King Road Transport Depot

Environmental Management Plans - Manual



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1 Introduction

This document sets out a series of Environmental Management Plans for key matters associated with short-term project works at 766 King Road in Oldbury to recover stockpiled crushing and demolition (C&D) material for use as base course fill for the further development of the site. The crushing and screening of C&D material is part of the site remediation project which is described in Section 2 Site Remediation Management Plan, of this report.

Environmental management of the broader site and activities conducted on site after the short-term project works have been completed will be covered by another environmental management plan.

The development is being undertaken by Hope Valley Wood Waste Pty Ltd (HVW) on behalf of the owner the site, Thomas Road Property Pty Ltd (TRPP).

1.1 Scope of These Plans

These Environmental Management Plans only apply to the project works associated with the deconstruction of the C&D material stockpile located in the eastern portion of the site and subsequent processing to produce geotechnically suitable fill for placement on the western portion of the site.

1.2 Approvals Relevant to These Plans

These plans are produced as a supporting document for the Works Approval Application lodged with the Department of Water and Environmental Regulation (DWER) to allow the processing of the stockpiled C&D material by crushing and screening. They are also provided in response to DWER's request for information (RFI) of 6 March 2025, in particular, Schedule 1 and line item 5.

The plans are also relevant in part, to the Development Approval (Application No: PA24/262) for the site as granted and altered by the Shire of Serpentine Jarrahdale on 17 March 2025.

1.3 Emergency Management Plan

The methods involved in processing the C&D material present a very low risk of causing any significant public health or environmental emergency. The key emergency risks are:

- The risk of injuries to personnel; and
- The risk of oil or fuel spill.

Emergencies that occur inside and outside of the project area will be managed in accordance with the site's overall Emergency Management Plan.

If an emergency occurs in the project area the site Manager will escalate it to the overall site Manager for its management.

1.4 Acknowledgements

The Environmental Management Plans acknowledges the work undertaken by:

- Aurora Environmental to characterise the contamination status of the stockpiled material.
- ABEC Pty Ltd to characterise groundwater characteristics.
- Statewest Planning in terms of the design of the site and planning approvals.
- Noel Davies of Jevsands Pty Ltd for input and advice on asbestos related matters.

2 Site Remediation Management Plan

Site remediation project works have been designed to take place in two parts to create the Stage 2 Transport Depot:

- Part 1 project works involved (which have mostly been completed as of 1 July 2025):
 - o Recovery of the low western stockpile, the wood-waste stockpile and the plaster stockpile.
 - o Creation of earthen bunds to the north and south of the Stage 2 area.
 - o Placement of fill and creation of an engineered laydown area.
 - o Reconstructing the surface water drainage system to incorporate the Stage 2 depot area.
- Part 2 project works will involve:
 - Sorting, crushing and screening the C&D stockpile and using it as sub-base or base fill on the Part 2
 area.
 - o Importing fill and cover material to create an engineered depot.
 - Finalising the surface water drainage system and incorporating sedimentation traps and overflow areas.

The staging of these works are set out in sequential steps within Figure 1 through to Figure 4.

2.1 Stage 2 Part 1 Project Works

The Stage 2 Part 1 project works have been completed. They involved the following main activities:

- Removing the wood waste and plaster stockpile and incorporate them into the northern and south bunds to be created.
- Levelling the western low stockpile after removing steel, concrete and any other unwanted materials.
- Placing fill material on the Part 1 area.
- Covering the fill with recycled asphalt pavement and contouring the area toward the surface water drainage system.

In relation to the above works HVW did not process material through the crushing and screening plant. As such these works were not required to be conducted under the provision of a works approval. It has, however, been subject to regulation by the Shire of Serpentine Jarrahdale.

HVW's progress on the western stockpile to 1 July 2025 can be seen in the record of aerial photography provided below in Plate 1 and Plate 2 below.

All works undertaken on western stockpile have been undertaken in consultation with, and under the supervision of an experienced Environmental Supervisor. The Supervisor carried out regular (virtually daily) inspections of the material during the works to assess for the presence of unacceptable or hazardous materials. No asbestos containing materials, fuel or chemical drums, stained or odorous soils were observed. These observations confirm that the original assessment by Aurora Environmental properly characterised the material as suitable for re-use on the site.



Plate 1: Site Aerial Image 3 February 2025

Source: MNG Access - Maps accessed 20/5/2025



Plate 2: Site Aerial Image 25 June 2025

Source: MNG Access - Maps accessed 05/07/2025

In relation to 'clean material' sourced to cover the laydown area (Stage 2, Part 1) it was material classified as 'clean fill' or virgin material such as crushed limestone. The site did not accept any material that was classified as a waste.

No noise or dust related complaints were received during the Stage 2, Part 1 works.

2.2 Stage 2 Part 2 Remediation & C&D Crushing and Screening

The contamination assessment completed by Aurora Environmental confirmed that, based on an assessment completed in accordance with relevant DWER and National Environmental Protection Measure (NEPM) guidelines the material in the stockpile was suitable for use as fill on a site to be used for commercial and industrial purposes. The assessment of the stockpile was undertaken in two parts. An initial assessment completed in 2023 which characterised the stockpile as containing material consistent with HIL-D criteria and a second assessment completed in June/July 2025 at the request of DWER. The second assessment showed that the central and deeper areas of the stockpile which were not previously sampled as similar in nature to the areas of the stockpile that were sampled in the 2023 investigation.

The key difference between the two investigation phases was that while no asbestos was encountered in the first investigation phase, a total of 200 g of Asbestos Containing Material (ACM) was that found in the more than 30 samples taken in the second phase. If it is assumed that the central area of the stockpile characterised nominally 10,000 m3 (20,000t) of concrete, soil and brick and the ACM recovered contained a nominal 15% of asbestos, then the following estimate of asbestos contamination can be made for the central portion of the stockpile:

- A total 30 g of asbestos (15% of 200g)
- A W/W concentration of asbestos of 30g asbestos/20,000 x 10⁶g of stockpiled material
- Translating to 1.5x10-7% asbestos

This value can be compared to the accepted definition for materials not being defined as containing asbestos of 0.001%.

As a result asbestos is not considered a significant risk in the stockpile and the proposed management procedures for unexpected finds will manage this risk appropriately.

It is further assessed that monitoring for airborne asbestos fibres is not required, although Aurora recommended general dust and air quality control to be monitored by particulate matter (PM_{10} and $PM_{2.5}$) measurement.

The initial Aurora Environmental Assessment identified a small volume of material in the south-west area of the stockpile that exhibited slightly elevated concentrations of some metals, although these were not in excess of concentrations permissible for re-use of the material on a commercial and industrial site. Notwithstanding, and based on a precautionary approach, HVW has:

Excised this material from the stockpile and stockpiled it separately.

- Is characterising the material to determine the appropriate landfill class for off-site disposal. This characterisation will be completed in accordance with the relevant DWER Guidelines.
- The material will be disposed of to a licensed landfill as part of the processing of the main stockpile.
- The walls and base of the area excavated from the main stockpile have been sampled to validate that residual metal concentrations are consistent with the contaminant concentrations in the main stockpile.
- The remainder of the stockpile will be processed using the following methodology: The stockpile will be
 progressively deconstructed and excavated by an excavator using various attachments that allow for
 segregation of ferrous metals by magnetic means and extraction of non-ferrous metals and timber using
 a hydraulic grabber attachment attached to the excavator.
- Any unsuitable or hazardous materials identified during the de-construction process will be stored separately for off-site disposal. This will include items such as potentially asbestos containing materials (ACM), chemical drums or batteries etc.
- The residual stockpile material, following removal of timber and metals will be processed through a combined crusher and screen to produce two streams of material for placement as fill on the site. The streams will be fines (< 25 mm), and oversize (nominally 25-100 mm). Any larger fragments (>100mm) will be reprocessed through the screener/crusher.
- The product from the screener/crusher will be placed in stockpiles with a nominal volume of 1,000-2,000m³.
- Each fines stockpile will be subjected to assessment by progressive visual assessment by an experienced Environmental Supervisor and sampling with laboratory assessment for asbestos fines and a standard suite of 8 metals (As, Ba, Cd, Cr, Pb, Hg, Se & Ag). In view of the fact that the Aurora Environmental assessment has already confirmed that the material is at low risk of being contaminated, the sampling rate proposed is to take a nominal total of 4 samples per day (approximately 4 samples per 500m³) Samples will be analysed for Asbestos Fines and a suite of 8 metals. Samples will be handled in accordance with relevant Contaminated Sites procedures and all samples will be analysed in a laboratory certified by NATA for these analyses. The sample analysis results will be compared with the Health Investigation levels for Commercial and Industrial land use (HIL-D).

Note, an experienced Environmental Supervisor will always be on-site, supervising the processing operations to ensure that any unexpected finds are dealt with appropriately.

The Supervisor will also take the required samples and ensure they are directed to a NATA registered laboratory for analysis with relevant chains of custody.

Roles and Responsibilities of the Site Manager and Site Environmental Supervisor

The Site Manager will be appointed by HVW to procure and operate the necessary machinery and equipment to allow:

- The efficient deconstruction and segregation of the stockpiled materials.
- The segregation of materials that are deleterious or hazardous for use as fill (large metal pieces and wood fragments).
- The safe storage and disposal of unsuitable materials
- The crushing and screening of bricks, concrete and fines materials
- The placement and compaction of fines materials in locations determined by HVW.
- The leveling and coverage of fines material to create a stable trafficable landform.

The Site Manager will also be responsible for ensuring that all personnel involved in the works described complete an induction that addresses the following:

- Identification and management of unexpected finds.
- The control of dust and noise.
- Waste management.
- Management of spills.
- The management of incidents and complaints.

The Environmental Supervisor will be an experienced Environmental Consultant appointed by and responsible to HVW. The Environmental Supervisor will:

- Ensure that the Site Manager is aware of all necessary environmental approvals, environmental procedures and advise on and assist with implement environmental aspects of the induction procedure.
- The Environmental Supervisor will:
 - Be on-site at all times when stockpile deconstruction works and crushing and screening works are occurring.
 - Will visually inspect the site for the presence of hazardous or unsuitable materials in the stockpiled materials
 - Will supervise the excision of the volume of material in the stockpile that is affected by elevated concentrations of metals.
 - Will manage the sampling of fines stockpiles and issue written releases confirming that the stockpiled material is suitable for use as fill.
 - Record details of the processes and practices used for placement and coverage of the fill as it placed and covered.
 - Arrange for a final Remediation report to be submitted to DWER seeking reclassification of the site as "Remediated for Restricted Use."
 - Be responsible for investigating the cause of any activity that results in complaint and assist HVW with addressing the cause of any justified complaint.

3.1 Site Induction

All personnel on the site will be required to undertake a site induction prior to commencing work on the site. A log will be maintained demonstrating that all personnel have undergone the induction process.

The site induction will:

- Provide a brief overview of the history of the site.
- Describe the potential health and environmental risks associated with the works program.
- Describe the relevant management procedures including PPE to address the identified risks.
- Provide clear advice on responsibilities, authorities and contact details relevant to the safe management
 of the site.

3.2 Personnel Safety

Safety is of paramount concern at all stages of the project works and this will be addressed in detail during the site induction.

The overall risks associated with the site are similar to those associated with a normal earth-working site and related to exposure to:

- Nuisance dust.
- Fuels and oils.
- Unexpected finds.

Additionally, the works will involve the operation of heavy equipment and vehicles and so it is essential that access to areas where vehicles and equipment is controlled at all times.

Minimum PPE requirements are as follows:

- Hi-vis shirts and jackets.
- Long pants and shirt sleeves.
- Steel capped enclosed footwear.
- Safety eye wear.
- Hearing protection (muffs or plugs) when working in areas where prolonged exposures to noise emissions above 80 dBA are likely.
- Gloves when manually handling concrete, bricks or metal materials.

Given that no asbestos containing or hazardous material have been identified in the stockpiled material, decontamination procedures are not considered necessary.

3.2.1 Specific Responsibilities

- 1. The Environmental Supervisor will check the weather forecast daily when the site is operational for high wind conditions and liaise with the Site Manager over the need for additional dust controls or whether operations should be suspended.
- 2. The Environmental Supervisor will review PM_{10} and $PM_{2.5}$ monitoring data and receive real time alerts for exceedances of trigger values. The Site Manager will also receive real time alerts for such exceedances. The Environmental Supervisor will advise the Site Manager of the additional dust control measures required to adequately dust (Site Manager to ensure they are implemented).
- 3. The Environmental Supervisor will check the stockpile face for signs of hazardous materials (ACM and chemicals containers etc.) and issue instructions for additional controls for safe management of the site.
- 4. The Site Manager will ensure that all equipment is properly maintained and that refuelling or maintenance is conducted in a manner that minuses the risk of spillages.
- 5. The Environmental Supervisor will ensure the safe management and disposal of unsuitable materials and will keep a record of who the material was managed in the Waste Tracking Log (Appendix 4).

6. The Environmental supervisor will undertake all sampling and maintain all records to permit a final remediation report to be submitted to DWER Contaminated Sites Branch to allow reclassification of the site to *Remediated for Restricted Use*.

4 C&D Crushing and Screening Management Plan

Objective: To ensure that stockpiled C&D material is recovered and processed into material that

is fit for site remediation.

Risk Level: Low. Site surveys to date to have not identified material in the C&D stockpile that is

not suitable for the project. The C&D stockpile does contain large pieces of metal and wood which will be removed or set aside and not processed through the crushing and

screening plant.

Key Issues:

Recovered fill material from the C&D stockpile does contain pieces of ferrous and non-ferrous metals and timber which will be removed or set aside as it is picked from the stockpile and not processed through the crushing and screening plant.

The C&D stockpile has been extensively investigated and while it does contain pieces of ferrous and non-ferrous metals and timber, it is largely free from other forms of contaminant. Given that the C&D stockpile was created in an unregulated manner, there does exist the possibility that it might contain ACM (asbestos cement sheeting pieces/remnants) and other hazardous materials (waste oil) know to contaminate C&D materials.

4.1 Stockpile Management Plan

On the basis that crushed and screened material recovered from the C&D stockpile might contain unwanted materials, the following process will be followed to allow for quality assurance testing of recovered materials.

An excavator will remove large fragments of unwanted material from the C&D stockpile, setting aside non-recoverable materials (metals and wood mostly) and feeding the residual material into mobile crushing and screening equipment.

The C&D stockpile recovery operations will notionally work on a weekly work rotation for about 10 weeks in total, although there may be some breaks in the operation depending on the availability of personnel and machinery.

Crushed and screened material will be set placed at separate stockpiles. Typically, there will be a 3-stockpile rotation in operation as follows:

- Stockpile 1 will be filling directly from the crusher and screener.
- Stockpile 2 will be stored pending sampling and assessment.
- Stockpile 3 will be progressively excavated and placed as fill.

Note: No material will be placed as fill until the sampling results confirm it meets the HIL-D requirements.

Each stockpile might contain about 2,000m³ of material.

4.1.1 Creating, Holding and Release Stockpiles

Recovered materials from the C&D stockpile will be set aside in separate stockpiles, tested and then released on quality assurance inspection. There will be at least three (weekly) stockpiles of materials:

- 1. One stockpile being built.
- 2. One stockpile held pending quality assurance testing.
- 3. One stockpile being used for base coarse preparation in the project area.
 - Stockpiles of recovered materials will be periodically rotated as stockpiles are completed, tested
 and released. If testing results are delayed or a stockpile of material does not meet the specification,
 the project team will create additional stockpiles as necessary.

• A notional arrangement of these stockpiles is shown in Figure 4 noting that their location will vary to meet the project's requirements but, the process of there being at least three stockpiles (building, holding, and releasing stockpiles) in rotation will not change.

4.2 Stockpile Testing Plan

Sampling and testing of the recovered and processed material from the C&D stockpile will be as per the following steps:

- 1. During each day of processing, samples of crushed and screened material will be collected.
- 2. A nominal total of 4 samples per day (approximately 4 samples per 500 m³ will be taken from the fines stockpile.

Note the DWER Guidance on Managing asbestos at Construction and demolition waste recycling facilities recommends sampling at a minimum rate of 1 per 70 m³ in the absence of demonstrated controls over asbestos in waste but allows for a reduced sampling rate of one sample per 600 m³ for asbestos where facilities have demonstrated the ability to consistently produce recycled product that meets product specifications.

The proposed nominal sampling rate of one sample per 500 m³ has been selected on the basis that stockpile sampling has demonstrated very low contaminant levels are present throughout the stockpile.

All samples will be assessed on a concentration basis only for Asbestos Fines and the standard suite of 8 metals (As, Ba, Cd, Cr, Pb, Hg, Se & Ag).

4.3 Testing Criteria

The results of the processed material stockpiled sampling will be compared to the relevant contaminated sites criteria for commercial and industrial land use. That is the HIL-D criteria.

5 Inwards Civil and Geotechnical Material Management Plan

Objective: To ensure that civil and geotechnical materials brought on to site for remediation

works do not contaminate the site.

Risk Level: Low - only those materials that are clean fill, inert and not contaminating will be

sourced.

Key Issues/sources:

Civil and geotechnical material brought on to site have the potential to contaminate the site if they are not sourced form reputable suppliers and supported with documentation ascertaining the quality of the material.

Management Actions

To ensure that the environmental impacts from civil and geotechnical materials brought on to site are 'safe' the Site Manager will:

- 1. Not accept waste material of any type on to site for civil and geotechnical work.
- 2. Source clean fill and cover material from reputable suppliers and inspect it on arrival at site.
- 3. Source geotechnical material from reputable suppliers and inspect it on arrival at site.
- 4. Obtain and keep quality assurance and quality control records (QA/QC) (including chemical testing results) of inwards civil and geotechnical material brought on to the project area.
- 5. Keep a register of civil and geotechnical materials received on to the project (Appendix 3).

Site remediation activities have been designed to a have minimalised impact on the local environment including the impacts associated with the inwards movement of civil and geotechnical materials.

If material arrives on site without an accompanied QA/QC certificate it will be:

- Set aside and isolated on site.
- An incident will be raised, recorded and the material will be managed via the Incident, Unexpected Find and Complaint Management Procedure (Section 13).

6 Noise Management Plan

Objective: To ensure that the site's activities and operations do not produce noise that

unreasonably impacts neighbours.

Risk Level: Low — not subject to site specific DWER regulatory controls though subject to the

Environmental Protection (Noise) Regulations 1997 at all times. The predictive noise

assessment for the activity indicates compliance with the Noise Regulations.

Key Noise Sources:

Noise sources on site in the activity area occur from:

1. Crushing and screening equipment.

- 2. Heavy plant and machinery.
- 3. Diesel powered generating set(s).

Management Actions

Standard hours of operation for crushing and screening activities and site remediation activities will be limited to Monday to Friday from 7am to 7pm and on Saturday from 7am to 1 pm.

To ensure that noise emissions are minimised and compliant with the Noise Regulations, the occupier will:

- 1. Keep in place the containers to the south of the C&D stockpile, acting as a noise barrier.
- 2. Operate and maintain vehicles and equipment according to manufacturer's requirements with particular attention to mufflers and noise shielding fittings.
- 3. Fit warning lights or low frequency beepers on plant and mobile equipment wherever possible.
- 4. Regularly check and repair trafficable surfaces to maintain good conditions (free of potholes, rills and spillages).
- 5. Regularly check motor vehicles and equipment and any excessively noisy items will be taken out of service and repaired.
- 6. Limit the speed of mobile equipment to that which is the slowest reasonable speed (generally less than 10km/hr).
- 7. Minimise the use of noisy equipment not associated with the crushing and screening of C&D material and remediation activities on other areas of the 766 King Road site.

The crushing and screening activities have been designed to comply with the *Environmental Protection (Noise) Regulations 1997* and as such, unacceptable noise impacts and noise related complaints are not expected. However, should a noise complaint arise, it will be recorded and managed via the Incident, Unexpected Finds and Complaint Management Procedure (Section 13).

7 Dust Management Plan

Objective: To ensure that crushing and screening activities minimise the generation of dust on

site, avoiding any off-site impacts.

Risk Level: Low — short duration activity (8 to 10 weeks) with dust suppression in place.

Key Dust Sources:

Dust sources occur from:

1. Materials handling from the stockpile to the crusher.

- 2. Crushing and screening equipment.
- 3. Materials handling to the interim stockpile.
- 4. Materials handling to the application area (Moxy trucks).
- 5. Civil work to form the new depot laydown yards (Graders and dozers).
- 6. Dust lift-off from material stockpiles.

Management Actions

To ensure that dust emissions are minimised, HVW will utilise the following management techniques:

- 1. Wet processing: recovered materials entering the crushing and screening plant will be processed in a wet state by pre-wetting feed material and using water spray bars at the entry of the crusher.
- 2. Mobile water cart: the site will have a mobile water cart to add water to stockpiles and working areas to lower the risk of dust *lift-off*.
- 3. Timing: remediation works are to take place in winter months (preferably).
- 4. High wind speed avoidance: the work site will shut-down remediation activities when the wind speed exceeds 29km/hr being a *fresh* wind speed (Beaufort No. 5), unless the weather forecast includes significant rain which will act to minimise the potential for dust emissions.
- 5. Visible dust across the boundary: the work site will shut-down remediation activities when there is visible dust crossing the boundary of the premises.

Site remediation activities been designed to comply with industry standards and as such, unacceptable dust impacts and dust related complaints are not expected. However, should a dust complaint arise, it will be recorded and managed via the Incident, Unexpected Find and Complaint Management Procedure (Section 13).

If in the unlikely event that visible dust crosses the boundary of the premises staff, after having shut-down the remediation activities (including the C&D crushing and screening plant) will raise an incident, record it and it will be managed via the Incident, Unexpected Find and Complaint Management Procedure.

Monitoring Actions

Three real-time PM_{10} and $PM_{2.5}$ monitors will be established around the works (northern site boundary, southern site boundary and eastern site boundary) They will be connected to an SMS alert system. The Site Manager and Environmenta Supervisor will set up to receive SMS alerts if <u>15-minute</u> rolling average PM_{10} levels exceed the following levels:

PM₁₀: 50μg/m³; and

PM_{2.5}: 25μg/m³.

The alert levels have been conservatively applied from the amended National Environmental Protection Measure for Ambient Air Quality (NEPC, 2016) as these concentrations are the target ambient criteria over a 24-hour period. If the alert levels are exceeded during periods of work activities (i.e., during the day-time when works are being actively conducted), all works will be stopped and an investigation in the area of the air monitor(s) will be undertaken by the Environmental Supervisor and the Site Manager. The investigation will consider:

- the potential source of dust, whether it is from on or off the Site and whether it is from disturbance of the materials subject to works;
- any other activities being undertaken which are unrelated to the crushing and screening works; and
- the wind direction.

8 Waste Management Plan

Objective: To ensure that recovered unsuitable materials, metal and wood is managed properly.

Risk Level: Low — Metal and recovered wood waste from the C&D stockpile are valuable

materials.

Key Waste Sources:

Key waste sources that may arise from the site's activities occur from:

- Out of Specification waste material.
- Fragments of metal and wood.
- Asbestos.
- Other unexpected finds.

Management Actions

To ensure that wastes are managed properly, the occupier will:

- 1. Manage the abovementioned waste sources and risks in accordance with the site-specific plans set-out in Section 8.1 through to Section 8.4 that follow.
- 2. Repurpose and recycle waste and as a last resort, consign it to a landfill.
- 3. Consign asbestos and other unexpected finds to appropriately classified disposal sites.
- 4. Ensure that general waste is regularly removed from the premises so that excessive amounts of waste are not stored on site.

8.1 Site Specific Out-of-Specification C&D Material Management Plan

Objective: To ensure that there is no potential for non-conforming recovered material to be used

in the project.

Risk Level: Low — Site surveys to date to have not identified material in the C&D stockpile that

is not suitable for the project. Finding out of specification material, although possible,

is not expected.

Key Management Issues:

The key management issue related to out-of-specification waste material management is:

1. Material that is contaminated or would contribute towards contamination of the site.

Management Actions

- 1. Unsuitable materials will be segregated for separate management and will not be processed or used as fill in the project.
- 2. Recovered metals will be placed in bulk bins and periodically directed off-site to a suitable licensed scrap metal recovery centre. As far as possible ferrous and non-ferrous metals will be segregated.
- 3. Timber waste will be stockpiled for future recycling or recovery. The preference is that timber is re-used on site as a soil amendment of mulch.
- 4. Materials identified as potentially containing asbestos will be placed in lidded bins and directed off-site for disposal at a site licensed to dispose of asbestos or asbestos containing materials.
- 5. Any unsuitable materials will be stored in an area that is sign-posted indicating that it is 'out of specification' and it is not to be used in the project.
- 6. In the unlikely event that a significant quantity of asbestos or other unsuitable material is identified in the feed material, an incident report will be raised, recorded in the register and it will be managed in accordance with procedure for incidents, unexpected finds and complaints (case by case management). Small and isolated volumes of unsuitable or hazardous materials will be directed to appropriate storage bins or stockpiles and the overall volumes and management approach for such materials will be recorded without raising an incident.

8.2 Site Specific Waste Metal and Wood Waste Management Plan

Objectives:

- To maximise the recovery of re-usable or recyclable metals to the extent feasible.
- To minimise the volume of hazardous material spread into the site or wider environment.

Risk Level: Low — subject to DWER regulatory controls during the operational phases.

Key Management Issues:

The key management issues related to recovered metals management include:

- 1 Mixing of ferrous and non-ferrous metals which will reduce recovery rates when recycling.
- 2 Ensuring that items such as fuel or chemical drums empty and free of products.

Management Actions

To ensure that recovered segregated metal wastes are managed properly, the Site Manager and Environmental Supervisor will:

- On a daily basis, inspect in storage bins to ensure that they are not overflowing
- 2 Ensure that ferrous and non-ferrous metals are stored separately.

Removal from Site

To ensure that recovered metals are properly removed from site, the occupier will:

- Store ferrous and non-ferrous metals in separate bulk storage bins.
- Arrange for bins to removed from site when they ae full to a licensed scrap metal facility.
- Maintain records of the total volume/mass of metals that are directed off-site for disposal and the sites to which they are directed (Appendix 4).

8.3 Site Specific Asbestos Management Plan

Objective: To ensure that the potential for asbestos containing material (ACM) to be processed

in the crushing and screening plant is minimised.

Risk Level: Low ACM material has not been found in the C&D material on site to be crushed and

screened.

Key Management Issues:

The key management issues related to an unexpected find of ACM include:

1 Identification of ACM or potential ACM (PACM) before it is feed to the crusher/screener.

- 2 Correct management of any ACM/PACM if it is identified on site including use of appropriate PPE.
- 3 Safe storage of ACM/PACM in appropriately sized fully enclosed bins labelled with warning signs.
- 4 Off-site disposal of the material to a facility licensed to receive ACM with appropriate documentation to ensure the landfill operator is aware of the nature of the waste material.

Management Actions

To ensure that any found ACM is managed properly, the Environmental Supervisor will:

- On a daily basis, visually inspect the waste stockpile, interim storage stockpiles and screened product stockpiles for the presence of ACM/PACM.
- Where ACM/PACM is identified as isolated fragments or small volumes, it will be wetted with a water spray bottle, collected, placed in heavy duty plastic bags which will be placed in dedicated ACM storage bins.
- Where significant quantities of ACM/PACM are detected in the main waste stockpile, work will cease in that area, it will marked off with temporary fencing and wetted down while specific management procedure is developed for its safe management.
- All personnel involved in the deconstruction and excavation of the waste stockpile and/or the crushing and screening operation will receive specific instruction with regard to the identification and management of ACM/PACM.
- When the ACM /PACM storage bins are nearing their full capacity, they will be closed and directed for offsite disposal at a licensed facility.

Removal from Site

To ensure that any recovered ACM waste is properly removed from site, the occupier will:

- 1. Store ACM in fully enclosed and labelled bins.
- 2. Prior to placement in the dedicated storage bins, ACM will be enclosed in suitable plastic bags after being wetted down to minimise fibre release.
- 3. Records will be maintained of the total volume of ACM/PACM recovered, the transporter used for disposal and the licensed disposal site to which it is directed (Appendix 4).

8.4 Site Specific Unexpected Material Management Plan

Objective:

- To ensure that unexpected finds that could result in contamination of soils proposed for use as fill are identified, removed from the C&D stockpile and managed safely.
- To ensure that unexpected finds will not result in airborne hazardous emission or fires or explosions.

Risk Level:

Low — The stockpiled material has been extensively investigated and been found to be largely free from of contaminants or materials other than soil, bricks, concrete timber and metals. Additional operational controls will ensure that unexpected finds are identified and managed appropriately

Key Management Issues:

The key management issues related to unexpected waste material management include:

- 1. Identification of ACM or PACM that was not previously found during the initial sampling
- 2. Identification of potentially hazardous materials such as batteries or drums that may contain chemicals or hydrocarbons.

Management Actions

The Site Manager will be responsible for ensuring that unexpected waste material is managed properly by:

- All personnel involved in the excavation and recovery of material from the stockpile and subsequent processing or waste will undergo an induction process that addresses the identification of potentially hazardous materials.
- 2 On a daily basis, inspect the faces of the stockpiles and process stockpiles to check for unexpected finds.
- If unexpected finds are located, work will cease while a methodology is developed for safely managing the unexpected finds. The key methodology proposed is to safely segregate and remove the unexpected finds for storage in bins provided for the purpose. Where necessary additional PPE or air monitoring may be required if the quantities of materials are significant.
- 4 The detection of unexpected finds will be logged as an incident (Appendix 1 and Appendix 2).

The Environmental Supervisor will assist in the management of unexpected finds by:

- 1 Undertaking regular daily inspections of stockpile surfaces
- 2 Providing advice to the Site Manager on appropriate management and monitoring measures.

Removal from Site

To ensure that any recovered unexpected waste material is properly removed from site, the Site Manager will:

- 1 Provide bulk bins for storage of metals
- 2 Provide fully enclosed bins for storage of ACM/PACM
- 3 Provided bunded pallets for storage of batteries in the unlikely event they are located in significant quantities
- 4 Keep records of unexpected waste material consigned for disposal etc (Appendices 2 and Appendix 4)

9 Hazardous Materials and Hydrocarbon Management Plan

Objective: To ensure that the potential for the uncontrolled releases of liquid hazardous

materials and hydrocarbons is minimised or eliminated.

Risk Level: Low — The storage, handling and use of hazardous materials is not permitted in the

project area, except for onboard fuel and hydraulic oil in mobile plant and machinery.

Management Actions:

The key management issues related hazardous materials and hydrocarbon management include:

1. Storage of more than 2,000L of hazardous materials or hydrocarbons is not permitted in the project area.

- 2. Refuelling of plant and equipment will only be undertaken using an electromechanical pump system and a well maintained, flexible hose and valved spigot in order to minimise the risk of spillage. Direct decanting of fuels is not permitted.
- 3. Refuelling will be conducted under supervision of experienced plant operators to ensure that overfilling and spillages do not occur.
- 4. Plant and machinery refuelled in the project area will be completed:
 - a. By trained and skilled personnel; and
 - b. With spillage recovery and containment equipment (spill kits) on a refuelling vehicle.
- 5. Any unexpected finds of materials that are hazardous or likely to be hazardous (including hydrocarbons) will be isolated from the C&D stockpile, stored in a safe container and consigned to an approved facility for its management or disposal. The find of an unexpected hazardous material will cause an incident to be raised, recorded and subsequently managed in accordance with the Incident, Unexpected Finds and Complaint Management Procedure (Section 13).
- 6. To ensure that unexpected material is detected and managed properly, the Site Manager, Environmental Supervisor and plant operators will examine the C&D stockpile on a daily and regular basis during the day

10 Stormwater Management Plan

Objective: To ensure that stormwater is properly managed and that any off-site impacts are

minimised.

Risk Level: Low — There is an existing surface water management system in place, and it will be

expanded to encompass the Stage 2 depot.

Key Management Issues:

Key stormwater management issues include:

1. Separating potentially contaminated and clean stormwater to minimise the risk of contamination of clean stormwater.

2. Providing controls such as kerbing, bunding, drainage channels and detention basins to prevent surface water flows from exiting the project area and affecting adjacent land with sediment rich or contaminated stormwater.

Site Surface Water Management Actions

The occupier will:

- 1. Ensure the site is graded to retain stormwater within the project area.
- 2. Construct temporary bunds, channels or ponds to retain stormwater within the project area.
- 3. Ensure that the depot and the crushing and screening activity areas are regularly inspected to prevent external surface water to come on to the site and that stormwater generated on the site does not discharge outside the project area.
- 4. Prepare earthworks and drainage as set out in Figure 3 and Figure 5.

11 Vehicle and Mobile Plant Management Plan

Objective: To ensure that mobile plant and vehicles do not unreasonably impact the

environment.

Risk Level: Low — due to the short duration of the remediation tasks (8 to 10 weeks).

Key Management Issues:

Key management issues for vehicles and mobile plant within the site include:

- Accidental spillages from maintenance activities causing a hydrocarbon issue.
- Accidental spillages from refuelling activities causing a hydrocarbon issue.
- Mechanical failure of plant and equipment causing a hydrocarbon issue.

Management Actions

To ensure that the environmental impacts from mobile plant and machinery are minimised the Site Manager will:

- 1. Prohibit the routine maintenance and servicing of mobile plant and machinery in the project area.
- 2. Restrict maintenance activities in the project area to essential breakdown repairs only to enable the mobile plant and machinery to be moved outside of the project area.
- 3. Ensure that operators of mobile plant and machinery perform daily pre-start checks and other regular machinery inspections in accordance with manufactures specifications.
- 4. Refuelling activities are undertaken by skilled and trained people.
- 5. Refuelling vehicles are fitted with or have on-board access to spill recovery kits.

Site remediation activities been designed to a have minimal impact on the local environment including the impacts associated with mobile plant and equipment. If a mobile plant or machinery event other than within the permitted management actions noted above, or a hydrocarbon spillage event occurs in the project area, staff will raise an incident, record it and it will be managed via the Incident, Unexpected Find and Complaint Management Procedure (Section 13, Appendices 1 and 2).

12 Vehicle Washdown Management Plan

Objective: To ensure that washing down vehicles, plant and equipment does not unreasonably

impact the environment.

Risk Level: Low — due to the limited frequency of washing vehicles, plant and equipment and

the short duration of the remediation tasks (8 to 10 weeks).

Key Issues/sources:

 Washing vehicles might cause a large amount of sediment to be washed away in surface water management systems.

- Washing diesel powered equipment might involve washing engine compartments which may cause an emission of hydrocarbons (diesel) into the local environment.
- Washing hydraulically powered equipment might involve washing away hydraulic oil and grease potentially components causing an unacceptable release of waste into the local environment.

Management Actions

To ensure that the impacts arising from washing vehicles, plant and equipment are minimised the Site Manager will:

- 1. Limit washing of vehicles, plant and equipment to one time only at the end of their service (if necessary) on site and if possible, outside of the project area.
- 2. Washing of vehicles, plant and equipment will be limited to the use of water only, avoiding engine bays and drive trains. Degreasers will not be used.
- 3. Vehicles, plant and equipment that needs to be washed will in the first instance be cleaned by hand tools (brushes) and pneumatic tools (air tool blow down).
- 4. Washing vehicles, plant and equipment will occur within the catchment of the surface water drainage system so that any sediment will be retained on site.
- 5. Vehicles, plant and equipment will be clean and free of any debris before being mobilised to the site for the remediation works.

Site remediation activities been designed to a have minimal impact on the local environment including the impacts associated with vehicle washdowns. If a washdown event occurs other than within the permitted management actions noted above, staff will raise an incident, record it and manage it via the Incident, Unexpected Find and Complaint Management Procedure (Section 13, Appendices 1 and 2).

13 Incident, Unexpected Find and Complaint Management Procedure

Objective: To ensure that incidents, unexpected finds and complaints are handled in a

professional manner, to rectify problems and ensure that incidents and complaints

are not repeated.

Responsibilities

The Site Manager

The Site Manager is responsible for:

- Reviewing incidents, unexpected finds and complaints.
- Investigating incidents, unexpected finds and complaints.
- Identifying corrective actions to ensure that the identified cause of an incident or a complaint does not happen again.
- Putting into place corrective actions, changes, improvements or other measures to ensure that the identified cause of an incident or a complaint does not happen again.
- As necessary, liaising with the complainant(s) and external parties about the actions taken to resolve complaints.

All Employees

All employees are responsible for:

- Adhering to all policies and procedures applicable to the project.
- Ensuring they are fully aware of an understand their obligations in relation to this procedure.
- Recording and documenting incident, unexpected finds and complaint details.
- With the Site Manager, investigating the cause of an incident, an expected find or complaint and identifying corrective actions so that they do not happen again.

Management Actions

If an incident, unexpected find or complaint occurs on site (incident) including but not limited to the following:

- Unexpected finds
- Asbestos finds
- High wind stoppage events
- Visible dust across the boundary events
- A hydrocarbon, diesel or hydraulic fluid spillage occurs or
- A complaint is received.

Then the following actions shall occur:

- 1. In the event of a complaint the staff member receiving it shall listen to the details of the complaint, acknowledge the concern raised, obtain the complainant's contact details and advise the complainant of the next step (the Site Manager will call within 24 hours).
- 2. Record the details of the incident, unexpected find or complaint on the incident, unexpected find and complaint form, set out in Appendix 1.
- 3. Record a summary of the incident, unexpected find or complaint in the Register of Incidents, Unexpected Finds and Complaints, set out in Appendix 2

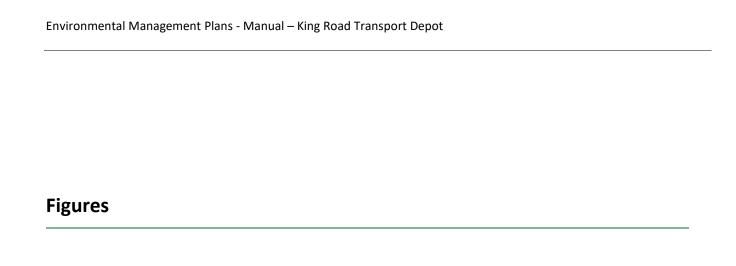


Figure 1 Stage 2 Works - Step 1

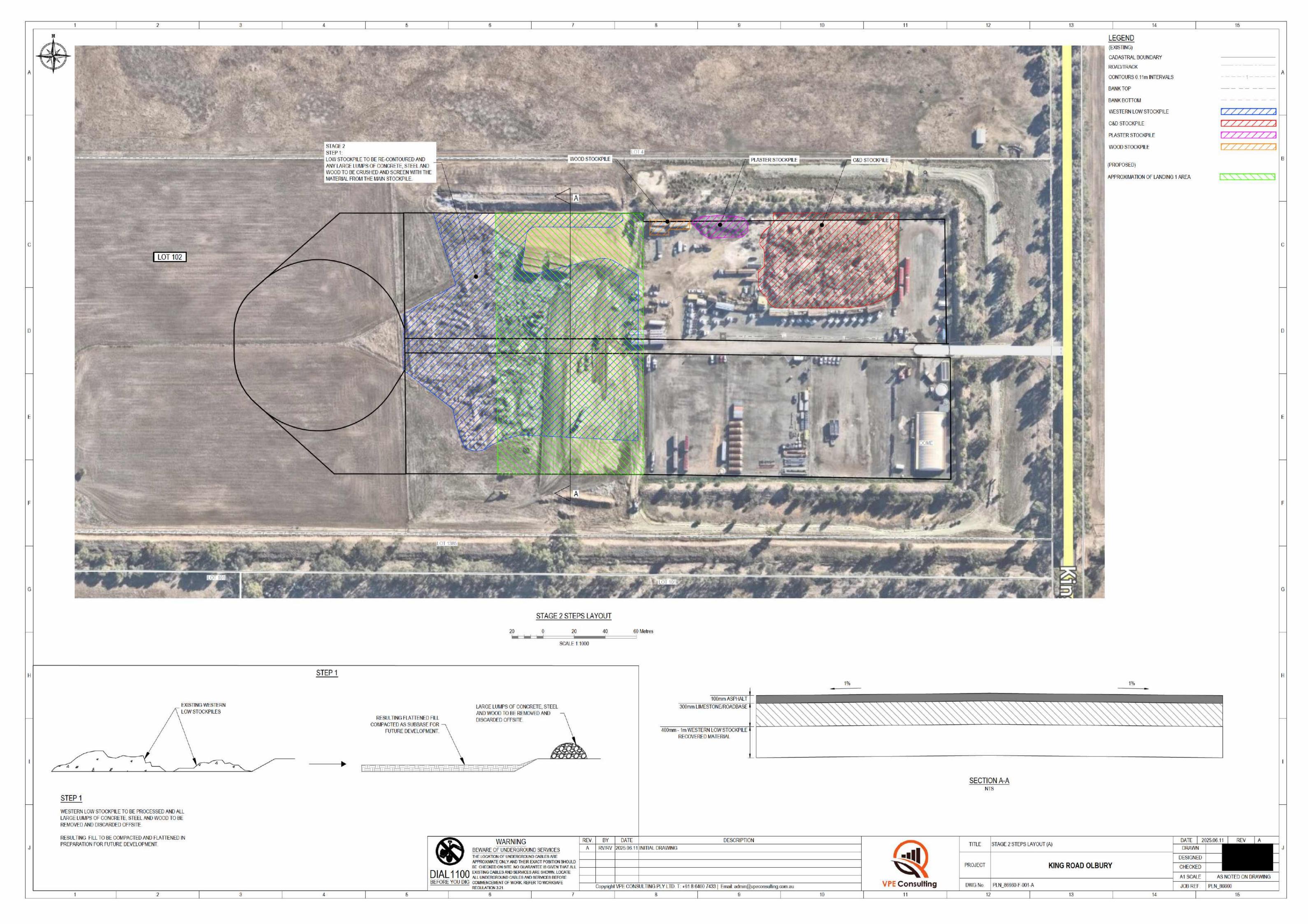


Figure 2 Stage 2 Works – Step 2

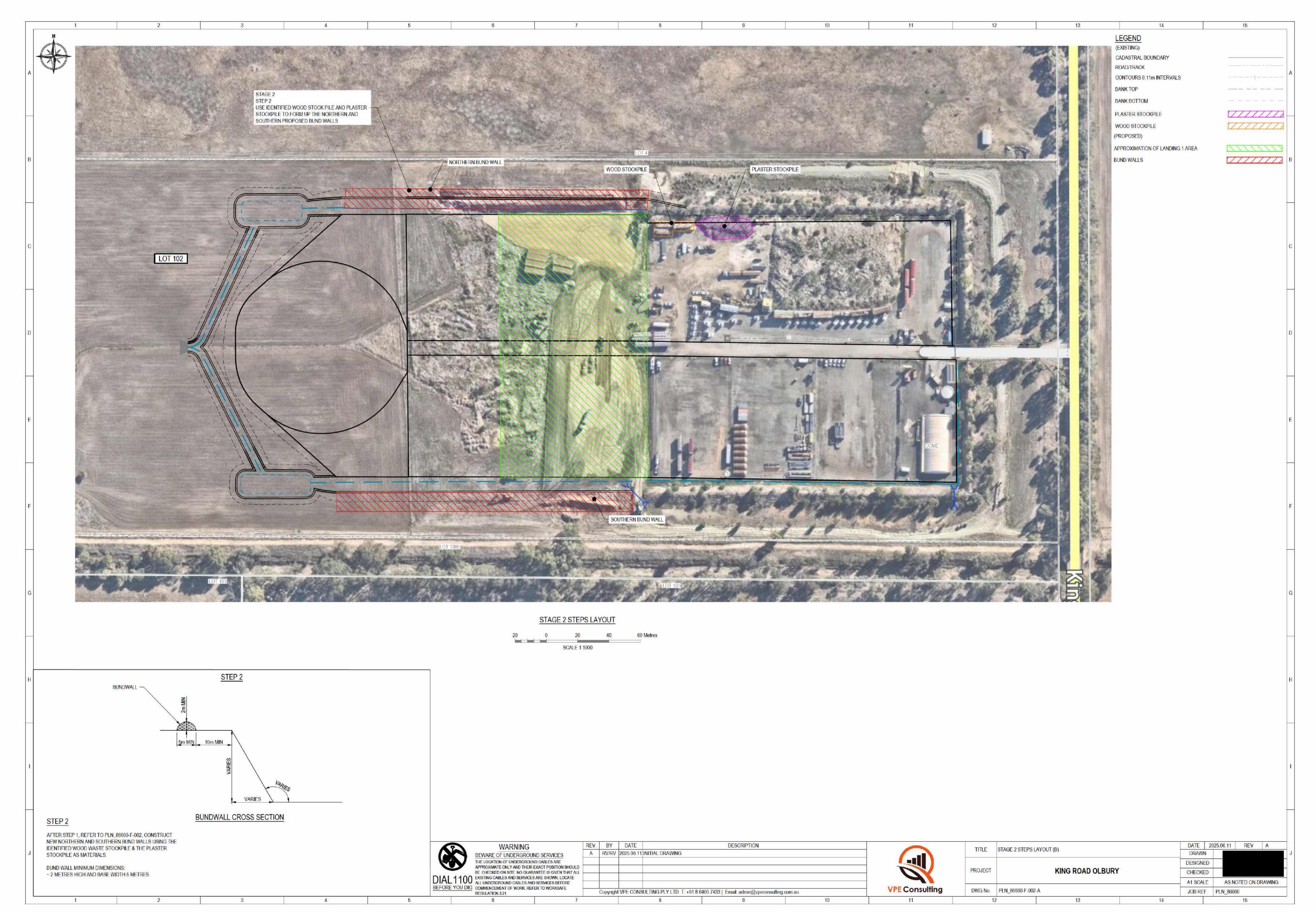


Figure 3 Stage 2 Works – Step 3

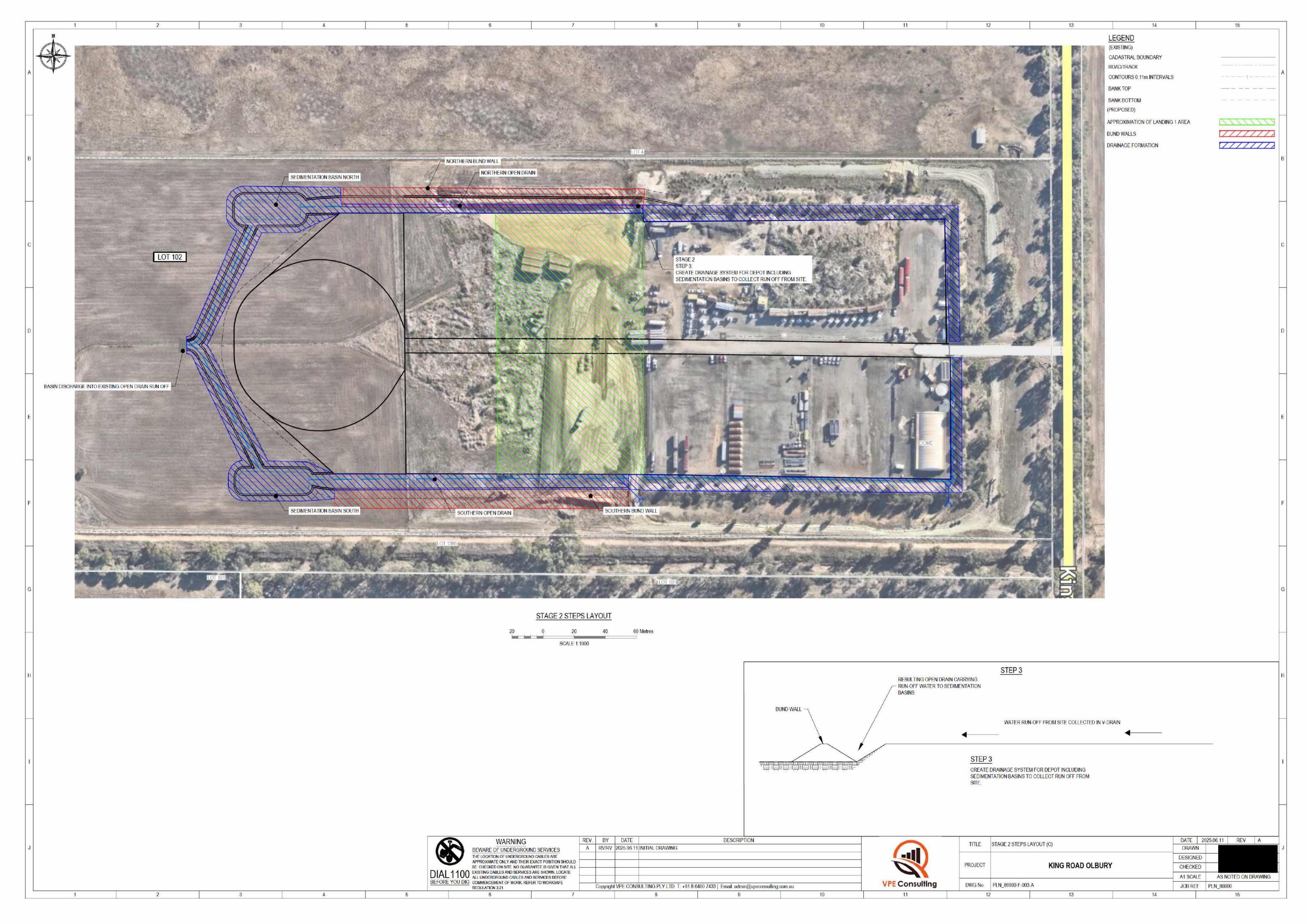


Figure 4 Stage 2 Works – Step 4

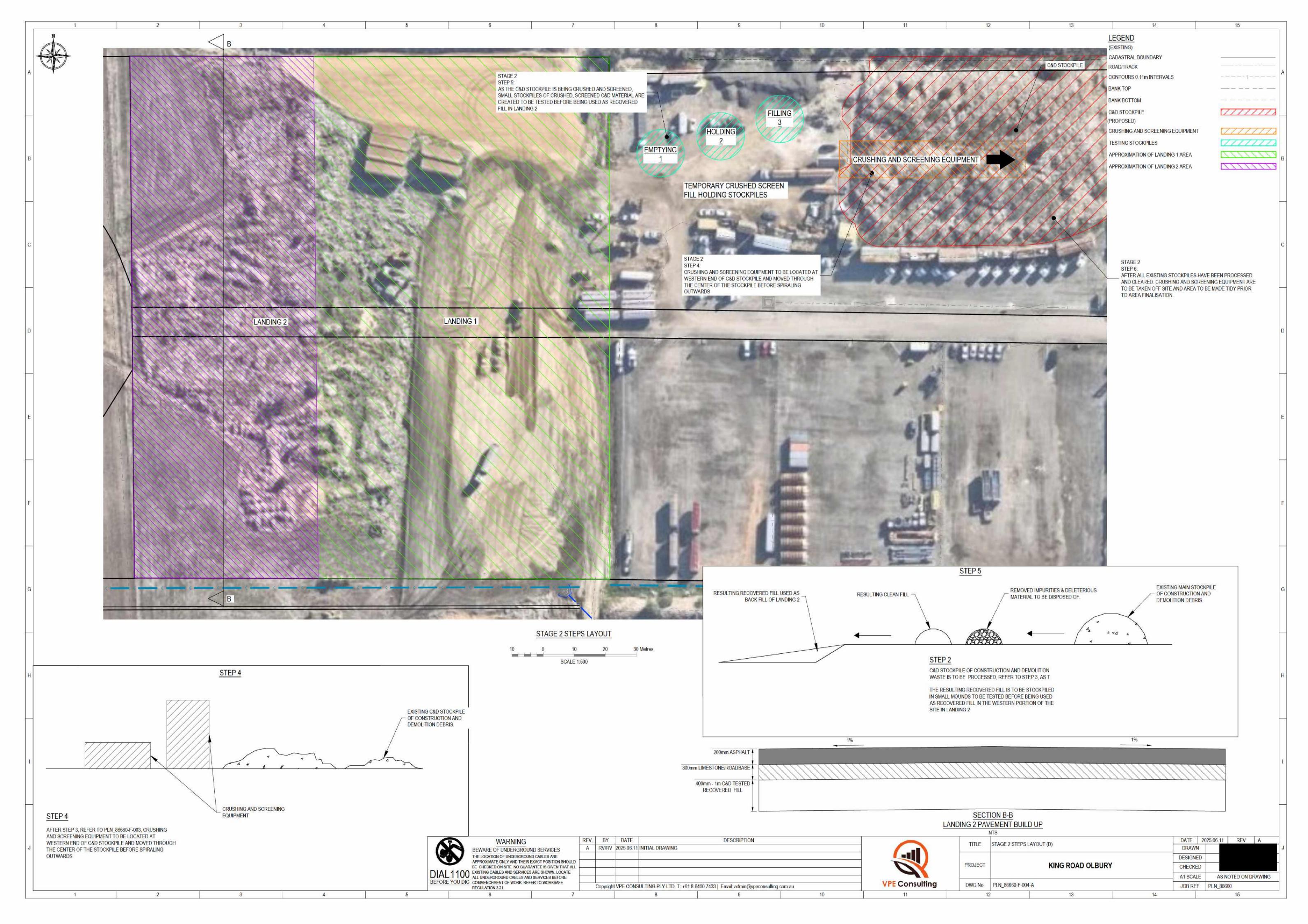
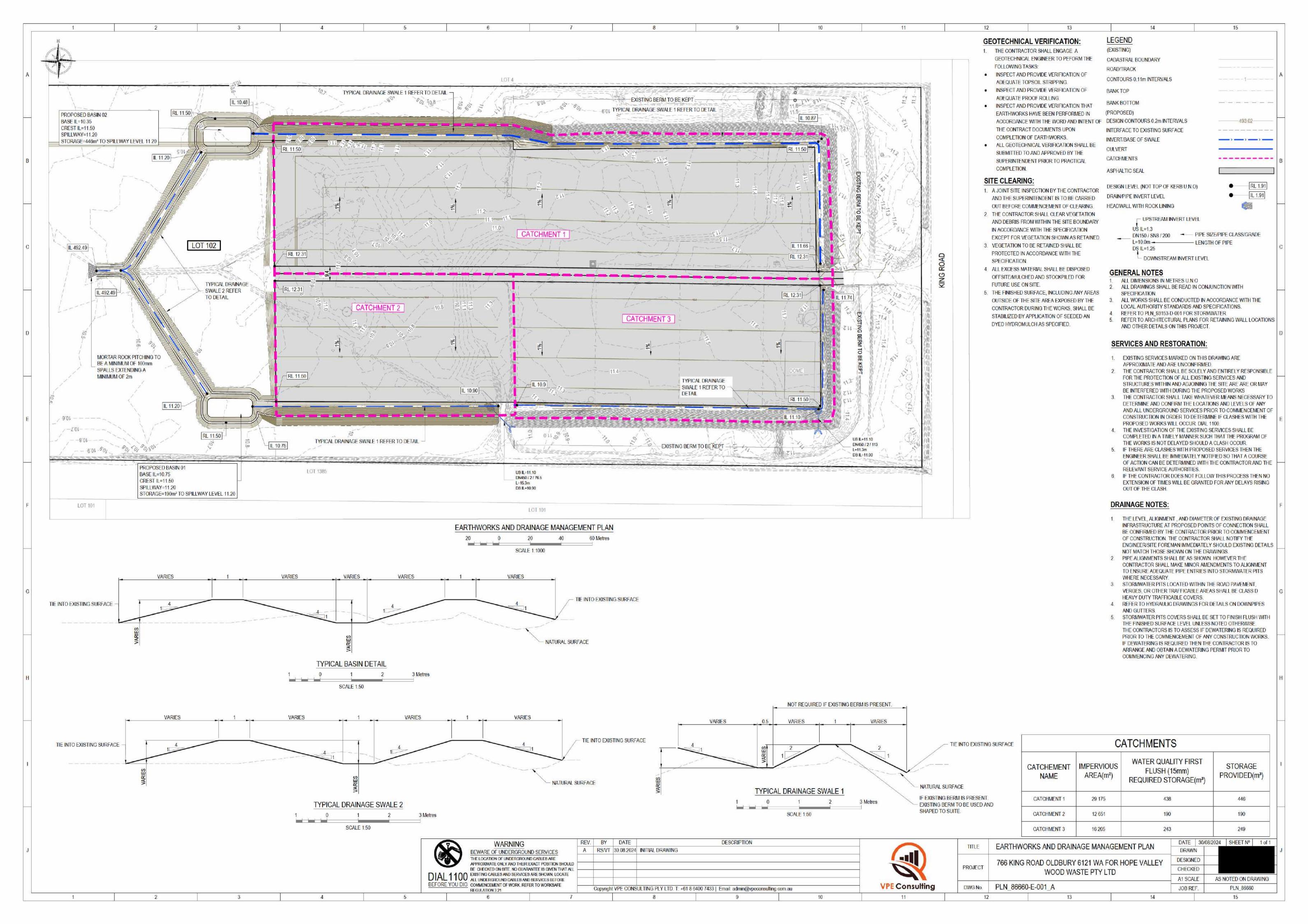


Figure 5 Earthworks and Drainage Management Plan

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Appendix 1 Incident, Unexpected Find and Complaint FORM

Incident, Unexpected Find and Complaint Form

To be completed in the first instance by the person identifying the incident, coming across and unexpected find or receiving a complaint with the support of the Site Manager

Date of incident, unexpected find or complaint				
Complaint from				
Contact details				
Description of Incident, un temperature or other rele	nexpected find or basis of the complaint (record wind direction, vant details)			
Action taken				
Resolved (Y/N)				
Date complainant advised of outcome				
Further action required by who and when				
Site Manager Sign				
Date Resolved				

Appendix 2 Incident, Unexpected Event and Complaint REGISTER

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Incident, Unexpected Find* and Complaint Register

To be maintained by the Site Manager

Date of incident	Location, description and details of incident/unexpected find/complaint/complainant	Action taken	Resolved (Y/N)	Further action required by who and when	Manager sign-off & date

^{*}Includes finds of asbestos

Appendix 3 Inwards Civil Materials and Fill REGISTER

Inwards Civil Materials and Fill Register

To be completed and maintained by the Site Manager

Date	Material and Description	Source	Quantity (tonnes)	QA/QC reference document

Appendix 4 Waste Tracking LOG

Waste* Tracking Log – for materials consigned to off-site disposal

To be completed and maintained by the Site Manager

Date	Waste* Description	Source	Quantity (tonnes)	Location where it has been consigned

^{*}Including asbestos and other hazardous materials