are located within the existing Allied Asphalt site at 54 Aerodrome Road, Mount Maunganui. This site is part of the wider property shared with Fulton Hogan Ltd, with Fulton Hogan's main office and contractors yard comprising the front portion of the property (**Figure 1** and **Figure 2**). The site is largely impervious hardfill, asphalt or concrete, is flat, and is currently used by Allied Asphalt for construction related storage, laydown and manufacture of products used for roading construction.



Figure 1: Allied Asphalt site within wider 54 Aerodrome Road property

The internal stormwater network receives overland flow from the entire site, discharging via two points to the local stormwater system running down Aerodrome Road (**Figure 2**). These two points are via the stormwater interceptor located within the site and a stormwater overland flow path running along the property's northern boundary. The stormwater interceptor within the site receives >90% of the site's stormwater. The northern overland flow path also discharges through a stormwater interceptor located in the north-eastern corner of the Fulton Hogan site.

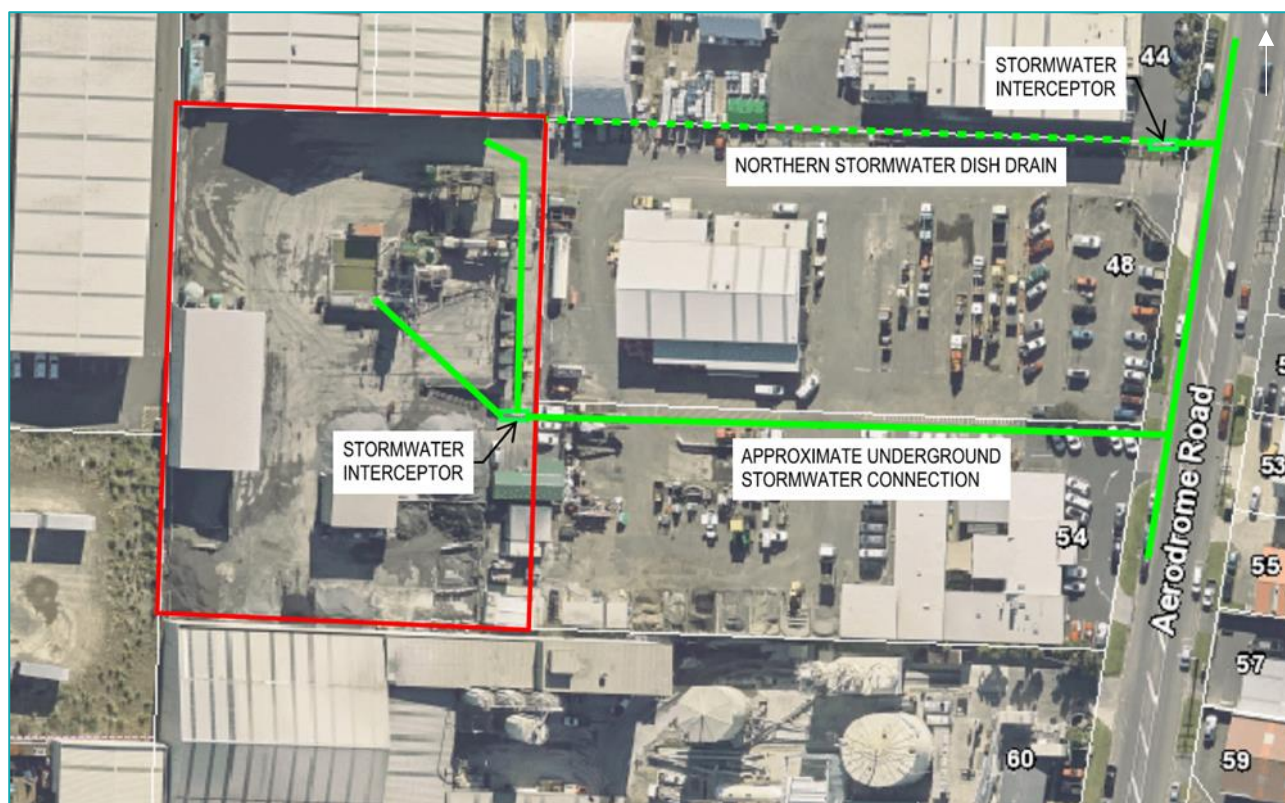


Figure 2: Indicative existing stormwater network at 54 Aerodrome Road with Allied Asphalt site boundary in red.

2.2 Works Description

Preliminary design plans outlining the proposed upgrade works are provided in **Appendix A**. The proposed upgrade works are split into the following three stages for the purposes of this ESCP only:

1. Enabling works – clearance of stockpiled aggregate to existing ground level. Removal of existing infrastructure (site office and aggregate shed and bays) in the proposed footprint of the new asphalt plant.
2. Construction – construction of the new asphalt plant offline from the existing site processes including new asphalt plant infrastructure, bitumen tanks, new aggregate loading bays, stormwater and wastewater infrastructure and dry service connections (**Figure 3**).

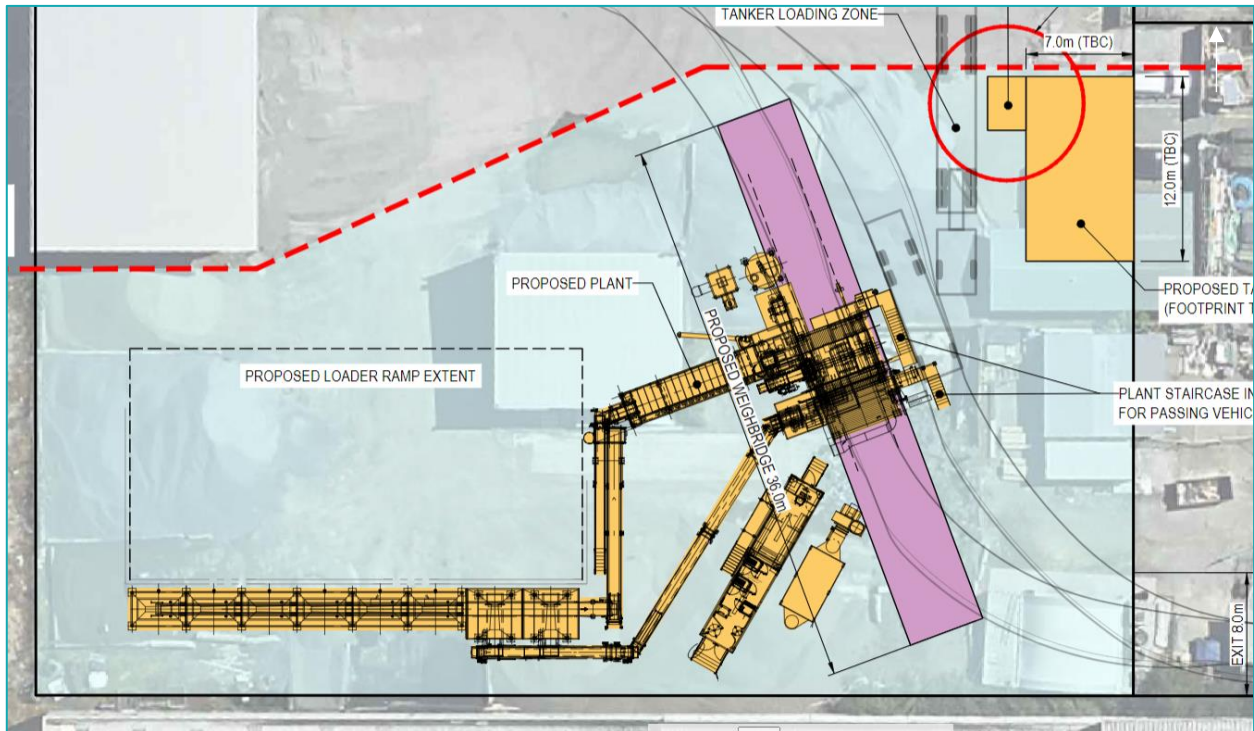


Figure 3. Construction phase works area – indicative only (Preliminary Design – Site Layout Construction Phasing DWG 3936244-SK1)

- Decommissioning of old plant and new storage bays – once the new plant is commissioned, Allied Asphalt can then commence decommissioning the existing plant. This stage also includes the construction of more aggregate storage bays in the southern vicinity of the site (**Figure 4**).

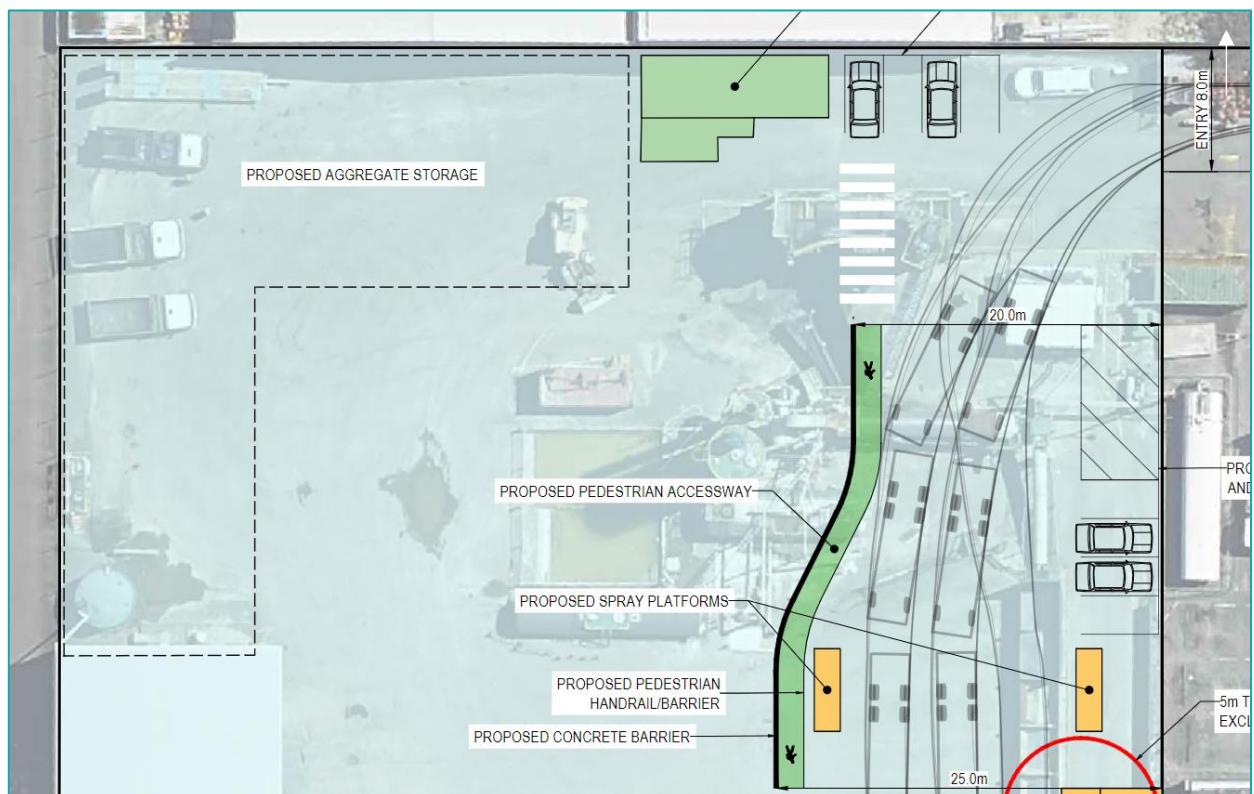


Figure 4. Decommissioning phase works area – indicative only (Preliminary Design – Site Layout Construction Phasing DWG 3936244-SK2)

The works are expected to involve relatively limited earthworks volumes. Previous geotechnical analysis undertaken onsite indicate the site is layered with up to 0.5m of compacted gravelly sand basecourse before transitioning to sand beneath. The works outlined above do not require bulk earthworks down to this soil layer and will likely only comprise discrete areas associated with piles, foundations, ground shaping for surface drainage and trenched services. The majority of the site will therefore be maintained as hardfill surface and sealed at the completion of works. The total volume of disturbance (including reshaping hardfill) has been calculated at 1500m³.

2.3 Receiving Environment

All site stormwater discharge onsite is via the two stormwater interceptors (**Figure 2**) connecting to the public stormwater infrastructure running down Aerodrome Road.

The public stormwater network runs through ~1.1km of pipe to the west to ultimately discharge to a stormwater swale at the end of Seawind Lane, prior to discharging to Tauranga Harbour a further 800m away.

3 Erosion and Sediment Control Guidelines and Principles

The key principles to be employed in an erosion and sediment control plan are to undertake land disturbing activities in a manner that reduces the potential for erosion of bare soils to occur (erosion control) and to employ devices to treat sediment laden water prior to discharge from the site (sediment control). The ten basic principles of erosion and sediment control outlined in the Bay of Plenty Regional Council's *Erosion and Sediment Control Guidelines for Land Disturbing Activities* (2010)¹, hereon referred to as the 'ESC Guidelines' are set out below:

- **Minimise Disturbance:** Only work those areas required for construction to take place.
 - Actual soil disturbance associated with the project is low, with the majority of site works being within existing hardfill material or involving the placement of new engineered hardfill for foundations.
- **Stage Construction:** Carefully plan works to minimise the area of disturbance at any one time
 - Site works are to be staged, minimising the footprint of potentially exposed soils.
- **Protect Critical Areas:** Protect prone steep slopes and watercourses with erosion protection.
 - No steep slopes exist in the site and no steep cut faces will be required.
- **Separate clean water from dirty water:** understand where your clean and dirty water separations are.
- **Control erosion at the source:** prevention of erosion at the source takes precedence over sediment containment and treatment.
- **Progressively stabilise disturbed areas:** Methods range from placing aggregate, grassing, and mulching or temporary methods such as polymer and geotextiles. The majority of the worked site will be stabilised with aggregate hardfill or concrete surfaces with progress.
- **Retain sediment onsite:** Treat runoff by methods that allow sediment to settle out.
 - The proposed isolated earthworks for the site will act as a retention area. No other retention areas are proposed.
- **Install perimeter controls:** Divert clean water away from areas of disturbance and divert runoff from disturbed areas to sediment control measures.
 - The site is flat and will not involve a large volume of clean water inflow from nearby areas. Low driveable asphalt bunds may be required in isolated areas along with stormwater catchpit protection.
- **Make sure the plan evolves:** Update the plan as required.
- **Assess and adjust:** Inspect, monitor, and maintain control measures.

These principles and the broader ESC Guidelines have been adopted in the preparation of this plan. The appointed Contractor will also adopt the ESC Guidelines in preparing their SSES CP.

¹ Bay of Plenty Regional Council's *Erosion and Sediment Control Guidelines for Land Disturbing Activities* (2010) - <https://www.boprc.govt.nz/media/29555/Guideline-100624-ErosionandSedimentControl.pdf>

4 Erosion Control

Erosion Control is to be prioritised ahead of the reliance of sediment retention devices. Efficient erosion control minimises the volume of sediment generated, and therefore minimises the overall sediment discharge risk. The following items will be assessed throughout the duration of the project.

4.1 Proposed Staging

Staging will be discussed in the SSES CP as it is dependent on the detailed earthwork methodology. Staging may be undertaken throughout the site to minimise the extent of open area at one given time with a priority of only opening those areas where active excavation is required for foundation work. It is noted that only very small pockets of soil are likely to be encountered throughout the site, so staging is not deemed to be a necessity.

4.2 Timing of Earthworks

Earthworks are relatively minor in volume and comprise shallow depths and trenching so could be completed at any time throughout the year. Whilst summer timing for earthworks is preferable (i.e. 1st October – 30th April) the works could be managed throughout a winter period.

During earthworks, the appointed contractor will monitor the weather forecast and avoid working during periods of rainfall in order to minimise sediment generation.

4.3 Stabilised Accessways and Surfaces

During construction, access would be from the existing concrete and metalled driveways off Aerodrome Road in the northeast corner of the site.

This accessway will provide a stabilised access for the works and reduce the likelihood of sediment tracking out of the site.

Machinery undertaking the works will utilise the existing stabilised surfaces for working platforms, therefore minimising the potential erosion of the excavated site.

The Contractor would implement standard construction measures to ensure sediment is maintained within the site including:

- maintaining aggregate cover over excavations.
- inspection and assessment of accessways for tracking sediment.
- truck stops and wheel wash if needed.

4.4 Clean Water Management

Clean water overland flow will be controlled by staging of earthworks or implementing water diversions (such as driveable asphalt bunds). Clean water diversions are unlikely to be required given the surrounding stabilised surfaces and flat nature of the site.

4.5 Progressive Stabilisation and 'Cut & Cover' Methodology

Stabilisation of the site will primarily be achieved through placement of an aggregate cover (engineered hardfill) as soon as possible over excavations. In some cases, temporary open areas may be stabilised with geofabric prior to hardfill placement or the designed hardstand surface.

4.6 Dust Control

Dust will be controlled by water spray as required. Water for dust control purposes will likely be sourced from onsite rainwater tanks or public supply. The site has existing dust control sprinklers that can be used to suppress dust during excavation activities.

5 Sediment Control

The construction methodology of the site and small extent of earthworks exposing soils, combined with the flat, low risk topography of the site, and implementation of erosion controls outlined in Section 4, reduces the need for any substantial sediment retention devices.

Sediment control emphasis is therefore placed on preventing sediment entering the stormwater infrastructure based on the following standard methods.

5.1 Stormwater catchpit protection

Catchpit protection near areas of earthworks would be achieved through the use of filter cloth lining, silt socks, and cesspit bags.

The stormwater infrastructure network within the site is the only receiver of discharge from the works area. The existing network passes through two interceptors, which, to some degree, will allow the retention of sediment onsite prior to discharge offsite. The use of catchpit liners and silt socks around intakes during construction would provide an additional layer of protection from sediment reaching the interceptor.

5.2 Silt fences

Given the predominantly impervious nature of the site, and since works mainly involve the disturbance of hardfill material, the installation of silt fences or retention areas is not considered possible, or necessary.

5.3 Earth bunds

On the basis of the proposed methodology and project area outlined above, no perimeter earth bunds are anticipated to be required.

Should dirty water bunds be required following confirmation of the final plant design and detailed SSES CP, they will be constructed with side slopes no steeper than 3:1 and adequately compacted, in accordance with the BoPRC Guidelines.

5.4 Decanting Earth Bunds and Sediment Retention Ponds

Decanting earth bunds (DEBs) or sediment retention ponds (SRPs) would not be required given the small-scale nature of earthworks and predominately stabilised surface associated with this development.

5.5 Dewatering methodology

The excavation throughout the site may result in temporary stormwater retention areas within the site that require dewatering sporadically through construction. Any dewatering will be passed through a dewatering treatment device such as a dewatering bag, turkeys' nest, baffled bin or lamella clarifier set up in an area that allows the passive discharge of treated water to existing stormwater interceptor devices on site.

Examples of these dewatering devices are provided in **Figure 5** below. Any dewatering undertaken would be closely monitored to ensure no excess sediment is being discharged out of the site. This methodology will be further detailed in the detailed SSES CP.



Figure 5. Example dewatering devices (source: Auckland Council Guideline Document 005)

5.6 Stockpiling

There may be the requirement for temporary stockpiling of excavated material onsite during foundation excavations or piling. These stockpiles are likely to only be a low volume and temporary, and therefore have a low sediment discharge risk. Should any soil stockpiles be longer duration and present a sediment discharge risk they should be adequately stabilised with geofabric (or similar material) or be positioned within the catchment of sediment control device.

If stockpiling of potentially contaminated material is required there may be further management requirements to be provided in a Contaminated Soils Management Plan, or similar management plan.

6 ESC Maintenance

The following monitoring and maintenance activities shown in **Table 1** are recommended for the site. This table provides several aspects of ESC that the Site Manager will assess regularly to ensure ESC measures are optimised.

Table 1. ESC Maintenance and Inspections

Control Type	Inspection and Maintenance Requirements	Frequency
Weather Forecast	<ul style="list-style-type: none"> Check MetService New Zealand or private forecast provider for rainfall forecasts <ul style="list-style-type: none"> Undertake a pre-check of the site controls prior to any large rainfall events. 	Daily during operations
Silt fences	<ul style="list-style-type: none"> Check any silt fence is toed in correctly. Check for tears and other damage – fix if required. Any areas of collapse, decomposition or ineffectiveness are to be replaced immediately. Remove silt build ups when bulges develop or when deposition reaches 30% of the silt fence height. 	Weekly
Stormwater catchpits	<ul style="list-style-type: none"> Check any silt trap or silt sock protecting stormwater infrastructure. Ensure sediment build up is removed and contained, and the sediment protection re-established. 	Weekly
Monitoring of Sediment Discharge	<ul style="list-style-type: none"> Check whether erosion and sediment devices are operating as designed via checking water clarity in devices and receiving waterways. Inspect areas of earthworks and identify whether additional erosion and sediment control measures are necessary. Determine whether excessive sediment is discharging to roadways, land, or watercourses and remediate immediately. 	Prior and during rainfall events and weekly
Stabilised Entranceway	<ul style="list-style-type: none"> Inspect the stabilised accessway and laydown area and top up with clean aggregate if required. Inspect the public road surface is not having sediment tracked onto it – sweep if required. Inspect any structure used to trap sediment from the stabilised entranceway. 	Daily during operations
Stabilising Areas	<ul style="list-style-type: none"> Check that all stabilised areas have at least 80% cover before removing control devices. Identify areas that require stabilisation and remedy. 	Daily during operations and prior to rainfall events

7 Summary

- The site is flat and consists of an existing compacted hardfill and asphalt and concrete surfaces.
- Stormwater across the site discharges through two existing interceptors which discharge to the public stormwater infrastructure.
- Works associated with this project do not involve large areas and volumes of soil disturbance, and predominantly involve re-grading existing hardfill material and isolated service trenching or foundations.
- Erosion controls are to be emphasised, primarily the use of the existing stabilised surfaces and progressive stabilisation with aggregate. Temporary erosion controls such as geofabrics and polymers may be used as required.
- Emphasis on sediment control is to be placed on the protection of the stormwater network running from the site with stormwater catchpit protection.
- Overall, the site conditions and proposed construction activities do not present a high erosion and sediment discharge risk. Principles of erosion and sediment control outlined in this report will be sufficient in minimising any potential sediment discharge risk from the proposed works.

A

Appendix A – Preliminary Design Plans

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.



**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)	Design	Approved For Construction*
1:250	Drawn	Date
Reduced Scale (A3)	Dwg Verifier	
1:500	Dwg Check	
	* 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

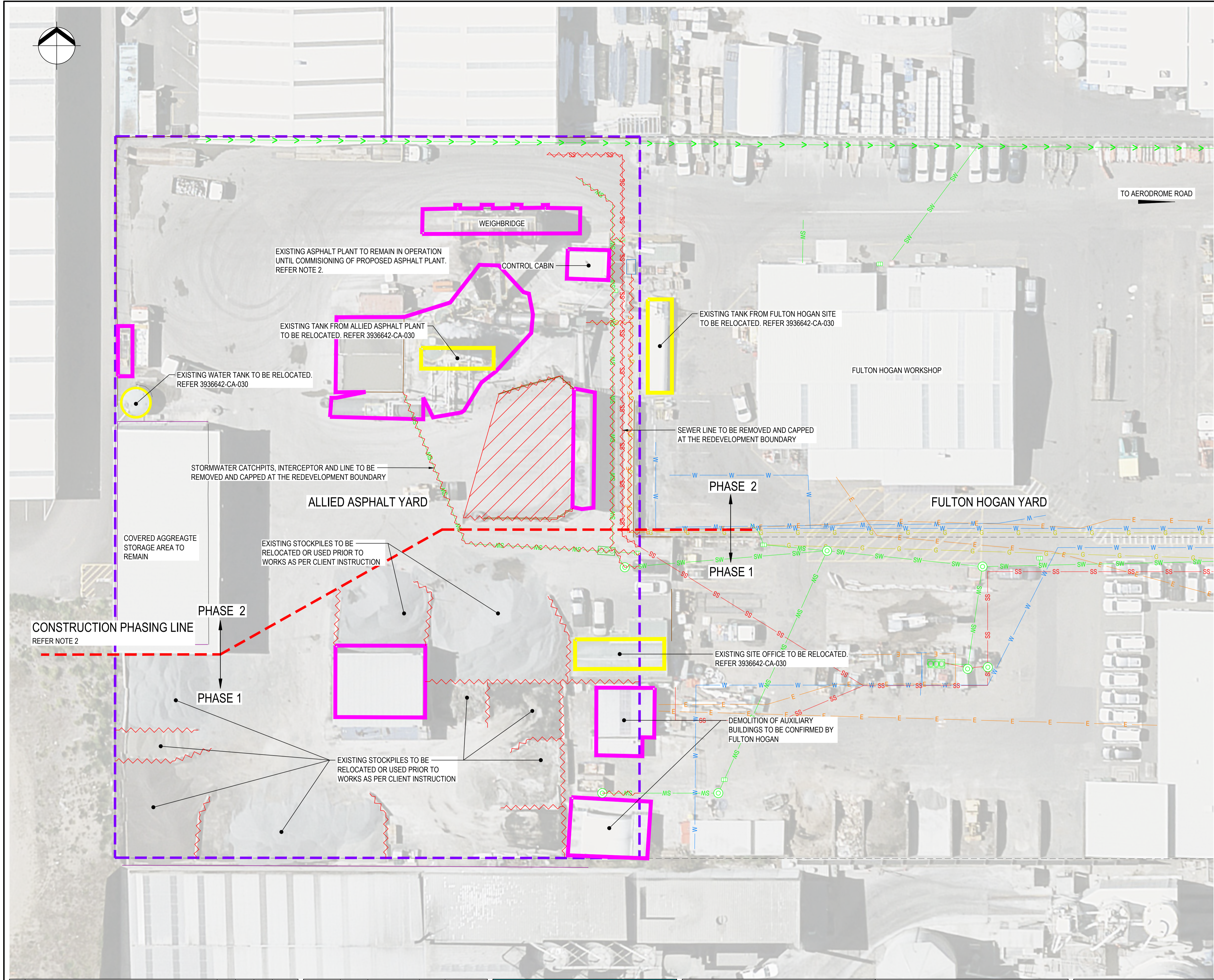
LEGEND

- CADASTRAL SITE BOUNDARY
- - - REDEVELOPMENT SITE BOUNDARY
- - - CONSTRUCTION PHASING LINE
- TO BE DEMOLISHED
- TO BE RELOCATED
- TO BE REMOVED
- MATERIAL TO BE RELOCATED/USED

EXISTING SERVICES

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

- NOTES**
- REFER TO DRAWING 3936244-CA-001 FOR GENERAL NOTES.
 - DEMOLITION AND CONSTRUCTION TO BE CARRIED OUT IN TWO PHASES. PHASE 2 TO COMMENCE FOLLOWING COMMISSIONING OF THE PROPOSED ASPHALT PLANT.
 - EXISTING PLANT TO REMAIN FULLY OPERATIONAL UNTIL THE COMMISSIONING OF THE NEW PLANT.
 - CONTRACTOR TO PROVIDE DETAILED METHODOLOGY OF STAGING OF THE WORKS INCLUDING KEEPING EXISTING SERVICES LIVE DURING THE WORK.



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



Client: **ALLIED ASPHALT**

Project: **MOUNT MAUNGANUI ASPHALT PLANT CONSENTING**

Title: **SITE CLEARANCE PLAN**

Discipline	CIVIL
Drawing No.	3936642-CA-020
Rev.	B

LEGEND

- CADASTRAL SITE BOUNDARY
- REDEVELOPMENT SITE BOUNDARY
- INDUSTRIAL ASPHALT
- PROPOSED FEATURES
- RELOCATED FEATURES
- TANKER TRUCK FLOW
- AGGREGATE TRUCK FLOW
- ASPHALT TRUCK FLOW

- NOTES**
1. REFER TO DRAWING 3936244-CA-001 FOR GENERAL NOTES.
 2. FULTON HOGAN YARD IS UNDERGOING SEPARATE REDEVELOPMENT NOT SHOWN ON THESE DRAWINGS.
 3. VEHICLE TRACKING DIAGRAMS AVAILABLE UPON REQUEST. REFER INFRASTRUCTURE AND SERVICING ASSESSMENT REPORT FOR DETAILS.



PROPOSED SITE DEVELOPMENT AREA = 0.7ha

**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	Design Drawn	Approved For Construction*
Reduced Scale (A3) 1:500	Dwg Verifier	Date
	Dwg Check	* Refer to Revision 1 for Original Signature



Client: **ALLIED ASPHALT**

Project: **MOUNT MAUNGANUI ASPHALT PLANT CONSENTING**

Title: **PROPOSED SITE PLAN**

Discipline	CIVIL
Drawing No.	3936244-CA-030
Rev.	B

B

Appendix B – Site Photos (01.06.22)



Figure 1. Aggregate Bay storage sheds. One located in the middle of the south end of the site (centre) and the other located along the western site boundary (right).



Figure 2. Aggregate stockpiles within the south-western corner of the site.



Figure 3. Looking towards aggregate stockpile and aggregate storage shed on the western site boundary from the south-western corner.



Figure 4. Looking toward the aggregate storage shed on the western site boundary from the east.