

Environmental Management Plan

**Eagle Hawk Neck
Old Jetty Road to Blow Hole
Road**

Contract No: 3206



DOCUMENT CONTROLS

Business Name	Shaw Contracting (Aust) Pty Ltd				
Project Title	Eagle Hawk Neck (Old Jetty Road to Blow Hole Road)				
Document Title	Environmental Management Plan (EMP)				
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Prepared by					
Approvals		Name	Position	Signed	Date
	Shaw	J. Irvine	GM P&S		15/8/20
	Shaw	C. Reardon	PM		18/8/2020
	Client				

CHANGE HISTORY (PROJECT-SPECIFIC DOCUMENT)

Approved by: Project Manager

Issue	Clause	Change description	Date

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1 INTRODUCTION

- 1.1** Shaw Contracting (Aust.) Pty. Ltd. (hereafter referred to as ‘Shaw’) is a leading Tasmanian civil contracting company that offers a comprehensive range of specialist civil contracting services across Australia. Shaw is committed to providing services that meet or exceed client expectations by combining technical expertise with extensive industry experience. Along with the application of environmentally responsible practices, we strive to maintain positive and open communications with interested parties.
- 1.2** Independently certified to the International Organisation for Standardisation’s (ISO) AS/NZS ISO 14001:2015 Environmental Management Systems (EMS), Shaw commits “to prevent, or otherwise minimise, mitigate and remediate, harmful effects of the Company’s operations on the environment”. This commitment and the undertaking by Shaw to comply with all legal and other obligations to which the company subscribes, is clearly stated within Shaw’s Environmental Policy.
- 1.3** This Environmental Management Plan (EMP) is structured in line with the elements contained within AS/NZS ISO 14001:2015 – Requirements and guidance for use and is to be read in conjunction with the Project Management Plan (PMP).

2 SCOPE

- 2.1** This EMP applies to work being undertaken by Shaw at Eagle Hawk Neck (Old Jetty Road to Blow Hole Road) during *construction of sea wall and associated road works*.

2.2 Description of Project

The work under the contract for Eagle Hawk Neck (Old Jetty Road to Blow Hole Road) shall consist of, constructing 560m sea wall and associated pavement widening work including line marking, sealing works, wire rope and W-Beam installation. Bus Stop improvements including traffic islands and ramps. New culvert construction consisting of 600mm diameter pipe 32 metres in length, a 450mm diameter pipe extension and associated end walls including subsoil drainage and approximately 700m of Telstra service relocation.

3 PURPOSE OF EMP

- 3.1** The purpose of this EMP is to provide a framework to assist Shaw manage the environmental aspects associated with all stages of Shaw’s involvement in construction of the *Eagle Hawk Neck (Old Jetty Road to Blow Hole Road)* so as to have no unintended environmental impacts. The information contained within this EMP will enable Shaw to monitor its environmental performance against the requirements of the client and against relevant legislation.

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4 DEFINITIONS AND TERMS

EMP	ENVIRONMENTAL MANAGEMENT PLAN
Environment	Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation.
Environmental Aspect	Element of an organisation's activities, products or services that can interact with the environment.
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisations activities, products or services.
Environmental Damage	Any damage to, deterioration in or degradation of the environment caused by or arising in connection with the carrying out of the works under contract and includes the emission of, causing or allowing to continue, any pollution and the emission of or failure to contain any hazardous materials.
Hazardous Materials	All materials, substances, gas, liquid, chemical, biological, mineral or other physical matter which is toxic, highly flammable or inherently harmful to the environment or any life forms inhabiting the environment.
Incident	Any unplanned event resulting in, or having a potential for injury, ill health, damage or loss.
Interested party	Person or group concerned with or affected by the environmental performance of the organisation.
PMP	Project Management Plan
Policy	Overall intentions and direction of an organisation related to its performance as formally expressed by senior management.
Pollution Incident	A pollution incident is defined as a leak, spill or escape of a substance which as a result causes or could cause harm to health of human beings, animals, the environment and property that is not trivial, where trivial is defined as being of small value or importance. It includes the unlawful placement or disposal of waste but does not include the emission of any noise or odour.
Preventative Action	Action to eliminate the cause of a potential nonconformity.
Prevention of Pollution	Use of processes, practices, techniques, materials, products, services or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutant or waste, in order to reduce adverse environmental impacts.
Procedure	A procedure is a specified series of actions, acts or operations which have to be executed in the same manner in order to always obtain the same result under the same circumstances (for example, emergency procedures).
Record Document	States results achieved or providing evidence of activities performed.
Shaw	Shaw Contracting (Aust.) Pty. Ltd.

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5 PLANNING

5.1 Environmental Aspects, Impacts and Risk Assessments

- .5.1.1 Shaw identifies reasonably foreseeable environmental aspects and impacts through one or more of the following:
- Historical and existing knowledge of staff, contractors and clients;
 - Internal and external assessments and audits;
 - Field inspections;
 - Pre-start checks;
 - Team based risk assessments;
 - Incident investigations and emergency situations;
 - Stakeholder concerns and/or complaints; and
 - Industry reports, regulatory body advice and communications.
- .5.1.2 The risk management process applied by Shaw includes:
- Risk assessment utilising the risk framework to determine the level of risk (consequence and likelihood) as outlined in OHS002 Risk Management;
 - Identification of existing and proposed operational controls;
 - Assessment of the inherent and residual risks and prioritisation of the latter based upon the consequence, and the likelihood of the consequence occurring (as per AS/NZS ISO 31000:2009 Risk management – Principles and guidelines);
 - The reduction of significant aspects/risks and implementation of proposed controls managed via the corrective action system; and
 - Ongoing monitoring and verification of the effectiveness of controls through inspection, auditing and review processes.
- .5.1.3 Environmental hazards and risks identified on the project site are recorded by Supervisors in the Daily Diary. The environmental aspects relevant to this project, are recorded in the Project Risk Register.
- .5.1.4 All information relating to the above is routinely recorded within Shaw's Risk Register and communicated to appropriate personnel.
- .5.1.5 The project Risk Register is a working document developed with the most current understanding of the environmental conditions, potential impacts, design and work practices expected on the project. As the project is delivered, the register will be reviewed to remove aspects that are no longer present and add new or future aspects as they become relevant.

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5.2 Legal and Other Requirements

.5.2.1 Environmental protection legislation, legal and other applicable requirements, e.g. codes of practice and standards that apply to this project are listed in the Project Risk Register.

Access to current legal and other requirements is available electronically via Shaw Management System, Shaw-Work-Management System-Information Library-Legal and other Requirements.

The HSE Department monitors a subscription service which notifies when legal and standards requirements change, and the HSE Department will then update these plans and notify the Project Manager where relevant to the project.

5.3 Objectives and Targets

.5.3.1 Shaw considers the following when identifying objectives and targets:

- Environmental related incidents;
- Relevant changes to legal and other obligations;
- Results of environmental risk assessments;
- Known risk reduction and improvement opportunities;
- Views and concerns expressed by interested parties and the community;
- Results of internal and external audits;
- Incidents and emergency events; and
- The availability of resources (personnel and finance) to progress objectives and targets.

.5.3.2 Objectives and targets identified by Shaw that relate to environmental management on projects are as follows:

No	Objective	Target	Performance Indicator
1	Internal audits conducted	100% of audits conducted as scheduled	100%
2	Effective communication and consultation	At least one toolbox talk held per fortnight	1 pf
3	Audit reports reviewed and closed out (internal and external)	100% of audit responses completed within 14 days.	100%
4	Community complaints responded to promptly	100% of complaints closed out within 5 working days	100%
5	Environmental legal requirements complied with	No penalties or notices received	Zero

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6	Workplace environmental inspections completed weekly	100% of planned inspections carried out	100%
7	Environmental awareness	100% of employees & subcontractors are inducted prior to start project	100%

- .5.3.3 Known internally as Key Performance Indicators (KPIs), the General Manager -People & Systems is accountable for ensuring that objectives and targets are met and that changes to KPIs relevant to field activities are disseminated to all employees.
- .5.3.4 It is the responsibility of the General Manager - People & Systems to ensure all other managers and supervisors know internal KPIs and that processes are in place to measure, monitor and report on the KPIs.
- .5.3.5 Objectives and targets may be reviewed and updated from time to time. The most likely time for a review to occur would be after an environmental management system review or as a result of significant changes to legislation.

6 IMPLEMENTATION AND OPERATION

6.1 Roles and Responsibilities

(a) The specific responsibilities for implementation of this EMP are identified below:

ROLE	RESPONSIBILITY
Project Manager	<ul style="list-style-type: none"> Ensure all works comply with relevant regulatory and project requirements Ensuring that the development, implementation, monitoring and updating of the EMP and sub plans Ensure the requirements of this EMP are fully implemented, and, that environmental requirements are not secondary to other construction requirements Liaise with the Environmental Representative and other government authorities as required Participate and provide guidance in the regular review of this EMP and supporting documentation Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this EMP Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements Ensure that complaints are investigated, and issues raised resolved Direct that works be stopped immediately where there is an actual or potential risk of harm to the environment.

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ROLE	RESPONSIBILITY
Project Engineer	<ul style="list-style-type: none"> • Manage environmental document control, reporting, inductions and training • Manage environmental reporting • Oversee site environmental monitoring, inspections and internal audits • Report to Project Manager on the performance and implementation of the EMP • Identify where environmental measures are not meeting the set targets and where improvement can be achieved
Project Supervisors	<ul style="list-style-type: none"> • Plan construction works in a manner that avoids or minimises impact to environment • Ensure the requirements of this EMP are fully implemented • Ensure construction personnel manage construction works in accordance with statutory and approval requirements • Ensure environmental management procedures and protection measures are implemented • Ensure all Project personnel attend an induction prior to commencing works • Liaise with the Environmental Representative as required • Direct that works be stopped immediately where there is an actual or potential risk of harm to the environment.
Environmental Representative	<ul style="list-style-type: none"> • Interface with the Project Manager on all issues relating to environmental compliance for all works • Ensure Shaw are managing environmental risks adequately and in accordance with the Project requirements • Review environmental management plans and related documents prepared for the Project • Monitor the environmental performance of the Project • Evaluate and advise on compliance with the client environmental requirements, and • Review and approve any environmental management documents for the Project or related activities • Be the principal point of advice in relation to the environmental performance • Ensure that environmental auditing is undertaken in accordance with Shaw's Environmental Management System(s)

6.2 The GM People and Systems, in consultation with Project Managers, will periodically review the effectiveness of training against an established training needs analysis to identify additional areas of environmental awareness or competencies that may be required. The Project Risk Assessment is used as a key input into the identification of additional training and awareness requirements. Workers whose tasks may have a direct impact upon a significant environmental aspect will be provided with relevant additional training. Additional training and awareness may include (but not be limited to):

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- (a) Emergency preparedness and response;
- (b) Water management;
- (c) Hydrocarbon management;
- (d) Dust management;
- (e) Flora and fauna – particularly in relation to threatened or protected species;
- (f) Weed management;
- (g) Noise management; and
- (h) Waste management.

6.3 Communication

- .6.3.1 Shaw strives to establish and maintain transparent and open communication and consultation with workers, clients, and other interested parties. Shaw encourages workers to participate in and contribute to environmental performance improvement initiatives.
- .6.3.2 For information transfer, Shaw utilises the following communication and consultation forums and where relevant, records and retains minutes of meetings in the Environmental Management System Shaw Work:
 - (a) Weekly safety meetings;
 - (b) Pre-start meetings;
 - (c) Tool-box meetings;
 - (d) Supervisors meeting;
 - (e) Inductions;
 - (f) Noticeboards;
 - (g) Task observations;
 - (h) Management meetings;
 - (i) Risk assessments;
 - (j) Investigations into accidents and incidents;
 - (k) Workplace inspections;
 - (l) Hazard identification and reporting (in accordance with SP021 Accident Incident Procedure);
 - (m) Planning training requirements; and
 - (n) Client and stakeholder meetings.
- .6.3.3 Communication with regards to environmental performance shall be in accordance with SP008 Communication Procedure.

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6.4 Operational Controls

.6.4.1 Operational controls have been established and implemented to ensure that activities undertaken by Shaw personnel are managed to minimise environmental harm and are carried out in accordance with relevant policies, procedures and applicable legislative requirements. Operational controls are documented in the Project Risk Register and the hierarchy of controls as identified below are applied:

- (a) Eliminate the risk by ceasing the hazardous component or activity;
- (b) Substitute a less harmful alternative hazardous substance or process;
- (c) Engineer out / reduce the risk by redesigning;
- (d) Isolate or separate the hazard at source using engineering means;
- (e) Utilize administrative controls to minimize exposure to the risk;
- (f) Use personnel protective clothing and equipment when required.

6.5 Erosion and Sediment Control Plans

- (a) Erosion and Sediment Control Plans are used to identify the approximate location of erosion and sediment control structures within the Project site.
- (b) They are produced for construction stages from initial vegetation clearing to rehabilitation, when erosion and sediment controls are no longer required and are removed. Erosion and Sediment Control Plans will be developed and implemented prior to commencing activities at all works areas where there is a risk of erosion and sediment loss.
- (c) Erosion and Sediment Control Plans will be developed by the Project Engineers and reviewed and approved by then Environmental Representative. They will be reviewed and revised regularly to reflect the changing site conditions.

6.6 Sensitive Area Plans

- (a) Where the project works traverses environmentally and socially sensitive areas. To assist preconstruction planning and on-site construction management, these areas are consolidated on a series of map-based sheets that extend the length of the Project. Sensitive area plans include the following information:
 - (i) Noise sensitive receivers, e.g. residential dwellings, educational institutions
 - (ii) Flora and fauna features, including threatened species and endangered ecological communities
 - (iii) Aboriginal and non-Aboriginal heritage sites, where relevant, and
 - (iv) Local waterways

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6.7 Quality Check Points

- (a) A system of quality check points will be used during construction of the Project to confirm that all high-risk activities are undertaken in accordance with the specified requirements. The environmental check points for the Project will include but are not limited to:
- (i) Submission of EMP and sub-plans
 - (ii) Evidence of obtained approvals, licences and permits
 - (iii) Verification that environmental non-conformities have been rectified, and
 - (iv) Working in or near environmentally sensitive areas.

6.8 Emergency Preparedness and Response

- .6.8.1 Shaw's Emergency Response Plan outlines the course of action to be taken in the event of an emergency situation occurring on the project site. The aim of the Plan is to
- (a) Protect life and prevent or minimise injury;
 - (b) Protect the environment;
 - (c) Protect physical assets; and
 - (d) Make safe and clean up the affected area.
- .6.8.2 Environmental emergencies related to the project will be assessed and determined with reference to the Project Risk Assessment. Where an environmental emergency is identified, the appropriate measures/controls will be put in place prior to project start-up and communicated via the project specific environmental induction.

7 CHECKING

7.1 Monitoring and Measurement

- .7.1.1 As a means of ensuring the project is undertaken with the utmost regard for the environment, Shaw will monitor and audit project site activities to assess environmental performance against the requirements of this EMP (inclusive of legislative and client requirements). Shaw conduct weekly environmental inspections, **SP012-09**, on the project to monitor the performance of environmental controls implemented on site. Any actions resulting from the inspections are promptly resolved.
- .7.1.2 Project activities which may have an impact upon the environment will be monitored both informally during day-to-day operations and formally through either a site inspection or audit. Findings resulting from inspections/audits shall be recorded and discussed with the Site Supervisor and Project Manager. Where applicable, actions will be assigned to correct deficiencies/non-conformances.

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7.2 Evaluation of Compliance

.7.2.1 Evaluation of compliance with the requirements of this EMP will be incorporated into Shaw's internal audit process. Formal audits of compliance against this EMP will be undertaken once during the project by a suitably qualified individual. Review and evaluation of the environmental management plan shall be prompted by changes to:

- (a) Project site conditions
- (b) The results of incident/event investigations
- (c) Internal and external audits
- (d) Legislative changes
- (e) Changes to the scope of the contract, and
- (f) Any other time deemed necessary by Shaw

7.3 No-conformity, corrective action and preventative action

.7.3.1 Corrective and preventative actions arising because of non-conformances or deficiencies identified during incident investigations, inspections, audits or as a result of observed substandard acts or behaviour, will be recorded, tracked and managed to effective close-out.

7.4 Control of Records

.7.4.1 All records necessary to demonstrate compliance with this EMP along with other internal and/or external requirements (such as legislation), shall be managed in accordance with **SP011 Document Control & Records Management Procedure**. This procedure outlines information relating to records such as:

- (a) Storage and access;
- (b) Retention;
- (c) Archiving; and
- (d) Disposal.

.7.4.2 Records associated with the implementation of this EMP include:

- (a) Legal, regulatory and other requirements such as licences, permits and approvals;
- (b) Regulatory, government and client communications regarding environmental management;
- (c) Training records;
- (d) Audit reports;
- (e) Corrective Action Plans;
- (f) Environmental incident investigations and reports; and
- (g) Maintenance Records.

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- .7.4.3 Unless specifically required for reference within the site Project office, all records shall be retained in the Environmental Management System Shaw Work. This will enable appropriate storage in a secure and easily accessible location.

8 REFERENCES

Documents referenced in this EMP are:

- (a) *Department of State Growth* Environmental Requirements;
- (b) Archaeological Method Statement
- (c) Acid Sulphate Soils Management Plan
- (d) AS/NZS ISO 14001:2015 Environmental Management Systems – Requirements and guidance for use;
- (e) AS/NZS ISO 31000:2009 Risk management – Principles and guidelines;
- (f) Shaw Environmental Policy;
- (g) Shaw Emergency Response Plan - Master
- (h) Shaw Procedures:
 - (i) SP002 - Risk Management Procedure
 - (ii) SP008 – Communication Procedure
 - (iii) SP021 – Accident Incident Procedure
 - (iv) SP011 - Document Control & Records Management

9 REVIEW OF ENVIRONMENTAL PERFORMANCE

- 9.1 Environmental performance is monitored through site environmental inspections, internal audit and project reviews. This EMP provides for effective management of compliance with the requirements of AS/NZS 14001:2015. Refer to SP012 Internal Audit.

10 REVIEW AND EVALUATION OF ENVIRONMENTAL MANAGEMENT PLAN

- 10.1 Review and evaluation of the environmental management plan shall be prompted by changes to:
- (a) Project site conditions
 - (b) The results of incident/event investigations
 - (c) Internal and external audits
 - (d) Legislative changes

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- (e) Changes to the scope of the contract, and
- (f) Any other time deemed necessary by Shaw

10.2 The General Manager People & Systems has overall responsibility to:

- (a) Manage the development, implementation and annual review of the environmental policy and associated strategy and;
- (b) Manage the development, implementation and continuous improvement of the environmental management system.

11 ATTACHMENTS

- 1. EMP Impacts
- 2. Sensitive Area Plan

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Water Quality

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Water Quality	<ul style="list-style-type: none">It is not expected that water quality will be detrimentally impacted during construction activities. The construction zone is predominantly within the existing road corridor with limited clearance of vegetation required for the works. There will be some disturbance of marine sediments during excavation required for the placement of armour rock however disturbance and subsequent increases in suspended sediment are expected to be localised and unlikely to extend through a single tide cycle.
<ul style="list-style-type: none">Monitoring	<ul style="list-style-type: none">Visual monitoring will be conducted during rain events for any impacts on the surrounding water quality. Construction activities are unlikely to affect the water quality parameters outlined within the tender documents excepting short term increases sediment from runoff and the disturbance of marine sediments impacts are expected to be short term, generally a single tidal cycle.Acid Sulphate Soils (ASS) will be managed offsite and under the control of a separate management plan. This plan will contain provisions for the monitoring of potential impacts from the management of ASS.
<ul style="list-style-type: none">Inspection	<ul style="list-style-type: none">Water Quality will be inspected on a weekly basis at a minimum and during rain events, through the Shaw <i>Weekly Environmental Inspection</i> process. Any improvements required will be recorded and actions assigned.

Erosion and Sediment Control



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ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Land Clearing	<ul style="list-style-type: none">Vegetation removal will be as outlined within the contract documents. No go zones will be established using flagging to delineate the limits of ground disturbance/vegetation clearing. The area of vegetation to be cleared is minimal and is not expected to contribute greatly to either erosion or increased sediment transport into receiving waters.
<ul style="list-style-type: none">Stockpiles	<ul style="list-style-type: none">No material will be stockpiled at the construction site, all material will be trucked in as required for immediate use. As material will be placed and compacted in a continual basis erosion is unlikely to occur and sediment transport through stormwater or other runoff therefore is expected to be low.
<ul style="list-style-type: none">Sediment Control	<ul style="list-style-type: none">The construction footprint does not allow sufficient area for the construction of water retention/sediment control structures. Sediment controls will be temporary and implemented on a continual basis as construction progresses and will consist of silt fencing and sandbag checks dams as required.Sediment control in the form of sandbag check dams will be installed at the outflow from cut-off drains and will be maintained until areas have stabilised.Erosion and sediment control effectiveness will be monitored throughout the life of the project and will be adjusted as required.Details of general design of sediment controls is outlined later in this document.
<ul style="list-style-type: none">Contaminated Water Capture	<ul style="list-style-type: none">There is no opportunity to capture water onsite given the construction footprint and the large areas of defined as “no go zones” and PAS sites on the project drawings. No detention basins will be established.
<ul style="list-style-type: none">Concrete Washout	<ul style="list-style-type: none">No concrete washout will be undertaken at the site.
<ul style="list-style-type: none">Erosion	<ul style="list-style-type: none">It is not expected that there will be of high likelihood of erosion, however assessment will be undertaken on a regular basis and comprises a section of the <i>Shaw Weekly Environmental Checklist</i>. Appropriate controls will be implemented if erosion is observed.



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ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">• Inspection	<ul style="list-style-type: none">• Erosion and sediment controls will be inspected on a weekly basis as a minimum, through the Shaw <i>Weekly Environmental Inspection</i> process as well during rainfall events. Any repairs or improvements required will be recorded and actions assigned.

Flora and Fauna Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">• Threatened Species	<ul style="list-style-type: none">• Exclusion zones for threatened flora communities have been outlined of project drawings. No other threatened species have been identified at the site.
<ul style="list-style-type: none">• No Go (Exclusion) Zones	<ul style="list-style-type: none">• Exclusion zones will be established as outlined in the project drawings. Exclusion zones will be marked using flagging and signage. Where the installation of flagging may require some clearing to enable access, such as on the northern boundary of the zone to the north of Blowhole Road only flagging required to delineate the exclusion zone and prevent access by construction personnel/equipment will be established. The northern boundaries of this area are not accessible from the construction zone. A sensitive Area Plan will be posted in the Site Office showing locations of all sensitive and no-go areas.
<ul style="list-style-type: none">• Tasmanian Devils	<ul style="list-style-type: none">• Where the any potential dens for Tasmanian Devils are identified during works, the Contractor will notify the Superintendent immediately and seek direction.
<ul style="list-style-type: none">• Domestic Pets	<ul style="list-style-type: none">• No domestic pets will be permitted on site.
<ul style="list-style-type: none">• Inspection	<ul style="list-style-type: none">• Controls will be inspected on a weekly basis as a minimum, through the Shaw <i>Weekly Environmental Inspection</i> process.



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Weeds, Pests and Disease Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">• Weeds	<ul style="list-style-type: none">• There are a number of controlled and environmental weeds located on the site. An inspection of the site identified that while the number of individual species identified in the tender documents is high the actual numbers are relatively low and the volume of weed material/potentially contaminated soil to be removed is also relatively low. Weed material and soil suspected of being contaminated with weed seeds will be encapsulated (deep buried) in an offsite controlled dump area.• It should be noted that there are existing weeds located within areas that will be exclusion zones for project personnel and equipment. The status of weeds in these areas will be recorded during the construction period however the contractor will not be undertaking any weed management activities in these areas during construction or the defect liability period. It is expected that these areas will continue to be management by the existing DSG maintenance contractor.
<ul style="list-style-type: none">• Vehicle Washdown	<ul style="list-style-type: none">• All plant and equipment used in the construction will be washed, using the Shaw vehicle washing process, prior to arrival on the site. Plant and equipment will be inspected for the presence of soil, mud, or vegetation by the site supervisor prior to entry to the site. Records in the form of the Shaw vehicle inspection sheet will be maintained at the site office.
<ul style="list-style-type: none">• Weed Management	<ul style="list-style-type: none">• Weed management will be ongoing through the construction and defects liability period excepting in those areas designated as “no go zones” on project drawings.
<ul style="list-style-type: none">• Inspection	<ul style="list-style-type: none">• Weed management will be reviewed on a weekly basis at a minimum during the construction period, through the Shaw <i>Weekly Environmental Inspection</i> process and at six monthly intervals post construction during the defect period.



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Noise and Vibration Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Dilapidation Report	<ul style="list-style-type: none">A dilapidation inspection will be completed prior to construction commencing.
<ul style="list-style-type: none">Hours of work	Standard hours of work will be: <ul style="list-style-type: none">Monday to Friday - 7 am to 6 pm.Saturday and Sunday - 9 pm to 4 pm.No works to be carried out on weekends or public holidays without prior approval.
<ul style="list-style-type: none">Engine covers., noise attenuation etc	<ul style="list-style-type: none">Engine covers will remain in the closed position when plant and equipment is in operation.All noise attenuation equipment will be fitted and maintained on plant and equipment to OEM specifications.
<ul style="list-style-type: none">Idling vehicles	<ul style="list-style-type: none">Vehicles will not be left idling when not in operation.

Air Quality Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Dust	<ul style="list-style-type: none">Dust generation is not expected to be high. A water truck will be in use at the site during the road construction and will be available for dust suppression if required.



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ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Burning of Waste Material	<ul style="list-style-type: none">No burning of any material on the worksite will be permitted.
<ul style="list-style-type: none">Visual Monitoring	<ul style="list-style-type: none">Visual monitoring of dust at the work site will be undertaken by the Shaw Supervisor during working hours, dust suppression such as watering of areas will be undertaken if/as required.
<ul style="list-style-type: none">Inspection	<ul style="list-style-type: none">The effectiveness of dust control will be reviewed on a weekly basis at a minimum, through the Shaw <i>Weekly Environmental Inspection</i> process.

Cultural Heritage Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Aboriginal or other Heritage Items	<ul style="list-style-type: none">Both aboriginal and European heritage items have been identified at the site. The requirements of the <i>Archaeological Management Plan</i> will be implemented once this plan has been provided to the contractor.
<ul style="list-style-type: none">No Go (Exclusion) Zones	<ul style="list-style-type: none">Exclusion zone will be established as outlined in the project drawings. Exclusion zones will be marked using flagging and signage.
<ul style="list-style-type: none">Unanticipated Discovery Plan	<ul style="list-style-type: none">The Tasmanian <i>Unanticipated Discovery Plan</i> will be followed in the event that any suspected heritage items are uncovered during excavation and clearance. A copy of the plan is attached.

Environmentally Hazardous Materials Management



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ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Storage	<ul style="list-style-type: none">It is expected that Environmentally Hazardous Materials at the project will be limited to hydrocarbons related to vehicle operation/maintenance or other small quantities of chemicals required on a single use basis.Environmentally Hazardous Materials will be stored in appropriately banded containers providing 110% containment for the volume of the largest package at a minimum. These will be stored at the site compound, to be established on an offsite location.
<ul style="list-style-type: none">Waste	<ul style="list-style-type: none">Waste related to hazardous materials will be disposed of in accordance with the related Australian Standards and Tasmanian legislation. Hydrocarbon waste related to vehicle servicing will be removed from site by Shaw maintenance personnel for disposal at designated hydrocarbon waste bins at the Shaw workshop.
<ul style="list-style-type: none">Spill kits	<ul style="list-style-type: none">Spill kits will be located at both the construction site and the site office/compound.A spill kit will be carried on the light vehicle used to refuel equipment at the site.
<ul style="list-style-type: none">Refuelling	<ul style="list-style-type: none">Refuelling of plant and equipment at the worksite will be undertaken using a fuel pod mounted on a light vehicle.A hydrocarbon spill kit will be carried on this vehicle.
<ul style="list-style-type: none">SDS	<ul style="list-style-type: none">SDS will be held at the site for all hazardous materials.
<ul style="list-style-type: none">Emergency Response Plan	<ul style="list-style-type: none">The Shaw <i>Emergency Response Plan</i> outlines the actions required to be undertaken in the event of a spill or loss of containment of hazardous materials.
<ul style="list-style-type: none">Inspection	<ul style="list-style-type: none">Storages for Environmentally Hazardous Materials will be inspected on a weekly basis as a minimum, through the Shaw <i>Weekly Environmental Inspection</i> process.



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Bush Fire Risk Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Plan	<ul style="list-style-type: none">No specific Bush Fire Management Plan is proposed for the site. Normal precautions will be undertaken to identify fire risk related to construction activities and the surrounding area.
<ul style="list-style-type: none">Total Fire Ban Declaration	<ul style="list-style-type: none">No Hot Works will be conducted during periods when a Total Fire Ban has been declared area surrounding the site.
<ul style="list-style-type: none">Fire extinguishers	<ul style="list-style-type: none">Fire extinguishers are carried on all vehicles.Fire extinguishers will be available whenever Hot Works are being undertaken.
<ul style="list-style-type: none">Burning of Waste Material	<ul style="list-style-type: none">No burning of any material on the worksite will be permitted.

Waste Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Waste	<ul style="list-style-type: none">Small volumes of waste are expected to be generated at the project and will be managed through the use of skip bins supplied by a suitably licenced waste contractor.
<ul style="list-style-type: none">Skip Bins	<ul style="list-style-type: none">A single skip bin for comingled waste will be located at the site offices.A licenced waste contractor will be engaged to service these bins on a regular basis.
<ul style="list-style-type: none">Toilets	<ul style="list-style-type: none">Portable toilets will be located at both the construction site and site offices/compound.



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ENVIRONMENTAL ASPECT	CONTROLS
	<ul style="list-style-type: none">• A licenced waste contractor will be engaged to service these toilets on a regular basis.
<ul style="list-style-type: none">• Hydrocarbon Waste (Vehicle Maintenance)	<ul style="list-style-type: none">• Hydrocarbon waste related to vehicle servicing will be removed from site by Shaw Fitters for disposal at designated hydrocarbon waste bins at the Shaw workshop.
<ul style="list-style-type: none">• No Burning	<ul style="list-style-type: none">• No burning of any material on the worksite will be permitted.
<ul style="list-style-type: none">• No Concrete Washout	<ul style="list-style-type: none">• No concrete washout will be permitted at the site.
<ul style="list-style-type: none">• Inspections	<ul style="list-style-type: none">• Waste Management will be inspected on a weekly basis as a minimum, through the Shaw <i>Weekly Environmental Inspection</i> process.

Traffic Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">• Speed limits	<ul style="list-style-type: none">• Posted speed limits on public roads will be observed.• The site office, located on private land will have a posted speed limit of 10 km/h.

Contaminated Land Management



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ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Land Contamination	<ul style="list-style-type: none">No contaminated land has been identified at the work site. No specific contaminated soil management is required.Should suspected contaminated soil be identified during excavation the actions outlined in Tasmanian EPA Information Bulletin No 105 – Classification and Management of Contaminated soil for Disposal will be followed.
<ul style="list-style-type: none">Acid sulphate Soils (ASS)	<ul style="list-style-type: none">Acid Sulphate Soils (ASS) have been identified within the construction zone. ASS disturbed during construction will be managed through a stand-alone ASS Management Plan. Testing will be carried out along the Armour Wall foundation and Acid levels and treatment methods determined.
<ul style="list-style-type: none">Excess Excavated Material	<ul style="list-style-type: none">It is planned that excess material excavated during construction will be placed as outer fill on the new road embankments.
<ul style="list-style-type: none">Tracked Mud	<ul style="list-style-type: none">If mud is tracked onto public roads during wet weather a road sweeper will be utilised to provide clean up services.
<ul style="list-style-type: none">Inspection	<ul style="list-style-type: none">Roads will be inspected on a daily basis for tracked mud.

Energy and Greenhouse Gas Management

ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">Vehicle Maintenance and Operation	<ul style="list-style-type: none">All vehicles, plant and machinery are maintained by Shaw in accordance with OEM specifications and operated as designed.Equipment will be switched off when not in use.



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ENVIRONMENTAL ASPECT	CONTROLS
<ul style="list-style-type: none">• Inspection	<ul style="list-style-type: none">• The operation of plant and equipment is monitored by Shaw Supervisors on a constant basis. Maintenance plans are developed and implemented by Shaw maintenance personnel.



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Unanticipated Discovery Plan

Unanticipated Discovery Plan

Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania

For the management of unanticipated discoveries of Aboriginal relics in accordance with the Aboriginal Heritage Act 1975 and the Coroners Act 1995. The Unanticipated Discovery Plan is in two sections.

<p>Discovery of Aboriginal Relics other than Skeletal Material</p> <p>Step 1: Any person who believes they have uncovered Aboriginal relics should notify all employees or contractors working in the immediate area that all earth disturbance works must cease immediately.</p> <p>Step 2: A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal relics, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal relics have been assessed by a consulting archaeologist, Aboriginal Heritage Officer or Aboriginal Heritage Tasmania staff member.</p> <p>Step 3: Contact Aboriginal Heritage Tasmania on 1300 487 045 as soon as possible and inform them of the discovery. Documentation of the find should be emailed to aboriginal@heritage.tas.gov.au as soon as possible. Aboriginal Heritage Tasmania will then provide further advice in accordance with the Aboriginal Heritage Act 1975.</p>	<p>Discovery of Skeletal Material</p> <p>Step 1: Call the Police immediately. Under no circumstances should the suspected skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene.</p> <p>Step 2: Any person who believes they have uncovered skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately.</p> <p>Step 3: A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal material, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and/or Coroner.</p> <p>Step 4: If it is suspected that the skeletal material is Aboriginal, Aboriginal Heritage Tasmania should be notified.</p> <p>Step 5: Should the skeletal material be determined to be Aboriginal, the Coroner will contact the Aboriginal organisation approved by the Attorney-General, as per the Coroners Act 1995.</p>
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Aboriginal Heritage Tasmania
Department of Primary Industries, Parks, Water and Environment

Guide to Aboriginal site types

Stone Artefact Scatters

A stone artefact is any stone or rock fractured or modified by Aboriginal people to produce cutting, scraping or grinding implements. Stone artefacts are indicative of past Aboriginal living spaces, trade and movement throughout Tasmania. Aboriginal people used hornfels, chalcedony, spongilite, quartzite, chert and silcrete depending on stone quality and availability. Stone artefacts are typically recorded as being 'isolated' (single stone artefact) or as an 'artefact scatter' (multiple stone artefacts).

Shell Middens

Middens are distinct concentrations of discarded shell that have accumulated as a result of past Aboriginal camping and food processing activities. These sites are usually found near waterways and coastal areas and range in size from large mounds to small scatters. Tasmanian Aboriginal middens commonly contain fragments of mature edible shellfish such as abalone, oyster, mussel, warraner and limpet, however they can also contain stone tools, animal bone and charcoal.

Rockshelters

An occupied rockshelter is a cave or overhang that contains evidence of past Aboriginal use and occupation, such as stone tools, middens and hearths and in some cases, rock markings. Rockshelters are usually found in geological formations that are naturally prone to weathering, such as limestone, dolerite and sandstone.

Quarries

An Aboriginal quarry is a place where stone or ochre has been extracted from a natural source by Aboriginal people. Quarries can be recognised by evidence of human manipulation such as battering of an outcrop, stone fracturing debris or ochre pits left behind from processing the raw material. Stone and ochre quarries can vary in terms of size, quality and the frequency of use.

Rock Marking

Rock marking is the term used in Tasmania to define markings on rocks which are the result of Aboriginal practices. Rock markings come in two forms; engraving and painting. Engravings are made by removing the surface of a rock through pecking, abrading or grinding, whilst paintings are made by adding pigment or ochre to the surface of a rock.

Burials

Aboriginal burial sites are highly sensitive and may be found in a variety of places, including sand dunes, shell middens and rock shelters. Despite few records of pre-contact practices, cremation appears to have been more common than burial. Family members carried bones or ashes of recently deceased relatives. The Aboriginal community has fought long campaigns for the return of the remains of ancestral Aboriginal people.

Further information on Aboriginal Heritage is available from:

Aboriginal Heritage Tasmania
Natural and Cultural Heritage Division
Department of Primary Industries, Parks, Water and Environment
GPO Box 44 Hobart TAS 7001

Telephone: **1300 487 045**

Email: aboriginal@heritage.tas.gov.au

Web: www.aboriginalheritage.tas.gov.au

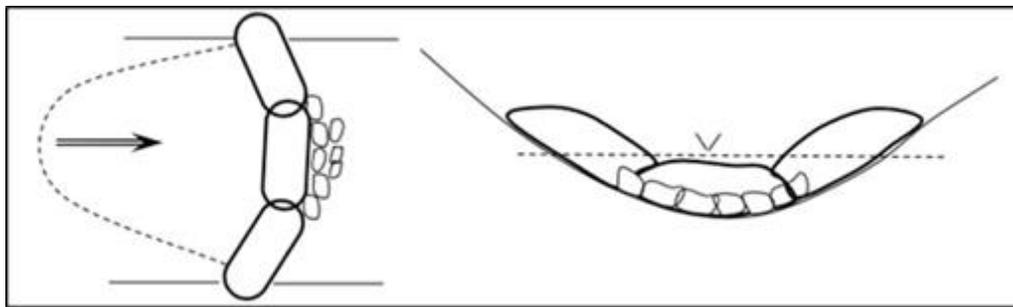
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General Design of Sediment Controls

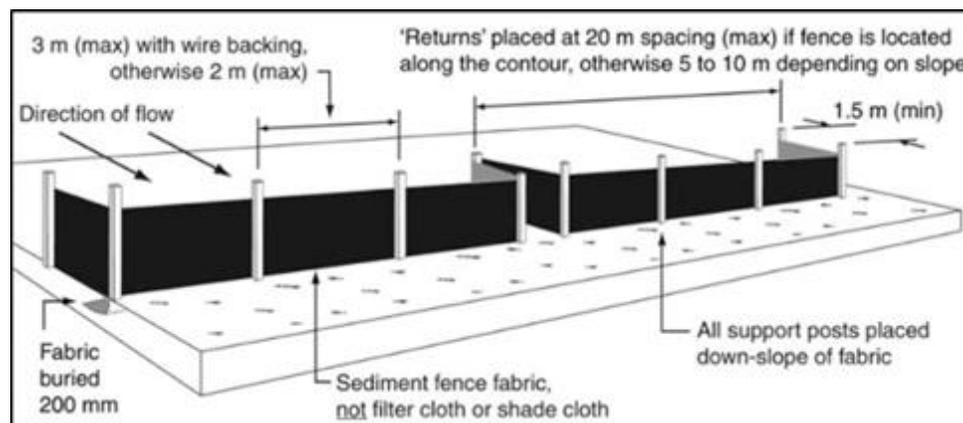
The figures below show the general arrangement for the sediment controls that will be installed as required throughout the construction zone.

Figure 1: Sand Bag Check Dam - General Details



General silt fence design and construction and highlighted in Figures 2 and 3

Figure 2: Silt Fences - General Details





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Figure 3: Silt Fences - General Details

