

Hanson Construction Materials Pty Ltd



Construction Stormwater Management Plan:

Proposed Hanson Aggregate Facility
and Concrete Batching Plant

South Eastern Corner of Lot 10 in DP
1170710, Glebe Island, Rozelle, NSW

P1706211JR06V01
November 2021

ENVIRONMENTAL



WATER



WASTEWATER



GEOTECHNICAL



CIVIL



PROJECT
MANAGEMENT



Copyright Statement

Martens & Associates Pty Ltd (Publisher) is the owner of the copyright subsisting in this publication. Other than as permitted by the Copyright Act and as outlined in the Terms of Engagement, no part of this report may be reprinted or reproduced or used in any form, copied or transmitted, by any electronic, mechanical, or by other means, now known or hereafter invented (including microcopying, photocopying, recording, recording tape or through electronic information storage and retrieval systems or otherwise), without the prior written permission of Martens & Associates Pty Ltd. Legal action will be taken against any breach of its copyright. This report is available only as book form unless specifically distributed by Martens & Associates in electronic form. No part of it is authorised to be copied, sold, distributed or offered in any other form.

The document may only be used for the purposes for which it was commissioned. Unauthorised use of this document in any form whatsoever is prohibited. Martens & Associates Pty Ltd assumes no responsibility where the document is used for purposes other than those for which it was commissioned.

Limitations Statement

The sole purpose of this report and the associated services performed by Martens & Associates Pty Ltd is to complete a Construction Stormwater Management Plan in accordance with the scope of services set out in the contract / quotation between Martens & Associates Pty Ltd and Hanson Construction Materials Pty Ltd (hereafter known as the Client). That scope of works and services were defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

Martens & Associates Pty Ltd derived the data in this report primarily from a number of sources which may include for example site inspections, correspondence regarding the proposal, examination of records in the public domain, interviews with individuals with information about the site or the project, and field explorations conducted on the dates indicated. The passage of time, manifestation of latent conditions or impacts of future events may require further examination / exploration of the site and subsequent data analyses, together with a reevaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, Martens & Associates Pty Ltd may have relied upon and presumed accurate certain information (or absence thereof) relative to the site. Except as otherwise stated in the report, Martens & Associates Pty Ltd has not attempted to verify the accuracy of completeness of any such information (including for example survey data supplied by others).

The findings, observations and conclusions expressed by Martens & Associates Pty Ltd in this report are not, and should not be considered an opinion concerning the completeness and accuracy of information supplied by others. No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings and conclusions are based solely upon site conditions, information and drawings supplied by the Client etc. in existence at the time of the investigation.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between Martens & Associates Pty Ltd and the Client. Martens & Associates Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

© November 2021
Copyright Martens & Associates Pty Ltd
All Rights Reserved

Head Office
Suite 201, 20 George St
Hornsby, NSW 2077, Australia
ACN 070 240 890 ABN 85 070 240 890
Phone: +61-2-9476-9999
Fax: +61-2-9476-8767
Email: mail@martens.com.au
Web: www.martens.com.au

Document and Distribution Status							
Author(s)		Reviewer(s)		Project Manager		Signature	
Brenna Nichols		Sina Arbabzadeh		Jeffrey Fulton			
Revision No.	Description	Status	Release Date	Document Location			
				File Copy	Hanson		
1	Construction Stormwater Management Plan	Final	05.11.2021	1E,1P,1H	1P		

Distribution Types: F = Fax, H = hard copy, P = PDF document, E = Other electronic format. Digits indicate number of document copies.

All enquiries regarding this project are to be directed to the Project Manager.

Contents

1 INTRODUCTION.....	5
1.1 Overview	5
1.2 Purpose	5
1.3 Scope	6
1.4 Approved Works	7
1.5 Relevant Guidelines	7
2 CONSTRUCTION STORMWATER MANAGEMENT PLAN.....	8
2.1 General Management	8
2.1.1 Proposed Site Development	8
2.1.2 Construction Hours	8
2.2 Soil and Water Control Management Plan	9
2.2.1 Overview	9
2.2.2 Soil and Water Management Control Measures	9
2.2.3 Water Quality Treatment Requirements	10
2.2.4 Waste Management	11
2.2.5 Inspecting, Monitoring and Reporting	11
3 LIMITATIONS STATEMENT	12
4 REFERENCES	13
5 ATTACHMENT A – P1706122PS05	14
6 ATTACHMENT B – ARCHITECT LAYOUT.....	19
7 ATTACHMENT C – WASTE MANAGEMENT PLAN	21

1 Introduction

1.1 Overview

This Construction Stormwater Management Plan ("**CSWMP**") has been prepared by Martens & Associates ("**MA**") to satisfy Condition 28 of Development Consent for Application No. SSD 8544 issued by NSW Government Independent Planning Commission.

The subject site is South Eastern Corner of Lot 10 in DP 1170710, Glebe Island, Rozelle, NSW, refer to **Figure 1**.

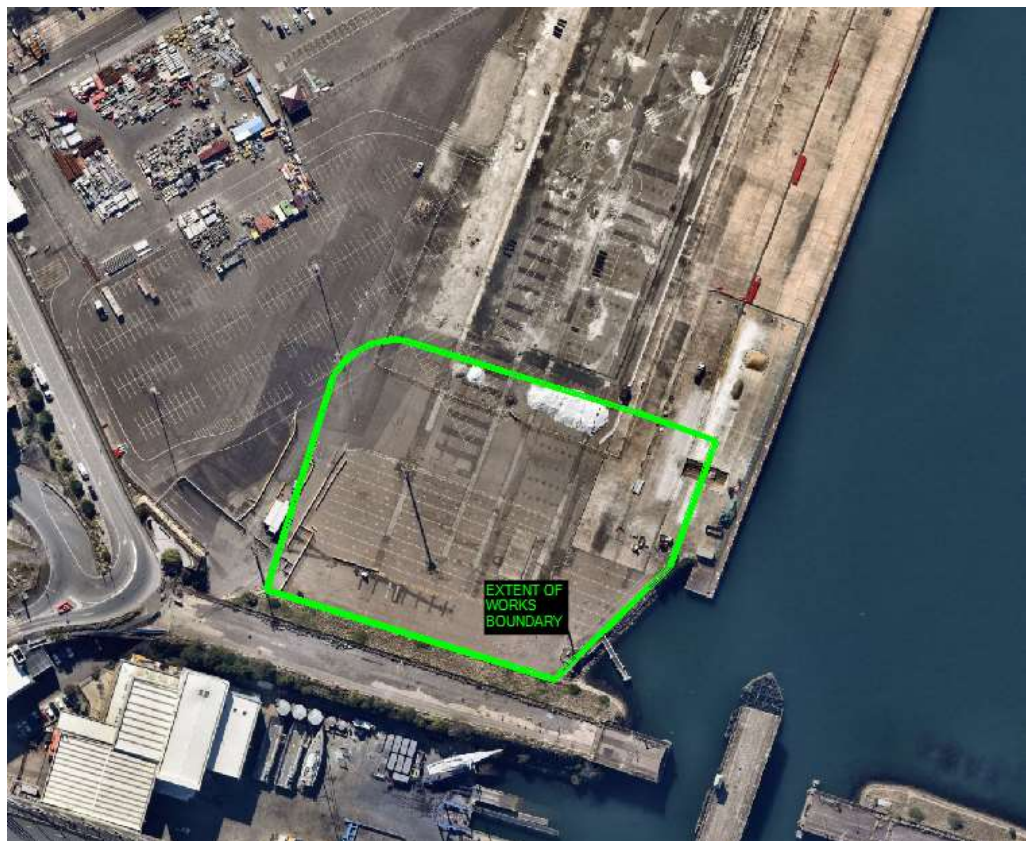


Figure 1: Aerial view, site outlined in green (Nearmap, August 2021)

1.2 Purpose

This CSWMP describes the management of the stormwater during the construction works at the site. The objective of the CSMP is to minimise the impact of construction activities and to ensure that appropriate stormwater management practices are followed during construction.

The areas addressed in this report are to be adopted by the head contractor for onsite works with the intent being to:

1. Detail temporary boundary treatment and stormwater overland flow paths.
2. Procedures for management of any spills.
3. Describe appropriate management of all excess spoil and construction wastes.

The CSWMP must be implemented for the duration of the proposed works.

It is the responsibility of all project personnel, contractors, and subcontractors to comply with the objectives and requirements of this CSWMP and any related documents.

1.3 Scope

The scope of this CSWMP is to satisfy Condition 28 of Development Consent for Application No. SSD 8544 which stated the following:

28. Construction Stormwater Management Plan

Prior to the commencement of works a Construction Stormwater Management Plan (CSWMP) must be prepared by a suitably qualified person in consultation with the EPA. This plan must include an Erosion and Sediment Control Plan and systems, processes and procedure for the implementation, operation and management of:

- a) Temporary boundary treatment and stormwater overland flow paths;*
- b) Procedures for management of any spills; and*
- c) Management of all excess spoil and construction wastes.*

The CSWMP must include an intensive monitoring program to characterise key pollutants in liquid waste inflows to and discharges associated with the development to ensure this waste is treated to an acceptable level.

To satisfy the above requirements, the following CSWMP report and Attachment A – P1706122PS05 have been prepared to:

1. Detail the soil and water management measures to be implemented during the civil and construction works stage of the development.
2. Describe the water quality discharge criteria and outline treatment methods.
3. Outline onsite waste management strategies.
4. Detail inspection, monitoring and reporting requirements.

1.4 Approved Works

Development Consent for Application No. SSD 8544 was approved by the Independent Planning Commission on 23 July 2021 for the construction of a concrete batching plant. The approved works comprise of:

- Concrete batching plant producing up to 1 million cubic meters of concrete per annum.
- Delivery of up to 1 million tonnes of aggregates per annum predominantly by ship to Glebe Island Berth 1 for use in the concrete batching facility on site and for delivery by truck for use of site.
- Aggregate handling facility to store aggregate delivered to the site by ship and truck for the above purposes.

1.5 Relevant Guidelines

The following guidelines have been considered in the development of this CSWMP:

- Inner West Council (2013) Leichardt Development Control Plan.
- Landcom (2004) Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition.
- Transport for NSW (2016) Water Discharge and Reuse Guideline.

2 Construction Stormwater Management Plan

2.1 General Management

2.1.1 Proposed Site Development

The proposed development involves the construction of an aggregate storage facility and concrete batching plant, refer to Attachment B for architect layout. The concrete batching plant will work to supply concrete for infrastructure and building construction in the CBD and inner suburbs following completion.

The construction of the concrete batching plant is to be completed generally in accordance with the following stages:

1. Civil works: 25 weeks
2. Construction works: 52-72 weeks
3. Plant commissioning: 12 weeks
4. Landscaping: 4 weeks
5. Public artworks: 6 weeks

The CSWMP should be implemented for the duration of the civil and construction works stages.

2.1.2 Construction Hours

The following construction hours are to be adopted for the development for the duration of construction works in accordance with the Consent Conditions:

- Monday to Friday: 7:00am to 6:00pm
- Saturday: 7:30am to 3:30pm
- No work is permitted to be carried out on Sundays or public holidays

2.2 Soil and Water Control Management Plan

2.2.1 Overview

The following actions are to be completed prior to and during the construction stage to reduce the occurrence of sedimentation and erosion onsite as noted below:

1. All Soil and Water Control (“**SWC**”) management measures are to be installed prior to commencement of works in accordance with Landcom's 'Blue Book'. No construction works are to commence until SWC measures have been inspected and approved by the site supervisor.
2. To avoid the generation of sediment the site disturbance areas are to be minimised. We understand Hanson shall only be removing the existing concrete hardstand from areas where building / silo foundations, underground services or tank installation is required.
3. All SWC measures are to be routinely inspected and maintained (or repaired) for the duration of construction.
4. Accumulated sediment is to be removed from sediment filters before 30% of total storage capacity is filled and following heavy rainfall events.
5. Vehicle tyres are to be hosed down as required to remove any accumulated sediment prior to exiting the works area.

2.2.2 Soil and Water Management Control Measures

The below SWC management measures are to be installed prior to construction in accordance with Attachment A – P1706122PS05 and maintained for the duration of works. Refer to Attachment A – P1706122PS05 for additional details and specific locations for sediment treatment devices.

1. All site access points must be provided with a stabilised access point through the provision of a shaker pad to reduce the tracking of soils onto public roads. Surface flows are to be diverted from site access where possible.
2. Sandbags are to be used on the upstream work site boundary as a flow diversion berm to minimise surface flows entering the site.

3. A sediment fence is to be on the downstream site boundary to prevent sedimentation existing the site. The sediment fence is to be anchored with gravel bags.
4. Stockpiles shall be protected from erosion through the placement of sandbags upstream and gravel bags downstream to the stockpile and have maximum 2:1 (horizontal: vertical) battered slopes. Stockpiles are to be placed more than 2 m, preferably 5 m, from drainage lines, including overland flow paths.
5. Geotextile inlet filters are to be installed around the inlet of drainage pits to protect sedimentation from entering current and future drainage lines.
6. RUSLE calculations for the site demonstrate that the average annual soil loss is less than 150 m³/year (refer to P1706122PS05 drawing no. PS05-B320). Therefore, a sediment basin is not required for the site. Instead, where stormwater collects onsite where existing hardstand has been removed, water is to be drained to temporary sump and tested to confirm it meets water quality targets in Table 1 prior to discharge to stormwater system.

2.2.3 Water Quality Treatment Requirements

Water quality testing is to be undertaken 36 to 48 hours following completion of a rainfall event that fills the temporary sump. If water quality meets the minimum water parameters identified in Table 1 below it is to be discharged immediately following.

Table 1: Water quality discharge criteria.

Parameter	Criterion	Method	Time prior to discharge
Oil and grease	No visible	Visual inspection	< 1 hour
pH	6.5-8.5	Probe / meter ¹	< 1 hour
TSS	< 50mg/L	Meter / grab sample ²	< 1 hour / < 24 hour

Notes

1. Litmus paper and pool testing kits are not to be used.
2. Samples must be analysed at a NATA accredited laboratory.
3. Water quality discharge criteria sources from Transport for NSW (2016) Water Discharge and Reuse Guideline.

Water must be treated and retested prior to discharge if the criteria has not been met. The following treatment measures can be employed to ensure water meets the water quality discharge requirements:

- Oil and grease may be physically removed spreading absorbent materials across the water surface. Absorbent materials must be disposed of appropriately following use.
- pH levels may be neutralised by either containing the water until it naturally neutralises, diluting with other contaminated site water with a higher or lower pH as necessary or by the addition of an acid (to lower pH levels) or a base (to raise pH levels). Safety protocols should be followed should an acid or base be used to alter the pH levels.
- Total suspended solids may be removed by either natural settlement, flocculation or filtration.

2.2.4 Waste Management

The management of all excess spoil and construction wastes is to be managed in accordance with the Construction Waste Management Plan ("**CWMP**") prepared by Hanson (2021) for the site, refer to Attachment C. The waste management processes outlined in the CWMP has been developed by Hanson for the construction of the Glebe Island Concrete Batching Plant and all processes should be adopted.

The CWMP ensures all waste produced during construction is managed lawfully and responsibly and outlines the management of waste produced onsite and the offsite disposal procedures to be followed during the construction process.

2.2.5 Inspecting, Monitoring and Reporting

It is the responsibility of the Site Supervisor to monitor and check to ensure all management controls are sufficiently operating. The Site Supervisor is to:

1. Inspect and approve all SWC measures prior to commencement of works.
2. Perform routine visual inspections of all SWC measures throughout the duration of construction.
3. Perform inspections of all SWC measures after heavy rainfall events to ensure the integrity of the SWC measures are maintained.
4. Report uncontrolled stormwater flows or uncontrolled erosion onsite and the implementation of any corrective methods.

3 Limitations Statement

This CSWMP has been undertaken in line with current industry standards. MA has prepared this CSWMP for the purposes of the referenced development. No reliance on this report should be made for any other investigation or proposal. MA accepts no responsibility and provides no guarantee regarding the characteristics of areas of the site not specifically addressed in this plan.

4 **References**

Inner West Council (2013) Leichardt Development Control Plan

Landcom (2004) Managing Urban Stormwater: Soils and Construction,
Volume 1, 4th Edition

Hanson (2021) Construction Waste Management Plan Glebe Island
Concrete Batching Plant Lot 10 DP 1170710 Glebe Island, Rozelle

Transport for NSW (2016) Water Discharge and Reuse Guideline

5 Attachment A – P1706122PS05

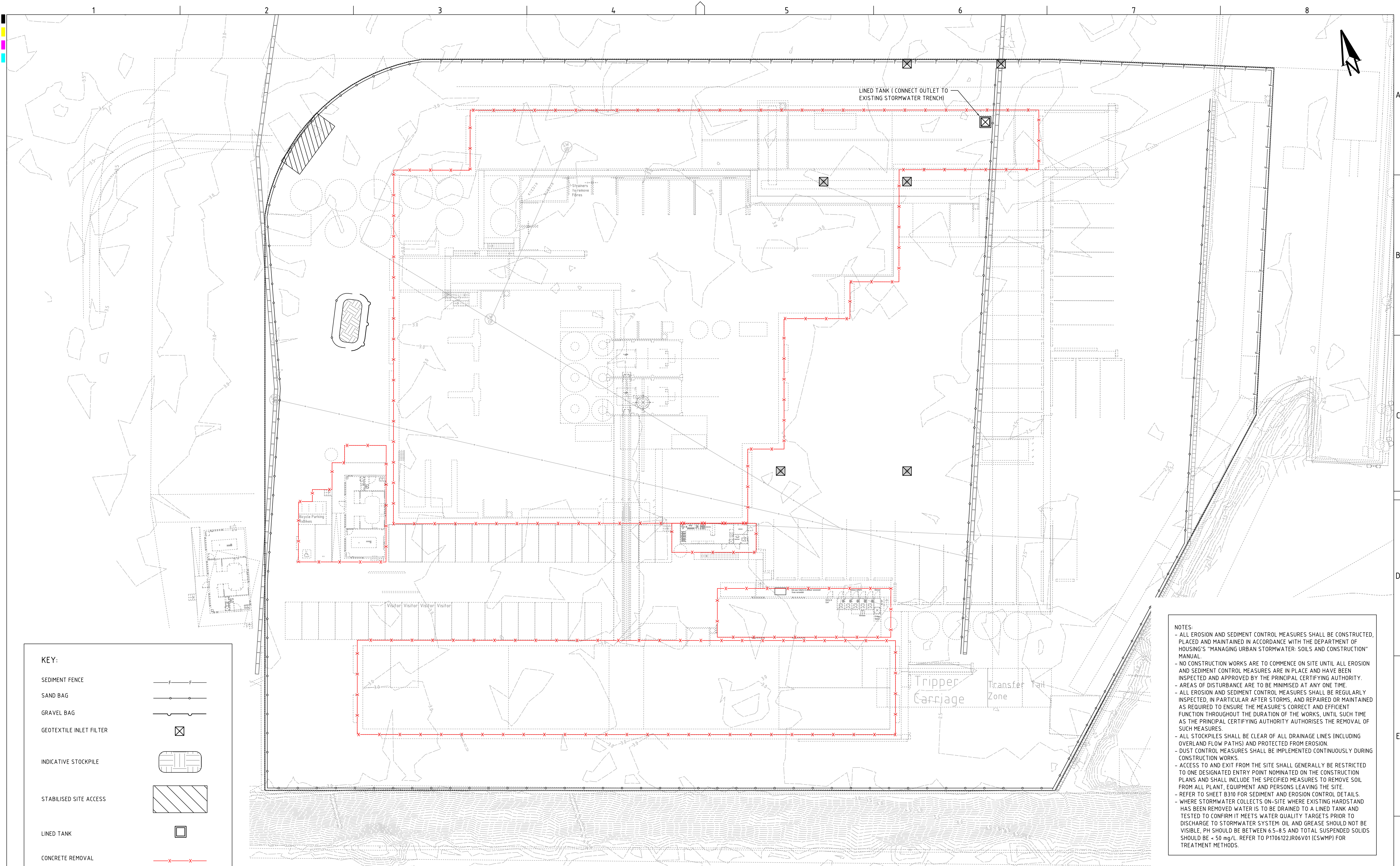
DRAWING LIST		
DWG NO.	REV	DWG TITLE
GENERAL		
PS05-A000	A	COVER SHEET
CONSTRUCTION MANAGEMENT WORKS		
PS05-B300	A	SOIL AND WATER MANAGEMENT PLAN
PS05-B310	A	SOIL AND WATER MANAGEMENT DETAILS
PS05-B320	A	RUSSEL CALCULATIONS



GLEBE ISLAND, ROZELLE, NSW
Lot 10, DP 1170710

CONSTRUCTION STORMWATER MANAGEMENT PLAN

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au	DRAWING TITLE COVER SHEET
A	INITIAL RELEASE	15/10/2021	RK	BN	SA	JF		---	---	AN	HANSON CONSTRUCTION MATERIALS P/L		
											PROJECT NAME/PLANSET TITLE		
											DISCLAIMER & COPYRIGHT		
											This plan must not be used for construction unless signed as approved by principal certifying authority.		
											All measurements in millimetres unless otherwise specified.		
											This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.		
											(C) Copyright Martens & Associates Pty Ltd		
											PROPOSED CONCRETE BATCHING PLANT CONSTRUCTION STORMWATER MANAGEMENT PLAN		
											GLEBE ISLAND LOT 10 DP 1170710		
AT / A3 LANDSCAPE (A3LX_v02.0.01)												DRAWING ID: P1706122-PS05-R02-A000	

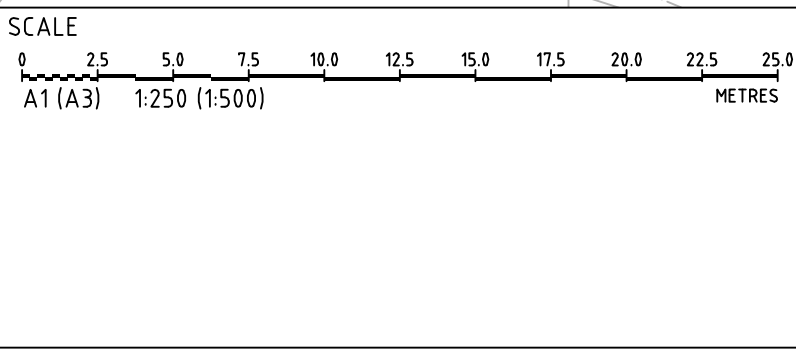


NOTES:

- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH THE DEPARTMENT OF HOUSING'S "MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION" MANUAL.
- NO CONSTRUCTION WORKS ARE TO COMMENCE ON SITE UNTIL ALL EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE PRINCIPAL CERTIFYING AUTHORITY.
- AREAS OF DISTURBANCE ARE TO BE MINIMISED AT ANY ONE TIME.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REGULARLY INSPECTED, IN PARTICULAR AFTER STORMS, AND REPAIRED OR MAINTAINED AS REQUIRED TO ENSURE THE MEASURE'S CORRECT AND EFFICIENT FUNCTION THROUGHOUT THE DURATION OF THE WORKS, UNTIL SUCH TIME AS THE PRINCIPAL CERTIFYING AUTHORITY AUTHORISES THE REMOVAL OF SUCH MEASURES.
- ALL STOCKPILES SHALL BE CLEAR OF ALL DRAINAGE LINES (INCLUDING OVERLAND FLOW PATHS) AND PROTECTED FROM EROSION.
- DUST CONTROL MEASURES SHALL BE IMPLEMENTED CONTINUOUSLY DURING CONSTRUCTION WORKS.
- ACCESS TO AND EXIT FROM THE SITE SHALL GENERALLY BE RESTRICTED TO ONE DESIGNATED ENTRY POINT NOMINATED ON THE CONSTRUCTION PLANS AND SHALL INCLUDE THE SPECIFIED MEASURES TO REMOVE SOIL FROM ALL PLANT, EQUIPMENT AND PERSONS LEAVING THE SITE.
- REFER TO SHEET B310 FOR SEDIMENT AND EROSION CONTROL DETAILS.
- WHERE STORMWATER COLLECTS ON-SITE WHERE EXISTING HARDSTAND HAS BEEN REMOVED WATER IS TO BE DRAINED TO A LINED TANK AND TESTED TO CONFIRM IT MEETS WATER QUALITY TARGETS PRIOR TO DISCHARGE TO STORMWATER SYSTEM. OIL AND GREASE SHOULD NOT BE VISIBLE, PH SHOULD BE BETWEEN 6.5-8.5 AND TOTAL SUSPENDED SOLIDS SHOULD BE < 50 mg/L. REFER TO P1706122J06V01 (CSWMP) FOR TREATMENT METHODS.

CONSTRUCTION STORMWATER MANAGMENT PLAN

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
A	INITIAL RELEASE	15/10/2021	RK	BN	SA	JF



GRID
MGA

DATUM
mAHD

PROJECT MANAGER
AN

CLIENT
HANSON CONSTRUCTION MATERIALS P/L

PROJECT NAME/PLANSET TITLE
PROPOSED CONCRETE BATCHING PLANT
CONSTRUCTION STORMWATER MANAGEMENT PLAN

GLEBE ISLAND
LOT 10 DP 1170710

DISCLAIMER & COPYRIGHT
This plan must not be used for construction unless signed as approved by principal certifying authority.
All measurements in millimetres unless otherwise specified.
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.
(C) Copyright Martens & Associates Pty Ltd

martens
& Associates Pty Ltd

Consulting Engineers

Environment
Water
Geotechnical
Civil

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE				
SOIL AND WATER MANAGEMENT PLAN				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1706122	PS05	R02	PS05-B300	A

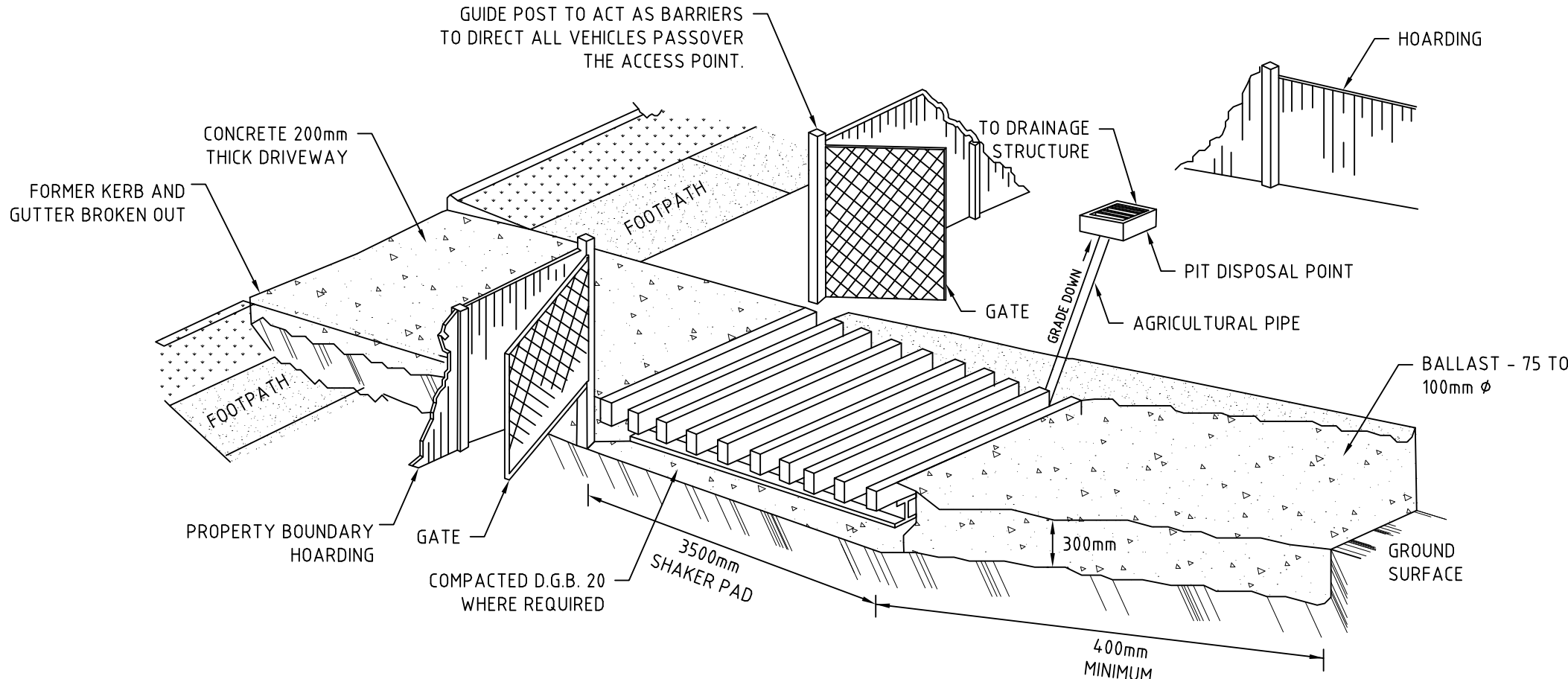
PRINTED: 15/10/2021 14:52:14
A1 / A3 LANDSCAPE (A1L_C_02.0.01)

STABILISED ACCESS POINT

TYPE II SAP

THE TYPE II SAP DESIGN IS MORE DEFINED IN THAT IT REQUIRES AN AREA OF BALLAST WITHIN THE SITE COMBINED WITH A SHAKER PAD; ADJACENT THE SHAKER PAD AND IN THE PUBLIC WAY IS A TEMPORARY (CONCRETE) VEHICULAR CROSSING. (SEE DIAGRAM)

STABILISED ACCESS POINT - TYPE 2



IN BOTH TYPE I AND TYPE II SAP'S, THE TEMPORARY VEHICULAR CROSSING MUST:

- CONNECT TO AN EXISTING GUTTER LAYBACK (WHERE THE KERB AND GUTTER EXIST). IF A GUTTER LAYBACK DOES NOT EXIST THEN THE CONNECTION MUST BE MADE TO THE GUTTER BY REMOVING THE ADJACENT KERB SECTION ONLY.
- CONNECT TO A DISH CROSSING (WHERE KERB AND GUTTER DOES NOT EXIST). IF A DISH CROSSING DOES NOT EXIST, THEN IT MUST BE CONSTRUCTED IN ACCORDANCE WITH DETAILS CONTAINED IN COUNCIL'S ISSUED FOOTPATH CROSSING LEVELS.

IT SHOULD BE NOTED THAT THESE TYPES OF SAPS ARE CONSIDERED TO BE APPLICABLE FOR THE MAJORITY OF ACTIVITIES HOWEVER SOME SITES MAY REQUIRE SPECIAL CONSIDERATION.

SHAKER PAD (CATTLE GRID)

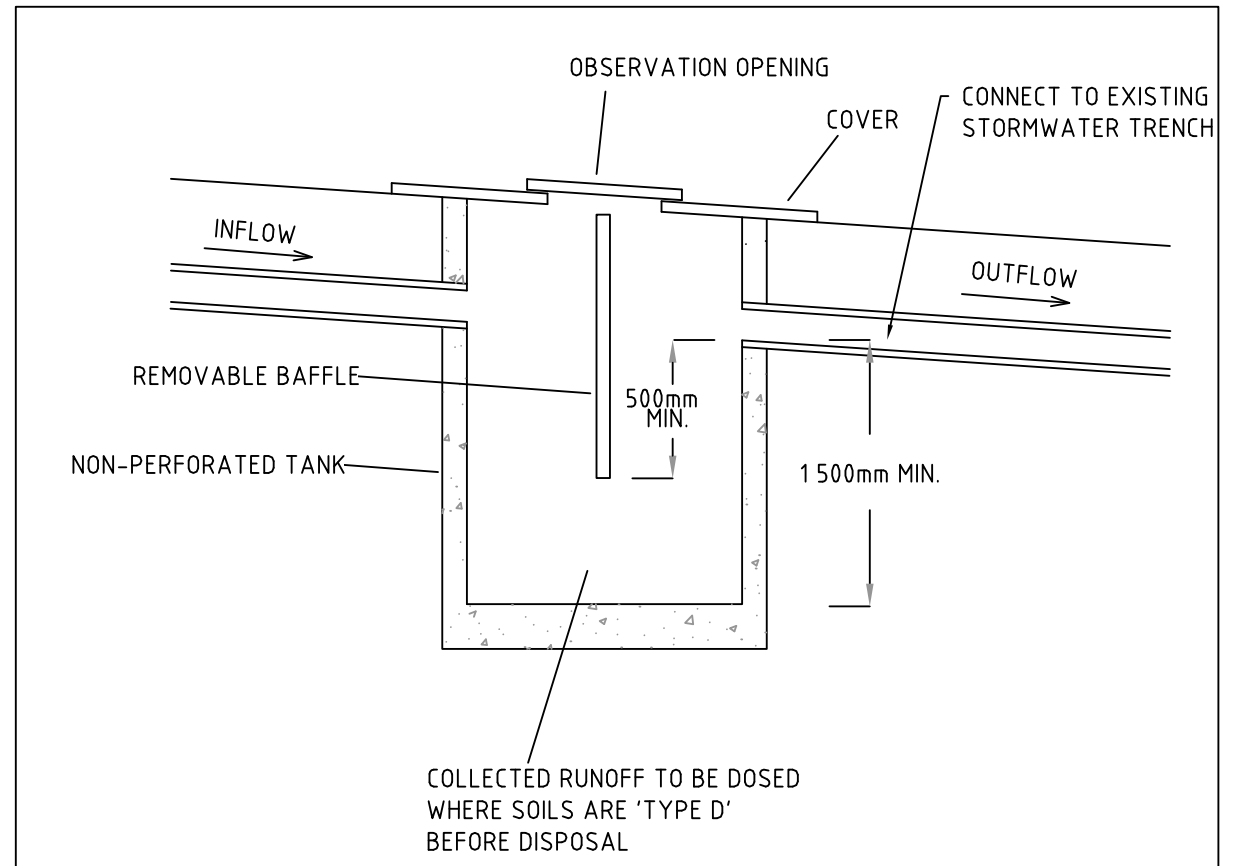
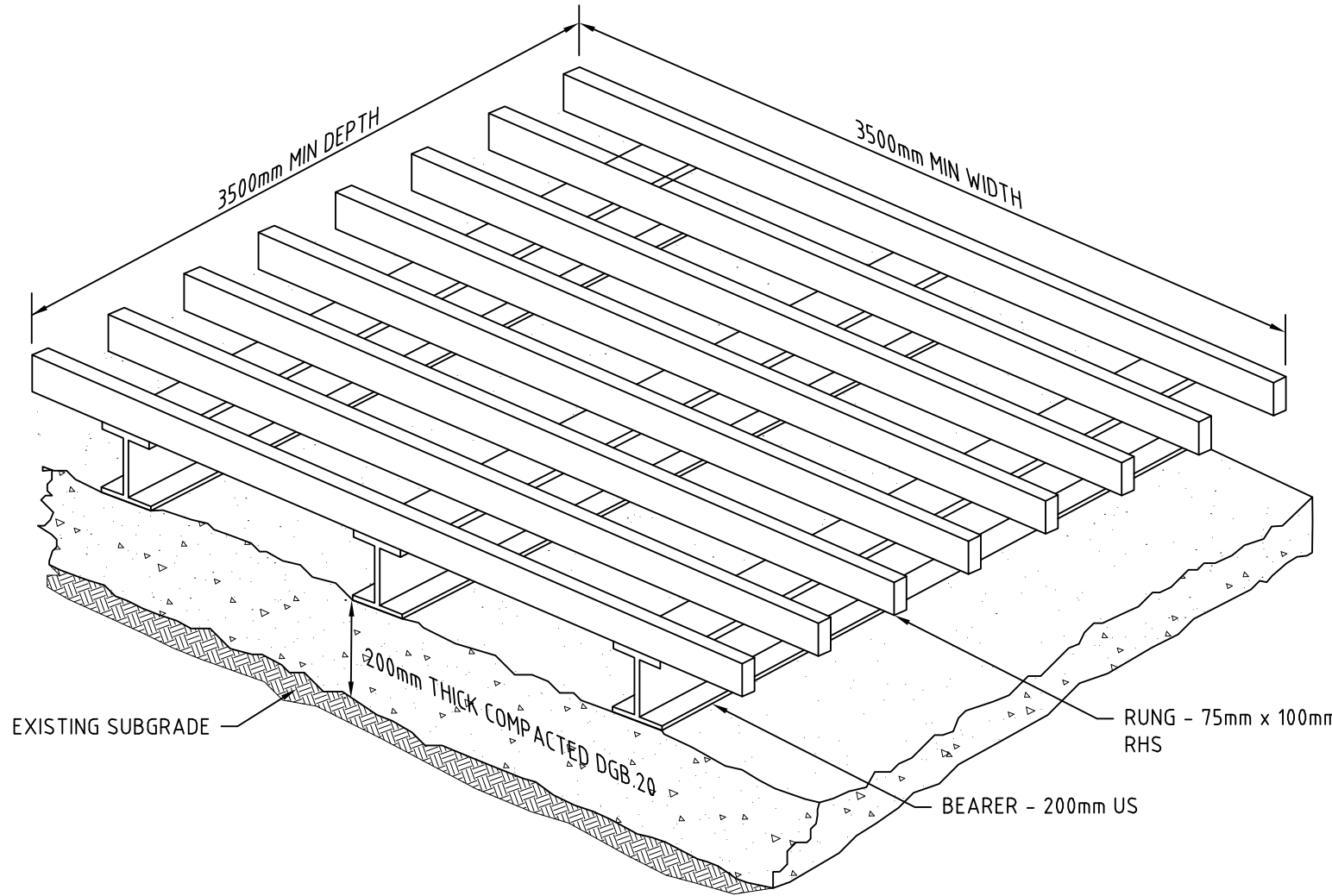
A CORRECTLY DESIGNED AND INSTALLED SHAKER PAD WILL ASSIST IN PREVENTING SEDIMENT TRANSFER FROM A SITE. ANY STABILISED ACCESS POINT (SAP) CAN BE DESIGNED WITH A SHAKER PAD (COMPULSORY IN TYPE II SAP'S)

SHAKER PADS CAN BE DESIGNED AND CONSTRUCTED TO ENABLE RE-USE ON FUTURE PROJECTS.

THE SHAKER PAD:

- MUST BE DESIGNED AND CERTIFIED BY A PRACTISING STRUCTURAL ENGINEER. THE CERTIFIED DESIGN SHOULD BE SUBMITTED WITH THE RELEVANT APPLICATION.
- CAN BE CONSTRUCTED FROM ANY SUITABLE MATERIAL.
- MUST BE LOCATED ON A SUITABLY PREPARED AND COMPACTED SUB-GRADE/BASE MATERIAL.
- MUST BE SITUATED SUCH THAT THE RUNGS OF THE SHAKER PAD ARE LEVEL WITH THE ADJOINING NATURAL SURFACE.
- MUST BE A MINIMUM OF 3.5m IN LENGTH.
- MUST BE A MINIMUM OF 3.5m IN WIDTH.
- MUST HAVE CLEAR SPACING BETWEEN RUNGS OF 200 - 250mm.
- RUNGS MUST HAVE A MAXIMUM WIDTH (BEARING AREA) OF 75mm.
- MUST HAVE A MINIMUM CLEAR DEPTH OF 300mm IE FORM THE TOP OF THE RUNG TO THE FINISHED SUB-GRADE/BASE LEVEL.

THE SHAKER PAD MUST BE PROVIDED WITH SUITABLE BARRIERS AT THE SIDES TO ENSURE THAT ALL TYERS OF VEHICLES LEAVING THE SITE TRAVERSE THE DEVICE.

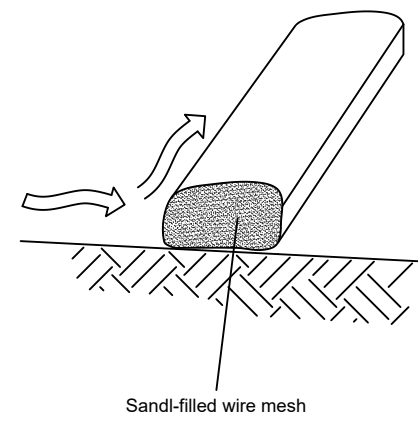


CONSTRUCTION NOTES

1. JOIN THE INLET TO THE STORMWATER, TAKING ANY SUITABLE STEPS TO REMOVE BULKY OR COARSE MATERIAL BEFORE IT CAN ENTER THE TANK.
2. CONNECT THE OUTLET TO A SAFE DISPOSAL AREA FOLLOWING THE SWMP.
3. INSTALL A REMOVABLE BAFFLE, CENTRAL TO THE INFLOW/OUTFLOW AND NORMAL TO THE DIRECTION OF FLOW, ENSURING THAT IT REACHES 500mm BELOW THE INVERT OF THE OUTLET PIPE.
4. INSTALL A COVER OVER THE PIT WITH AN OBSERVATION PORT AND ACCESS COVER.

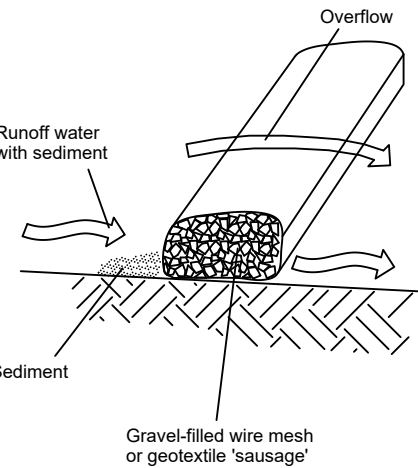
LINED TANK

SD 6-5



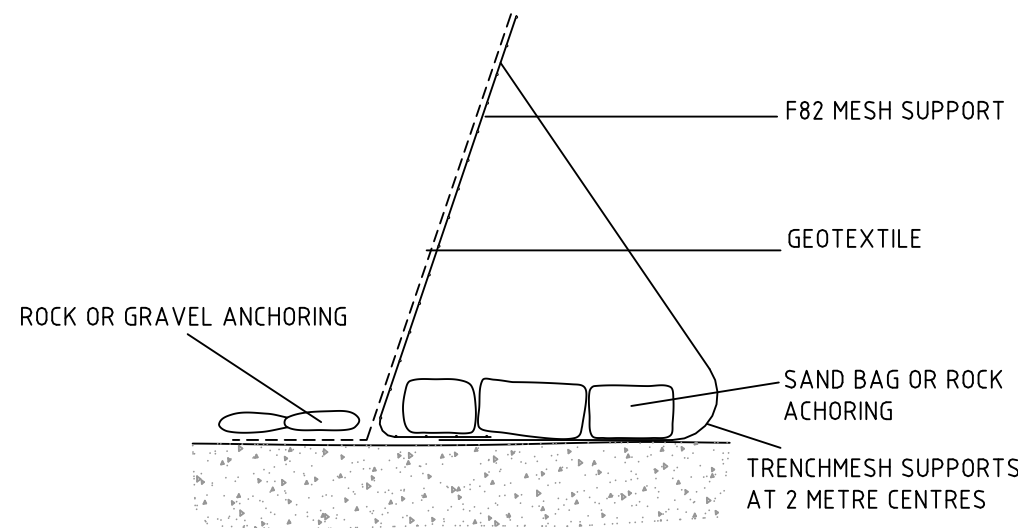
NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

SAND BAG



NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

GRAVEL BAG

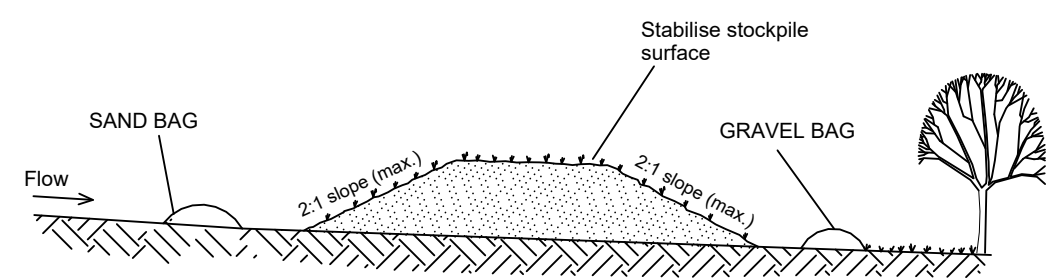


CONSTRUCTION NOTES

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.

ALTERNATIVE SEDIMENT FENCE

SD 6-9

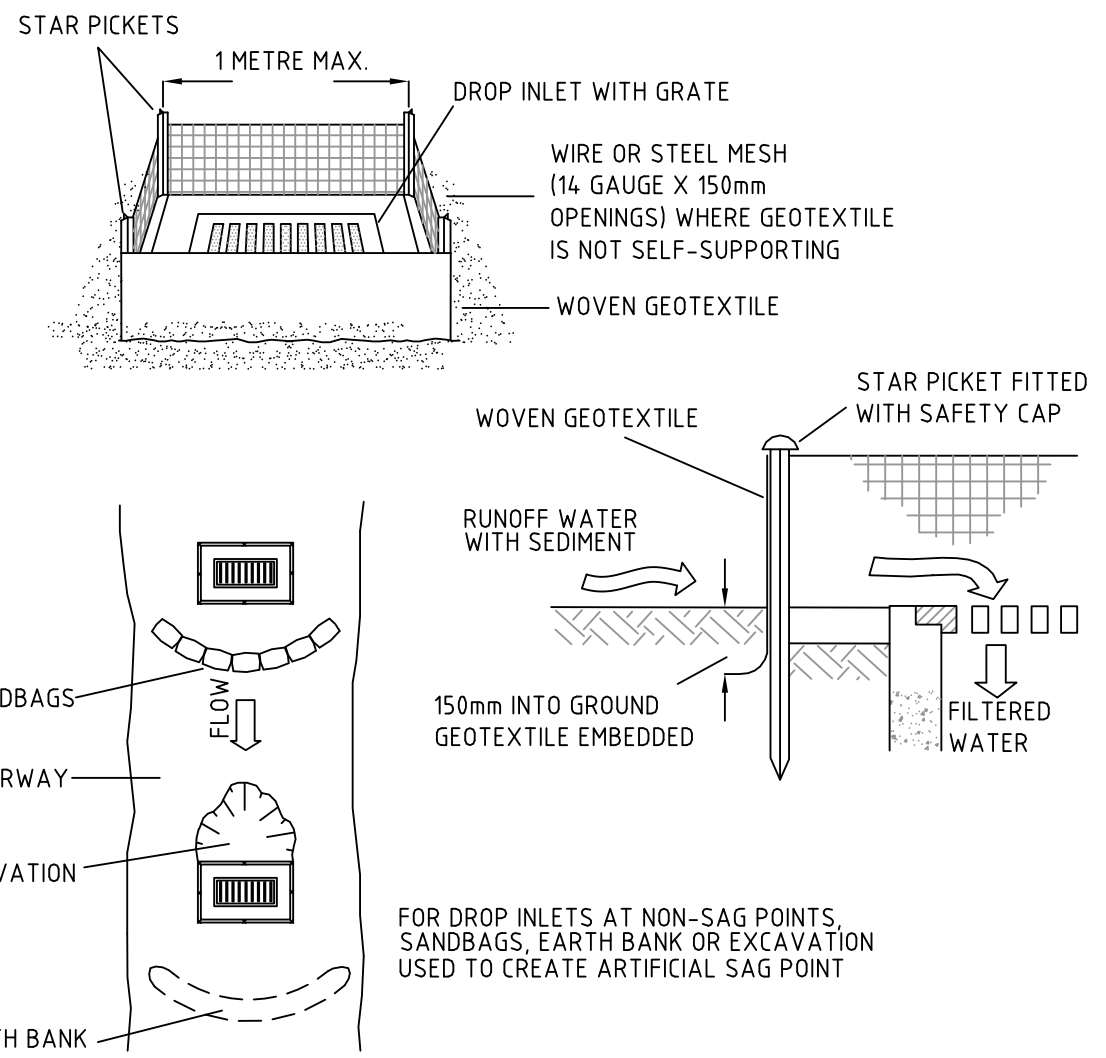


Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct sand bags on the upslope side to divert water around stockpiles and gravel bags 1 to 2 metres downslope.

STOCKPILES

SD 4-1



CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER

SD 6-12

CONSTRUCTION STORMWATER MANAGEMENT PLAN

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
A	INITIAL RELEASE	15/10/2021	RK	BN	SA	JF

SCALE

GRID	DATUM	PROJECT MANAGER
		AN
DISCLAIMER & COPYRIGHT		
This plan must not be used for construction unless signed as approved by principal certifying authority.		
All measurements in millimetres unless otherwise specified.		
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.		
(C) Copyright Martens & Associates Pty Ltd		

CLIENT
HANSON CONSTRUCTION MATERIALS P/L
PROJECT NAME/PLANSET TITLE
PROPOSED CONCRETE BATCHING PLANT CONSTRUCTION STORMWATER MANAGEMENT PLAN
GLEBE ISLAND LOT 10 DP 1170710

	Consulting Engineers Environment Water Geotechnical Civil
Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au	

DRAWING TITLE				
SOIL AND WATER MANAGEMENT DETAILS				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1706122	PS05	R02	PS05-B310	A

DRAWING ID: P1706122-PS05-R02-B310

SWMP Commentary, Detailed Calculations

Note: These "Detailed Calculation" spreadsheets relate only to high erosion hazard lands as identified in figure 4.6 or where the designer chooses to use the RUSLE to size sediment basins. The "Standard Calculation" spreadsheets should be used on low erosion hazard lands as identified by figure 4.6 and where the designer chooses not to run the RUSLE in calculations.

1. Site Data Sheet

Site Name: P1706122

Site Location: South Eastern Corner of Lot 10 in DP 1170710, Glebe Island, Rozelle, NSW
Precinct: N/A

Description of Site: Construction of Concrete Batching Plant

Site area	Site						Remarks
	CAT 1						
Total catchment area (ha)	1.42						
Disturbed catchment area (ha)	1.42						

Soil analysis							
% sand (fraction 0.02 to 2.00 mm)	50						Soil texture should be assessed through mechanical dispersion only. Dispersing agents (e.g. Calgon) should not be used
% silt (fraction 0.002 to 0.02 mm)	25						
% clay (fraction finer than 0.002 mm)	25						
Dispersion percentage	15.0						E.g. enter 10 for dispersion of 10%
% of whole soil dispersible	5.625						See Section 6.3.3(e)
Soil Texture Group	C						See Section 6.3.3(c), (d) and (e)

Rainfall data							
Design rainfall depth (days)	5						See Sections 6.3.4 (d) and (e)
Design rainfall depth (percentile)	80						See Sections 6.3.4 (f) and (g)
x-day, y-percentile rainfall event	29.7						See Section 6.3.4 (h)
Rainfall intensity: 2-year, 6-hour storm	10.1						See IFD chart for the site

RUSLE Factors							
Rainfall erosivity (R-factor)	2250						Automatic calculation from above data
Soil erodibility (K-factor)	0.03						
Slope length (m)	100						
Slope gradient (%)	1						
Length gradient (LS-factor)	0.2						RUSLE data can be obtained from Appendixes A, B and C
Erosion control practice (P-factor)	1.3						
Ground cover (C-factor)	1						

Calculations							
Soil loss (t/ha/yr)	18						
Soil Loss Class	1						See Section 4.4.2(b)
Soil loss (m ³ /ha/yr)	14						
Sediment basin storage volume, m ³	3						See Sections 6.3.4(i) and 6.3.5 (e)

P1706122JS01V01 RUSLE

1

SWMP Commentary, Detailed Calculations

2. Storm Flow Calculations

Peak flow is given by the Rational Formula:

$$Q_y = 0.00278 \times C_{10} \times F_y \times I_{y,tc} \times A$$

where: Q_y is peak flow rate (m³/sec) of average recurrence interval (ARI) of "Y" years
 C_{10} is the runoff coefficient (dimensionless) for ARI of 10 years. Rural runoff coefficients are given in Volume 2, figure 5 of Pilgrim (1998), while urban runoff coefficients are given in Volume 1, Book VIII, figure 1.13 of Pilgrim (1998) and construction runoff coefficients are given in Appendix F
 F_y is a frequency factor for "Y" years. Rural values are given in Volume 1, Book IV, Table 1.1 of Pilgrim (1998) while urban coefficients are given in Volume 1, Book VIII, Table 1.6 of Pilgrim (1998)
 A is the catchment area in hectares (ha)
 $I_{y,tc}$ is the average rainfall intensity (mm/hr) for an ARI of "Y" years and a design duration of "tc" (minutes or hours)

$$\text{Time of concentration (t}_c\text{)} = 0.76 \times (A/100)^{0.38} \text{ hrs (Volume 1, Book IV of Pilgrim, 1998)}$$

Note: For urban catchments the time of concentration should be determined by more precise calculations or reduced by a factor of 50 per cent.

Peak flow calculations, 1

Site	A (ha)	tc (mins)	Rainfall intensity, I, mm/hr						C ₁₀
			1 _{y,tc}	5 _{y,tc}	10 _{y,tc}	20 _{y,tc}	50 _{y,tc}	100 _{y,tc}	
CAT 1	1.42	9	54.3	81.4	96.3	112	133	150	0.9

Peak flow calculations, 2

ARI (yrs)	Frequency factor (F _y)	Peak flows						Comment
		CAT 1 (m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	5 (m ³ /s)	(m ³ /s)	
1 y _{r,tc}	0.8	0.154						
5 y _{r,tc}	0.95	0.275						
10 y _{r,tc}	1	0.342						
20 y _{r,tc}	1.05	0.418						
50 y _{r,tc}	1.15	0.543						
100 y _{r,tc}	1.2	0.640						

P1706122JS01V01 RUSLE

1

NOTES:
- SEDIMENT BASIN IS NOT REQUIRED AS TOTAL SOIL LOSS IS LESS THAN 150m³/yr (14x1.42=19.88<150)

CONSTRUCTION STORMWATER MANAGMENT PLAN

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil	DRAWING TITLE			
A	INITIAL RELEASE	15/10/2021	RK	BN	SA	JF				AN	HANSON CONSTRUCTION MATERIALS P/L		RUSSLE CALCULATIONS			
								DISCLAIMER & COPYRIGHT		PROJECT NAME/PLANSET TITLE PROPOSED CONCRETE BATCHING PLANT CONSTRUCTION STORMWATER MANAGEMENT PLAN GLEBE ISLAND LOT 10 DP 1170710		PROJECT NO. P1706122 PLANSET NO. PS05 RELEASE NO. R02 DRAWING NO. PS05-B320 REVISION A				
								This plan must not be used for construction unless signed as approved by principal certifying authority.								
								All measurements in millimetres unless otherwise specified.								
								This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.								
								(C) Copyright Martens & Associates Pty Ltd								
A1 / A3 LANDSCAPE (A3/LC_v02.0.0)																

PRINTED: 15/10/2021 14:00:00

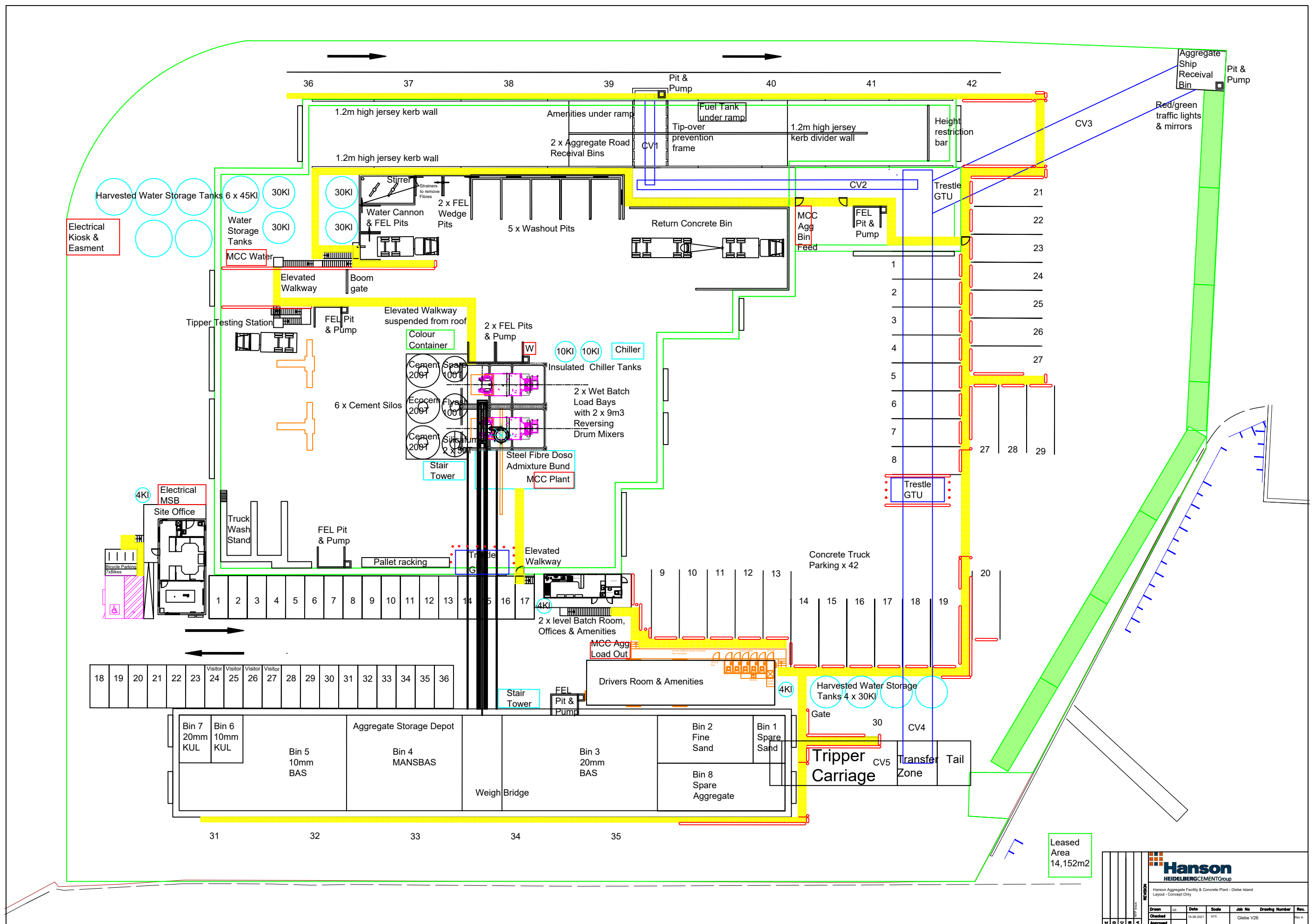
USER: RYAN.HADZIOPOULOS

DRAWING ID: P1706122-PS05-R02-B320

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

01000

6 **Attachment B – Architect Layout**



7 Attachment C – Construction Waste Management Plan



CONSTRUCTION CERTIFICATE

**Construction Waste Management Plan
Glebe Island Concrete Batching Plant
Lot 10 DP 1170710 Glebe Island, Rozelle**

SUBMITTED TO THE DEPARTMENT OF PLANNING, INFRASTRUCTURE & ENVIRONMENT

13 October 2021

Details of Revision			
Level	Details	Date	Initial
0.1	Draft for Review	01/08/2021	AZ
0.2	Final	13/10/2021	JT

Table of Contents

1	INTRODUCTION	1
1.1	Project Context	1
2	SCOPE	1
3	WASTE TYPES AND QUANTITIES	2
4	WASTE MANAGEMENT	4
4.1	Reporting Requirements	4
4.2	Waste Tracking System	4
4.3	Internal Waste Handling Procedure	5
5	OFFSITE WASTE DISPOSAL PROCEDURE	7
5.1	Monitoring and Reporting	7
5.2	Asbestos transport NSW	8
6	SURFACE RUNOFF MANAGEMENT PROCEDURE	8
6.1	Monitoring and Reporting	9

1 Introduction

This Construction Waste Management Plan (CWMP) is prepared by Hanson Construction and sets out the waste management systems to be used to manage and mitigate the ongoing waste impacts for the Glebe Island concrete batching plant development.

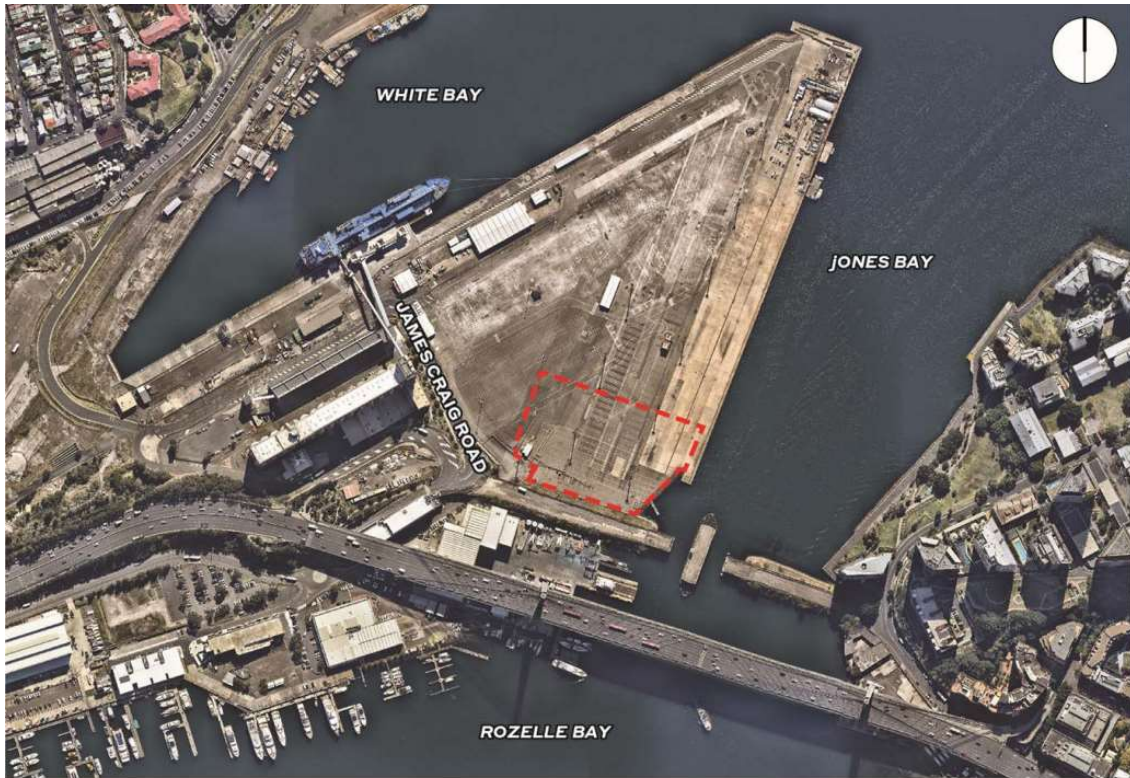
1.1 Project Context

Hanson has development consent to construct:

- a concrete batching plant with the capacity to produce up to 1 million cubic metres of concrete per annum.
- a new aggregate handling facility with a shipping terminal at GLB1 that will receive and handle aggregates delivered by ship.

The site is located in the South-Eastern portion of Lot 10 Glebe Island, a site that has recently been used for industrial and port activities and is currently 100% impervious hardstand. Key construction activities are anticipated to include:

- Site preparation on the existing hardstand area.
- Installation of cement, aggregate and sand silos.
- Installation of water tanks, weight bridges, weigh hoppers and slump conveyors.
- Construction of truck and car parking area.
- Construction of office building.
- Construction of enclosure for general storage, machinery and waste bins.



 The Site

2 Scope

To ensure that all site waste is managed in a lawful and responsible manner meeting Hanson's targets, objectives, and contractual requirements.

3 Waste Streams and Classifications

The construction stages of the development are anticipated to generate the following broad waste streams:

- Excavation waste, including concrete, asphalt pavement and underlying, potentially contaminated, soil and fill.
- Construction waste.
- Plant maintenance waste.
- Packaging waste.
- Work compound (site employees) waste.

The following table summarises the types of waste that is likely to be generated during construction, along with their waste classifications according to EPA NSW (2014) and management methods.

Waste Types	NSW EPA Classification	Proposed Reuse / Recycling / Disposal Method
Excavation Spoil	Non-putrescible waste, waste classification depends on concentrations of contaminants.	Re-use for under ramp embankments (if assessed to meet criteria for re-use) or off-site disposal.
Sediment Fencing, Geotextile Materials	General solid waste (non-putrescible).	Re-use at other sites where possible or disposal at landfill.
Steel (structural and reinforcing) and other metal	General solid waste (non-putrescible).	Off-site recycling.
Timber formwork	General solid waste (non-putrescible).	Reuse on-site or off-site recycling.
Glass	General solid waste (non-putrescible).	Off-site recycling.
Concrete	General solid waste (non-putrescible).	Remaining concrete to be taken back by delivering concrete truck to concrete batching plant for re-use. Alternatively, the remaining concrete will be taken to offsite crushing facilities for recycling. Excavated concrete shall be transported to offsite crushing facility to form recovered aggregates.
Packaging materials, including wood, plastic, metals and cardboard	General solid waste (non-putrescible).	Returned to suppliers or off-site recycling.
Other construction waste (plasterboard, metal wire, etc.)	General solid waste (non-putrescible).	Most material is used as best as possible to reduce waste. Specific contractors to recycle most materials.
Truck / machinery waste	Hazardous waste if contains or was previously in contact with Dangerous Goods.	Offsite recycling or disposal by servicing contractors of truck / machinery.

Recyclable beverage containers, tin cans, paper, and cardboard	General solid waste (non-putrescible)	Any general recyclables to recycle bin onsite and emptied by preferred supplier for off-site recycling.
General staff amenities waste	General solid waste (non-putrescible) waste mixed with putrescible waste	Disposal at landfill.

Feature	Estimated Quantity (tonnes)							
	Area (m ²)	Timber	Concrete	Bricks	Gyprock	Spoil	Metal	Other
Maritime Facility	2053	0.5	4.3	3.4	0.9	9.9	1.2	1.0
Office & Enclosure	4130	1.0	8.7	6.8	1.9	19.8	2.5	2.1
Total	6183	1.5	13.0	10.2	2.8	29.7	3.7	3.1

Notes: All above quantities are estimated figures only. Hanson and its contractors will manage all types of waste on site complying with relevant guidelines and regulations.

4 Waste Management

4.1 Reporting Requirements

A Waste Register Report will be produced and will include the following details:

- Inspections.
- Corrective actions.
- Training and awareness.
- Waste disposal.
- Recycled materials.

4.2 Waste Tracking System

A Waste Tracking System (WTS) will be used to manage and monitor the movement of waste. The WTS will:

- Record and document the transfer of each waste load using a waste tracking dockets.
- Retain dockets to validate the destination of all hazardous and nonhazardous waste.

- Document the off-site disposal of waste material using the docket system and the appropriate environmental permits for removal of controlled waste from the site pursuant to the Protection of the Environment Operations (Waste) Regulation 2005.
- Provide a system to ensure waste generated, and expected to be generated, is able to be adequately contained in the waste bins to prevent bin over piling and ensure waste is removed from site regularly and proactively.

The following actions will be used to effectively manage the movement of waste material across and out of the site:

- An initial site induction for all worker(s) involved with the movement and relocation of the waste. They will be informed of the site/location of waste and transport routes to be used.
- A General Waste Register will be used to identify the description of the waste, docket number, transport company, vehicle registration, disposal facility and quantity of the waste.
- A NSW EPA permit must be obtained prior to removal for wastes classified as trackable. The form will be in duplicate with the original retained by the landfill operator and the duplicate retained by the transport driver, once signed as received by the landfill operator.

4.3 Internal Waste Handling Procedure

As part of the demolition works, site waste will be sorted into waste streams to avoid contamination of the various waste.

Soil and possibly some waste material will be excavated, transported across the site and either temporarily stockpiled, or taken directly off-site for disposal. The objective of this procedure is to ensure the transportation and handling of all waste material within the project area is undertaken in a safe and lawful manner.

The following actions are to be used for managing the excavation, transfer and stockpiling of waste fill including placement of the final cover.

Excavation

If work must be undertaken below grade the following shall apply:

- Penetration and Excavation Permit must be issued before surface penetration occurs.

- All waste material is to be removed in a damp condition to reduce the potential for dust generation and adverse air quality.
- Waste material is to be placed directly into trucks for immediate transfer to the temporary stockpile.

Transportation

- Vehicles used for transporting waste material are to be inspected prior to accessing site and daily to ensure capacity and ability to safely and effectively carry out the works.
- Vehicles are to transport waste material via the approved site haulage routes according to the Traffic Management Plan.
- All loads are to be wet down with a fine water spray to prevent dust emissions prior to leaving the exclusion zone.
- Spill kits will be in designated work areas close to haulage routes.

Stockpiles

- Stockpile locations for waste material will be streamed as identified by the Site Supervisor in consultation with Hanson.
- Stockpile locations to allow for ease of access; to ensure stockpiles are clear of overland flow paths and minimise the impact on site amenity.
- Stockpiles shall require appropriately designed sediment controls, in accordance with the Storm Water Management Plan.
- Waste material may only be temporarily stockpiled on top of existing waste fill material or on top of compacted material if on natural ground.
- All temporary stockpiles, as well as waste bins, are to be inspected daily by the Site Supervisor and proactively covered during periods of adverse weather to prevent materials or waste from leaving the designated areas or site.
- Dust suppression techniques are to be used on the temporary stockpiles.

4.3.1 Monitoring and Reporting

Monitoring and reporting will include:

- Accidents involving the spillage of waste material from trucks and the corrective action undertaken using an Incident Report form.
- Earthmoving and traffic accidents are to be reported verbally (radio communication) and in writing directly to the Site Supervisor immediately following the incident.

- Routine random checks will be undertaken by the Site Supervisor of waste handling practices to ensure conformance to this procedure.

4.3.2 Domestic Waste

Domestic waste generated on site will mainly consist of general rubbish from the demolition zones. This rubbish will be in skips and recycled or disposed of by a licensed contractor.

5 Offsite Waste Disposal Procedure

Waste material excavated during the demolition work will only be stockpiled on-site temporarily. These stockpiles will be transported to an approved landfill or recycling facility if they are unable to be reused on site.

The following actions will be followed for managing the off-site disposal of any waste material:

- Stockpiles of material for off-site disposal will be characterised in accordance with the Waste Tracking Guidelines (NSW EPA). If necessary, stockpile samples will be tested for heavy metals including the leachable fraction.
- Material will be transported off-site to approved EPA landfill sites by certified waste transport contractor. If required, application for a waste transport certificate to be approved by the NSW EPA.
- All movement of material offsite is to be recorded using the General Waste Register.
- Trucks are to be roadworthy and operated in accordance with transport regulations.
- Two-way radios or mobile phone to be provided in all trucks in case of emergency.
- Truck loads are to be covered with tarpaulins prior to leaving the site to prevent dust emissions whilst in transit (excluding scrap metal loads).
- All trucks, vehicles and motorised plant are to utilise the wheel wash bay prior to departure to prevent dirt, dust and splatter from leaving the site.
- Trucks to exit site utilising the Traffic Management Plan.
- Concrete delivery trucks are to return to plant of origin to dispose of waste and rinse, no trucks are permitted to wash down or dispose of excess concrete on site.
- Off-site transport routes will be decided upon prior to any loads being removed from site.
- The road condition at the entrance/exit to the work site will be monitored continuously and swept/washed as necessary.

5.1 Monitoring and Reporting

Monitoring and reporting will include:

- Accidents involving the spillage of material from trucks and the corrective action undertaken is to be reported in an Incident Report form.
- Traffic accidents are to be reported to the Police, and verbally to the Site Supervisor immediately following the incident.
- Routine random checks will be undertaken by the Site Supervisor to ensure the loads are secure and conform to this procedure.

5.2 Asbestos transport NSW

In NSW the transport of more than 10 square meters of asbestos sheeting, or 100 kilograms of asbestos waste must be reported to the EPA. Asbestos transporters and facilities receiving asbestos waste must report the movement of this waste to the EPA using WasteLocate. Each load of asbestos waste needs to have a unique EPA consignment ID, which the transport company must generate using WasteLocate. The unique EPA consignment ID will allow each load to be monitored from the place of generation to the site of disposal.

The following actions will be followed for managing the off-site disposal of Asbestos in NSW (if required):

- Quantity and description of asbestos waste will be advised to transport company when engaged.
- The unique EPA consignment ID will be sited before the Asbestos waste can leave site.
- The transport company will supply Liberty Industrial with a copy of the WasteLocate consignment after delivery to designated waste facility.
- A copy of the WasteLocate consignment note will be saved by Liberty Industrial.

6 Surface Runoff Management Procedure

The following actions are to be followed for managing surface runoff from waste material.

- All stormwater inlets servicing the project area are to be protected with sediment controls as per the Stormwater Management Plan for the site.
- Stockpiles shall require appropriately designed sediment controls, in accordance with the Storm Water Management Plan.

- Stockpile locations to ensure clear of overland flow paths, be placed more than 2 (preferably 5) meters from existing vegetation, concentrated water flow, roads or hazard areas and require appropriately designed sediment controls.
- Water runoff generated from the construction site will be intercepted and treated (e.g. sediment filters and traps, etc.). Sediment and erosion controls will be installed prior to works commencing and maintained in an effective condition.
- Stockpiles of waste will be stored only on exposed surfaces of waste to prevent contaminating clean ground and will also form part of the weekly inspections.
- If required, a dust suppressant will be applied over the clean soil cover following placement to stabilise the ground surface.

6.1 Monitoring and Reporting

Monitoring and reporting will include:

- Routine random checks will be undertaken by the Site Supervisor of the stormwater system and any bunding to ensure conformance to this procedure
- Should there be any uncontrolled surface runoff or uncontained erosion of waste, the incident and any corrective action undertaken is to be reported and recorded.