

23rd October 2015

Urbis
Level 23, Darling Park Tower
201 Sussex Street
Sydney, NSW 2000

Your Ref:
Our Ref: 14-187-C001-06
Direct phone: 02 9439 1777

Attention Skye Playfair Redman

Dear Skye,

Response to Agency Comments on Civil Drawings and Report – The Next Generation, Energy from Waste Plant, Eastern Creek

We have reviewed all the Agency Responses to the Environmental impact Statement (EIS) for the proposed Energy from Waste Facility in Eastern Creek. Find below a summary of our responses to all the Agency comments for all civil and storm water related queries.

Blacktown City Council

A meeting was held between AT&L, DADI and Blacktown City Council (BCC) on the 26th of August 2015 to discuss BCC comments on the proposed development. At the conclusion of this meeting it was agreed for AT&L to provide BCC engineering documentation in response to the comments. AT&L provided a revised civil infrastructure report, DRAINS and MUSIC model for BCC for review on the 4th of September 2015 in response to this meeting.

In response to this submission, BCC provided a summary of responses on 29th September 2015. Find attached at the back of this letter.

As part of this correspondence, BCC confirmed that if the proposed bio-retention basin was to be dedicated to BCC a Works in Kind (WIK) agreement would be required. Confirmation has been received from DADI that the basin will be dedicated to BCC which will allow BCC to review the stormwater and basin design as part of the Construction Certificate approval and the WIK agreement. This was confirmed by BCC in correspondence received on the 30th of September 2015.

Below are AT&L's responses to Section 5, Engineering and Drainage Concerns, of BCC's SSD 6236 response.

5 - Engineering and Drainage Concerns

(note all Council comments are indicated in italics)

1. *The storm water drainage concept does not comply with the Precinct Plan.*

- i. Council's drainage engineers have reviewed the stormwater drainage and water cycle management issues for the proposal and have concluded that the stormwater concept has not been designed in accordance with the Eastern Creek Precinct Plan for Stage 3*

AT&L Response: The exhibited civil drawings and design report highlight all stormwater has been designed to meet the requirements of the SEPP 59 Eastern Creek Precinct 3 Development Control Plans. There is no reference to the Upper Parramatta River Catchment Trust (UPRCT) within the Civil Infrastructure Report.

Civil Engineers & Project Managers

ii. *Overland flow from the catchment above the site needs to be managed through the site.*

AT&L Response: A catchment plan has been provided to Blacktown City Council (BCC) indicating all overland flow within the site is managed within the site. A separate plan has been provided for the overall catchment including all upstream catchments indicating all overland flows are compensated for.

iii. *Flow from the proposed precinct road and residue land is to be directed to the precinct basin, not to the proposed basin on Hanson's property adjoining the site*

AT&L Response: As mentioned above the overall catchment plan provided to BCC indicates the proposed precinct road north of the development and residue land all drains into the proposed EFW bio-retention basin.

iv. *The precinct basin is required to provide suitable public access for maintenance.*

AT&L Response: An access road will be provided to the basin and berm at the top of the basin can be utilised for maintenance purposes. This will be incorporated into the design prior to the Construction Certificate application.

v. *A flood impact study is to be undertaken, as the information provided is not current. The impact study is to model the 2 year and 100 year ARI, and the Probable Maximum Flood.*

AT&L Response: An additional flood modelling report is proposed to be undertaken by Brown Consulting to include current land forms and include the PMF extents. This additional modelling will be undertaken prior to Construction Certificate application as part of the Works in Kind agreement with BCC.

2. Previous drainage advice provided by Council has not been followed

a) Council provided advice on this application on 24 October 2014 as follows:

i. *The first issue is that there is no reference to the stormwater management controls in Council's adopted precinct plan for this area (SEPP59 Eastern Creek Precinct 3). This appears to be the result of incorrect advice provided to the proponent's consultant by Council's DSU engineer. See section 3.2 of Appendix E. The OSD controls in Council Engineering guide requiring compliance with the UPRCT policy do not apply for development in this precinct as the controls in the adopted precinct plan are to be complied with.*

AT&L Response: The exhibited civil stormwater management report references the SEPP59 Eastern Creek Precinct 3 plan. Refer Appendices

ii. *The second issue is the flood information used for assessing flooding impacts. The information used is likely to be out of date as there were creek restoration orders issued to restore the creek and therefore the modelling relied on may not be current. It is also not clear whether permission was obtained from Brown or Council as the information used was provided in the context of legal proceedings and general information for review of draft S94 contributions plans for this area. The flood assessment should also include modelling of the PMF as the proposed project can be classed as critical and sensitive infrastructure in relation to flooding impacts.*

AT&L Response: An additional flood modelling report is proposed to be undertaken by Brown Consulting to include current land forms and include the PMF extents. As discussed this will be undertaken prior to Construction Certificate application.

b) *This advice is still current as the Civil Infrastructure Report, prepared by AT&L refers to managing the on-site detention using the Upper Parramatta River Catchment Trust (UPRCT) parameters. As stated in the previous advice this is incorrect and then detention basin is to be designed to meet the Precinct Plan (SEPP59 Eastern Creek Precinct 3, 2005) requirements*

AT&L Response: As mentioned previously, the exhibited Civil Infrastructure Report includes design parameters to SEPP59 requirements.

c) **A brief summary of the Precinct Plan requirements require the stormwater detention system to:**

i. *match peak developed flow rates to existing to manage storms from the 2 year to 100 year events*

AT&L Response: Peak post developed flows for all these storm events are less than peak pre developed rates and hence meet and exceed this condition. A DRAINS file has been provided to Blacktown City Council for verification.

ii. *the frequency of bank full flows would not increase and waterway stability shall conform to Council's current water quality control policy (see BCC DCP 2006 Part R)*

AT&L Response: The DRAINS model issued to Blacktown City Council indicates the basin weir only overtops in the 100 yr storm event and only a depth of approx. 80mm overtops the weir. The berm of the basin is below the 100 year water level and therefore complies with BCC's SEPP 59 Plan and the BCC DCP 2006 Part R guideline.

iii. *investigate the impact of the PMF on the stability of the detention basin*

AT&L Response: Brown Consulting will likely be engaged to undertake this as part of the revised flood modelling prior to Construction Certificate Application.

iv. *stormwater runoff quality management is to be undertaking on-site*

AT&L Response: Stormwater runoff quality management is proposed through the inclusion of a bio-retention basin. A MUSIC file has been provided to Blacktown City Council to verify this.

d) *Managing the stormwater runoff using the UPRCTY parameters will not meet all the Precinct Plan requirements for detention and waterway stability. This has not been demonstrated by the Report and drawings, as insufficient detail has been provided.*

AT&L Response: As previously mentioned the exhibited Report states all design is as per the SEPP59 Plan. Low and high flow orifice control pits will be incorporated into the basin to detain all storm events from the 2yr to 100yr events. This meets the requirements of the SEPP59 Precinct Plan.

e) *Under the Precinct Plan and the draft Section 94 Contributions Plan (CP18) for the area, it is planned to provide a precinct stormwater control basin at this location (Basin RC1.1) to manage the peak flows off the catchment and to treat the flows of the roads only. This basin has a capacity of 14,500m³ and a PSD of 1.10 m³/s in the 100 year ARI and 0.32m³/s in the 2 year ARI*

AT&L Response: As previously mentioned the detention basin and outlet flow rates have been designed to comply with the SEPP59 Eastern Creek Precinct Plan. The required basin capacity and PSD within the CP18 plan will be adopted in the civil design of the OSD basin prior to Construction Certificate application.

It should be noted it is proposed to dedicate the basin to Council once constructed. Confirmation was received from Georg Erbel from BCC on 30th of September 2015 with the following advice:

“For a public precinct basin would then need a Works in Kind agreement and Council would review the basin design as the Construction Certificate drawings would be part of the WIK agreement. Would encourage early discussion with Council on the basin design criteria”

As the basin will become a public precinct basin as confirmed by DADI it is proposed to update all basin details to conform with the CP18 plan prior to Construction Certificate application.

f) It should be noted that from the recent LEC decision and major project approvals on the adjacent sites (Lighthorse Park and Hansen) have required the proponent provide their own stormwater management. These outcomes need to be considered in design of the project stormwater management system

AT&L Response: An on-site bio-retention basin is proposed to detain and treat all stormwater generated from the site. This will be in line with the Precinct Plan.

g) The EFW plant stormwater management system will need to comply with the precinct plan stormwater management controls. The layout of the proposal will need to make provision for the precinct basin. The runoff from the proposed precinct road and residue land will need to be directed to a precinct basin, with suitable public access, so that it can be maintained

AT&L Response: All runoff from the proposed road to the north of the EFW plant drains into the proposed basin. A separate access road will be constructed to the basin to ensure maintenance vehicles can access.

h) As stated in our previous advice, flood information is now out of date. There has been works undertaken to relocate the creek channel onto its original alignment and this needs to be taken into account in the flood impact. The flood impact needs to be assessed for the 100 year and 2 year ARI and PMF storm events. This information is required to inform the design of the outlet from the basin.

AT&L Response: As stated previously Brown Consulting will be engaged to undertake this additional modelling.

i) The design of the stormwater management system is to be designed in accordance with the Precinct Plan and to Council's requirements

AT&L Response: As stated the stormwater management system will be designed to comply with the Precinct Plan and Section 94 contributions plan (CP18). All details will be updated prior to Construction Certificate application.

3. The on-site detention details are incomplete

a) The report notes the use of UPRCT V3 parameters in Section 3.2 however the report use the UPRCT V4 parameters.

AT&L Response: The detention basin has been designed in accordance with the SEPP59 Eastern Creek Precinct Plan and not the UPRCT as required by BCC.

b) The drawings refer to a bio-retention basin only. It is assumed that the basin also provides detention for the development.

AT&L Response: Yes this is correct

c) *Details are required on the basin showing plan, sections, outlet structures and creek flood levels.*

AT&L Response: All basin details have been shown on exhibited Civil drawings. These plans including sections and details for the outlet structure for both low and high outflows will be provided prior to Construction Certificate application. This will also include all revised flood levels based on the latest flood modelling.

d) *For a precinct basin the design ponding depth is 1.2m*

AT&L Response: Currently the maximum depth of ponding allowable is 1.7m before the water overtops the weir. To ensure a maximum depth of 1.2m is maintained the basin will need to extend its length whilst still providing the same amount of storage volume. This will be confirmed prior to Construction Certificate application.

e) *Hydrological and hydraulic models are to be submitted for review*

AT&L Response: A full DRAINs file has been provided to Blacktown City Council.

f) *Draining of the Precinct Road to the proposed Hansen basin is not suitable and needs to be drained to a precinct basin*

AT&L Response: The drainage has been designed to ensure the Precinct Road to the north of the EFW site drains to a precinct basin and not into the Hansen basin. The exhibited Civil drawings indicate this.

4. The water quality details are incomplete

a) *Water quality treatment is to meet the precinct plan requirements*

AT&L Response: This has been discussed in the exhibited Civil Report to comply with the SEPP59 Precinct Plan

b) *The treatment of the stormwater runoff from the site needs to be separate from the treatment of the runoff from the public roads. Currently the design is mixing the flows*

AT&L Response: All stormwater runoff is proposed to be treated in the precinct bio-retention basin. This includes the entire catchment area as indicated in our Site Catchment plan SKC35 plan issued to BCC on 04/09/2015. As it has been confirmed the basin will be dedicated to BCC and act as a Precinct Basin the flows can be mixed.

c) *A water quality model is to be submitted for review*

AT&L Response: A water quality (MUSIC) file has been provided to Blacktown City Council

5. The overland flow details are incomplete

a) *The report states that overland flows through the site have been designed to safely convey the flows. However, there is not enough information provided to assess the adequacy of this statement*

AT&L Response: A DRAINs file has been provided to Blacktown City Council which models all overland flows from verification.

- b) *As part of the Lighthouse approval a portion of the finished quarry landform has been nominated to drain to the precinct basin on this site. This needs to be taken into account in the design of the overland flow through the site to the precinct basin*

AT&L Response: AT&L have produced a revised overall stormwater management plan which indicates the finished quarry catchment areas. The design of all overland flow paths will comply with the Lighthouse approval. This will be confirmed prior to Construction Certificate application.

- c) *In addition an overland flow from the precinct road needs to be directed around the site, to the precinct basin*

AT&L Response: This overland flow path has been provided and indicated in the current civil drawings

6. The public roads are to be consistent with the Precinct Plan

- a) *Access to the facility is via Honeycombe Drive. The road will need to be extended as part of the proposal to provide direct access to the facility. We raise no objection to the proposal subject to the public roads being consistent with the road pattern approved as part of the Eastern Creek Precinct Plan Stage 3. All road constructions is to occur in accordance with RMS Road Design Standards and Council's Engineering Guide for Development 2005*

AT&L Response: The road will be designed to meet these relevant standards

- b) *An appropriate easement for the road underpass tunnel and conveyor belt between the subject site and the neighbouring Genesis MPC will also need to be created prior to any dedication of the road to Council*

AT&L Response: This easement will be created.

4 – Town Planning Concerns

3. No retaining works are to be provided on the property boundaries

- a) *The applicant has advised that, as part of the EFW facility, no retaining work is required on the property boundaries. However, further cut and fill plans, together with all retaining wall details, should be obtained to confirm this is the case.*

AT&L Response: Civil Drawings issued to Blacktown City Council indicate there are no retaining walls required on the property boundaries. The bulk earthworks plan confirms this.

- b) *In the event that any retaining walls or works are located on the boundary, an appropriate easement for maintenance or support must be provided on the adjoining lots.*

AT&L Response: This point is noted and will be adopted upon if retaining walls are required

- c) *Any retaining wall over 3 metres is to be of masonry construction and is required to be stepped with a 1.5m wide terrace (as per the Precinct Plan), to reduce the bulk and scale of these walls. All details are to be provided for approval.*

AT&L Response: This is noted and will be incorporated into the detailed design of the retaining walls.

4. The use of proposed Lots 1 and 3 following completion of the bulk earthworks must be subject to a separate DA

a) *The EFW facility will be located on proposed Lot 2 only. This allotment will require significant bulk earthworks in readiness for the building. The material cut from the site will therefore be placed on the adjoining lots (proposed Lot 1 and 3) to avoid any significant change in levels and to effectively drain the site*

AT&L Response: Noted. Lots 1 and 3 will be used for cut storage, however the overall site requires a large volume of imported fill so this cut material will be used for cut to fill.

b) *During construction of the EFW facility, proposed Lots 1 and 3 will be used for the storage of building materials and heavy machinery. Once the development has been completed, the allotments will be left vacant. It is recommended that the use of these lots be subject to a separate DA, as no end user of these lots has been nominated in this proposal*

AT&L Response: Noted. The stormwater drainage network and bio-retention basin for OSD and water treatment has been sized assuming these lots have been fully developed.

Hanson

Connectivity between the Genesis Xero Waste Facility and the Precinct Road

The EIS provides no information on how the Genesis Xero Waste Facility will access the Precinct Road once the Precinct Road is connected to Honeycomb Drive over the existing DADI driveway. It is recommended that a round-a-bout intersection be constructed at the Hanson Estate Road to allow vehicles to access both the Genesis Xero Waste Facility and the Hanson lands and also control the flow of heavy vehicle traffic (336 movements per day) generated by the proposed Eastern Creek Energy from Waste Facility

AT&L Response: It is our understanding Hanson and DADI are currently in negotiations on the layout, location and extent of the proposed entrance road. This includes discussions on the proposed intersection. Refer to letter of correspondence to be prepared by DADI as part of the response to submission for further stages.

Construction of the Precinct Road across Lot 8 DP1200048

Construction of Honeycomb Drive was completed in 2012. To date the section of the Precinct Road across Lot 8 DP1200048 referred to above has not been constructed by the applicant. This matter should be readdressed by the Department as a priority taking into consideration the benefits of a round-a-bout intersection at this location.

AT&L Response: It is our understanding Hanson and DADI are currently in negotiations on the layout, location and extent of the proposed entrance road. This includes discussions on the proposed intersection.

Insufficient information on the purpose and use of laydown pads

The EIS contains no information on the purpose and use of the laydown pads. The applicant proposed to construct laydown pad No. 3 immediately west of the Hanson land. No information has been provided on what materials will be placed and stored on these pads and whether the materials will be hazardous to people or the environment

AT&L Response: During construction stages of the proposed development these pads will be used for storage of construction materials. Once construction is completed these lots will not be used for storage purposes and remain vacant awaiting future development. The type of materials being stored will need to be confirmed by DADI.

Inadequate Surface Water Quality Design

The MUSIC modelling carried out by AT&L does not take into account the unsealed laydown pad areas. Therefore the pollutant loadings generated from the laydown pads areas (7.7Ha) are likely to have significant greater detrimental impacts to receiving waters taking into consideration that the re-use of bio-retention basin water has been ruled out based on modelling carried out using run-off from hardstand areas

AT&L Response: The surfacing of the laydown areas once construction is completed has been confirmed by Site Image the Landscape Architect to be planted entirely with native cooch grass. As a basis for modelling the bio-retention basin, these surfaces are assuming to be hard standing areas in the future which is a conservative design approach. If these laydown areas remain unsealed, catch drains and sediment basins will be constructed to ensure polluted runoff is conveyed and captured prior to release into the main stormwater network to drain into the precinct basin. This will be confirmed during detailed design as part of the CC application.

Australand (written by GHD)***Soils and Water***

There is little discussion of potential changes to flooding in Ropes Creek tributary as a result of the development. The EIS simply states that the development will not flood. It appears that the site is going to be raised adjacent to Ropes Creek tributary. As there is no scale of Figure 16 it is difficult to determine the distance from the creek and if the works fall within the 100 year flood area.

Appendix AA is about the design of a retention basin to ensure there is no increase in run-off, it doesn't actually assess potential interaction between the Ropes Creek tributary and the site beyond this.

While the assessment is lacking, it is unlikely that any changes to flooding would impact the Australand purchase area due to the distance between the property and the tributary and the fact that the Australand site is upstream of the Project

AT&L Response: As mentioned previously in response to the Blacktown City Council comments, a further flood modelling report will be undertaken by Brown Consulting. This will determine impacts on the Ropes Creek tributary due to the proposed development and will assess any potential interactions or issues created by the development.

RMS

The layout of the proposed car parking areas associated with the subject development (including driveways, grades, turn paths, sight distance requirements in relation to landscaping and/or fencing, aisle widths, aisle lengths, and parking bay dimensions) should be in accordance with AS 2890.1-2004, AS2890.6-2009 and AS2890.2-2002 for heavy vehicles usage

AT&L Response: We can confirm these Australian Standards have been used for all the car parking areas within the development

Should there be any questions regarding the above please contact me on the number below.

Yours sincerely



Andrew Tweedie
Senior Civil Engineer
02 9439 1777


Appendices:

- A. SSD 6236 – Energy from Waste Facility Memo from Blacktown City Council**
- B. SEPP 59 CP18 Review – Post Development Rafts Catchments**
- C. Proposed Future Stormwater Management Plan SKC007 Rev P5**

APPENDIX A

SSD 6236 – Energy from Waste Facility Memo from Blacktown City Council

memo

To Holly Palmer via Aneesh Singh
cc Tony Merrilees
From Georg Eberl 
Date 23 September 2015
Topic SSD 6236 - Energy from Waste Facility
File No MC 13-2284

Topic Review of stormwater drainage and watercycle management issues for the proposed development – resubmitted drainage information

Analysis The stormwater detention concept has been adjusted to suit the methodology in the precinct plan. However, the majority of issues raised in the memo dated 19 June 2015 have not been addressed and need to consider the Precinct plan stormwater strategy. This strategy is detailed in the draft Section 94 Contribution Plan stormwater layout for the area.

Recommendations

1. The stormwater management for the site is to be designed in accordance with the precinct plan for the area, SEPP 59 – Eastern Creek Precinct Plan (Stage 3) and Engineering Guide, which is available on Council’s website, and submitted to Council for approval.
2. Flow from the proposed Precinct Road and residue land is to be directed to the precinct basin, not to the proposed basin on Hansen’s property.
3. The precinct basin on the Ropes Creek Tributary is to provide suitable public access for maintenance.
4. A flood impact study is to be undertaken, as the information provided is not current. The impact study is to model the 2 and 100 Year ARI and the PMF.

1. Key information

This assessment only relates to consistency with precinct planning outcomes and proposed S94 or regional infrastructure works. No engineering assessment has been made for compliance with the applicable development controls and engineering guide. The design of any internal drainage or WSUD is to be referred to Tony Merrilees where required.

We have reviewed the following documents and models:

1. Proposed Future Contours drawing, reference 15-309, drawing SKC007, Rev P3 dated 1/09/2015 by at&I.
2. Site Catchment Plan drawing, reference 14-187, drawing SKC35, Rev P2 dated 1/09/2015 by at&I.
3. Civil Infrastructure Report, reference 14-187-5001-04-DA-, Rev 04 dated 09/2015 by at&I.
4. Concept Engineering Drawings, reference 14-187, drawings C000 to C041 (22 sheets), Rev C dated 20/02/2015 by at&I.
5. TNG Stormwater Model (*DRAINS*), dated 03/09/2015 by at&I.
6. MUSIC model for whole site, dated 03/09/2015 by at&I.

The *Civil Infrastructure Report*, prepared by at&I has been updated to manage the on-site detention using the Precinct Plan (*SEPP59 Eastern Creek Precinct 3, 2005*) requirements. Although the report determined that the basin meets the Precinct Plan requirements, we are unsure how the basin is configured and operates due to insufficient information. This does not allow for an assessment of the concept.

Under the Precinct Plan and the draft Section 94 Contributions Plan (CP 18) for the area, it is planned to provide a precinct stormwater control basin at this location (Basin RC 1.1) to manage the peak flows off the catchment and to treat the flows of the roads only. This basin has a capacity of 14,500 m³ and a PSD of 1.10 m³/s in the 100 Year ARI and 0.32 m³/s in the 2 Year ARI. Attached is the catchment plan showing the area for which this basin manages the stormwater.

The proponent's engineer has prepared a catchment plan for the future stormwater management of the DADI site, as required by a LEC decision. Generally, this is in accordance with Council's catchment plan, referred to above. A marked up copy of this plan is attached and summarized below:

- Basin H provides detention not just for the site, but under the Precinct Plan also provides compensatory detention for the land on the southern side of the creek (catchment rc 7.01 in Council's catchment plan).
- Part of Catchment G is to be managed in the Quarry Catchment Basin. The existing basins need to be relocated to within the approved Lighthorse area.
- The overall stormwater management strategy should facilitate future development of the site
- There are areas in Catchments A and B that need to be managed prior to discharge.
- Basin B is to be located in the north east corner of the catchment. If it is located further up the channel, the channel may need to be widened to convey the additional flow or as a minimum additional works to ensure stability of the channel.

With the catchment plans and the models there are discrepancies in the total catchment areas:

- Drawing SKC007 24.05 ha
- Drawing SKC35 22.3 ha
- DRAINS model 22.277 ha
- MUSIC model 23.198 ha

These areas are to be corrected so that they are consistent.

The design of the stormwater management system is to be designed in accordance with the Precinct Plan and to Council's requirements.

Flooding

As stated in our previous advice, flood information is now out of date. There has been works undertaken to relocate the creek channel onto its original alignment and this needs to be taken into account in the flood impact. The flood impact needs to be assessed for the 100 Year and 2 Year ARI and PMF storm events. This information is required to inform the design of the outlet(s) from the basin and assess flood risk to the proposed critical infrastructure.

On-Site Detention

- Details are required on the basin showing plan, sections, outlet structure(s) including levels and creek flood levels.
- The configuration of the basin in the *DRAINS* model is unusual, as a result we are unsure how it will operate, as the details referred to above are not provided. One error is that the invert of the high flow orifice (RL 53.87) is below the invert of the downstream pipe (RL 54.12) and pit (RL 54.00).
- For a precinct basin the design ponding depth is 1.2m.
- Draining of the Precinct Road to the proposed Hansen basin is not suitable and needs to be drained to a precinct basin, for the following reasons:
 - The Hansen basin has been designed to cater for the Hansen property only. There has been no allowance for additional catchments to drain to that basin
 - The timing of the construction of the Hansen basin is not known at this time and will be undertaken with the approved subdivision works.
 - The timing of the construction of the stormwater drainage line and swales from the road to the basin is also unknown for the reason above.

Water Quality

- Water quality treatment is to meet the precinct plan requirements.
- How is the runoff from the public roads managed? Currently, it appears that the public roads are either excluded from the model or mixed with the private runoff.
- The site needs to treat the runoff from privately owned land separately to the runoff from the public roads.
- From the information provided we are unable to determine how the treatment system is configured (there are no engineering drawings showing the treatment system, other than the general engineering drawings).

- The catchment area in the *MUSIC* model does not match the catchment plans or the *DRAINS* model.
- There is no allowance for pervious areas on the site in the *MUSIC* model.
- Prior to discharge to the basin the low flows are to be split from the high flow. The high flows are to be directed around the bioretention.
- Prior to discharge onto the bioretention the flows are to be pre-treated, typically with a GPT. This should also be included in the *MUSIC* modelling.

Overland Flow

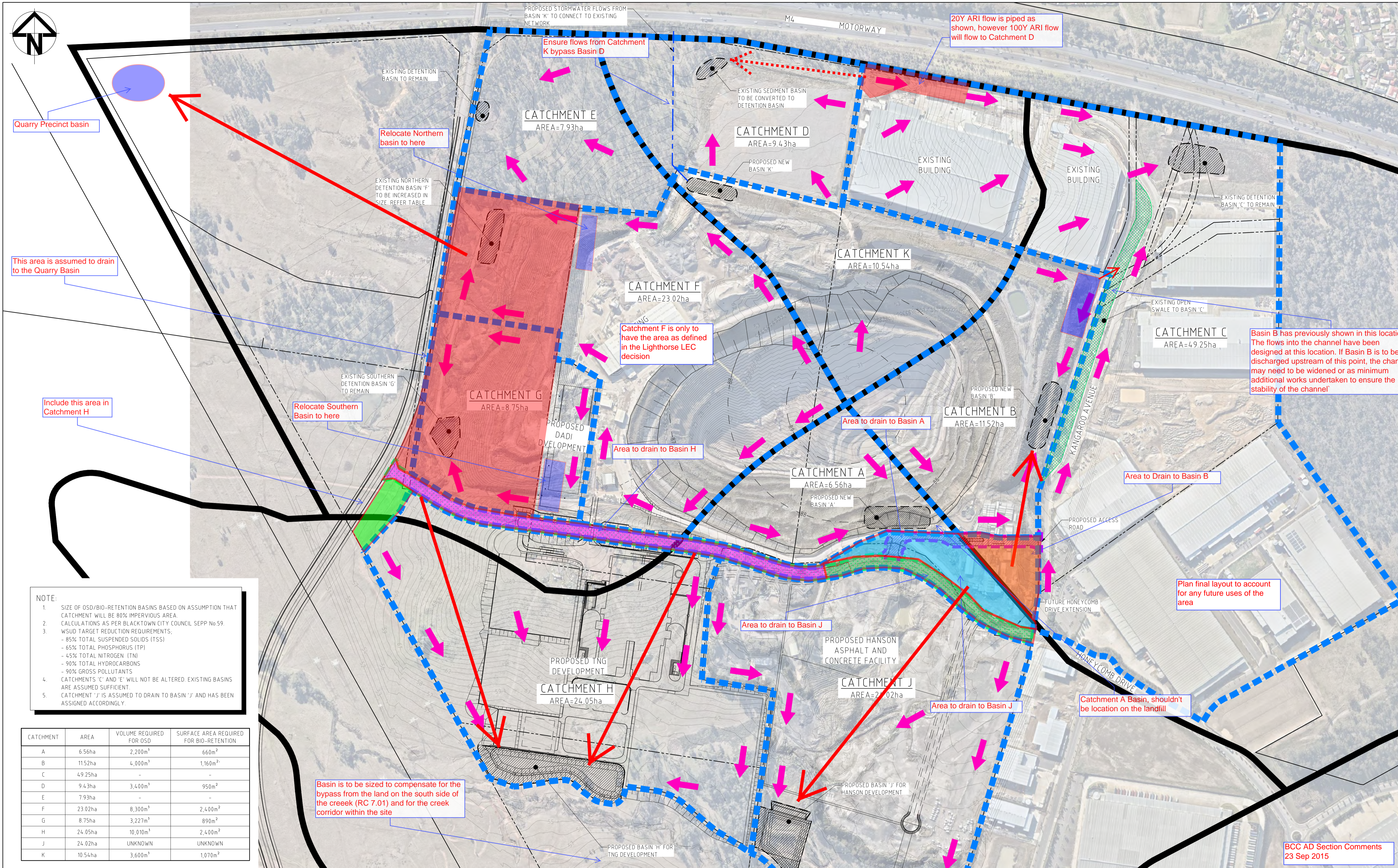
The report states that overland flows through the site have been designed to safely convey the flows, there is not enough information provided to assess the adequacy of this statement.

In addition an overland flow from the precinct road needs to be directed through the site, to the precinct basin.

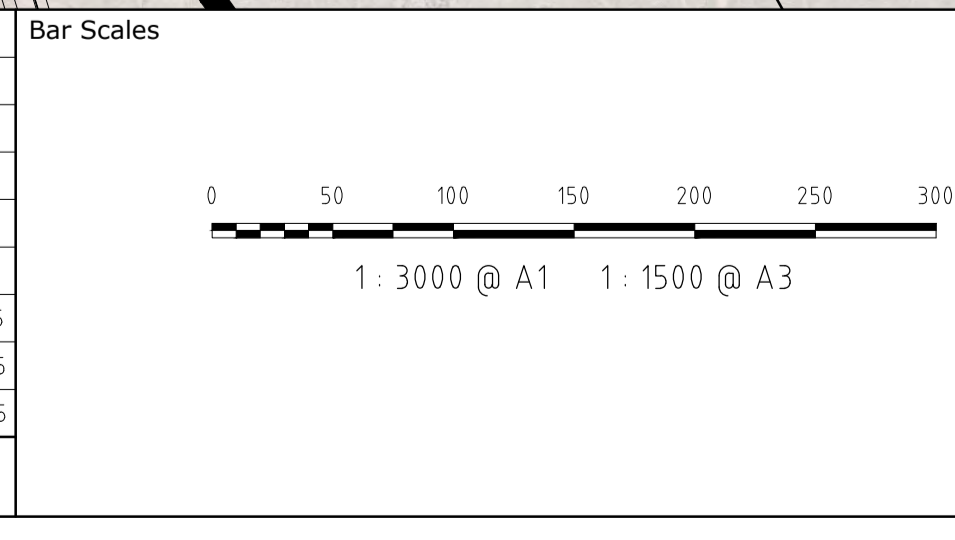
	Name and position	Signature
Prepared by	Robert Peterson Senior Engineer	

Attachments

1. Marked-up drawings



Issue	Description	Date
P3	ISSUED FOR INFORMATION	01-09-15
P2	ISSUED FOR INFORMATION	28-08-15
P1	ISSUED FOR INFORMATION	24-08-15



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Client	Scales	1:3000	Drawn	ASD
			Designed	ASD
			Checked	AT
			Approved	

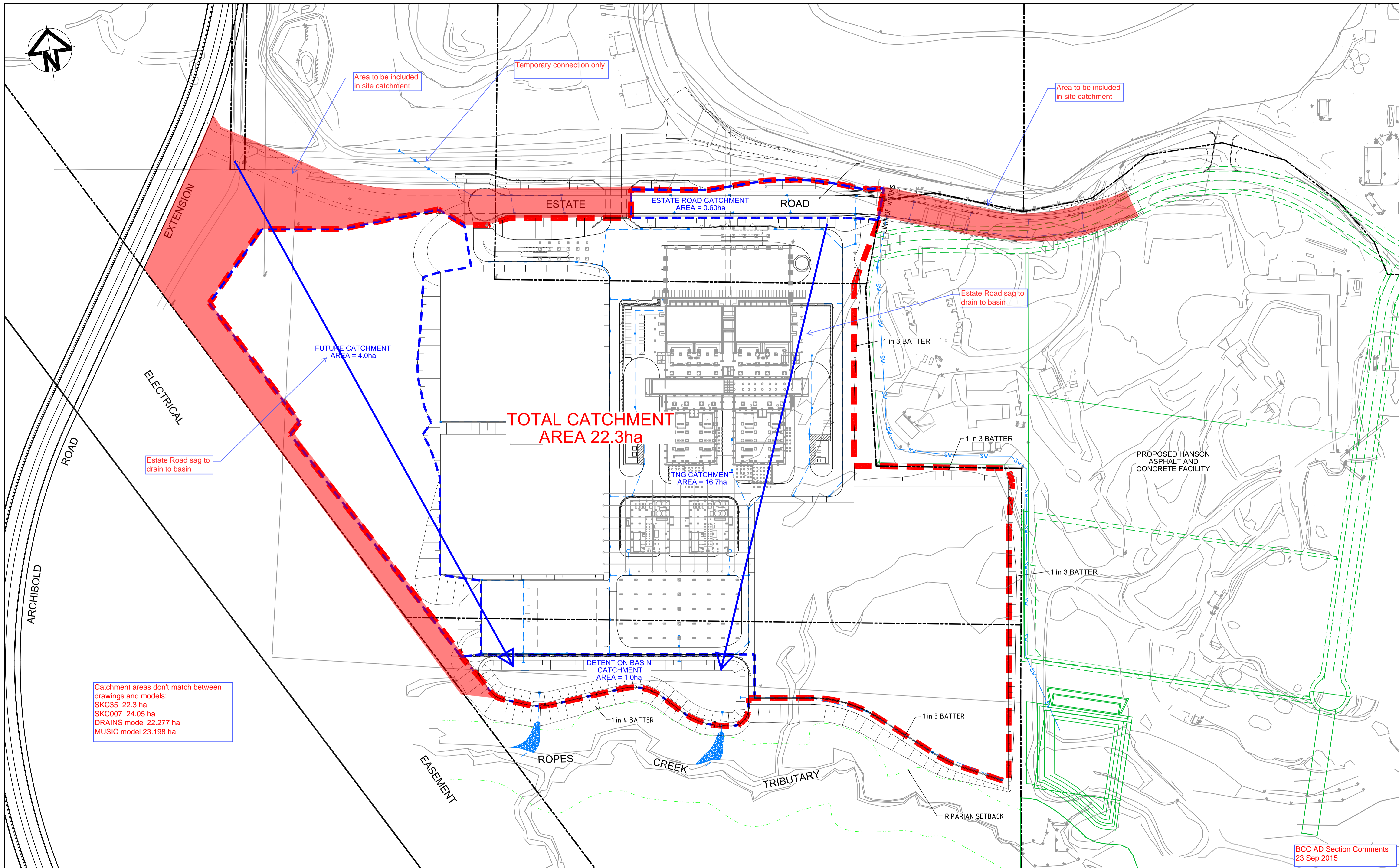
Project
SWMP DADI, EASTERN CREEK

Title
PROPOSED FUTURE CONTOURS

Civil Engineers and Project Managers

Suite 702, 154 Pacific Hwy
St Leonards NSW 2065
ABN 96 130 882 405
Tel: 02 9439 1777
Fax: 02 9460 8413
www.atl.net.au
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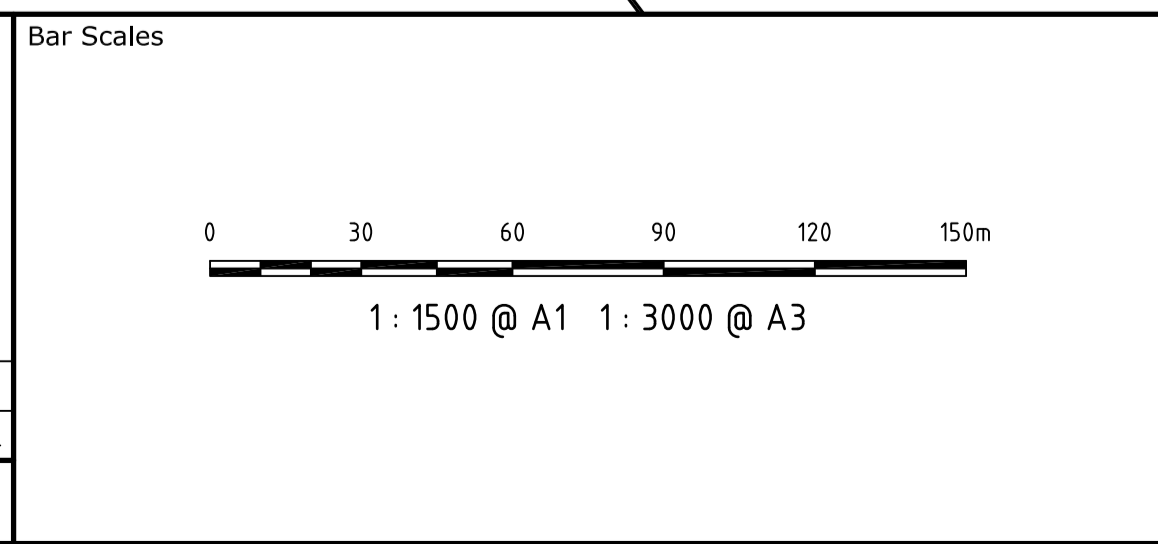
Status	FOR INFORMATION	A1
NOT TO BE USED FOR CONSTRUCTION		
Drawing No.	Project No.	Issue
SKC007	15-309	P3



Catchment areas don't match between drawings and models:
 SKC35 22.3 ha
 SKC007 24.05 ha
 DRAINS model 22.277 ha
 MUSIC model 23.198 ha

BCC AD Section Comments
 23 Sep 2015

Issue	Description	Date
P2	ISSUED FOR INFORMATION	01/09/15
P1	ISSUED FOR INFORMATION	16/06/14



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Client

Drawn	TS
Designed	MM
Checked	AT
Approved	

Scales: 1: 1500 @ A1

Grid: MGA

Height Datum: AHD

Project

ENERGY FROM WASTE ELECTRICITY GENERATION PLANT, EASTERN CREEK

Title

SITE CATCHMENT PLAN

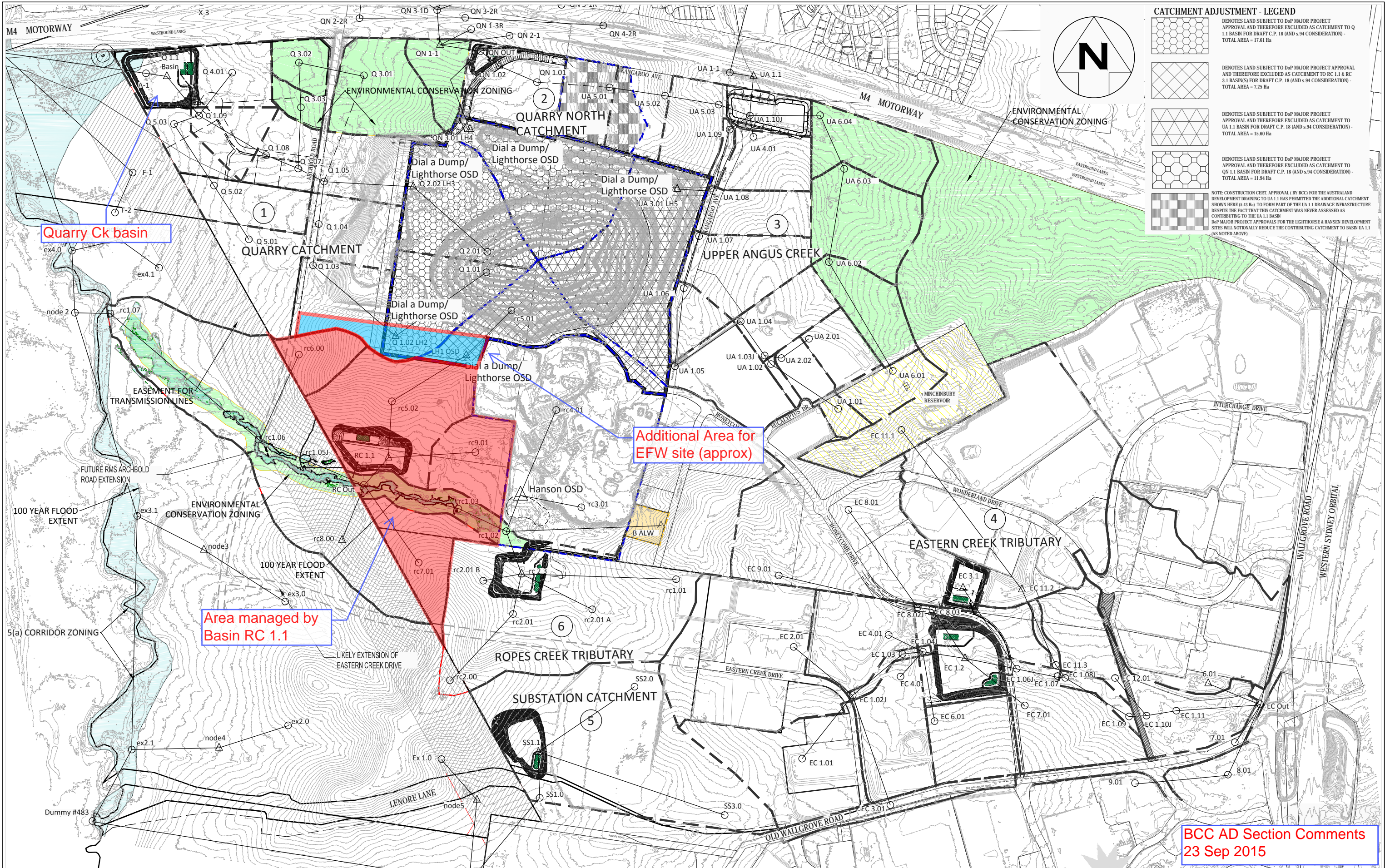
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Status	PRELIMINARY ONLY	A1
NOT TO BE USED FOR CONSTRUCTION		
Drawing No.	Project No.	Issue
SKC35	14-187	P2

APPENDIX B

SEPP 59 CP18 Review – Post Development Rafts Catchments



Quarry Ck basin

Additional Area for EFW site (approx)

Area managed by Basin RC 1.1

BCC AD Section Comments
23 Sep 2015

PREPARED BY:

1	AUG/12	FIRST DRAFT		
REV	DATE	DESCRIPTION	CHECKED	APPROVED

PUBLIC UTILITIES LEGEND

WATER MAINS	—W—	GAS	—G—	TELSTRA	—T—
HYDRANT	▲	GAS VALVE	■	TELSTRA PIT	■
STOP VALVE	▲	ELECTRICITY	—E—	TELSTRA PILLAR	■
WATER METER	M	ELECTRICITY PIT	■	TELSTRA POLE	●
WATER TAP	○	POWER POLE	○	STORM WATER	—SW—
SEWER	—S—	POWER LIGHT POLE	○	SW MANHOLE	⊗
SEWER LAMPHOLE	○	LIGHT POLE	○		
SEWER MANHOLE	⊗	STAY POLE	○		

DATUM

SURVEYED	ALS 2010
DESIGNED	GT
CADD	GT
VERIFIED	
DATE	

GRID

SHEET SIZE: A1

TITLE BLOCK VERSION: A

APPROVED

MANAGER ASSET DESIGN SERVICES
DATE

CLIENT

DATE

Blacktown City Council

COUNCIL CHAMBERS 62 FLUSHCOMBE ROAD, BLACKTOWN
ALL MAIL: GENERAL MANAGER PO BOX 63, BLACKTOWN NSW 2148
TELEPHONE: (02) 9839 6000 FAX: (02) 9831 1961
DX: 8117 BLACKTOWN

PLAN: LONG SECTION/HORIZ
VERT
CROSS SECTIONS

Scale: 1:5000 @ A1

PROJECT TITLE: SEPP 59 CP18 REVIEW, POST DEVELOPMENT RAFTS CATCHMENTS

SHEET TITLE: POST DEVELOPMENT RAFTS CATCHMENTS

CAD FILE: FILE No: PLAN No:

ISO 9001 International Standards Certification

Lic No. QAC/R61/0103

ASSET DESIGN SERVICES

SHEET 1 OF 2 SHEETS REV

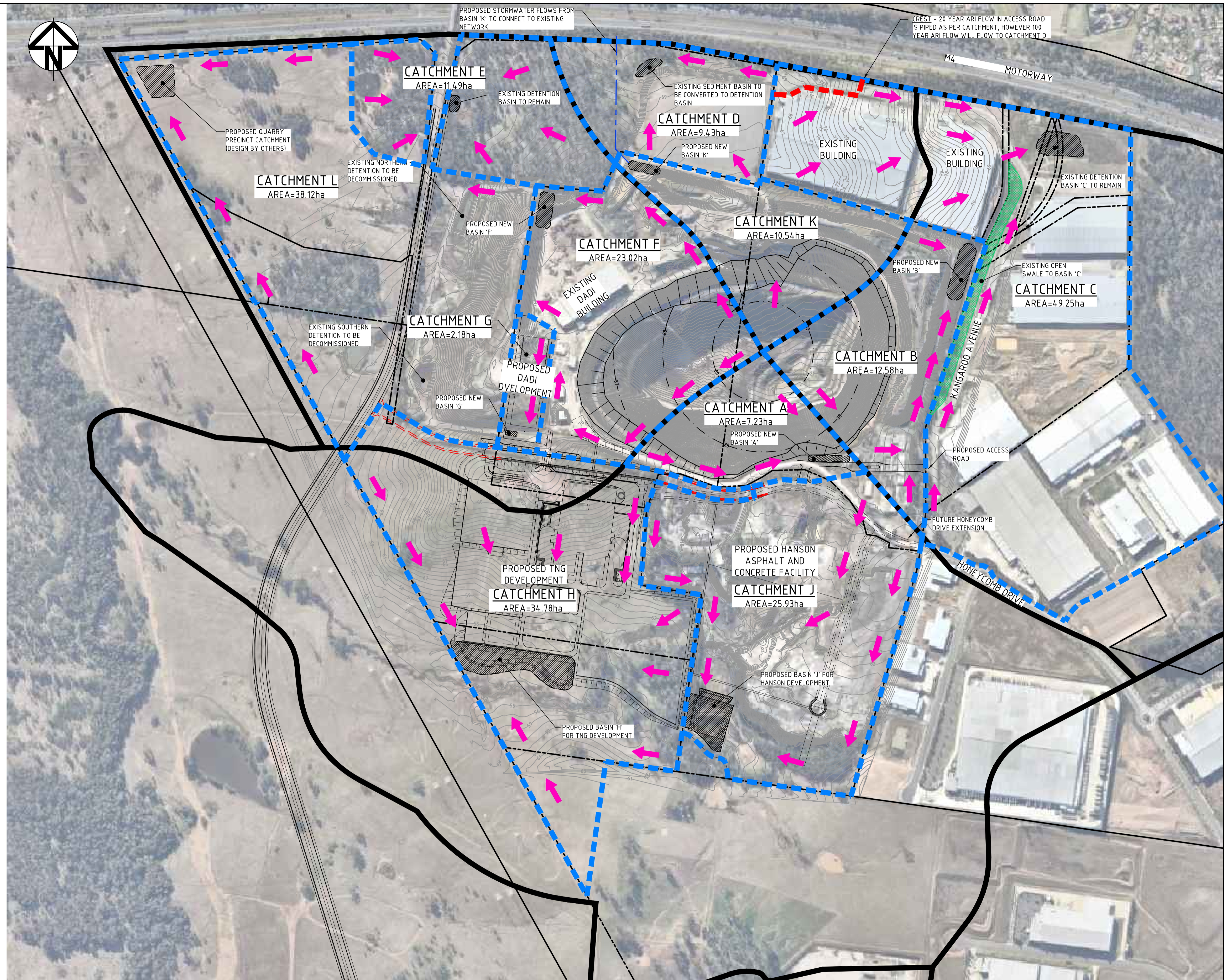
APPENDIX C

Proposed Future Stormwater Management Plan SKC007 Rev P5

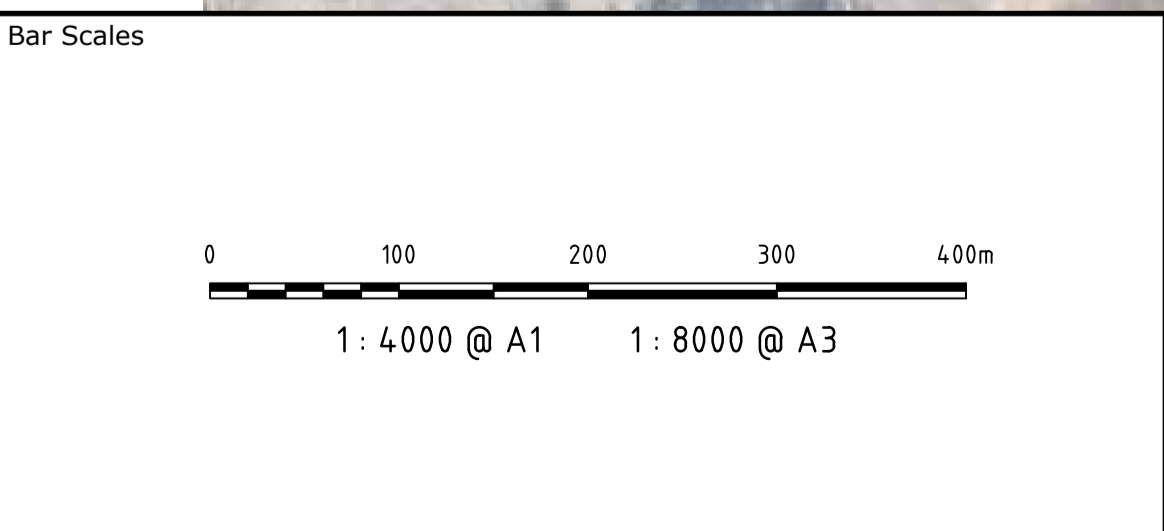
CATCHMENT	AREA	VOLUME REQUIRED FOR OSD	SURFACE AREA REQUIRED FOR BIO-RETENTION
A	7.23ha	2,510m ³	730m ²
B	12.58ha	4,300m ³	1,320m ²
C	4.925ha	-	-
D	9.43ha	3,300m ³	950m ²
E	11.49ha	-	-
F	23.02ha	8,300m ³	2,400m ²
G	2.18ha	760m ³	220m ²
H	34.78ha	12,080m ³	3,510m ²
J	25.93ha	UNKNOWN	UNKNOWN
K	10.54ha	3,600m ³	1,070m ²
L	38.12ha	13,250m ³	3,840m ²

NOTE:

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



Issue	Description	Date
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



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Client

Scales	Drawn	ASD
1:4000	Designed	ASD
	Checked	AT
	Approved	

Project
SWMP DADI, EASTERN CREEK

Title
PROPOSED FUTURE STORMWATER MANAGEMENT PLAN

Civil Engineers and Project Managers

Suite 702, 154 Pacific Hwy
St Leonards NSW 2065
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Status
FOR INFORMATION NOT TO BE USED FOR CONSTRUCTION

Drawing No. SKC007	Project No. 15-309	Issue P5
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