Construction Environmental Management Plan

Narrandera Poultry Production Complex
Sturt Highway, Narrandera NSW

ProTen Holdings Pty Limited

PO Box 1746
North Sydney NSW 2060

Prepared by:

SLR Consulting Australia

SLR Project No.: 610.v15489.00000

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Revision: v6.0

Making Sustainability Happen

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By	Revision Details
v6.0	24 July 2024	Madeleine Laws	Alanna Ryan	Alanna Ryan	Update to align with MOD 1.
Final v5	1 July 2016	Nathan Archer	Eryn Bath	Eryn Bath	Updated Construction Inspection to two monthly
Final v4	3 February 2016	Nathan Archer	Eryn Bath	Eryn Bath	Corrected Lot numbering in **Table2**
Final v3	16 December 2015	Nathan Archer	Eryn Bath	Eryn Bath	Addition of alternative mitigation measures for EPPC-ST5 (**Table 14**)
Final v2	19 November 2015	Eryn Bath	Eryn Bath	Eryn Bath	Submitted to DPHI for approval. Approval received 4/12/2015
Final	28 October 2015	Nathan Archer	Eryn Bath	Eryn Bath	-
Draft 1	19 October 2015	Nathan Archer	Eryn Bath		-

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ProTen Holdings Pty Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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1.0 Introduction

1.1 Background

The Narrandera Poultry Production Complex (the "Development") was granted Development Consent 6882 on the 9 November 2015 by the Planning Assessment Commission of NSW (PAC) to be established within a rural property approximately 26 kilometres (km) west of Narrandera in south western New South Wales (NSW). The Narrandera Poultry Production Complex applied for a Modification to Development Consent SSD 6882 and was accepted on 21st of March 2024 by the Department of Planning, Housing and Infrastructure (DPHI). Modification 1 to SSD 6882 included updates to the consent in relation to:

- Increase maximum number of broilers;
- Change bird placement regime; and
- Allow use of A-Double Heavy Vehicles.

The Development comprises five poultry production units (PPU) or farms, where broiler birds will be grown for human consumption. Each PPU will comprise 16 tunnel-ventilated fully-enclosed climate-controlled poultry sheds, with associated support infrastructure and staff amenities.

This Construction Environmental Management Plan (CEMP) has been prepared by SLR Consulting Australia (SLR), on behalf of ProTen Holdings (ProTen), for the Narrandera Poultry Production Complex.

For the purposes of this document, the Development is described in:

- The Environmental Impact Statement (EIS) (SLR 2015a) and the appendices contained within;
- The Response to Submissions (RTS) (SLR 2015b) and the appendices contained within; and
- The Euroley Poultry Farm SSD-6882 Modification Application (PSA Consulting 2023)

1.2 Document Purpose and Scope

This CEMP has been prepared to:

- Satisfy the requirements of conditions C1 and C2 of Development Consent SSD 6882, which are listed below in Table 1;
- Ensure that other relevant conditions imposed by Development Consent SSD 6882 are fully implemented and/or complied with during the construction phase of the Development;
- Ensure the application of best practice environmental management during the construction phase of the Development;
- Ensure that the commitments made in the EIS (SLR 2015a) and RTS (SLR 2015b) are fully implemented and/or complied with during the construction phase of the Development; and
- Ensure that the environmental risks associated with the construction of the Development are properly managed.

The CEMP has also been prepared in consideration of condition C6 of Development Consent SSD 6882, which sets out the requirements for management plans required by the

consent, and the Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources 2004).

This CEMP considers the construction of the new intersection with the Sturt Highway. This will be managed by the construction contractor in accordance with the Works Authorisation Deed (WAD) issued by the Roads and Maritime Services (RMS) and in consultation with Narrandera Shire Council (Council) and the RMS.

Condition B14 in the original consent limits operations to the use of B-Double vehicles only. The Modification 1 submission to SSD 6882 which was approved in March 2024, permits the use of A-Double Vehicles onto the site in line with the Sturt Highway intersection upgrade.

Note: The timing and content of this CEMP is reliant upon input from Transport for New South Wales (TfNSW) following lodgement of a Works Authorisation Deed (WAD) (refer to SSD 6882 Condition B14B).

Table 1: Relevant Development Consent Conditions

Schedule 4 Environmental Management, Reporting and Auditing Construction Environmental Management Plan		
Condition No.	**Condition**	**CEMP Section**
C1.	The Applicant shall prepare and implement a **Construction Environmental Management Plan** to the satisfaction of the Secretary. The Plan must:-	
b)	identify the statutory approvals that apply to the Development;	**Section 3.3**
c)	outline all environmental management practices and procedures to be followed during construction and demolition works associated with the Development;	**Section 4.0**
d)	describe all activities to be undertaken on the site during construction of the development, including a clear indication of construction stages;	**Section 2.0**
e)	detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;	**Section** 5.0
f)	describe of the roles and responsibilities for all relevant employees involved in construction associated with the Development; and	**Sections 3.2, 4.0** and **5.0**
g)	include the management plans under Condition C2 of this consent:	-
C2.	As part of the Construction Environmental Management Plan for the Development, required under condition C1 of this consent, the Applicant shall include the following:	
a)	Dust Management (see Condition B6 and B7);	**Section 4.2**
b)	Traffic Management (see Condition B16);	**Section 4.4** and **Appendix A**
c)	Construction Soil and Water Management (see Condition B37);	**Section** 4.5 and **Appendix B**
d)	Community Consultation and Complaints Handling.	**Sections 6.0** and **7.0**

2.0 Development Description

2.1 Location

The Development Site compromises approximately 1,160 hectares of rural land positioned off the Sturt Highway approximately 26 km west of Narrandera in south western NSW and within the Narrandera Local Government Area (LGA). The land parcels contained within the Development Site are listed in Table 2 and shown on Figure 1.

Table 2: Schedule of Land Parcels

Lot and Deposited Plan	Notes
Lots 1, 41, 42, 44, 45 and 54 in DP 750898	Freehold land within Development Site
Lot 1 in DP 1054064	Freehold land within Development Site
Sections of Crown Road in the southern portion of the Development Site	These sections are covered by an enclosure permit. ProTen is working towards closing and purchasing these sections of Crown Road.
Sections of Crown Road along the northern boundary of the Development Site.	The section of Crown Road between Lot 42 in DP 750898 and Lot 12 in DP 750898 is covered by an enclosure permit. The access road from the Stuart Highway into the Development Site will cross this section of Crown Road. ProTen is working towards closing and purchasing this section of Crown Road.
Lot 39 in DP 750876, Lots 12 and 15 in DP 750898 and a section of Crown Road.	An easement will be created through these parcels of land in order to construct and operate the access road between the Sturt Highway and the Development Site.

The topography of the Development Site is relatively flat, ranging between approximately 133 metres Australian Height Datum (AHD) and 138 metres AHD. There are no water courses within the Development Site, with only some small depressions that may hold water during significant rainfall events. The majority of the Site is devoid of significant vegetation, primarily comprising paddocks that have been consistently cropped and grazed for many years.

The north-west corner of the Development Site abuts the “Banandra” portions of the South West Woodland Nature Reserve and Murrumbidgee Valley National Park.

2.2 Nearest Receptors

The Development Site is removed from any urban areas and there is a low density of surrounding residential dwellings. Eleven privately-owned residences have been identified in the neighbouring and nearby properties (labelled R1-R5, R7-R11 and R13) as shown on Figure 1. The nearest of these are R5 and R4 located approximately 2.1 km and 2.3 km, respectively, to the north of the northern-most PPU (Farm 75).

The receptors labelled R6 and R12 on Figure 1 represent proposed dwellings for which development applications have been lodged with Council, however have not been constructed (at the time of writing this CEMP).

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DEVELOPMENT SITE AND NEAREST RECEPTORS

FIGURE 1

2.3 Development Overview

Figure 2 and Figure 3 show the proposed layout of the Development and each PPU, respectively. The individual components of the Development to be constructed are described in Table 3.

In the current consent (before the intersection upgrade each PPU comprises 16 tunnel-ventilated fully-enclosed climate-controlled poultry sheds, each havinghas the capacity to house 49,000 birds. This equates to a PPU population of 784,000 birds and a total Development population of 3.92 million birds.

Modification 1 to the consent (Condition B14A and B14B) permits ProTen to upgrade the intersection between the Sturt Highway and the site access.

Table 3: Development Components

Component	Description
Five poultry production units (PPUs), each consisting of:	
Additional infrastructure	
Sturt Highway - site access road intersection (completed)	• An intersection consisting of a basic right turn treatment (BAR) and basic left turn treatment (BAL) will be constructed at the intersection of the Sturt Highway and the site access road. It will be designed in accordance with *Austroads Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections*.
Site access roads (completed)	• An access road will be constructed from the Sturt Highway to the Development Site. This access road will be sealed for a minimum of 50 m from the Sturt Highway intersection and will be approximately 6.5 m wide. An appropriate easement will be created to enable the access road to traverse privately-owned land between the Sturt Highway and development site. • Internal access within the development site will be provided via the construction of rural-type all-weather property access roads. These internal roads will meet the minimum requirements of *AS 2890.2* to accommodate the turning movements of the largest vehicles generated by the poultry development, which will initially be semi-trailers however may include B-doubles in the future.
Site access road (covered in this CEMP)	• The Sturt Highway intersection has been approved for an upgrade in line with the works described in condition B14 and completed to Transport for NSW (formally known as RMS) satisfaction ProTen may increase the maximum population of broilers at any one time on the entire site from 3.92 million broilers to 4.4608 million broilers. • This access road will permit B-Double roads from entering the ProTen site.

Table 4: Consent Conditions B14, B14A and B14B

SSD 6882	
B14	Prior to the commencement of construction of any poultry shed, residential dwelling or structure on-site, the Applicant shall construct an intersection between the Sturt Highway and the proposed site access identified in the EIS to a Basic Right Turn (BAR) and Basic Left Turn (BAL) intersection treatment, in consultation with, and to the satisfaction of the RMS.
B14A	In addition to the roadworks completed under condition B14, the Applicant may further upgrade the intersection between the Sturt Highway and the site access. The works must be to the satisfaction of the RMS, in accordance with the plan in Appendix 3 and: a) be designed for an A-double heavy vehicle; b) include a 1.0 m minimum shoulder that prevents moisture ingress and provides lateral stability for road pavement along the entire southern side of the intersection treatment and both sides of the access driveway to the property boundary; and

SSD 6882	
	c) be designed and constructed so as not to interfere with the capacity of the current roadside drainage network and to prevent water from proceeding onto, or ponding on, the carriageway of the Sturt Highway
B14B	Prior to the commencement of construction of the roadworks described in condition B14A, the Applicant must: a) enter into a Works Authorisation Deed (or similar) with RMS for any works carried out on RMS land; and b) obtain approval for the works under the Roads Act 1993

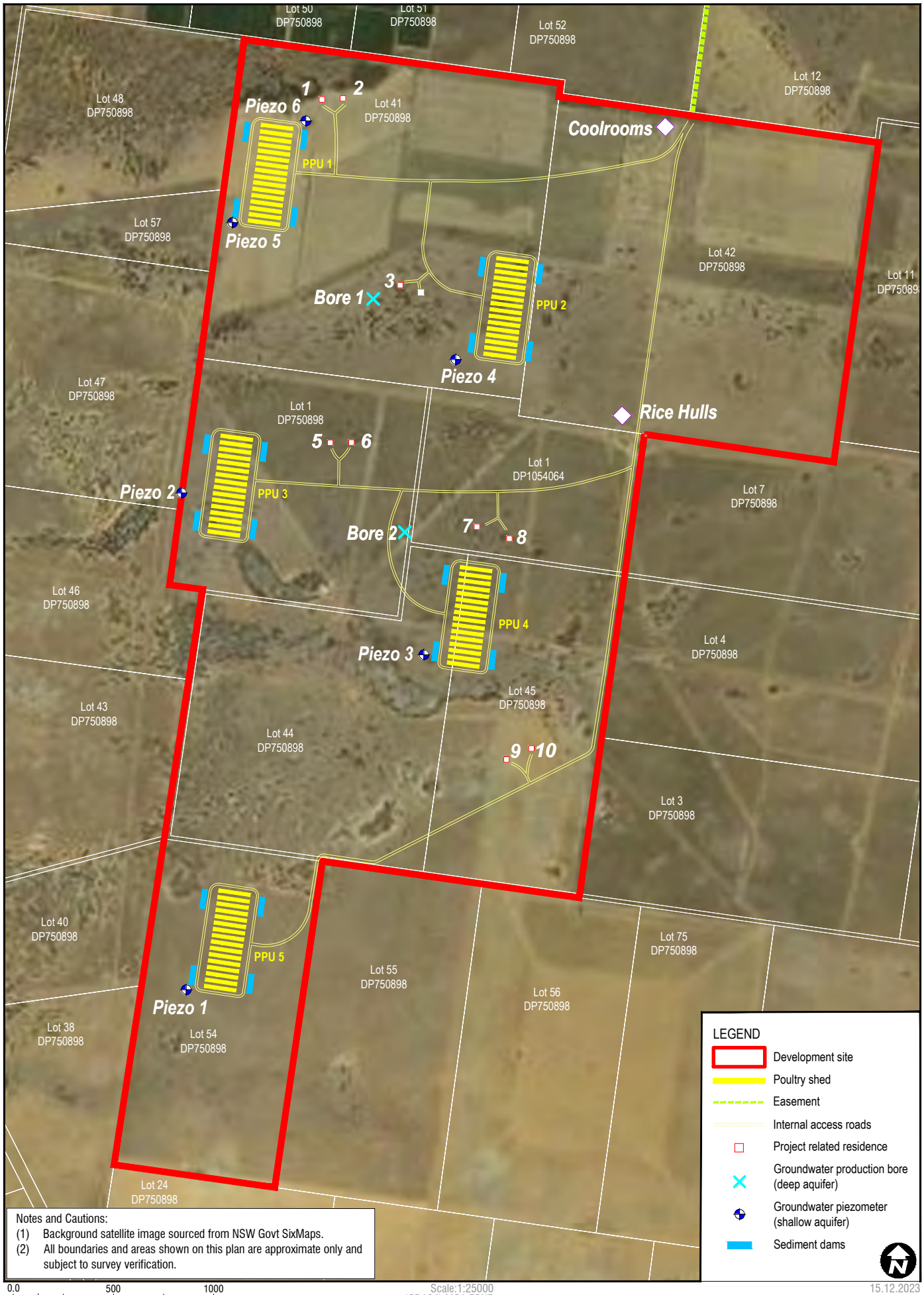
This intersection upgrade will result in each of the 16 sheds having a maximum capacity of 55,760 birds. This equates to a PPU population of 892,160 birds and a total Development population of 4.4608 million birds.

Note, EPL 20748 was submitted to the EPA on 1 July 2024 for a variation to align with SSD 6882 as approved by MOD1.

2.4 Construction Activities

In summary, the approved Development will involve the following construction activities:

- Construction of a new intersection with the Sturt Highway (this is required prior to any other construction activities);
- Construction of the new access road form the Sturt Highway to the development site;
- Site preparation and establishment works, including erosion and sediment control;
- Earthworks;
- Site landscaping.



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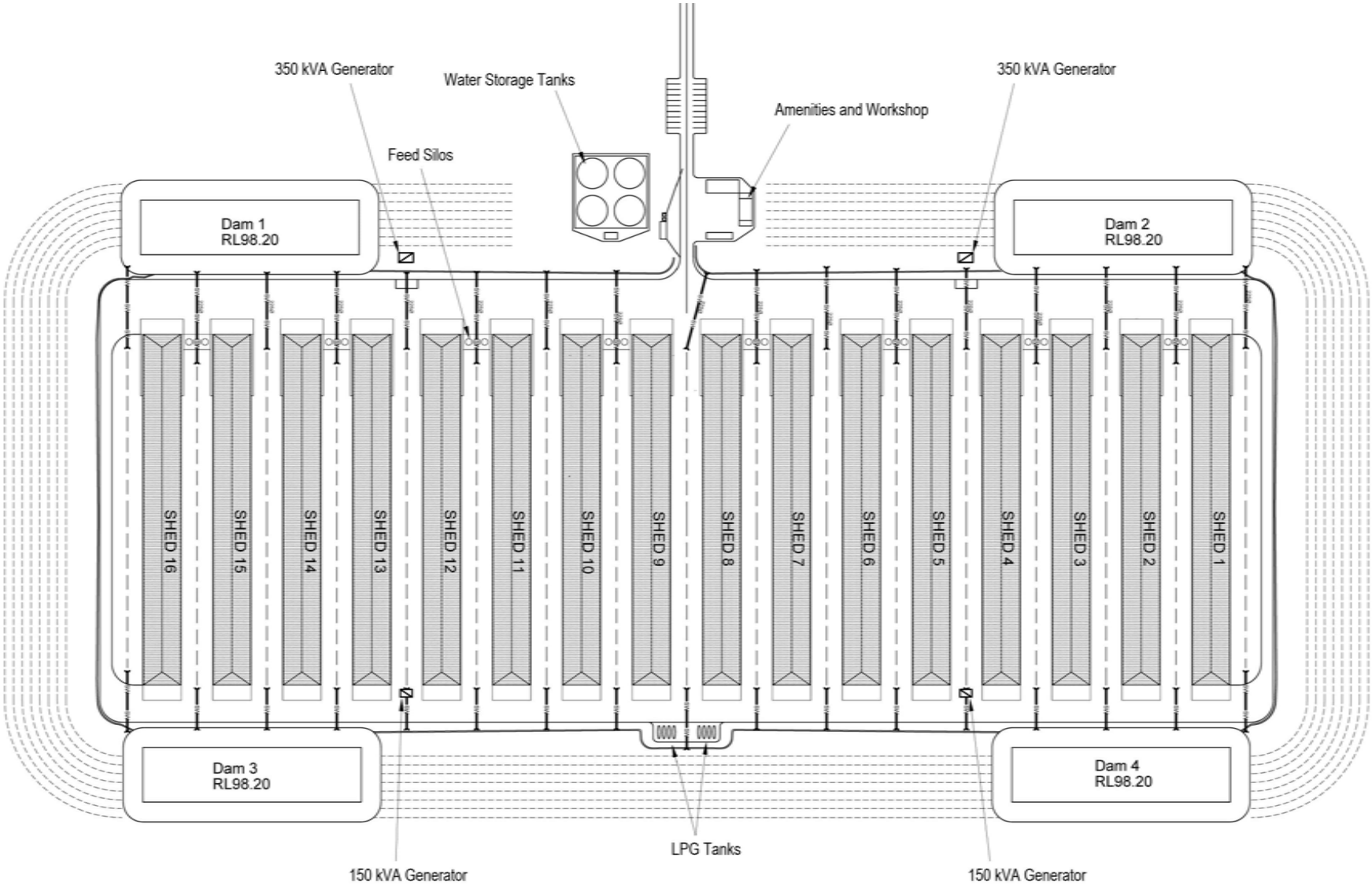
DEVELOPMENT LAYOUT

FIGURE 2



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POULTRY PRODUCTION UNIT LAYOUT

FIGURE 3

2.5 Construction Staging

Construction is scheduled to commence in Q4 2024 and the planned construction of the intersection at Sturt Highway is planned to be completed in Q1 2025. The construction phase will be generally staged as follows:

1 Sturt Highway Intersection upgrade

The intersection upgrade is permitted in line with condition B14A and B14B (refer to Table 4).

The current access road from the Sturt Highway to the Development Site was constructed to a minimum width of 6.5 metres, with pavement and road surface suitable for B-doubles. The access road is currently bitumen sealed for a minimum length of 50 metres from the Sturt Highway intersection.

The intersection upgrade will be designed to accommodate for A-double heavy vehicles. It will include a minimum of 1.0m shoulder that prevents moisture ingress and provides lateral stability. The intersection upgrade will also be designed and constructed as to not interfere with the capacity of the roadside drainage network and to prevent water from ponding on the carriageway of Sturt Highway.

The intersection upgrade will be constructed in accordance with the WAD and with approval obtained for the works under the Roads Act 1993.

2 Site Preparation and Establishment Works

Site preparation and establishment works, including erosion and sediment control, along with earthworks and construction of foundations and slabs, will commence on completion of the Sturt Road intersection upgrade.

2.6 Construction Hours

Construction hours for the Development will be in accordance with conditions B27 to B29 of Development Consent SSD 6882, which are reproduced below.

Construction Noise

B27. Construction activities associated with the Development shall be undertaken during the following construction hours:

a) 7:00am to 6:00pm Mondays to Fridays, inclusive; and

b) 8:00am to 1:00pm Saturdays; and

c) At no time on Sundays or public holidays.

B28. Construction works outside of the standard construction hours identified in Condition B27 may be undertaken in the following circumstances:

a) construction works that generate noise that is:

(i) No more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009); and

(ii) No more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers; or

b) for the delivery of materials required outside of these hours by the NSW Police Force or other authorities for safety reasons; or

c) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm;

d) works approved through an EPL, or by the Secretary;

e) works approved through the out of hours work protocol outlined in the CEMP.

B29. Except as expressly permitted by the EPL, activities resulting in impulsive or tonal noise (such as rock breaking, rock hammering, pile driving) shall only be undertaken:

a) between then hours of 8:00am to 5:00pm Monday to Friday;

b) between the hours of 8:00am to 1:00pm Saturday; and

c) in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.

For the purposes of this condition 'continuous' includes any period during which there is less than one hour respite between ceasing and recommencing any of the work the subject of this condition.

2.7 Construction Traffic

The anticipated construction traffic volumes to be generated by the Development are listed in Table 5 and Table 6. The Intersection upgrade to Sturt Highway is not expected to result in increased traffic volumes beyond what was originally forecast in the original SSD 6882.

Table 5: Traffic Generation Summary

Trips	Eis Traffic 9 Week Production Cycle	Eis Traffic Annual	Proposed Traffic 9 Week Production Cycle	Proposed Traffic Annual
Heavy Vehicles (Trips)	1926 (3852)	10975 (21950)	1382 (2764)	7875 (15750)
Light Vehicles (Trips)	1062 (2124)	6055 (12110)	1484 (2968)	8459 (16918)
TOTAL	**2988 (5976)**	**17030 (34060)**	**2866 (5732)**	**16334 (32668)**

Table 6: Estimated Construction Traffic Volumes

	Daily (two way trips)	Weekly (two way trips
Light Vehicles		
ProTen Staff	3 (6)	15 (30)
Tradespeople	15 (30)	75 (150)
Sub-total light vehicles	**18 (36)**	**90 (180)**
Heavy Vehicles		
Tradespeople – trucks	-	3 (6)
Construction material delivery	-	3 (6)
Equipment delivery	-	2 (4)

	Daily (two way trips)	Weekly (two way trips
Roading material	12 (24)	60 (120)
Concrete materials	2 (4)	10 (20)
Other	2 (4)	10 (20)
Sub-total heavy vehicles	**16 (32)**	**88 (176)**
Total	**34 (68)**	**178 (356)**

2.8 Construction Contact Details

Table 7 lists the key contacts during the construction phase of the Development.

Table 7: ProTen Contacts List

Location/Personnel	Contact Details
Environment Hotline (free call)	Ph: 1800 776 994
ProTen CEO – James Wentworth	Ph: 0407 936 896 Email: jamesw@proten.com.au
Regional Operations Manager – Grifith – Nathan Archer	Ph: 0439 197 124 Email: nathanr@proten.com.au
ProTen Head Office - Sydney	PO Box 1746, North Sydney NSW 2060 Ph: 02 9458 1700
ProTen National Operations Management – Graham Kirby	Ph: 0438 842 459 Email: graham@proten.com.au

Table 8 lists the contact details for the regulatory authorities that have an interest in the construction phase of the Development.

Table 8: Regulatory Authority Contacts List

Regulatory Authority	Contact Details
Environment Protection Authority (EPA)	
Environment Line	Ph: 131 555 or 02 9995 5555 Email: info@epa.nsw.gov.au
Griffith Regional Office	Ph: 02 6969 0700
NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)	
General Enquires	Ph: 1300 081 047 Email: info@environment.nsw.gov.au
Wagga Wagga Office (local office)	Ph: 6932 9100
Dubbo Office (regulation)	Ph: 6884 2560
Narrandera Shire Council	
Narrandera Office	Ph: 02 6959 5510 Email: council@narrandera.nsw.gov.au
NSW Wildlife Information, Rescue and Education Service (WIRES)	
Wildlife Rescue Line	Ph: 02 8977 3309 or 1300 094 737
Local Aboriginal Land Council	
Leeton and District Local Aboriginal Land Council (L&DLALC)	Ph: 02 6953 4344

Regulatory Authority	Contact Details
NSW Health	
Ministry of Health	Ph: 02 9391 9000
Central Office	Ph: 1800 020 103
WorkCover NSW	Ph: 131 050 Select Option 3 to report a 'serious incident or fatality' - this will result in the incident being recorded and the appropriate person being contacted.
Incident Notification Hotline	Ph: 131 050
Fire and Rescue NSW	
Zone Office Regional South 2 - Southern Highlands	Ph: 02 4824 7200
Emergency Services	
NSW Police Fire and Rescue NSW NSW Ambulance Service	Ph: 000

3.0 Environmental Management Framework

3.1 Roles and Responsibility

The key personnel responsible for environmental management during the construction of the Development are listed in Table 9.

Table 9: Roles and Responsibilities

Role	Responsibilities
ProTen Site Management / Principal Contractor	• Overall responsibility for environmental management and compliance with the Development Consent and relevant legislation; • Coordinate environmental inspections and reporting and authority liaisons; • Record, notify, investigate and respond to any complaints and/or enquiries and, where necessary, develop and implement corrective actions; • Record, notify, investigate and respond to any environmental incidents and, where necessary, develop and implement corrective actions; • Oversee the implementation of this CEMP and provide adequate resources to enable implementation of this CEMP; • Providing adequate environmental inductions/training to employees and contractors regarding their requirements under this CEMP; and • Report on the performance of the CEMP to senior management for review and as a basis for improvement of the system.
ProTen Site Management / Traffic Officer	• Be responsible for on-site traffic management during construction, including: o Implement and review the generic Traffic Control Diagram (TCD) as required; o Provide project support and advice in relation to traffic management; o Identify work activities with the potential to conflict with on-site traffic flows; o Undertake daily monitoring of traffic control signage and rectify as necessary; o Providing adequate inductions/training to employees and contractors regarding the provisions of the Traffic Management Plan (see Appendix A).
Environmental Representative	In accordance with condition C15 of Development Consent SSD 6882, a suitably qualified and experienced Environmental Representative, approved by the Secretary, will be employed during the construction phase. The Environmental Representative will: • Be the principle point of advice in relation to the environmental performance of the Development; • Monitor the implementation of this CEMP and report to ProTen Site Management; • Provide advice to ProTen Site Management on matters specified in the Development Consent and this CEMP relating to environmental performance and impacts; • Approve / reject minor amendments to this CEMP (see **Section 9**); • Direct reasonable steps be taken to avoid or minimise any unintended or adverse environmental impacts, and, failing the effectiveness of such steps, direct that the relevant actions cease immediately should an adverse impact on the environment be likely to occur; and • Be consulted in responding to the community concerning environmental performance where the resolution of points of conflict between ProTen and the community is required. • Contact NSW Wildlife Information Rescue and Education Service (WIRES) to arrange an inspection of the planned tree clearing areas and proposed safe area for fauna release prior to construction.
All employees and contractors	• Ensure familiarity, implementation and compliance with this CEMP and appended management plans;

Role	Responsibilities
	• Support ProTen's commitment to environmental management and compliance; • Work in a manner that will not harm the environment or impact on surrounding receptors; • Report all environmental incidents and complaints to ProTen Site Management without delay; and • Report any inappropriate construction practices and/or environmental management practices to ProTen Site Management without delay.

3.2 Development Consent

The Development will be constructed in accordance with Development Consent SSD 6882 and also in accordance with the other documents referenced under condition A2 of the Consent:

- The EIS (SLR 2015a) and the appendices contained within;
- The RTS (SLR 2015b) and the appendices contained within;
- The Management and Mitigation Measures attached to the Development Consent as Appendix 1, which have been replicated from the EIS (SLR 2015a);
- The plans and drawings attached to the Development Consent as Appendix 2, which have been sourced from the EIS (SLR 2015a) and RTS (SLR 2015b); and
- The Euroley Poultry Farm SSD-6882 Modification Application (PSA Consulting 2023).

If there is any inconsistency between the plans and documentation referred to in condition A2, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of Development Consent SSD 6882 Modification 1 prevail to the extent of any inconsistency.

3.3 Inductions and Training

ProTen Site Management / Principal Contractor will ensure that all employees and contractors involved with the construction of the Development are suitable inducted and trained prior to commencing any work on site. Training in relation to environmental responsibilities and implementation of this CEMP will take place initially through the site induction and then on an on-going basis through "toolbox talks" (or similar).

The topics to be covered during the induction and toolbox talks include:

- General site maintenance and management expectations and requirements;
- Familiarisation with site environmental management and mitigation measures in this CEMP;
- The environmental management commitments and responsibilities in this CEMP;
- The fauna management protocol outlined in Section 4.6.1;
- Animal vehicle strike risks and responses;
- The location and management of Aboriginal heritage items/sites as outlined in Section 4.7;
- The unexpected finds protocol for Aboriginal heritage items/sites as outlined in Section 4.7.1;
- Waste avoidance and management strategies;

- Appropriate response and management of environmental incidents in accordance with the protocol detailed in Section 8.0; and
- Appropriate response and management of complaints received from the public, government agencies or other stakeholders in accordance with the protocol detailed in Section 7.0.

Records of all inductions and training undertaken will be recorded in an Environmental Training Register.

4.0 Environmental Management Measures

Key environmental issues associated with the Development are identified and addressed in the EIS (SLR 2015a) and RTS (SLR 2015b) and a suite of development design, best management practices and mitigation measures have been committed to minimise the potential for adverse impact on the local environment and surrounding populace. The environmental mitigation and management measures as they are relevant to the construction phase of the Development are provided in the following sections.

4.1 General

Table 10 outlines the general environmental management and mitigation measures that will be implemented throughout the construction phase of the Development to minimise the potential for adverse impacts on the local environmental and surrounding receptors.

Table 10: General Construction Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
Construction activities will be undertaken within the construction hours specified in the Development Consent (see Section 2.6).	ProTen Site Mgt / Principal Contractor	On-going	• Conditions B27-B29 • EIS Sections 3.7.5 and 7.1 • CEMP Section 2.6
A clearly visible sign will be installed at the site entrance on the Sturt Highway prior to commencing construction. The sign will advise: • ProTen's Site Manager or principal contractor's name and telephone numbers (including an after-hours number); and • The location of the site office.	ProTen Site Mgt / Principal Contractor	Prior to construction	• CEMP Section 6.2
The complaints and incident management strategies contained within **Sections 7** and **8** will be implemented to ensure that all complaints and incidents relating to the Development are promptly and effectively addressed.	All employees and contractors	On-going	• Condition C2 • EIS Section 3.19 and Appendix C • CEMP Sections 7 and 8
Employees and contractors involved with the construction of the intersection upgrade will be suitably inducted and trained prior to commencing any work on site.	ProTen Site Mgt / Principal Contractor	Inductions prior to construction. Regular/as needed toolbox talks.	• CEMP Section 3.3
Methods of communication will be by two-way radio, mobile phone, visual and verbal. Site supervisors, traffic controllers and employees/contractors (as appropriate) will have a two-way radio to be contactable at all times. The communication channels for two-way radio will be advised.	ProTen Site Mgt / Principal Contractor	On-going	• CEMP Appendix A

4.2 Dust Management

ProTen will carry out all reasonable and feasible measures to minimise dust generated during the construction phase of the Development. The main source of dust emissions

during the construction phase will be wheel generated dust from the internal roads. However the potential for such emissions is predicted to be low given the constructed nature of the roads and subsequent lower silt loading (compared to using unformed tracks).

The environmental controls in Table 11 will be implemented to minimise the potential for adverse dust emissions and impacts during the construction of the Development.

Table 11: Dust Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
The access road from the Sturt Highway will be bitumen sealed for a distance of 50 m from the carriageway of the Highway.	ProTen Site Mgt / Principal Contractor	On-going	• Condition A16 • EIS Section 3.7.3 and 6.4
Where possible, vehicles on site will be confined to designated roadways.	All employees and contractors	On-going	• Consent Appendix 1 • EIS Section 6.2
Disturbance will be limited to the smallest practicable area possible to allow for any essential construction activity.	All employees and contractors	On-going	
Disturbed areas will be promptly rehabilitated and revegetated to a stable landform to minimise dust emissions.	ProTen Site Mgt / Principal Contractor	On-going	
If necessary, dust will be minimised by “wetting” down surfaces being worked and/or carrying traffic during dry periods.	ProTen Site Mgt / Principal Contractor	On-going	
Plant and equipment will be regularly maintained to ensure optimal operating condition.	ProTen Site Mgt / Principal Contractor	On-going	
Vehicles will not exceed a general speed limit of 60 km per hour along the access road from the Sturt Highway and within the Development Site, with a reduced speed limit of 40 km per hour to be adopted in the vicinity of all work sites.	All employees and contractors	On-going	• Condition B7 • RTS Section 2.2.3
Loaded vehicles entering or leaving the site will have their loads covered.	All employees and contractors	On-going	• Condition B7
Vehicles leaving the Development Site will be cleaned of dirt, sand and other materials to avoid tracking these materials on to the public road network.	All employees and contractors	On-going	
Heavy vehicles will not use engine breaks.	All employees and contractors	On-going	

4.3 Noise Management

The intersection upgrade will be constructed with the aim of achieving the construction noise management levels detailed in the Interim Construction Noise Guideline (ICNG) (Department of Environment and Climate Change 2009). All feasible and reasonable noise mitigation measures will be implemented.

Upgrade to the Sturt Highway intersection is only expected to be in construction over approximately 3-4 months and is not expected to have a large construction noise impact on surrounding receptors. Construction of the new intersection will be managed by the construction contractor in accordance with the WAD and in consultation with Council and RMS.The environmental controls listed in Table 12 will be implemented to minimise the potential for adverse noise impacts at the nearest receptor locations during construction of the intersection upgrade. .

Table 12: Noise Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
Construction of the Sturt Highway intersection will be undertaken in accordance with the WAD (including any imposed management and mitigation measures) and in consultation with Council and RMS.	Intersection Construction Contractor	Prior to construction within the Development Site	• Condition B14
Construction activities will be undertaken within the construction hours specified in the Development Consent (see Section 2.6).	ProTen Site Mgt / Principal Contractor	On-going	• Conditions B27-B29 • EIS Sections 3.7.5 and 7.1 • CEMP Section 2.6
Plant and equipment operators will be appropriately instructed on how to minimise noise generation at all times. If necessary, this may include avoiding the operation of noisy plant and equipment simultaneously.	ProTen Site Mgt / Principal Contractor	On-going	• Consent Appendix 1 • EIS Section 6.3
Plant and equipment will be maintained to meet regulatory and industry standards, as well as ensure optimal operating conditions.	ProTen Site Mgt / Principal Contractor	On-going	

4.4 Traffic Management

The majority of construction traffic, including heavy vehicle traffic, will travel between the Development Site and Griffith via Kidman Way and the Sturt Highway and between the Development Site and Narrandera via the Sturt Highway. There will not be any disruptions to the public road network during construction given that construction of the Sturt Highway intersection and all heavy vehicle and construction plant/equipment parking will be within the Development Site.

A Construction Traffic Management Plan (TMP) has been prepared for the current Development and is contained within Appendix A.

Note: The TMP (RoadNet Pty Ltd, 2015) does not include the intersection upgrade works.

Prior to construction of the intersection upgrade works a Construction Traffic Management Plan (CTMP) will be prepared in conjunction with the Works Authorisation Deed (WAD) and under the approval of the Roads Act 1993.

The management and mitigation measures listed in Table 13 will be implemented to minimise the potential for adverse traffic related impacts during construction of the intersection upgrade works. After the CTMP is updated to include upgrade works, it should be referred to for further requirements.

Table 13: Traffic Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
Construction vehicles will enter and exit the Development Site via the Sturt Highway intersection and access road.	ProTen Site Mgt / Principal Contractor / Traffic Officer	On-going	• CEMP Appendix A
Suitable signage will be erected indicating internal traffic direction and speed limits to	ProTen Site Mgt / Principal	Prior to construction and on-going	• Consent Appendix 1

Control	Responsibility	Timing/Frequency	Reference/Notes
ensure the orderly and safe use of the site, as well as to minimise the potential for traffic conflict.	Contractor / Traffic Officer		• EIS Section 6.4
All site works, including drivers of heavy vehicles, will be made aware of the routes to be driven within the Development Site.	ProTen Site Mgt / Principal Contractor / Traffic Officer	On-going	• CEMP Appendix A
Where possible, vehicles on site will be confined to designated roadways.	All employees and contractors	On-going	• Consent Appendix 1 • EIS Section 6.4
Heavy vehicles and construction plant/equipment will park along the internal road and/or PPU disturbance areas / construction pads. There will be no parking along the Sturt Highway.	All employees and contractors	On-going	
Internal roads will be maintained clear of obstruction and used exclusively for the purposes of transport, loading-unloading and parking.	All employees and contractors	On-going	
Vehicles will not exceed a general speed limit of 60 km per hour along the access road from the Sturt Highway and within the Development Site, with a reduced speed limit of 40 km per hour to be adopted in the vicinity of all work sites.	All employees and contractors	On-going	• Condition B7 • RTS Section 2.2.3
Loaded vehicles entering or leaving the site will have their loads covered.	All employees and contractors	On-going	• Condition B7
Vehicles leaving the Development Site will be cleaned of dirt, sand and other materials to avoid tracking these materials on to the public road network.	All employees and contractors	On-going	
Heavy vehicles will not use engine breaks.	All employees and contractors	On-going	
All drivers will read and sign a “driver’s code of conduct”.	ProTen Site Mgt / Principal Contractor / Traffic Officer	Prior to construction and as required for any drivers	• CEMP Appendix A
The only traffic to enter the Development Site will be construction traffic and emergency vehicles (if required). There will not be any general public access.	ProTen Site Mgt / Principal Contractor / Traffic Officer	On-going	• CEMP Appendix A
The generic traffic control plan (TCP) (see **Appendix A**) will be implemented when road construction activities are being undertaken on the Main Access Road and/or Roads 1 to 4 and there is a requirement to restrict the two-way road arrangement to a single lane and the single lane is having to cater for traffic travelling in both directions.	ProTen Site Mgt / Principal Contractor / Traffic Officer	On-going as required	• CEMP Appendix A

4.5 Soil and Water Management

A *Construction Soil and Water Management Plan* (CSWMP) has been prepared for the Development and is contained within Appendix B. In addition to providing a general framework for the overall management of soil and water resources during the construction phase, the CSWMP comprises:

- Standard erosion and sediment control (ESC) design drawings (as adapted from the Blue Book*); and
- Site-specific erosion and sediment control plans (ESCPs) prepared as part of the Development's civil design (Lance Ryan Consulting Engineers), which illustrate the nature and location of intended erosion and sediment control structures, relevant design specifications and sequencing.

  ** Managing Urban Stormwater – Soils and Construction Vol. 1 (Landcom, 2004), which is commonly known as the Blue Book.*

The controls and management procedures within this CSWMP will minimise the potential for offsite impacts to surface water resources and ensure compliance with the relevant conditions of Development Consent SSD 6882 and relevant legislation.

The following general principles apply for the management of erosion and sedimentation across the Development Site during construction:

- Investigate site features prior to disturbance (e.g. landform, slope/topography, catchment area, soil limitations, downstream sensitive areas, vegetation cover);
- Plan and coordinate works in order to limit the disturbance area through staging of works;
- Install ESC structures prior to disturbance activities commencing when and where required;
- Install appropriate diversions to ensure clean water is diverted away from disturbance areas;
- Where the disturbance area is greater than 2,500 square metres (m^2), has an annual calculated soil loss greater than 150 cubic metres per year (m^3/year) or where alternative ESC measures do not provide sufficient risk mitigation, sediment-laden water should be directed to an appropriately sized sediment basin;
- Sediment basins must be drawn down in the required management period (typically 5 days). The water should be preferentially utilised for construction activities or disposed in an environmentally responsible manner;
- Undertake progressive rehabilitation to stabilise disturbance areas as soon as practical to reduce the extent of exposed soils;
- Where daily weather forecasts predict weather conditions which may pose an environmental risk, the environmental controls shall be inspected to help eliminate potential erosion and sedimentation impacts.
- Where practicable, water captured within construction zones will be stored and reused in construction (i.e., dust suppression).
- All runoff from disturbed areas shall be treated for removal of sediment prior to leaving site.
- If runoff from disturbance areas is potentially contaminated with other pollutants (i.e., hydrocarbons), the water shall be collected to prevent it from leaving site. This potentially contaminated water shall be appropriately managed i.e., in accordance with the PIRMP.
- Minimise erosion within disturbed and rehabilitation areas by installing appropriate ESC measures; and
- Regularly inspect ESC structures to ensure their suitability and correct installation.

The appended CSWMP should be referred to for all specific soil and surface water controls and management strategies.

4.6 Biodiversity Management

While the majority of the Development Site has been historically cleared and used for agricultural production purposes, there are patches of native vegetation present. Construction of the Development will include minor impacts to native vegetation within the Development Site, including a small area of Sandhill Pine endangered ecologically community (EEC) to allow construction of the internal access road and a small area of low condition Black Box Grassy Open Woodland in the south of the Development Site. The revised *Biodiversity Offset Strategy* (SLR 2015c), which was appended to the RTS (SLR 2015b), includes appropriate biodiversity credit and offsetting provisions to compensate for vegetation and habitat loss.

ProTen will progressively establish the landscape plantings, as soon as practically possible, following bulk earthworks and construction of infrastructure at each PPU. The landscaping will be undertaken in accordance with the *Landscape Management Plan* in Appendix C.

Table 14 lists the management and mitigation measures that will be implemented before and during the construction of the Development to minimise direct and indirect impacts on biodiversity.

Table 14: Biodiversity Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
Before Construction			
Temporary fencing (to exclude sheep and other stock animals) will be installed to delineate and protect the area mapped by OEH (2011) as White Cypress Pine Open Woodland (equivalent to Sandhill Pine Woodland EEC) within the north western corner of the Site (see).	ProTen Site Mgt / Principal Contractor	Prior to construction and on-going	• RTS Section 2.4
A minimum 100 m buffer will be maintained between the construction footprint (including revegetation sites and vehicle access tracks) and the boundary of areas of remnant vegetation and the South West Woodland Nature Reserve (see Figure 4). These buffers will be confirmed when the development is physically set-out by the surveyor.	ProTen Site Mgt / Principal Contractor	Prior to construction and on-going	• RTS Section 2.4
Erosion and sediment control measures will be installed in accordance with the Blue Book and CSWMP (see Section 4.5 and Appendix B).	ProTen Site Mgt / Principal Contractor	Prior to construction and on-going	• Consent Appendix 1 • EIS Section 6.7
WIRES will be contacted (02 8977 3309 / 1300 094 737) to arrange an inspection of the planned tree clearing areas and proposed safe area for fauna release (see Figure 4).	Environmental Representative	Prior to construction	• CEMP Section 4.6.1
During Construction			
WIRES will be contacted (02 8977 3309 / 1300 094 737) prior to planned tree clearing to advise of proposed works and arrange a volunteer wildlife handler (if required and available).	ProTen Site Mgt / Principal Contractor	On-going as required	• CEMP Section 4.6.1

Control	Responsibility	Timing/Frequency	Reference/Notes
The *Fauna Management Protocol* in Section 4.6.1 will be followed (as required) for the identification and management of any rescued fauna.	All employees and contractors	On-going	• RTS Section 2.4 • CEMP Section 4.6.1
Vehicles leaving the Site will be cleaned to avoid the spread of weeds.	All employees and contractors	On-going	• Consent Appendix 1 • EIS Section 6.7 • CEMP Section 4.5, Appendices B and C
Rubbish (such as food scraps and building waste) will be properly managed and will not be stockpiled within areas of native vegetation.	All employees and contractors	On-going	
Revegetation will be undertaken in accordance with the CSWMP (see Appendix B) and the *Landscape Management Plan* (see Appendix C).	ProTen Site Mgt / Principal Contractor	Immediately following soil disturbances	
Revegetation works and landscaping undertaken within 100 m of mapped threatened ecological communities and remnant native vegetation (see Figure 4) will be undertaken with species that are naturally occurring within the area.	ProTen Site Mgt / Principal Contractor	On-going	
Revegetation works and landscape plantings will be regularly inspected and assessed for maintenance requirements, including weed control.	ProTen Site Mgt / Principal Contractor	On-going	
Vehicles will not exceed a general speed limit of 60 km per hour along the access road from the Sturt Highway and within the Development Site, with a reduced speed limit of 40 km per hour to be adopted in the vicinity of all work sites.	All employees and contractors	On-going	

4.6.1 Fauna Management Protocol

As included in Table 14, the Environmental Representative will contact NSW Wildlife Information Rescue and Education Service (WIRES) (02 8977 3309 / 1300 094 737) to arrange an inspection of the planned tree clearing areas and proposed safe area for fauna release (see Figure 4) prior to construction commencing. The following Fauna Management Protocol will be adopted for the identification and management of fauna that may be rescued or injured during construction works:

- WIRES will be contacted (02 8977 3309 / 1300 094 737) prior to planned tree clearing to advise of proposed works and arrange a volunteer wildlife handler (if required and available).
- If possible, any fauna fleeing the disturbance area will be directed to a safe area outside the disturbance area or, if necessary, captured and relocated to a safe area.
- All fauna will be handled in such a way as to prevent injury and unnecessary stress to the animal (and to the handler).
- All fauna that are required to be captured, and are uninjured, will be captured in a hessian bag (see note below) or ventilated box and relocated to a safe and appropriate location within the north western vegetation area (see Figure 4) which is to be protected from any disturbance. Relocation is to be undertaken on the same day as capture.

- Any fauna that is injured will be contained in a warm, dark and quiet place. The animal will be wrapped in a towel (or similar) and placed in a ventilated box. Site management will call WIRES (02 8977 3309 / 1300 094 737) for advice on the best course of action. This may include transporting the injured animal to the nearest vet or waiting for a rescuer to arrive at site.
- Wildlife captured, relocated and/or treated will be reported to WIRES.

Note: hessian bags are not suitable for birds or any animals with claws that could become stuck in the small holes or entangled in the fibres. If required, WIRES will be contacted for advice and/or to provide appropriate equipment for wildlife capture and care.

Figure 4: Vegetation Areas and Temporary Offset Measures

4.7 Aboriginal Heritage Management

Field surveys identified six Aboriginal heritage sites within the Development Site, comprising five scarred trees and one hearth (see Figure 5). While some of these sites are located within close proximity to Development infrastructure, they are not located within the disturbance footprint and will be avoided during construction. Table 15 lists the management and mitigation measures that will be implemented to avoid any impact on all Aboriginal heritage sites during the construction of the Development.

Table 15: Aboriginal Heritage Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
The six identified Aboriginal sites will be temporarily fenced with a 10 m buffer. The fencing will be clearly visible and signed with "Do Not Enter".	ProTen Site Mgt / Principal Contractor	Prior to construction	• Condition B52 • EIS Section 6.8
The following alternative mitigation measures are to be implemented in the vicinity of the EPPC-ST5 scar tree to ensure the protection of the tree where road batters encroach within the 10 m buffer zone: 1. No ground surface disturbing works (digging) will occur within the 10 m buffer zone. 2. If the batter of a road needs to encroach within 10 m buffer zone, the batter will sit on the ground surface and will not be dug in, and it will be kept as far from the trunk of the tree as practicable. 3. Sediment control measures will be put in place at the base of the batter to prevent any sediment run-off from the batter from accumulating at the base of the trunk. 4. The material to be used in the batter will not chemically change the pH/acidity of the soils in the area such the tree may suffer poor health as a result.	ProTen Site Mgt / Principal Contractor	During access road construction in the vicinity of EPPC-ST5	• OzArk email advice 8 December 2015
ProTen employees and contractors will be made aware of the presence of the six identified Aboriginal heritage sites during site inductions and training	ProTen Site Mgt / Principal Contractor	Prior to construction	• EIS Section 6.8 • CEMP Section 3.3
Any alterations to the Development footprint that are outside of the study areas of the Aboriginal heritage field surveys will be assessed in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*	ProTen Site Mgt / Principal Contractor	Prior to any changes to the development footprint	• EIS Section 6.8 • Condition B51
If the scarred trees naturally fall over, the Leeton and District Local Aboriginal Land Council (L&DLALC) will be contacted to discuss if further management is required and, if so, what the appropriate management would be.	ProTen Site Mgt / Principal Contractor	As required	• EIS Section 6.8

Control	Responsibility	Timing/Frequency	Reference/Notes
If any Aboriginal objects are uncovered during work, excavation or disturbance of the work area, work will stop immediately and the *Unexpected Finds Protocol* in Section 4.7.1 will be followed.	All employees and contractors	As required	• Condition B54 • EIS Section 6.8 • CEMP Section 4.7.1
If an Aboriginal object/place is known to be directly or indirectly adversely affected, ProTen will need to apply for, and be issued, an Aboriginal Heritage Impact Permit (AHIP) by OEH to comply with the *National Parks and Wildlife Act 1974*.	ProTen Site Mgt / Principal Contractor	As required	• Condition B54

4.7.1 Unexpected Finds Protocol

The following *Unexpected Finds Protocol* will be following in the event that any archaeological or Aboriginal objects are uncovered during construction:

1 **Cease work in the area immediately** - employees or contractors to cease work in the area immediately and contact ProTen Site Management / Principal Contractor.

2 **Barricade** - ProTen Site Management / Principal Contractor to erect temporary barricading around the find to prevent access and/or disturbance.

3 **Notify** - advise the relevant regulatory agencies (see Table 9) and adhere to any instructions issued by them -

   a) For archaeological finds notify the OEH Heritage Branch.

   b) For Aboriginal finds notify the OEH Regional Operations Group and L&DLALC.

4 **Management strategy** - an appropriate management strategy will be developed in consultation with the relevant stakeholders.

5 **Recommence works** - works are only to recommence once an appropriate and approved management strategy has been agreed by all relevant stakeholders.

Figure 5: Identified Aboriginal Heritage Sites

4.8 Potentially Hazardous Goods

The environmental management and mitigation measures that will be implemented to minimise the potential for environmental incidents relating to the storage, handling and transport of potentially hazardous goods are presented in Table 16.

Table 16: Dangerous Goods Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
Dangerous goods will be stored and handled in accordance with: • Relevant Australian Standards; and • *Environmental Protection Manual for Authorised Officers: Bunding and Spill Management* (EPA 1997).	ProTen Site Mgt / Principal Contractor	On-going	• Condition B22
Any liquids classified as dangerous goods will be stored within a bunded area with a minimum bund volume of 110% of the volume of the largest single stored volume within the bund.	ProTen Site Mgt / Principal Contractor	On-going	
Fuels and oils will be stored in in bunded areas in accordance with relevant Australian Standards and/or the *Storing and Handling Liquids: Environmental Protection – Participants Handbook*.	ProTen Site Mgt / Principal Contractor	On-going	• Condition B43
Safety Data Sheets (SDS) will be kept in the Site office and/or safety system.	ProTen Site Mgt / Principal Contractor	On-going	
The actions specified on the respective SDS will be implemented in the event of a minor chemical or fuel spill.	All employees and contractors	On-going	
Spill kits will be maintained at key locations according to the construction schedule.	ProTen Site Mgt / Principal Contractor	On-going	
In the event of a major spill, the Environmental Incident Management System outlined in **Section 8** will be followed.	All employees and contractors	On-going	• CEMP Section 8

4.9 Waste Management

Potential waste types along with their waste classification in accordance with the EPA's *Waste Classification Guidelines 2008* and intended reuse/recycling/disposal are provided below in Table 17.

Table 17: Potential Construction Wase Types, Classifications and Management

Waste Types	NSW Classification	Reuse/Recycling/Disposal
Site Establishment, Evacuation and Construction		
Green waste	General solid (putrescible) waste	Composting and/or direct reuse on site
Excavated material – virgin excavated natural material (VEMN) and excavated natural materials (EMN)	General solid (non-putrescible) waste	On site reuse
Concrete (solids and washouts)	General solid (non-putrescible) waste	On site reuse (where possible) or off site recycling

Waste Types	NSW Classification	Reuse/Recycling/Disposal
Timber formwork (dwellings)	General solid (non-putrescible) waste	Off site recycling
Plasterboard (dwellings)	General solid (non-putrescible) waste	Off site recycling or disposal at licensed facility
Metals and bulk electrical cabling	General solid (non-putrescible) waste	Off site recycling
Steel reinforcing, other metal (e.g. wire mesh)	General solid (non-putrescible) waste	Off site recycling
Glass	General solid (non-putrescible) waste	Off site recycling
Conduits and pipes	General solid (non-putrescible) waste	Off site recycling
Sediment fencing, geotextile materials	General solid (non-putrescible) waste	Off site reuse (where possible) or disposal at licensed facility
Packaging		
Packaging materials, including wood, plastic (including stretch wrap, LLPE), cardboard, metals, polystyrene	General solid (non-putrescible) waste	Off site recycling
Wooden crates / pallets	General solid (non-putrescible) waste	Returned to supplies, off site reuse or off site recycling
Plant Maintenance		
Tyres	Special waste	Off site recycling or disposal at licensed facility
Empty oil and other drums / tins (e.g. fuel, chemicals, paints, spill clean ups)	Hazardous waste if containers were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and from which residues have not been removed by washing or vacuuming. General solid (non-putrescible) waste if the containers have been cleaned by washing or vacuuming.	Off site recycling or disposal at licensed facility (N,B. transport to comply with the *Australian Code for the Transport of Dangerous Goods by Road & Rail)*
Air and oil filters and rags	General solid (non-putrescible) waste	Off site recycling or disposal at licensed facility
Batteries	Hazardous waste	Off site recycling
Site Office		
Recyclable beverage containers (glass and plastic bottles, aluminium cans), tin cans	General solid (non-putrescible) waste	Off site recycling
Clean paper and cardboard	General solid (non-putrescible) waste	Off site recycling
General domestic waste generated by workers (soiled paper and cardboard, food stuffs, polystyrene)	General solid (non-putrescible) waste mixed with putrescible waste	Disposal at landfill
Pump-out waste and septage (sewage)	Liquid (trade) waste	Off site disposal at licensed facility

The management and mitigation measures listed in Table 18 will be implemented during the construction of the Development to minimise waste generation and ensure waste is effectively managed and disposed of off site.

Table 18: Waste Management and Mitigation Measures

Control	Responsibility	Timing/Frequency	Reference/Notes
Waste Reuse, Recycling and Disposal			
Waste streams will be managed in accordance with the reuse / recycling / disposal methods nominated in Table 18.	ProTen Site Mgt / Principal Contractor	On-going	EPA's Waste Classification Guidelines 2008
No disposal of waste materials will occur within the bounds of the Development Site.	ProTen Site Mgt / Principal Contractor	On-going	Condition B19
Waste materials removed from the Site for reuse, recycling or disposal will be directed to a facility or premises lawfully permitted to accept the materials.	ProTen Site Mgt / Principal Contractor	On-going	Condition B17
Waste generated outside the Site will not be received at the Site for any purpose.	ProTen Site Mgt / Principal Contractor	On-going	Condition B18
Only wastes that cannot be cost effectively reused or recycled will be sent to for disposal.	ProTen Site Mgt / Principal Contractor	On-going	-
Waste Storage			
Minimum dedicated waste skips (or stockpiles for materials to be reused on site) will be provided for various waste streams listed above in Table 16.	ProTen Site Mgt / Principal Contractor	On-going	-
Co-mingled recycling bins will be provided at the Site Office and near work sites for container recycling to ensure these items do not end up at landfill.	ProTen Site Mgt / Principal Contractor	On-going	-
Waste Servicing			
Skips will be checked on a daily basis. If the skips are reaching capacity, removal and replacement will be organised for the next 24 hours.	ProTen Site Mgt / Principal Contractor	On-going	-
All skips leaving the Site will be suitably covered to avoid waste spillage while in transit.	ProTen Site Mgt / Principal Contractor	On-going	-
Waste Avoidance			
Site disturbance will be minimised to reduce unnecessary excavation.	ProTen Site Mgt / Principal Contractor	On-going	-
Where possible, materials will be ordered to size or ordered as pre-cut and prefabricated materials	ProTen Site Mgt / Principal Contractor	On-going	-
Where possible, construction formwork will be reused on site	ProTen Site Mgt / Principal Contractor	On-going	-
Where possible, materials will be delivered "as needed" to prevent degradation through weathering and moisture damage	ProTen Site Mgt / Principal Contractor	On-going	-
Packing wastes will be reduced, where possible, by returning packaging to the suppliers (e.g. pallets, reels), purchasing in bulk, requesting cardboard or metal drums (as opposed to plastics).	ProTen Site Mgt / Principal Contractor	On-going	-

Control	Responsibility	Timing/Frequency	Reference/Notes
Only wastes that cannot be cost effectively reused or recycled will be sent to for disposal.	ProTen Site Mgt / Principal Contractor	On-going	-
Liquid Waste			
Portable, self-contained toilets and washroom facilities will be regularly serviced and emptied by a licensed contractor for off site disposal at a licensed facility.	ProTen Site Mgt / Principal Contractor	On-going	-
Equipment/plant/machinery/vehicles will be washed down within an appropriately bunded washdown bay.	ProTen Site Mgt / Principal Contractor	On-going	-

5.0 Inspections and Reporting

5.1 Inspections

There are no specific monitoring requirements during the construction phase of the intersection upgrade. Notwithstanding, various environmental site inspections will be undertaken during the construction phase to ensure on-going implementation and compliance with this CEMP and to identify any adverse impacts and required remedial actions. The environment site inspections to be completed are listed in Table 19.

Table 19: Construction Environmental Site Inspections

Requirement	Timing/Frequency	Responsibility
Pre-Construction		
Site inspection to ensure all necessary environmental management and mitigation measures are in place and specific/required areas are demarcated (e.g. pegged, flagging tape) prior to commencing construction	Prior to construction	ProTen Site Mgt / Principal Contractor / Environmental Representative
During Construction		
Inspection of the construction area at the completion of construction (for that day) to ensure all management and mitigation measures are still in place and have not been removed/impacted by construction activities	Daily at the completion of construction	ProTen Site Mgt / Principal Contractor
Inspection of the soil and water management and mitigation measures on a weekly basis and following significant rainfall events to ensure the controls are operating effectively and at design capacity. See the CSWMP in Appendix B for specific information requirements.	Weekly and following significant rainfall events	ProTen Site Mgt / Principal Contractor
Environmental site inspections to assess the implementation of the management and mitigation measures and compliance with the Development Consent and this CEMP.	Every two months or more frequently as determined necessary in line with the construction program.	ProTen Site Mgt / Principal Contractor and Environmental Representative
Inspection of rehabilitated areas to: • Assess the success of revegetation; • Identify any required maintenance works (e.g. watering, re-seeding, fertiliser application); and • Remove temporary erosion and sediment controls on completion of works.	Monthly following completion of disturbance activity until fully rehabilitated (i.e. >70% permanent ground cover, excluding weeds)	ProTen Site Mgt / Principal Contractor and Environmental Representative

All environmental management and mitigation measures will be maintained in a functioning condition by ProTen Site Manager / Principal Contractor until individual construction/disturbance areas have been deemed complete and successfully rehabilitated (i.e. greater than 70% permanent ground cover, excluding weeds).

Where any of the controls are observed to be not functioning correctly and/or adverse environmental impact/risk is observed, appropriate remedial actions and/or additional mitigation measures will be promptly implemented. Refer to the CSWMP in Appendix B for specific maintenance works for erosion and sediment controls.

Where considered necessary, the relevant government agencies will be consulted and any additional instructions will be adhered to.

Once the impact/risk has been suitably addressed, appropriate preventative measures will be identified and implemented to negate the possibility of re-occurrence.

5.2 Reporting

5.2.1 Annual Review

In accordance with condition C8 of Development Consent SSD 6882, ProTen will prepare and submit an Annual Review to the DPHI that reviews the environmental performance of the Development (including construction) over the previous calendar year.

In accordance with condition C14, the Annual Reviews will be made publicly available on ProTen's website.

5.2.2 Environmental Inspection Report

As listed inTable 19, environmental site inspections will be undertaken every two months or more frequently as determined necessary in line with the construction program to assess the implementation of the management and mitigation measures and compliance with the Development Consent and this CEMP. These inspections will be undertaken by the approved Environmental Representative.

Following each inspection the Environmental Representative will prepare and provide ProTen Site Management with a Monthly Environmental Inspection Report summarising the following:

- Implementation of the management and mitigation measures in this CEMP;
- Any non-compliances with the Development Consent and/or this CEMP;
- Any identified environmental impacts and the require remedial actions and/or additional mitigation measures;
- Any complaints received in the previous month and how they were addressed;
- Any environmental incidents that occurred in the previous month and how they were addressed; and
- Any other identified issues that require ProTen's attention.

In accordance with conditions C11 and C14 of Development Consent SSD 6882, the Monthly Environment Inspection Reports will be made publicly available on ProTen's website as a means of providing regular reporting on the environmental performance of the construction phase of the Development.

5.2.3 Incident Reporting

In accordance with conditions C9 and C10 of Development Consent SSD 6882, ProTen Site Management will:

- Notify the Secretary and other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment within 24 hours of the incident; and
- Provide the Secretary and other relevant agencies with a detailed report on the incident within seven days of the detection of the incident.

The environment incident management system is outlined in **Section 8.0**.

6.0 Community Consultation

6.1 Surrounding Residents

Prior to the commencement of construction, ProTen will inform the owners/residents of the surrounding dwellings shown on Figure 1 of relevant construction details in writing via a letter. The letter will advise:

- General construction activities and staging (as per Sections 2.4 and 2.5, respectively);
- The construction hours (as per Section 2.6); and
- Relevant site contact details (as per Section 2.8).

These owners/residents will also be informed of any changes to the construction staging and any other relevant information during the construction phase in writing.

6.2 Site Signage

A clearly visible sign will be installed at the site access on the Sturt Highway prior to commencing construction. The sign will advise:

- ProTen's Site Manager or principal contractor's name and telephone numbers (including an after-hours number); and
- The location of the site office.

7.0 Complaints Management Strategy

7.1 Performance Objective

To ensure that all environmental complaints regarding the construction of the Development are promptly and effectively received, handled and addressed.

7.2 Responsibility

ProTen's Site Management is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of a complaint.

All employees and contractors who take receipt of a complaint, either verbal or written, are to immediately notify Site Management.

7.3 Receipt of Complaints

Complaints in relation to the construction activities may be received via any of the following ways:

- Any ProTen company or site office;
- ProTen Environmental Hotline – 1800 776 994;
- ProTen Internet enquiry – www.proten.com.au; and/or
- Through a government agency (for example, Council or EPA).

7.4 Handling Procedure

Upon becoming aware of a complaint, Site Management is to undertake the following:

1 Receive

In the normal course of events, the first contact for complaints will usually be made in person or by telephone. While this should instigate investigative action, a formal written complaint should be requested.

Where the initial contact reaches an employee or contractor who is not a representative of Site Management, the call should be directed to Site Management. If unavailable, the complainant's details should be taken with a view to returning the contact once Site Management is in a position to discuss the matter.

The complainant's name, address and contact details, along with the nature of the complaint, must be requested. If the complainant refuses to supply the requested information, a note should be made on the form and complainant advised of same.

2 Assistance

Where assistance is required handling the situation, ProTen's National Operations Manager (based on Griffith) should be contacted.

Where the complaint is reported via a government agency (for example, Council or the EPA), ProTen's National Operations Manager must be notified immediately (even if outside of normal business hours).

Relevant contact details are listed in Section 2.8.

3 Investigate

A field investigation should be initiated in an attempt to establish the legitimacy of the complaint and the cause of the problem. ProTen's Site Manager and/or the

construction contractor should be consulted to identify any abnormality or incident that may have resulted in the complaint. Details may include heavy vehicle activity, equipment and machinery activities, etc.

If the complaint is due to an environmental incident, the management system outlined in Section 8.0 should be followed, and if the incident has caused or threatens to cause material harm to the environment each of the relevant regulatory agencies must be immediately notified.

4 Action

Once the legitimacy and cause of the complaint has been established, every possible effort must be made to undertake appropriate remedial action(s) to fix the cause of the complaint and mitigate any further impact.

5 Inform

The investigative work and remedial action should be reported back to the complainant and, if necessary, the relevant regulatory agencies.

6 Record

It is imperative that an honest assessment of the situation is carried out and documented in order to minimise the potential for similar complaints in the future. On this basis, every complaint received is to be recorded on ProTen's standard Environmental Complaint Report Form contained within Appendix D. A copy of the completed form should be maintained for at least four years.

7.5 Preventative Action

Once the complaint has been suitably handled, appropriate preventative measures should be identified and implemented to negate the possibility of re-occurrence.

8.0 Environmental Incidents Management System

For the purpose of this CEMP, an environmental incident is defined as any event that causes, or has the potential to cause, material harm to the environment.

8.1 Performance Objective

To ensure that any environmental incident caused by or relating to the construction of the Development is effectively responded to, and any resulting adverse environmental and/or community impact is promptly prevented or effectively managed.

8.2 Responsibility

Site Management is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an environmental incident.

All employees and contractors are to:

- Take immediate action to notify ProTen Site Management of any environmental incident; and
- Take immediate action (where it is safe to do so) to prevent, stop, contain and/or minimise the environmental impact of the incident.

8.3 Handling Procedure

As per condition C9 and C10 of SSD 6882 an incident that causes or may cause harm to the environment must be reported to the Secretary and another other relevant agencies within 24 hours of the incident.

9.0 CEMP Review

This CEMP will be reviewed and, if necessary, revised in the following circumstances:

- Following any significant environmental incident or impact;
- Where there is any change to the scope of the Development's construction activities and/or disturbance footprint;
- Where it is identified that the environmental performance of the Development is not meeting the objectives of the CEMP; and/or
- At the request of a relevant regulatory authority.

As advised in Table 10 the approved Environmental Representative has the authority to approve minor amendments to the CEMP. For the purpose of this CEMP a "minor" amendment is defined as:

- An amendment involving a minor error, misdescription or miscalculation; and/or
- An amendment that maintains compliance with the EIS (SLR 2015a), RTS (SLR 2015b) and Development Consent SSD 6882; and/or
- An amendment that is necessary to maintain consistency and/or compliance with changing legislative requirements (for example, an amendment to an Act); and/or
- An amendment to the roles and responsibilities listed in Table 10 that does not involve deleting any responsibilities.

All employees and contractors will be informed of any revisions to the CEMP by Site Management during a toolbox talk.

10.0 References

AS 1940-2004 Storage and Handling of Flammable and Combustible Liquids

Department of Environment and Climate Change (2007) *Storing and Handling Liquids: Environmental Protection – Participants Handbook*

Department of Environment and Climate Change (2009) *Interim Construction Noise Guideline*

Department of Environment, Climate Change and Water (2010) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*

Department of Infrastructure, Planning and Natural Resources (2004) *Guideline for the Preparation of Environmental Management Plans*

Environment Protection Authority (2008) *Waste Classification Guidelines*

Environment Protection Authority (1997) *Environmental Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin*

Landcom (2004) *Managing Urban Stormwater – Soils and Construction Vol. 1*

National Transport Commission (2014) *Australian Code for the Transport of Dangerous Goods by Road & Rail*

National Uniform Drillers Licensing Committee (2012) *Minimum Construction Requirements for Water Bores in Australia, Third Edition*

PSA Consulting (2023) *The Euroley Poultry Farm SSD-6882 Modification Application*

SLR Consulting Australia (2015a) *Euroley Poultry Production Complex SSD 6882, Environmental Impact Statement.*

SLR Consulting Australia (2015b) *Euroley Poultry Production Complex SSD 6882, Response to Submissions.*

SLR Consulting Australia (2015c) *Euroley Poultry Production Facility Biodiversity Offset Strategy.*

Appendix A Construction Soil and Water Management Plan

Construction Environmental Management Plan

Narrandera Poultry Production Complex
Sturt Highway, Narrandera NSW

ProTen Holdings Pty Limited

SLR Project No.: 610.v15489.00000

24 July 2024

Construction Soil and Water Management Plan

Narrandera Poultry Production Complex

ProTen Pty Limited

PO Box 1746
North Sydney NSW 2059

Prepared by:

SLR Consulting Australia

10 Kings Road, New Lambton NSW 2305,
Australia

SLR Project No.: 630.031391.00004

22 July 2024

Revision: v0.1

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
630.031391.00004.CSWMP_v0.1	22 July 2024	Walter Rowlands	Paul Delaney	Paul Delaney
610.15489-Final V2	16 November 2017	Eryn Bath	Eryn Bath	Eryn Bath
610.15489-Final	27 October 2015	Ben Latimore	Andrew Behrens / Eryn Bath	Eryn Bath
610.15489-Draft 1	15 October 2015	Ben Latimore	Andrew Behrens	Andrew Behrens

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ProTen Pty Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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Appendices

1.0 Introduction

1.1 Background

The Narrandera Poultry Production Complex (the "Development") was granted Development Consent SSD 6882 on 9 November 2015 by the Planning Assessment Commission of NSW (PAC) to be established within a rural property approximately 26 kilometres (km) west of Narrandera in southwestern New South Wales (NSW). The Narrandera Poultry Production Complex applied for a Modification to Development Consent SSD 6882 and was accepted on 21st of March 2024 by the Department of Planning, Housing and Infrastructure (DPHI). Modification 1 to SSD 6882 included updates to the consent in relation to:

- Increase maximum number of broilers;
- Change bird placement regime; and
- Allow use of A-Double Heavy Vehicles.

The Development comprises five poultry production units (PPU) or farms where broiler birds are grown for human consumption, as shown on **Figure 1** and **Figure 2**. Each PPU comprises 16 tunnel-ventilated fully-enclosed climate-controlled poultry sheds, with associated support infrastructure and staff amenities.

This Construction Soil and Water Management Plan (CSWMP) has been prepared by SLR Consulting Australia Pty Ltd (SLR), on behalf of ProTen Pty Limited (ProTen), for the Narrandera Poultry Production Complex as approved under SSD 6882.

For the purposes of this document, the Development is described in:

- The *Environmental Impact Statement* (EIS) (SLR, 2015a) and the appendices contained within; and
- The *Response to Submissions* (RTS) (SLR, 2015b) and the appendices contained within.

This CSWMP has been prepared as an appendix to the Construction Environmental Management Plan (CEMP) and is to be read in conjunction with the CEMP along with:

- The standard erosion and sediment control (ESC) design drawings (as adapted from the 'Blue Book' (Landcom, 2004)) contained in **Appendix A**; and
- The site-specific erosion and sediment control plans (ESCPs), which were prepared as part of the Development's civil design (Lance Ryan Consulting Engineers), contained in **Appendix B**.

Note: an ESCP has been prepared for the intersection upgrade works between the Sturt Highway and the site access as part of SSD 6882, but has not been included in this CSWMP as the proposed design (and by association the ESCP) is still under review by Transport for NSW (TfNSW) and therefore potentially subject to change.

While the CSWMP provides a general framework for the overall management of soil and water resources during construction activities at the Development, the ESCPs in **Appendix B** illustrate the nature and location of intended erosion and sediment control structures, relevant design specifications and sequencing.

The controls and management procedures within this CSWMP will minimise the potential for off-site impacts to surface water resources and ensure compliance with the relevant conditions of Development Consent SSD 6882 and relevant legislation.

1.2 Scope

This CSWMP applies to the land and activities associated with construction at the Development. This includes lands impacted by or utilised for construction of the following:

- The Poultry Production Units (PPUs);
- Temporary and permanent staff amenities and associated facilities;
- Temporary and permanent access roads; and
- Laydown areas.

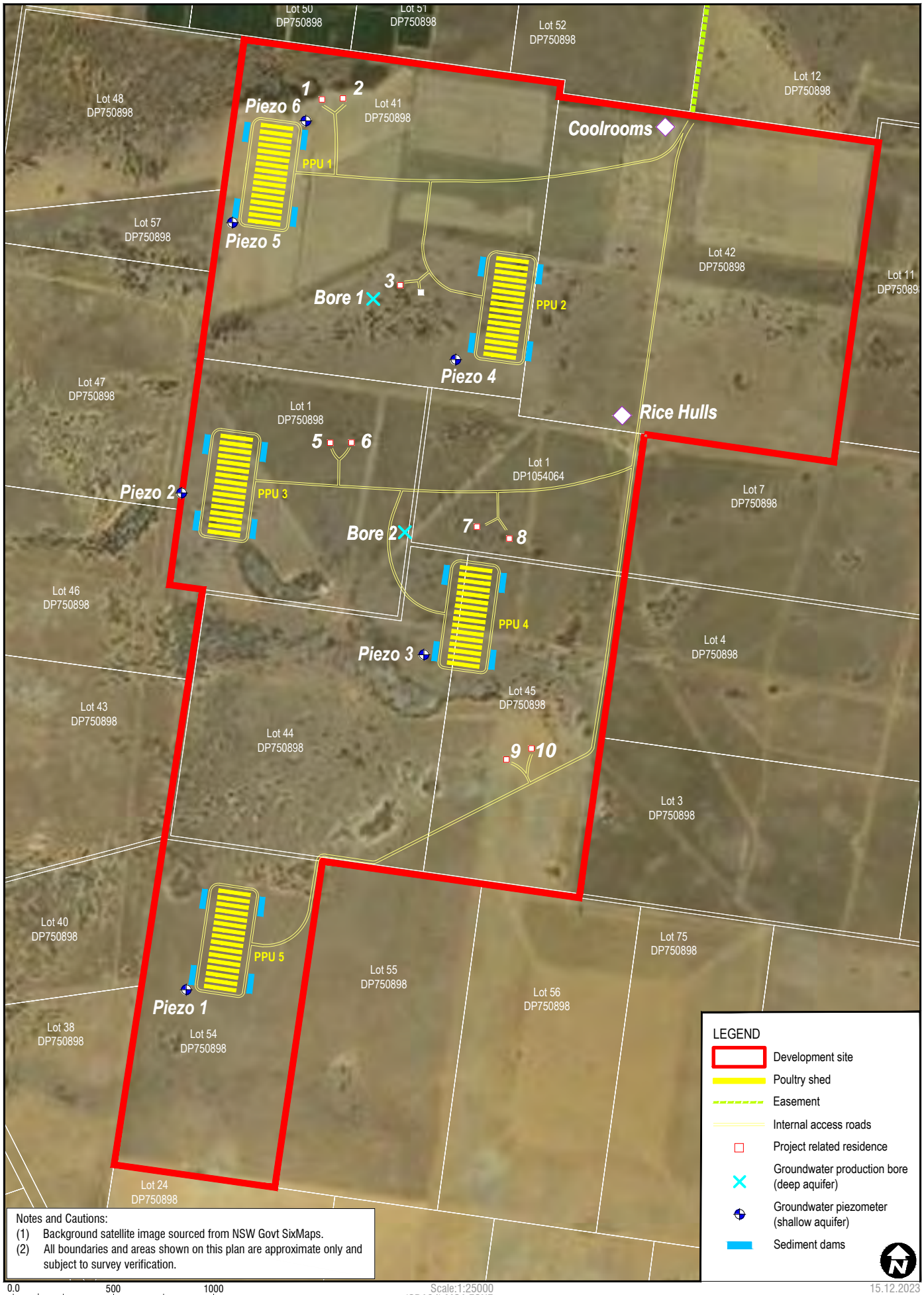
The CSWMP details the various soil and surface water management and mitigation measures to be considered and implemented during the site establishment phase, construction phase and post construction phases for the Development.

Construction activities could potentially impact on water resources through changes to groundwater recharge as a result of soil compaction, loss of ground cover and generation of sediment-laden runoff. However, given that the disturbance area is relatively small (in comparison to the overall area of the Development Site and the residual area that will remain undisturbed), changes to the rainfall runoff/recharge patterns are considered to be negligible. As such, groundwater recharge has not been addressed within this CSWMP.

1.3 Objectives

The objectives of the CSWMP are to:

- Outline relevant ESC performance criteria and design guidelines;
- Summarise the minimum standards to be implemented to minimise the potential impacts of erosion and sedimentation to local water resources;
- Summarise the minimum standards to be implemented to minimise the risk of an uncontrolled spill of any potentially environmentally harmful substances in accordance with the Pollution Incident Response Management Plan;
- Document how the CSWMP shall be implemented;
- Establish an inspection framework for proactive management of ESC measures;
- Outline a process for reporting and reviewing requirements; and
- Detail the relevant responsibilities associated with ESC measures.



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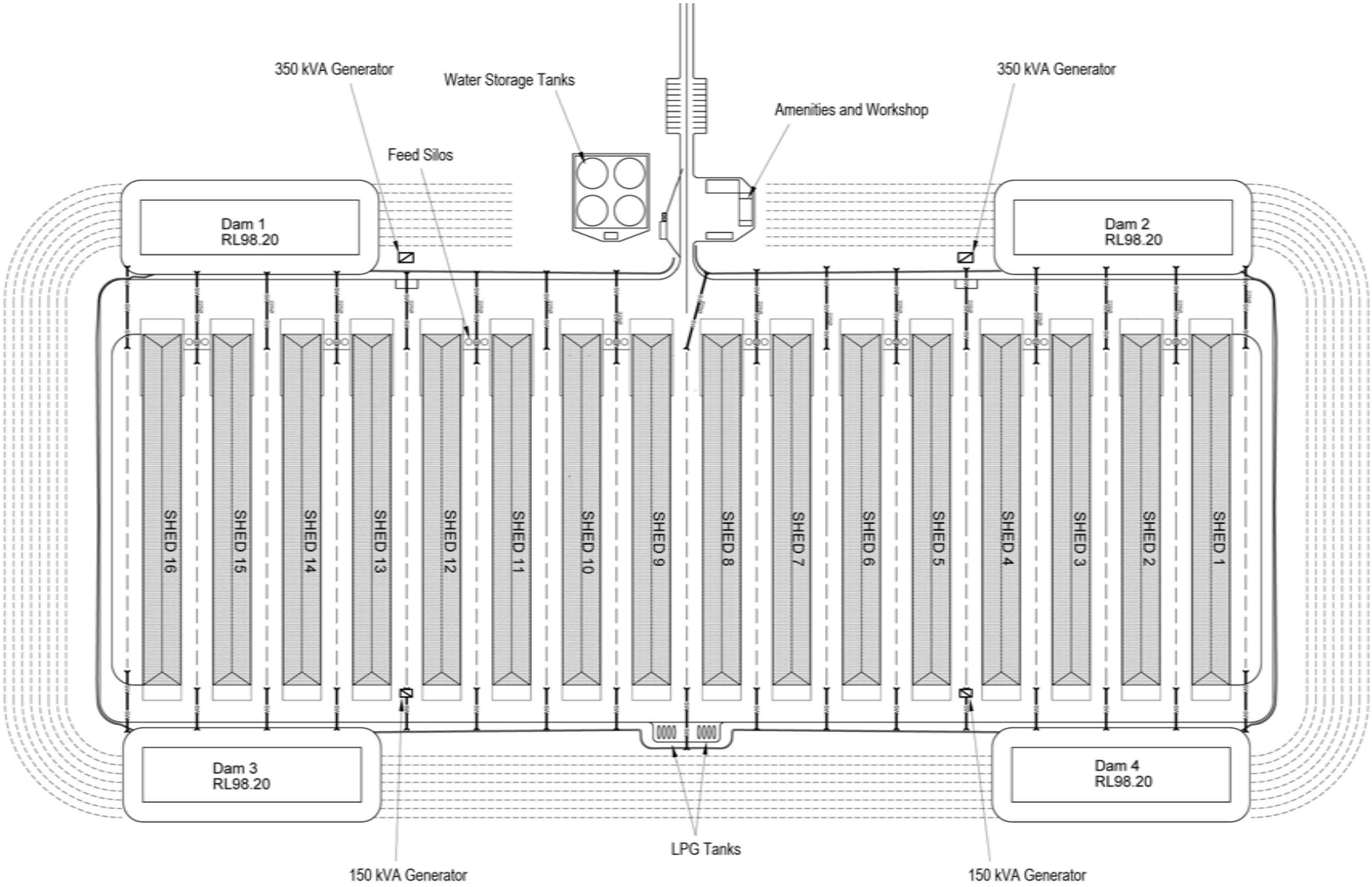
DEVELOPMENT LAYOUT

FIGURE 1



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POULTRY PRODUCTION UNIT LAYOUT

FIGURE 2

2.0 Regulatory Compliance

2.1 Legislation

State legislation and policies that are relevant to the preparation of this CSWMP includes:

- *Protection of the Environment Operations Act* 1997*;*
- *Water Management Act* 2000*;*
- *Water Act* 1912*;*
- *Soil Conservation Act* 1938*;*
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Australian and New Zealand Environment and Conservation Council [ANZECC] and Agriculture and Resource Management Council of Australia and New Zealand [ARMCANZ], 2000);
- *NSW State Groundwater Policy Framework Document* 1997*;*

2.2 Development Consent

The conditions imposed by Development Consent SSD 6882 relating to soil and water management during construction activities at the Development are listed in **Table 1**.

Table 1: Relevant Development Consent Conditions

Condition No.	Condition
B37	**Construction Soil and Water Management** Soil and water management measures consistent with *Managing Urban Stormwater – Soils and Construction Vol. 1* (Landcom, 2004) (the Blue Book) shall be employed during the construction of the development to minimise soil erosion and the discharge of sediment and other pollutants to land and/or waters.
B39	**Stormwater** The Applicant must design, construct, operate and maintain all stormwater and water storage facilities on site with the internal surfaces equivalent to, or better than, a clay liner of a minimum permeability of 1 x 10^{-9} metres per second and a clay liner thickness of no less than 600mm, or an equivalent alternative.
B43	**Bunding** The Applicant shall store all chemicals, fuels and oils used on site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participants Handbook*.
B44	**Domestic Effluent** The Applicant shall obtain the relevant license/approval from Council under section 68 of the *Local Government Act* 1996 prior to the commencement of construction, for all domestic effluent disposal and management systems on site.
C1	**Construction Environmental Management Plan** The Applicant shall prepare a Construction Environmental Management Plan to the satisfaction of the Secretary. The Plan must: (a) be approved by the Secretary prior to the commencement of construction; (b) identify the statutory approvals that apply to the Development; (c) outline all environmental management practices and procedures to be followed during construction works associated with the Development;

Condition No.	Condition
	(d) describe all activities to be undertaken on the site during construction of the Development, including a clear indication of construction stages; (e) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts; (f) describe the roles and responsibilities for all relevant employees involved in construction works associated with the Development; and (g) include the management plans under Condition C2 of this consent:
C2	As part of the Construction Environmental Management Plan for the Development, required under condition C1 of this consent, the Applicant shall include the following: a) Dust Management (see Condition B6 and B7); b) Traffic Management (see Condition B16); c) Construction Soil and Water Management (see Condition B37); and d) Community Consultation and Complaints Handling.
C3	The Applicant shall carry out the construction of the Development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.
Appendix 1: Management and Mitigation Measures	**Surface Water and Flooding** • Temporary erosion and sediment control structures, such as hay bales and silt fencing, will be used during construction and regularly maintained to prevent soil loss and sediment-laden runoff. • All clean extraneous surface water from upslope will be diverted around areas of disturbance.

2.3 Guidelines

All ESC measures in this CSWMP have been designed in accordance with the following guidelines:

- *Managing Urban Stormwater: Soils and Construction Volume 1, 4th edition* (Landcom 2004).
- *Managing Urban Stormwater: Soils and Construction Volume 2A: Installation of Services* (DECCW 2008); and
- *Managing Urban Stormwater: Soils and Construction Volume 2C: Unsealed Roads* (DECCW 2008).

Note: These guidelines are commonly referred to as “the Blue Book”.

3.0 Accountabilities

The key personnel responsible for environmental management during the construction of the Development are listed in **Table 2**.

Table 2: Roles and Responsibilities

Roles	Responsibilities
ProTen Site Management / Construction Contractor	• Overall responsibility for environmental management and compliance with the Development Consent and relevant legislation; • Coordinate environmental inspections and reporting and authority liaisons; • Record, notify, investigate and respond to any complaints and/or enquiries and, where necessary, develop and implement corrective actions; • Record, notify, investigate and respond to any environmental incidents and, where necessary, develop and implement corrective actions; • Oversee the implementation of the CEMP/CSWMP and provide adequate resources to enable implementation of the CEMP/CSWMP; and • Provide adequate environmental inductions/training to employees and contractors regarding their requirements under the CEMP/CSWMP.
Environmental Representative	In accordance with condition C15 of Development Consent SSD 6882, a suitably qualified and experienced Environmental Representative, approved by the Secretary, will be employed during the construction of the Development. The Environmental Representative will: • Be the principal point of advice in relation to the environmental performance; • Monitor the implementation of the CEMP/CSWMP and report to ProTen Site Management; • Provide advice to ProTen Site Management on matters specified in the Development Consent and the CEMP/CSWMP relating to environmental performance and impacts; • Approve/reject minor amendments to the CEMP/CSWMP; • Direct reasonable steps be taken to avoid or minimise any unintended or adverse environmental impacts, and, failing the effectiveness of such steps, direct that the relevant actions cease immediately should an adverse impact on the environment be likely to occur; and • Be consulted in responding to the community concerning environmental performance where the resolution of points of conflict between ProTen and the community is required.
All employees and contractors	• Ensure familiarity, implementation and compliance with the CEMP/CSWMP; • Support ProTen's commitment to environmental management and compliance; • Work in a manner that will not harm the environment or impact on surrounding receptors; • Report all environmental incidents and complaints to ProTen Site Management without delay; and • Report any inappropriate construction practices and/or environmental management practices to ProTen Site Management without delay.

4.0 Soil and Water Management Principles

The following general principles shall apply for the management of erosion and sedimentation across the Development Site during construction activities:

- Site personnel will investigate site features prior to disturbance (e.g., landform, slope/topography, catchment area, soil limitations, downstream sensitive areas, vegetation cover);
- Plan and coordinate works in order to limit the disturbance area through staging of works;
- Install ESC structures prior to disturbance activities commencing;
- Conducting best practice land clearing procedures for all proposed disturbance areas;
- Install appropriate diversions to ensure clean water is diverted away from disturbance areas;
- Appropriately manage topsoil for future rehabilitation activity;
- If soil stockpiles are required, then these stockpiles will be placed in areas away from roadways and other drainage lines. Suitable sediment control measures will be installed downslope of soil stockpiles and upslope clean water runoff diverted (where possible);
- Where the disturbance area is greater than 2,500 square metres (m^2), has an annual calculated soil loss greater than 150 cubic metres per year (m^3/year) or where alternative ESC measures do not provide sufficient risk mitigation, sediment-laden water should be directed to an appropriately sized sediment basin;
- All sediment basins must be drawn down in the required management period (typically 5 days). The water should be preferentially utilised for construction activities or disposed in an environmentally responsible manner;
- Effective dust suppression measures (where required);
- Visual inspections of all vehicles leaving the site will be undertaken and where it is deemed possible that sediment could be tracked onto roads, the vehicles shall be washed down in a suitable location such that the wash down water reports to appropriate sediment controls. Street sweeping will be used as an additional contingency measure where sediment is observed on roads;
- Undertake progressive rehabilitation to stabilise disturbance areas as soon as reasonably practicable to reduce the extent of exposed soils;
- Minimise erosion within disturbed and rehabilitation areas by installing appropriate ESC measures; and
- Regularly inspect ESC structures to ensure their suitability and correct installation.

5.0 Hydrological Setting and ESC Design

5.1 Existing Catchment

The Development Site (and surrounding land) is relatively flat, with the soils being significantly modified by historic land clearing and long-term agricultural production activities. There are no natural surface water bodies or tributaries located within the bounds of the Development Site and the Development is removed from any identifiable watercourses, significant drainage features and wetlands. Two minor topographical depressions that act as minor drainage features traverse the Site. These features have no formed banks and are only distinguishable as drainage features by their location topographically and vegetation present. There are some irrigation channels within the northern extent of the Site.

The majority of the Site is devoid of significant vegetation, primarily comprising paddocks that have been consistently cropped and grazed for years. The northwest corner of the Development Site abuts the “Banandra” portions of the South West Woodland Nature Reserve and Murrumbidgee Valley National Park.

5.2 Meteorology

The Development Site is located within the Riverina region of southwestern NSW, which is generally dominated by a dry semi-arid climate and characterised by very warm to hot summers and cool to mild winters. Rainfall is, on average, relatively evenly distributed throughout the year. Summer rainfall tends to occur mainly from localised thunderstorms, with more consistent rainfall occurring in the winter months. The region is quite susceptible to periods of drought.

Evaporation exceeds mean monthly rainfall throughout the year. Evaporation is greatest during the warmer months of November to February (inclusive).

5.3 Soil Types

The majority of soils within the Development Site have been significantly modified by historic land clearing and long-term agricultural production activities. In the absence of detailed soil landscape mapping data, general information on soil types has been sourced from the Land and Soil Capability (LSC) Mapping of NSW managed by the Department of Climate Change, Energy, the Environment and Water – Biodiversity, Conservation and Science (BCS) (formerly the Department of Planning and Environment – Biodiversity and Conservation Division).

The Development Site is broadly mapped as LSC Class 4 land (moderate capability land), which is defined as “land which has moderate to high limitations for high impact land use”. Based on this information it is anticipated that the soils across the Development Site may present an erosion hazard and are likely to be dispersive in nature (Type D/F Soils).
Core samples extracted during drilling of the test groundwater bores for the EIS showed the top 10 metres (m) of soil comprised of silty clays.

In the absence of detailed site-specific soil testing, the soils within the Site are assumed to be of Type D/F for the purposes of ESC management. If detailed soil assessment and characterisation is undertaken and the soils are determined to be of a lower erosion risk then a lower standard of ESC management may be adopted pending consultation with the relevant government agencies.

5.4 Site-Specific Design Criteria

This section details the relevant design criteria to be used for sizing sediment basins and designing ESC structures based on information sourced from the Blue Book. Note, as per **Section 5.3**, these design criteria are based on the assumption that soils are of high erosion potential and it is assumed the soils are Type D/F.

Table 3 (as taken from the Blue Book Vol. 2C) provides the recommended minimum design criteria for temporary ESC measures. While Vol. 2C is for construction of unsealed roads, this represents the most applicable design criteria with respect to the nature of the Development and covers the requirements set out for general urban construction sites as detailed in Volume 1 of the Blue Book.

Table 3: Design Criteria for Temporary ESC Measures

Table 6.1 Design storm events – minimum average recurrence interval (ARI) for temporary erosion and sediment control measures

	Duration of disturbance < 6 months		Duration of disturbance 6–12 months	
Control measure descriptions	**Standard design**	**Sensitive environment[1]**	**Standard design**	**Sensitive environment[1]**
Temporary drainage (erosion) control				
(e.g. diversion banks, perimeter banks, catch drains, level spreaders, check dams, batter drains and chutes) should be designed to have a non-erosive hydraulic capacity (excluding freeboard) sufficient to convey the nominated design storm event	2-year ARI	5-year ARI	5-year ARI	10-year ARI
Temporary sediment control				
(e.g. sediment fences, stacked rock sediment traps etc.) in small catchments where used as a 'last line of defence' (i.e. without a sediment basin down-slope) should be constructed to remain structurally sound in the nominated design storm event	2-year ARI	5-year ARI	5-year ARI	10-year ARI
Type C Sediment retention basins				
Designed to achieve required water quality for flows up to:	0.5 x 1-year ARI	1-year ARI	1-year ARI	1-year ARI
Embankment and spillway	10-year ARI	20-year ARI	20-year ARI	50-year ARI
Type D Sediment retention basins				
Basic volume based on nominated percentile rainfall depth for 5-day duration[2] storm:	75th percentile	80th percentile	80th percentile	85th percentile
Embankment and spillway	10-year ARI	20-year ARI	20-year ARI	50-year ARI

1 A 'sensitive environment' is one with a high conservation value, or that supports human uses of water that are particularly sensitive to degraded water quality.

2 Storm duration can be modified for different management regimes – see **1**: section 6.3.4

Construction works associated with Modification 1 are envisioned to commence in late 2024 to early 2025, pending consultation with TfNSW. The controls adopted will depend on the anticipated timeframe of disturbance for the area of interest.

Table 4 contains the relevant rainfall depths as sourced from the Blue Book which are used to design sediment basins according to the adopted design criteria.

Given the proximity of the Development from sensitive receivers, the 75th percentile storm depth may be adopted for design when the duration of disturbance is likely to be six months or less in accordance with the Blue Book. When the duration of disturbance is likely to exceed six months, the 80th percentile storm depth is recommended.

Table 4: Design Rainfall Depths for the Development Site

Rainfall Percentile	5-Day Rainfall Depth (mm)
75th	13.8
80th	16.4
85th	20.6
90th	25.4
95th	34.6

Source: Blue Book Vol. 1.

Table 5 lists the relevant volumetric runoff coefficients to be used in sizing sediment basins based on the adopted rainfall depth taken from **Table 4**.

Table 5: Runoff Coefficients for Disturbed Areas (Based on Design Rainfall Depth)

Design Rainfall Depth (mm)	Volumetric Runoff Coefficient
<20	0.39
21-25	0.5
26-30	0.56
31-40	0.64
41-50	0.69
51-60	0.74
61-80	0.79
Impervious	0.9

Source: Blue Book Vol. 1.

Table 6 provides the typical sediment basin design criteria to be adopted for the Development.

Table 6: Typical Sediment Basin Design Criteria

Parameter	Requirement	Source
Sediment basin type	Type D / F	Based on inferred soil type data (see **Section 5.3**).
Settling zone	See **Table 4** for design rainfall and **Table 5** for volumetric runoff coefficients	Blue Book Vol. 1
Sediment storage zone (disturbed slopes <13%)	2-month soil loss based on the Revised Universal Soil Loss Equation (RUSLE)	Based potential erosion hazard being "low" for slopes <13% (Blue Book Vol. 1, Figure 4.6)

Parameter	Requirement	Source
Basin length:width ratio	3:1 minimum (unless site constraints dictate otherwise)	Blue Book Vol. 1 Standard Drawing SD6-4
Minimum freeboard	750 mm between spillway and basin crest	
Batter slopes	1V:2H (internal) 1V:3H (external)	
Minimum water depth	1.5 m from toe of basin wall to crest of spillway (0.6 m for settling zone)	
Entry / exit points	To be stabilised to prevent excessive erosion	Blue Book Vol. 1

Source: Blue Book Vol. 1.

The Revised Universal Soil Loss Equation (RUSLE) is used to calculate the sediment zone volume of sediment basins for disturbance areas. Values to be used in the equation as derived from the Blue Book and site-specific data to be used in the calculation are presented in **Table 7**.

Table 7: Parameters to be adopted in RUSLE

Parameter	Value	Source
R (rainfall erosivity)	360	Based on Development location using R-Factor maps contained within Blue Book Vol. 1
K (soil erodibility)	0.05	Conservative value inferred from data provided in Appendix C of the Blue Book Vol. 1
P (erosion control practice)	1.3	Blue Book Vol. 1 - assumes compacted surfaces
C (cover factor)	1.0	Blue Book Vol. 1 - assumes no ground cover
A (area)	Site-specific	N/A
LS (slope length/gradient)	Site-specific (**Table 8**)	Table A1 Blue Book Vol.1

Source: Blue Book Vol. 1.

Table 8 provides a table for calculating the slope length (LS) factor for use in the RUSLE as defined in the Blue Book.

Table 8: Slope Length (LS) Factor for Use in the RUSLE

Slope ratio	Slope gradient (%)	Slope length (m)														
		5	10	20	30	40	50	60	70	80	90	100	150	200	250	300
100:1	1	0.09	0.11	0.13	0.15	0.16	0.17	0.18	0.19	0.19	0.20	0.20	0.23	0.24	0.26	0.27
50:1	2	0.14	0.18	0.24	0.28	0.31	0.34	0.36	0.39	0.41	0.43	0.44	0.52	0.58	0.64	0.69
33.3:1	3	0.17	0.24	0.34	0.41	0.47	0.52	0.57	0.61	0.65	0.69	0.72	0.87	1.00	1.11	1.22
25:1	4	0.21	0.30	0.44	0.54	0.63	0.71	0.78	0.85	0.91	0.97	1.03	1.26	1.47	1.65	1.82
20:1	5	0.24	0.36	0.54	0.68	0.80	0.91	1.01	1.10	1.19	1.27	1.35	1.70	2.00	2.28	2.53
16.6:1	6	0.28	0.42	0.64	0.81	0.97	1.11	1.24	1.36	1.47	1.58	1.68	2.14	2.54	2.91	3.25
12.5:1	8	0.34	0.53	0.83	1.08	1.31	1.51	1.70	1.88	2.05	2.21	2.37	3.07	3.70	4.28	4.82
10:1	10	0.42	0.68	1.09	1.44	1.75	2.04	2.31	2.56	2.81	3.04	3.27	4.06	4.94	5.75	6.52
8.3:1	12	0.52	0.85	1.39	1.85	2.27	2.66	3.02	3.37	3.70	4.02	4.33	5.77	7.07	8.28	9.42
7.1:1	14	0.62	1.02	1.69	2.26	2.79	3.28	3.74	4.18	4.61	5.02	5.42	7.27	8.95	10.52	12.01
6.3:1	16	0.71	1.19	1.98	2.67	3.31	3.90	4.46	5.00	5.52	6.02	6.51	8.78	10.86	12.81	14.65
5.5:1	18	0.80	1.35	2.27	3.07	3.82	4.51	5.17	5.81	6.42	7.02	7.59	10.30	12.78		
5:1	20	0.89	1.50	2.55	3.47	4.32	5.12	5.88	6.61	7.32	8.01	8.68	11.92	14.84		
4:1	25	1.09	1.88	3.23	4.43	5.54	6.59	7.60	8.57	9.51	10.43	11.32				
3.3:1	30	1.28	2.23	3.86	5.32	6.69	7.99	9.23	10.43	11.60	12.74	13.85				
2.5:1	40	1.61	2.83	4.98	6.92	8.74	10.48	12.15	13.77							
2:1	50	1.88	3.33	5.89	8.22	10.42	12.52	14.55								

Source: Blue Book Vol. 1 Table A1.

5.5 Calculating Sediment Basin Capacity

As per the Blue Book, a sediment basin may not be required for small or flat sites. As a general rule, a sediment basin is required where the total disturbance area is greater than 2,500 m^2, the total annual calculated soil loss is greater than 150 m^3/year, or where other ESC measures do not provide sufficient risk mitigation to minimise erosion and sedimentation.

The total required sediment basin capacity is the sum of the settling zone volume plus the sediment storage zone volume. The relevant equations used to calculate the sediment basin capacity are detailed in **Table 9**.

Table 9: Sediment Basin Capacity Calculation Methodology

Required Sediment Basin Capacity = Setting Zone Volume + Sediment Zone Volume
Settling Zone Volume (*Type D/F*) (m^3) = 10 x C_v x A x R (y%ile, 5-day)
Where: 10 = a unit conversion factor C_v = volumetric runoff coefficient A = area of disturbance (hectares) R = design rainfall depth (mm)
Sediment Zone Volume (m^3) = (0.17 x A x (R x K x LS x 1.3 x 1.0)) / 1.3
Where: 0.17 = one sixth of the computed average annual soil loss 1.3 = bulk density of deposited sediment (assumed where no site-specific analysis available) A = area (hectares) R = rainfall erosivity factor K = soil erodibility factor LS = slope length factor

6.0 General Management and Mitigation Measures

As aforementioned, this CSWMP has been prepared as an appendix to the CEMP and is to be read in conjunction with the CEMP together with the:

- Standard ESC design drawings (adapted from the Blue Book) contained in **Appendix A**; and
- Site-specific ESCPs, which were prepared as part of the Development's civil design (Lance Ryan Consulting Engineers), contained in **Appendix B**.

Note: an ESCP has been prepared for the intersection upgrade works between the Sturt Highway and the site access as part of SSD 6882, but has not been included in this CSWMP as the proposed design (and by association the ESCP) is still under review by TfNSW and therefore potentially subject to change.

While the below sections provide a general framework for the overall management of soil and water resources during construction activities at the Development, the ESCPs in **Appendix B** illustrate the nature and location of intended erosion and sediment control structures, relevant design specifications and sequencing.

6.1 Inductions and Training

ProTen Site Management will ensure that all employees and contractors involved in construction are suitably inducted and trained prior to commencing any work on site. Training in relation to environmental responsibilities and implementation of the CEMP, including this CSWMP, will take place initially through the site induction and then on an on-going basis through 'toolbox talks'.

6.2 General ESC Practices

The general ESC practices that will be adhered to during construction activities in accordance with the requirements of the Blue Book and the site-specific ESCPs (**Appendix B**) are listed in **Table 10**.

Table 10: General ESC Practices

Management and Mitigation Measure	Responsibility	Timing
All drainage, erosion, sedimentation and water pollution control systems and facilities will be located, designed, constructed operated and maintained to meet the requirements of the relevant authorities including the NSW Environment Protection Authority (EPA).	ProTen Site Management / Construction Contractor	Ongoing during construction
Where daily weather forecasts predict weather conditions which may pose an environmental risk, the environmental controls shall be inspected to help eliminate potential erosion and sedimentation impacts.	ProTen Site Management / Construction Contractor	Ongoing during construction
Where practicable, water captured within construction zones will be stored and reused in construction (i.e., dust suppression).	ProTen Site Management / Construction Contractor	During construction
All runoff from disturbed areas shall be treated for removal of sediment prior to leaving site.	ProTen Site Management / Construction Contractor	During construction
If runoff from disturbance areas is potentially contaminated with other pollutants (i.e., hydrocarbons), the water shall be collected to prevent it from leaving site. This potentially	ProTen Site Management / Construction Contractor	During construction

Management and Mitigation Measure	Responsibility	Timing
contaminated water shall be appropriately managed i.e., in accordance with the PIRMP.		
Where the disturbance area is greater than >2500 m^2 or has an annual soil loss >150 m^3/year (calculated using RUSLE) or where other ESC measures do not adequately mitigate the risk of erosion and sedimentation, sediment-laden runoff must be directed to appropriately sized sediment basin(s).	ProTen Site Management / Construction Contractor	Design phase

6.3 Site Access

General requirements for site access during construction activities to ensure minimal impacts to off-site soil and water resources are listed in **Table 11**.

Table 11: Site Access Requirements

Management and Mitigation Measure	Responsibility	Timing
Site ingress and egress will be restricted to established roads/tracks with appropriate ESC measures in place.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
The site entry/exit point will be appropriately managed so that vehicles leaving the construction site are adequately free from mud, dirt, sediment and other materials. This is to minimise the volume of material tracked on to public roads.	All personnel driving on site	Ongoing throughout construction
Runoff from access roads and stabilised entry/exit points must report to an appropriate sediment control device for treatment.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
If any materials are transported or spilled on to public roads, the materials are to be handled in accordance with the PIRMP.	All employees and contractors	Ongoing throughout construction
Vehicle movements on disturbed areas shall be minimised during wet weather periods.	ProTen Site Management / Construction Contractor	Ongoing pending weather
Appropriate drainage controls should be installed for all access roads in accordance with Blue Book Vol. 2C: Unsealed roads.	ProTen Site Management / Construction Contractor	Prior to construction
Access roads are to be maintained so that dust-generation is minimised.	ProTen Site Management / Construction Contractor	Ongoing throughout construction

6.4 Site Establishment

Site establishment is an important phase with respect to establishing surface water controls and protecting soil and water resources. General requirements relating to site establishment activities are listed in **Table 12**.

Table 12: Site Establishment Requirements

Management and Mitigation Measure	Responsibility	Timing
The disturbance boundaries of each construction site shall be clearly identified by temporary demarcation. The demarcation must be maintained for the duration of work.	ProTen Site Management / Construction Contractor	Prior to construction
All required ESC measures shall be installed prior to commencement of work. This includes temporary sediment controls for the disturbance activities associated with construction of any required sediment basins.	ProTen Site Management / Construction Contractor	Prior to construction

Management and Mitigation Measure	Responsibility	Timing
Where practicable, runoff from undisturbed 'clean' catchments shall be diverted around disturbance areas via suitably stabilised diversion drains.	ProTen Site Management / Construction Contractor	Prior to construction
The outlets of any clean water diversions shall be stabilised as required (i.e., construction of level sill/spreader) or designed to spill into a stable, well vegetated area such as to not cause erosion.	ProTen Site Management / Construction Contractor	Prior to construction
Diversion drains shall be installed and adequately lined/stabilised before adjacent ground is disturbed and any excavation commences.	ProTen Site Management / Construction Contractor	Prior to construction
Areas of soil disturbance shall be limited to the minimum extent required for construction activities.	ProTen Site Management / Construction Contractor	Prior to construction

6.5 Vegetation Clearing

Undertaking timely, best practice clearing of vegetation is integral to the overall management of soil and water resources and presents an opportunity for better quality future rehabilitation. General requirements for vegetation clearing are listed in **Table 13**.

Table 13: Vegetation Clearing Requirements

Management and Mitigation Measure	Responsibility	Timing
Clearing shall be phased where practical and only undertaken immediately prior to construction activities commencing in the area.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
No land clearing shall be undertaken unless adequate ESC measures have been installed. The exception to this is when clearing is required for the purpose of installing such measures.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Clearing shall be limited to the smallest practicable area possible to allow for any essential construction activity and shall be within the disturbance boundaries.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Trees that are to remain shall be clearly marked and compaction of the ground within the drip line of the trees avoided.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Cleared vegetation shall be salvaged and stockpiled. Vegetation may be either mulched and incorporated into the topsoil, stockpiled separately (i.e., windrowed to form sediment retention berms) or large timbers re-spread over rehabilitation areas to provide additional habitat.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing

6.6 Topsoil Stripping and Stockpile Management

Topsoil is an important component of final rehabilitation and should be appropriately stockpiled for future rehabilitation activity. General requirements for topsoil management are listed in **Table 14**.

Table 14: Topsoil Stripping and Stockpile Management Requirements

Management and Mitigation Measure	Responsibility	Timing
Areas to be stripped of topsoil shall be appropriately marked with survey pegs with stripping depths normally between 50 mm to 150 mm.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Where possible, topsoil shall be stripped in a moist condition to reduce deterioration in topsoil quality and dust generation.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Stripping of topsoil shall be limited to the design footprint (including designated access roads).	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Strip and stockpile topsoil separately for later use in rehabilitation.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Topsoil will be stockpiled within the disturbance footprint and in accordance with the following conditions: • Blue Book Standard Drawing SD4-1 (including sediment fence downslope and upslope catch drains if upslope catchment >1,500 m^2); • Located clear of the drip lines of trees. • Be shaped to heights of less than 3 m and have maximum batter slopes of 1V:2.5H; and • Positioned in an area away from construction activities so that it does not have to be relocated, where possible.	ProTen Site Management / Construction Contractor	During topsoil stripping
Topsoil shall only be stockpiled when no areas ready for rehabilitation are available for direct placement and spreading.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
If the topsoil is to be stockpiled for >10 days, it shall be seeded immediately to establish vegetation and limit weed infestation (i.e., use approved sterile cover crop) or alternate measures installed to reduce the C-factor to <0.1 (60% ground cover).	ProTen Site Management / Construction Contractor	During topsoil stripping
Topsoil can be formed into bunds around the perimeter of the site to act as clean water diversions. Where this approach is taken, the topsoil bunds shall be adequately compacted but have a roughened surface and seeded with the approved seed mix (which includes sterile, fast growing cover crops) within 2 days of forming the topsoil bunds and prior to rainfall (to achieve sufficient ground cover. Alternatively, the bunds can be lined (i.e., geofabric) to ensure the water remains 'clean'.	ProTen Site Management / Construction Contractor	During topsoil stripping
All stockpiles shall be free draining.	ProTen Site Management / Construction Contractor	During topsoil stripping
Diversion banks shall be established upslope of any stockpiles to prevent run-on surface water causing erosion where the upslope catchment exceeds 1,500 m^2.	ProTen Site Management / Construction Contractor	Prior to topsoil stripping

Management and Mitigation Measure	Responsibility	Timing
Catch drains/banks or sediment fences shall be established down slope of stockpiles to prevent off-site transport of sediment.	ProTen Site Management / Construction Contractor	During topsoil stripping

6.7 Earthworks

Earthworks may extend to cut/fill of construction zones, foundation construction, topsoil stripping, subsoil excavation, trench excavation, subsoil compaction and import of fill for foundation construction. General requirements for earthworks with respect to soil and water management are listed in **Table 15**.

Table 15: Earthworks Requirements

Management and Mitigation measure	Responsibility	Timing
Erosion and sediment control measures to be implemented on site during construction are likely to include: • Mulching. • Surface roughening. • Temporary ground cover (e.g., geofabric, soil stabilisers). • Soft and hard armour lined diversion drains. • Rock check dams. • Energy dissipaters. • Temporary sediment retention devices (sediment fence, straw bales, sand bags, coir logs). • Stabilised access/shaker ramps, wash down bays. • Culvert inlet and outlet protection. • Sediment traps. • Sediment basins. • Coagulants and/or flocculants. • Progressive revegetation.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Diversion drainage works shall be installed before the removal of topsoil and commencement of earthworks.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Stabilised diversion drains or bunds shall be installed to divert clean water runoff from undisturbed areas around the construction area. Clean water drains/bunds are to have a C-factor of less than 0.05 (approximately 70% ground cover) prior to conveying flows.	ProTen Site Management / Construction Contractor	Prior to disturbance commencing
Water velocities within diversion drains are to be maintained below a level which causes erosion during the design storm event. Measures may include maintaining low gradients, providing check dams or by lining the channels via the installation of erosion control blankets, rock, geofabric (for temporary drains only) or establishing vegetation.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Where rock ballast is used for energy dissipation it shall be placed over a filter layer of suitable geotextile.	ProTen Site Management / Construction Contractor	During construction
Energy dissipaters shall be installed at the end of diversion banks (where required), to slow flow velocities to non-erodible levels.	ProTen Site Management / Construction Contractor	During construction

6.8 Installation of Services

Services installation, including trenching, can present a risk of impact to soil and water resources. General requirements for appropriate management of services installation are listed in **Table 16**.

Table 16: Installation of Service Requirements

Management and Mitigation Measure	Responsibility	Timing
Trench widths and depths shall be kept to the minimum necessary.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Divert surface water away from trench openings.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
For trenches running down grade, measures should be employed to capture sediment-laden water, including trench stops (i.e., use sandbags as bulkheads across trench invert to shorten the slope length and capture sediment-laden water flow within trench).	ProTen Site Management / Construction Contractor	Ongoing throughout construction
For trenches running down grade, cross berms shall be used once backfilled.	ProTen Site Management / Construction Contractor	After backfilling
For trenches running across grade, excavated soil to be placed upslope and clear of the trench and in such a way that does not cause ponding or erosion at the outlet.	ProTen Site Management / Construction Contractor	During trenching
Stockpile topsoil separately from other excavated material (see **Section 6.6**).	ProTen Site Management / Construction Contractor	During trenching
Avoid opening trenches whenever there is a risk of heavy rainfall/storms.	ProTen Site Management / Construction Contractor	Prior to commencing trenching
Organise service installations to enable progressive backfilling (aim to complete and close within three days).	ProTen Site Management / Construction Contractor	Prior to commencing trenching
Trenches not located within roadways or civil infrastructure must be backfilled, compacted to a level that allows for settlement, covered with topsoil, and appropriately stabilised.	ProTen Site Management / Construction Contractor	During trenching
All service trenches, not located within roadways or other infrastructure shall be seeded within five days after backfilling and prior to rainfall.	ProTen Site Management / Construction Contractor	During trenching
Water captured within service trenches should be managed the same as water within a sediment basin.	ProTen Site Management / Construction Contractor	During trenching

6.9 Sediment Basins

In accordance with the Blue Book, a sediment basin may not be required for small or flat sites. As a general rule, a sediment basin is required where the total disturbance area is greater than 2,500 m^2, the total annual calculated soil loss is greater than 150 m^3/year, or where other ESC measures are insufficient to mitigate the risk of impact to soil and water resources.

The Development Site is very flat and proposed disturbance/construction works may not warrant sediment basins. However, where it is determined that a sediment basin is required, they will be constructed in accordance with the relevant design criteria of the Blue Book (see **Section 5.4**) and maintained in accordance with the management measures listed in **Table 17**.

Table 17: Sediment Basin Management Requirements

Management and Mitigation Measure	Responsibility	Timing
Sediment Basin Design and Construction		
Sediment basins will be designed and constructed in accordance with the Blue Book design criteria (see **Section 5.4**) and Standard Drawing SD6-4 (see **Appendix A** and **Appendix B**).	ProTen Site Management / Construction Contractor	During construction
Prior to construction of the sediment basin, upslope diversions should be installed (where possible) along with downslope temporary sediment controls.	ProTen Site Management / Construction Contractor	Site establishment
A marker peg shall be installed in the basin to identify the maximum sediment storage level/required level of drawdown.	ProTen Site Management / Construction Contractor	Site establishment
As far as practical, sediment basins shall be located in non-vegetated areas in order to reduce the clearing footprint.	ProTen Site Management / Construction Contractor	Design phase
Sediment Basin Inspection		
The following are to be observed as part of routine inspections: • The water level and clarity within the basin. • The condition of the vehicle access to the basin. • Presence of excessive scouring and erosion. • Visible signs of hydrocarbon contamination (oil, diesel). • Integrity of valves, pipes pumps and inlets. • Emergency spillways to confirm clear and stable. • If sediment is required to be removed.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Sediment Basin Dewatering		
Water from sediment basins shall be used on site for construction (i.e., dust suppression, compaction) or transferred off-site by a licensed contractor.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Pumping equipment shall be provided so that all sediment basins are dewatered 5 days following a rainfall event.	ProTen Site Management / Construction Contractor	As required
If dewatering is to occur via sucker trucks, a suitable all-weather access shall be constructed and maintained to the sediment basin.	ProTen Site Management / Construction Contractor	Site establishment

Management and Mitigation Measure	Responsibility	Timing
Dewatering activities must be continually monitored.	ProTen Site Management / Construction Contractor	During dewatering
Records are to be kept of dewatering activities including the area being dewatered, estimated volume, method and receiving area.	ProTen Site Management / Construction Contractor	Ongoing throughout activity
Sediment Basin Desilting		
Accumulated sediment shall be removed prior to the sediment storage zone being full (typically equates to 30% reduction in capacity). A marker peg should be installed in the basin to clearly identify the maximum sediment storage level.	ProTen Site Management / Construction Contractor	Prior to and during construction
Sediment extracted from the basin shall be suitably disposed of in sediment dumps, taken to containment areas or mixed with in-situ soils in a manner that will not result in soil erosion or sediment runoff from the site.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Sediment Basin Water Transfers		
Should substantial dirty water be generated on site following a rainfall event, it should be preferentially utilised for construction activities or if this is not possible, the dirty water should be removed from site for treatment by a licensed water treatment contractor. Alternatively, the water may be discharged to the lands within the Development Site provided the water is adequately filtered prior to discharge and it can be proven that no detrimental environmental impact will result.	ProTen Site Management / Construction Contractor	Ongoing throughout construction

6.10 Concrete Works

Concrete works present a risk of producing highly alkaline wash waters and may contain traces of potentially environmentally harmful chemicals or substances. General requirements for managing concrete works are detailed in **Table 18**.

Table 18: Concrete Works Requirements

Management and Mitigation Measure	Responsibility	Timing
A suitable area for cement truck washouts will be provided by the contractor for any concrete works.	ProTen Site Management / Construction Contractor	Prior to concrete works commencing
Truck washdowns and cement truck washouts shall be conducted in approved areas only.	Cement truck operators	During any concrete works
Details of concrete curing compounds and treatments will be outlined in the work procedure to be prepared for concreting and paving operations. This will contain a description of the procedure used including equipment, chemicals and primary/secondary controls to capture curing compound runoff.	ProTen Site Management / Construction Contractor	Prior to concrete works commencing
Washdown areas for equipment will be located within bunded areas.	ProTen Site Management / Construction Contractor	Design phase
Concrete washout areas and pits will be adequately sized and maintained regularly.	ProTen Site Management / Construction Contractor	Design phase
Slurry from saw cutting and curing compounds will be retained close to the source as far as practicably possible.	ProTen Site Management / Construction Contractor	Throughout construction phase

6.11 Rehabilitation

The most effective means of controlling erosion and sedimentation is through the establishment and maintenance of a healthy vegetation cover. Vegetation provides surface protection against raindrop impact, binds the underlying soil to resist detachment by surface flows and improves soil infiltration capacity.

Following completion of construction activities, all disturbed surfaces which will not be utilised for operational purposes shall be rehabilitated in accordance with the requirements in **Table** 19. Recommended species and revegetation rates are provided in **Table 20**.

Table 19: Rehabilitation of Disturbed Areas Requirements

Management and Mitigation Measure	Responsibility	Timing
All areas disturbed by the contractor, including temporary access tracks, temporary material laydown areas and areas for temporary crib facilities must be topsoiled and revegetated as soon as reasonably practicable following completion of formation earthworks.	ProTen Site Management / Construction Contractor	Upon completion of construction
All site erosion and sediment controls measures must remain in place, be regularly inspected and maintained until the area they are servicing is considered fully rehabilitated (>70% permanent ground cover excluding weeds) after which they should be removed.	ProTen Site Management / Construction Contractor	Upon completion of construction
Broadcast seeding will be utilised as the preferred revegetation method for all disturbance areas requiring revegetation. For critical areas requiring quick revegetation or for areas where poor revegetation is identified, more intensive revegetation methods (i.e., hydromulching) may be warranted.	ProTen Site Management / Construction Contractor	Upon completion of construction or as required
Topsoil stockpiles which will be in place for a duration greater than ten days will be sown with a cover crop immediately after stockpile formation. Recommended pasture species are: Autumn / Winter Sowing: • Oats / Ryecorn at 20 kilograms per hectare; and/or • Japanese Millet at 10 kilograms per hectare. Spring / Summer Sowing: • Japanese Millet at 20 kilograms per hectare; and/or • Oats / Ryecorn at 10 kilograms per hectare.	ProTen Site Management / Construction Contractor	As required
Broadcast seeding involves the spreading of a suitable pasture seed mix over the area to be revegetated and will be undertaken according to the following construction notes: • Where possible, topsoil will be re-spread to a minimum depth of 100 mm in the reverse sequence to its removal so that the organic layer containing any seed or vegetation is returned to the surface. Re-spreading on the contour will aid runoff control and increase moisture retention for subsequent plant growth. The re-spread topsoil will be levelled to achieve an even surface (avoiding a compacted or an over-smooth finish) and tilled. • After surface soil tillage is completed for any given area, revegetation will commence as soon as practicable. • An appropriate fertiliser such as Granulock 15 (or similar) will be applied during the seeding operation at a rate of approximately 250 kilograms per hectare. The pasture grass and legume mix in **Table 20** will be applied.	ProTen Site Management / Construction Contractor	As required

Table 20: Recommended Pasture Grasses and Legume for Revegetation

Species	Rate (kilograms per hectare)	
	Spring / Summer	Autumn / Winter
Japanese Millet	20	5
Oats / Ryecorn	5	20
Couch Grass	10	8
Wimmera Ryegrass	5	10
White Clover	8	-
Lucerne	5	-
Sub Clover	-	8
Serradella	-	10
Consol	-	2

Note: all legumes (clovers and lucerne) should be inoculated with Rhizobia and lime pelleted to promote nodulation and facilitate subsequent nitrogen fixation.

6.12 Storage and Handling of Potentially Environmentally Hazardous Substances

Table 21 outlines the requirements for the storage and handling of potentially environmentally hazardous substances with respect to the protection of soil and water resources.

Table 21: Potentially Hazardous Substance Requirements

Management and Mitigation Measure	Responsibility	Timing
All fuels, hydrocarbon-based lubricants and other potentially environmentally hazardous materials are to be stored in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participants Handbook (*other than when in immediate use). All materials are to be stored in accordance with any dangerous /hazardous substances storage and handling guidelines with Safety Data Sheets (SDSs) made readily available for reference should an uncontrolled release to land/water occur.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Should a spill occur, the spill is to be handled and reported in accordance with the PIRMP.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
Should a sediment basin or other drainage/storage feature be contaminated by a hydrocarbon material or other potentially environmentally hazardous substance, the water is to be managed in accordance with the PIRMP.	ProTen Site Management / Construction Contractor	Ongoing throughout construction
All stored waste and waste waters are to be appropriately bunded where there is a potential risk of pollution or spill to land surfaces i.e., waste leachate or stored wastewaters, in accordance with the PIRMP.	ProTen Site Management / Construction Contractor	Ongoing throughout construction

7.0 Inspections, Maintenance and Reporting

7.1 Inspections

Table 22 provides the inspection schedule to be followed for soil and water controls when construction activities are undertaken at the Development.

Table 22: Inspection Schedule

Inspection Requirement	Responsibility	Timing
Visual inspection(s) to: • Understand the actual location of proposed works. • Understand the environmental context. • Identify any interaction with existing activities or environmental features. • Ensure the area is demarcated (e.g., pegged, flagging tape etc.). • Inspect the required ESCs to be installed (as per the ESCPs).	ProTen Site Management / Construction Contractor	Site establishment
Informal visual checks of: • All ESC measures. • Potential discharge locations to ensure that controls have been provided where required and/or are functioning correctly. • Any deficient controls will be noted and repaired to maintain efficiency. • Weather forecast and daily conditions shall be monitored and recorded during construction activities. If adverse conditions are expected, works should be planned accordingly, and this information shared with construction crews at pre-start meetings.	ProTen Site Management / Construction Contractor	Weekly or daily when rain is predicted
Formal visual checks which must include: • Conditional checks of all ESC measures to ensure they are being maintained in an efficient condition. • Check that all measures required to be installed under the ESCPs have been implemented. • If any additional controls are required along with any subsequent updates required to the ESCPs. • Drainage structures to ensure they have sufficient freeboard, are free of sediment/debris and there is no excessive erosion. • All sediment basins for: o The water level and clarity within the basin. o The condition of the vehicle access to the basin. o Presence of excessive scouring and erosion. o Visible signs of hydrocarbon contamination (oil, diesel). o Integrity of valves, pipes, pumps and inlets. o Emergency spillways to confirm clear and stable. o Visible signs of overtopping. o Remaining capacity of the sediment storage zone. • Any required treatment or dewatering requirements of the sediment basins, trenches and excavations. • Sediment deposition within sediment basins and the need for removal.	ProTen Site Management / Construction Contractor	Weekly or following heavy rainfall (>20 mm in 24hr period)

Inspection Requirement	Responsibility	Timing
• Occurrences of excessive sediment deposition (whether on site or off-site) and the need for its removal (i.e., within drains, behind temporary sediment controls). • Occurrences of mud generation around the site office, car park, site access and on neighbouring public roads. • Health of recently established vegetation. • Litter. • Oil, fuel and chemical storage facilities. • Available capacity within the sediment basins. • Trench openings. • All drainage and ESC measures including clean water diversions and last line of defence catch drains. • All temporary (e.g., overnight) flow diversion and drainage works.		
Joint inspections involving the ProTen Site Management, Contractor and nominated Environmental Representative.	ProTen Site Management / Construction Contractor	Monthly (as a minimum)
Inspections following completion of construction/rehabilitation activities: • Success of revegetation and any required maintenance works (watering, re-seeding, fertiliser etc.). • Ensure all temporary erosion and sediment controls are removed on completion of the rehabilitation works.	ProTen Site Management / Construction Contractor	Monthly following completion of disturbance activity until fully rehabilitated (>70% permanent ground cover excluding weeds)

7.2 Maintenance

All ESC measures shall be maintained in a functioning condition by the contractor until individual areas have been deemed successfully rehabilitated (>70% permanent ground cover excluding weeds). Where controls are observed to not be functioning correctly, the controls shall be restored to meet the required standard. Where significant erosion is observed to be occurring on a regular basis, additional controls shall be constructed.

Table 23 provides a maintenance schedule for ESC structures for the Development.

Table 23: Maintenance Schedule

Maintenance Requirement	Responsibility	Frequency
Sediment Basins		
Desilting	ProTen Site Management / Construction Contractor	When accumulated sediment has reduced the design capacity to <70% (or where the sediment zone is full of sediment) or as instructed by the site superintendent
Repairs	ProTen Site Management / Construction Contractor	When determined by visual inspections
Draw down to design level (to ensure settlement zone volume is available)	ProTen Site Management / Construction Contractor	Within the nominated design period (5 days following a rainfall event)

Maintenance Requirement	Responsibility	Frequency
Drainage Channels		
Remedial works	ProTen Site Management / Construction Contractor	When erosion is observed
Construction of additional erosion controls/drainage channels	ProTen Site Management / Construction Contractor	When significant erosion is observed
Temporary ESC Structure		
Repairs	ProTen Site Management / Construction Contractor	When determined by visual inspections
Installation of additional controls	ProTen Site Management / Construction Contractor	When regular excessive erosion is observed or sediment is not being captured effectively
Access Tracks		
Checking drainage systems for debris and blockages	ProTen Site Management / Construction Contractor	During routine inspections or after large storm events
Maintenance to roads and tracks	ProTen Site Management / Construction Contractor	Following large storm events or as erosion develops
Rehabilitated Areas		
Re-ripping and seeding	ProTen Site Management / Construction Contractor	When identified as required by visual inspections
Fertiliser application	ProTen Site Management / Construction Contractor	When identified as required by visual inspections

7.3 Reporting

Records of all inspections, environmental incidents and other such information relating to the management of soil and water resources during construction activities at the Development shall be maintained by the relevant Project Manager, Environmental Representative or Superintendent.

Formal requirements and procedures for monitoring, incident management and reporting are outlined in the CEMP.

Appendix A Standard ESC Design Drawings

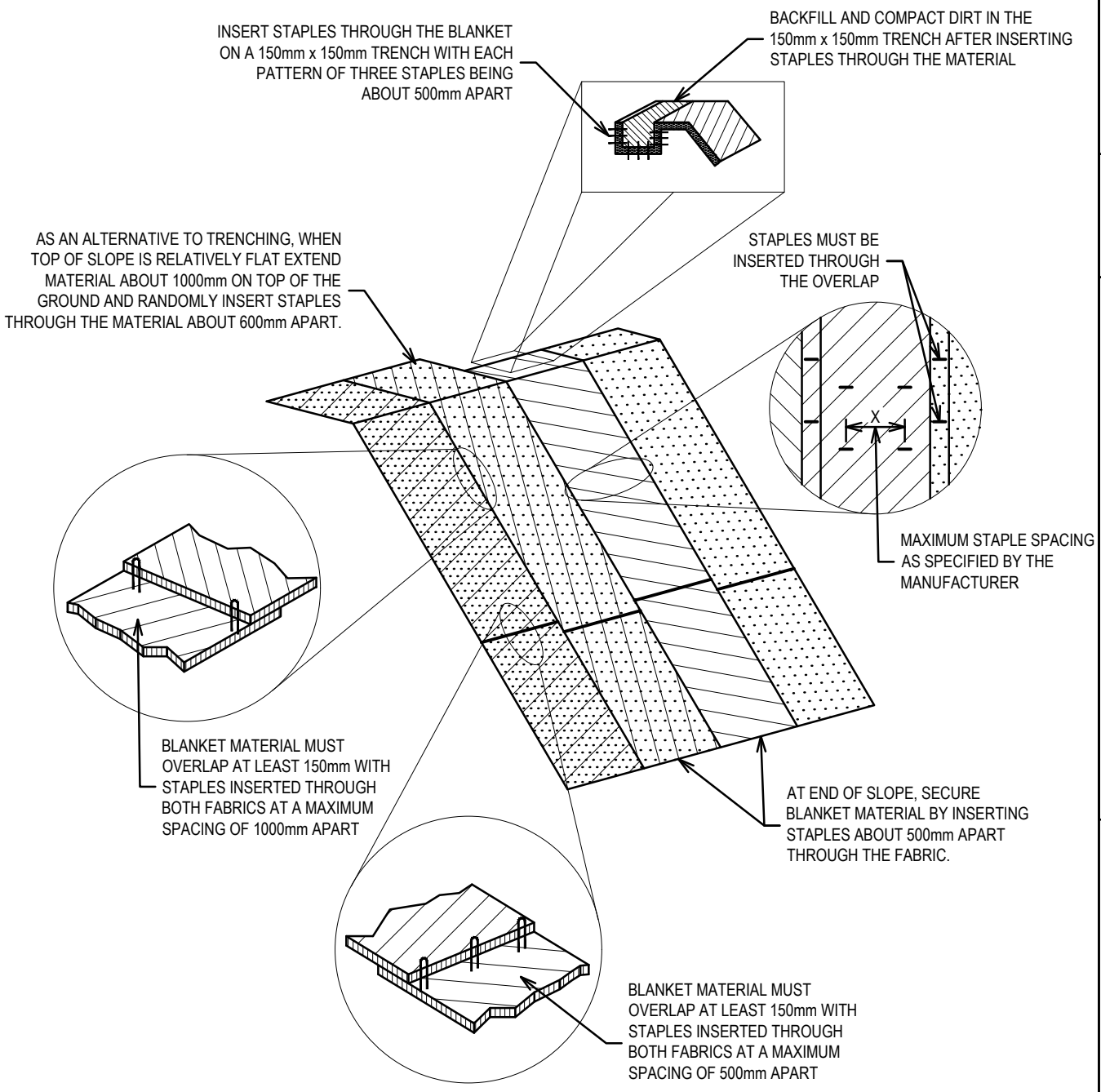
Construction Soil and Water Management Plan

Narrandera Poultry Production Complex

ProTen Pty Limited

SLR Project No.: 630.031391.00004

22 July 2024



CONSTRUCTION NOTES:

1. REMOVE ANY ROCKS, CLODS, STICKS OR GRASS FROM THE GROUND SURFACE BEFORE LAYING THE MATTING.
2. SPREAD TOPSOIL TO AT LEAST 75mm DEPTH.
3. WHERE APPROPRIATE, COMPLETE FERTILISING AND SEEDING ON A PROPERLY PREPARED SEEDBED (STANDARD DRAWING 7-1) BEFORE LAYING THE MATTING
4. ENSURE THE FABRIC CAN BE CONTINUOUSLY IN CONTACT WITH THE SOIL BY GRADING THE SURFACE CAREFULLY FIRST.
5. LAY THE MATTING IN "SHINGLE-FASHION" WITH THE ENDS OF EACH UPSTREAM ROLL OVERLAPPING THE NEXT ROLL DOWNSLOPE.
6. ENSURE SUFFICIENT STAPLES ARE USED TO MAINTAIN A GOOD CONTACT BETWEEN THE SOIL AND THE MATTING.

DRAWN: .	DATE: xx.xx.xxxx	CLIENT:	CLIENT
DESIGN: .	DATE: .	PROJECT:	STANDARD DRAWING
DRG. CHECK: .	DATE: .	DRAWING TITLE:	**RECP : SHEET FLOW**
DES. CHECK: .	DATE: .	SCALE:	NTS
A4	DO NOT SCALE THIS DRAWING IF IN DOUBT ASK	DRAWING NUMBER:	SD 5-2
		ISSUE:	A

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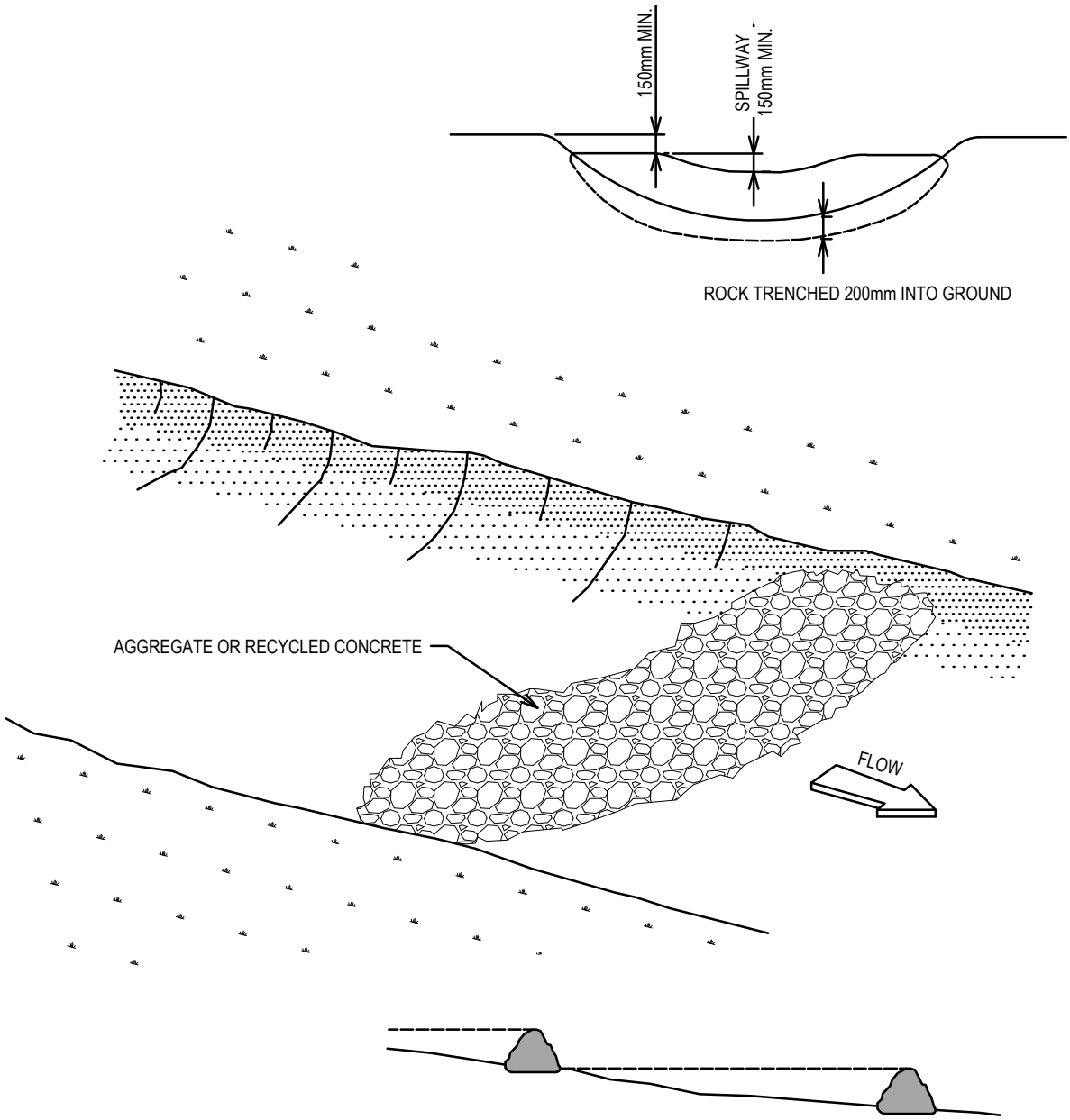
CONSULTANT PROJECT
xxx
FULL SIZE ON ORIGINAL
0 5 10 20 30 40 50
A4

C:\WORKING TEMP FILES\DRAWING STANDARDS\05_Civil Standard Engineer Dwg Files\Blue Book Standards\UPDATED WITH NEW LOGO\SD 5-2 RECP SHEET FLOW.dwg



SPACING OF CHECK DAMS ALONG CENTRELINE AND SCOUR PROTECTION BELOW EACH CHECK DAM TO BE SPECIFIED ON SWMP/ESCP

CONSTRUCTION NOTES:

1. CHECK DAMS CAN BE BUILT WITH VARIOUS MATERIALS, INCLUDING ROCKS, LOGS, SANDBAGS AND STRAW BALES. THE MAINTENANCE PROGRAM SHOULD ENSURE THEIR INTEGRITY IS RETAINED, ESPECIALLY WHERE CONSTRUCTED WITH STRAW BALES. IN THE CASE OF BALES, THIS MIGHT REQUIRE THEIR REPLACEMENT EACH TWO TO FOUR MONTHS.

2. TRENCH THE CHECK DAM 200mm INTO THE GROUND ACROSS ITS WHOLE WIDTH. WHERE ROCK IS USED, FILL THE TRENCHES TO AT LEAST 100mm ABOVE THE GROUND SURFACE TO REDUCE THE RISK OF UNDERCUTTING.

3. NORMALLY, THEIR MAXIMUM HEIGHT SHOULD NOT EXCEED 600mm ABOVE THE GULLY FLOOR. THE CENTRE SHOULD ACT AS A SPILLWAY, BEING AT LEAST 150mm LOWER THAN THE OUTER EDGES.

4. SPACE THE DAMS SO THE TOE OF THE UPSTREAM DAM IS LEVEL WITH THE SPILLWAY OF THE NEXT DOWNSTREAM DAM.

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CLIENT: CLIENT

PROJECT: STANDARD DRAWING

DRAWING TITLE: **ROCK CHECK DAM**

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FULL SIZE ON ORIGINAL 0 5 10 20 30 40 50 A4

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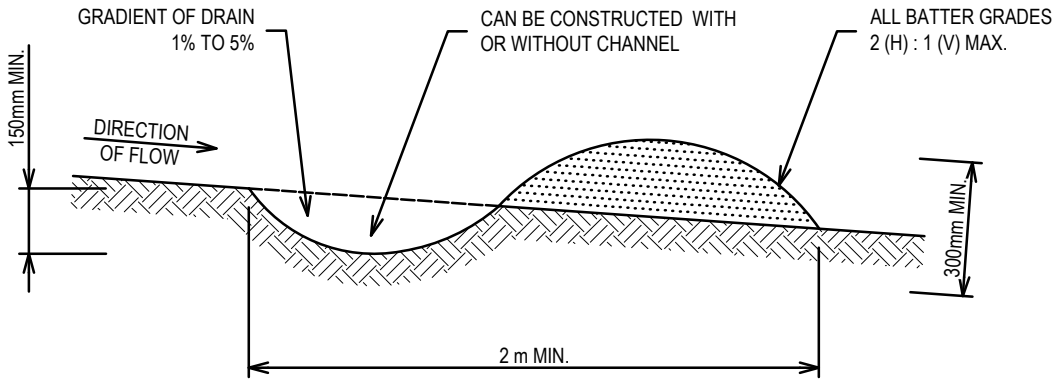

NOTE: ONLY TO BE USED AS TEMPORARY BANK
WHERE MAXIMUM UPSLOPE LENGTH IS 80m.

CONSTRUCTION NOTES:

1. BUILD WITH GRADIENTS BETWEEN 1% AND 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

DRAWN: . DATE: XX.XX.XXXX
DESIGN: . DATE: .
DRG. CHECK: . DATE: .
DES. CHECK: . DATE: .

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DRAWING TITLE: **EARTH BANK (LOW FLOW)**

A4 | DO NOT SCALE THIS DRAWING IF IN DOUBT ASK | SCALE: NTS | DRAWING NUMBER: SD 5-5 | ISSUE: A

CONSULTANT PROJECT | xxx | FULL SIZE ON ORIGINAL 0 5 10 20 30 40 50 | A4

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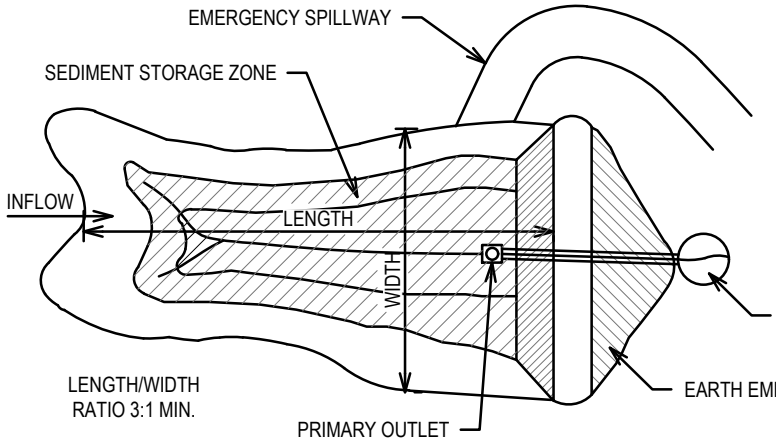
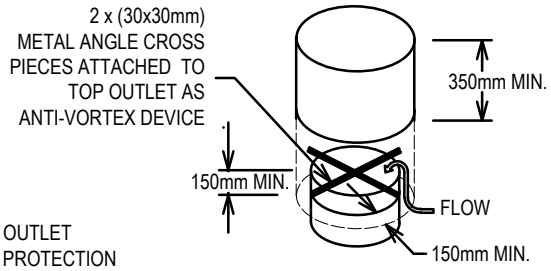
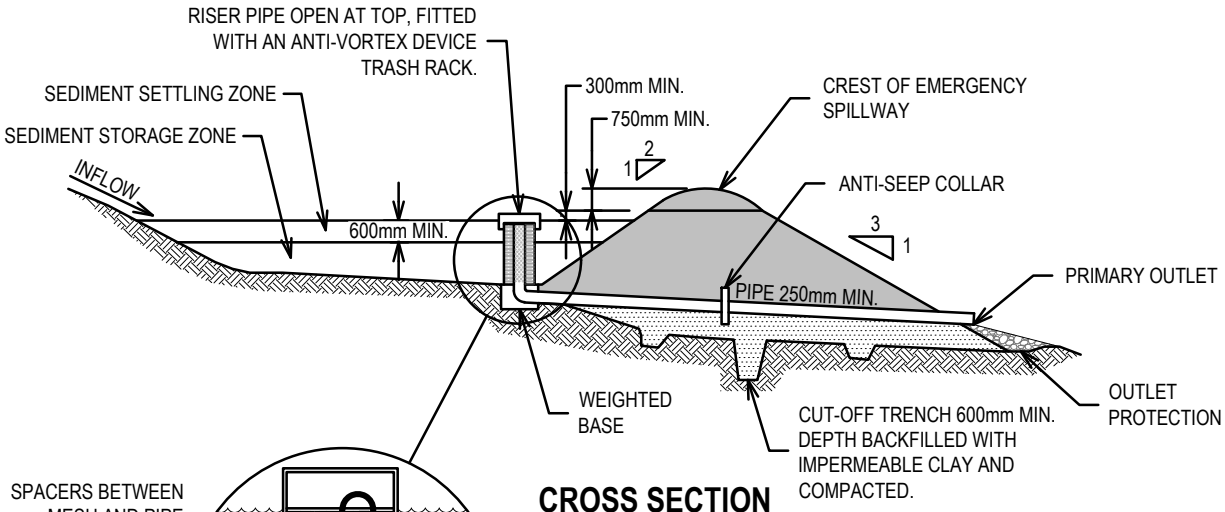


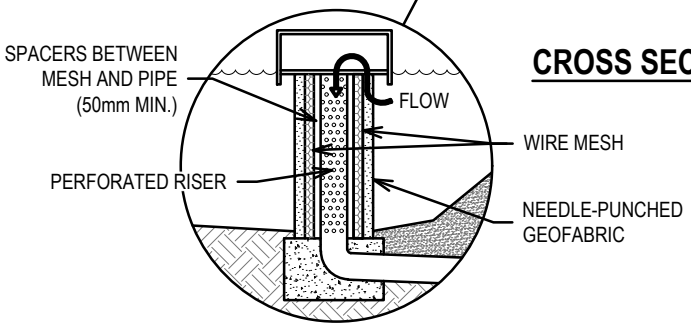
PLAN VIEW



TRASH RACK / ANTI-VOTEX DEVICE



CROSS SECTION



CONSTRUCTION NOTES:

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. FORM A CUT OFF TRENCH UNDER THE CENTRELINE OF THE EMBANKMENT 600mm DEEP AND 1,200mm WIDE, EXTENDING TO A POINT ON THE WATERCOURSE WALL ABOVE THE RISER SILL LEVEL.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95% STANDARD PROCTOR DENSITY.
4. SELECT FILL ACCORDING TO THE SWMP THAT IS FREE FROM ROOTS, WOOD STOCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND THE COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
7. INSTALL THE PIPE OUTLET WITH SEEPAGE COLLARS AS SPECIFIED IN THE SWMP AND STANDARD DRAWING 6-3b.
8. FORM BATTER GRADES AT 2(H):1(V) UPSTREAM AND 3(H): 1(V) DOWNSTREAM OR AS SPECIFIED IN THE SWMP.

DRAWN:	DATE:
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PROJECT: STANDARD DRAWING

DRAWING TITLE: **EARTH BASIN - DRY (APPLIES TO 'TYPE C' SOILS ONLY)**

A4 | DO NOT SCALE THIS DRAWING IF IN DOUBT ASK | SCALE: NTS | DRAWING NUMBER: SD 6-3 | ISSUE: A

CONSULTANT PROJECT | XXX | FULL SIZE ON ORIGINAL | A4

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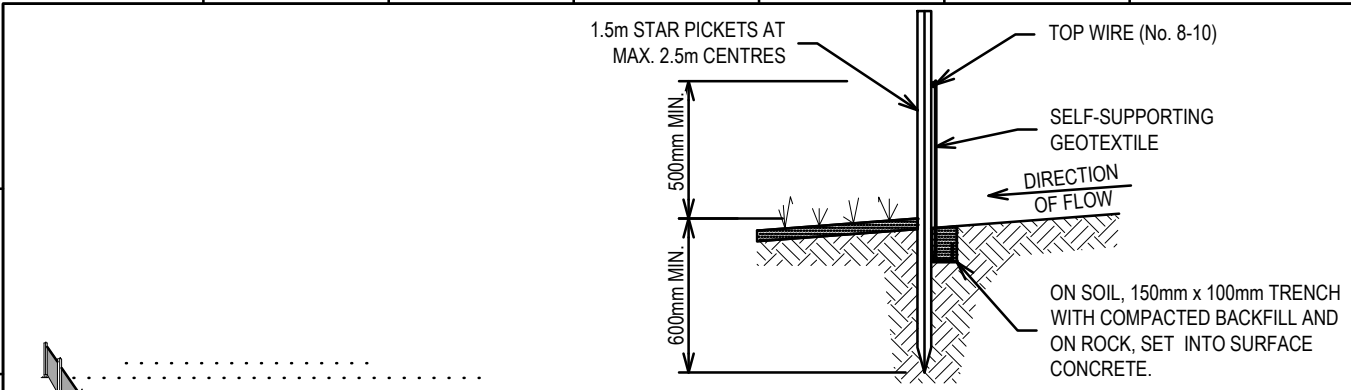

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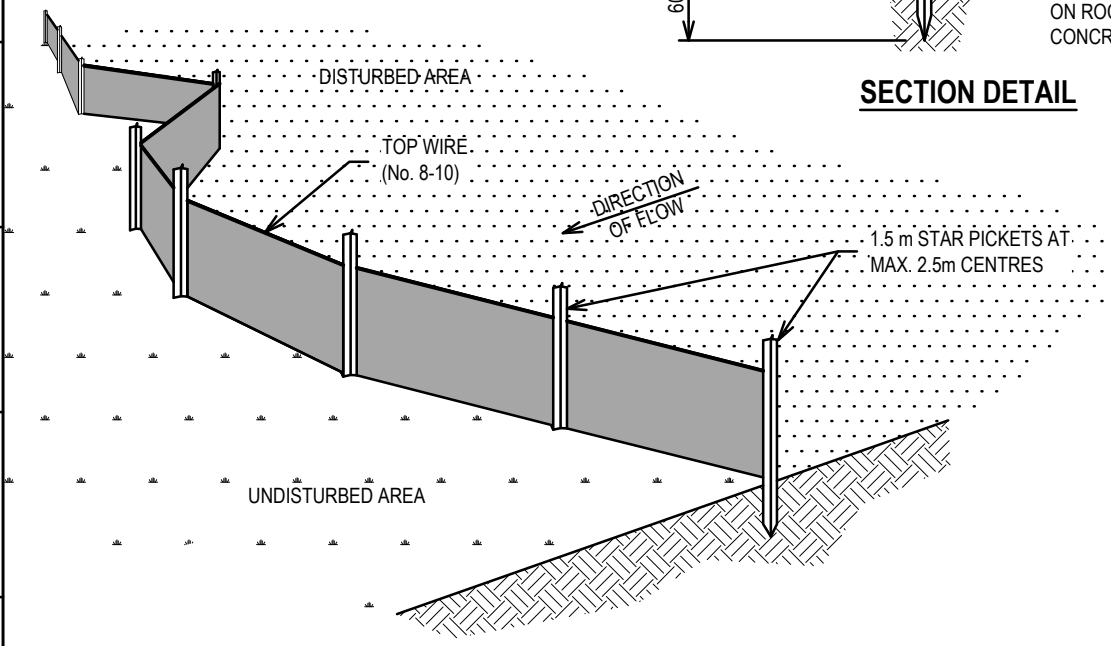

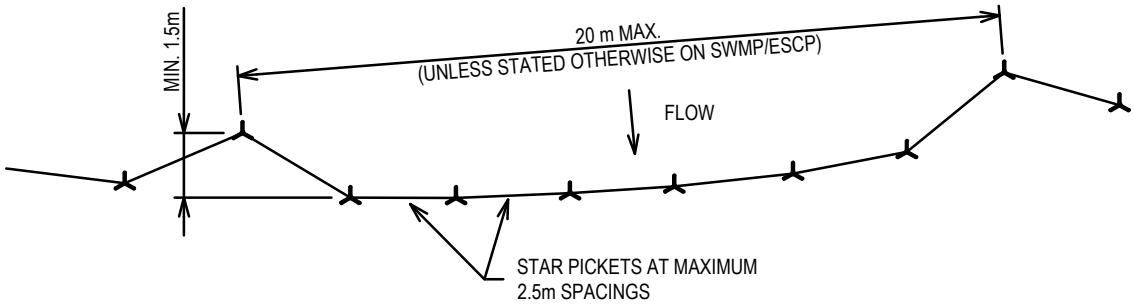

PLAN

CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 2.5 m INTERVALS (MAX.) AT THE DOWNSLOP EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

DRAWN: .	DATE: XX.XX.XXXX		
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CLIENT: CLIENT
PROJECT: STANDARD DRAWING
DRAWING TITLE: **SEDIMENT FENCE**

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xxx
FULL SIZE ON ORIGINAL
0 5 10 20 30 40 50
A4

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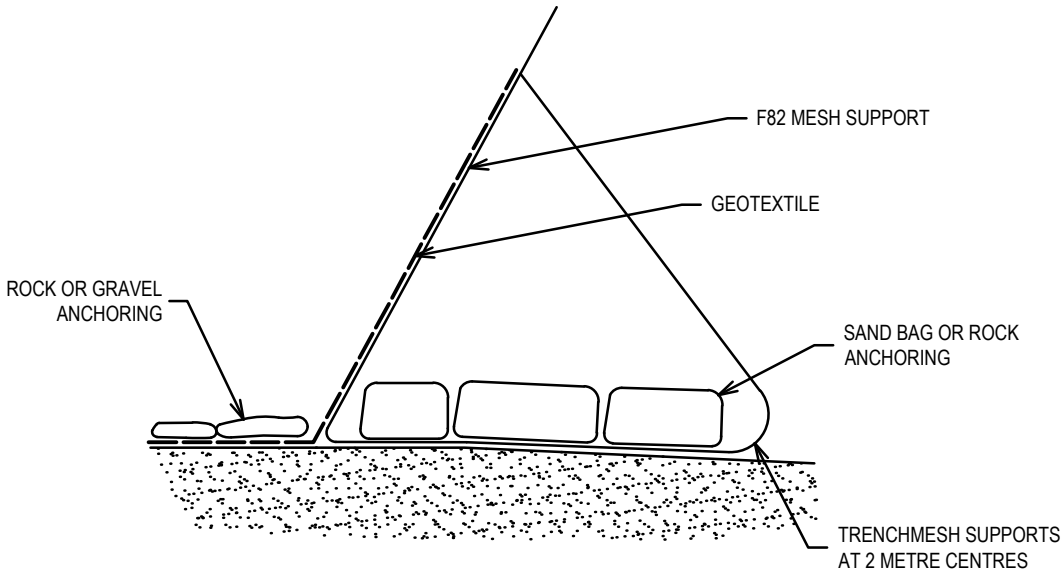

CONSTRUCTION NOTES:

1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE . SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.

2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING ABOVE. ATTACH THE GEOTEXTILE TO THE WELDED MESH FACING USING UV RESISTANT CABLE TIES.

3 STABILISE THE WHOLE STRUCTURE WITH SANDBAG OR ROCK ANCHORING OVER THE TRENCH MESH AND THE LEADING EDGE OF THE GEOTEXTILE. THE ANCHORING SHOULD BE SUFFICIENTLY LARGE TO ENSURE STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.

Responsible Principal Signature	Date	DRAWN: .	DATE: XX.XX.XXXX	SLR 10 KINGS ROAD NEW LAMBTON NEW SOUTH WALES 2305 AUSTRALIA T: 61 2 4037 3200 www.slrconsulting.com	CLIENT: CLIENT	
		DESIGN: .	DATE: .		PROJECT: STANDARD DRAWING	
		DRG. CHECK: .	DATE: .	The content contained within this document may be based on third party data. SLR Consulting Australia Pty Ltd does not guarantee the accuracy of any such information.	DRAWING TITLE: **ALTERNATIVE SEDIMENT FENCE**	
		DES. CHECK: .	DATE: .	A4 DO NOT SCALE THIS DRAWING IF IN DOUBT ASK	SCALE: NTS	DRAWING NUMBER: SD 6-9 / ISSUE: A

CONSULTANT PROJECT | xxx | FULL SIZE ON ORIGINAL 0 5 10 20 30 40 50 A4

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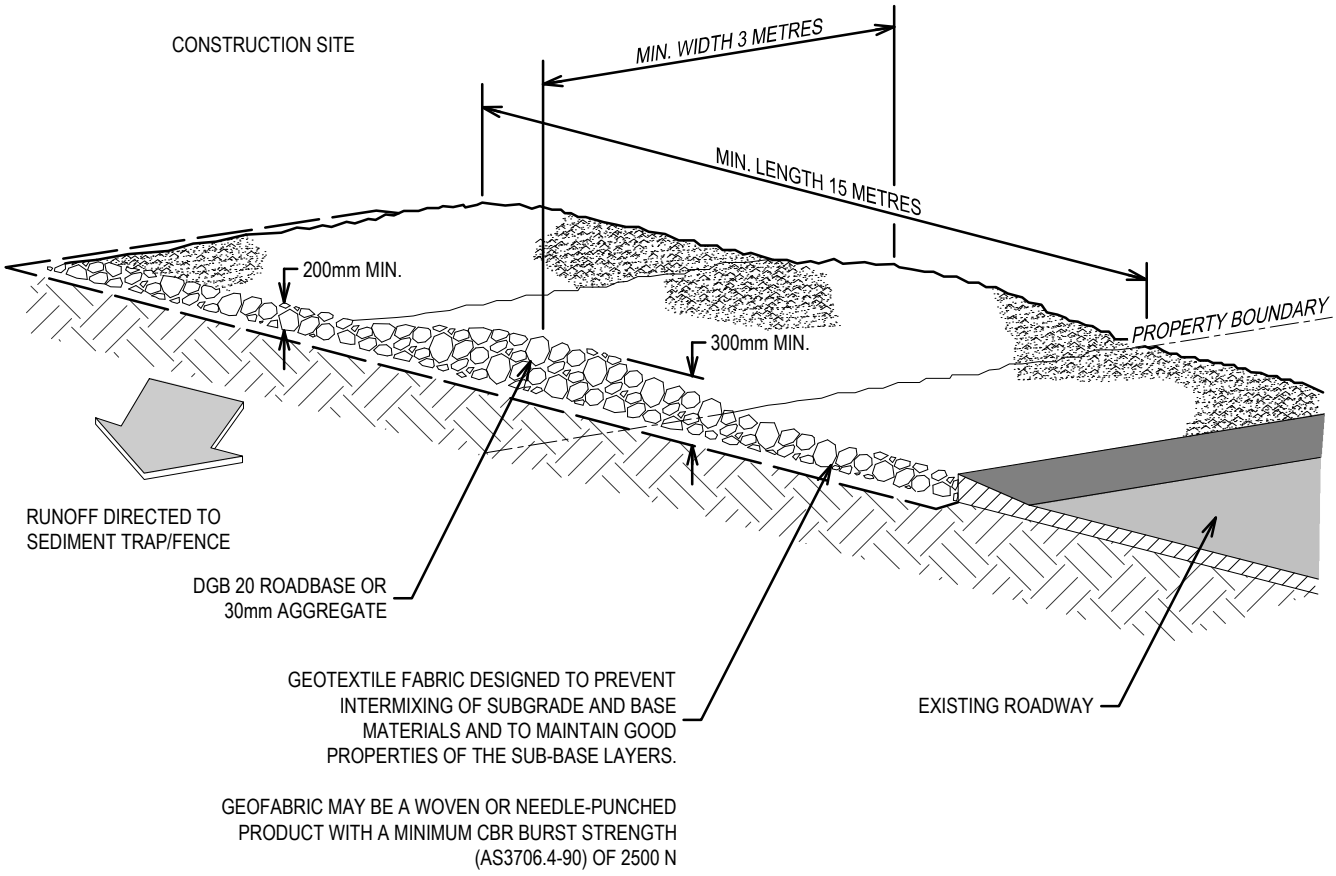

CONSTRUCTION NOTES:

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15m LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3m WIDE
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

DRAWN: . DATE: XX.XX.XXXX
DESIGN: . DATE: .
DRG. CHECK: . DATE: .
DES. CHECK: . DATE: .

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DRAWING TITLE: **STABILISED SITE ACCESS**

A4 | DO NOT SCALE THIS DRAWING IF IN DOUBT ASK | SCALE: NTS | DRAWING NUMBER: SD 6-14 | ISSUE: A

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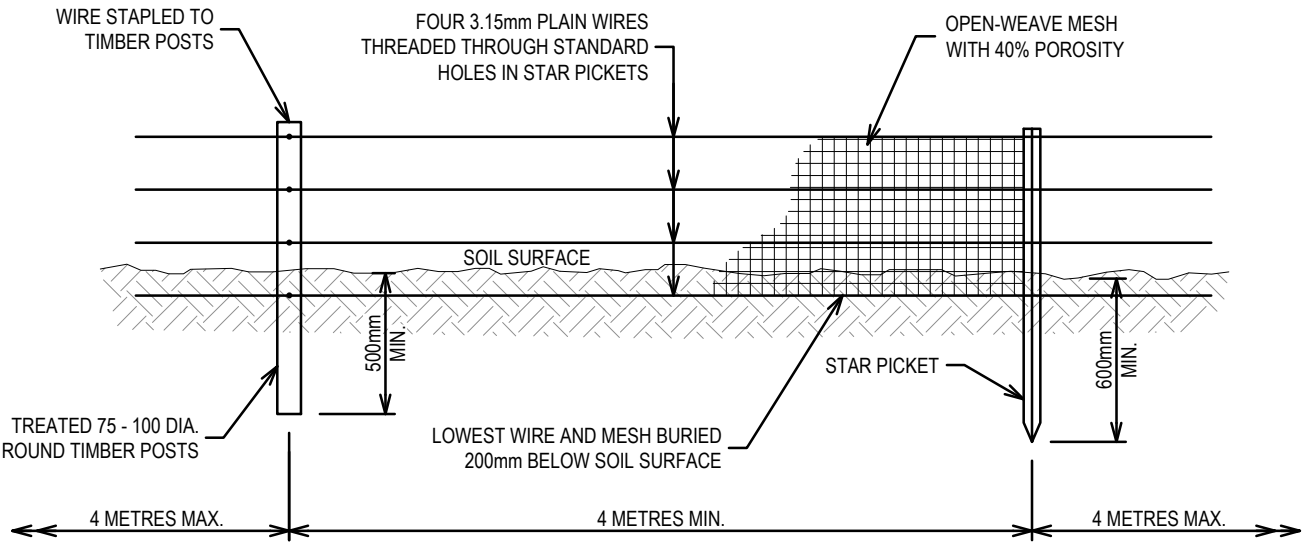

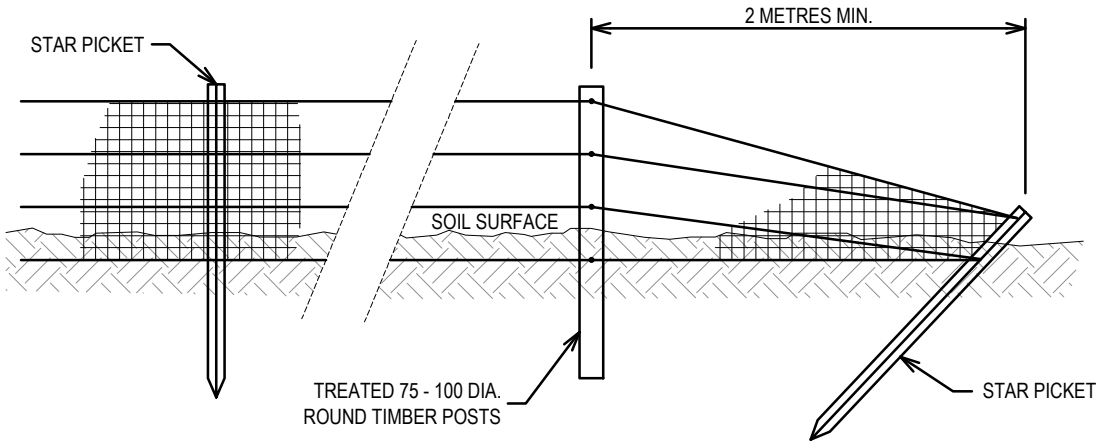

CONSTRUCTION NOTES:

1. INSTALL THE FENCE TO THE HEIGHT SPECIFIED IN THE ESCP/SWMP.
2. CUT A CHANNEL 200mm DEEP ALONG THE FENCE LINE.
3 PLACE WIRE AND LIGHT RESISTANT, OPEN WEAVE POLYMER MESH WITH 40 PERCENT POROSITY ON THE PREVAILING WIND SIDE OF FENCE.
4. FASTEN THE MESH TO ALL WIRES USING RING FASTENERS AT 100mm TO 150mm INTERVALS ON TOP WIRE AND 300mm INTERVALS ON OTHER WIRES.
5. USE ONE 75mm TO 100mm DIAMETER TREATED ROUND TIMBER POST EVERY 20 METRES.
6. WHERE STAR PICKETS ARE USED, ENSURE THEY ARE FITTED WITH SAFETY CAPS.

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DES. CHECK: . DATE: .

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CLIENT: CLIENT
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DRAWING TITLE: **CONTROL OF WIND EROSION**
SCALE: NTS
DRAWING NUMBER: SD 6-15
ISSUE: A

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FULL SIZE ON ORIGINAL 0 5 10 20 30 40 50 A4

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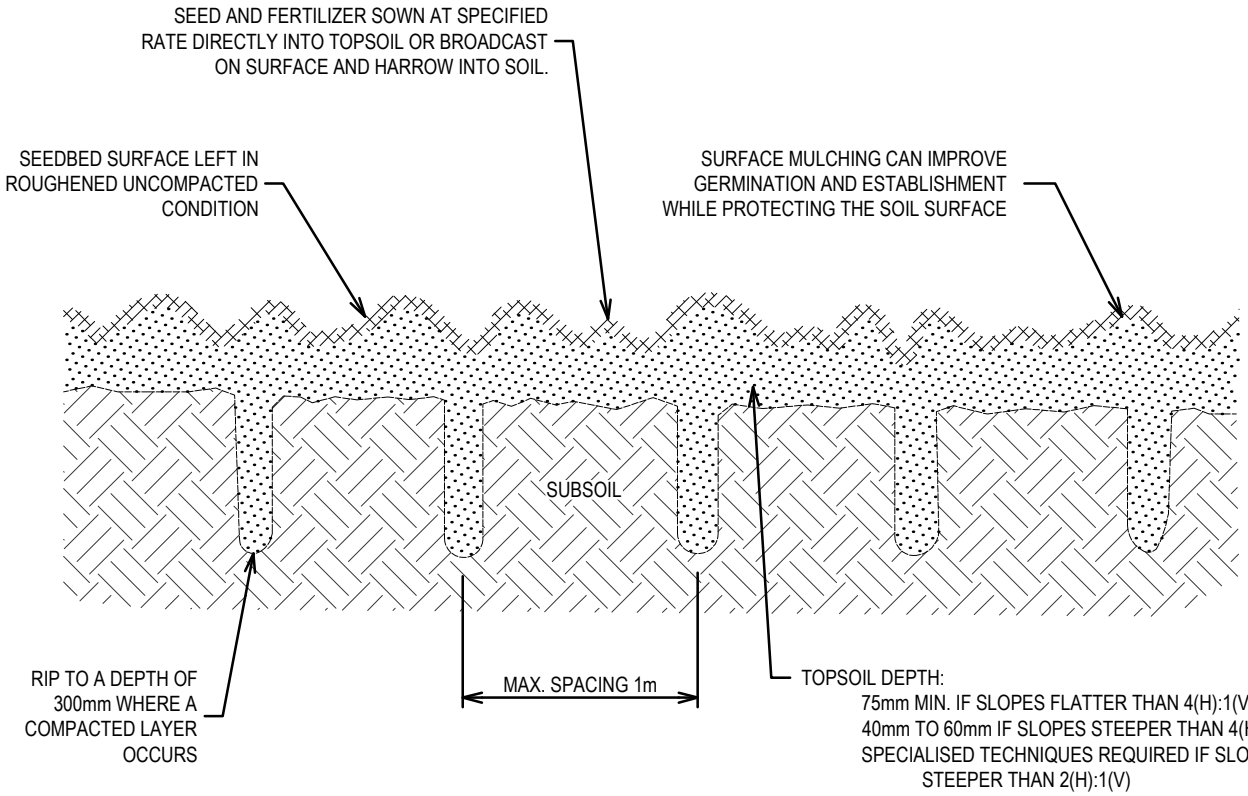

CONSTRUCTION NOTES:

1. LOOSEN COMPACTED SOIL BEFORE SOWING ANY SEED. IF NECESSARY, RIP THE SOIL TO A DEPTH OF 300mm
2. WORK THE GROUND ONLY AS MUCH AS NECESSARY TO ACHIEVE THE DESIRED TILTH AND PREPARE A GOOD SEEDBED.
3. AVOID CULTIVATION IN VERY WET OR VERY DRY CONDITIONS.
4. CULTIVATE ON OR CLOSE TO THE CONTOUR WHERE POSSIBLE, NOT UP AND DOWN THE SLOPE.

DRAWN: . DATE: XX.XX.XXXX
DESIGN: . DATE: .
DRG. CHECK: . DATE: .
DES. CHECK: . DATE: .

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DRAWING TITLE: **SEEDED PREPARATION**
SCALE: NTS
DRAWING NUMBER: SD 7-1
ISSUE: A

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Appendix B Erosion and Sediment Control Plans

Construction Soil and Water Management Plan

Narrandera Poultry Production Complex

ProTen Pty Limited

SLR Project No.: 630.031391.00004

22 July 2024

SOIL AND WATER MANAGEMENT NOTES

SWM1 THE CONTRACTOR WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE CONSISTENT WITH 'MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION' - ALSO KNOWN AS 'THE BLUE BOOK'.

SWM2 ALL BUILDERS AND SUB-CONTRACTORS SHALL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

SWM3 WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNTIL THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.

SWM4 "SEDIMENT" FENCING WILL BE INSTALLED AS INDICATED ON THE PLANS AND AT THE DIRECTION OF THE SITE SUPERINTENDENT TO ENSURE CONTAINMENT OF SEDIMENT. AFTER RAINFALL EVENTS SEDIMENT FENCING TO BE LEANED OF ALL SEDIMENT BUILD UP.

SWM5 STOCKPILES ARE TO BE SURROUNDED WITH SEDIMENT FENCING ON THE LOW SIDE. SEDIMENT FENCING TO REMAIN UNTIL THE STOCKPILE HAS BEEN REMOVED AND THE AREA HAS BECOME REASTABLISHED WITH GRASS COVER

SWM6 DURING WINDY WEATHER, LARGE, DISTURBED, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

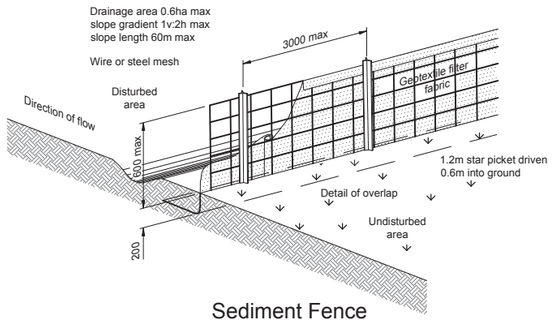
SWM7 UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

SWM8 WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :
INSTALL SEDIMENT" FENCES AS SHOWN ON THESE PLANS.
EXCAVTION OF RETENTION DAMS THAT WILL ACT AS SEDIMENT BASINS DURING CONSTRUCTION

SWM9 TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

SWM10 FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SWM11 ALL SOIL AND EROSION MEASURES ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THESE PLANS AND THE CONSTRUCTION AND SOIL MANAGEMENT PLAN.



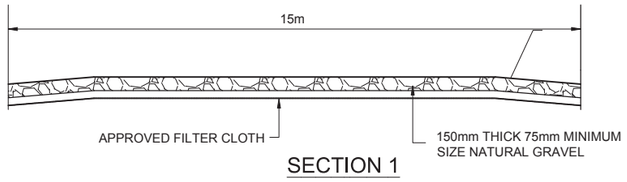
Sediment Fence
(Geotextile Filter Fabric)
NTS

Legend

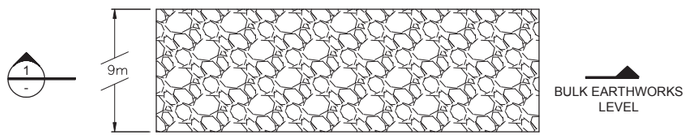
Sediment Fence. Place sediment fence in the locations as shown on the plans.

Retention Dams capture all runoff from poultry sheds. Swale drains around the perimeter of the sheds discharge into the retention dams. Retention dams are capable of capturing 1 in 100 year flows

Access Roads



SECTION 1



PLAN

SCALE 1:100

STABILISED CONSTRUCTION ENTRY / EXIT

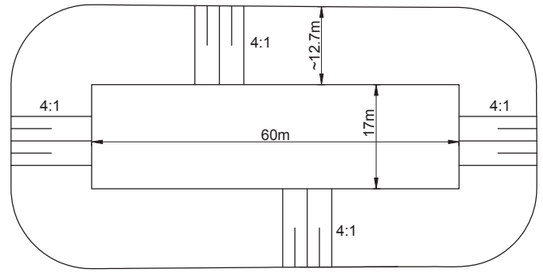
SCALE 1:50

MAINTENANCE

1. THE TEMPORARY ACCESS SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.
2. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
3. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

Erosion Control Construction Sequence

Item	Item	Installed	Removed	Summary Construction
1	Sediment Fencing	Prior to site works	At completion of construction and once site is completetly rehabilitated	To capture sediment around the construction site
2	Retention Dams / Sediment Basins	During bulk earthworks	Never	To capture runoff and sediment during and after construction
3	Swale Drains	During bulk earthworks	Never	To direct runoff to the retention dams / sediment dams
4	Stabilised Construction Entry / Exit	Prior to site works	At completion of construction and once site is completetly rehabilitated	To prevent sediment being transported onto the Sturt Highway
5	Respread topsoil over all disturbed areas as soon as practical			
6	Undertake required re-vegetation works over disturbed areas			



Typical Retention Dam

Each site of 16 Poultry Sheds consists of 4 retention dams. Each dam has a capacity of approximately 7000m² providing total detention for each of the individual sites of 28,000m³. The retention dams provide three functions. They are as follows-

1. Borrow Pits. During construction the excavated material is used as fill material for the poultry sheds and gravel ring rounds around the sheds. Consequently the retention dams will be constructed at the start of the construction process as part of the bulk earthworks.
2. The dams will act as sediment basins during construction. and post construction.
3. Act as retention dams and collect all runoff from the poultry sheds and ring roads around the sheds. Runoff from the sheds and ring road is collected in swale drains around the perimeter of the ring roads and discharge into the retention dams. The total volume of runoff for a 1 in 100 year, 72 hour storm event from the poultry sheds and ring road is approximately 16,500m³. Therefore the provided retention volume of 28,000m³ is 170% larger than that required for a 1 in 100 year, 72 hour storm event.
4. The retention dams and swale drains are to be maintained during the life of the project in accordance with the Blue Book and the Construction Soil and Water Management Plan. Swale drains are to be desilting if during a visual inspection it is deemed they might overflow and not be capable of transporting runoff to the retention dams, The 4 Retention dams provided at each site are to be de-watered / desilted whenever their capacity is reduced below16,500m³. This will ensure the retention dams are always capable of holding the 1 in 100 year, 72 storm event.
5. If significant erosion is observed any where on-site the construction of additional erosion control structures will be implemented

Revision	Amendment or reason for issue	Issue date	Drawing completed by	Designed & dwg. checked by	Verified by X = Not verified	Issue authorised (*)
2	Issued for Information	13.11.2015	L.V.R.	L.V.R.	L.V.R.	
1	Issued for Information	28.10.2015	L.V.R.	L.V.R.	L.V.R.	

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Project	ProTen Chicken Sheds ProTen Narrandera Lot 42, Sturt Highway Euroley NSW 2700
Drawing Title	Notes and Details
Client	ProTen
Scales	As Shown
Client Project No.	
Architect / Project Manager	
Project Number	15W013
Dwg. No.	EC02
Sheet	01 or 4
Revision	2

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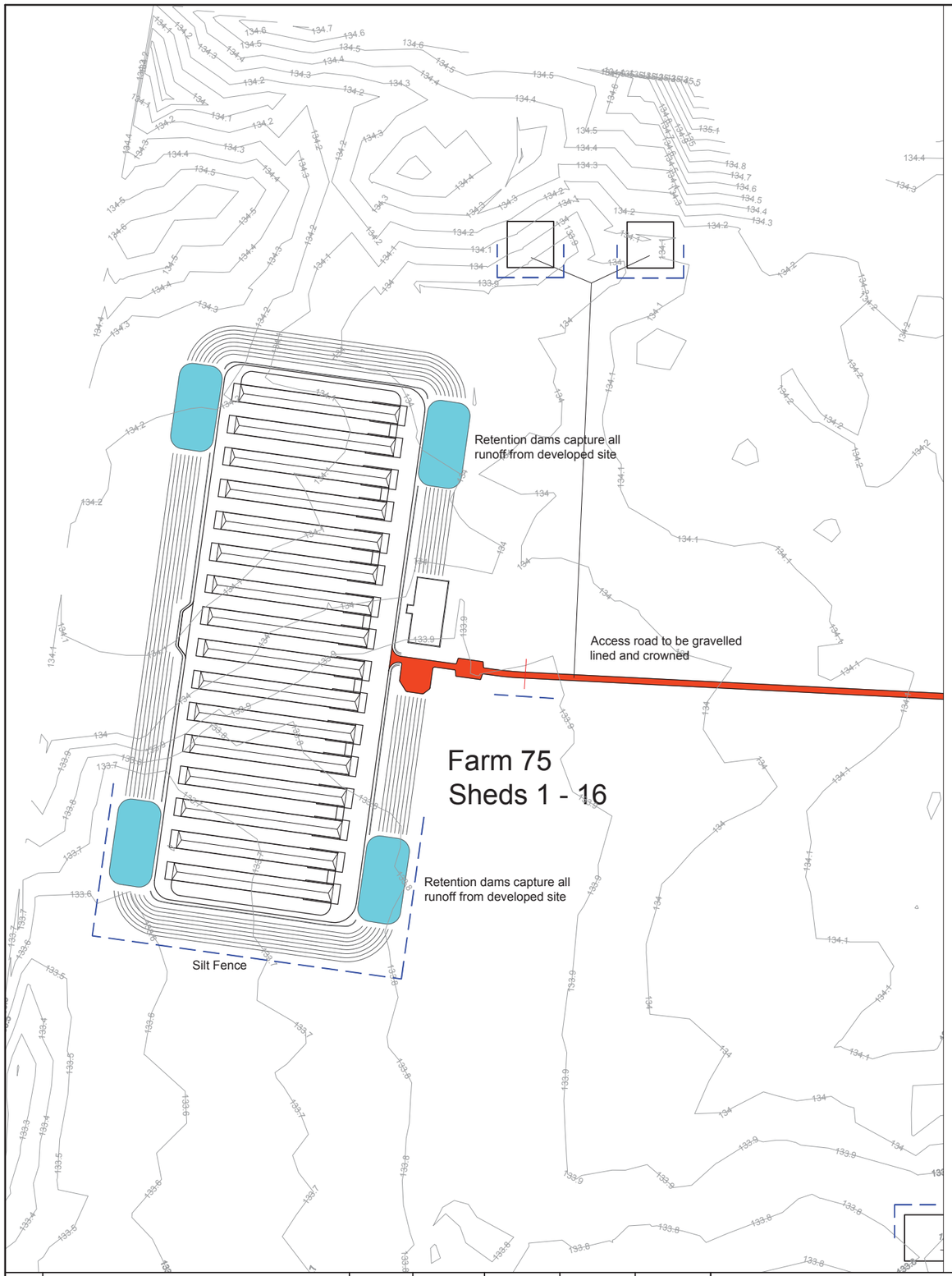

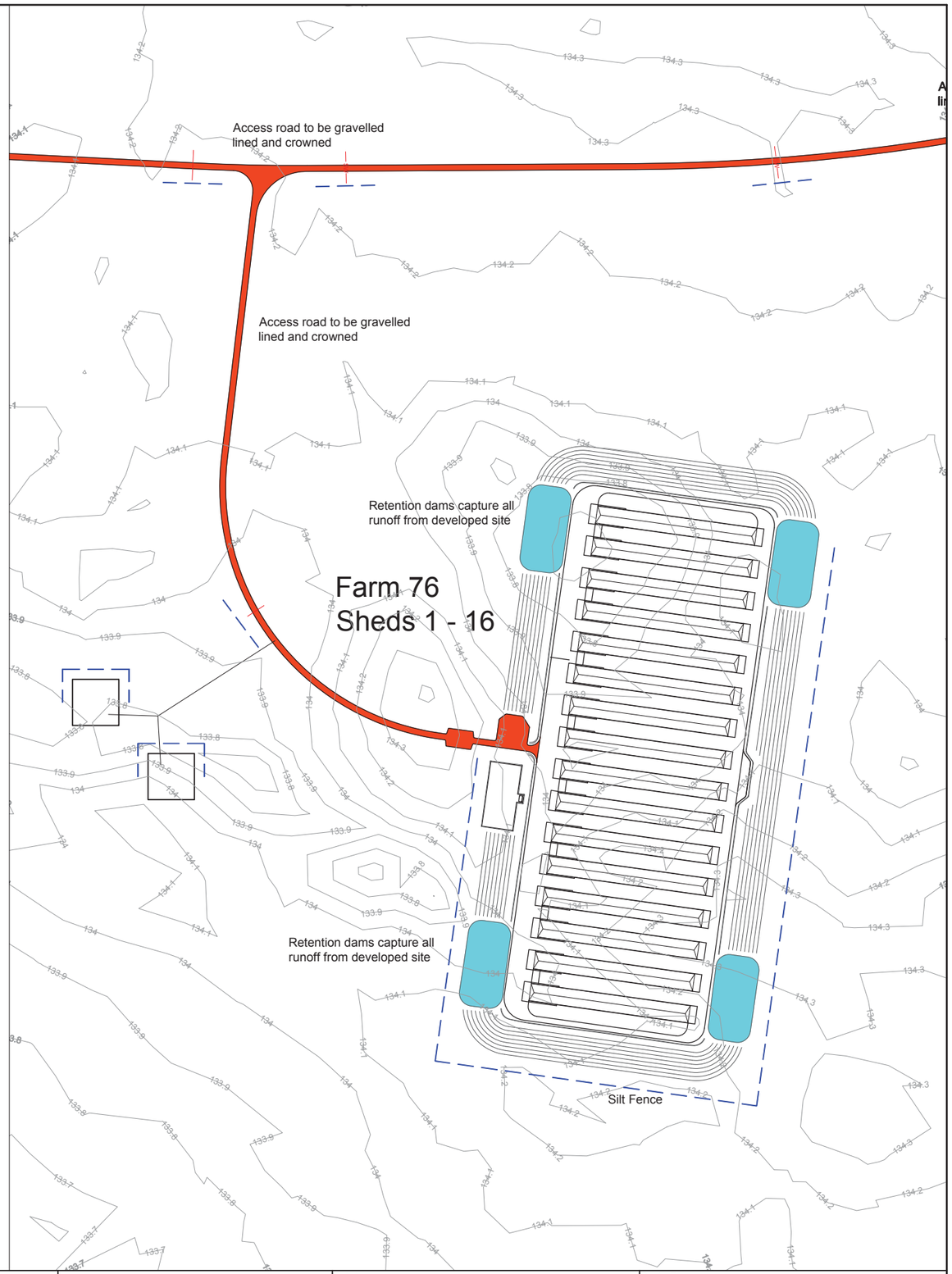

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Drawing Title	Site Plan
Client	ProTen
Scales	1:2500
Client Project No.	
Architect / Project Manager	
Project Number	15W013
Dwg. No.	EC02
Sheet	02 or 04
Revision	2

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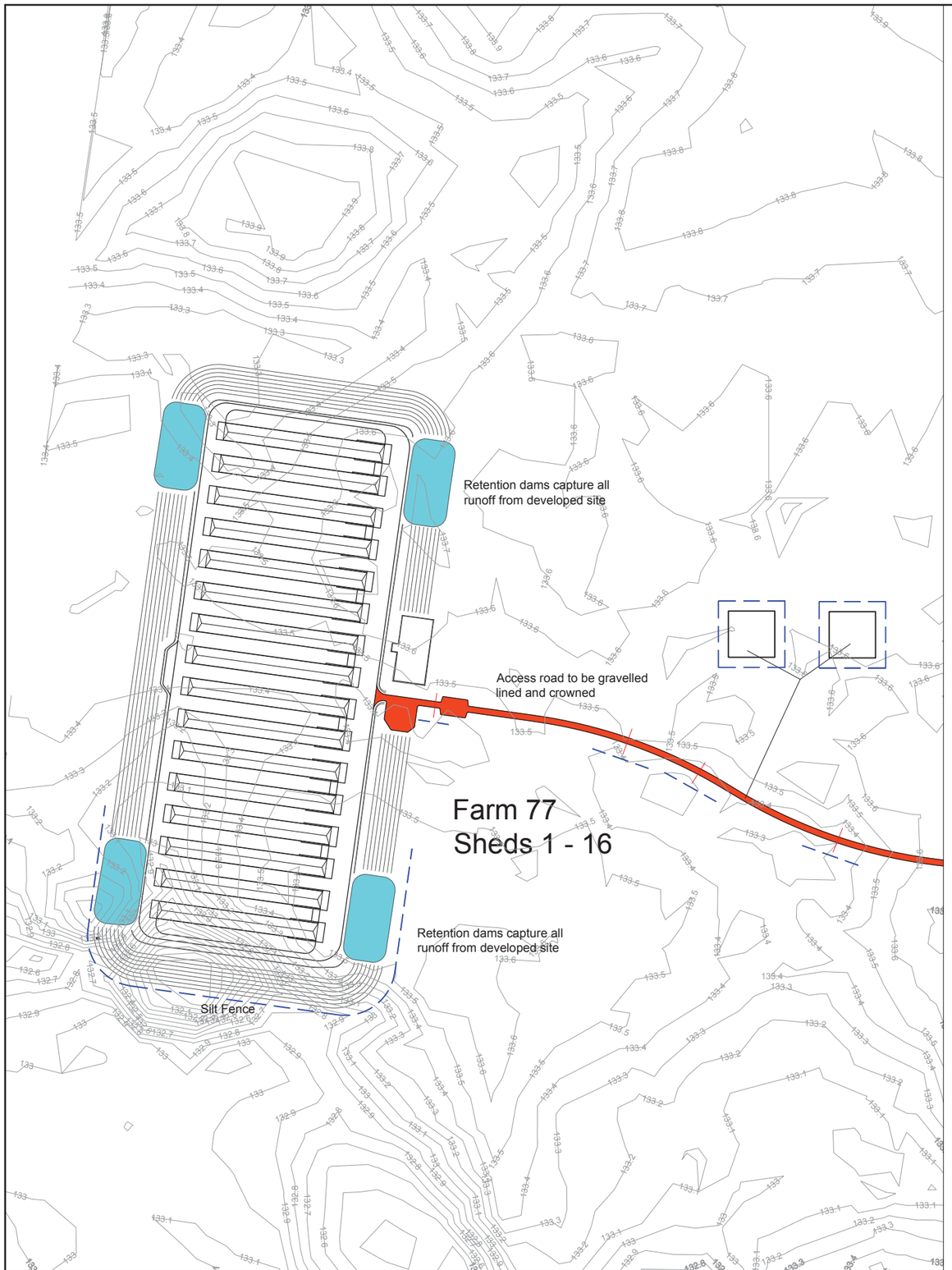

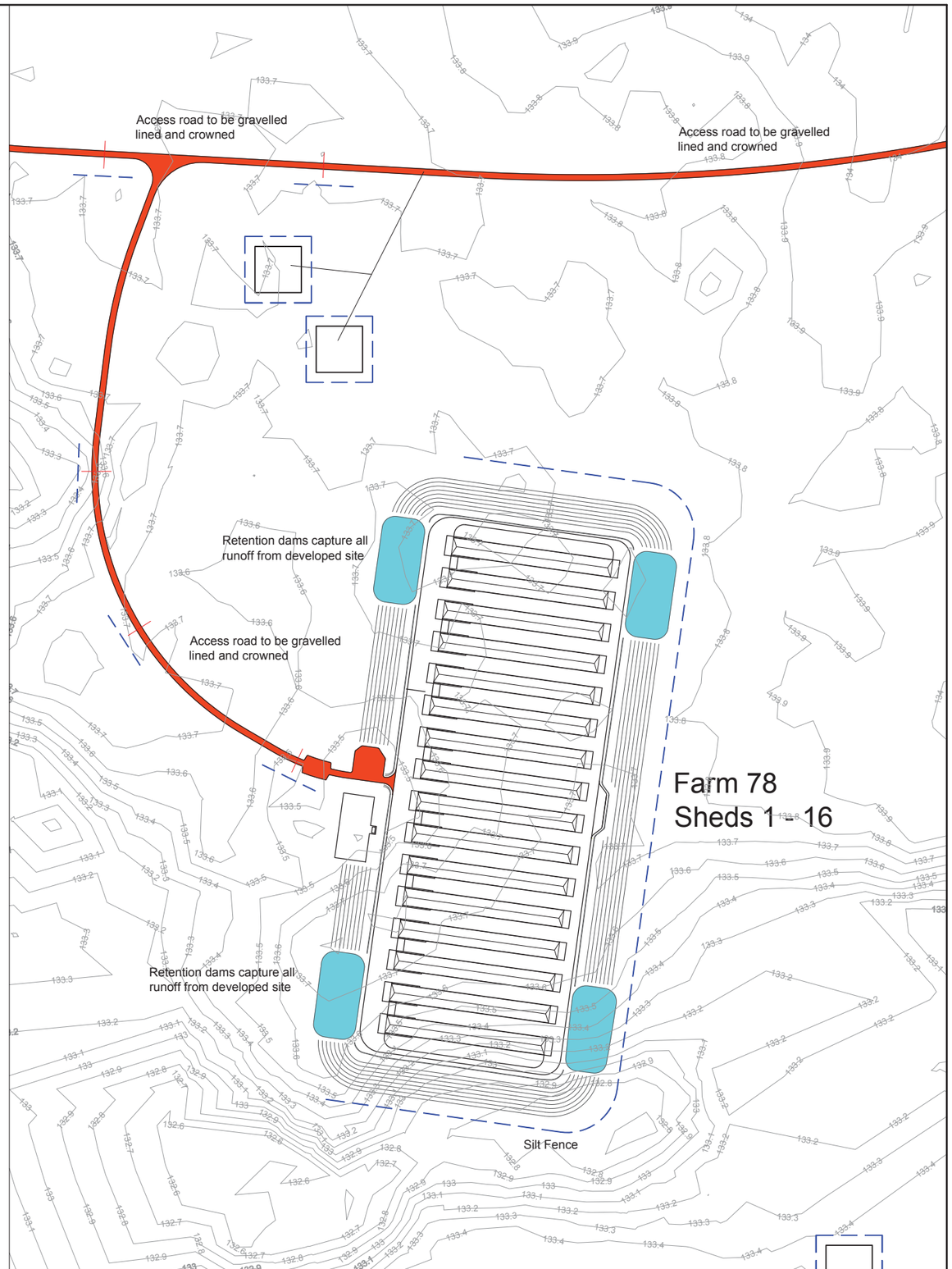

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Drawing Title	Site Plan
Client	ProTen
Scales	1:2500
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Architect / Project Manager	
Project Number	15W013
Dwg. No.	EC03
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Revision	2

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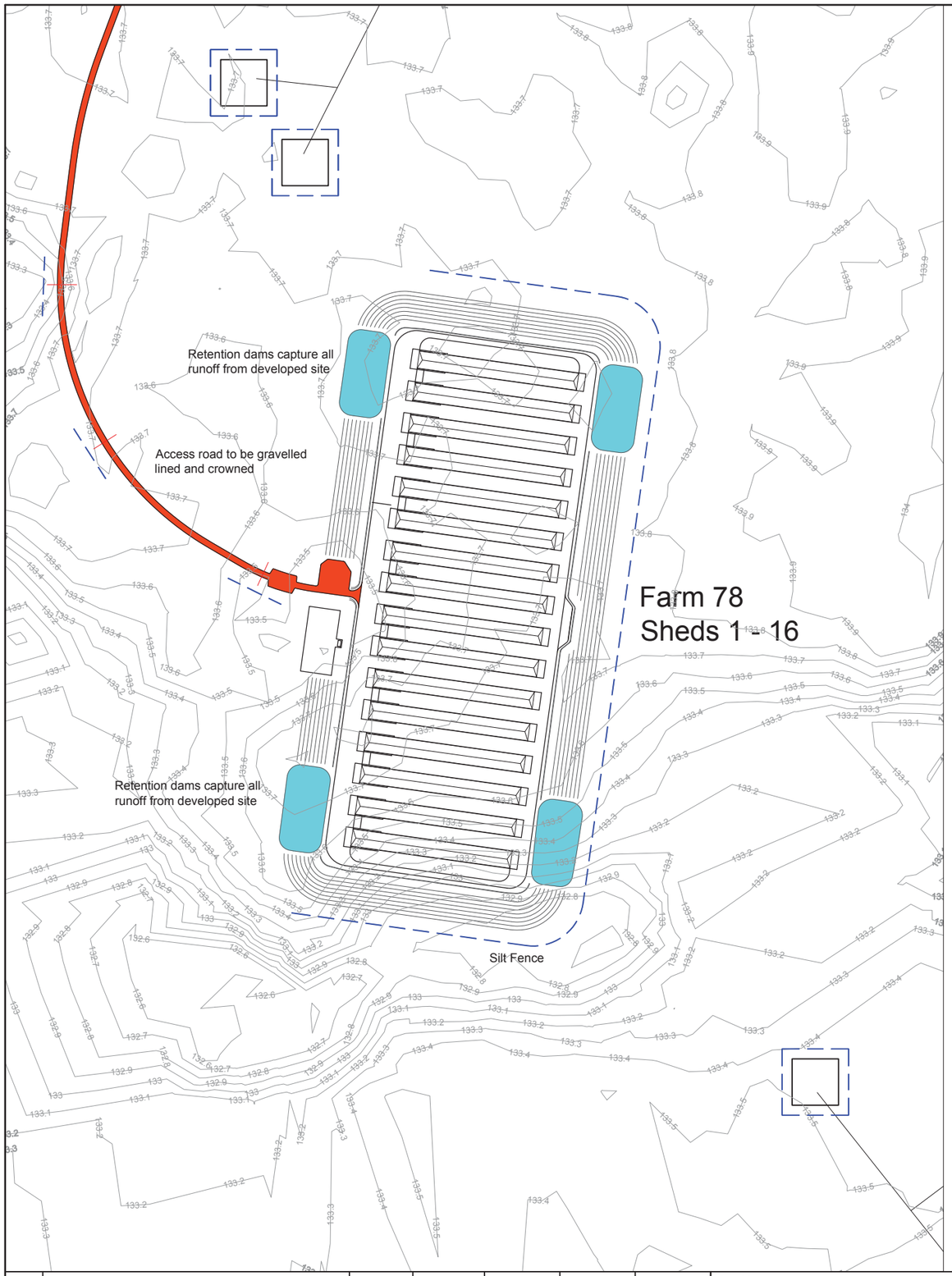

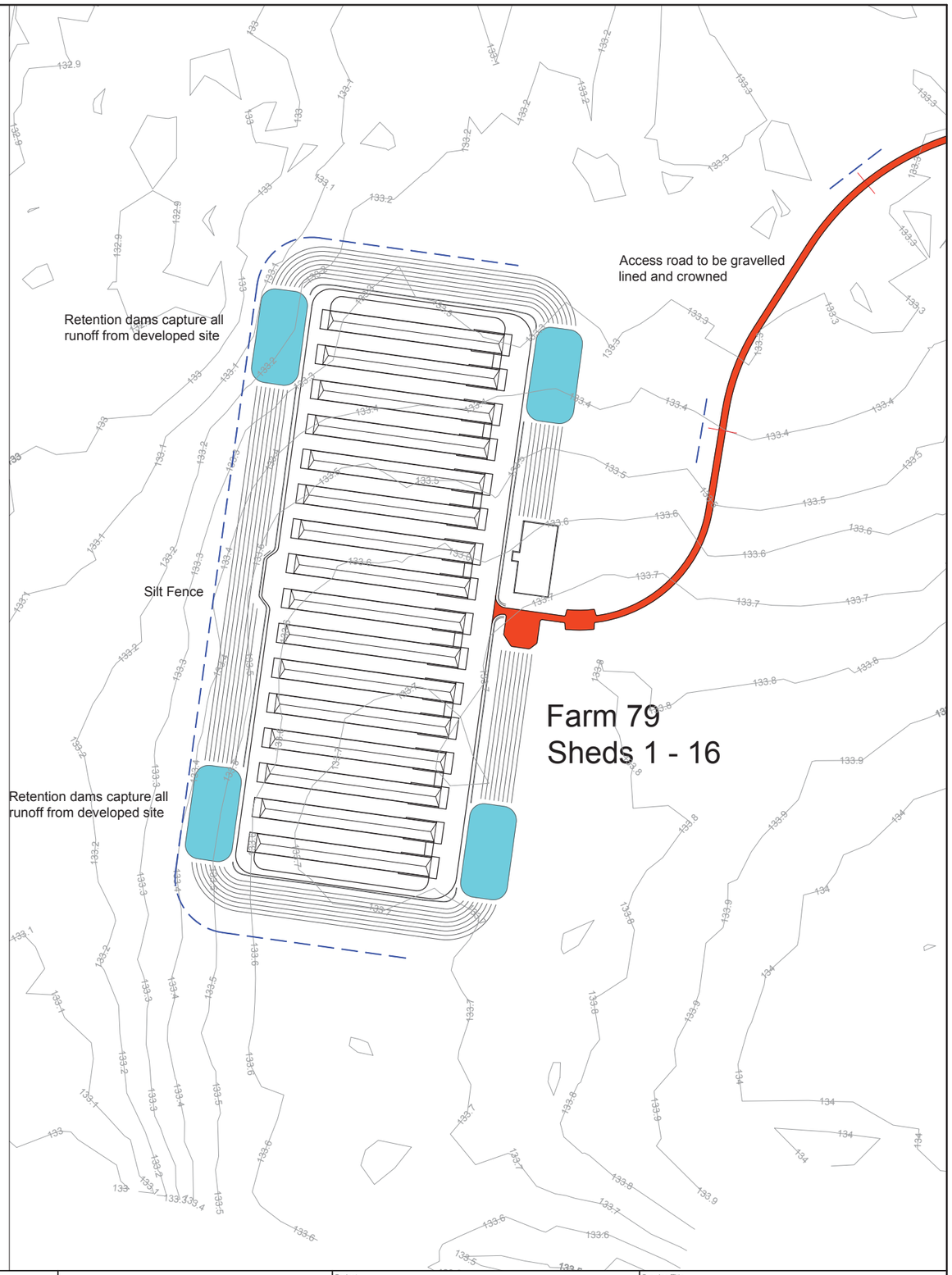

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Drawing Title	Site Plan
Client	ProTen
Scales	1:2500
Client Project No.	
Architect / Project Manager	
Project Number	15W013
Dwg. No.	EC04
Sheet	04 or 04
Revision	2

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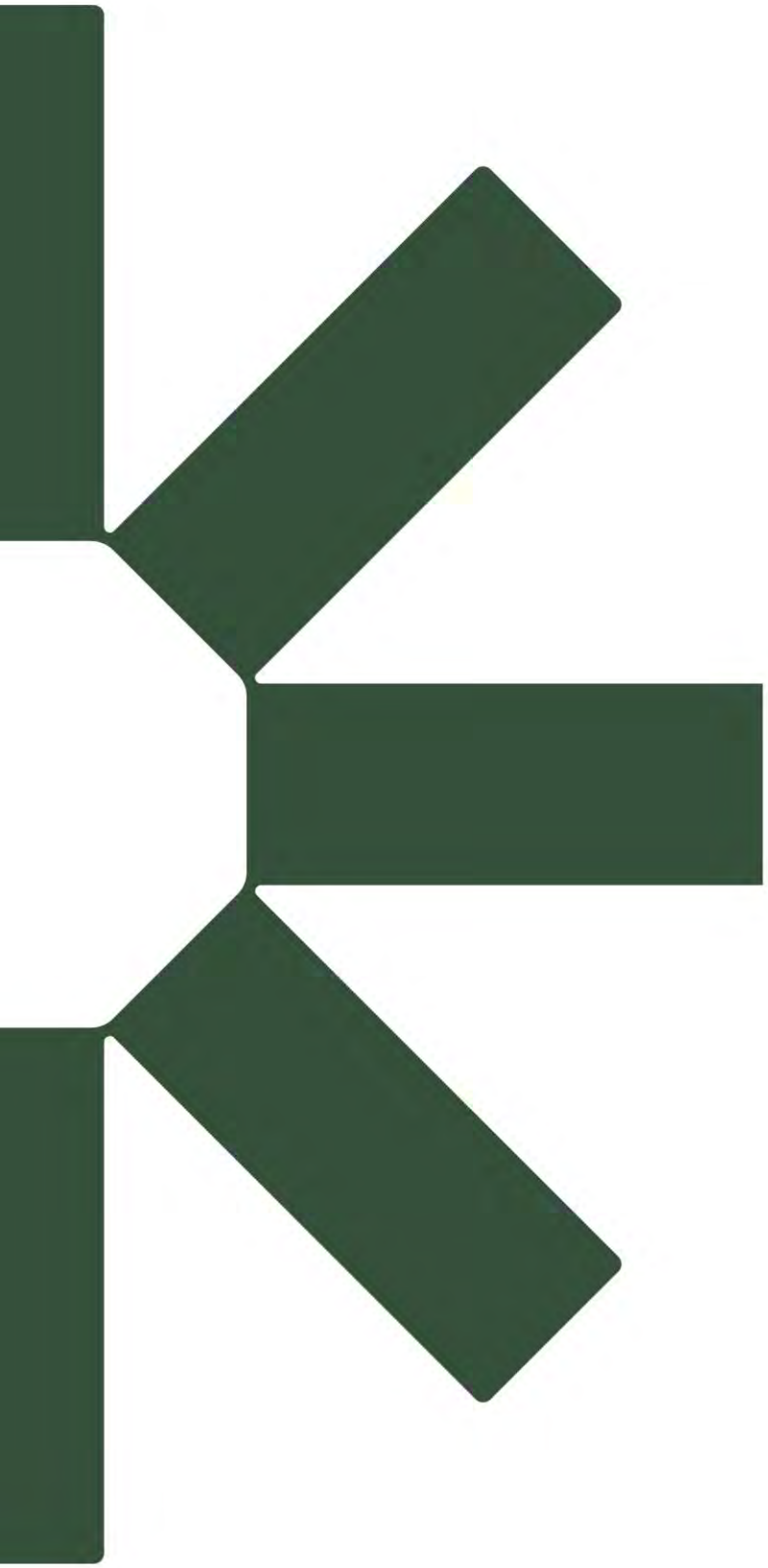

Making Sustainability Happen

Appendix B Landscape Management Plan

Construction Environmental Management Plan

Narrandera Poultry Production Complex
Sturt Highway, Narrandera NSW

ProTen Holdings Pty Limited

SLR Project No.: 610.v15489.00000

24 July 2024

Landscape Management Plan

Narrandera Poultry Production Complex
Sturt Highway, Narrandera

ProTen Holdings Pty Limited

PO Box 1746
North Sydney NSW 2060

Prepared by:

SLR Consulting Australia

SLR Project No.: 610.15489

23 July 2024

Revision: Final V3

Making Sustainability Happen

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
610.15489Final V3	15 July 2024	Madeleine Laws	Sam McDonald	Alanna Ryan
610.15489Final V3	12 November 2015	Eryn Bath	Eryn Bath	Eryn Bath
610.15489Final V3	27 October 2015	Nathan Archer	Eryn Bath	Eryn Bath
610.15489Final V3	21 October 2015	Nathan Archer	Eryn Bath	

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ProTen Holdings PTY Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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Figures in Text

1.0 Introduction

1.1 Background

The Narrandera Poultry Production Complex (the "Development") was granted Development Consent SSD 6882 on 9 November 2015 by the Planning Assessment Commission of NSW (PAC) to be established within a rural property approximately 26 kilometres (km) west of Narrandera in South Western New South Wales (NSW). The Narrandera Poultry Production Complex applied for a Modification to Development Consent SSD 6882 and was accepted on 21st of March 2024 by the Department of Planning, Housing and Infrastructure (DPHI). Modification 1 to SSD 6882 included updates to the consent in relation to:

- Increase maximum number of broilers.
- Change bird placement regime; and
- Allow use of A-Double Heavy Vehicles.

The Development comprises five poultry production units (PPU) or farms, where broiler birds will be grown for human consumption. Each PPU will comprise 16 tunnel-ventilated fully-enclosed climate-controlled poultry sheds, with associated support infrastructure and staff amenities. This Landscape Management Plan (LMP) has been prepared by SLR Consulting Australia (SLR), on behalf of ProTen Holdings (ProTen), for the Narrandera Poultry Production Complex. For the purposes of this document, the Development is described in:

- The Environmental Impact Statement (EIS) (SLR 2015a) and the appendices contained within; and
- The Response to Submissions (RTS) (SLR 2015b) and the appendices contained within.
- The Euroley Poultry Farm SSD-6882 Modification Application (PSA Consulting 2023).

The layout of the Development is illustrated on Figure 1 It is intended to continue using the land outside of the disturbance footprint within the Development Site for continued agricultural production purposes under some form of lease or share farming arrangement.

1.2 Objectives

This LMP has been prepared to satisfy condition B47 of Development Consent SSD 6882:

Landscape Management Plan

B47. Prior to the commencement of operation, the Applicant shall prepare a Landscape Management Plan (LMP) to manage the revegetation and landscaping works on-site, to the satisfaction of the Secretary. The LMP shall form part of the OEMP in Condition C4 and be prepared in accordance with Condition C6. The LMP shall:

a) detail the species to be planted on-site to achieve a vegetation buffer of 40 metres around each PPU;

b) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and

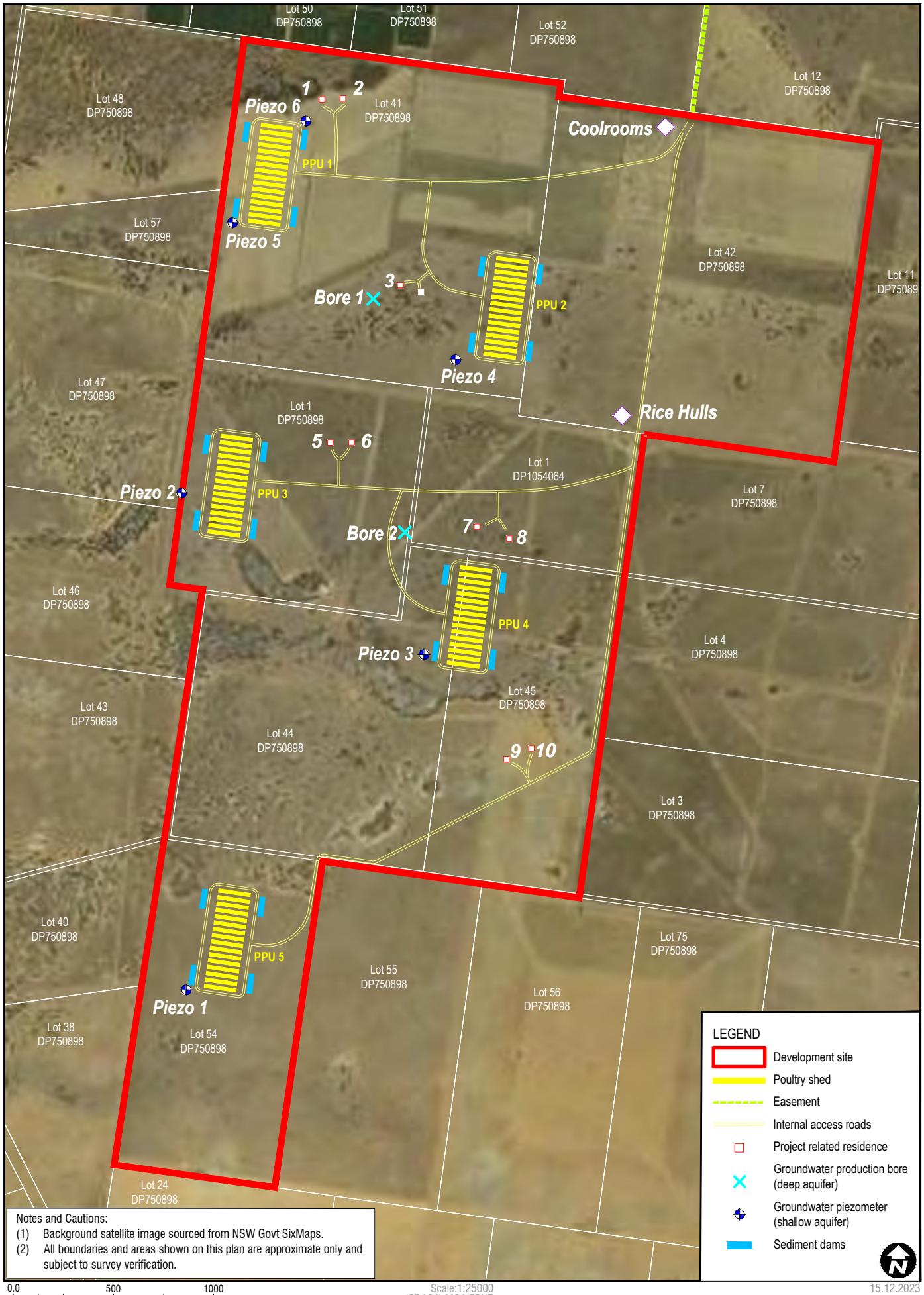
c) be consistent with the Management and Mitigation Measures at Appendix 1.

Given that landscaping is part of the Development's construction phase, this LMP has actually been prepared as an appendix to the Construction Environmental Management Plan (CEMP) (SLR 2024) and is to be read in conjunction with the CEMP.

The objectives of the landscape plantings include:

- Reducing the magnitude and frequency of any adverse air quality impacts by effectively filtering air movement, which will enhance dust deposition and odour dispersion;
- Protecting the poultry sheds against any spray drift or off-target applications of chemicals from neighbouring agricultural land users; and
- Providing a high level of light screening.

Increasing the “surface roughness” and providing some filtering effect, via the establishment of vegetation screens, assists to reduce dust and odour levels from poultry production operations. Vegetative screens set downwind of PPUs act to induce additional turbulence as the ventilation air from the poultry sheds passes through this permeable barrier and also act to partially remove fine dust particles from the ventilation air giving a corresponding percentage reduction in odour levels



Notes and Cautions:
(1) Background satellite image sourced from NSW Govt SixMaps.
(2) All boundaries and areas shown on this plan are approximate only and subject to survey verification.

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DEVELOPMENT LAYOUT

FIGURE 1

2.0 Landscaping Strategy

2.1 Overview

As shown on Figure 2 and Figure 3, the landscape plantings will comprise suitable tree and shrub species strategically planted around the perimeter of each PPU to improve the visual and environmental amenity of the Development. The plantings have been based on the relevant recommendations outlined in Planning Guidelines Separating Agricultural and Residential Land Uses (Queensland Department of Natural Resources 1997). These being:

- A biological buffer of approximately 40 metres wide around the poultry sheds.
- Contain consistent, yet random, plantings of a variety of tree and shrub species of differing growth habits, at spacings of around 4 to 7 metres.
- Include species with long, thin and rough foliage to facilitate the capture of spray droplets and dust particles.
- Provide a permeable barrier that allows air to pass through the buffer. The plantings will aim to achieve a porosity of around 0.5 (i.e. around 50 percent of the screen will be air space);
- Include species that are hardy and fast growing; and
- Foliage from base to crown (i.e. lower and upper storey vegetation) to ensure that the buffer is effective in slowing and filtering air movement at all levels.

ProTen will progressively establish the landscape plantings, as soon as practically possible, following bulk earthworks and construction of infrastructure at each PPU.

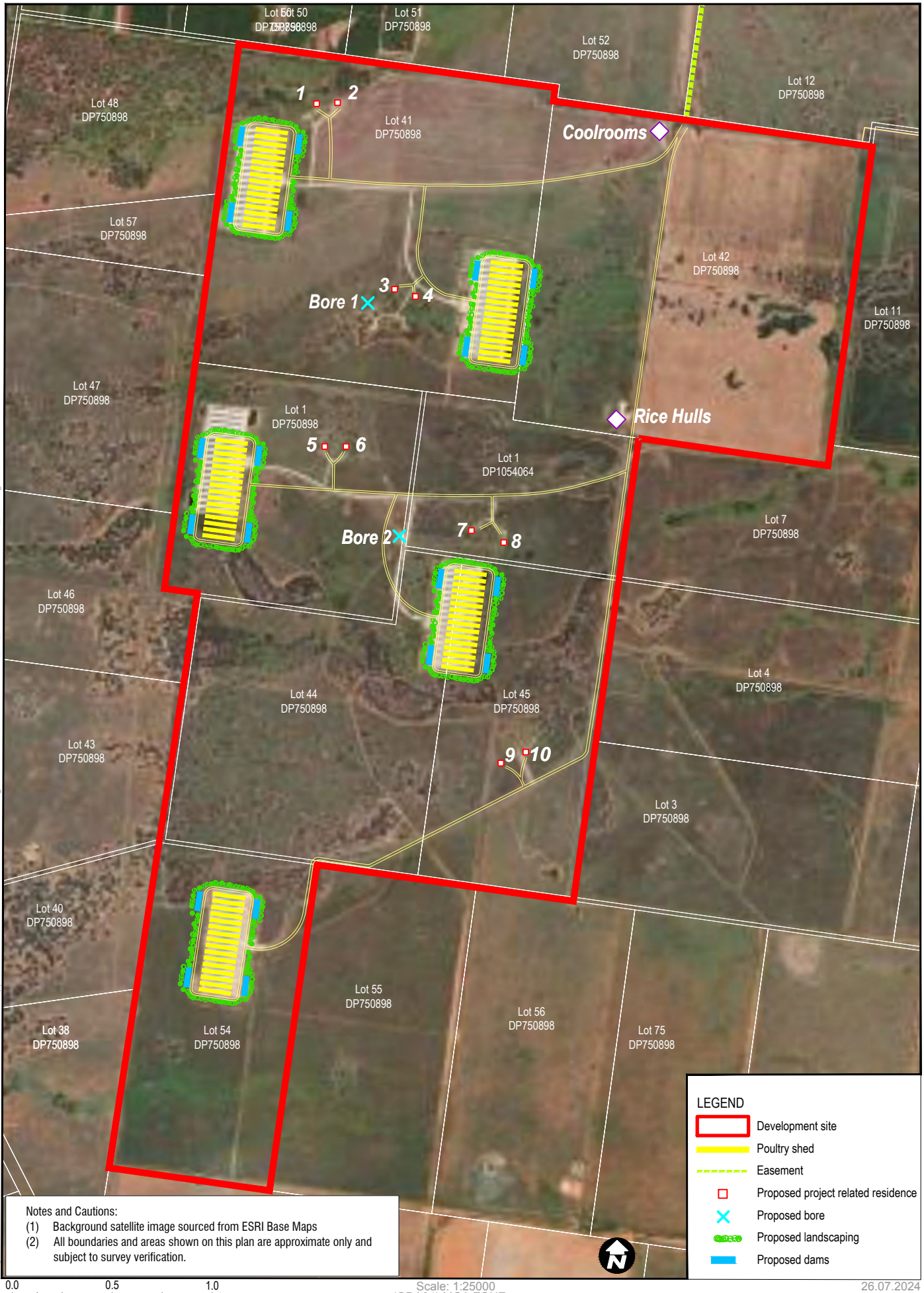
2.2 Species Selection

The following commitments were made in the RTS (SLR 2015b) and have been carried through in the CEMP (SLR 2024):

a) Landscaping works within 100 metres of threatened ecological communities and remnant native vegetation identified in the Biodiversity Assessment Report (SLR 2024) prepared as part of the EIS or mapped in the Central-southern NSW vegetation dataset (Office of Environment and Heritage 2011) will be with species that naturally occur within the relevant community.

b) Landscaping undertaken within 100 metres of mapped threatened ecological communities and remnant native vegetation will be undertaken with species that are naturally occurring within the area.

Table 1 lists the various tree and shrub species to be planted, as recommended by SLR's Principal Ecologist and Botanist who undertook the biodiversity assessment, in consideration of the above commitments and the points listed in Section 2.1 Table 1 nominates the general location (i.e. respective PPU) where the recommended species should be planted in order to meet the requirements of commitments (a) and (c) above.



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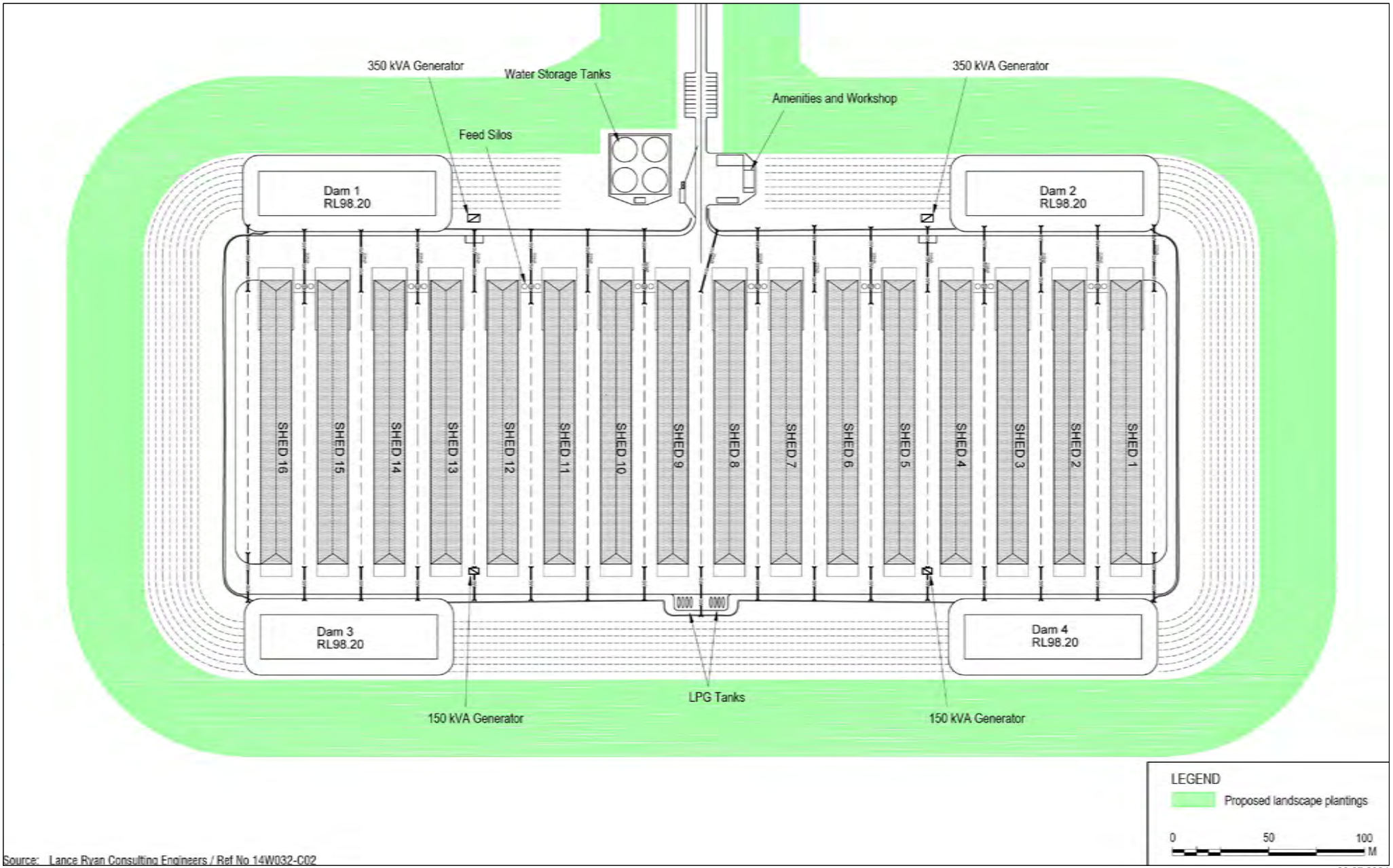
DEVELOPMENT SITE LANDSCAPE PLANTINGS

FIGURE 2



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PPU LANDSCAPE PLANTINGS

FIGURE 3

Table 1: Recommended Local Native Species for PPU Landscaping

Scientific Name	Common Name	Life Form	Mature Height	PCT (see below)
Landscaping Around PPU 1 (White Cypress Pine open woodland of sand plains, prior streams and dines mainly of the semi-arid (warm) climate xone)				
Callitris glaucophylla	White Cypress Pine	Tree	< 20 m	MR644
Allocasuarina luehmannii	Buloke	Tree	5 - 5 m	MR644
Glycine clandestina		Tree	1 m	MR644
Geijera parviflora	Wilga	Tree	5 - 8 m	MR644
Myoporum platycarpum subsp. platycarpum	Sugarwood	Tree	4 - 12 m	MR644
Alectryon oleifolius subsp. Canescens; or				
Alectryon oleifolius subsp. elongatus	Boonaree	Small tree	< 9 m	MR644
Hakea tephrosperma	Hooked Needlewood	Small tree / shrub	3 -12 m	MR644
Acacia oswaldii	Miljee	Small tree / shrub	2 - 6 m	MR644
MR517				
Dodonaea viscosa subsp. angustissima	Giant Hopbush	Shrub	< 6 m	MR644
Landscaping around PPUs 2 to 5 (Black Box - Lignum woodland of the inner floodplains in the semi-arid (warm) climate zone; and Black Box grassy open woodland of rarely flooded depressions, South-Western NSW)				
Eucalyptus largiflorens	Black Box	Tree	10 - 20 m	MR517
Eucalyptus camaldulensis subsp. camaldulensis	River Red Gum	Tree	12 - 45 m	MR517
Eucalyptus microcarpa	Grey Box	Tree	10 - 25 m	MR517
Eucalyptus melliodora	Yellow Box	Tree	12 - 30 m	MR517
Brachychiton populneus subsp. populneus	Kurrajong	Tree	5 - 10 m	MR517
Acacia stenophylla	River Coobah	Small tree	4 - 10 m	MR517
Acacia pendula	Boree	Small tree	5 - 10 m	MR517
Acacia oswaldii	Miljee	Small tree / shrub	2 - 6 m	MR644
MR517				
Acacia salicina	Coobah	Small tree / shrub	3 - 12 m	MR517
Rhagodia spinescens	Hedge Saltbush	Shrub	1.5	MR644 MR518 MR517

Scientific Name	Common Name	Life Form	Mature Height	PCT (see below)
Myoporum montanum	Western Boobialla	Shrub	1 - 4 m	MR517
Duma florulenta	Lignum	Shrub	1 - 3 m	MR517
Hakea leucoptera subsp. leucoptera	Silver Needlewood	Shrub	2 - 4 m	MR517

Plant community type (PCT) codes:

- MR517 - Black Box - Lignum woodland of the inner floodplains in the semi-arid (warm) climate zone.
- MR518 - Black Box grassy open woodland of rarely flooded depressions, South Western NSW.
- MR644 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone.

A mixture of the tree and shrub species will ensure that the vegetation screens are established as quickly as possible. The shrubs will be planted between the trees in order to form a lower foliage screen.

It is estimated that approximately 16,000 trees and shrubs will be planted within the Development Site.

2.3 Tree and Shrub Siting

In order to allow maximum leaf area and room for future growth, large trees are to be planted at intervals of around 7 metres and smaller trees and large shrubs are to be planted at intervals of around 4 metres. As previously advised, shrubs are to be planted between the trees in order to form a lower foliage screen.

Species are to be randomly, yet consistently, planted in a band around 40 metres wide in order to allow air movement whilst trapping fine particulate matter and spray droplets on foliage.

2.4 Site Preparation

Good site preparation is critical to root development, tree/shrub survival and establishment of rapid growth rates. The landscaping areas will be sprayed out using a herbicide to remove grass and weeds, followed by deep ripping and cultivation. In newly ripped soil air pockets occur which may cause a seedling to die from lack of available water. On this basis, the rip lines will be left to settle and maintained in a weed free condition for approximately one month. This period can be shortened with good rain or irrigation.

Appropriate mulching will also help promote growth and reduce water requirements. Mulch retains soil moisture, increases soil temperature, reduces erosion, encourages earthworm activity and builds a humus layer that adds to and benefits the topsoil.

2.5 Plantings

Following the site preparation described above in Section 2.4, the planting method will comprise the following key steps:

- If possible, planting will be undertaken during the autumn/early winter months to reduce moisture stress.

- The landscaping areas will be deep watered approximately one week prior to planting in order to ensure a good moisture base.
- Trees and shrubs will be randomly, yet consistently, planted in the rip lines.
- If necessary, appropriate fencing and/or tree guards will be installed to limit grazing animals such as rabbits and kangaroos.
- Each of the newly planted trees and shrubs will be deep-watered; and
- If necessary, an appropriate fertiliser will be applied.

2.6 Maintenance

A commitment to effective landscaping involves on-going monitoring and maintenance for a period of at least 12 to 18 months following planting. The vegetation plantings will be inspected and assessed for maintenance requirements on a fortnightly basis, including success of tree and shrub plantings and the presence/absence of weeds.

Where the health and/or growth of the plantings appear limited, maintenance activities will be initiated. These may include re-planting and where necessary, topdressing and/or the application of specialised treatments such as composted mulch to areas with poor vegetation establishment.

Tree guards will be replaced around planted stock if damaged and animal grazing is found to be excessive.

Watering of the landscaping plantings will occur, as required, in the formative years via surface irrigation.

3.0 Revegetation

The most effective means of controlling erosion and sedimentation is through the establishment and maintenance of a healthy vegetation cover. Vegetation provides surface protection against raindrop impact, binds the underlying soil to resist detachment by surface flows and improves the soil's infiltration capacity.

3.1 General Disturbance Areas

General disturbance areas will be promptly rehabilitated to a stable landform and revegetated following completion of the construction/disturbance activities. Broadcast seeding will be utilised as the preferred revegetation method for all disturbance areas requiring revegetation. For critical areas requiring quick revegetation or for areas where poor revegetation is identified, more intensive revegetation methods (i.e. hydromulching) may be warranted.

Broadcast seeding involves the spreading of a suitable pasture seed mix over the area to be revegetated and will be undertaken according to the following construction notes:

- Where possible, topsoil will be re-spread to a minimum depth of 100 millimetres in the reverse sequence to its removal so that the organic layer containing any seed or vegetation is returned to the surface. Re-spreading on the contour will aid runoff control and increase moisture retention for subsequent plant growth. The re-spread topsoil will be levelled to achieve an even surface (avoiding a compacted or an over-smooth finish) and tilled.
- After surface soil tillage is completed for any given area, revegetation will commence as soon as practicable; and
- An appropriate fertiliser such as Granulock 15 (or similar) will be applied during the seeding operation at a rate of approximately 250 kilograms per hectare.

The pasture grass and legume mix provided in Table 2 will be applied.

Table 2: Pasture Grasses and Legumes for Revegetation

Species	Rate (kilograms per hectare)	
	Spring / Summer	Autumn / Winter
Japanese Millet	20	5
Ryecorn/Oats	5	20
Couch Grass	10	8
Wimmera Ryegrass	5	10
White Clover	8	-
Lucerne	5	-
Sub Clover	-	8
Serradella	-	10
Consol	-	2

All legumes (clovers and lucerne) should be inoculated with Rhizobia and lime pelleted to promote nodulation and facilitate subsequent nitrogen fixation

3.2 Topsoil Stockpile

In accordance with the Blue Book (Landcom 2004), any longer term soil stockpiles (i.e. greater than 10 days) will be sown with a cover crop immediately after stockpile formation. The following cover crop specifications are recommended for temporary erosion control protection:

Autumn/Winter sowing:

- Oats/Ryecorn at 20 kilograms per hectare; and/or
- Japanese Millet at 10 kilograms per hectare.

Spring/Summer sowing:

- Japanese Millet at 20 kilograms per hectare; and/or
- Oats/Ryecorn at 10 kilograms per hectare.

Refer to the Construction Soil and Water Management Plan (CSWMP) (SLR 2024), which is also appended to the CEMP (SLR 2024), for further details on revegetation requirements.

4.0 Review and Update

This LMP will be reviewed and, if necessary, revised in response to the following:

- Development modification, including notable operational and/or management changes.
- Where is it identified (via on-going inspections/monitoring) that the success and/or health of the landscape plantings is poor and/or adverse air quality impacts are identified at surrounding receptors; and/or.
- Changes to the conditions imposed by the Development Consent SSD 6882 and/or the site's Environmental Protection Licence (EPL).

5.0 References

Queensland Department of Natural Resources (1997*) Planning Guidelines Separating Agricultural and Residential Land Uses*

Landcom (2004) *Managing Urban Stormwater – Soils and Construction Vol. 1*

SLR Consulting Australia (2015a) *Euroley Poultry Production Complex SSD 6882, Environmental Impact Statement*

SLR Consulting Australia (2015b) *Euroley Poultry Production Complex SSD 6882, Response to Submissions*

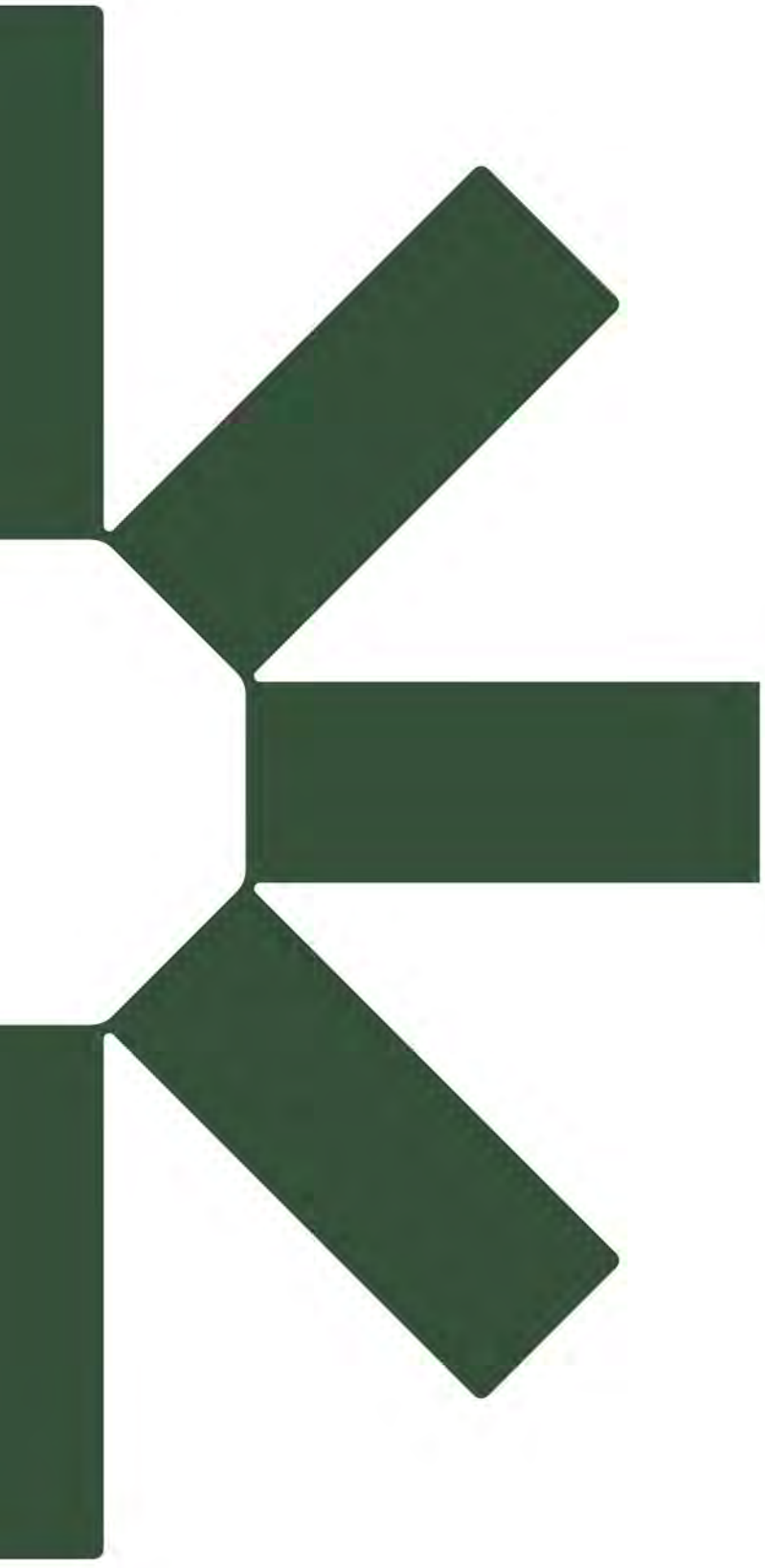
SLR Consulting Australia (2024) *Narrandera Poultry Production Complex Construction Environmental Management Plan*

SLR Consulting Australia (2024) *Narrandera Poultry Production Complex Construction Soil and Water Management Plan*

6.0 Feedback

At SLR, we are committed to delivering professional quality service to our clients. We are constantly looking for ways to improve the quality of our deliverables and our service to our clients. Client feedback is a valuable tool in helping us prioritise services and resources according to our client needs.

To achieve this, your feedback on the team's performance, deliverables and service are valuable and SLR welcome all feedback via https://www.slrconsulting.com/en/feedback. We recognise the value of your time and we will make a $10 donation to our Charity Partner - Lifeline, for every completed form.



Making Sustainability Happen

Appendix C Complaints Form

Construction Environmental Management Plan

Narrandera Poultry Production Complex
Sturt Highway, Narrandera NSW

ProTen Holdings Pty Limited

SLR Project No.: 610.v15489.00000

24 July 2024

PROTEN HOLDINGS PTY LTD

Narrandera Poultry Production Complex

ENVIRONMENTAL COMPLAINT REPORT FORM

STAFF MEMBER CONTACTED

Name:- .....

Date:- ..... **Time:-** ……am/pm

COMPLAINANT DETAILS

Name:- .....

Address:- .....

Contact No.:- .....

COMPLAINT DETAILS

Date of event:- ..... **Approx. time:-** ……am/pm

Description:- ……...

……...

……...

……...

FIELD INVESTIGATION

Investigation undertaken:- Yes / No (if no, give reason)

Findings:- ……...

……...

……...

……...

Is complaint related to an environmental incident:- Yes / No

If yes, complete the Environmental Incident Report Form and, if the incident has caused or threatens to cause material harm to the environment, notify the relevant authorities (as listed in the CEMP).

REMEDIAL ACTION

Remedial action undertaken:- Yes / No (if no, give reason)

Description:- ……...

……...

……...

……..

PROTEN HOLDINGS PTY LTD

Narrandera Poultry Production Complex

ENVIRONMENTAL COMPLAINT REPORT FORM

Any further corrective action required:- Yes / No

If yes, describe:- ……...

……...

……...

……...

COMPLAINANT INFORMED

Complainant informed:- Yes / No **Via:-** Phone / Fax / Email / Letter / In Person

By whom:- ……

SIGN OFF

Name:- …… **Title:-** ……

Signature:- …… **Date:-** ……..

Appendix D Environmental Incident Form

Construction Environmental Management Plan

Narrandera Poultry Production Complex
Sturt Highway, Narrandera NSW

ProTen Holdings Pty Limited

SLR Project No.: 610.v15489.00000

24 July 2024

PROTEN HOLDINGS PTY LTD

Narrandera Poultry Production Complex

ENVIRONMENTAL INCIDENT REPORT FORM

INCIDENT DETAILS

Date of incident:- ..... **Time of incident:-** ……am/pm

Location:- ……...

Description:- ……...

……...

……...

NOTIFICATION TO REGULATORY AUTHORITY

Has the incident caused or does it threaten to cause material harm to the environment:- Yes / No

If yes, the relevant authorities (as listed in the CEMP) must be notified immediately.

Relevant authorities notified:- Yes / No

Who:- ……...

Date:- ..... **Time:-** ……..... am/pm

Instructions:- ……...

……...

……...

REMEDIAL ACTION

Remedial action undertaken:- Yes / No (if no, give reason)

Description:- ……...

……...

……...

……...

Any further corrective action required:- Yes / No

If yes, describe:- ……...

……...

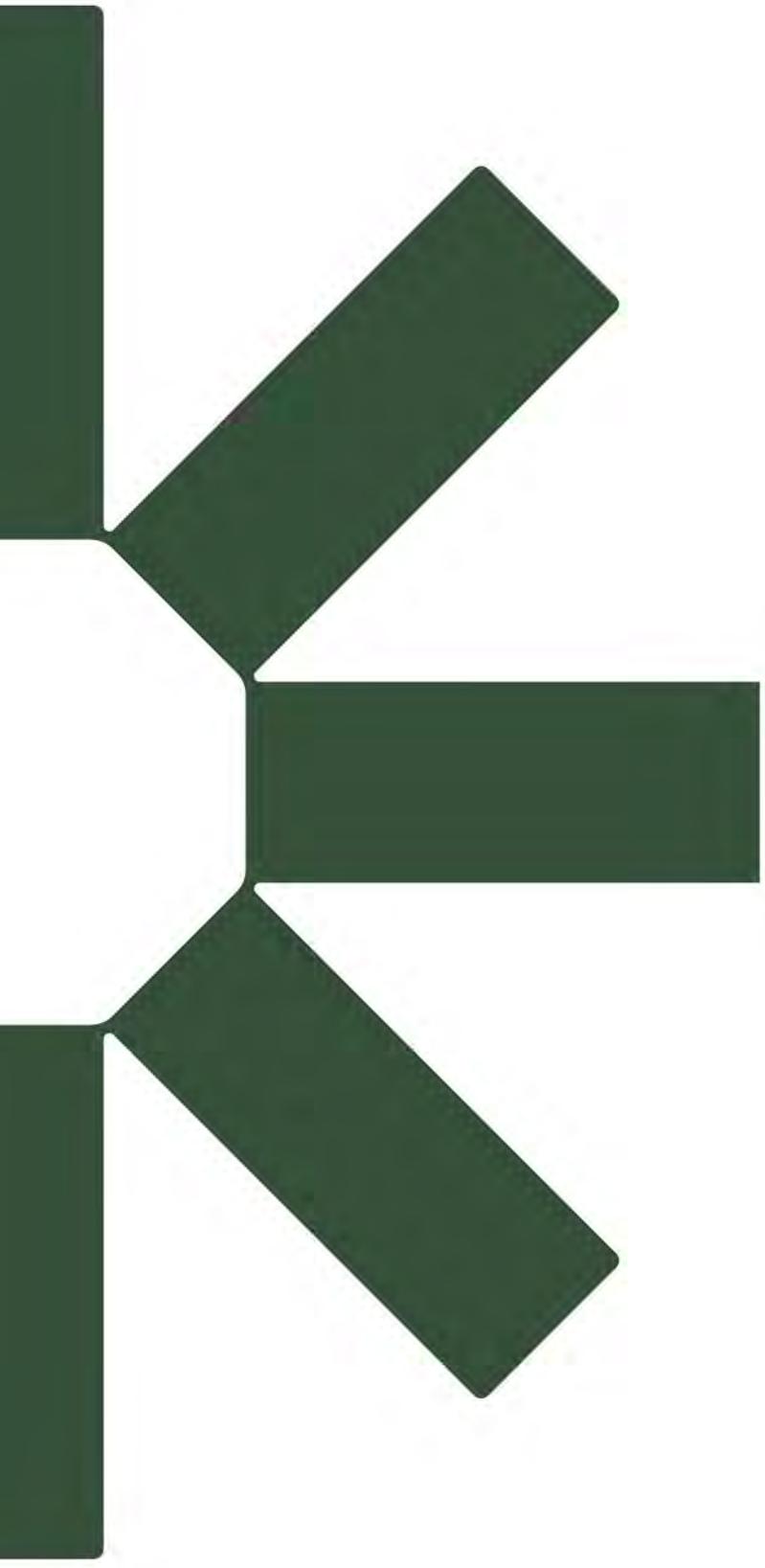
……...

……...

SIGN OFF

Name:- …… **Title:-** ……

Signature:- ……. **Date:-** ……..



Making Sustainability Happen