SITE MANAGEMENT PLAN

Westhaven Residential Development

Carter Group Ltd.

Version A



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QUALITY ASSURANCE

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QUALITY ASSURANCE

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VERSION HISTORY

	Ben Henry	V1 - Consent Issue	01/11/2026

STATEMENT OF EXPERTISE

Ben Henry, BEng (Hons) Civil, CPEng (No. 1019139), IntPE, APEC Engineer, is a Chartered Professional Civil Engineer with 16 years' experience in civil infrastructure and land development. His CPEng practice area is Water Engineering, with experience spanning the investigation, design and delivery of stormwater, wastewater, water supply, roading, earthworks and utility infrastructure, including work for local authorities and private land developers.

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STATEMENT OF GENERAL REPORTING POLICIES

1) Our responsibility in connection with this report is limited to the person or party to whom the report is addressed and we disclaim all responsibility to any other party without reference to us.
2) This report has been prepared for the purpose stated in the report and may be relied upon for that purpose only. Assumptions made in the preparation of the report are as expressly stated in the report or set out below.
3) Where information has been supplied to us for the purpose of the report by another party, this information is believed to be reliable but we can accept no responsibility if this should prove not to be so.

1 SITE MANAGEMENT POLICY STATEMENT

1.1 Background

This Site Management Plan (SMP) has been prepared in support of the substantive application under the Fast-track Approvals Act (FTAA) for the Rolleston West Residential Development (or otherwise known as 'Westhaven'). The project is a listed project within Schedule 2 of the FTAA. The site area is depicted in Figure 1 and Appendix A.

Carter Group Limited has engaged Inovo Projects Limited (Inovo) to provide planning, engineering and surveying services for the proposed subdivision. The proposal entails the progressive development of approximately 4,134 residential allotments across the wider Westhaven landholdings, together with three commercial super lots, a number of roads, reserves, and services to vest. The proposal also seeks authorisation to enable the establishment of future dwellings, commercial activities, and associated subdivision infrastructure within the proposed allotments.

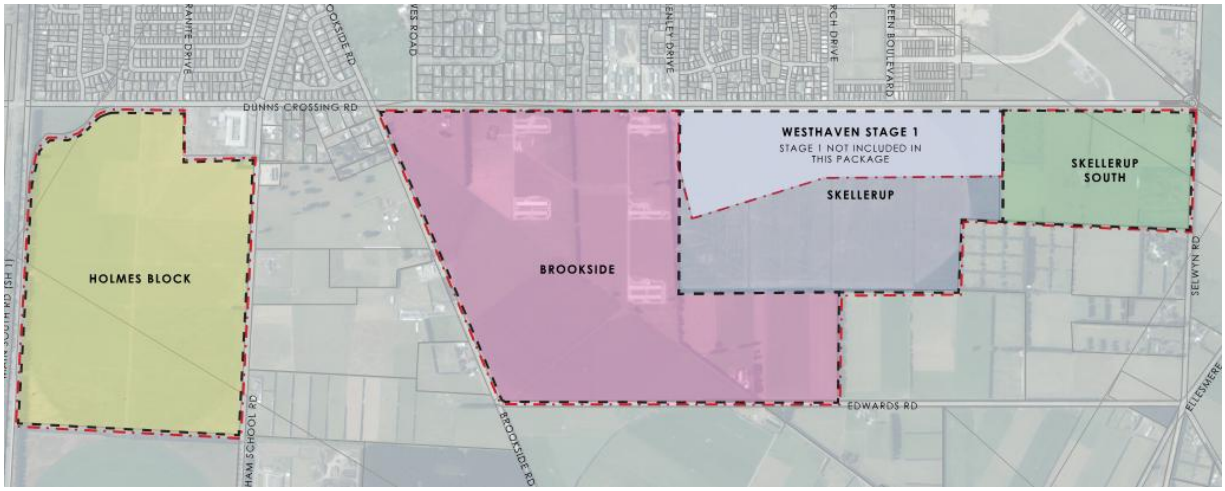

Figure 1 – Westhaven Site Extents

This SMP, prepared as part of the construction planning and consenting process, is purposed to outline the methodology that provides the following:

- The best environmental and safe work approach for dealing with erosion, sediment, dust, and construction phase stormwater during the bulk earthworks and civil construction phase for the proposed Westhaven residential subdivision development.
- Health and safety and quality control measures employed during the site works.

The environmental risks associated with these works include:

- Nuisance by dust and noise during earthworks.
- Discharge of sediment-laden stormwater to existing water races or downstream stormwater flow paths during rainfall events.
- Discharge of sediment-laden water to existing water races or uncontrolled discharge areas during dewatering of excavations and trenches.
- Discharge of hazardous substances into land or water during construction or during clean-up of any contaminated areas.
- Interception of groundwater leading to flooding of excavations, instability, or uncontrolled groundwater discharge.
- Disturbance to existing water races where works are required in proximity to, across, or within the water race network, subject to the final design and any required approvals.

It is intended for this to be a live document, so revisions may occur as site conditions change during construction. The SMP will be implemented by the nominated contractor who will be responsible for management of control measures on site with supervision by Inovo.

1.2 Environment Policy Statement

Inovo is committed to integrating sound environmental policies and programs into all its development works and recognizes the need to have proper regard for the activities that will occur in the natural and physical environment in which the works are to occur.

In terms of compliance and reporting, routine checks of the erosion, sediment, and dust control measures installed on each site are to be carried out, and the erosion, sediment, and dust control plan amended as required to ensure no adverse effect is occurring to the neighbouring sites or the receiving environment.

1.3 Code of Conduct

This assessment has been prepared in accordance with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. The authors have complied with that Code in preparing this report and confirm that the opinions expressed are within their respective areas of expertise, except where reliance has been placed on information or opinions provided by others.

2 INTRODUCTION

2.1 Objectives

The objectives of this SMP are to:

- Describe methods to manage erosion and dust generation.
- Describe methods to control potentially sediment-laden stormwater from entering existing water races, downstream stormwater flow paths, or uncontrolled discharge areas.
- Describe methods to control noise emissions.
- Describe methods for managing any hazardous substances within the development site.
- Describe the site emergency protocol.
- Describe the proposed measures for health and safety and quality-related risk management.
- Describe methods of controlling ground water interception.
- Ensure the methods listed above are compliant with consents and national, regional, and district-wide regulations.

2.2 Consent Requirements

The site will be subject to a land-use and subdivision consent that are being applied for through this substantive application under the FTAA. Resource Consent references will be added to this section before it is finalised. Consent conditions will likely require that an updated SMP is provided to SDC and ECan prior to construction commencing on site. Also, due to detection of soil contaminants above background concentration, we envisage that resource consenting associated with the construction and operation of the development may also include site remediation works as well as earthworks, stormwater discharge, dewatering, etc.

We expect the SMP to include the following:

- A detailed erosion, sediment, and dust control plan.
- Details of stormwater management during the construction phase, including:
- Minimization of the flow of stormwater through the construction site.
- If work can be carried out during periods of heavy rain given the high drainage of the Rolleston Gravels.
- Details of the dewatering procedure and treatment of the discharge water (where required).
- Environmental protection measures for working within streams and wetlands.
- Site-Specific Safety Plan.
- Contract Quality Plan consisting of an Inspection and Test Plan.
- Site Risk Register detailing health and safety, environmental, and quality risks and appropriate controls.
- Hazardous Substances Register.
- Chemical treatment plan
- Remedial Action Plan for soil contamination.

2.3 Activity and Site Description

The wider Westhaven landholdings comprise the following legal descriptions:

- Holmes Block: Section 1 SO 608925.
- Brookside Block: Lot 2 DP 72132; Lot 1 DP 72132; Lot 3 DP 20007; Lot 4 DP 20007; and Lot 1 DP 82068.
- Skellerup Block: Part RS 31356; Part Section 4 RES 1342; and Part RS 31354.
- Skellerup South Block: RS 23614 and RS 25807.

The Westhaven development area is located in west Rolleston. It comprises four land areas known as the Holmes Block, Brookside Block, Skellerup Block, and Skellerup South Block. The Holmes Block forms the northern part of Westhaven and is physically separate from the southern Westhaven landholdings. It is bounded by Dunns Crossing Road to the east, Burnham School Road to the south, private land to the west, and State Highway 1 to the north.

Brookside, Skellerup, and Skellerup South form the southern part of Westhaven and are located west of the existing Rolleston urban area. These blocks adjoin each other in sequence, with Brookside adjoining Skellerup to the north and Skellerup adjoining Skellerup South to the south. Dunns Crossing Road forms the eastern frontage to these blocks, while Brookside Road, Edwards Road, Selwyn Road, and adjoining private land define the remaining external boundaries.

The existing land use within the wider Westhaven landholdings is predominantly rural. Existing site infrastructure is generally limited to private rural servicing infrastructure, including irrigation bores, pump sheds, irrigation lines, centre pivot irrigation, K-line irrigation, and stock water troughs. Stage 1 of Westhaven is currently under construction within the Skellerup Block and does not form part of this substantive application[1].

Vegetation and land cover across the site is predominantly open rural paddocks, with shelter belts, fence-line vegetation, and vegetation associated with existing rural buildings and water race corridors.

A continuous water race alignment associated with the Paparua Water Race scheme passes through or adjacent to parts of the wider Westhaven landholdings. The water race is identified by different local section names as it passes through the development area, including the Main South Water Race through the Holmes Block, Edwards Water Race through the Brookside Block, and Selwyn Water Race through the Skellerup South Block. The current intention is to realign part of the water race going through the northern part of the Holmes Block, as well as, permanently close the portion of the water race from where it enters the Brookside block (at the Edwards Road intersection) all the way to where it ceases within the Skellerup South block. See other consultant reports for details. The final treatment of the water race network, including any diversion, crossing, protection, or closure requirements, will be confirmed through detailed design and any required approvals. Until the final approach is confirmed, construction controls will be implemented to prevent sediment-laden runoff or contaminants entering the water race network.

The site is generally flat to gently undulating, with an overall fall broadly to the south and south-east. Available contour information indicates a relatively consistent slope across the wider development area in the order of 1 in 175. Shallow depressions and localised undulations are present in parts of the site, generally associated with historic overland flow paths.

The current land use surrounding the site comprises established and emerging urban development to the east, including Faringdon and Arbor Green, with rural land remaining around other parts of the wider site.

The construction work will be conducted in multiple phases designed to limit the area of exposed bare or unstabilised soil to a maximum of 10 ha at any one time, unless otherwise approved. Earthworked areas will be stabilised as soon as practicable after replacement or shaping of topsoil to minimise the potential for sediment-laden runoff to discharge from the site. Road pavements are expected to be partially constructed to subbase level to form construction access for the civil works phase and to stabilise road corridors.

The initial construction stage under this SMP will be designed to minimise the extent of cut and fill required to shape future lot areas. Where a change in level of less than ±200 mm applies, topsoil may be shaped by re-grading the in-situ topsoil and then re-sown with grass as soon as practicable. Topsoil bunds may be formed around completed lot areas to contain stormwater within lot areas until grass cover is re-established. These topsoil bunds may remain in place until berm construction is completed during the civil works phase, with the material reused for grass berms or landscape areas where suitable.

Subsequent construction stages will follow a similar methodology. While individual stage areas may exceed 10 ha, the area of exposed bare or unstabilised soil will be limited to a maximum of 10 ha at any one time, unless otherwise approved. The site will be progressively stabilised as soon as practicable to limit the area of exposed soil. A detailed design for each stage, together with any required update to this SMP, will be completed before construction starts within that stage.

[1] For completeness, Stage 1 does not form a part of this substantive application.

3 GEOLOGY AND SOIL CONDITIONS

3.1 Site Description

A geotechnical site investigation has been completed for the site, as reported in the Fast-track Substantive Application - Geotechnical Report – Westhaven Residential Development (Job No. CHC2026-0005AC) prepared by CMW Geosciences, dated 22 October 2026.

The geotechnical assessment indicates that the site is generally underlain by river alluvium deposits. The ground conditions typically comprise a layer of topsoil of varying thickness, generally less than 0.30 m (but up to 0.50 m), overlying sandy gravels and gravelly silts grading to sandy gravel. Sandy gravel deposits are expected to extend to depths greater than 30 m below ground level.

These ground conditions are generally consistent with free-draining alluvial soils typical of the Rolleston area. The presence of shallow topsoil and underlying granular materials will be considered during earthworks, temporary construction access, erosion and sediment control, trench stability, dust management, and construction-phase stormwater management.

3.2 Soil contamination

The DSI report (Detailed Site Investigation – Westhaven Residential development Fast Track Substantive Application by EHS Support, dated 23 October 2026) has been prepared for the site. The documents conclude that:

- The site has been subjected to activities on the Hazardous Activities and Industries List (HAIL)
- One or more of arsenic, cadmium, lead, Total Petroleum Hydrocarbons (TPH) and asbestos were detected at concentrations in excess of Soil Contaminant Standards (SCS) for residential land use in a number of locations.
- Concentrations in excess of background of a number of heavy metals are present in shallow soil across areas of the site associated with the waste and offal pits, a burn pile and around site buildings.

Due to the contaminant concentrations being in excess of the SCS for the proposed residential land use, the DSI concludes that consenting will likely be required under the NESCS and the Land and Water Regional Plan for the various activities associated with the construction and operation of the development including but not limited to earthworks, stormwater discharge and dewatering.

Detected soil contamination greater than the SCS for residential land use will require management and remediation, which should be addressed via the preparation of a Remedial Action Plan (RAP). It is anticipated given the nature of the contamination found, that the contaminated areas can be addressed in isolation, which is typical in developments of rural land such as this.

3.3 Groundwater

A groundwater assessment has been prepared by PDP in support of the application[2]. As part of the assessment, available groundwater information has been reviewed from a variety of sources including ECan bore records, manual dipping of bores surrounding the wider development and detailed data from four monitoring bores (BH-001 to BH-004) drilled in April 2026 within the Skellerup and Skellerup South blocks.

The assessment indicates that depth to groundwater is greatest at the Holmes Block, with shallower groundwater indicated further south through Brookside and Skellerup, and the shallowest groundwater indicated near Selwyn Road on the Skellerup South block.

A copy of this assessment is included as part of this substantive application.

[2] Westhaven Residential Development Fast-track Substantive Application – Groundwater Level Assessment prepared by Carl Steffens of Pattle Delamore Partners, dated 22October 2026.

3.4 Bores

Environment Canterbury bore records identify a number of existing bores within the wider Westhaven landholdings. These bores are generally associated with historic and existing rural land use, including irrigation, domestic supply, stock water and observation.

The known bores within the Westhaven landholdings are summarised in Table 1.

Table 1 – Existing bores within Westhaven landholdings

Block	Bore ID	Parcel (location)	Use	Depth	Diameter
Holmes	M36/8063	Section 1 SO 608925 (south boundary)	Irrigation	99 m	300 mm
Brookside	M36/0015	Lot 4 DP 20007 (centre)	Domestic and stock water	36.3 m	203 mm
Brookside	M36/7225	Lot 1 DP 82068 (northwest boundary)	Irrigation	60.0 m	250 mm
Brookside	M36/5022	Lot 1 DP 72132 (west)	Irrigation and domestic supply	25.2 m	200 mm

4 EARTHWORKS

4.1 Bulk Earthworks

Earthworks will be required to support the future subdivision and residential development of the Westhaven landholdings. The earthworks will generally include:

- levelling of parts of the site, including engineered filling within existing overland flow channels and secondary flow paths;
- formation of new secondary overland flow paths;
- earthworks for the proposed road layout, including stormwater overland flow corridors; and
- formation of residential allotments to provide positive drainage toward road frontages.

The Westhaven landholdings are generally flat to gently undulating, with an overall fall broadly to the south and south-east. Available contour information indicates a relatively consistent slope across the wider development area in the order of 1 in 175. The approximate elevation change across each block is summarised as follows:

- Holmes Block: approximately 4.5 m across the site;
- Brookside Block: approximately 5.4 m from Brookside Road to the Skellerup Block boundary, with a further approximately 1.9 m along the Edwards Road frontage;
- Skellerup West: approximately 7.3 m across the site; and
- Skellerup South Block: approximately 3.8 m across the site.

The earthworks design methodology will seek to minimise the extent of cut and fill while creating practical residential building platforms, road corridors, drainage paths, and infrastructure corridors. Finished lot levels will be designed so that residential allotments drain toward road frontages at a minimum gradient of 1 in 500 where practicable.

Earthworks and finished lot levels are developed in conjunction with the flood modelling and stormwater design to confirm that future building platforms are located above the 1-in-200-year flood level, while maintaining appropriate secondary overland flow paths through the development.

Bulk earthworks quantities are confirmed through the concept earthworks model. The currently anticipated earthworks quantities are summarised in Table 2.

Table 2 – Anticipated bulk earthworks quantities

Block / area	Approximate cut volume	Approximate fill volume	Maximum cut depth	Maximum fill depth
Holmes	104,000 m^3	206,000 m^3	1.0 m	1.4 m
Brookside, Skellerup West and South	386,490 m^3	243,300m^3	1.49 m	1.22 m

The above quantities exclude service trenching.

Earthworks will generally operate on a cut-to-fill basis, with suitable site-won material reused as engineered fill where practicable. Fill placed in excess of 300 mm depth will be constructed in accordance with NZS 4431:2022, Engineered fill construction for lightweight structures.

The suitability of site-won material for reuse as structural engineered fill will be confirmed through geotechnical assessment and construction-phase testing. If insufficient suitable material is available on site, imported fill may be required to make up any shortfall. Imported granular material will be used for road pavement construction where required.

4.1.1 Main Civil Works

The main civil works consist of the following:

- Construction of new roads and berms.
- Installation of wastewater reticulation.
- Establishment of stormwater reticulation and soakage infrastructure.
- Construction of water supply infrastructure.
- Trenching and installation of utility services.
- Works affecting existing water races, where required by the final design and relevant approvals.
- Road frontage upgrades and intersection works on adjoining roads, where required.

Separate Engineering Approval will be obtained before commencing these works and will likely be obtained on a stage-by-stage basis.

5 QUALITY CONTROL AND HEALTH AND SAFETY MEASURES

5.1 Management of Health and Safety Risks

A site-specific safety plan will be prepared by the nominated contractor prior to starting construction works, which will detail the following.

- Site safety induction process.
- Provision of necessary training and maintenance of training records.
- Competency Register confirming the employment of suitably qualified personnel.
- WorkSafe notification process.
- Service location process.
- Hazardous Substances Register.
- Site-Specific Risk Register identifying health and safety, environmental, and quality-related risks and appropriate controls.
- Site Emergency Plan detailing evacuation process and routes assembly points.
- Task Analysis for Significant Work

Effective communication of safety information will be achieved by means of:

- Daily prestart meetings.
- Monthly health and safety toolbox talks.
- Notice boards and signage.
- Site meetings as necessary

5.2 Working Near Overhead High Voltage Power Lines

Existing overhead high voltage electricity distribution lines are located along the western side of Dunns Crossing Road adjoining parts of the Westhaven frontage. These lines are currently operated at 33 kV and are rated for 66 kV. The line alignment and associated poles are shown on the Civil Engineering Plan Set by Inovo, dated 26/10/2026.

Works near overhead high voltage lines have the potential to affect worker safety and the ongoing operation, maintenance, upgrading, and development of the electricity distribution network. Construction activities in proximity to these lines may include earthworks, road formation, service trenching, kerb and channel construction, pavement construction, utility installation, and operation of mobile plant.

Minimum safe separation distances are specified by the New Zealand Electrical Code of Practice for Electrical Safe Distances 2001 (NZECP 34). All works near overhead high voltage lines, poles, and associated support structures shall comply with NZECP 34 and any requirements of Orion or the relevant network utility operator.

Before works start near overhead high voltage lines, the Contractor shall confirm the location of the lines and poles, identify the required minimum approach distances, and implement appropriate exclusion zones, signage, spotters, height limits, permit controls, and work methods. Mobile plant shall not operate within the required clearance distances unless an approved work method has been agreed with the relevant network utility operator.

Any pole relocation, undergrounding, protection works, temporary isolation, or other works affecting the overhead electricity network shall be coordinated with the relevant network utility operator (Orion) before construction.

5.3 Management of Quality Related Risks

Quality of the construction work will be ensured by the implementation of adequate quality assurance processes. Copies of approved consents, plans and method statements will be kept on site at all times alongside an approved Contract Quality Plan which will include a site-specific Inspection and Test Plans.

6 ENVIRONMENTAL CONTROL MEASURES

6.1 Roles and Responsibilities

Successful implementation of the environmental control measures outlined in this report relies on the assignment of various roles and responsibilities to individual personnel who can be held accountable. The roles and responsibilities are outlined in the following table and described in the following sections.

Responsibility	Contact Details	Role Summary
Design	Inovo Projects Ph. (03) 377 3290 Ben Henry Senior Civil Engineer	Provide approved design and specifications for construction. Design and specify appropriate Erosion & Sediment Control Plan (ESCP) measures in accordance with this report, amended to suit Construction Contractor and their preferred methodology.
Construction Contractor	TBC	Install, maintain and operate the ESCP measures
On Site Monitoring During Construction	TBC The construction contractors site supervisor will undertake this role.	The Contractor's roles will be included in the construction contract documents: Periodic reviews of the ESCP measures. Review construction programme and weather conditions and amend ESCP measures to suit. Collect and analyse Discharge Quality Samples. Reporting.
Authorisation	Environment Canterbury (ECAN) Representative TBC	Provide Resource Consent Monitor Compliance with Conditions Oversee Environmental Responsibilities

6.2 Program of Works

It is proposed that the civil works will be undertaken in stages, yet to be determined, following detailed design and updates to this report.

6.3 Inspection and Monitoring Programme

Key principles for erosion and sediment control and dust management inspection and monitoring during and after construction are:

- Adjust the Erosion & Sediment Control Plan (ESCP) during construction: The ESCP and proposed measures shall be reviewed and updated to reflect changes to construction sequencing, weather changes, and effectiveness with input from the contractor completing works on site.
- Inspection and Monitoring Programme – The inspection and monitoring programme shall be detailed and fit for purpose to ensure any issues that arise are picked up and communicated to the people who can act on the issue quickly.
- Frequency and Methodology of Inspections – the ESCP shall state the frequency and methodology of how the ESCP measures will be checked, who is responsible for undertaking these checks, how the findings are recorded, reported, and assessed. This includes checks that will be needed during and after rainfall events and to accommodate any times that the site will be unattended, including weekends.
- Education: All staff are to be educated in advance of the emergency procedures that will be implemented for any accident, including spills and accidental untreated sediment discharge reaching surface water.

With the above key principles in mind, we anticipate the following inspection and monitoring program to be implemented.

- ESCP measures to be inspected at least once a week and after each rainfall event >5mm. Amendments and additions to be made where necessary.

- Sediment build-up in front of treatment areas and devices or any other area shall be monitored and removed when necessary.
- The contractor's role will be included in the construction contract documents and will include.
    - Periodic reviews of the ESCP measures and reporting to the engineer.
    - Review of construction sequencing.
    - Review weather conditions and amend ESCP measures to suit.
    - Any repairs to the ESCP measures shall be affected urgently by the contractor.

It remains the contractor's responsibility to ensure that sediment is not discharged from the site as a result of their activities. Should it become evident that the control measures specified in this document are failing to prevent erosion or sediment discharge, then the contractor shall implement further mitigation measures. The contractor is to be fully conversant with the ECAN Erosion and Sediment Control Toolbox and the relevant ECAN consents but may contact Inovo to seek further advice on erosion and sediment control management.

6.4 Material Storage and Construction Support Area

Storage of excavated materials or other materials are typically required during the earthworks and civil works stage of the project. The exact location of these stockpiles will be confirmed by the contractor prior to construction on-site, and the ESCP will be updated to include the proposed control measures. Initial proposed stockpile locations are shown on the ESCP.

An exact location of the Construction Support Area (CSA) will be confirmed by the contractor prior to construction, and the ESCP will be updated to include appropriate control measures. The CSA includes contractors site laydown areas, site offices, parking, etc.

6.5 Vehicle Refuelling

Refuelling operations must either be in a designated, bunded area or use a drip tray to capture any spills. All fuel will be stored securely or removed from the site overnight. All small portable fuel containers (5L–20L) will be kept with lids and caps on in a bunded container on site when not actively being used. Mini tankers will visit the site to refuel only and do not remain on site.

There is to be no refuelling of vehicles or machinery within 10 m of any active water race.

6.6 Incident Response Procedures

A suitably sized hydrocarbon spill kit shall be stored on site. The spill kit shall be located by the site office, and staff shall be trained in its use.

In the event of a spill of fuel or other contaminant, the contractor will take appropriate action to minimize any further spillage and potential for environmental impact. This may include the excavation and removal of any contaminated material. Contaminated material must be disposed of at a facility authorized to receive such material. Drivers are to retain all disposal dockets. A spill report is to be completed in accordance with the company policy.

The following procedure shall apply:

1. CONTROL THE SPILL — Immediate efforts shall be made to control the spill, identify the source, and prevent further discharge.
2. CONTACT — Notify the Construction Manager.
3. ISOLATE — The area around the spill shall be made safe. This may include turning off machinery, establishing an exclusion area, and notifying staff working nearby.
4. PPE — Appropriate PPE shall be worn, such as overalls, gloves, protective eyewear, and respiratory protection where required.
5. CLEAN UP — The spill kit shall be deployed for the clean-up process. Typical spill kit materials include absorbent pads, pillows, socks, absorbent peat, pellets, or similar approved absorbent products.

6.	REMOVE CONTAMINATED MATERIAL	Contaminated material shall be removed until there are no visible or odorous signs of contamination remaining.
7.	DISPOSE	All materials associated with the clean-up shall be placed in sealed containers and disposed of off site at an appropriate receiving facility.
8.	REPORT	Spills greater than 5 L, or any spill that enters or has the potential to enter a stormwater system, water race, groundwater, or an uncontrolled discharge area, shall be reported to ECan and any other relevant authority in accordance with consent and regulatory requirements.

6.7 Sediment Removal

The concept erosion and sediment control measures for the works have been designed using the ECan Erosion and Sediment Control Toolbox for Canterbury. These measures include sediment retention ponds, decanting earth bunds, sediment traps, dirty water diversion channels, clean water diversions, stabilised construction entrances, and other controls required for the relevant stage of works.

The Contractor shall construct, operate, maintain, inspect, and modify the erosion and sediment control measures in accordance with the concept ESCP design, the approved Erosion and Sediment Control Plan, consent conditions, and the ECan Erosion and Sediment Control Toolbox for Canterbury. Any Contractor-proposed changes to the ESCP measures shall be reviewed by Inovo and approved where required before implementation.

Dirty water runoff from exposed earthworked areas shall be directed to the relevant sediment control device by stabilised or lined dirty water diversion channels. The need for lining will be confirmed during detailed design and construction, having regard to channel gradient, flow velocity, soil conditions, erosion risk, groundwater conditions (closer to Selwyn Road), and proximity to water races or downstream stormwater flow paths.

Sediment retention ponds shall be located to make use of the existing landform where practicable, while maintaining appropriate separation from water races, completed works, public roads, and adjoining properties. Where required, sediment retention ponds shall be lined to prevent loss of sediment-laden runoff to ground or interaction with groundwater.

Each sediment retention pond shall be sized for its contributing catchment in accordance with the ECan Toolbox. Where a 10 ha contributing catchment is adopted, the sediment retention pond shall provide a total storage volume of 3,000 m^3, based on 300 m^3 per hectare. Sediment forebays, baffles, decant devices, primary spillways, outlet pipes, and emergency spillways shall be provided in accordance with the relevant ECan Toolbox requirements and approved design details.

6.8 Dewatering

Dewatering may be required during construction to remove groundwater, perched groundwater, rainfall runoff, or sediment-laden water from excavations, service trenches, pump station excavations, or other temporary work areas.

Based on the available groundwater information and the anticipated depth of civil reticulation, groundwater is not expected to be encountered across most of the wider Westhaven landholdings during standard earthworks and shallow trenching. Groundwater interception is more likely where deeper excavations are required, particularly for deeper service trenches and pump station works in the southern part of the development near Selwyn Road, where shallower groundwater depths are anticipated and pump station excavation works may exceed 3.5 m below ground level.

The potential effects of construction dewatering have been assessed in the report entitled Fast-track Application – Westhaven Rolleston – Dewatering Assessment of Environmental Effects Report, prepared by PDP , dated 27 October 2026. That report should be read in conjunction with this SMP and the applicable consent conditions.

The detailed dewatering methodology will be confirmed by the Contractor to suit the final construction methodology, excavation depth, groundwater conditions, programme, and consent requirements.

Dewatering may include sump pumping, well points, dewatering bores, settlement tanks, sediment retention ponds, or a combination of these methods.

Any dewatering shall be undertaken in accordance with the approved ESCP, relevant consent conditions, the ECan Erosion and Sediment Control Toolbox for Canterbury, the Assessment of Environmental Effects Report, and the requirements of this SMP. Dewatering discharges shall be managed to avoid sediment discharge, erosion, scour, uncontrolled discharge, or discharge of sediment-laden water to water races, stormwater systems, groundwater, adjoining land, or downstream stormwater flow paths.

Where dewatering is required, the Contractor shall prepare a Dewatering Plan or methodology statement before works commence. The Dewatering Plan shall identify, as a minimum:

- the location and extent of the proposed dewatering;
- the anticipated excavation depth and groundwater conditions;
- the proposed dewatering method;
- the proposed discharge location and discharge pathway;
- the proposed sediment treatment method;
- monitoring requirements;
- contingency measures for dirty water, high flows, or treatment failure; and
- any approval or notification requirements under the applicable consent conditions

General controls to be implemented during dewatering works include the following:

- Works shall be planned to minimise dewatering volumes, including limiting open trench lengths where practicable and backfilling completed works as soon as possible.
- Water shall be reused where practicable, including for dust suppression or earthworks conditioning, provided the water quality is suitable for that use.
- Pumped water shall be discharged to a suitable treatment device before discharge, such as a sediment retention pond, settlement tank, decanting earth bund, filter bag, or other approved treatment system.
- The outlet of any pumped discharge shall be stabilised and protected against erosion and scour.
- Dewatering shall not discharge untreated sediment-laden water to water races, stormwater systems, adjoining land, or uncontrolled discharge areas.
- Water quality shall be monitored at the point of discharge and within the receiving environment where required by consent conditions.
- Particular care shall be taken at the start and end of pumping, when sediment concentrations are often highest.
- Where pumped water does not meet discharge requirements, the water shall be retained, treated, recirculated, or removed from site until acceptable water quality is achieved.
- Where dewatering water is pumped to a sediment retention pond, discharge shall be directed to the forebay where practicable. The pond outlet may need to be temporarily closed during pumping where required to allow treatment and settlement.
- Where contaminated or potentially contaminated material is encountered in an excavation requiring dewatering, discharge shall stop until the material has been assessed by a suitably qualified contaminated land practitioner and appropriate management measures have been confirmed.
- Any works requiring dewatering of, diversion of, or discharge to an existing water race shall be subject to the final design, consent conditions, and any required approvals before works commence.

Dewatering records shall be retained by the Contractor, including dewatering locations, dates, discharge locations, water quality monitoring results, treatment measures, inspections, maintenance records, and any incidents or corrective actions.

6.9 Works Affecting Water Races

Existing water races associated with the Paparua Water Race scheme pass through or adjacent to parts of the wider Westhaven landholdings. Works affecting these water races may include temporary

isolation, temporary diversion or bypass, crossing works, culvert installation or removal, realignment, piping, closure, or other modifications required by the final development design.

The current intention is to realign part of the water race going through the northern part of the Holmes Block, as well as, permanently close the portion of the water race from where it enters the Brookside block (at the Edwards Road intersection) all the way to where it ceases within the Skellerup South block. See other consultant reports for details. Any works affecting existing water races shall be carried out in accordance with the final design, consent conditions, and any approvals required from the relevant authority. Until the final approach is confirmed, water races shall be protected from sediment-laden runoff, construction debris, concrete washwater, fuel, oils, or other contaminants.

Where temporary diversion, isolation, bypass, or dewatering of a water race is required, the Contractor shall prepare a methodology for approval before works commence. The methodology shall address flow management, sediment control, dewatering, stabilisation, reinstatement, water quality monitoring, and any ecological management requirements identified by the project ecologist or consent conditions.

6.10 Temporary Diversion or Isolation of Water Races

Temporary diversion or isolation of water races may be required where construction works are undertaken within or across an existing water race alignment. This may include removal of existing culverts, installation of new culverts, service crossings, road crossings, temporary construction access, or realignment works.

Temporary diversion or isolation shall be undertaken using methods appropriate to the flow volume, duration of works, available working area, ground conditions, and consent requirements. The preferred approach shall minimise disturbance to the existing water race and maintain flow continuity where required.

Given the limited width of the existing water races, full temporary diversion channels are unlikely to be required for most works. Localised dam and pump, dam and divert, bypass pipe, temporary fluming, or temporary isolation methods are expected to be more appropriate for most water race crossings or modifications.

Temporary works may include one or more of the following methods:

- temporary diversion channels, where required for higher flows or longer-duration works;
- dam and pump arrangements;
- dam and divert arrangements;
- temporary bypass pipes;
- temporary fluming;
- temporary upstream and downstream isolation controls; or
- other approved methods suited to the water race conditions.

6.10.1 Temporary diversion channels

Temporary diversion channels, where required, shall be constructed generally as follows:

- Excavate the diversion channel while maintaining an earthen plug at each end to prevent uncontrolled flow entering the diversion before it is stabilised.
- Size the temporary diversion to convey the design construction-phase flow required by the consent conditions or approved methodology.
- Stabilise the diversion channel before introducing flow. Stabilisation may include geotextile, rock lining, matting, grassing, or other erosion-resistant treatment appropriate to the expected velocity and duration of use.
- Open the downstream plug first, followed by the upstream plug, to reduce erosion and sediment mobilisation.
- Install a non-erodible dam, plug, or other approved control at the upstream end of the existing water race to direct flow into the diversion.
- Install a downstream control where required to prevent backflow into the work area.
- Maintain the diversion, erosion protection, and sediment controls throughout the works.
- Remove the downstream control first during reinstatement, then slowly remove the upstream control to minimise sediment mobilisation.

- Remove dirty water from the isolated work area to an approved sediment treatment device before discharge.
- Backfill, stabilise, and reinstate the temporary diversion channel once it is no longer required.

6.10.2 Dam and pump (or dam and divert) process

Dam and pump, dam and divert, bypass pipe, temporary fluming, or temporary isolation methods may be used for smaller water races, lower flows, shorter-duration works, or localised crossings. Where used, these methods shall be constructed generally as follows:

- Install upstream and downstream controls using stabilised and non-erodible materials such as sandbags, sheet piles, steel plates, temporary bunding, bypass pipes, flumes, or other approved materials.
- Maintain flow continuity around or through the work area where required.
- Protect pump inlets to avoid drawing sediment from the bed of the water race.
- Provide fish screening where required by the project ecologist or consent conditions.
- Discharge pumped or diverted flow to a stable location with suitable erosion protection and energy dissipation.
- Provide sediment treatment where pumped water is sediment-laden.
- Size temporary pumping or bypass arrangements for the construction-phase flow required by the consent conditions or approved methodology.
- Stabilise and dewater the work area before removing temporary controls.
- Remove temporary works and reinstate the affected water race area once construction is complete.

Where aquatic fauna management is required by the project ecologist, consent conditions, or relevant authority, fish salvage or relocation shall be carried out by a suitably qualified person holding the necessary permits and approvals. No fish salvage or aquatic fauna handling shall be undertaken by site staff unless authorised and appropriately qualified.

6.11 Permanent Water Race Diversion, Realignment, Piping, or Closure

Permanent diversion, realignment, piping, or closure of existing water races may be required to suit the final development layout, road network, earthworks, stormwater design, servicing corridors, or staging requirements. The final extent and form of any permanent water race works will be confirmed through detailed design and the relevant approval process.

Permanent water race works shall be designed to maintain the required water race function where that function is to be retained, or to provide for closure or removal where this is approved by the relevant authority. Design inputs may include civil design, stormwater design, groundwater assessment, ecological assessment, landscape design, and authority requirements.

Where a new or modified water race alignment is required, the works shall be sequenced so that flow is not introduced until the new alignment is constructed, stabilised, inspected, and confirmed as suitable to receive flow. Temporary diversion or isolation methods described in Section 6.10.1 may be used to complete the permanent works.

Permanent works shall be stabilised as soon as practicable following construction. Stabilisation may include erosion-resistant lining, rock protection, geotextile, vegetation, matting, or other treatment required by the final design and consent conditions. On completion, disturbed areas shall be reinstated and stabilised to prevent erosion, sediment generation, and discharge of sediment-laden water to the water race network or downstream stormwater flow paths.

6.12 Working with Shallow Groundwater

Groundwater levels vary across the wider Westhaven landholdings. Based on the available groundwater information, groundwater is not expected to be encountered across most of the site during standard earthworks, shallow service installation, or road construction. Groundwater interception is more likely where deeper excavations are required, particularly for deeper service trenches and pump station works in the southern part of the development near Selwyn Road, where shallower groundwater depths are anticipated.

The potential for groundwater interception shall be managed through construction and design measures where relevant, including:

- Confirming groundwater levels before construction of deeper services, pump station excavations, or other excavations likely to extend near or below groundwater level.
- Planning works to minimise excavation depth and duration where practicable.
- Limiting open trench lengths and backfilling completed sections as soon as practicable.
- Using backfill materials and compaction methods appropriate to the surrounding ground conditions and service requirements.
- Sealing around manholes, pump station structures, pipe penetrations, and other structures where required to limit groundwater ingress or migration along service corridors.
- Using alternative installation methods, such as directional drilling or thrusting, where appropriate to avoid unnecessary open trench excavation.
- Managing any dewatering in accordance with Section 6.8 of this SMP, the approved ESCP, consent conditions, and the Dewatering Assessment of Environmental Effects Report.
- Preventing untreated sediment-laden water from discharging to water races, stormwater systems, adjoining land, groundwater, or uncontrolled discharge areas.

Where groundwater is encountered unexpectedly, the Contractor shall stop work in the affected area if required to maintain safety or environmental control, notify the Engineer, and confirm the appropriate construction methodology before works continue.

6.13 Construction Traffic Management

Dedicated stabilised accessways are proposed to be constructed from the adjoining public road frontages, as indicated by the Erosion and Sediment Control Plans in Appendix A. The final location and use of construction access points will be confirmed for each stage of works.

The flow of construction traffic will be managed and controlled to limit disruption to adjoining road users and neighbouring properties. Public roads will be regularly inspected, maintained, and swept as required to limit tracking of sediment, dust generation, and other nuisance effects. As part of the contract award process, the Contractor will be required to provide a Construction Management Plan.

For any proposed construction work within the public road reserve, Corridor Access Requests (CAR) and Traffic Management Plans (TMP) will be obtained, and copies kept on site at all times.

6.14 Construction Noise Management

A detailed Construction Noise Management Plan (CNMP) is to be completed before each relevant stage commences. The methodology outlined in this section is intended to provide a general approach to noise management and to demonstrate that measures can be taken to limit the amount and intensity of noise generated by construction.

6.14.1 Hours of Operation

Construction works, including the movement of trucks to and from the site, are expected primarily to take place between the standard working hours given below:

7:00 am to 7:00 pm - Monday to Friday
8:00 am to 5:00 pm – Saturday

When works occur outside of these standard hours, the Contractor will make all reasonable efforts to ensure the works are carried out using appropriate methods and equipment to minimise the intensity and duration of noise-generating events. It is expected that some works, such as works in the public road corridor, may need to be undertaken outside standard working hours where required by Selwyn District Council, the road controlling authority, consent conditions, or approved traffic management requirements.

6.14.2 Noise Levels

The New Zealand standard for noise associated with construction activities is NZS 6803:1999 Acoustics - Construction Noise. Construction noise shall be managed to comply with NZS 6803:1999, the Selwyn District Plan, and any applicable consent conditions.

The need for temporary acoustic barriers or other noise mitigation measures will be assessed as part of the CNMP for each relevant stage of works. Particular consideration will be given to occupied dwellings or other sensitive receivers located near the relevant work area, including dwellings adjoining or near the Westhaven road frontages.

Construction activities with higher noise potential may include bulk earthworks, road construction, pavement construction, trenching, compaction, concrete cutting, breaking, piling, or works within the public road corridor. Where these works are undertaken close to occupied dwellings or other sensitive receivers, additional mitigation may be required.

6.14.3 Mitigation

Where practicable, acoustic barriers may be established around the relevant work area where construction activities are taking place. The development will be constructed in stages and the entire site does not need to be fully enclosed by acoustic barriers at all times. The CNMP will identify where temporary acoustic barriers are required for each relevant stage.

It may also be necessary to provide additional localised acoustic screening during works that cannot otherwise be mitigated by changes to work method, plant selection, timing, or duration. This may include works such as breaking, cutting, compaction, dewatering, or other high-noise activities close to occupied dwellings or sensitive receivers.

The Contractor and Project Manager shall demonstrate awareness of, and adherence to, the relevant construction noise control standards nationally and locally, and shall organise additional staff training where required to support compliance. The Contractor shall select appropriate equipment and methodologies to minimise noise generation as far as practicable, such as the selection of construction plant fitted with effective mufflers, silencers, or other noise-reduction measures.

The Contractor shall also ensure that staff do not generate excessive noise through unnecessary means such as shouting, vehicle horns, loud radios, speakerphones, or excessive machine shaking.

6.15 Accidental Discovery of Archaeological Material

In the event of the accidental discovery of archaeological material, all work in the vicinity of the discovery, within 20 m, must cease immediately and the area must be isolated by fencing or other suitable means. The Project Manager must be informed, and no further work is to occur in the area until advised by the Project Manager.

Where an archaeological feature or artefact is identified, Heritage New Zealand Pouhere Taonga must be informed, and a qualified archaeologist shall be provided access to the site to carry out investigations.

6.16 Accidental Discovery of Contaminated Material

In the event of an unexpected discovery of potentially contaminated material, all work in the vicinity of the discovery, within 5 m, shall stop and the Project Manager shall be notified. Signs that further assessment is required may include visually discoloured soils, odours indicating hydrocarbons or other potential contaminants, oily or greasy soils, asbestos-containing material, or significant buried rubbish.

The area shall be isolated by fencing or other visual means. The contaminated land specialist shall be informed immediately. The contaminated land specialist shall determine the appropriate course of action, which may include notifying Selwyn District Council and ECan, and preparing relevant remediation action plan(s) or management procedures.

6.17 Accidental Discovery of Culturally Significant Material

In the event of an unexpected discovery of culturally significant material, an Accidental Discovery Protocol consistent with Appendix 3 of the Mahaanui Iwi Management Plan 2013 (IMP), or any more recent discovery protocol recommended through cultural advice for the application, shall be applied.

7 EROSION, SEDIMENT AND DUST CONTROL PLAN

7.1 Key Principles

Erosion and sediment control follows the principles as detailed in the ECan ESC Toolbox.

Key principles for the erosion and sediment control (ESC) management during construction are:

- Minimise Disturbance – design of erosion and sediment control measures shall consider existing site features and minimise earthwork extents.
- Staged Construction – staging of construction activities to limit exposed surfaces that may produce sediment.
- Progressively Stabilise Exposed Areas – soils disturbed are to be progressively stabilised once complete.
- Install Perimeter Controls and cut-off drains – prevent clean water runoff mixing with dirty water runoff on the site. Divert upstream catchments around exposed areas through clean water diversion channels.
- Employ Sediment Retention Area and Devices – capture and treat runoff with settlement areas in the first instance and then structural devices where required.
- Adjust the ESCP as needed – ESC measures and the ESCP should be reviewed and updates to reflect changes to construction sequencing, weather changes with input from the Contractor completing works on site.
- Dewatering – ESC measures for the dewatering of excavations will be managed in compliance with ECAN requirements.

A concept ESCP has been prepared for the works and is included in Appendix A. The ESCP is to be reviewed and further developed in consultation with the Contractor before starting site works to ensure that the erosion and sediment control measures are fit for purpose and practical for the intended construction sequence. Stage-specific ESCPs shall be prepared and implemented for subsequent stages of works where required.

Stormwater runoff from construction areas shall be intercepted and conveyed by dirty water cut-off drains or dirty water diversion channels to the relevant sediment control device. Sediment control devices may include sediment retention ponds, decanting earth bunds, settlement tanks, sediment traps, or other controls appropriate to the contributing catchment, construction methodology, and site conditions.

Where sediment retention ponds are adopted, they shall be located to make use of existing landform where practicable and shall be designed generally in accordance with the ECan Erosion and Sediment Control Toolbox for Canterbury. Sediment retention ponds shall be sized for the contributing catchment and provided with appropriate dead storage, live storage, forebay, baffles, decants, spillways, outlet controls, and emergency overflow provisions.

Dirty water conveyance channels shall be stabilised or lined where required, having regard to channel gradient, flow velocity, soil conditions, duration of use, and erosion risk. The need for geotextile lining, rock lining, matting, or other stabilisation shall be confirmed as part of the detailed ESCP and construction methodology.

Pumping of stormwater may be required to remove stormwater that collects in low areas, road cuts, service trenches, excavations, or behind temporary bunded areas. Pumped water shall be directed to an approved sediment treatment device before discharge, unless the water is confirmed as clean and suitable for direct discharge in accordance with the approved ESCP and consent conditions

7.2 Control Device Selection

The erosion and sediment control measures and devices listed below are based on the ECan Erosion and Sediment Control Toolbox for Canterbury. These measures are the preliminary controls assumed to be required to manage erosion and sedimentation during construction.

The final selection, location, sizing, and sequencing of controls shall be reviewed with the Contractor before works commence and updated as required during construction to reflect the Contractor's methodology, staging, exposed earthworks areas, weather conditions, and site conditions. All erosion and sediment control measures shall be inspected and confirmed as correctly installed before earthworks commence in the relevant area.

Control Measure/Device	Application
Stabilised Entrance	Stabilised construction entrances will be provided at construction access points from adjoining public roads. Existing farm access tracks may be used where suitable, subject to confirmation that they can be stabilised and managed to prevent sediment being tracked onto public roads. Shaker ramps, wheel wash facilities, ballast rafts, or other suitable controls shall be provided where required for heavy construction traffic exiting the site.
Earthen Bunds and Cut-off Drains	Clean water and dirty water bunds, cut-off drains, and diversion channels may be used to manage runoff across the site. Clean water controls shall divert upstream or off-site runoff around exposed earthworked areas where practicable. Dirty water controls shall direct sediment-laden runoff towards sediment retention areas and treatment devices.
Silt Fences	Silt fences may be used as perimeter controls or localised controls to prevent sediment leaving exposed work areas, entering road corridors, or discharging to water races, stormwater systems, adjoining land, or uncontrolled discharge areas. Silt fences shall only be used for suitable small catchments and low-flow conditions.
Sediment Retention Pond	Sediment-laden stormwater generated from exposed areas may be conveyed to sediment retention ponds by dirty water diversion channels. Sediment retention ponds shall be sized in accordance with the ECan Toolbox based on the contributing catchment. Where a 10 ha unstabilised contributing catchment is adopted, the sediment retention pond shall provide a storage volume of approximately 3,000 m^3, based on 300 m^3 per hectare.
Decanting earth bunds / sediment traps	Decanting earth bunds, sediment traps, or similar devices may be used for smaller catchments, localised earthworks areas, road corridors, or trenching areas where a sediment retention pond is not practicable or required
Silt Socks	Silt socks may be used to treat minor sediment-laden runoff prior to discharge or as a localised perimeter control to prevent sediment entering sumps, road corridors, water races, or existing stormwater infrastructure. They are generally limited to smaller catchments and localised applications.
Rapid Stabilisation	Mulch, topsoiling and grass seeding, aggregate, geotextile, matting, hydroseeding, or other stabilisation measures covered by the ECan Toolbox may be used to stabilise exposed areas and reduce erosion. Stabilisation shall be undertaken progressively as areas are completed or are no longer required for active construction.
Cut and Cover Methodology	Cut-to-fill and staged construction methods may be used to minimise the area and duration of exposed soil. This approach is expected to be used for parts of the earthworks and trenched service installation where practicable. Finished surfaces shall be stabilised or grassed as soon as practicable.

Dust Control Measures	Water carts, temporary irrigation systems, sprinklers, or other dust suppression methods may be used to dampen exposed earthworked areas, haul roads, stockpiles, and construction access routes. Dust control shall be implemented proactively rather than reactively. Construction water shall be sourced from an approved temporary Bulk Water Extraction connection, existing irrigation bores where available and authorised, onsite storage, or other approved sources. Water shall not be extracted from fire hydrants for construction purposes.

7.3 Dust Management

Airborne dust may be generated from construction activities, wind action on unstabilised ground, stockpiles, and vehicle movements within the site. Dust shall be managed to avoid nuisance effects beyond the site boundary and to maintain safe working conditions within the site.

The area of exposed bare or unstabilised soil shall be limited to a maximum of 10 ha at any one time, unless otherwise approved. Limiting the exposed area will reduce the potential for dust generation and assist with maintaining effective dust suppression during construction.

Water carts, temporary irrigation systems, sprinklers, or other dust suppression methods shall be available for dampening unstabilised surfaces, haul roads, stockpiles, temporary construction access tracks, and other dust-generating areas.

Construction water shall be sourced from an approved temporary Bulk Water Extraction connection, existing irrigation bores where available and authorised, onsite storage, or other approved sources. Water shall not be extracted from fire hydrants for construction purposes. Where water is required from the Selwyn District Council reticulated water supply, the Contractor shall obtain approval for a temporary Bulk Water Extraction connection before use. The connection shall be metered, protected by an RPZ backflow prevention device, and used in accordance with the approved Water Use Management Plan and any conditions imposed by Council.

Installed storage tanks, temporary tanks, or other suitable onsite storage may be used to buffer construction water demand and allow efficient filling of water carts. Use of existing irrigation bores for construction water shall only occur where authorised and where any applicable water take consent requirements are met.

Truck loading and unloading operations shall occur during times of low wind velocity where practicable. If loading or unloading is required during higher wind conditions, the material shall be dampened or otherwise managed to prevent dust discharge beyond the site boundary.

Dust management measures shall include the following:

- All site workers shall be advised of the need to minimise dust through responsible operation of machinery and vehicles.
- Vehicle speeds shall be managed on unsealed haul roads and temporary access tracks.
- Vehicle loading and unloading operations shall occur during times of low wind velocity where practicable.
- Where loading, unloading, or material handling is required during higher wind conditions, material shall be wetted, covered, or otherwise managed to prevent dust discharge beyond the site boundary.
- Dust-generating activities shall be suspended where dust control measures become ineffective due to increased wind speed or dry conditions.
- Public roads and site entrances shall be regularly inspected for sediment tracking and dust generation from vehicle movements.
- Sediment tracked onto public roads shall be removed by sweeping, water cart, or other suitable method as required.
- Water carts or other dust suppression systems shall be kept onsite and used as required.
- Stockpiles shall be located, shaped, stabilised, covered, or dampened as required to minimise dust generation.
- Completed or inactive earthworked areas shall be stabilised as soon as practicable.

7.4 Implementation of ESC Measures

The methodology for installing erosion and sediment control measures and the indicative construction sequence is outlined below. The final sequence shall be confirmed by the Contractor and reflected in the stage-specific ESCP before works commence.

1. Confirm the stage-specific ESCP, construction access points, sediment control devices, stockpile areas, clean water diversion requirements, dirty water diversion requirements, and stabilisation areas.
2. Install stabilised construction entranceways at the approved site access points.
3. Install perimeter controls, including silt fences, bunds, cut-off drains, and clean water diversion channels where required.
4. Construct sediment retention ponds, decanting earth bunds, sediment traps, or other sediment control devices required for the relevant stage.
5. Construct dirty water diversion channels to convey sediment-laden runoff from exposed areas to the relevant sediment control devices.
6. Inspect and confirm that the erosion and sediment control measures are correctly installed and operational before bulk earthworks commence.
7. Strip topsoil from the initial work area and stockpile for later reuse.
8. Prepare stockpile areas by removing topsoil where required, placing stockpiles in approved locations, shaping and track-rolling stockpiles, and installing silt fences, bunds, or other perimeter controls as required.

- Complete bulk earthworks progressively, limiting exposed bare or unstabilised soil to a maximum of 10 ha at any one time unless otherwise approved.

9. Install services, backfill trenches, and construct road subgrades and pavements progressively, maintaining erosion and sediment controls throughout the works.
10. Stabilise completed earthworked areas as soon as practicable, including topsoiling, grassing, mulching, aggregate placement, or other approved stabilisation measures.
11. Review and adjust erosion and sediment control measures as the works progress to reflect changes in exposed areas, drainage patterns, construction sequencing, weather conditions, and Contractor methodology.
12. Decommission temporary controls only once the contributing catchment has been stabilised and the control is no longer required.
13. Remove remaining temporary erosion and sediment control measures following completion and stabilisation of the relevant stage, unless they are required to remain for subsequent stages or maintenance periods.
14. Reinstate and stabilise any areas disturbed by the removal of temporary controls.

APPENDIX 1 EROSION, SEDIMENT AND DUST CONTROL DRAWINGS



NOTES:

1. REFER TO ECAN'S EROSION & SEDIMENT CONTROL TOOLBOX / GUIDELINES FOR CANTERBURY REGION (HTTPS://ESCCANTERBURY.CO.NZ).
2. INSTALL ALL EROSION & SEDIMENT CONTROL MEASURES PRIOR TO COMMENCING BULK EARTHWORKS.
3. MONITOR SYSTEMS AND DEVICES WEEKLY AND FOLLOWING RAIN EVENTS FOR MAINTENANCE AND EFFECTIVENESS.
4. STRIPPED TOPSOIL STOCKPILES TO BE APPROPRIATELY ISOLATED FROM RUNOFF AREAS AND DOWNSTREAM DIRTY WATER COLLECTION. STOCKPILES SHOULD HAVE SEDIMENT FENCING ALONG THE DOWNHILL SIDE.
5. TOPSOIL SHOULD BE RE-SPREAD AND SOWN ASAP TO STABILISE EXPOSED SUBGRADE / LOESS TO MINIMISE RISK OF SEDIMENT DISCHARGE. MINIMISE STRIPPED AND EXPOSED EARTHWORK AREAS WHERE POSSIBLE.
6. SIMILARLY APPLY MULCHING, SOIL BINDER, HYDROSEEDING OR BLANKETS WHERE NECESSARY TO MINIMISE THE EFFECT OF RAIN IMPACT EROSION.
7. ESC MEASURES INSPECTED ONCE PER DAY MINIMUM, OR FOLLOWING ANY RAIN EVENT WHERE RAINFALL EXCEEDS 5mm.
8. ANY ACCUMULATED SEDIMENT SHALL BE RECOVERED AND REPAIRS MADE AS NECESSARY WITH RECORDS KEPT OF ANY MAINTENANCE.
9. REMOVAL OF SEDIMENT CONTROLS ONLY WHEN ALL EARTHWORKED SURFACES ARE STABILISED AS CONFIRMED BY THE ENGINEER.
10. WATER CART KEPT ON SITE AT ALL TIMES AND SHALL BE USED TO SUPPRESS DUST ON HAUL ROADS, STOCKPILES AND EARTHWORKED SURFACES (AS REQUIRED).
11. EARTHWORKED SURFACES SHALL BE STABILISED AS SOON AS PRACTICABLE AND COVERED WITH AGGREGATE, MATTING, BLANKETS, TOPSOIL OR POLYMER SPRAYS UNTIL GRASS IS ESTABLISHED.
12. ANY VARIATION FROM THE DESCRIBED METHODOLOGY SHOULD BE FIRSTLY DISCUSSED WITH THE ENGINEER, COUNCIL'S SUBDIVISION ENGINEER AND/OR ECAN'S AREA MONITORING OFFICER.
13. MAXIMUM AREA OF EARTHWORKS NOT TO EXCEED 10 HECTARES.
14. ALL DIMENSION IN METERS UNLESS NOTED OTHERWISE.
15. ESDMP TO BE IN PLACE PRIOR TO ANY WORKS COMMENCING.
16. ANY INSTRUCTIONS FROM COUNCIL OR OTHER AUTHORITY TO BE CONFIRMED WITH THE ENGINEER.
17. DRAWINGS ARE TO BE READ AS A COMPLETE SET. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEER FOR CLARIFICATION.
18. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH ANY APPLICABLE ECAN CONSENTS.

LEGEND:

- SITE BOUNDARY
- RT RT — RECORD OF TITLE (Ex. BOUNDARY)
- EXISTING BOUNDARY
- 20m SETBACK
- 10.0 — EXISTING MAJOR CONTOURS SHOWN AT 2.5m INTERVALS
- 10.5 — EXISTING MINOR CONTOURS SHOWN AT 0.5m INTERVALS
- // // — FENCE
- DIRTY WATER DIVERSION
- DIRTY WATER DIRECTION
- SOAK PIT
- STABILIZED ENTRANCE
- EARTH BUND
- HARDSTAND AREA
- STOCK PILE AREA

CLIENT: CARTER GROUP

PROJECT: WESTHAVEN FAST TRACK

DRAWING TITLE: EROSION AND SEDIMENT CONTROL OVERVIEW PLAN

A	ISSUED FOR FT APPLICATION	MP	02/11/2026
REVISION DETAILS		BY	DATE

SURVEYED	-		-
DESIGNED	ARA		06/10/2026
DRAWN	ARA		06/10/2026
REVIEWED	CS		02/10/2026
APPROVED	MP		02/11/2026
SCALE	1:8,000 @A1	1:16,000 @A3	REVISION
STATUS	FOR CONSENT NOT FOR CONSTRUCTION		A
DWG NO	16521-00-EN-2600		

Synergy Version:

Plot Date: 11:59:15 am,2 November 2026, KIM CHEN

0 150 375 750 SCALE (m) 1: 7,500 @A1
1:15,000 @A3

File: C:\12DS\DATA\INOVO-12D\16521-ROLLESTON WEST FAST TRACK_236\03 CAD\001 CURRENT\16521-00-EN-2600.DWG

RUNNERS RD

SH1

SH1

DUNNS CROSSING RD

STOCKPILE AREA FOR EXCESS MATERIAL TO USE AS STOCKPILE AREA

STAGE 3

STAGE 2

RE-FUELLING AREA

RE-FUELLING AREA

HARDSTAND AREA/SITE OFFICE

WEST ROLLESTON PRIMARY SCHOOL

DUNNS CROSSING RD

BURNHAM SCHOOL RD

BURNHAM SCHOOL RD

FOREBAY AND SOAK-PIT

STABILISED ENTRANCE WITH SHAKER RAMP

FOREBAY AND SOAK-PIT

STABILISED ENTRANCE WITH SHAKER RAMP

FOREBAY AND SOAK-PIT

0 40 100 200 SCALE (m) 1:2,000 @A1
1:4,000 @A3

NOTES:

1. FOR GENERAL NOTES REFER TO DWG 16521-00-EN-2600

LEGEND:

- SITE BOUNDARY
- RT RT RECORD OF TITLE (Ex. BOUNDARY)
- EXISTING BOUNDARY
- 20m SETBACK
- 10.0 EXISTING MAJOR CONTOURS SHOWN AT 2.5m INTERVALS
- 10.5 EXISTING MINOR CONTOURS SHOWN AT 0.5m INTERVALS
- FENCE
- DIRTY WATER DIVERSION
- DIRTY WATER DIRECTION
- SOAK PIT
- STABILIZED ENTRANCE
- EARTH BUND
- HARDSTAND AREA
- STOCK PILE AREA

CLIENT: CARTER GROUP

PROJECT:
WESTHAVEN
FAST TRACK

DRAWING TITLE:
EROSION AND SEDIMENT CONTROL PLAN
SHEET 1 OF 4

A	ISSUED FOR FT APPLICATION	MP	02/11/2026
REVISION DETAILS		BY	DATE

SURVEYED	-	-
DESIGNED	ARA	06/10/2026
DRAWN	ARA	06/10/2026
REVIEWED	CS	02/10/2026
APPROVED	MP	02/11/2026

SCALE	1:2,000 @A1 1:4,000 @A3	REVISION
STATUS	FOR CONSENT NOT FOR CONSTRUCTION	A
DWG NO	16521-00-EN-2601	

Synergy Version:

Plot Date: 11:59:18 am,2 November 2026,KIM CHEN

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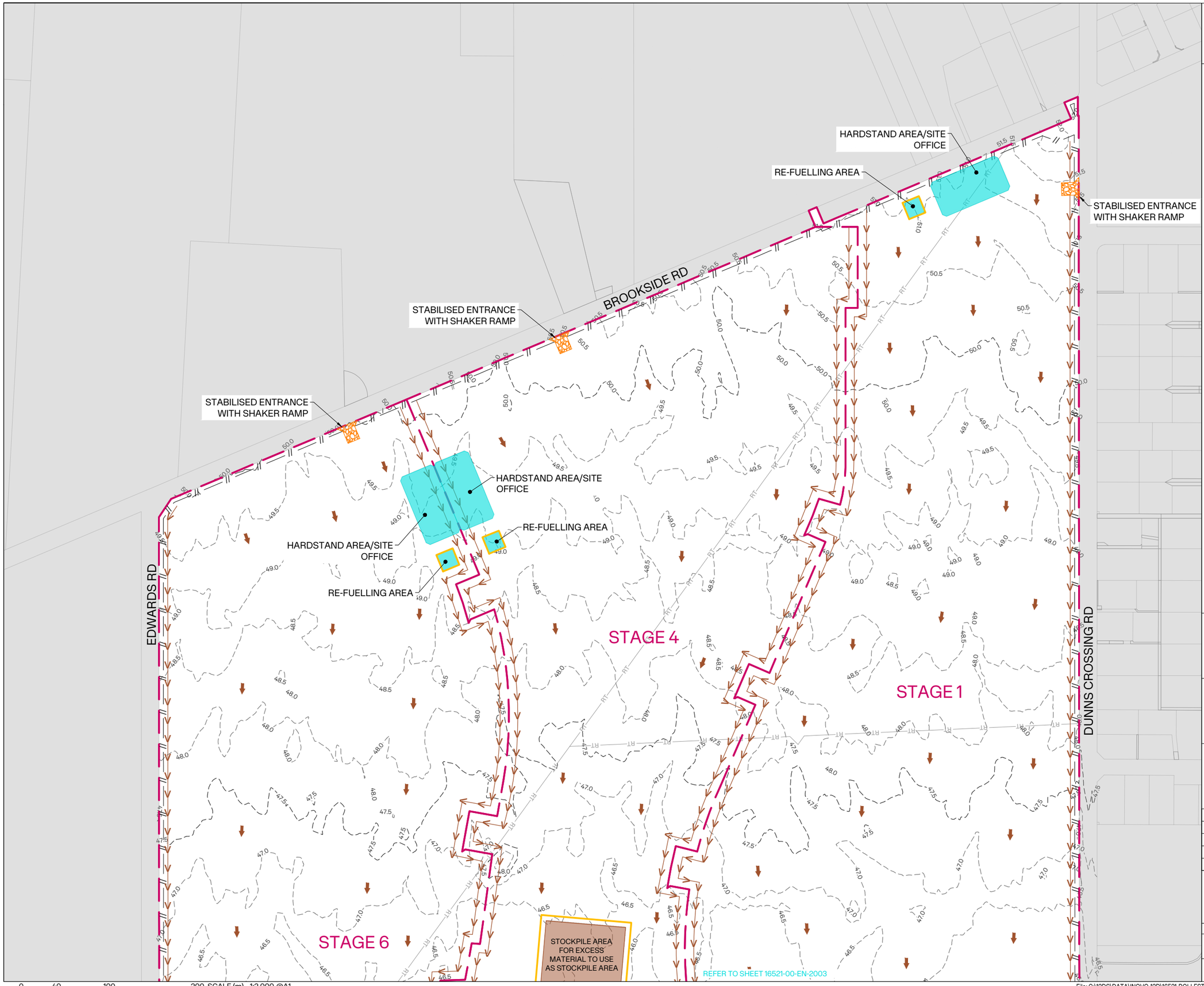

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1:4,000 @A3

NOTES:

1. FOR GENERAL NOTES REFER TO DWG 16521-00-EN-2600

LEGEND:

- SITE BOUNDARY
- RECORD OF TITLE (Ex. BOUNDARY)
- EXISTING BOUNDARY
- 20m SETBACK
- EXISTING MAJOR CONTOURS SHOWN AT 2.5m INTERVALS
- EXISTING MINOR CONTOURS SHOWN AT 0.5m INTERVALS
- FENCE
- DIRTY WATER DIVERSION
- DIRTY WATER DIRECTION
- SOAK PIT
- STABILIZED ENTRANCE
- EARTH BUND
- HARDSTAND AREA
- STOCK PILE AREA

CLIENT: CARTER GROUP

PROJECT: WESTHAVEN FAST TRACK

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN SHEET 2 OF 4

A	ISSUED FOR FT APPLICATION	MP	02/11/2026
REVISION DETAILS		BY	DATE

SURVEYED	-		-
DESIGNED	ARA		06/10/2026
DRAWN	ARA		06/10/2026
REVIEWED	CS		02/10/2026
APPROVED	MP		02/11/2026
SCALE	1:2,000 @A1	1:4,000 @A3	REVISION
STATUS	FOR CONSENT NOT FOR CONSTRUCTION		A
DWG NO	16521-00-EN-2602		

Synergy Version:

Plot Date: 11:59:21 am 2 November 2026, KIM CHEN

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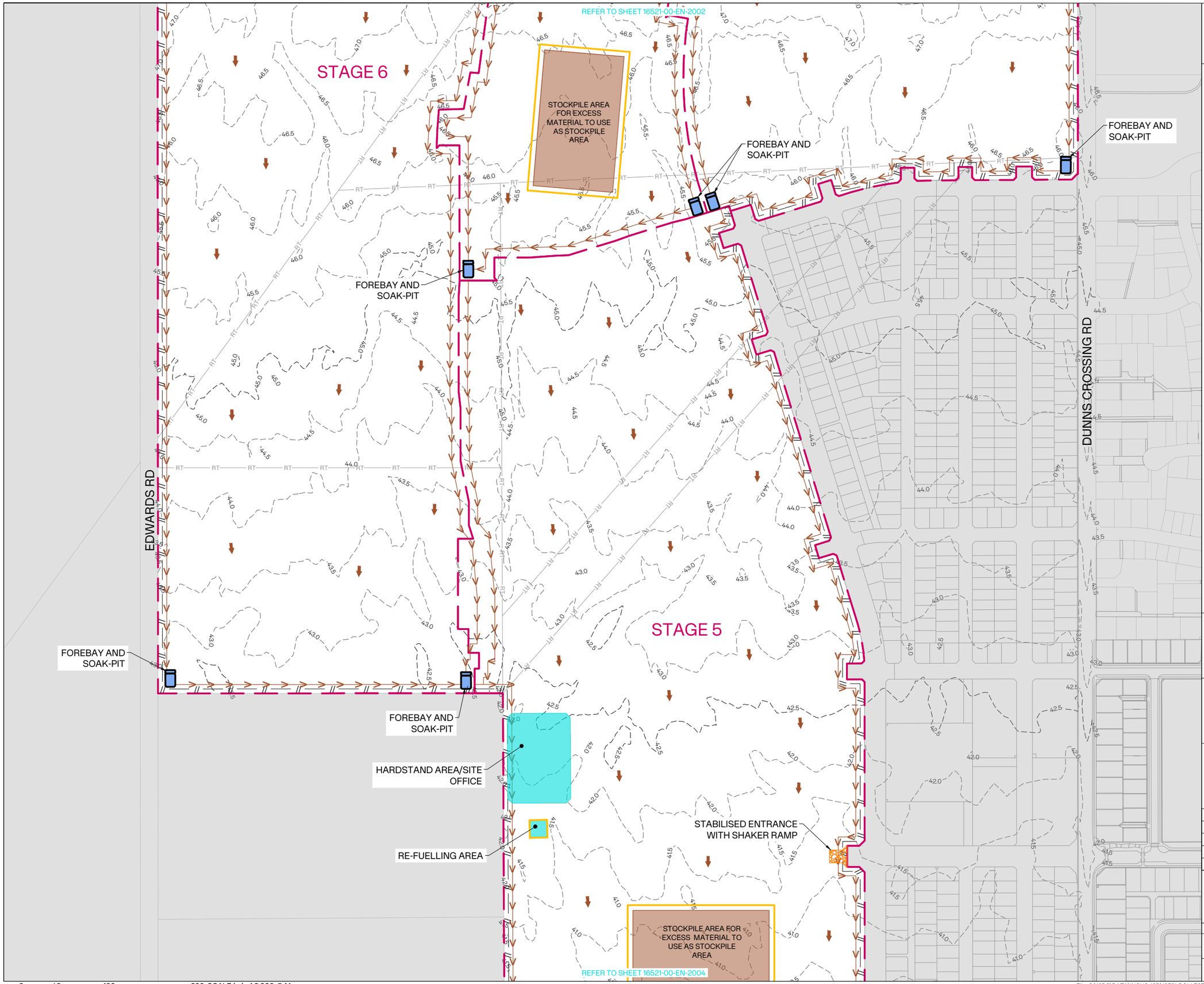


0 40 100 200 SCALE (m) 1:2,000 @A1 1:4,000 @A3

INOJO

NOTES:

1. FOR GENERAL NOTES REFER TO DWG 16521-00-EN-2600

LEGEND:

- SITE BOUNDARY
- RECORD OF TITLE (Ex. BOUNDARY)
- EXISTING BOUNDARY
- 20m SETBACK
- 10.0 EXISTING MAJOR CONTOURS SHOWN AT 2.5m INTERVALS
- 10.5 EXISTING MINOR CONTOURS SHOWN AT 0.5m INTERVALS
- FENCE
- DIRTY WATER DIVERSION
- DIRTY WATER DIRECTION
- SOAK PIT
- STABILIZED ENTRANCE
- EARTH BUND
- HARDSTAND AREA
- STOCK PILE AREA

CLIENT: CARTER GROUP

PROJECT: WESTHAVEN FAST TRACK

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN SHEET 3 OF 4

A	ISSUED FOR FT APPLICATION	MP	02/11/2026
REVISION DETAILS		BY	DATE

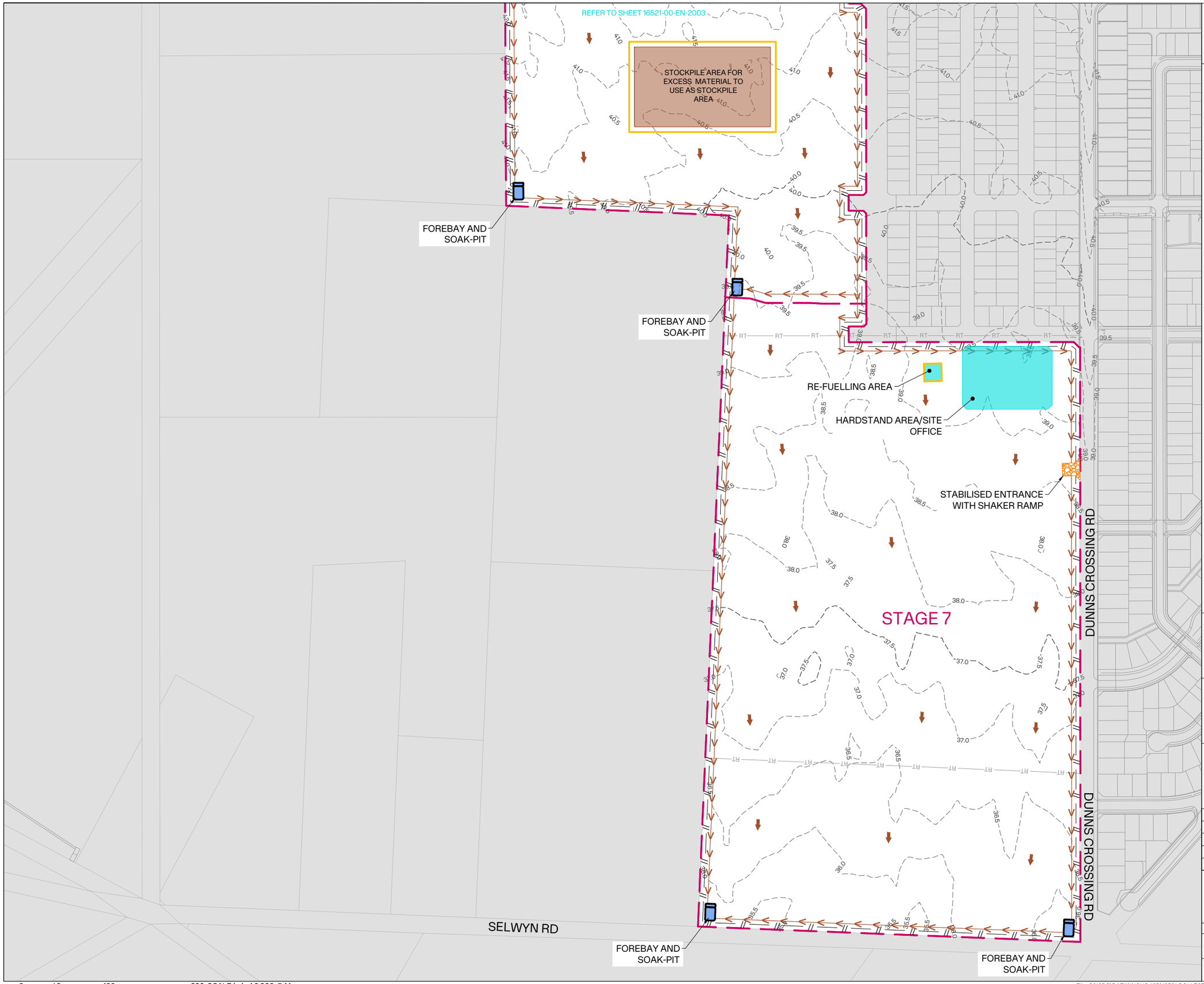
SURVEYED	-	-
DESIGNED	ARA	06/10/2026
DRAWN	ARA	06/10/2026
REVIEWED	CS	02/10/2026
APPROVED	MP	02/11/2026

SCALE	1:2,000 @A1	1:4,000 @A3	REVISION
STATUS	FOR CONSENT NOT FOR CONSTRUCTION		A
DWG NO	16521-00-EN-2603		

Synergy Version:

Plot Date: 11:59:25 am,2 November 2026, KIM CHEN

File: C:\12DS\DATA\INOVO-12D\16521-ROLLESTON WEST FAST TRACK_236\03 CAD\001 CURRENT\16521-00-EN-2600.DWG



0 40 100 200 SCALE (m) 1:2,000 @A1
1:4,000 @A3

INOJO

NOTES:

1. FOR GENERAL NOTES REFER TO DWG 16521-00-EN-2600

LEGEND:

- SITE BOUNDARY
- RECORD OF TITLE (Ex. BOUNDARY)
- EXISTING BOUNDARY
- 20m SETBACK
- 10.0 EXISTING MAJOR CONTOURS SHOWN AT 2.5m INTERVALS
- 10.5 EXISTING MINOR CONTOURS SHOWN AT 0.5m INTERVALS
- FENCE
- DIRTY WATER DIVERSION
- DIRTY WATER DIRECTION
- SOAK PIT
- STABILIZED ENTRANCE
- EARTH BUND
- HARDSTAND AREA
- STOCK PILE AREA

CLIENT: CARTER GROUP

PROJECT:
WESTHAVEN
FAST TRACK

DRAWING TITLE:
EROSION AND SEDIMENT CONTROL PLAN
SHEET 4 OF 4

A	ISSUED FOR FT APPLICATION	MP	02/11/2026
REVISION DETAILS		BY	DATE

SURVEYED	-		-
DESIGNED	ARA		06/10/2026
DRAWN	ARA		06/10/2026
REVIEWED	CS		02/10/2026
APPROVED	MP		02/11/2026
SCALE	1:2,000 @A1	1:4,000 @A3	REVISION
STATUS	FOR CONSENT NOT FOR CONSTRUCTION		A
DWG NO	16521-00-EN-2604		

Synergy Version:

Plot Date: 11:59:29 am,2 November 2026, KIM CHEN

File: C:\12DS\DATA\INOVO-12D\16521-ROLLESTON WEST FAST TRACK_236\03 CAD\001 CURRENT\16521-00-EN-2600.DWG