Eastern Creek Recycling Ecology Park – MPC2 Modification

1 Kangaroo Avenue, Eastern Creek

Interim Stormwater Management Report

Bingo Industries Pty Ltd

AUGUST 2021

19-692

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Document Registration

Document Title	Eastern Creek Recycling Ecology Park – MPC2 Modification Interim Stormwater Management Report
Document File Name	REP002-01-19-692-MPC2 Interim Stormwater Management Plan
Section	Engineering
Document Author	Tim Michel

Issue	Description	Date	Author	Checked	Approved
01	Issue for Approval	13-04-21	Tim Michel	☐	☐
02	Issue for Approval	11-05-21	Tim Michel	☒	☒
03	Minor Amendments	10-08-21	Tim Michel	☒	☒
				☐	☐
				☐	☐

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1. Introduction

This report has been prepared to document an Interim Stormwater Management Plan for the proposed construction of Materials Processing Centre 2 (MPC2), a car park and weighbridges at the Eastern Creek Recycling Ecology Park (formerly referred to as the Genesis Waste Management Facility). This Plan addresses Specific Environmental Conditions outlined in the Modification 8 (Mod 8) approval to the consent for the Eastern Creek Waste Project (Application No. MP06_0139). Approval of the proposed work under Mod 8 was granted in March 2021 under a Section 4.55(1A) application to the approved major project development consent (MP06_0139).

The Eastern Creek Recycling Ecology Park is located at 1 Kangaroo Avenue, Eastern Creek, on Lot 1 DP 1145808 and Lot 2 DP 1247691 (refer to **Figure 1**). The site is generally bound by the Western Motorway (M4) to the north, industrial land to the east and south and undeveloped land to the west.

Figure 1: Locality Plan

The objective of this report is to document the strategy for the management of stormwater runoff from the proposed MPC2, car park and weighbridges that will satisfy relevant development controls and objectives. Specifically, the following documents are referenced:

- Blacktown City Council, *Engineering Guide for Development 2005*.
- *Blacktown Development Control Plan 2015*, Part J – Water Sensitive Urban Design and Integrated Water Cycle Management.
- Blacktown City Council, *State Environmental Planning Policy No. 59 – Central Western Sydney Economic and Employment Area, Employment Lands Precinct Plan, Eastern Creek Precinct.*

2. Background

2.1. Current Project Approval

In 2009, the current landfill and waste management operation was approved by the NSW Minister for Planning under Major Project Application No. MP06_139.

Modification 5 (Mod 5) under MP06_139 (approved in March 2016) allowed for the construction and operation of an additional pre-sort enclosure (herein referred to as MPC2) to provide additional floor space for segregating incoming waste prior to further processing through the existing MPC1. The overall intent of the modification was to improve the efficiency of existing resource recovery and recycling activities undertaken within MPC1.

Since the approval of Mod 5, there have been several strategic changes that have led to the need to increase resource recovery rates and divert greater volumes of waste from landfill. The proposed works under Mod 8 will provide advanced resource recovery capacity for various waste streams, thereby meeting objectives outlined in the *NSW Waste Avoidance and Resource Recovery (WARR) Strategy*.

2.2. Modification 8 Application to MP06_139

Proposed modifications to the current project approval that have been approved under Mod 8 include:

- Minor changes to the MPC2 building footprint to include shed awnings.
- Changes to tip floor operations.
- Minor works external to MPC2 for the provision of services and creation of a concrete apron.
- Provision of advanced fixed recycling plant.
- Provision of outfeed conveyors.
- Temporary relocation of weighbridges.
- Relocation of existing car spaces and provision of a dedicated site car park.

2.3. Relevant Condition of Consent

In March 2021, approval of the Mod 8 Application was granted by a delegate for the NSW Minister of Planning and Public Spaces. The condition of approval under MP06_0139-Mod-8 that is the subject of this Interim Stormwater Management Plan is reproduced below for reference:

> *25a. Within 3 months of the approval of Mod 8, the Applicant must prepare an Interim Stormwater Management Plan for the Materials Processing Centre 2, car park and weighbridges, to the satisfaction of the Planning Secretary. The plan must:*
>
> > *a) be prepared in consultation with Council and the EPA;*
> >
> > *b) include details and specifications for the detention basins in Catchment G (as shown in Proposed Future Stormwater Management Plan, Drawing No. SKC077, Issue P6, dated 26 October 2015; and letter from Genesis Xero Waste to Blacktown City Council, dated 4 November 2015); and*
> >
> > *c) satisfy the requirements of Council's* Engineering Guide for Development (2005) *and* Blacktown Development Control Plan 2015*, or their most recent versions.*

2.4. Reference Documents

This report should be read in conjunction with the following previous documents pertaining to stormwater management measures that have been implemented (or are planned to be implemented) on the site:

1) Arcadis, *Eastern Creek Recycling Ecology Park (& Landfill); Soil, Water and Leachate Management Plan* (Revision B, March 2021).

2) AT&L, *DADI Eastern Creek Stormwater Management Plan* (Revision 04, October 2015).
3) AT&L, *Pre-Sorting Centre, Section 75W Approval – Stormwater Management* (Revision 1, December 2014). This report documented the stormwater quality and quantity management controls for the construction of the MPC2 building (previously referred to as the Pre-Sorting Centre).
4) Martens and Associates, *Consolidated Stormwater Management Plan*, October 2011.
5) Storm Consulting, *Site Surface Water Management Plan*, November 2008.

3. Statutory and Development Controls

As shown in **Figure 2**, the site is zoned *IN1 – General Industrial* under the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (also referred to as SEPP 59).

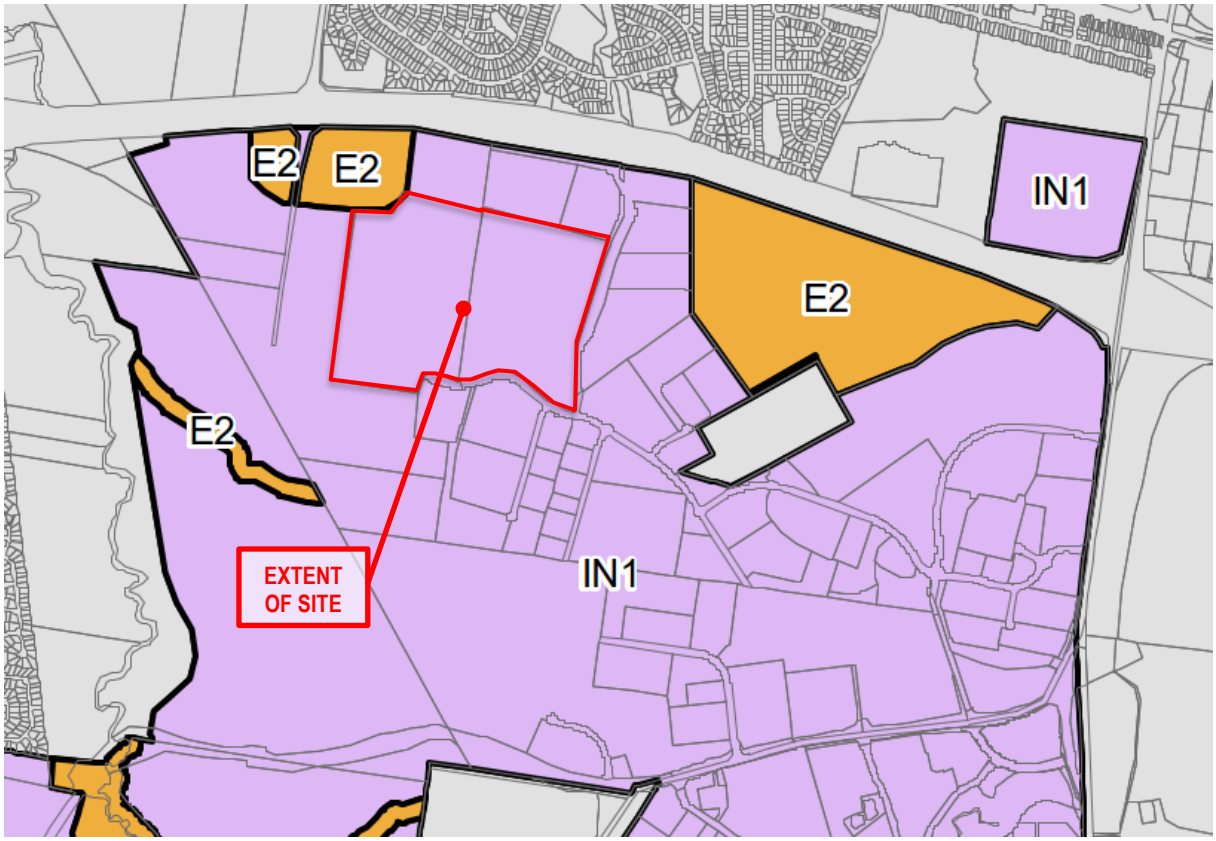

Figure 2: Extract of SEPP 59 Land Zoning Map (LZN_001_080_20200828)

As the site is located within the Blacktown LGA, stormwater management principles shall also be designed to comply with Blacktown City Council's *Engineering Guide for Development* (2005) and the *Blacktown Development Control Plan 2015*.

3.1. SEPP 59 Stormwater Management Provisions

Section 33L of SEPP 59 outlines provisions relating to stormwater, water quality and water sensitive design that apply to any proposed work on the site. The objective of these provisions is to '*avoid or minimise the adverse impacts of stormwater on the land on which development is to be carried out, adjoining properties, riparian land, native bushland, waterways, groundwater dependent ecosystems and groundwater systems*'.

Under SEPP 59, the consent authority must take into consideration whether water sensitive design principles are incorporated into the design of the development. These principles are as follows:

- *protection and enhancement of water quality, by improving the quality of stormwater runoff from catchments,*
- *minimisation of harmful impacts of development on water balance and on surface and groundwater flow regimes,*
- *integration of stormwater management systems into the landscape in a manner that provides multiple benefits, including water quality protection, stormwater retention and detention, public open space, habitat improvement and recreational and visual amenity,*
- *retention, where practical, of on-site stormwater for use as an alternative supply to mains water, groundwater, or river water.*

3.2. SEPP 59 Employment Lands Precinct Plan

Stormwater management objectives and controls that are applicable to development on the site are contained in the *State Environmental Planning Policy No. 59 – Employment Lands Precinct Plan (Eastern Creek Precinct)*.

The broad stormwater management controls relevant to the Site include:

- **Major drainage system** – to be designed to safely convey the stormwater flows under normal operating conditions for the critical 1% AEP (100 year ARI) flood event.
- **Minor drainage system** – shall be designed to have the capacity to convey stormwater flows under normal operating conditions for the 5% AEP (20 year ARI) event.
- **Detention Basins and Constructed Wetlands** – shall be sized to attenuate peak flows to a maximum of rural flows over a range of storms from the critical 0.5 EY (2 year ARI) event up to and including the critical 1% AEP event.
- **Water Quality** – best practice WSUD techniques are to be used for treating stormwater quality to the required standard and for the attenuation of flows to a pre-development level.

4. Existing Site Condition

The site has previously been utilised for agricultural purposes and then as a quarry prior to construction of the current waste management facility, which commenced operations in 2012.

Apart from the former quarry, ground levels on the site are generally between RL 60 and RL 85 mAHD.

The extent of the proposed work under Mod 8 falls under the following broad catchments:

- MPC2 and car park – within the Quarry Catchment that generally discharges in a north-westerly direction towards the M4 Motorway.
- Weighbridges – partly within the Upper Angus Creek and partly within the Ropes Creek Tributary catchments.

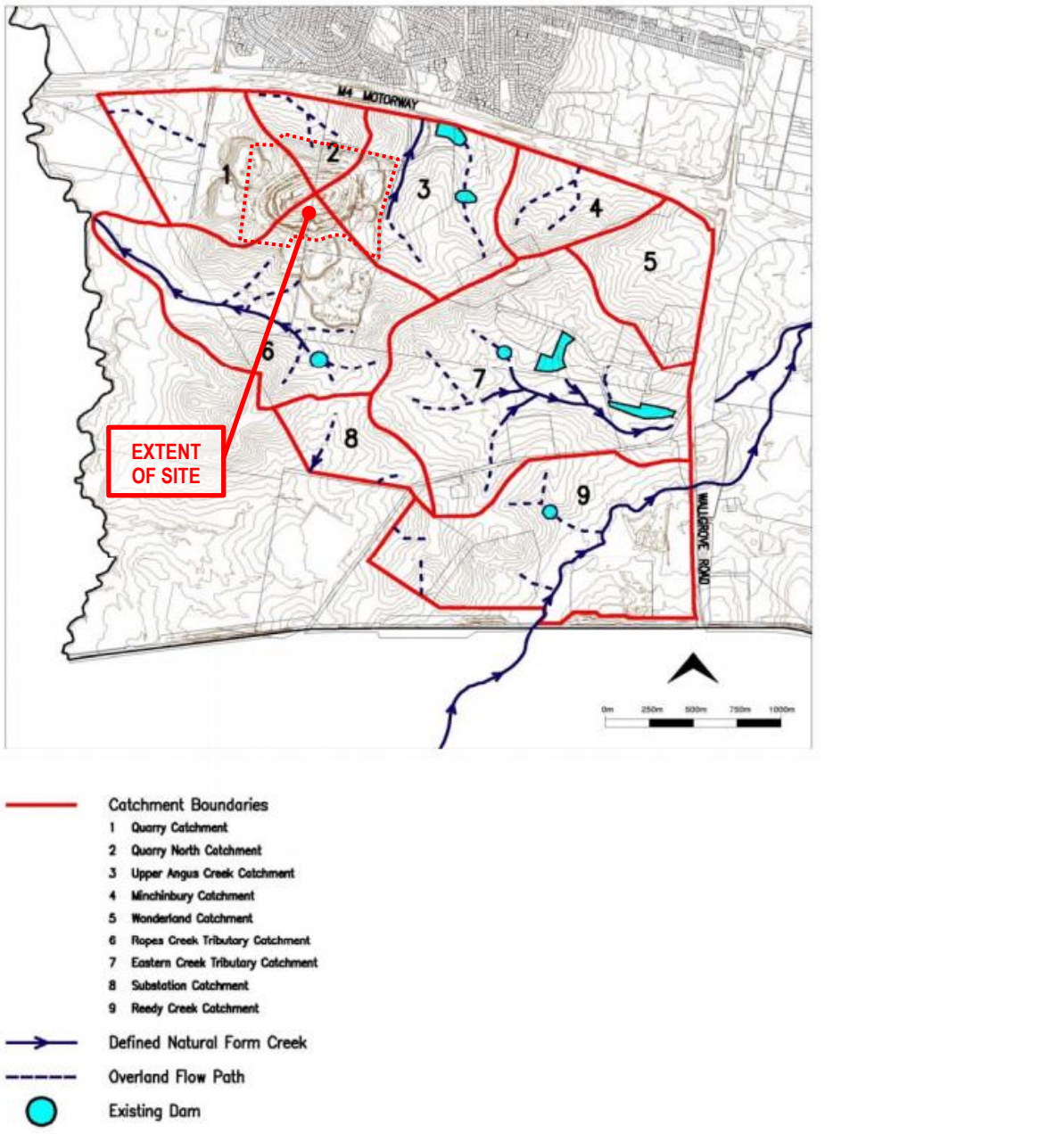

Figure 3: Existing Drainage Conditions (from SEPP59 – Eastern Creek Precinct Plan, Blacktown City Council, 2005)

4.1. Existing Southern OSD Basin

The majority of the proposed extent of work under Mod 8 will discharge to the existing southern OSD basin, located approximately 200 metres west of the MPC2 building (refer to **Figure 4**).

Detailed design drawings and work as executed survey of the existing southern OSD basin are included in **Appendix A**.

Figure 4: Existing Southern OSD Basin (nearmap, 5 June 2021)

5. Proposed Site Conditions

5.1. Proposed Interim Landform

The proposed arrangement of the work under the Mod 8 approval is presented in **Figure 4**.

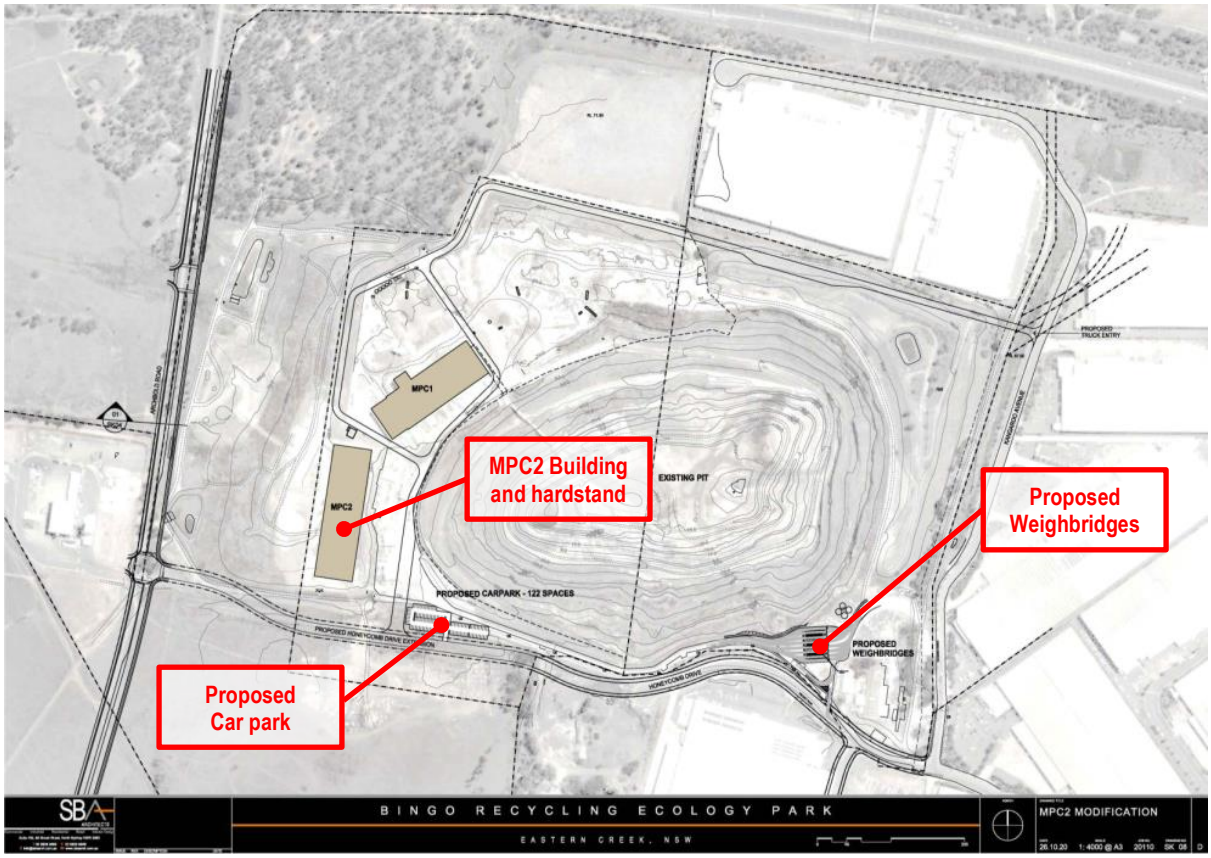

Figure 5: Proposed Site Arrangement

A summary of the proposed works under Mod 8 of the project approval is outlined below:

- **MPC2 building and hardstand** – minor change to the existing building footprint to include shed awnings and minor works external to the building for provision of services (including subsurface drainage) and creation of a concrete apron.
- **Proposed car park** – construction of a sealed (asphalt) car park with provision for up to 122 car spaces, including surface drainage to an existing catch drain along the northern edge of the car park.
- **Proposed weighbridges** – relocation of existing weighbridges near the MPC2 building to near the Eastern Creek REP site entrance, comprising six (6) adjacent weighbridges near the Kangaroo Avenue site entrance.

An Internal Catchment Plan showing the extent of catchments within the site is included as **Appendix B**.

5.2. Proposed Final Landform

AT&L previously documented the proposed final landform for the site in the *DADI Eastern Creek Stormwater Management Plan* (October 2015). The intent of this Interim Stormwater Management Plan is to confirm that the proposed work under the Mod 8 approval can be suitably accommodated by both existing stormwater management measures on site, as well as the proposed future (final) Stormwater Management Plan documented in 2015.

The proposed ultimate Stormwater Management Plan for the site is included as **Appendix C**. We note that this Plan is being reviewed and is likely to be updated as part of further development of the Masterplan for the

Eastern Creek REP. Any updates to the Site Masterplan and ultimate Site Stormwater Management Plan will be subject to assessment under future development applications.

6. Interim Stormwater Management Strategy Overview

To manage stormwater associated with the proposed work under the Mod 8 approval, the proposed stormwater management strategy is as follows:

- Discharge of surface water runoff from the MPC2 building and hardstand and new car park to the existing southern OSD basin, located approximately 200 metres west of the MPC2 site.
- The MPC2 building and hardstand will discharge via a subsurface drainage network into an existing swale that drains to the existing Southern OSD basin.
- The car park surface will generally discharge in a north-westerly direction towards the existing swale and ultimately into the existing Southern OSD basin.
- The majority of the hardstand associated with the proposed weighbridges (approx. 0.65 ha) will generally drain in a southerly direction towards a new catch drain. This catch drain will discharge towards an extension of the site surface water management system and ultimately towards the existing Southern OSD basin.
- A small portion of the weighbridge access road (approximately 0.11 ha) will drain in an easterly direction towards the existing swale adjacent to the eastern boundary of the site (parallel to Kangaroo Avenue).
- A proposed extension of the Visitor Centre carpark adjacent to the new weighbridges (approx. 0.05 ha) will drain towards the existing truck parking and manoeuvring area adjacent to the Visitor Centre.

The proposed Interim Stormwater Management Strategy is presented below in **Figure 5**.

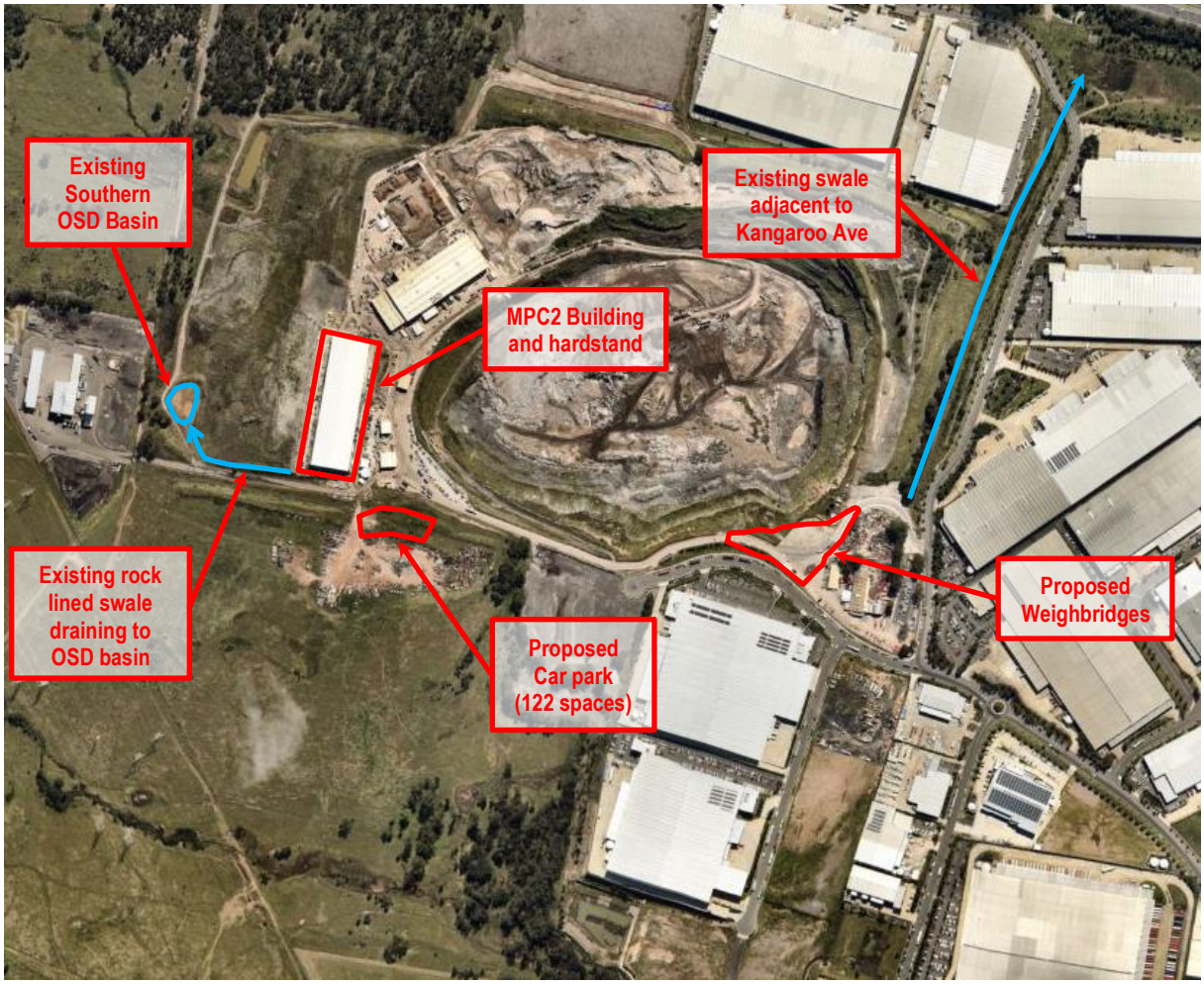

Figure 6: Proposed arrangement of works under Mod 8 Application

6.1. Interface with Proposed Future Stormwater Management Strategy

A summary of the proposed work under the Mod 8 approval with respect to the Proposed Future Stormwater Management Strategy is presented below in **Table 1**. Note that the proposed future stormwater management strategy will be incorporated into future development approvals and is subject to change.

Table 1: Summary of interim and ultimate stormwater management strategies for the Mod 8 work

Item	Location (refer to SKC007 in Appendix C)	Interim Strategy	Ultimate Strategy
MPC2 building and hardstand	Catchment G	Provide connection to Existing Southern OSD Basin via existing rock lined swale.	Discharge to Existing Southern OSD Basin. OSD volume required = 760 m^3 Bio-retention area required = 220 m^2
Car park	Catchments F and H	Discharge to Existing Southern OSD Basin via existing rock lined swale	Discharge to Existing Northern OSD Basin. OSD volume required = 8300 m^3 Bio-retention area required = 2400 m^2
Weighbridges	Catchments A and B	Western portion (approx. 1.14 ha) to discharge to an extension of the site surface water management system and ultimately to the existing southern OSD basin. Eastern portion (approx. 0.103 ha) to discharge to existing swale adjacent to eastern boundary of the site (parallel to Kangaroo Avenue) Southern portion (approx. 0.049 ha) to drain via sheet flow onto truck parking and manoeuvring area adjacent to the Visitors Centre.	Discharge to future Basin A and Basin B

7. Stormwater Quality Management

7.1. Objectives

Stormwater runoff from the site will need to be treated to satisfy the treatment objectives of Part J of Blacktown City Council's DCP titled *Water Sensitive Urban Design and Integrated Water Cycle Management*. A stormwater treatment train is proposed that satisfies the treatment objectives prior to discharge via surface water runoff towards the site boundary.

Specific requirements for stormwater quality management are summarised in **Table 2**.

Table 2: Council's post-construction stormwater management objectives

Pollutant	% post development average annual load reduction
Gross Pollutants	90
Total Suspended Solids (TSS)	85
Total Phosphorus (TP)	65
Total Nitrogen (TN)	45
Hydrocarbons	90

7.2. Strategy Overview

7.2.1. MPC2 Building and Carpark

The Consolidated Stormwater Management Plan prepared by Martens & Associates in 2011 documents measures that form part of the water quality treatment train for the part of the site that includes the MPC2 building and car park. These measures include:

1) **Rainwater Tanks** – the design of the MPC2 building incorporates two 25kL tanks to capture and store roof runoff. Allowance has been made for reuse of up to 0.1 kL/day for non-potable uses such as toilet flushing and other site uses not addressed by stormwater harvested from OSD basins.
2) **Gross Pollutant Traps (GPTs)** – overflow from rainwater tanks and surface water runoff from operational areas are directed to an existing GPT located south of the MPC2 building.
3) **Water Quality Wetland** – Outflow from the GPT adjacent to the MPC2 building is directed to the existing southern OSD basin via an open channel (rock lined swale).

7.2.2. Weighbridges

The proposed weighbridges (including approaches) will discharge to existing water quality management measures via an extension of the site surface water management system. This will be achieved via a gravity drainage system and/or a pumped system to transfer surface water runoff from the weighbridge area to the existing southern OSD basin.

The proposed driveway and car park adjacent to the Visitors Centre will drain to the adjacent truck parking and manoeuvring area. Given the relatively small area (approximately 0.05 ha) and the likely flows off this portion of the car park and driveway, this is a suitable interim measure for the management of surface water runoff from this area.

7.3. Water Quality Model Setup

The proposed stormwater treatment measures have been modelled using the MUSIC software package (version 6.3.0). Modelling has been undertaken in accordance with the *NSW MUSIC Modelling Guidelines* (BMT WBM, August 2015) and Council's DCP.

7.4. MUSIC Model Results

Based on the adopted stormwater quality management measures for this Interim Stormwater Management Strategy, results from the MUSIC model demonstrating the treatment train effectiveness of the existing southern OSD basin are presented in **Table 3**.

Table 3: MUSIC Model Results for existing OSD basin

Pollutant	Sources – Post-Development (kg/yr)	Residual Load – Post-Development (kg/yr)	% Reduction
Total Suspended Solids	10500	1410	86.6
Total Phosphorus	18.5	4.73	74.4
Total Nitrogen	105	57	45.8
Gross Pollutants	1180	0.00	100.0

7.5. Bypass catchments associated with proposed weighbridge area

As described in **Section 6.1**, a small portion of the proposed weighbridge area will not drain to the existing southern OSD basin. These areas will have interim stormwater management arrangements as per approvals provided under Modification 8. Further information for these areas is presented below:

Eastern portion of the weighbridge area

- The extent of the catchment within the proposed weighbridge upgrades that drains towards Kangaroo Avenue is approximately 1030 m^2. This is equivalent to approximately 0.8% of the total catchment area that will ultimately drain to Kangaroo Avenue (Catchment B = 12.58ha).
- The upgrade works as part of the proposed throughput increase will include construction of proposed Basin B (incorporating OSD and water quality) as shown on SKC007[P6] (AT&L, October 2015).
- The proposed works in this catchment comprise widening of the existing driveway off Kangaroo Avenue to accommodate the turning movements of the design vehicle. This work will result in a minor increase in the extent of concrete pavement, within a part of the site that is currently utilised as a hardstand for storage of bins and equipment and currently has a surface comprising compacted basecourse material. On the basis that the existing surface is essentially impervious, there will be no change to the surface water runoff characteristics within this catchment, other than some minor change to direction of surface water flow due to localised regrading of the driveway.

Southern portion of the weighbridge area (carpark adjacent to the Visitors Centre)

- The extent of the catchment within the extent of the proposed weighbridge upgrades that drains towards Honeycomb Avenue is approximately 460 m^2. This is equivalent to approximately 0.6% of the total catchment area that will ultimately drain to Honeycomb Avenue (Catchment A = 7.23ha).
- The proposed works in this catchment comprise construction of a new carpark and driveway off Honeycomb Drive to provide parking for cars arriving at the Visitors Centre. This work will include construction of asphalt pavement within a part of the site that is currently utilised as a hardstand for storage of bins and equipment and currently has a surface comprising compacted basecourse material. On the basis that the existing surface is essentially impervious, there will be no change to the surface water runoff characteristics within this catchment, other than some minor change to direction of surface water flow due to localised regrading of the driveway and carpark.

8. Stormwater Quantity Management

8.1. On-Site Stormwater Detention (OSD)

There are two existing OSD basins (northern and southern) that capture and detain surface water runoff from the operational area. The proposed work under the Mod 8 application will discharge towards the southern OSD basin.

As documented previously in the *Consolidated Stormwater Management Plan* (Martens, 2011), the existing southern OSD basin was designed to attenuate peak flows up to and including the 1% AEP event. The assumed catchment area discharging to the southern OSD basin was 9.1 ha. As indicated in Table 1 and Attachment E of the *Consolidated Stormwater Management Plan*, the adopted breakdown of the catchment discharging towards the existing southern OSD basin under post-development conditions is as follows:

- Southern Operational catchment = 5.63 ha (100% impervious)
- Southern OSD bund = 3.47 ha (0% impervious)

8.2. Existing Southern OSD Basin

A hydrological model of the proposed work under the Mod 8 approval has been setup using the DRAINS software package. The purpose of this modelling is to confirm that the proposed work approved under Mod 8 can be accommodated by the existing Southern OSD basin whilst satisfying the stormwater management objectives for the site.

Key parameters for the existing southern OSD basin are summarised below:

- Level of bottom of opening in low flow pit wall (bottom of OSD storage)– RL 58.48 mAHD
- Top of surcharge pit – RL 59.60 mAHD
- Level of overflow weir – RL 60.50 mAHD
- Volume between bottom of OSD storage and top of surcharge pit – 1623 m^3.
- Volume between bottom of OSD storage and top of overflow weir – 3227 m^3.
- Outlet orifice – 475mm diameter with centre elevation at RL 59.337 mAHD.
- High flow weir – crest length of 10 metres at RL 60.5 mAHD.

These parameters have been adopted in the DRAINS model to estimate the performance of the OSD basin under post-development conditions including the Mod 8 approved work.

8.3. Catchment Parameters

Catchment parameters under pre-development and post-development conditions are summarised below in **Table 4**.

Table 4: Catchment parameters adopted in DRAINS

DRAINS Scenario	Catchment ID	Area (ha)	% impervious
Pre-Development	Southern catchment	8.68	0
Post-Development	MPC2 Building and Hardstand	2.28	100
	Southern Operational catchment	1.62	100
	Car park	0.73	75 (allowing for landscape batters adjacent to car park)
	Weighbridges	1.14	100

DRAINS Scenario	Catchment ID	Area (ha)	% impervious
	External catchments A, B and C	4.09	5

8.4. Model Results

Results of pre-development and post-development DRAINS modelling for the median storm in the critical ensembles for the 0.5 EY (2 year ARI), 10% AEP (10 year ARI) and 1% AEP (100 year ARI) design storm events are summarised in **Table 5**. A range of storm durations between 15 minutes and 6 hours have been assessed.

Table 5: Summary of DRAINS model results for existing southern OSD basin

Duration (mins)	0.5 EY		10% AEP		1% AEP	
	Pre-development	Post-development	Pre-development	Post-development	Pre-development	Post-development
15	525	0	1354	177	2695	378
20	593	31	1538	230	2885	423
25	633	68	1422	263	2614	452
30	603	95	1497	286	2600	476
45	705	156	1245	329	2237	733
60	592	189	1460	350	2201	950
90	477	216	1045	377	1748	1186
120	484	236	892	369	1829	1128
180	422	237	823	378	1334	925
270	364	237	602	347	1329	730
360	350	239	689	368	1169	993

These results demonstrate that the existing southern OSD basin will attenuate post-development flow to less than pre-development flow rates for a range of design storms.

9. Construction and Operation Phase Stormwater Management

As per current arrangements on the site, erosion and sediment control measures will be implemented in accordance with *Managing Urban Stormwater – Soils and Construction* (Landcom, 2004) and to the satisfaction of Council's requirements.

An Erosion and Sediment Control Plan (ESCP) that shows measures required to minimise soil erosion and the transfer of sediment to downstream waters is included in the *Soil, Water and Leachate Management Plan* (Arcadis, March 2021), refer to **Appendix D**. As per this ESCP, it is recommended that as a minimum the following measures be implemented:

- Stabilised site access shall be constructed at all entry and exit points to the site to prevent the migration of soil and sediments.
- At the upstream end of works, clean water shall be temporarily diverted around disturbed areas.
- Sediment fences shall be installed at the downstream end of any disturbed areas.
- The area of soil disturbed at any one time shall be minimised where possible. Any stockpiled material shall be covered, kept moist or planted with hydromulch.
- Any disturbed areas shall be rehabilitated as soon as practical.
- Sediment basins and/or traps (including sediment fences) shall be cleaned when the structures are at a maximum of 60% full of solid materials and disposed of in a manner that prevents further pollution of the site.
- Measures will be inspected regularly and after significant rainfall (nominally more than 25mm over a 24-hour period) and will be cleaned and repaired as necessary.

These erosion and sediment control measures would ensure that there are no significant adverse impacts on the quality of stormwater in receiving waters during construction periods.

The ongoing operation of the Landfill and Waste Management Facility should adhere to the principles and strategies outlined in the following documents:

- *Managing Urban Stormwater – Soils and Construction Volume 2B Waste Landfills* (NSW DPIE, 2008)
- *Managing Urban Stormwater – Soils and Construction Volume 2E Mines and quarries* (NSW DPIE, 2008)

10. Conclusion

The proposed stormwater management measures outlined in this report will satisfy the development controls outlined in relevant planning documents including Blacktown City Council's *Engineering Guide for Development* (2005), Council's *Development Control Plan 2015* and the *SEPP59 Employment Lands Precinct Plan*. The proposed measures would ensure the proposed works under the Mod8 Application would not generate negative impacts in terms of stormwater quantity and quality from the site.

This Interim Stormwater Management Plan demonstrates that specific stormwater quality and quantity management objectives for the proposed work under Mod 8 can be accommodated by the existing southern OSD basin for the MPC2 building and hardstand area, the proposed car park and the proposed weighbridges.

Appendix A

Existing Southern OSD Basin

BIO-FILTRATION POND OVERFLOW OUTLET

ROCK SCOUR PROTECTION D_{50}=250mm UNDERLAID WITH BIDM A14 GEOTEXTILE FABRIC

GATE

RL 59.00

RL 57.20

RL 57.10

RL 57.50

RL 57.50

BIO-FILTRATION POND OVERFLOW INLET

ROCK LINED OPEN DRAIN

EXISTING HEADWALL

BASE RL 57.0

NORTHERN OSD BASIN

BIO-FILTRATION POND

1 C03

TOP OF BERM RL 55.50 MIN.

1 in 2 (TYP)

PLANTING ZONE BASE RL 51.8 TO RL 52.8

ø450

STORMWATER PIT A\1

STORMWATER PIT A\2

RL 57.10

CUT OPEN DRAIN TO DIVERT WATER TO EXISTING ROAD CULVERT

3 C03

ø600

RENO MATTRESS REFER NOTES ON DWG C02

6 C04

ROCK SCOUR PROTECTION D_{50}=250mm UNDERLAID WITH BIDM A14 GEOTEXTILE FABRIC

10.0m

7 C04

RENO MATTRESS REFER NOTES ON DWG C02

2 C03

THESE DRAWINGS SHOULD BE READ IN CONJUNCTION WITH MARTENS CONSULTING ENGINEERS CONSOLIDATED STORMWATER MANAGEMENT PLAN P1103002JR01V05

Issue	Description	Date
2	NOTATION AMENDED	6-2-12
1	ISSUED FOR CONSTRUCTION	03-01-12

100mm on Original

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Client: DIAL A DUMP

Scale Bar: 0 5 10 15 20 25m — 1 : 300

Scales: 1: 300

Grid: MGA

Height Datum: AHD

File:

Drawn	MM
Designed	AMc
Checked	
Approved	

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: NORTHERN OSD BASIN LAYOUT PLAN

Civil Engineers and Project Managers
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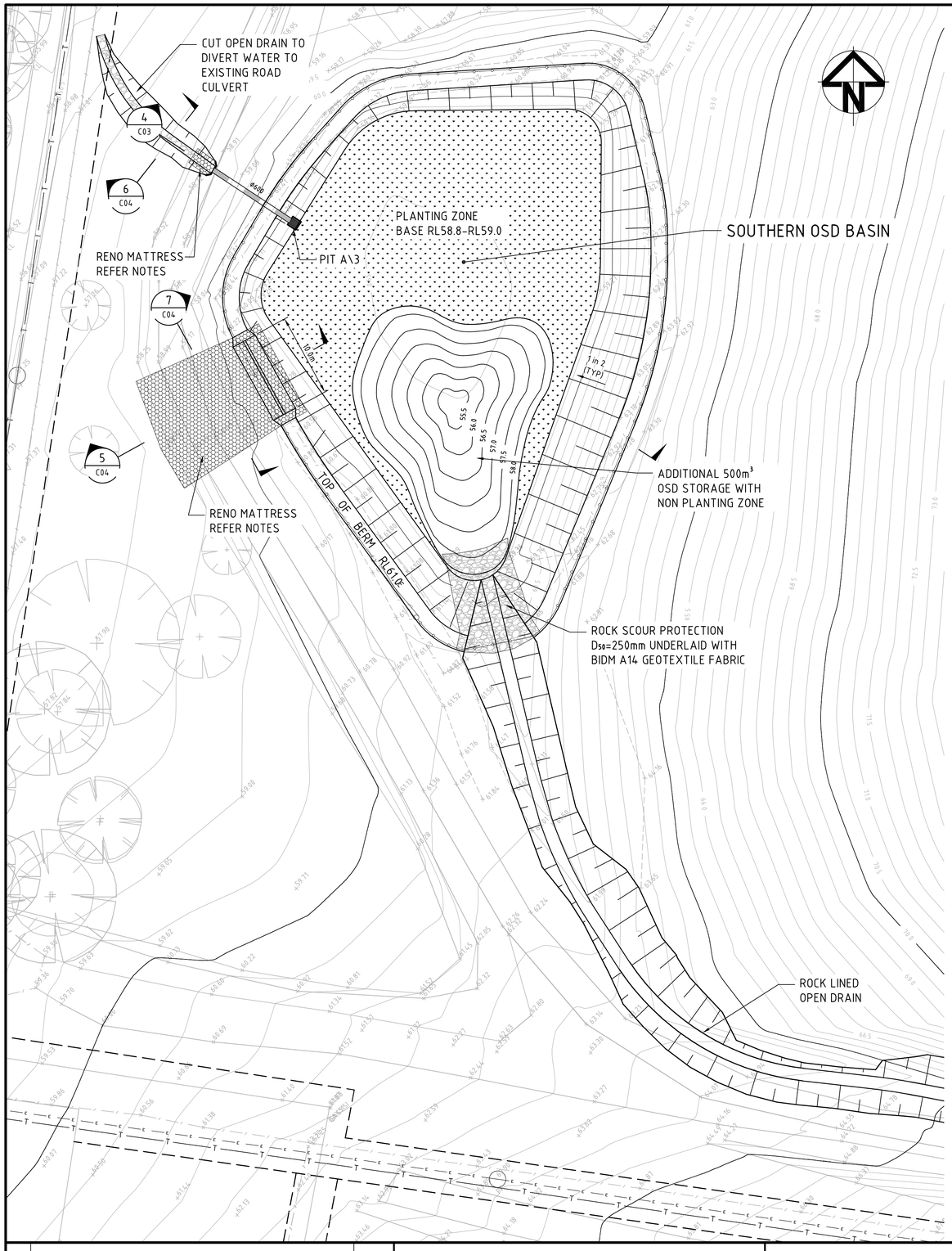
Status: FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C01	10-16	2

F:\10-16 Dial A Dump\Drgs\Civil\Final\C01 Northern Basin Plan.dwg

V1



EMBANKMENT CONSTRUCTION SEQUENCE

1. STRIP VEGETATION AND TOPSOIL FROM EMBANKMENT AREA AND STOCKPILE TOPSOIL FOR LATER USE. CUT BACK AREA TO FIRM GROUND.
2. CONSTRUCT EMBANKMENT IN PRESENCE OF QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER IF NOT ROCK.
3. IN THE CASE WHERE THE EMBANKMENT AREAS SLUSH, GROUTING AND DENTAL CONCRETE MAY BE REQUIRED, AS DIRECTED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER.
4. COMPACT CLAY STABILIZED WITH GYPSUM (3% BY DRY MASS, MINIMUM) AS APPROVED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER INTO THE CUT-OFF TRENCH OF LAYERS NOT EXCEEDING 150mm LOOSE THICKNESS TO A DRY DENSITY EQUIVALENT TO 98% OF THAT DETERMINED BY STANDARD COMPACTION (AS 1289.5.1.1) AND AT A MOISTURE CONTENT OF -2% TO +2% OF OPTIMUM MOISTURE CONTENT.
5. GYPSUM STABILIZED NATURAL SOILS EXPOSED IN EMBANKMENT AREA WITH MINIMUM 3% GYPSUM BY DRY MASS AND COMPACT AS FOR #4. ALL TO THE APPROVAL OF A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER.
6. CONSTRUCT BODY OF EMBANKMENT WITH CLAYEY MATERIAL WON FROM SITE. COMPACT THE CLAYEY MATERIAL APPROVED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER IN LAYERS NOT EXCEEDING 150mm THICKNESS TO A DRY DENSITY EQUIVALENT TO 98% OF THAT DETERMINED BY STANDARD COMPACTION (AS 1289.5.1.1) AND AT A MOISTURE CONTENT OF -2% TO +2% OF OPTIMUM MOISTURE CONTENT. MOST IMPORTANTLY, IF SHRINKAGE CRACKS OCCUR, AS DIRECTED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER.
7. OVERFILL THE EMBANKMENT AND TRIM OFF, SO THAT THE ENTIRE BODY OF THE EMBANKMENT IS COMPACTED.
8. TRIM THE EMBANKMENTS BATTERS TO THE OVERFILLED MATERIAL, STABILIZE THE UPSTREAM CLAY BATTERS WITH WELL MIXED GYPSUM (3% BY DRY MASS, MINIMUM) AND COMPACT TO MIN. 98% STD -2% TO +2% OMC.
9. PLACE ROCK RIP-RAP AS SHOWN.
10. RECOVER TOPSOIL FROM STOCKPILE AND SPREAD OVER EMBANKMENT AND CUT BATTERS (A THIN COVER OF TOPSOIL ONLY HAS BEEN NOMINATED). ONLY LIGHTLY TRACK-ROLL THE TOPSOIL AND THEN LANDSCAPE IN ACCORDANCE WITH THE LANDSCAPE AREA DRAWINGS.
11. WATER AND FERTILIZE LANDSCAPE AS REQUIRED BY CLIMACTIC CONDITIONS TO ENSURE THE LANDSCAPE IS SUCCESSFUL.
12. AT THE COMPLETION OF WORK WRITTEN CONFIRMATION & CERTIFICATION IS TO BE PROVIDED FROM A QUALIFIED & EXPERIENCED GEOTECHNICAL ENGINEER THAT THE EMBANKMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THESE DRAWINGS.

BULK EARTHWORKS NOTES

1. ORIGIN OF LEVELS: REFER SURVEY NOTES
2. STRIP ALL TOPSOIL/ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCK PILE AS DIRECTED BY SUPERINTENDENT.
3. EXCAVATED MATERIAL TO BE USED AS STRUCTURAL FILL PROVIDED THE PLACEMENT MOISTURE CONTENT OF THE MATERIAL IS +/- 2% OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH AS 1289.5.7.1.
4. COMPACT FILL AREAS AND SUBGRADE TO NOT LESS THAN:

LOCATION	STANDARD DRY DENSITY (AS 1289 E 5.1.1.)
UNDER BUILDING SLABS ON GROUND	98%
UNDER ROADS AND CARPARKS	98%
LANDSCAPED AREAS UNLESS NOTED OTHERWISE	98%

5. FOR NON COHESIVE MATERIAL, COMPACT TO 75% DENSITY INDEX.
6. BEFORE PLACING FILL, PROOF ROLL EXPOSED SUBGRADE WITH AN 8 TONNE (MIN) DEADWEIGHT SMOOTH DRUM VIBRATORY ROLLER TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER).
7. FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN :-
   (A) 1 TEST PER 200m² OF FILL PLACED PER 300mm LAYER OF FILL.
   (B) 3 TESTS PER VISIT
   (C) 1 TEST PER 1000m² OF EXPOSED SUBGRADE
   TESTING SHALL BE "LEVEL 1" TESTING IN ACCORDANCE WITH AS 3798 (1996).
8. FILLING TO BE PLACED AND COMPACTED IN MAXIMUM 150mm LAYERS
9. NO FILLING SHALL TAKE PLACE TO EXPOSE SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF AT & L AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED.

FENCING AND SECURITY

BOTH BASINS ARE TO BE FENCED WITH 1.8m HIGH MAN PROOF FENCE GALVANISED POSTS AT 3m c/s. PROVIDE 4.8m WIDE GATE TO ALLOW ACCESS. GATES TO BE LOCKED AT ALL TIMES. EXACT LOCATION OF FENCE AND GATE TO BE DETERMINED ON SITE. PROVIDED HINGED ONEWAY FLOOD FLAP AT WEIR LOCATIONS.

EROSION AND SEDIMENT CONTROL NOTES:

GENERAL INSTRUCTIONS

1. THE SITE SUPERINTENDENT/ENGINEER WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED.
2. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
   a. LOCAL AUTHORITY REQUIREMENTS
   b. EPA REQUIREMENTS
   c. MANAGING URBAN STORMWATER - SOIL & CONSTRUCTION VOLUME 1, (2004) LANDCOM
3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
5. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

6. 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:
   (A) INSTALL A WIND FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (B) INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (C) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
   (D) INSTALL SEDIMENT BASIN AS SHOWN ON PLAN
   (E) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
   (F) 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.

EROSION CONTROL

7. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

9. STOCKPILES WILL NOT BE LOCATED WITHIN 5 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS.
10. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
11. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS

13. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
14. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
   (A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE
   (B) ENSURING THAT NOTHING IS NAILED TO THEM
   (C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS.
   (I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER
   (II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH
   (III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS & PITTWATER COUNCIL SPECIFICATIONS.
2. CONCRETE QUALITY
   ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	AS 3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
VEHICULAR BASE	32	60	20
KERBS, PATHS, AND PITS	25	80	20

   - CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL
   - PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL SPECIFICATIONS.
3. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY AT & L.
4. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE 40mm TOP AND 70mm FOR EXTERNAL EDGES UNLESS NOTED OTHERWISE.
5. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.T.A. SPECIFICATION R83.
7. REINFORCEMENT SYMBOLS:
   N DENOTES GRADE 450 N BARS TO AS 1302 GRADE N
   R DENOTES 230 R HOT ROLLED PLAIN BARS TO AS 1302
   SL DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS 1304

   NUMBER OF BARS IN GROUP — BAR GRADE AND TYPE
   17 N 20 250
   NOMINAL BAR SIZE IN mm — SPACING IN mm

   THE FIGURE FOLLOWING THE FABRIC SYMBOL SL IS THE REFERENCE NUMBER FOR FABRIC TO AS 1304.
8. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:

STORMWATER DRAINAGE NOTES

1. PIPES TO BE INSTALLED TO TYPE HS1 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
2. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
3. GRATES AND COVERS SHALL CONFORM TO AS 3996.
4. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
5. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

RENO MATTRESS NOTES

1) ALL CONSTRUCTION METHODS AND MATERIALS USED ARE IN ACCORDANCE WITH MACCAFERRI SPECIFICATION OR APPROVED EQUIVALENT.
2) PRODUCT SPECIFICATIONS
   GALMAC & PVC COATED OR APPROVED EQUIVALENT
3) FILL MATERIALS
   A. THE MATTRESS FILL MATERIAL MUST BE WEATHER RESISTANT, NON-FRIABLE, INSOLUBLE AND SUFFICIENTLY HARD BASALT, HAVE THESE PROPERTIES AND SPECIFIC GRAVITY WHICH QUALIFY THEM TO BE USED AS FILL MATERIAL AS PER AS2758.4.
   B. CONSTRUCTION METHODS USED, IN ACCORDANCE WITH MACCAFERRI SPECIFICATIONS OR APPROVED EQUIVALENT.
   C. ROCK SHALL BE WELL GRADED BETWEEN 100mm AND 200mm WITH NO GREATER THAN 6% SMALLER MATERIAL MECHANICALLY INTERLOCKING ROCKS ARE PREFERED. THE ROCKS SHALL HAVE A DEGREE OF ANGULARITY AND RANGE OF SIZE.
   D. WET/DRY VARIATION SHALL BE 100kN OR GREATER IN ACCORDANCE WITH AS 1141.22.
4) CONSTRUCTION
   COMPACT MATERIAL BELOW THE STRUCTURE TO 98% STD MDD.
   GEOMAC NON-WOVEN GEOTEXTILE (BIDM A14) TO BE PLACED AT ALL MESH SOIL ROCK INTERFACES OR APPROVED EQUIVALENT.

MATTRESS FILL
ROCK FILL UNIT WEIGHT = 25kN/m³
GABION POROSITY = 30%

Issue	Description	Date
2	NOTATION AMENDED	6-2-12
1	ISSUED FOR CONSTRUCTION	03-01-12

100mm on Original

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Client: DIAL A DUMP

Scale Bar: 0 5 10 15 20 25m — 1 : 300

Scales: 1: 300

Grid: MGA

Height Datum: AHD

Drawn	MM
Designed	AMc
Checked	
Approved	

File: F:\10-16 Dial A Dump\Drgs\Civil\Final\C02 Southern Basin Plan.dwg

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: SOUTHERN OSD BASIN LAYOUT PLAN

Civil Engineers and Project Managers
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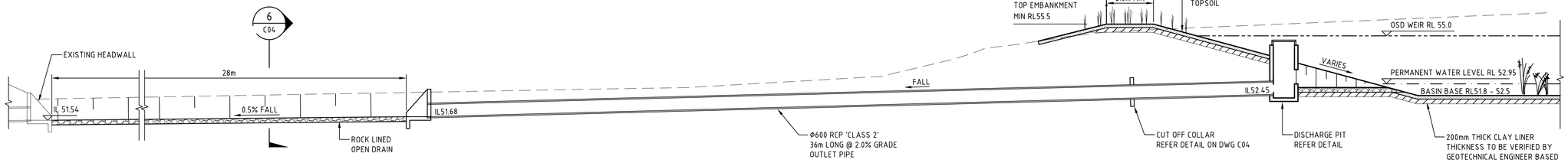
Status: FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C02	10-16	2

V1



SECTION 3 (C01)
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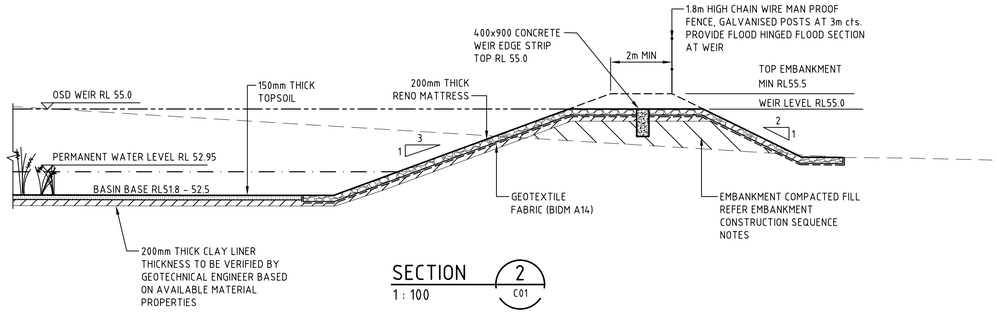
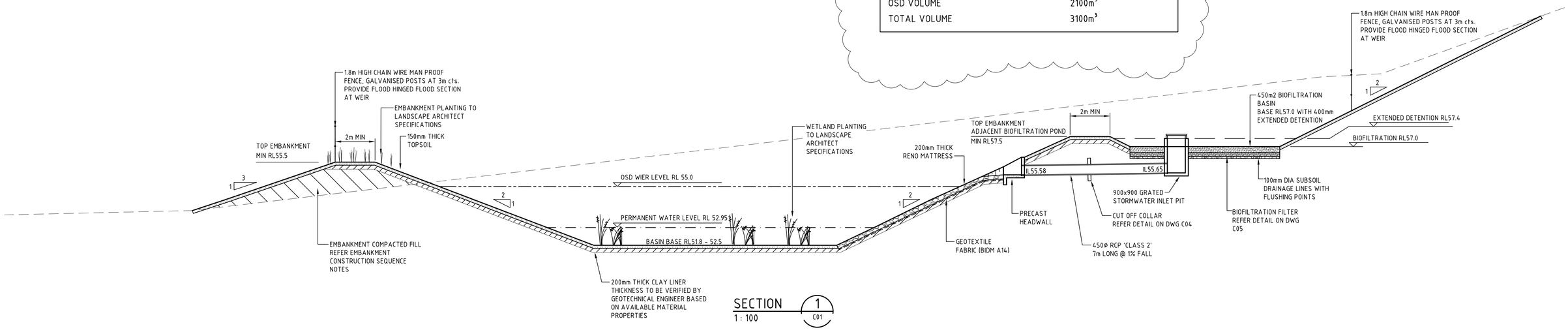


SECTION 2 (C01)
1 : 100

BASIN STORAGE TABLE

NORTHERN BASIN	
PERMANENT WATER VOLUME	500m³
OSD VOLUME	2900m³
TOTAL VOLUME (TO WEIR)	3400m³
NORTHERN BIO-FILTRATION BASIN	
FILTER AREA	450m²
EXTENDED DETENTION AREA	450m²
EXTENDED DETENTION DEPTH	400mm
FILTER DEPTH	500mm
FILTER MEDIA PERMEABILITY	200mm\HOUR (SPEC)
	100mm\HOUR (ULTIMATE)
SOUTHERN BASIN	
PERMANENT WATER VOLUME	1000m³
OSD VOLUME	2100m³
TOTAL VOLUME	3100m³



SECTION 1 (C01)
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Issue	Description	Date
3	STORAGE TABLE UPDATED	16-2-12
2	STORAGE TABLE UPDATED	6-2-12
1	ISSUED FOR CONSTRUCTION	03-01-12

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Client: DIAL A DUMP

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Scales: 1:100 @ A1, 1:200 @ A3
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Height Datum: AHD
File:

Drawn	AM
Designed	AM
Checked	
Approved	

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: NORTHERN BASIN SITEWORKS SECTIONS

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Status: FOR CONSTRUCTION | A1

Drawing No.	Project No.	Issue
C03	10-16	3

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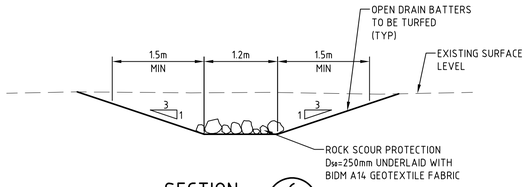
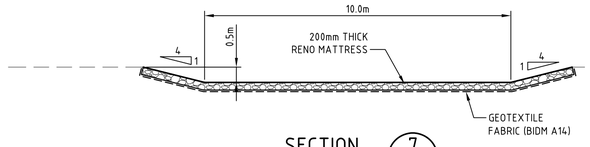
V1



SECTION 6
1 : 50
C01 & C02



SECTION 7
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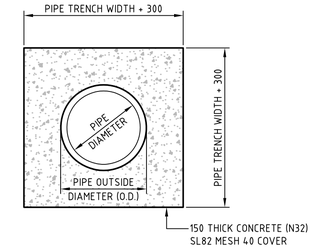
C01 & C02



CUT-OFF COLLAR DETAIL
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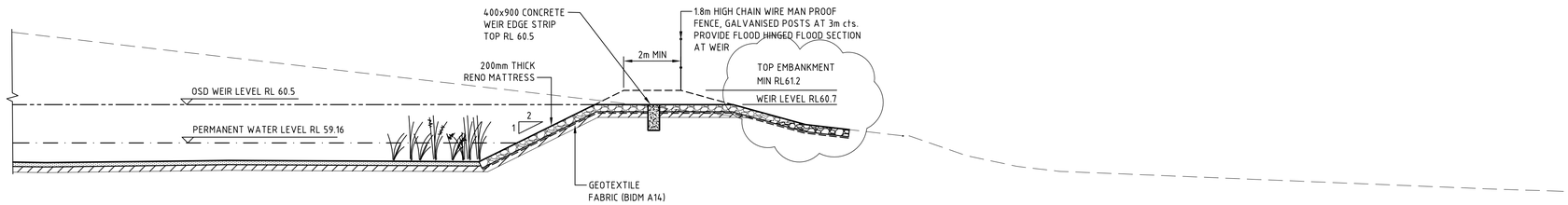

SECTION 5
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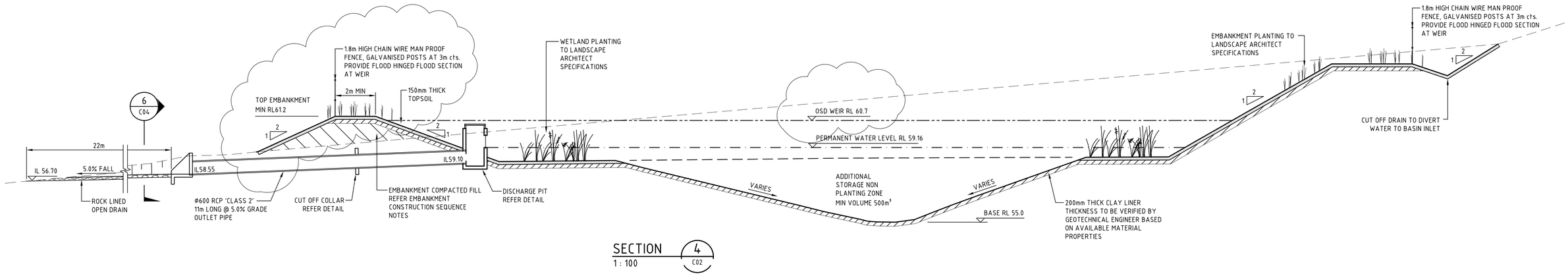
C02



SECTION 4
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C02

Issue	Description	Date
2	WEIR AND TOP OF BANK LEVELS AMENDED	6-2-12
1	ISSUED FOR CONSTRUCTION	03-01-12

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Client: DIAL A DUMP

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1 : 25
0 1 2 3 4 5m
1 : 50
0 2 4 6 8 10m
1 : 100

Scales: 1:100 @ A1, 1:200 @ A3
Grid: MGA
Height Datum: AHD
File:

Drawn: AM
Designed: AM
Checked:
Approved:

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C04	10-16	2

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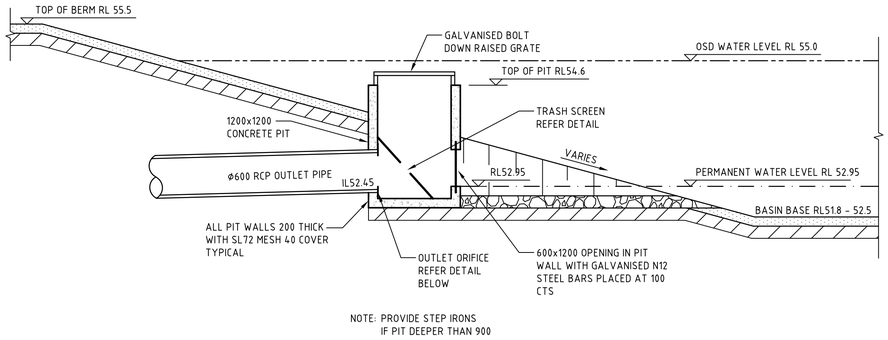
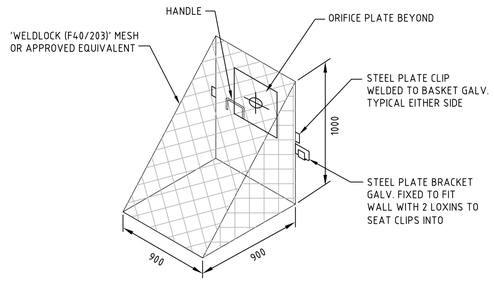
V1



NOTE: PROVIDE STEP IRONS
IF PIT DEEPER THAN 900

NORTHERN BASIN PIT A\1 DETAIL
SCALE 1:50



TRASH SCREEN DETAIL
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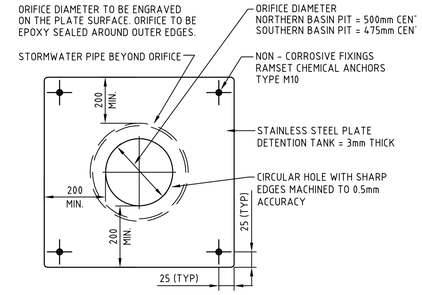
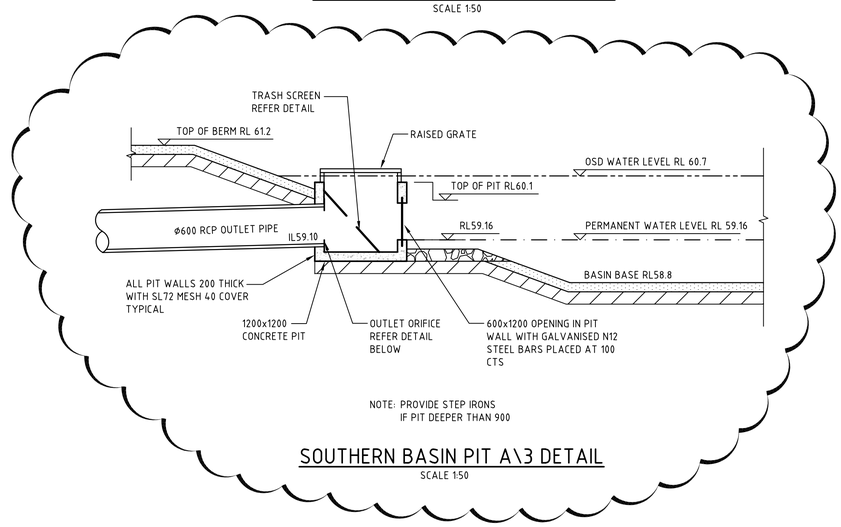
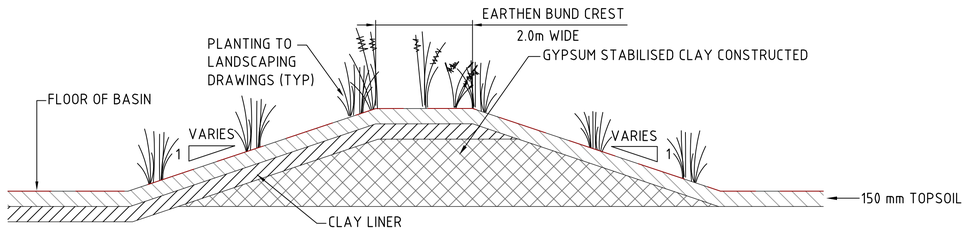


ORIFICE PLATE DETAIL
SCALE 1:5

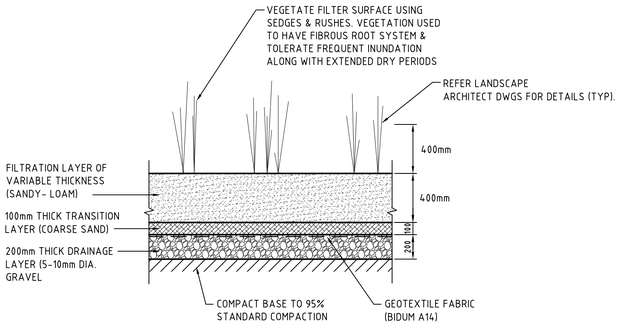


NOTE: PROVIDE STEP IRONS
IF PIT DEEPER THAN 900

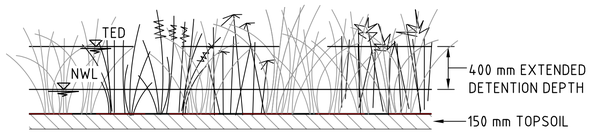
SOUTHERN BASIN PIT A\3 DETAIL
SCALE 1:50



OSD EMBANKMENT DETAIL
NOT TO SCALE



BIOFILTRATION FILTER DETAIL
SCALE 1:25



OSD TYPICAL DETAIL
NOT TO SCALE

0 50 100 200 300 400 500mm
1 : 5
0 100 200 400 600 800 1000mm
1 : 10
0 0.5 1 1.5 2 2.5m
1 : 25
0 1 2 3 4 5m
1 : 50

Issue	Description	Date
3	WEIR AND TOP OF BANK LEVEL AMENDED	6-2-12
2	TRASH RACK DETAIL AMENDED	31-01-12
1	ISSUED FOR CONSTRUCTION	03-01-12

100mm on Original

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Client: DIAL A DUMP

Scale Bar

Scales: AS SHOWN
Grid: MGA
Height Datum: AHD
File

Drawn: MM
Designed: AMc
Checked
Approved

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: BASIN TYPICAL DETAILS

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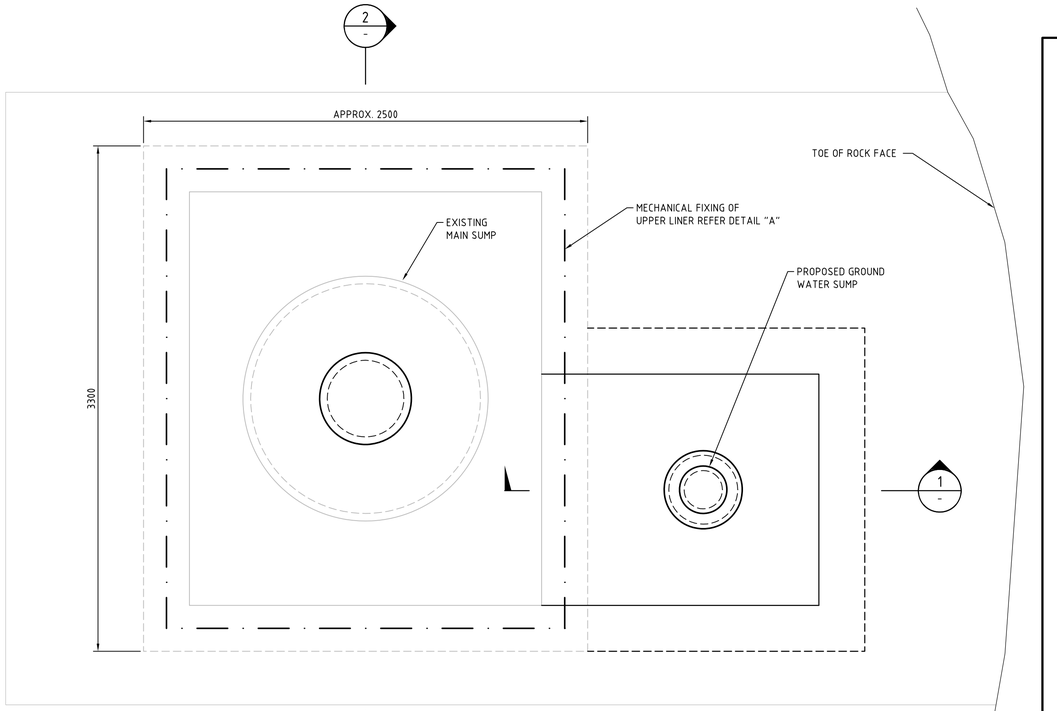
info@atl.net.au

Status: FOR CONSTRUCTION
A1

Drawing No.	Project No.	Issue
C05	10-16	3

F:\10-16 Dial A Dump\Drgs\Civil\Final\C05 Basin Typical Details.dwg

V1



LEACHATE MAIN SUMP - GROUND WATER SUMP PLAN

SCALE 1 : 20

CONCRETE NOTES

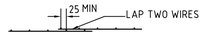
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. CONCRETE QUALITY
   ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

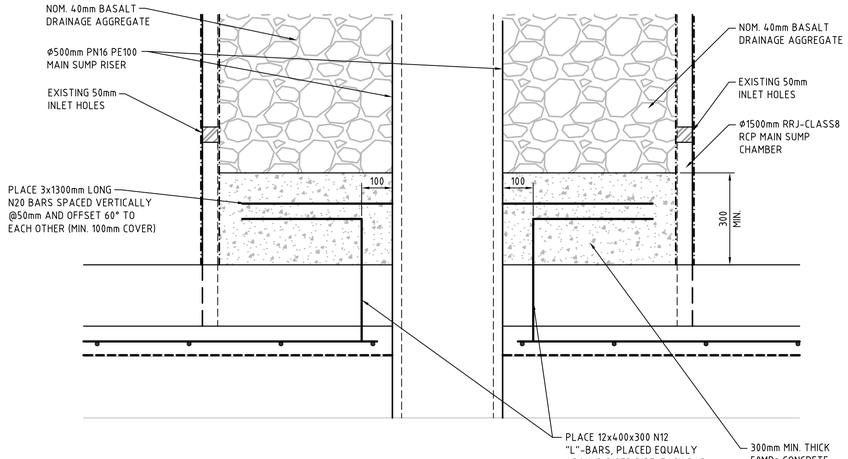
ELEMENT	AS 3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
ALL POURED CONCRETE	50	120	20

   - CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SR
   - PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379.
3. NO ADMIXTURES SHALL BE USED IN CONCRETE.
4. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE 40mm FOR EXTERNAL EDGES UNLESS NOTED OTHERWISE.
5. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.T.A. SPECIFICATION R83.
7. REINFORCEMENT SYMBOLS:
   N DENOTES GRADE 450 N BARS TO AS 1302 GRADE N
   R DENOTES 230 R HOT ROLLED PLAIN BARS TO AS 1302
   SL DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS 1304

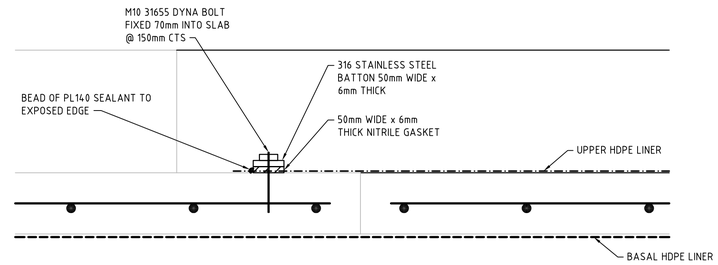
   NUMBER OF BARS IN GROUP — BAR GRADE AND TYPE
   17 N 20 250
   NOMINAL BAR SIZE IN mm — SPACING IN mm

   THE FIGURE FOLLOWING THE FABRIC SYMBOL SL IS THE REFERANCE NUMBER FOR FABRIC TO AS 1304.
8. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:



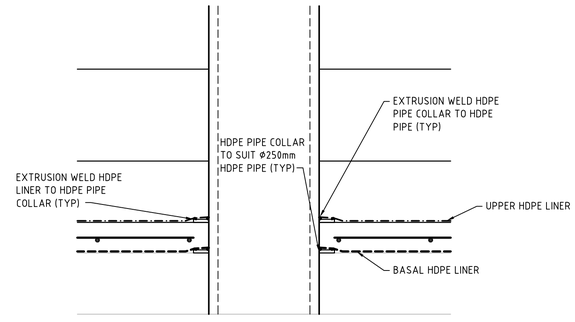


SECTION 2
1 : 10



MECHANICAL FIXING OF UPPER LINER TO CONCRETE SLAB

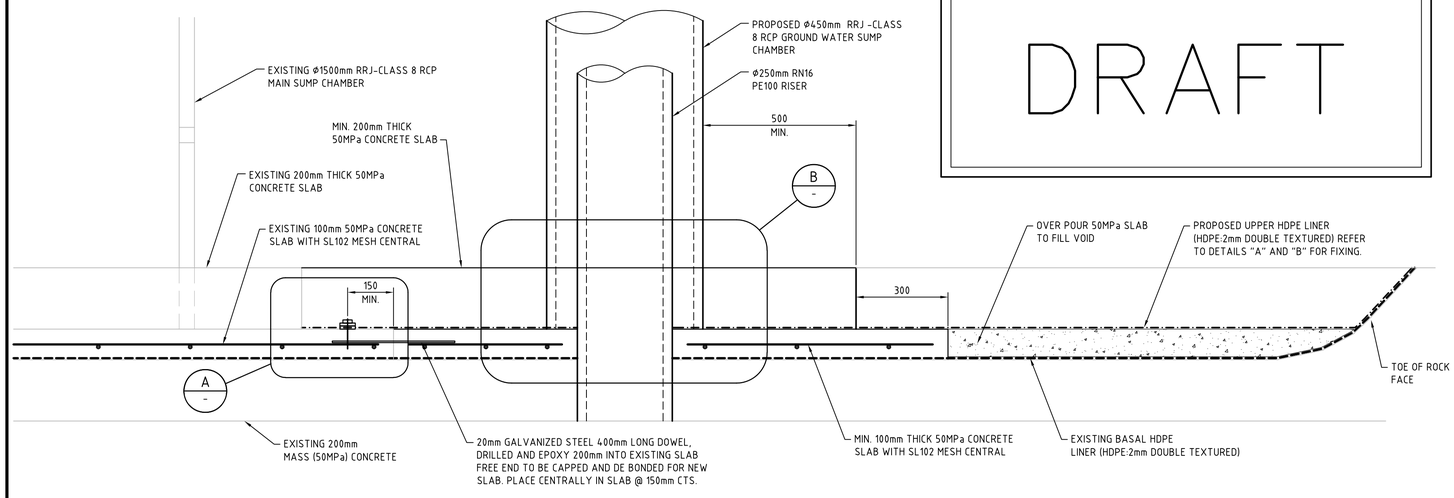
DETAIL A
1 : 5



MECHANICAL FIXING OF LINERS TO GROUND WATER RISER

DETAIL B
1 : 10

DRAFT



SECTION 1
1 : 10

Issue	Description	Date
1	ISSUED FOR CONSTRUCTION	XXXXX

100mm on Original

0 50 100 200 300 400 500mm
1 : 5
0 100 200 400 600 800 1000mm
1 : 10
0 500 1000 1500 2000mm
1 : 20

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Client: DIAL A DUMP
Scale Bar:
Scales: AS SHOWN
Grid:
Height Datum: AHD
File:

Drawn	TS
Designed	AP
Checked	AP
Approved	

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK
Title: MAIN SUMP DETAILS

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info@atl.net.au

Status: PRELIMINARY ONLY
A1

Drawing No.	Project No.	Issue
C06	10-16	1

F:\10-16 Dial A Dump\Drgs\Civil\Final\C06 Ground Water Sump Deatails.dwg

V1

Issue	Description	Date
P1	ISSUE FOR INFORMATION	10-03-14

100mm on Original

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Client: DIAL A DUMP

Scale Bar: 0 50 100 150 200m — 1 : 2000

Scales: 1: 2000 @ A1

Grid: MGA

Height Datum: AHD

File

Drawn	MM
Designed	AMc
Checked	AM
Approved	

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: ESTATE ROAD LAYOUT LAYOUT PLAN

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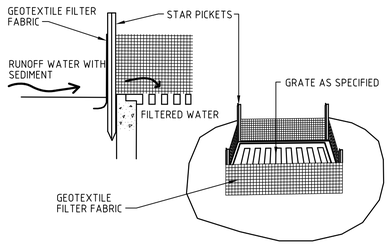
Status: INFORMATION
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C10	10-16	P1

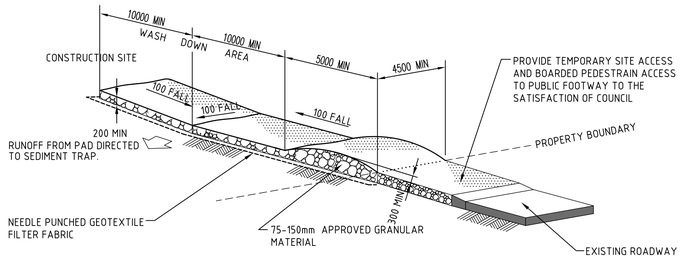
F:\10-16 Dial A Dump\Drgs\Civil\Final\C10 Estate Road Plan Plan.dwg

V1



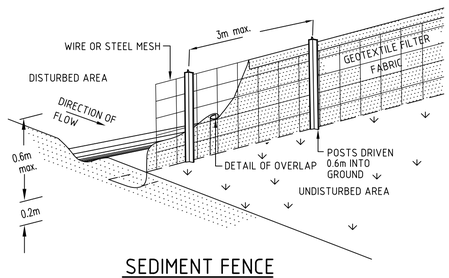
GEOTEXTILE FILTER PIT SURROUND

NTS



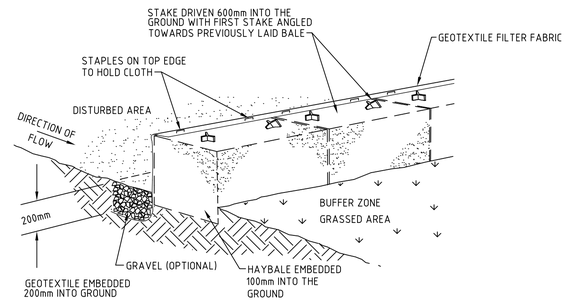
STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA

NTS



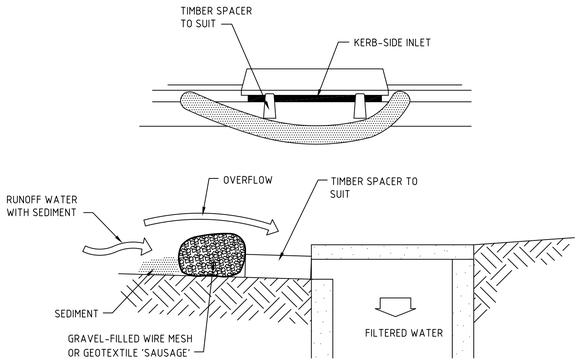
SEDIMENT FENCE

NTS



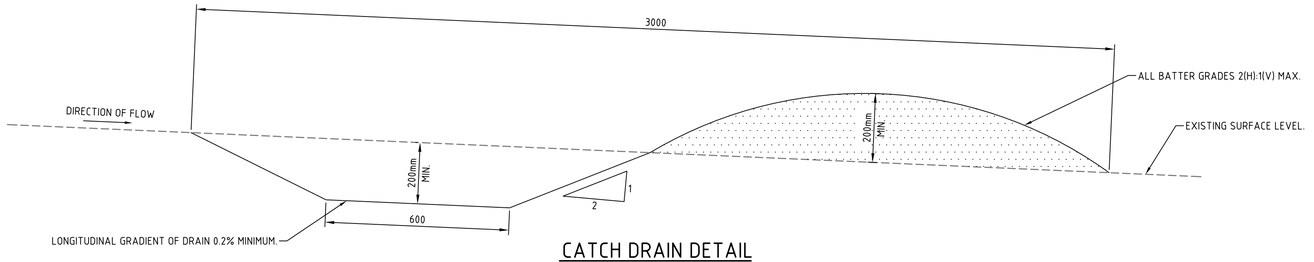
HAYBALE AND GEOTEXTILE SEDIMENT FILTER

NTS



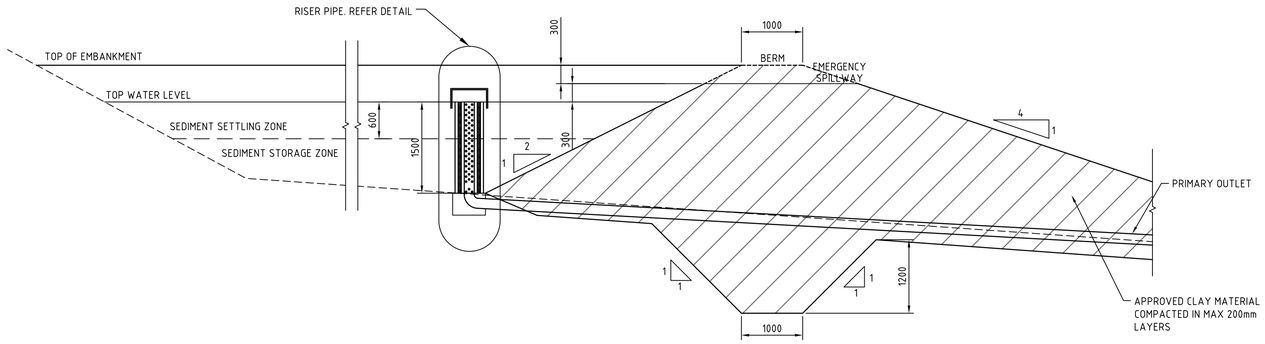
MESH AND GRAVEL INLET FILTER

NTS



CATCH DRAIN DETAIL

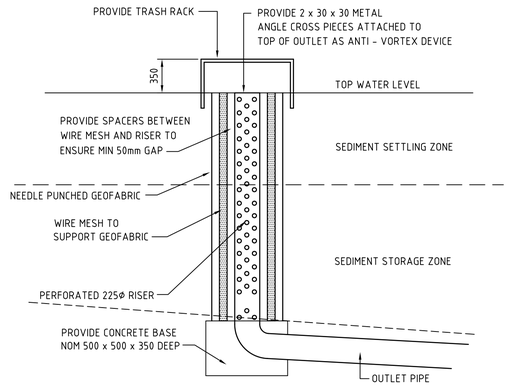
SCALE 1:10



SEDIMENT BASIN TYPE 1 TYPICAL CROSS SECTION

1 : 50

TYPICAL FOR ALL SEDIMENT BASINS



RISER PIPE DETAIL

1 : 50

Issue	Description	Date
A	ISSUE FOR INFORMATION	26-05-16

0 1 2 3 4 5m

1 : 50 @ A1 1 : 100 @ A3

0 100 200 400 600 800 1000mm

1 : 10 @ A1 1 : 20 @ A3

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Client: DIAL A DUMP

Scale Bar

Scales: AS SHOWN

Grid

Height Datum: AHD

File

Drawn	JB
Designed	JB
Checked	AMc
Approved	

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: EROSION AND SEDIMENT DETAILS

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www.atl.net.au
info@atl.net.au

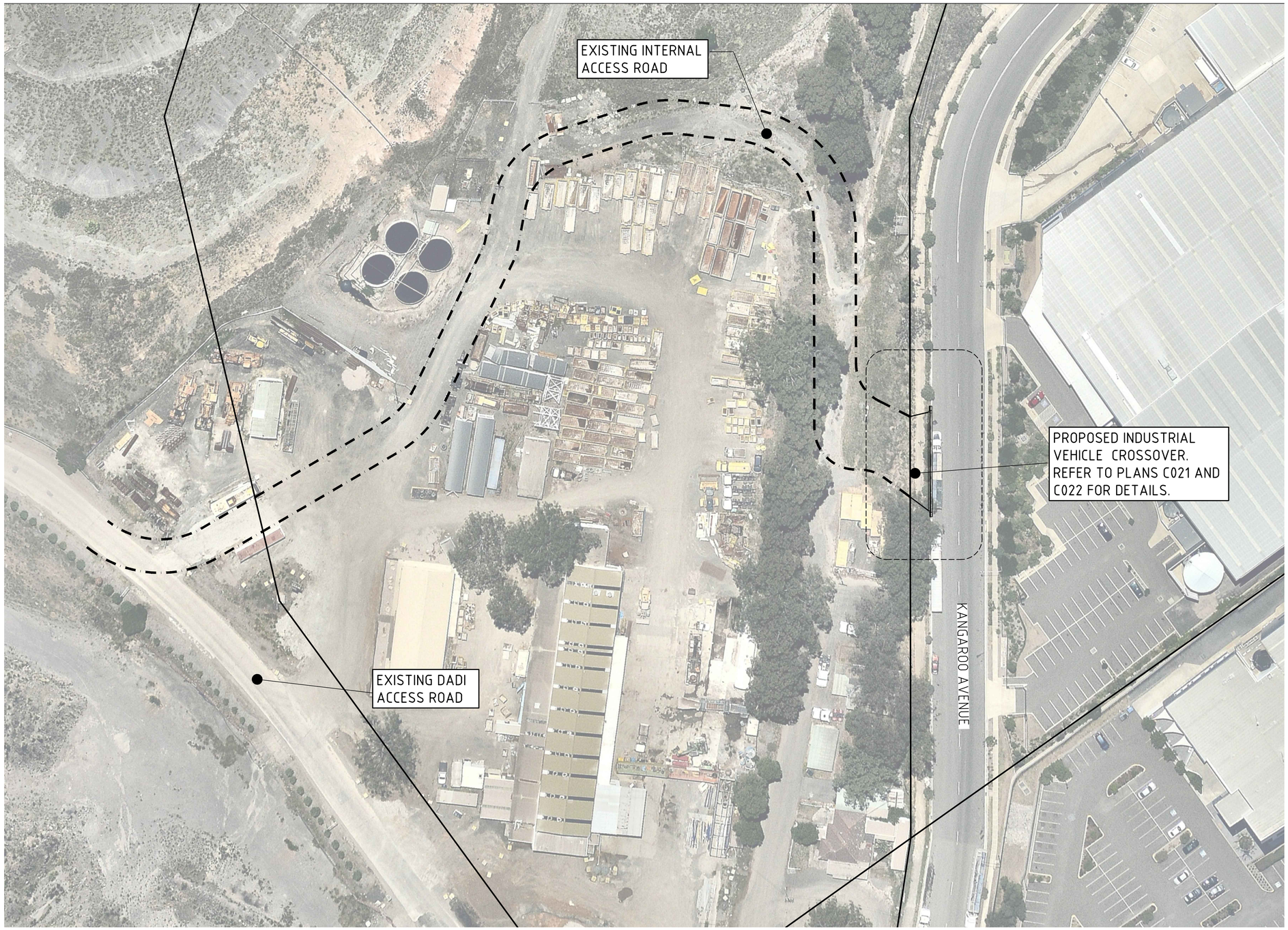
Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C11	10-16	A

100mm on Original

F:\10-16 Dial A Dump\Drgs\Civil\Final\C11 Sedimentation details.dwg



NOTE:
INTERNAL ACCESS ROAD
NOT PART THIS APPROVAL

SITE PLAN
SCALE 1 : 500

Issue	Description	Date
A	ISSUED FOR APPROVAL	06-03-17

100mm on Original

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Client: DIAL A DUMP INDUSTRIES

Scale Bar: 0 10 20 30 40 50m
1 : 500 @ A1 1 : 1000 @ A3

Scales: 1:500
Grid:
Height Datum:

Drawn	AM
Designed	AM
Checked	AT
Approved	

Project: DIAL A DUMP INDUSTRIES
EASTERN CREEK

Title: PROPOSED TEMPORARY ACCESS CROSSOVER OVERALL SITE PLAN

Civil Engineers and Project Managers
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St Leonards NSW 2065
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Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C020	10-16	A

Z:\10-16 Dial A Dump\Drgs\Civil\Final\10-16_C020.dwg

LEGEND

PROPOSED HEAVY DUTY CONCRETE PAVEMENT - REFER DETAILS AND SPECIFICATIONS ON DWG C022

• P78.000 PROPOSED FINISHED PAVEMENT LEVEL

NOTE:
AT THE COMPLETION OF THE CONSTRUCITON OF THE PRECINCT ROAD, THE CROSSING IS TO BE REMOVED, KERB AND GUTTER TO BE REINSTATED, FOOTPATH RECONSTRUCTED AND VERGE AREA TO BE TURFED.

LAYOUT PLAN
SCALE 1 : 100

Issue	Description	Date
A	ISSUED FOR APPROVAL	06-03-17

100mm on Original

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Client: DIAL A DUMP INDUSTRIES

Scale Bar: 0 2 4 6 8 10m
1 : 100 @ A1 1 : 200 @ A3

Scales: 1:500
Grid:
Height Datum:
File:

Drawn	AM
Designed	AM
Checked	AT
Approved	

Project: DIAL A DUMP INDUSTRIES EASTERN CREEK

Title: PROPOSED TEMPORARY ACCESS CROSSOVER DETAIL LAYOUT PLAN

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Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C021	10-16	A

Z:\10-16 Dial A Dump\Drgs\Civil\Final\10-16_C021.dwg

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. CONCRETE QUALITY
   ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	AS 3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
VEHICULAR BASE	32	60	20
KERBS, PATHS, AND PITS	25	80	20

   - CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL
   - PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379.
3. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY AT & L.
4. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE 40mm TOP AND 70mm FOR EXTERNAL EDGES UNLESS NOTED OTHERWISE.
5. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.T.A. SPECIFICATION R83.
7. REINFORCEMENT SYMBOLS:
   N DENOTES GRADE 450 N BARS TO AS 1302 GRADE N
   R DENOTES 230 R HOT ROLLED PLAIN BARS TO AS 1302
   SL DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS 1304

   NUMBER OF BARS IN GROUP — BAR GRADE AND TYPE
   17 N 20 250
   NOMINAL BAR SIZE IN mm — SPACING IN mm

   THE FIGURE FOLLOWING THE FABRIC SYMBOL SL IS THE REFERANCE NUMBER FOR FABRIC TO AS 1304.
8. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:

KERBING NOTES

K1 ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa.

K2 ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 75mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 98% MODIFIED DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.

K3 EXPANSION JOINTS (EJ) TO BE FORMED FROM 10MM COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 12M CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.

K4 WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.

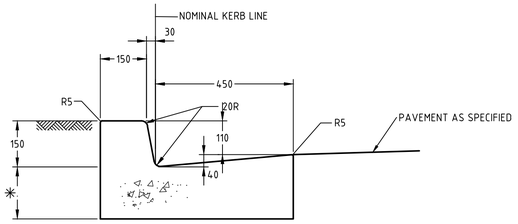
K5 BROOMED FINISHED TO ALL RAMPED AND VEHICULAR CROSSINGS, ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.

K6 IN THE REPLACEMENT OF KERBS:
EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm FROM LIP OF GUTTER. UPON COMPLETION OF NEW KERBS, NEW BASECOURSE AND SURFACE IS TO BE LAID 900mm WIDE.

NEW AC ROAD SURFACE ADJACENT TO KERBS TO BE LAID mm BELOW LIP OF KERB TO ACCOMMODATE FUTURE ROAD RESHEETING.

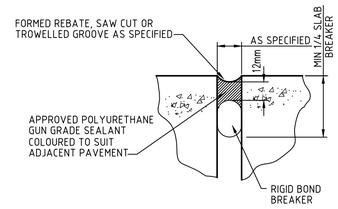
EXISTING ALLOTMENT DRAINAGE PIPES ARE TO BE BUILT INTO THE NEW KERB WITH A 100mmDIA HOLE.

EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

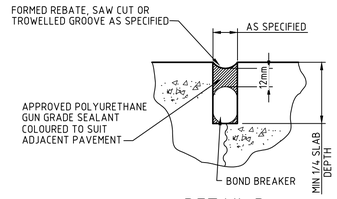


KERB AND GUTTER (K&G)
SCALE 1:10

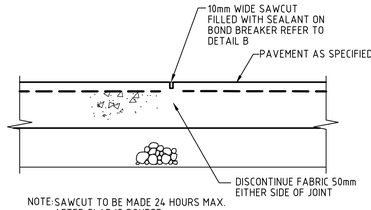
✳ TO SUIT PAVEMENT DEPTH MIN. 150mm



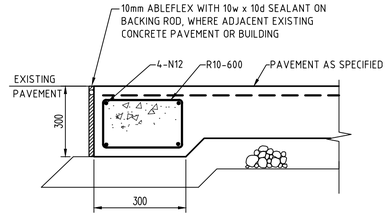
DETAIL A
N.T.S.



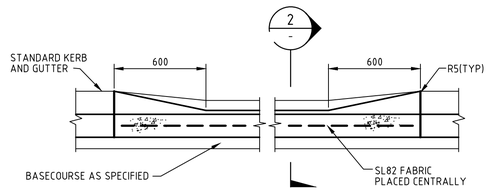
DETAIL B
N.T.S.



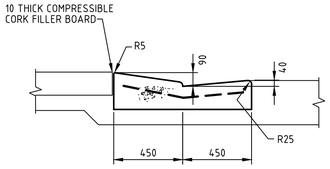
SAWN JOINT (SJ)
SCALE 1:10



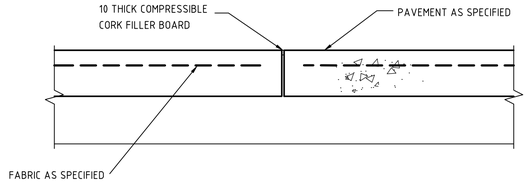
THICKENED EDGE (TE)
SCALE 1:10



SECTION 2 / 1 : 20



SECTION 1 / 1 : 20



EXPANSION JOINT (EJ)
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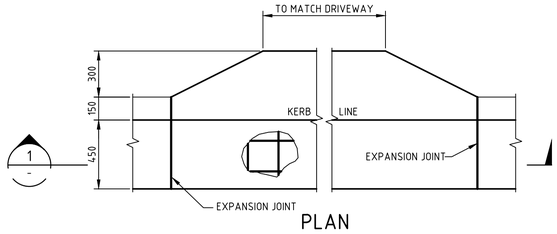

PLAN

VEHICULAR CROSSING (TYP.)
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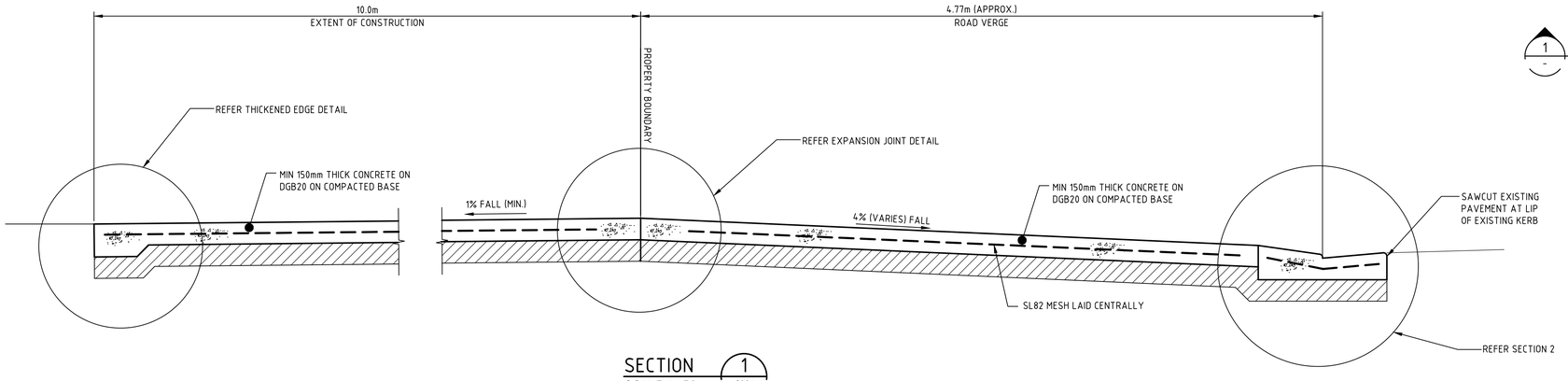

SECTION 1 / SCALE 1 : 50 — C021

Issue	Description	Date
A	ISSUED FOR APPROVAL	06-03-17

100mm on Original

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Client: DIAL A DUMP INDUSTRIES

Scale Bar: AS SHOWN

Scales: AS SHOWN

Grid:

Height Datum:

Drawn	AM
Designed	AM
Checked	AT
Approved	

Project: DIAL A DUMP INDUSTRIES EASTERN CREEK

Title: PROPOSED TEMPORARY ACCESS CROSSOVER DETAILS

Civil Engineers and Project Managers
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Suite 702, 154 Pacific Hwy
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Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C022	10-16	A

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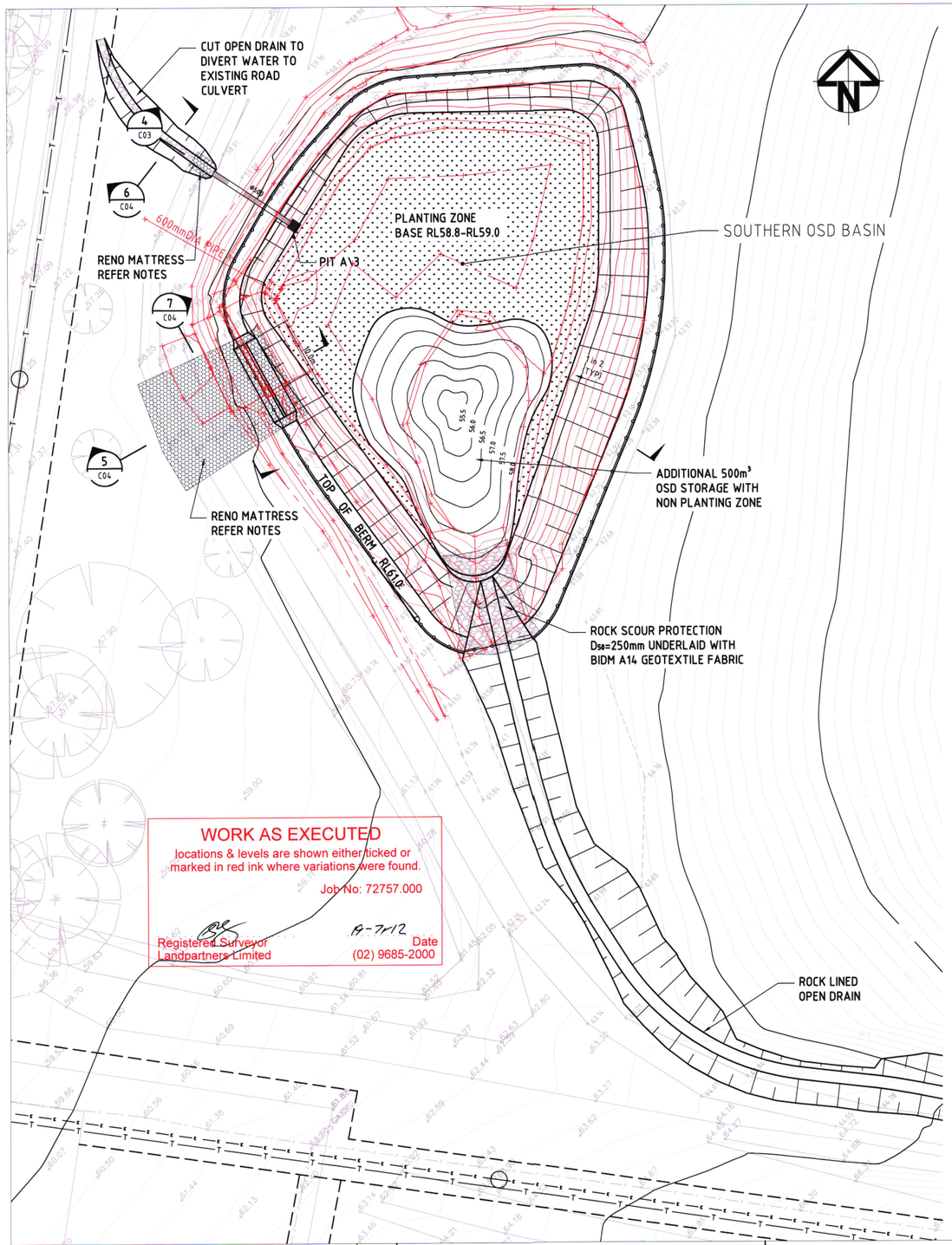


WORK AS EXECUTED

locations & levels are shown either ticked or marked in red ink where variations were found.

Job No: 72757.000

Registered Surveyor
Landpartners Limited

Date 8-7-12
(02) 9685-2000

EMBANKMENT CONSTRUCTION SEQUENCE

1. STRIP VEGETATION AND TOPSOIL FROM EMBANKMENT AREA AND STOCKPILE TOPSOIL FOR LATER USE. CUT BACK AREA TO FIRM GROUND.
2. CONSTRUCT EMBANKMENT IN PRESENCE OF QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER IF NOT ROCK.
3. IN THE CASE WHERE THE EMBANKMENT AREAS SLUSH, GROUTING AND DENTAL CONCRETE MAY BE REQUIRED, AS DIRECTED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER.
4. COMPACT CLAY STABILIZED WITH GYPSUM (3% BY DRY MASS, MINIMUM) AS APPROVED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER INTO THE CUT-OFF TRENCH OF LAYERS NOT EXCEEDING 150mm LOOSE THICKNESS TO A DRY DENSITY EQUIVALENT TO 98% OF THAT DETERMINED BY STANDARD COMPACTION (AS 1289.5.1.1) AND AT A MOISTURE CONTENT OF -2% TO +2% OF OPTIMUM MOISTURE CONTENT.
5. GYPSUM STABILIZED NATURAL SOILS EXPOSED IN EMBANKMENT AREA WITH MINIMUM 3% GYPSUM BY DRY MASS AND COMPACT AS FOR #4. ALL TO THE APPROVAL OF A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER.
6. CONSTRUCT BODY OF EMBANKMENT WITH CLAYEY MATERIAL WON FROM SITE. COMPACT THE CLAYEY MATERIAL APPROVED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER IN LAYERS NOT EXCEEDING 150mm THICKNESS TO A DRY DENSITY EQUIVALENT TO 98% OF THAT DETERMINED BY STANDARD COMPACTION (AS 1289.5.1.1) AND AT A MOISTURE CONTENT OF -2% TO +2% OF OPTIMUM MOISTURE CONTENT. MOST IMPORTANTLY, IF SHRINKAGE CRACKS OCCUR, AS DIRECTED BY A QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER.
7. OVERFILL THE EMBANKMENT AND TRIM OFF, SO THAT THE ENTIRE BODY OF THE EMBANKMENT IS COMPACTED.
8. TRIM THE EMBANKMENTS BATTERS TO THE OVERFILLED MATERIAL, STABILIZE THE UPSTREAM CLAY BATTERS WITH WELL MIXED GYPSUM (3% BY DRY MASS, MINIMUM) AND COMPACT TO MIN. 98% STD -2% TO +2% OMC.
9. PLACE ROCK RIP-RAP AS SHOWN.
10. RECOVER TOPSOIL FROM STOCKPILE AND SPREAD OVER EMBANKMENT AND CUT BATTERS (A THIN COVER OF TOPSOIL ONLY HAS BEEN NOMINATED). ONLY LIGHTLY TRACK-ROLL THE TOPSOIL AND THEN LANDSCAPE IN ACCORDANCE WITH THE LANDSCAPE AREA DRAWINGS.
11. WATER AND FERTILIZE LANDSCAPE AS REQUIRED BY CLIMACTIC CONDITIONS TO ENSURE THE LANDSCAPE IS SUCCESSFUL.
12. AT THE COMPLETION OF WORK WRITTEN CONFIRMATION & CERTIFICATION IS TO BE PROVIDED FROM A QUALIFIED & EXPERIENCED GEOTECHNICAL ENGINEER THAT THE EMBANKMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THESE DRAWINGS.

BULK EARTHWORKS NOTES

1. ORIGIN OF LEVELS: REFER SURVEY NOTES
2. STRIP ALL TOPSOIL/ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCK PILE AS DIRECTED BY SUPERINTENDENT.
3. EXCAVATED MATERIAL TO BE USED AS STRUCTURAL FILL PROVIDED THE PLACEMENT MOISTURE CONTENT OF THE MATERIAL IS +/- 2% OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH AS 1289.5.7.1.
4. COMPACT FILL AREAS AND SUBGRADE TO NOT LESS THAN:

LOCATION	STANDARD DRY DENSITY (AS 1289 E 5.1.1)
UNDER BUILDING SLABS ON GROUND	98%
UNDER ROADS AND CARPARKS	98%
LANDSCAPED AREAS UNLESS NOTED OTHERWISE	98%

5. FOR NON COHESIVE MATERIAL, COMPACT TO 75% DENSITY INDEX.
6. BEFORE PLACING FILL, PROOF ROLL EXPOSED SUBGRADE WITH AN 8 TONNE (MIN) DEADWEIGHT SMOOTH DRUM VIBRATORY ROLLER TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER).
7. FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN :-
   (A) 1 TEST PER 200m² OF FILL PLACED PER 300mm LAYER OF FILL.
   (B) 3 TESTS PER VISIT
   (C) 1 TEST PER 1000m² OF EXPOSED SUBGRADE
   TESTING SHALL BE "LEVEL 1" TESTING IN ACCORDANCE WITH AS 3798 (1996).
8. FILLING TO BE PLACED AND COMPACTED IN MAXIMUM 150mm LAYERS
9. NO FILLING SHALL TAKE PLACE TO EXPOSE SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF AT & L AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED.

FENCING AND SECURITY

BOTH BASINS ARE TO BE FENCED WITH 1.8m HIGH MAN PROOF FENCE GALVANISED POSTS AT 3m c/s. PROVIDE 4.8m WIDE GATE TO ALLOW ACCESS. GATES TO BE LOCKED AT ALL TIMES. EXACT LOCATION OF FENCE AND GATE TO BE DETERMINED ON SITE. PROVIDED HINGED ONEWAY FLOOD FLAP AT WEIR LOCATIONS.

EROSION AND SEDIMENT CONTROL NOTES:

GENERAL INSTRUCTIONS

1. THE SITE SUPERINTENDENT/ENGINEER WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED.
2. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
   a. LOCAL AUTHORITY REQUIREMENTS
   b. EPA REQUIREMENTS
   c. MANAGING URBAN STORMWATER - SOIL & CONSTRUCTION VOLUME 1, (2004) LANDCOM
3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
5. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

6. 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:
   (A) INSTALL A WIND FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (B) INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (C) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
   (D) INSTALL SEDIMENT BASIN AS SHOWN ON PLAN
   (E) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
   (F) 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.

EROSION CONTROL

7. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

9. STOCKPILES WILL NOT BE LOCATED WITHIN 5 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS.
10. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
11. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS

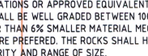
13. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
14. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
   (A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE
   (B) ENSURING THAT NOTHING IS NAILED TO THEM
   (C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS.
   (I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER
   (II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH
   (III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS & PITTWATER COUNCIL SPECIFICATIONS.
2. CONCRETE QUALITY
   ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	AS 3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
VEHICULAR BASE	32	60	20
KERBS, PATHS, AND PITS	25	80	20

   - CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL
   - PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL SPECIFICATIONS.
3. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY AT & L.
4. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE 40mm TOP AND 70mm FOR EXTERNAL EDGES UNLESS NOTED OTHERWISE.
5. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.T.A. SPECIFICATION R83.
7. REINFORCEMENT SYMBOLS:
   N DENOTES GRADE 450 N BARS TO AS 1302 GRADE N
   R DENOTES 230 R HOT ROLLED PLAIN BARS TO AS 1302
   SL DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS 1304
   NUMBER OF BARS IN GROUP — BAR GRADE AND TYPE — 17 N 20 250 — NOMINAL BAR SIZE IN mm — SPACING IN mm
   THE FIGURE FOLLOWING THE FABRIC SYMBOL SL IS THE REFERENCE NUMBER FOR FABRIC TO AS 1304.
8. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:



STORMWATER DRAINAGE NOTES

1. PIPES TO BE INSTALLED TO TYPE HS1 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
2. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
3. GRATES AND COVERS SHALL CONFORM TO AS 3996.
4. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
5. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

RENO MATTRESS NOTES

1) ALL CONSTRUCTION METHODS AND MATERIALS USED ARE IN ACCORDANCE WITH MACCAFERRI SPECIFICATION OR APPROVED EQUIVALENT.
2) PRODUCT SPECIFICATIONS
   GALMAC & PVC COATED OR APPROVED EQUIVALENT
3) FILL MATERIALS
   A. THE MATTRESS FILL MATERIAL MUST BE WEATHER RESISTANT, NON-FRIABLE, INSOLUBLE AND SUFFICIENTLY HARD BASALT, HAVE THESE PROPERTIES AND SPECIFIC GRAVITY WHICH QUALIFY THEM TO BE USED AS FILL MATERIAL AS PER AS2758.4.
   B. CONSTRUCTION METHODS USED, IN ACCORDANCE WITH MACCAFERRI SPECIFICATIONS OR APPROVED EQUIVALENT.
   C. ROCK SHALL BE WELL GRADED BETWEEN 100mm AND 200mm WITH NO GREATER THAN 6% SMALLER MATERIAL MECHANICALLY INTERLOCKING ROCKS ARE PREFERED. THE ROCKS SHALL HAVE A DEGREE OF ANGULARITY AND RANGE OF SIZE.
   D. WET/DRY VARIATION SHALL BE 100kN OR GREATER IN ACCORDANCE WITH AS 1141.22.
4) CONSTRUCTION
   COMPACT MATERIAL BELOW THE STRUCTURE TO 98% STD MDD.
   GEOMAC NON-WOVEN GEOTEXTILE (BIDM A14) TO BE PLACED AT ALL MESH SOIL ROCK INTERFACES OR APPROVED EQUIVALENT.

MATTRESS FILL
ROCK FILL UNIT WEIGHT = 25kN/m³
GABION POROSITY = 30%

Issue	Description	Date
2	NOTATION AMENDED	6-2-12
1	ISSUED FOR CONSTRUCTION	03-01-12

100mm on Original

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Client: DIAL A DUMP

Scale Bar: 0 5 10 15 20 25m — 1 : 300

Scales: 1: 300
Grid: MGA
Height Datum: AHD

Drawn: MM
Designed: AMc
Checked:
Approved:
File:

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: SOUTHERN OSD BASIN LAYOUT PLAN

Civil Engineers and Project Managers
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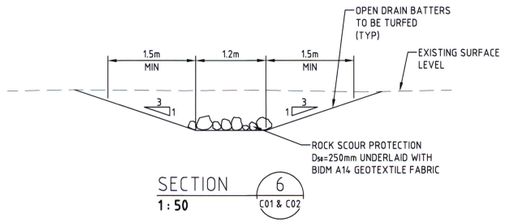
Milsons Point NSW 2061
ABN 96 130 882 405
Tel: 02 8920 2466
Fax: 02 9922 5102
www.atl.net.au
info@atl.net.au

Status: FOR CONSTRUCTION | A1

Drawing No.	Project No.	Issue
C02	10-16	2

I:\Projects - Current\SY072757.000 quarry road eastern creek\SY072757.008 dadi LHBC as built locations\C02 Souther



SECTION 6 (C01 & C02)
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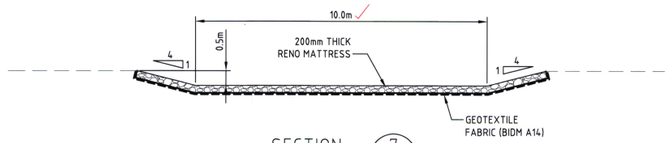

SECTION 7 (C01 & C02)
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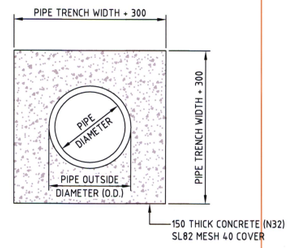

CUT-OFF COLLAR DETAIL
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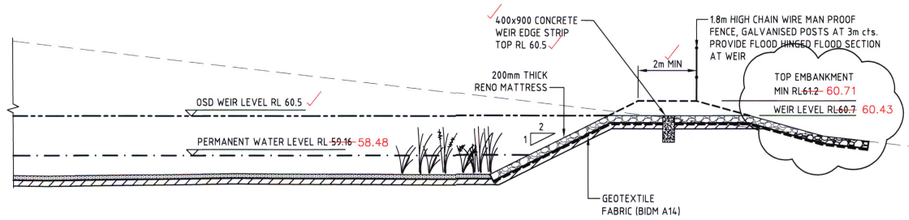

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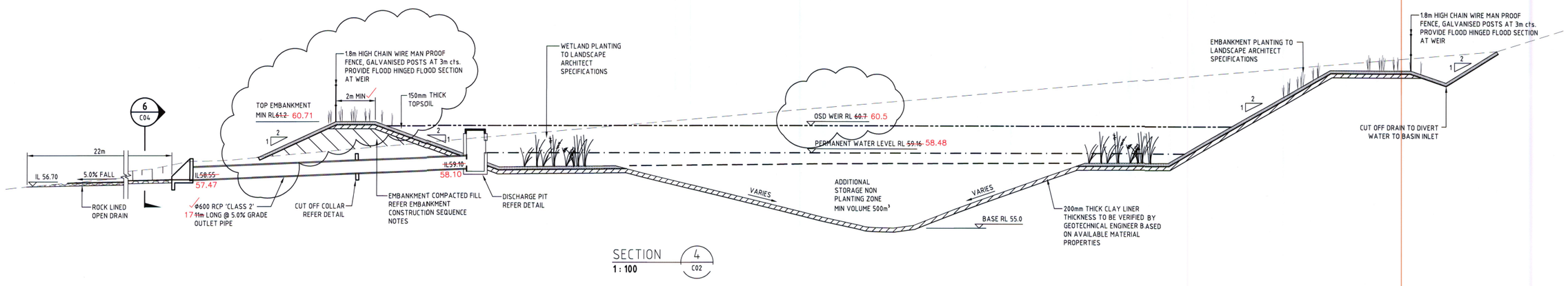

SECTION 4 (C02)
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WORK AS EXECUTED
locations & levels are shown either ticked or marked in red ink where variations were found.
Job No: 72757.000

Registered Surveyor
Landpartners Limited

19-7-12
Date
(02) 9685-2000

Issue	Description	Date
2	WEIR AND TOP OF BANK LEVELS AMENDED	6-2-12
1	ISSUED FOR CONSTRUCTION	03-01-12

100mm on Original

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Client: DIAL A DUMP

Scale Bar
0 0.5 1 1.5 2 2.5m
1 : 25
0 1 2 3 4 5m
1 : 50
0 2 4 6 8 10m
1 : 100

Scales	1:100 @ A1, 1:200 @ A3
Drawn	AM
Designed	AM
Grid	MGA
Checked	
Height Datum	AHD
Approved	
File	

Project: LIGHT HORSE BUSINESS PARK EASTERN CREEK

Title: SOUHERN BASIN SITEWORKS SECTIONS

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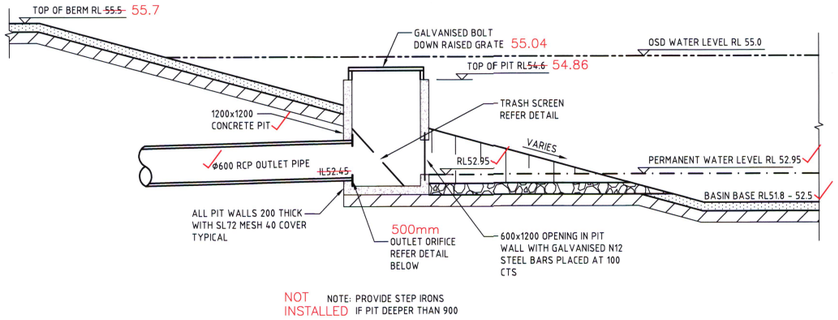
Status		
FOR CONSTRUCTION		A1
Drawing No.	Project No.	Issue
C04	10-16	2

I:\Projects - Current\SY072757.000 quarry road eastern creek\SY072757.008 dadi LHBC as built locations\C04 Basin Se



NORTHERN BASIN PIT A\1 DETAIL
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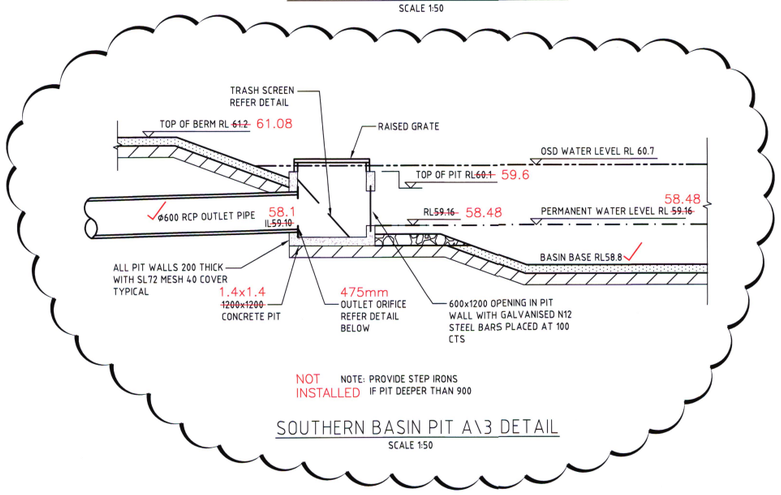

SOUTHERN BASIN PIT A\3 DETAIL
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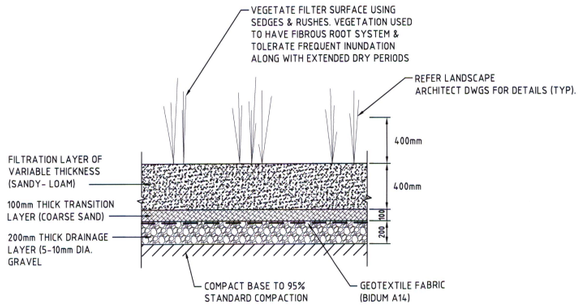

BIOFILTRATION FILTER DETAIL
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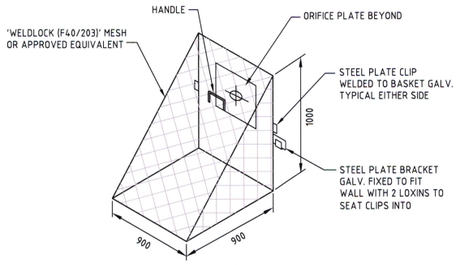
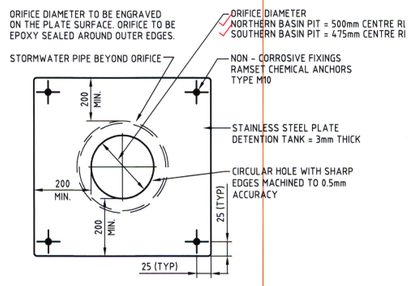
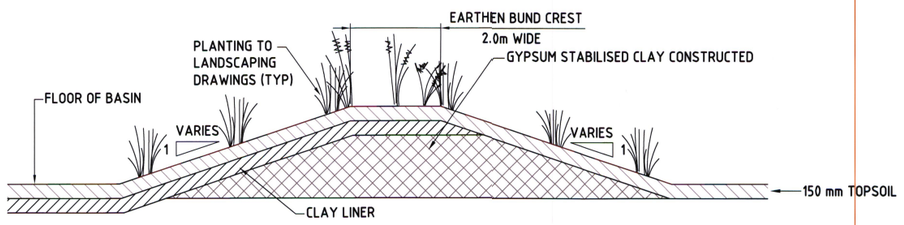


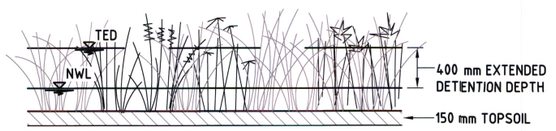
TRASH SCREEN DETAIL
SCALE 1:10



ORIFICE PLATE DETAIL
SCALE 1:5



OSD EMBANKMENT DETAIL
NOT TO SCALE



OSD TYPICAL DETAIL
NOT TO SCALE

3	WEIR AND TOP OF BANK LEVEL AMENDED	6-2-12
2	TRASH RACK DETAIL AMENDED	31-01-12
1	ISSUED FOR CONSTRUCTION	03-01-12

WORK AS EXECUTED
locations & levels are shown either ticked or marked in red ink where variations were found.
Job No: 72757.000
Registered Surveyor
Landpartners Limited
8-7-12
Date
(02) 9685-2000

0 50 100 200 300 400 500mm
1 : 5
0 100 200 400 600 800 1000mm
1 : 10
0 0.5 1 1.5 2 2.5m
1 : 25
0 1 2 3 4 5m
1 : 50

	MM
AS SHOWN	AMc
MGA	
AHD	

BASIN TYPICAL DETAILS

FOR CONSTRUCTION

C05

3
V1

Appendix B

Internal Catchment Plan
(19-692-SKC028-P1, AT&L, July 2021)

STORMWATER CATCHMENT LEGEND

- MPC2 AREA CATCHMENT
- CARPARK AREA CATCHMENT
- WEIGHBRIDGE AREA CATCHMENT
- OTHER CATCHMENTS DRAINING TO EXISTING SOUTHERN OSD BASIN
- ULTIMATE CATCHMENT EXTENTS (REFER TO DRAWING SKC007[P6], AT&L, OCTOBER 2015)
- FLOW DIRECTION

CATCHMENTS DRAINING TO EXISTING SOUTHERN OSD BASIN

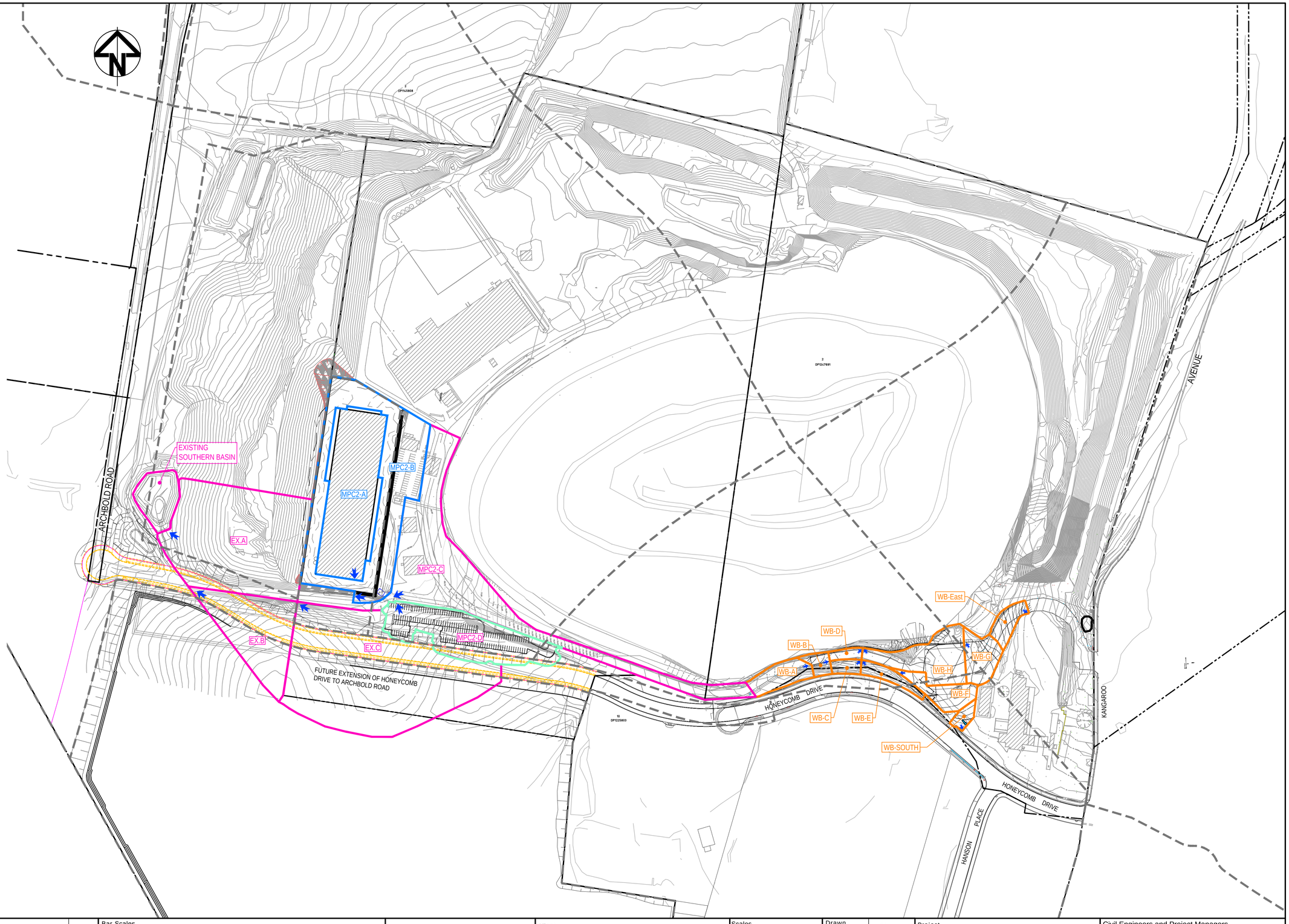
CATCHMENT	AREA (Ha)
EX.A	1.636
EX.B	0.691
EX.C	2.200
MPC2-A	1.026
MPC2-B	1.253
MPC2-C	1.615
MPC2-D	0.727
WB-A	0.162
WB-B	0.058
WB-C	0.049
WB-D	0.041
WB-E	0.090
WB-F	0.170
WB-G	0.181
WB-H	0.386
TOTAL	10.285

CATCHMENTS DRAINING TO HONEYCOMB DRIVE

CATCHMENT	AREA (Ha)
WB-SOUTH	0.046

CATCHMENTS DRAINING TO KANGAROO DRIVE

CATCHMENT	AREA (Ha)
WB-East	0.103



Issue	Description	Date
P1	ISSUE FOR INFORMATION	02-07-21

Bar Scales

0 50 100 150 200m

1 : 2000 @ A1

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Client: BINGO INDUSTRIES

Scales: 1 : 2000

Grid: GDA94 MGA56

Height Datum: AHD

Drawn: QD

Designed: TM

Checked: TM

Approved: TM

Project: BINGO RECYCLING ECOLOGY PARK PROPOSED WEIGHBRIDGES

Title: PROPOSED STORMWATER MANAGEMENT PLAN MOD 8

Civil Engineers and Project Managers
at&l
Level 7, 153 Walker Street
North Sydney NSW 2060
ABN 96 130 882 405
Tel: 02 9439 1777
Fax: 02 9923 1055
www.atl.net.au
info@atl.net.au

Status: FOR INFORMATION
NOT TO BE ISSUED FOR CONSTRUCTION

A1

Project - Drawing No.: 19-692-SKC028

Issue: P1

100mm on Original

F:\19-692 BINGO\6.0 Drgs\Civil\Sketches\SKC028 - PROPOSED STORMWATER MANAGEMENT CATCHMENTS FOR MOD8.dwg

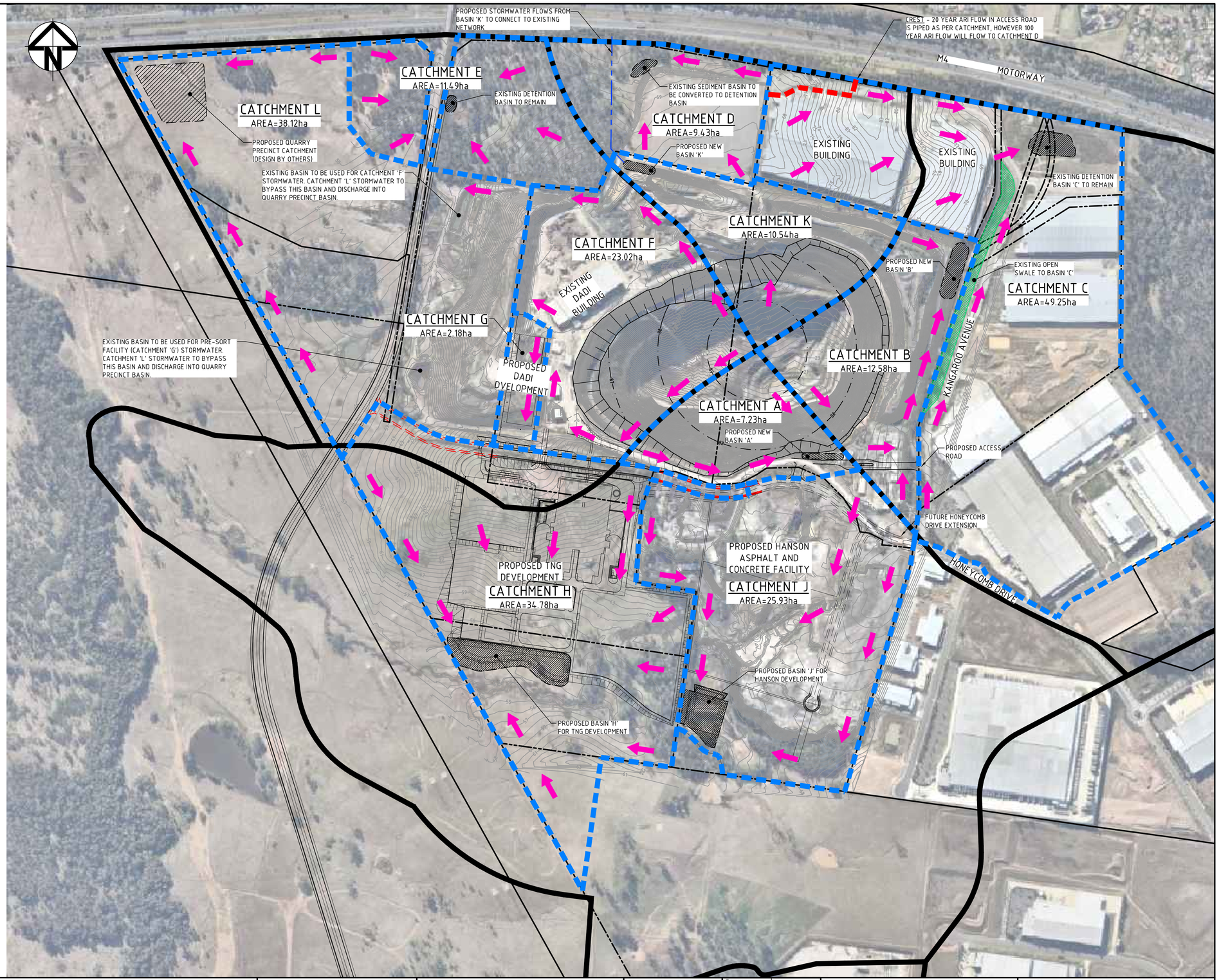
Appendix C

Proposed Ultimate Stormwater Management Plan
(SKC007-15-309-P6, AT&L, October 2015)

CATCHMENT	AREA	VOLUME REQUIRED FOR OSD	SURFACE AREA REQUIRED FOR BIO-RETENTION
A	7.23ha	2,510m³	730m²
B	12.58ha	4,300m³	1,320m²
C	49.25ha	-	-
D	9.43ha	3,300m³	950m²
E	11.49ha	-	-
F	23.02ha	8,300m³	2,400m²
G	2.18ha	760m³	220m²
H	34.78ha	12,080m³	3,510m²
J	25.93ha	UNKNOWN	UNKNOWN
K	10.54ha	3,600m³	1,070m²
L	38.12ha	13,250m³	3,840m²

NOTE:

1. SIZE OF OSD/BIO-RETENTION BASINS BASED ON ASSUMPTION THAT CATCHMENT WILL BE 80% IMPERVIOUS AREA.
2. CALCULATIONS AS PER BLACKTOWN CITY COUNCIL SEPP No.59.
3. WSUD TARGET REDUCTION REQUIREMENTS;
   - 85% TOTAL SUSPENDED SOLIDS (TSS)
   - 65% TOTAL PHOSPHORUS (TP)
   - 45% TOTAL NITROGEN (TN)
   - 90% TOTAL HYDROCARBONS
   - 90% GROSS POLLUTANTS
4. CATCHMENTS 'C' AND 'E' WILL NOT BE ALTERED. EXISTING BASINS ARE ASSUMED SUFFICIENT.
5. CATCHMENT 'J' IS ASSUMED TO DRAIN TO BASIN 'J' AND HAS BEEN ASSIGNED ACCORDINGLY.



Issue	Description	Date
P6	ISSUED FOR INFORMATION	26-10-15
P5	ISSUED FOR INFORMATION	12-10-15
P4	ISSUED FOR INFORMATION	18-09-15
P3	ISSUED FOR INFORMATION	01-09-15
P2	ISSUED FOR INFORMATION	28-08-15
P1	ISSUED FOR INFORMATION	24-08-15

100mm on Original

Bar Scales

0 100 200 300 400m

1 : 4000 @ A1 1 : 8000 @ A3

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Client

GENESIS XERO WASTE

Scales	1:4000
Grid	
Height Datum	
Drawn	ASD
Designed	ASD
Checked	AT
Approved	

Project

GENESIS XERO WASTE FACILITY EASTERN CREEK

Title

PROPOSED FUTURE STORMWATER MANAGEMENT PLAN

Civil Engineers and Project Managers
at&l
Suite 702, 154 Pacific Hwy
St Leonards NSW 2065
ABN 96 130 882 405
Tel: 02 9439 1777
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www.atl.net.au
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Status: FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION

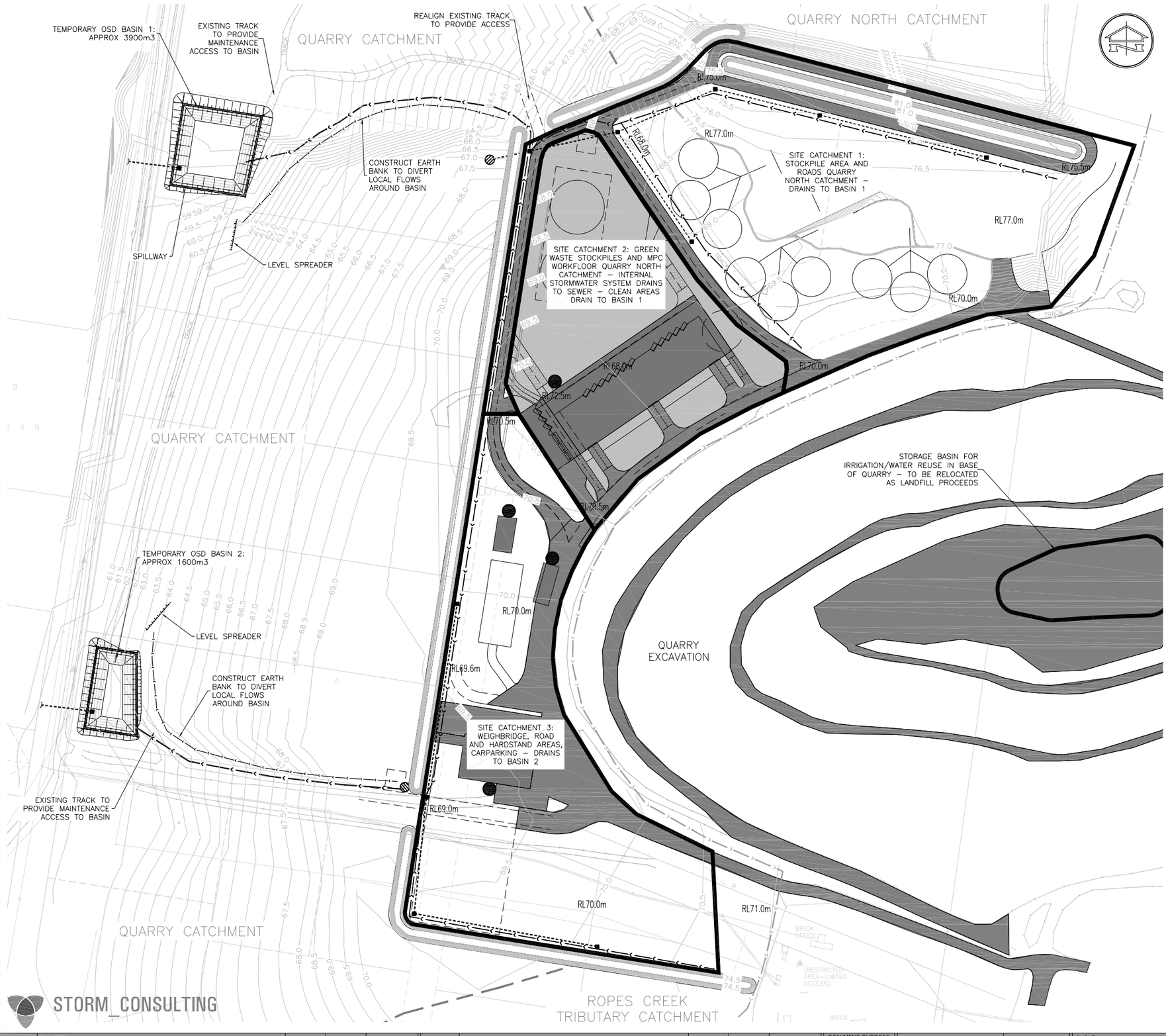
A1

Drawing No.	Project No.	Issue
SKC007	15-309	P6

F:\15-309 DADI SWMP\Drgs\Civil\Sketches\SKC007.dwg

Appendix D

Erosion and Sediment Control Plan (Storm Consulting)



LEGEND

- INDICATIVE STORMWATER PIT LOCATION
- INDICATIVE STORMWATER PIPE LOCATION
- OVERLAND FLOW/ SWALE DIRECTION
- OVERLAND FLOW SWALE TO DETENTION BASIN
- GROSS POLLUTANT TRAP
- DESIGN CONTOURS (0.5m INTERVAL)
- MIN 10kL RAINTANKS FOR BUILDINGS (INTERNAL REUSE – TOILET FLUSHING, LOCAL IRRIGATION, TOP UP OF WHEEL WASH)
- INDICATIVE FUTURE OVERLAND FLOW SWALE FROM FINAL LANDFILL FORMATION

NOTES

1. ALL ROADS AND CONTSTRUCTED PLATFORMS MINIMUM GRADE 0.5%,
2. ALL CONSTRUCTED PLATFORMS AND ROADS TO BE DRAINED BY PIT/PIPE DESIGNED FOR 20 YEAR ARI CAPACITY, AND OPEN SWALE DESIGNED FOR 100 YEAR ARI CAPACITY.
3. ALL SWALES AND CULVERT OUTLETS TO BE ARMOURED/VEGETATED AS PER DETAILED DESIGN.
4. ALL AREAS TO DRAIN TO DETENTION BASINS TO THE WEST OF THE SITE AS PER COUNCIL INSTRUCTIONS.
5. IRRIGATION/ DUST SUPPRESSION LINE TO BE INSTALLED ALONG BERMS AND AS DETAILED BY HYDRAULIC ENGINEER.
6. TYPICAL SECTION OF DETENTION BASIN SHOWN ON DRAWING D02.
7. BASIN VOLUME GIVEN IS IN ADDITION TO WETLAND PERMANENT STORAGE AND REUSE STORAGE.
8. REFER TO DRAWING D02 FOR EARTH BANK DETAIL AND LEVEL SPREADER DETAIL

SITE CATCHMENTS

	CATCHMENT 1 [INCLUDES CRUSHED MATERIAL STOCKPILE AREA]	CATCHMENT 2 [GREEN WASTE STOCKPILE AREA AND MPC WORKSHOP]	CATCHMENT 3 [WEIGHBRIDGE, HARDSTAND AREAS, OTHER BUILDINGS]
TOTAL AREA	6.5HA	3.3 HA	4.8 HA
TEMPORARY OSD BASIN VOL (BASED ON 400m3/Ha WITH STAGED DISCHARGE OUTLETS AT BASIN)	3,900m3 FOR TOTAL AREA OF CATCHMENTS 1 AND 2. VERY CONSERVATIVE OSD VOLUME AS MAJORITY OF RUNOFF FROM CATCHMENT 2 UP TO 100 YEAR EVENT WILL BE COLLECTED AND PUMPED TO LEACHATE TREATMENT SYSTEM		1,600m3

STORM_CONSULTING

ISSUE	REVISION	BY	CKD	DATE
A				

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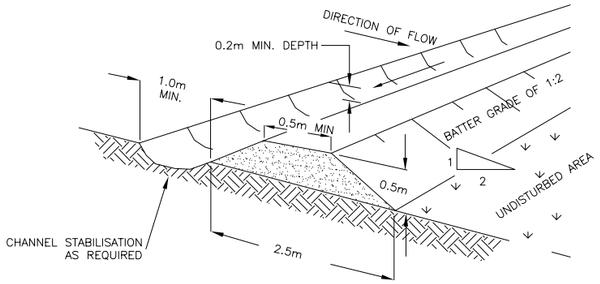
COORD. ORIGIN: | SCALE: 1:1500
DATUM: | DATE: NOV 2008
DRAWN: BF | DESIGNED: BF | CHECKED: NL

CLIENT: Alexandria Landfill Pty Ltd, 32 Burrows Road, Alexandria NSW 2015, (02) 9519 9999

LIGHT HORSE BUSINESS CENTRE
STORMWATER MANAGEMENT PLAN
GERERAL ARRAGEMENT AND LAYOUT

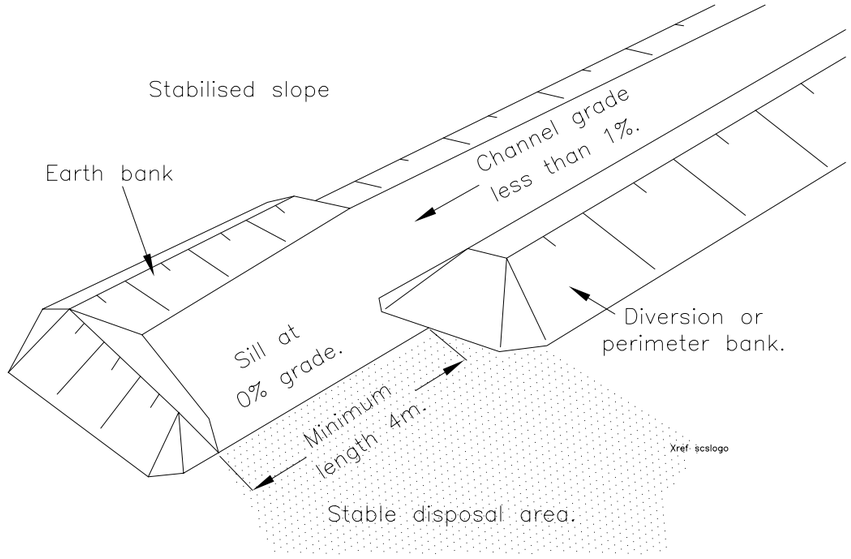
DRAWING: P01
SHEET: 1 OF 3
A1



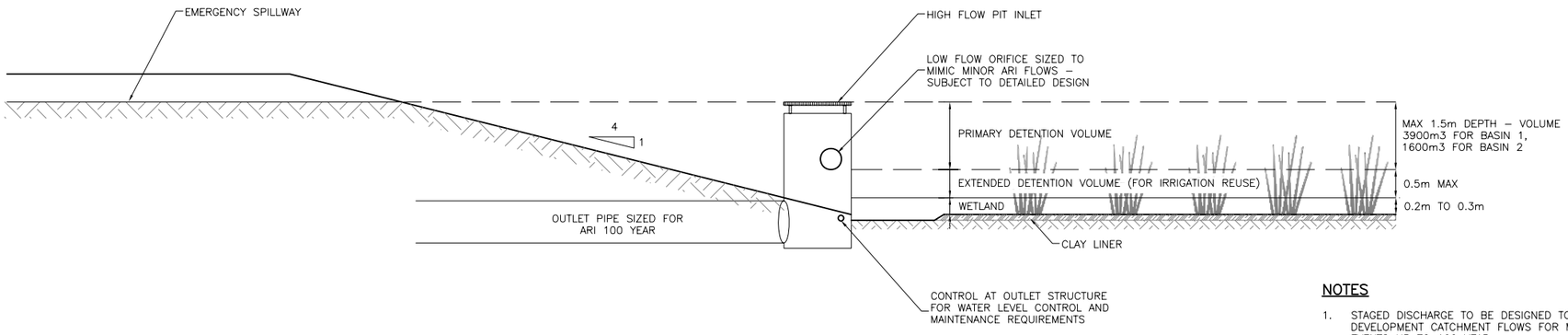
EARTH BANK DETAIL
NTS

EARTH BANK CONSTRUCTION NOTES

1. CONSTRUCT AT A GRADIENT 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 WITH 10 DAYS OF CONSTRUCTION.
7. WHERE DISCHARGING TO ERODIBLE LANDS, ENSURE THEY OUTLET THROUGH A PROPERLY CONSTRUCTED LEVEL SPREADER.
8. CONSTRUCT LEVEL SPREADER AT A GRADIENT OF LESS THAN 1%
9. WHERE POSSIBLE, ENSURE THEY DISCHARGE WATERS ONTO EITHER STABILISED OR UNDISTURBED DISPOSAL SITES WITH THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED. APPROVAL MIGHT BE REQUIRED TO DISCHARGE INTO OTHER SUBCATCHMENTS.



LEVEL SPREADER
NOT TO SCALE



SCHEMATIC OF DETENTION BASIN AND STAGED DISCHARGE OUTLET
SCALE 1:50

NOTES

1. STAGED DISCHARGE TO BE DESIGNED TO MATCH PRE AND POST DEVELOPMENT CATCHMENT FLOWS FOR MAJOR AND MINOR ARI RAINFALL EVENTS UP TO 100 YEAR.
2. PRIMARY DETENTION VOLUME TO CATER FOR UP TO 100 YEAR ARI.
3. EXTENDED DETENTION (REUSE) VOLUME TO BE INCLUDED DEPENDING ON FINAL WATER BALANCE AND REUSE REQUIREMENTS – SUBJECT TO DETAILED DESIGN.
4. WETLAND DESIGN AND PLANTING SUBJECT TO DETAILED DESIGN.

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ISSUE	REVISION	BY	CKD	DATE

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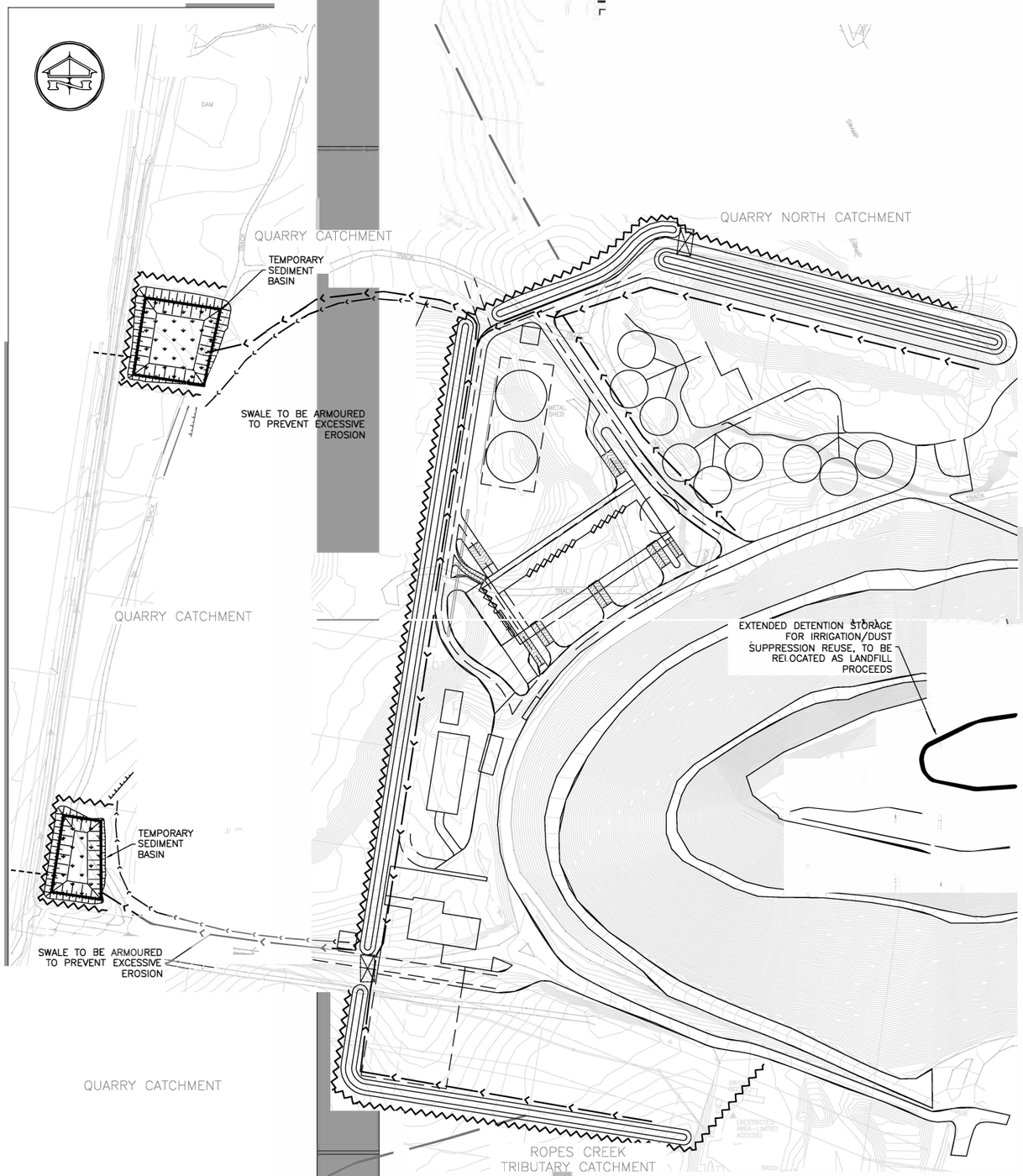
COORD. ORIGIN:
DATUM:
SCALE: AS SHOWN
DATE: NOV 2008
DRAWN: BF
DESIGNED: BF
CHECKED: NL

CLIENT:
Alexandria Landfill Pty Ltd
32 Burrows Road
Alexandria NSW 2015
(02) 9519 9999

LIGHT HORSE BUSINESS CENTRE
STORMWATER MANAGEMENT PLAN
OSD TYPICAL SECTION

DRAWING: D02
SHEET: 2 OF 3
A1



GENERAL REQUIREMENTS

THE FOLLOWING SOIL AND WATER MANAGEMENT PLAN (SWMP) HAS BEEN DEVELOPED IN GENERAL ACCORDANCE WITH LANDCOM (2004) – MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION, OTHERWISE KNOWN AS "THE BLUE BOOK". THE CONTRACTOR SHALL BE AT ALL TIMES RESPONSIBLE FOR TAILORING THE SOIL AND WATER MANAGEMENT PLAN TO SUIT SITE CONDITIONS. AS CONSTRUCTION PROGRESSES THE CONTRACTOR SHALL AMEND THE SOIL AND WATER MANAGEMENT PLAN ACCORDINGLY. IT IS THE CONTRACTOR'S RESPONSIBILITY ALL TIMES TO ENSURE THAT THE SOIL AND WATER MANAGEMENT MEASURES COMPLY WITH THE REQUIREMENTS OF THE BLUE BOOK.

SITE ESTABLISHMENT

PRIOR TO THE COMMENCEMENT OF EARTHWORKS ON THE SITE THE FOLLOWING SHALL BE UNDERTAKEN AS A MINIMUM:

1. ERECT SAFETY FENCING WITH SIGNAGE CLEARLY INDICATING THAT THE SITE IS A CONSTRUCTION ZONE AND ACCESS IS RESTRICTED AS DEEMED NECESSARY.
2. ERECT CLEARLY VISIBLE BARRIER FENCING AT LOCATIONS SHOWN OR IF NOT SHOWN AT THE DISCRETION OF THE SITE SUPERINTENDENT TO ENSURE TRAFFIC IS CONTROLLED AND TO PROHIBIT UNNECESSARY SITE DISTURBANCE.
3. INSTALL STABILISED SITE ACCESS IN ACCORDANCE WITH DRAWING SD6–14 AT EACH SITE ACCESS POINT TO PREVENT CONSTRUCTION EQUIPMENT FROM CARRYING SEDIMENT OFF THE SITE ONTO SURROUNDING ROADS.
4. INSTALL SEDIMENT AND EROSION CONTROL DEVICES IN ACCORDANCE WITH THE CONSTRUCTION DETAILS SPECIFIED IN THIS DRAWING SET AND/OR THE REQUIREMENTS OF THE 'BLUE BOOK'.

CONSTRUCTION

5. TOPSOIL, FROM ALL AREAS TO BE DISTURBED, SHALL BE STRIPPED PRIOR TO CONSTRUCTION OF ANY WORKS AND STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN LANDSCAPED AREAS. TOPSOIL SHALL BE STOCKPILED IN WINDROWS OUTSIDE OF MAJOR FLOW AREAS.
6. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT.
7. ALL TAIL–OUT DRAINS SHALL BE GRASSED AND TRAPEZOIDAL IN SECTION. HAY BALES SHALL BE PLACED AS A SEDIMENTATION CONTROL DEVICE WHERE REQUIRED.
8. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED. TOPSOIL SHALL BE AMELIORATED AND COMPOSTED TO LANDSCAPE ARCHITECTS SPECIFICATIONS.
9. INLET FILTERS WILL BE INSTALLED WHERE SHOWN TO PREVENT WATER FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE. IF THE LOCATION OF INLET FILTERS ARE NOT SHOWN ON THE PLAN THEIR LOCATION SHALL BE AT THE DISCRETION OF THE SUPERINTENDENT.

STOCKPILES

10. SPOIL AND TOPSOIL STOCKPILES SHALL BE LOCATED NO CLOSER THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
11. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 10 DAYS THEN THEY SHALL BE STABILISED BY COVERING WITH MULCH OR WITH TEMPORARY VEGETATION.
12. STOCKPILES SHALL BE IN WINDROWS NO HIGHER THAN 2m HIGH AND SHALL HAVE BATTER SLOPES NO STEEPER THAN 1 IN 2. AN EARTH BANK SHALL BE INSTALLED ON THE UPSLOPE SIDE AND SEDIMENT FENCING SHALL BE INSTALLED ALONG THE LENGTH OF THE DOWNSLOPE SIDE ON ANY STOCKPILE.

MAINTENANCE

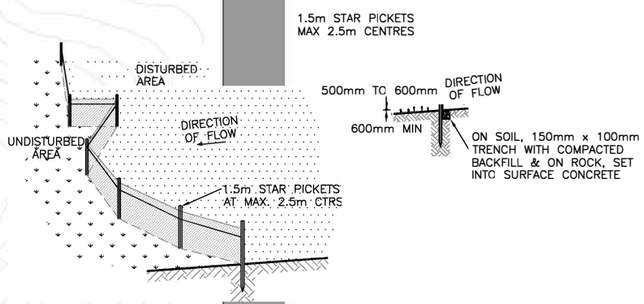
13. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM OF 60% FULL OF SOLID MATERIALS (INCLUDING DURING THE MAINTENANCE PERIOD) AND DISPOSED OF IN A MANNER THAT PREVENTS FURTHER POLLUTION OF THE SITE.
14. TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES WILL BE RETAINED UNTIL AFTER THE LANDS THEY ARE PROTECTING, ARE COMPLETELY REHABILITATED.
15. THE CONTRACTOR WILL INSPECT THE SITE AT LEAST WEEKLY OR AFTER ANY STORM EVENT AND WILL:
    - ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS;
    - REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS (E.G. LANDS CLOSER THAN FIVE METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY DRAINS, WATERWAYS AND PAVED AREAS);
    - REMOVE TRAPPED SEDIMENT WHENEVER LESS THAN DESIGN CAPACITY REMAINS WITHIN THE STRUCTURE;
    - ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS APPROPRIATE;
    - CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS REQUIRED;
    - MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED; AND
    - REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES AS THE LAST ACTIVITY IN THE REHABILITATION PROGRAM.

SEQUENCE OF WORKS:

1. INSTALL SOIL AND WATER MANAGEMENT MEASURES AS DETAILED.
2. CONSTRUCT EARTHWORKS
3. CONSTRUCT DRAINAGE STRUCTURES
4. CONSTRUCT ROADS
5. REHABILITATE SITE AND REMOVE MANAGEMENT DEVICES.
6. CLEAN SEDIMENT BASINS AND CONSTRUCT AS OSD BASINS AS PER DETIALED DESIGN.

OTHER:

2. DETENTION BASINS TO BE CONSTRUCTED AT COMMENCEMENT OF PROJECT AND USED AS SEDIMENT BASINS UNTIL CONSTRUCTION OF OPERATIONAL AREA IS COMPLETE.
3. SEDIMENT BASINS TO BE CONVERTED TO OSD AT THE COMPLETION OF CONSTRUCTION AND WHEN SITE HAS BEEN STABILISED.
4. MAIN BUNDS AROUND SITE TO BE FORMED AT COMMENCEMENT OF EARTHWORKS.
5. ALL SITE SEDIMENT AND EROSION CONTROL MEASURES TO BE REVIEWED AS EARTHWORKS PROCEED.



SEDIMENT CONTROL FENCE DETAIL

NTS

SEDIMENT FENCE 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 10YR 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 THE GROUND AT 2.5m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF–SUPPORTING GOETEXTILE 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.

LEGEND:

- PROPOSED SWALE (AND DIRECTION OF FLOW)
- PROPOSED SEDIMENT FENCE
- DESIGN SURFACE CONTOURS (0.5m INTERVAL)
- STABILISED SITE ACCESS
- SEDIMENT BASIN LOCATION

LAND USE	LIMITATIONS	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN FIVE (5) AND PREFERABLE TWO (2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THE PLAN	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF TEN (10) METRES	THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THEIR BOUNDARIES THAT, WHERE APPROPRIATE, ARE MARKED WITH BARRIER MESH, SEDIMENT FENCING, OR SIMILAR MATERIALS.

STORM CONSULTING

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COORD. ORIGIN: | SCALE: 1:2000
DATUM | DATE: NOV 2008
DRAWN BF | DESIGNED BF | CHECKED NL

CLIENT:
Alexandria Landfill Ptd Ltd
32 Burrows Road
Alexandria NSW 2015
(02) 9519 9999

LIGHT HORSE BUSINESS CENTRE
STORMWATER MANAGEMENT PLAN
EROSION AND SEDIMENT CONTROL PLAN

DRAWING P03
SHEET 3 OF 3
A1

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