Erosion and Sediment Control Plan – Stage 1B and Stage 2

Following AT&L ESCP drawings; Soil and Water Management Plans
Brickworks Plant 2 Upgrade

_____
Eric Claus, BSc, MSc

Claus Environmental Engineering
113 Sporing Ave, Kings Langley NSW 2147
0414-496-894
eclaus@ozemail.com.au
www.clausenviro.com.au

August 2020

Submitted to:
Jeremy Foster
Project Engineer
National Engineering Division - Australia
Brickworks
Brickmakers Drive
Wollert VIC 3750
Email: Jeremy.Foster@brickworks.com.au

Table of Contents

1. Introduction 1
2. Consent Conditions 2
2.1 General 2
2.2 DPIE Conditions B19 and C3 2
2.3 DPIE Condition Appendix 2 (b) Biodiversity b) 2
2.4 DPIE Condition Appendix 2 (e) 3
2.5 DPIE Condition Appendix 2 (f) 3
2.6 DPIE Condition Appendix 2 (g) a) 3
2.7 DPIE Condition Appendix 2 (g) b) 4
2.8 DPIE Condition Appendix 2 (g) c) 4
3. Commitments to meet DPIE Conditions B19 and C3 5
3.1 Preparation of Erosion and Sedimentation Control Plan 5
3.2 ESCP prepared following the Blue Book 5
4. Commitments to meet Condition App 2 (b) b) 6
5. Commitments to meet DPIE Condition Appendix 2 (e) 7
6. Commitments to meet DPIE Condition Appendix 2 (f) 8
7. Commitments to meet DPIE Condition Appendix 2 (g) a) 9
8. Commitments to meet DPIE Condition Appendix 2 (g) b) 11
9. Commitments to meet DPIE Condition Appendix 2 (g) c) 18
10. Erosion and Sedimentation Control Drawings 19
10.1 Existing Catchments 20
10.2 Stage 1A 21
10.3 Stage 1B 22
10.4 Stage 2 25
11. References 28

Appendices

Dwg No.	Title
C071	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 1A
C072	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 1B SHEET 1
C073	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 1B SHEET 2
C074	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 2 SHEET 1
C075	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 2 SHEET 2
C076	CONCEPT EROSION AND SEDIMENT CONTROL DETAILS & NOTES
C050	STORMWATER DRAINAGE CATCHMENT PLAN

1. Introduction

This Plan has been prepared to meet the requirements of the Development Consent (Application Number SSD-9601) for the upgrade of Brickworks Horsley Park Plant 2 facility. The Consent Conditions primarily being addressed are Items C3(b) and B19.

The Stage 1A Erosion and Sedimentation Control Plan was approved 7 August 2020 and the overall Construction Environmental Management Plan (CEMP) for Stage 1A was approved 19 August 2020. This is the Erosion and Sedimentation Control Plan for Stage 1B and Stage 2. Although the areas covered in Stage 1B are smaller than the overall area covered in Stage 2, it has been determined in cooperation between DPIE and Austral Bricks that the most efficient way to understand the erosion and sedimentation control measures to be employed for each stage is to show both stages in the same report. DPIE also indicated that they clearly understood that although the Erosion and Sedimentation Control Drawings for Stage 1B show sediment fences, drainage inlet filters and other control measures in specific locations and the control measures in Stage 2 in specific locations, the project does not proceed in leaps. It proceeds in steps. As erosion and sedimentation control measures are needed in certain areas they will be employed in those areas. This means that there is likely to be overlap between Stage 1B and Stage 2, so showing the Stage 2 controls helps to better understand the philosophy behind the Stage 1B controls.

Section 10 of this Plan describes the changes to the catchments and the changes to the flow patterns for each Stage.

This Plan has been developed following the approved concepts prepared by AT&L Civil Engineers and Project Managers (AT&L). These concepts are well described in:

- Appendix 4 of the Environmental Impact Statement (prepared by Willow Tree Planning), entitled Brickworks Plant 2 Upgrade, Soil and Water Management Plan & Civil Engineering Design Report, prepared by AT&L.
- Revised Soil and Water Management Plan & Civil Engineering Design Report, Appendix 3 of the Additional Information in the Response to Submissions, prepared by AT&L.
- Stage 1A, Stage 1B and Stage 2 Concept Erosion and Sediment Control Plans (included in the Appendices of this report).

Several sections of the AT&L Reports and Drawings are quoted in this report.

2. Consent Conditions

2.1 General

On 18 May 2020, Anthea Sargeant, Executive Director, Regions, Industry and Key Sites Assessments for the NSW Department of Planning, Industry and Environment (DPIE) issued a Development Consent under Section 4.38 of the Environmental Planning and Assessment Act 1979 for Application Number SSD-9601. The Development is defined in part as "Upgrade works to the Horsley Park Brickworks Plant 2 facility."

For ease of review all the consent conditions relating to the Erosion and Sedimentation Control Plan are listed in this section. In the following sections each part of each condition is then listed again with an explanation of Austral Brick's strategy for meeting that condition and protecting the environment in the most effective way.

2.2 DPIE Conditions B19 and C3

Erosion and Sediment Control

B19. Prior to the commencement of any construction or other surface disturbance the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements of the *Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book (Landcom, 2004)* guideline and the Erosion and Sediment Control Plan included in the CEMP required by condition C2. –

C3. As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following:
   (b) Erosion and Sediment Control Plan;

2.3 DPIE Condition Appendix 2 (b) Biodiversity b)

b) Erosion, sedimentation and pollution control:
   (i) The amount of expose~~s~~(*d*) soils at the site at any given time would be minimised;
   (ii) All stockpiled soils would be adequately covered when not in use to prevent erosion from heavy rainfall;
   (iii) Sediment fences would be established around the perimeter of the site to prevent the impacts of sedimentation on the adjoining vegetation;
   (iv) During development, precautions would be taken to ensure that no pollution, such as petrochemical substances or water containing suspended solids, escapes the construction site;
   (v) Pollution traps would be installed where required; and

(vi) Efficient removal of pollution to an offsite location would be undertaken to help minimise pollution impacts.

2.4 DPIE Condition Appendix 2 (e)

(e) Appropriate erosion and sediment control measures would be installed and maintained for the duration of the proposed construction works to ensure that sediment-laden runoff does not pollute the downstream environment, particularly the Eastern Creek riparian zone.

2.5 DPIE Condition Appendix 2 (f)

(f) All erosion and sediment control plans would be prepared in accordance with the NSW Government's Managing Urban Stormwater– Soils and Construction Blue Book Volume 1,4th Edition, March 2007. A preliminary erosion and sediment control plan for the site is included as Appendix A to Appendix 4 of the Environmental Impact Statement prepared by Willowtree Planning Pty Ltd in July 2019. Further details of the erosion and sediment control systems and procedures would be provided at the detailed design stage when more information is available regarding in-situ soils and development staging.

2.6 DPIE Condition Appendix 2 (g) a)

(g) The following management measures would be implemented to mitigate potential erosion and sediment impacts from occurring as a result of the proposed development:

a) Pre-construction erosion and sediment controls, implemented prior to construction, to minimise disturbances and ensure water quality performance criteria are met:

(i) Designation and marking of transport routes across undisturbed portions of the site to ensure minimal vegetation disturbance. Transport routes would be provided with stabilised construction entry/exits (e.g. Blue Book SD6-14) at the designated access points;

(ii) Installation of the proposed sediment basin would occur before bulk earthworks across the site begin so that sediment-laden runoff from the works can be captured and treated;

(iii) Diversions would be constructed to divert clean stormwater away from exposed soils and development areas. The exact location and time of construction for each diversion measure would depend on construction staging;

(iv) Existing vegetated buffer zones/bunds are to be fenced off;

(v) Filter rolls or geotextile inlet filters (e.g. Blue Book SD6-11&6-12) to be installed around all existing stormwater inlet gullies; and

(vi) All site personnel to complete an environmental induction covering the erosion and sediment controls;

2.7 DPIE Condition Appendix 2 (g) b)

(g) The following management measures would be implemented to mitigate potential erosion and sediment impacts from occurring as a result of the proposed development:

b) Measures to mitigate potential water quality impacts during the construction of the proposed development:

(i) Sediment fences (e.g. Blue Book SD6-8) to be erected at the base of all batters to prevent sediment-laden stormwater from flowing into the Eastern Creek riparian zone;

(ii) Regular dust suppression on exposed areas by water truck or the use of chemical dust suppressant;

(iii) Progressive stabilisation of filled and disturbed areas;

(iv) Sediment fences to be erected around soil stockpiles;

(v) Regular inspections as soon as practicable after storm events to check and maintain controls;

(vi) Sediment to be removed from fences when controls are 40% full and at the completion of construction. All material to be reused or stored onsite in a controlled manner or taken offsite for reuse or disposal at a licensed waste disposal facility;

(vii) Filter rolls or geotextile inlet filters (e.g. Blue Book SD6-11&6-12) to be installed around all new stormwater inlet gullies; and

(viii) Monitoring of water quality to determine the effectiveness of the sediment and erosion control management practices;

(ix) Erosion and sediment control measures would remain in place for the duration of construction works and following completion until the site is fully stabilised;

2.8 DPIE Condition Appendix 2 (g) c)

(g) The following management measures would be implemented to mitigate potential erosion and sediment impacts from occurring as a result of the proposed development:

c) Site inspection and maintenance measures to be undertaken so long as earthworks are being conducted or site subsoils are exposed, after every rainfall event and at least weekly:

(i) Inspect and assess the effectiveness of the Soil and Water Management Plan and identify any inadequacies that may arise during normal work activities or from a revised construction methodology. Construct additional erosion and sediment control works as necessary to ensure the desired protection is given to downstream lands and waterways;

(ii) Ensure that drains operate properly and to affect any repairs;

(iii) Remove spilled sand or other materials from hazard areas, including lands closer than 5 metres from areas of likely concentrated or high velocity flows especially waterways and paved areas;

(iv) Remove trapped sediment whenever less than design capacity remains within the structure;
(v) Ensure rehabilitated lands have affectively reduced the erosion hazard and to initiate upgrading or repair as appropriate;
(vi) Maintain erosion and sediment control measures in a fully functioning condition until all construction activity is completed and the site has been rehabilitated; and
(vii) Remove temporary soil conservation structures as the last activity in the rehabilitation.

3. Commitments to meet DPIE Conditions B19 and C3

3.1 Preparation of Erosion and Sedimentation Control Plan

B19. Prior to the commencement of any construction or other surface disturbance the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements of the *Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book (Landcom, 2004)* guideline and the Erosion and Sediment Control Plan included in the CEMP required by condition C2.

C3. As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following:
(b) Erosion and Sediment Control Plan;

Austral Brick has prepared this Erosion and Sedimentation Control Plan following the detailed plans prepared by AT&L and the AT&L Soil and Water Management Plan and Civil Engineering Design Report (March 2020).

3.2 ESCP prepared following the Blue Book

The following are excerpted from Section 2.4 Erosion and Sediment Controls of the AT&L SWMP (March 2020).

> All erosion and sediment control plans will be prepared in accordance with the NSW Government's Managing Urban Stormwater – Soils and Construction Blue Book Volume 1, 4th Edition, March 2007.
>
> All design, documentation, installation and maintenance of sediment and erosion controls will be in accordance with the requirements of:
> - Protection of the Environment Operations Act;
> - Office of Environment and Heritage's 'Managing Urban Stormwater: Soils and Construction. Landcom, (4th Edition) (The "Blue Book") Volume 1 and Volume 2.

Item 2 in the Erosion and Sedimentation Control Notes AT&L DAC 002 states:

2. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
   a. LOCAL AUTHORITY REQUIREMENTS
   b. EPA REQUIREMENTS
   c. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBANS STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004.

The CONCEPT EROSION AND SEDIMENT CONTROL DETAILS & NOTE page of the Erosion Control Plan (C074) lists the following erosion control measures all referenced from the Blue Book

- GEOTEXTILE FILTER PIT SURROUND (SD 6-12)
- STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)
- SEDIMENT FENCE (SD 6-8)
- HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)
- INLET SEDIMENT TRAP (SD 6-11)
- EARTH BASIN - WET TYPE F (SD 6-4)

4. Commitments to meet Condition App 2 (b) b)

b) Erosion, sedimentation and pollution control:

(i) The amount of exposes(*d*) soils at the site at any given time would be minimised;

The areas to be excavated have already been cleared of vegetation in previous development so there will be no change in the area of exposed soil.

(ii) All stockpiled soils would be adequately covered when not in use to prevent erosion from heavy rainfall;

Stockpiles and cleared area exists on several hectares of the Plant 2 site. There would be no point in covering a 3000 m^2 area of stockpile and leaving 100,000 m^2 of exposed earth uncovered. There may be some small soil stockpiles near the near the excavations made for the retaining walls around the perimeter of Plant 2. These stockpiles, which may runoff into drains near Plant 2 will be appropriately protected by either silt fence or gravel sausages. In most cases they will be located to take advantage of the existing silt fence and other erosion and sedimentation controls.

(iii) Sediment fences would be established around the perimeter of the site to prevent the impacts of sedimentation on the adjoining vegetation;

Sediment fences are shown on the AT&L Erosion and sedimentation control plans, that are submitted with this written plan.

(iv) During development, precautions would be taken to ensure that no pollution, such as petrochemical substances or water containing suspended solids, escapes the construction site;

Limited volumes of fuels, lubricating oils, hydraulic oils, paint and other liquids that could potentially get into the stormwater system will be stored on site. No potentially polluting liquids will be stored near Eastern Creek.
Controlling water containing suspended solids is the principal goal of the erosion and sedimentation control plan and ESC controls. All the details included in these pages and on the AT&L plans are focussed on achieving that goal.

(v) Pollution traps would be installed where required; and

Austral Brick intends to use the Oceansave high-capacity gross pollutant trap produced by Oceanprotect at the inlet of the sedimentation basin and the Ocean Protect Jellyfish filter at the outlet of the basin (links below).

https://oceanprotect.com.au/oceansave/
https://oceanprotect.com.au/jellyfish/

(vi) Efficient removal of pollution to an offsite location would be undertaken to help minimise pollution impacts.

Austral Bricks does not envision any pollution being generated. As described above limited volumes of oils, paints and other potentially polluting liquids will be securely stored on site away from drains and Eastern Creek. Solid Waste will be stored in bins where it can't wash into drains in a storm. If there was any waste or potential pollution that had to be disposed off-site, Austral would use a licenced contractor and get the waste / pollution removed in a timely manner.

5. Commitments to meet DPIE Condition Appendix 2 (e)

(e) Appropriate erosion and sediment control measures would be installed and maintained for the duration of the proposed construction works to ensure that sediment-laden runoff does not pollute the downstream environment, particularly the Eastern Creek riparian zone.

Austral Brick is committed to providing effective erosion and sedimentation controls through the duration of the project and until the exposed area is sufficiently regenerated such that there is minimal risk of discharge of sediment laden waters from the project site into the adjacent receiving waters.

6. Commitments to meet DPIE Condition Appendix 2 (f)

(f) All erosion and sediment control plans would be prepared in accordance with the NSW Government's Managing Urban Stormwater– Soils and Construction Blue Book Volume 1,4th Edition, March 2007. A preliminary erosion and sediment control plan for the site is included as Appendix A to Appendix 4 of the Environmental Impact Statement prepared by Willowtree Planning Pty Ltd in July 2019. Further details of the erosion and sediment control systems and procedures would be provided at the detailed design stage when more information is available regarding in-situ soils and development staging.

As described in section 3.2 above. The following are excerpted from Section 2.4 Erosion and Sediment Controls of the AT&L SWMP (March 2020).

> All erosion and sediment control plans will be prepared in accordance with the NSW Government's Managing Urban Stormwater – Soils and Construction Blue Book Volume 1, 4th Edition, March 2007.
>
> All design, documentation, installation and maintenance of sediment and erosion controls will be in accordance with the requirements of:
> - Protection of the Environment Operations Act;
> - Office of Environment and Heritage's 'Managing Urban Stormwater: Soils and Construction. Landcom, (4th Edition) (The "Blue Book") Volume 1 and Volume 2.

Item 2 in the Erosion and Sedimentation Control Notes AT&L DAC 002 states:

2. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
   a. LOCAL AUTHORITY REQUIREMENTS
   b. EPA REQUIREMENTS
   c. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBANS STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004.

The CONCEPT EROSION AND SEDIMENT CONTROL DETAILS & NOTE page of the Erosion Control Plan (C074) lists the following erosion control measures all referenced from the Blue Book

- GEOTEXTILE FILTER PIT SURROUND (SD 6-12)
- STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)
- SEDIMENT FENCE (SD 6-8)
- HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)
- INLET SEDIMENT TRAP (SD 6-11)
- EARTH BASIN - WET TYPE F (SD 6-4)

7. Commitments to meet DPIE Condition Appendix 2 (g) a)

(g) The following management measures would be implemented to mitigate potential erosion and sediment impacts from occurring as a result of the proposed development:

a) Pre-construction erosion and sediment controls, implemented prior to construction, to minimise disturbances and ensure water quality performance criteria are met:

(i) Designation and marking of transport routes across undisturbed portions of the site to ensure minimal vegetation disturbance. Transport routes would be provided with stabilised construction entry/exits (e.g. Blue Book SD6-14) at the designated access points;

There are no undisturbed portions of the site where previously undisturbed vegetation might be damaged by traffic / construction vehicles.
The stabilised construction exit (Blue Book SD 6-14 or similar) is shown at the exit on drawings C071 and C072.

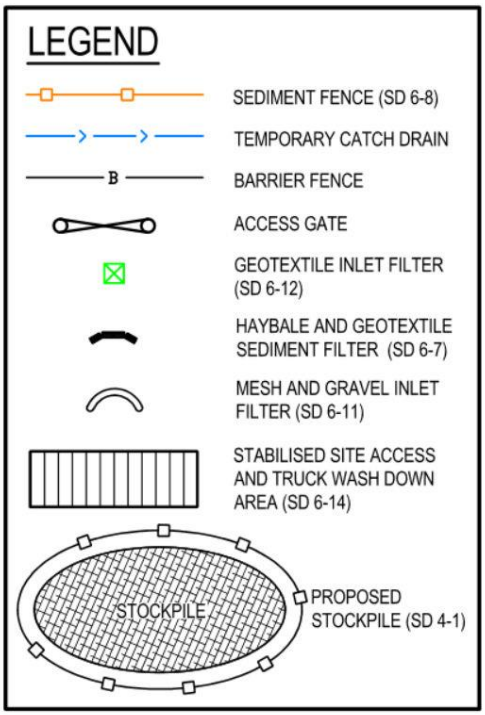


Figure 7-1 – AT&L Erosion and Sedimentation Control Plans Legend

(ii) Installation of the proposed sediment basin would occur before bulk earthworks across the site begin so that sediment-laden runoff from the works can be captured and treated

Stage 1A includes the construction of the sediment basin, as described in Section 1.2 of the CEMP.

(iii) Diversions would be constructed to divert clean stormwater away from exposed soils and development areas. The exact location and time of construction for each diversion measure would depend on construction staging;

Temporary catch drains are shown on the AT&L ESC drawings as shown on **Figure 7-2**. These will be staged during the construction as the grading is done, and the drains are installed around the hardstand areas surrounding Plant 2. A detail from AT&L C067 is shown in **Figure 7-3**.

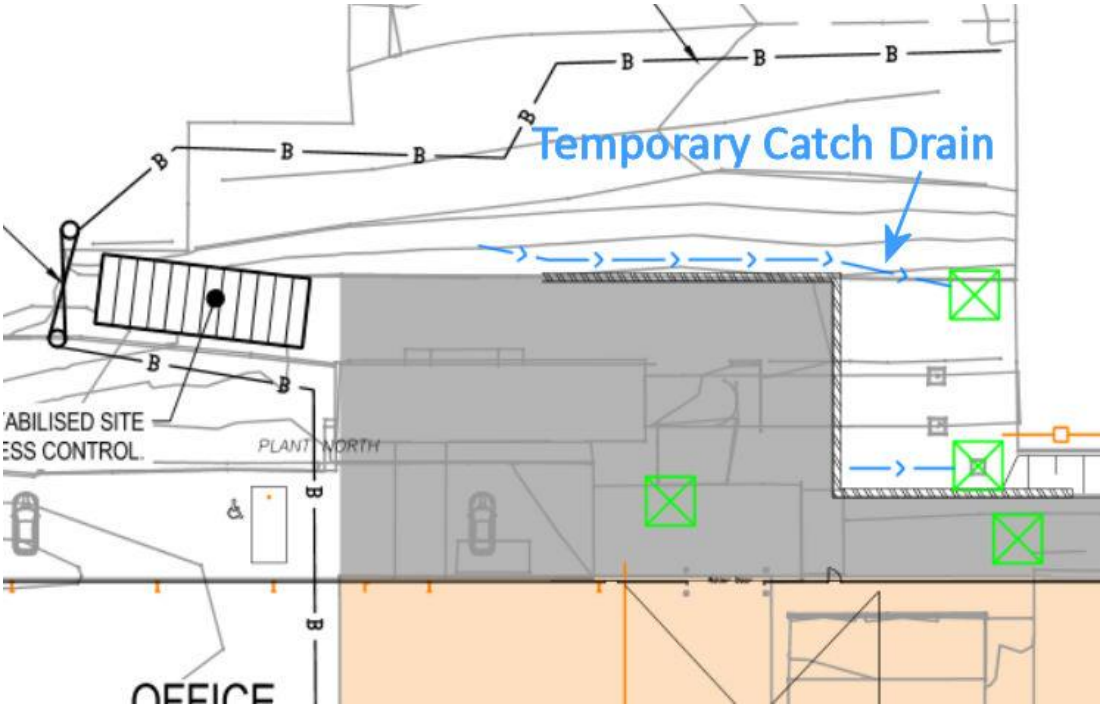


Figure 7-2 – AT&L Erosion Control Plan C072 showing Temporary Catch Drain

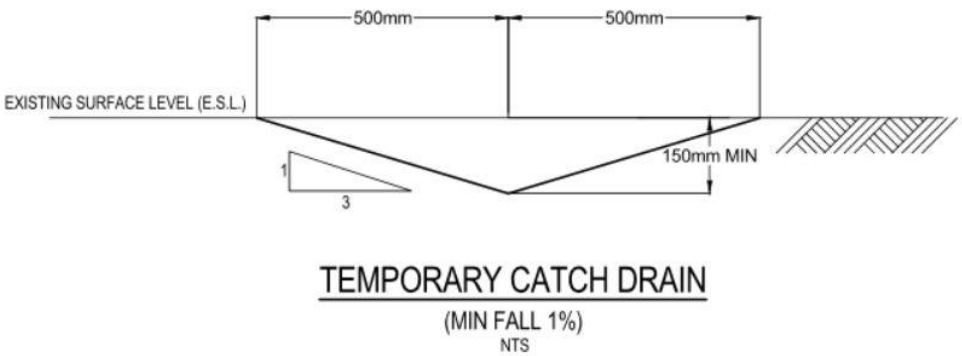


Figure 7-3– 1000mm wide Temporary Catch Drain from AT&L Erosion Control Plan C076

(iv) Existing vegetated buffer zones/bunds are to be fenced off;

No vegetated buffer zones have currently been identified but if Austral Brick determines that it is appropriate to fence some areas off, fencing will be installed. The induction will include a general note about possible fencing and protection of vegetation.

(v) Filter rolls or geotextile inlet filters (e.g. Blue Book SD 6-11 & 6-12) to be installed around all existing stormwater inlet gullies; and

Drainage inlets, floor drains and inlet gullies will be protected from direct inflow of sediment laden water, by controls like the Blue Book SD 6-11 & 6-12, where appropriate, by a field inlet sediment trap (also shown on the Details sheet C076) or by a combination of these controls depending on the flow patterns around the inlet and the access needed around the inlet.

(vi) All site personnel to complete an environmental induction covering the erosion and sediment controls; -

An erosion and sedimentation control induction video is being prepared to be used along with the more general induction video (see link below). Elements of the ESC video will be forwarded to DPIE for review.

https://vimeo.com/238837963/b19099ad68

8. Commitments to meet DPIE Condition Appendix 2 (g) b)

(g) The following management measures would be implemented to mitigate potential erosion and sediment impacts from occurring as a result of the proposed development:

b) Measures to mitigate potential water quality impacts during the construction of the proposed development:

(i) Sediment fences (e.g. Blue Book SD6-8) to be erected at the base of all batters to prevent sediment-laden stormwater from flowing into the Eastern Creek riparian zone;

The Blue Book Sediment fences (SD 6-8) are shown on the Details sheet C076. The location of sediment fences are shown on the plans. An example is shown in **Figure 8-2** on the following page which is a section of drawing C073.

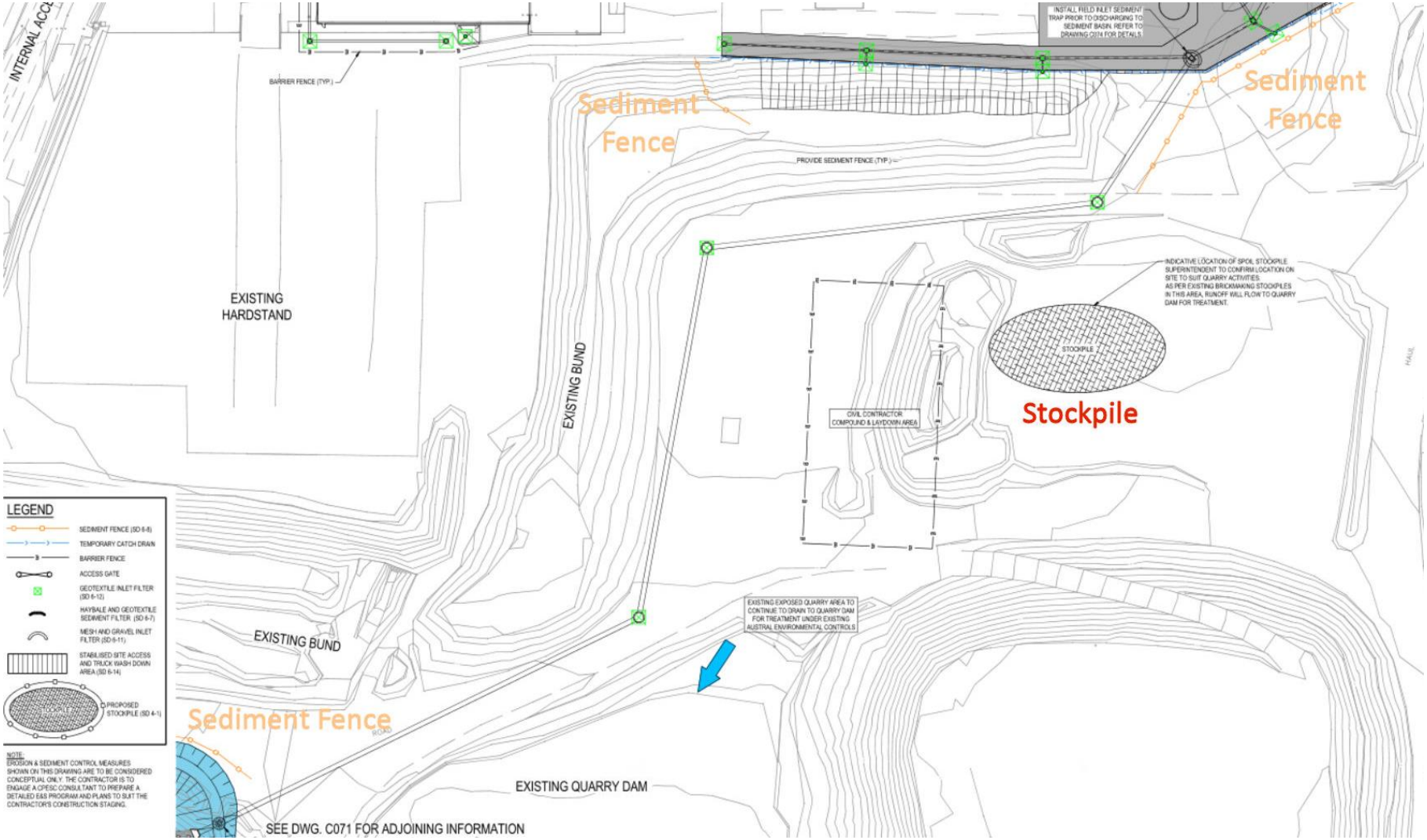


Figure 8-1 – Part of ESC Plan Drawing C073 showing location of silt fences using silt fence symbol and Stockpile

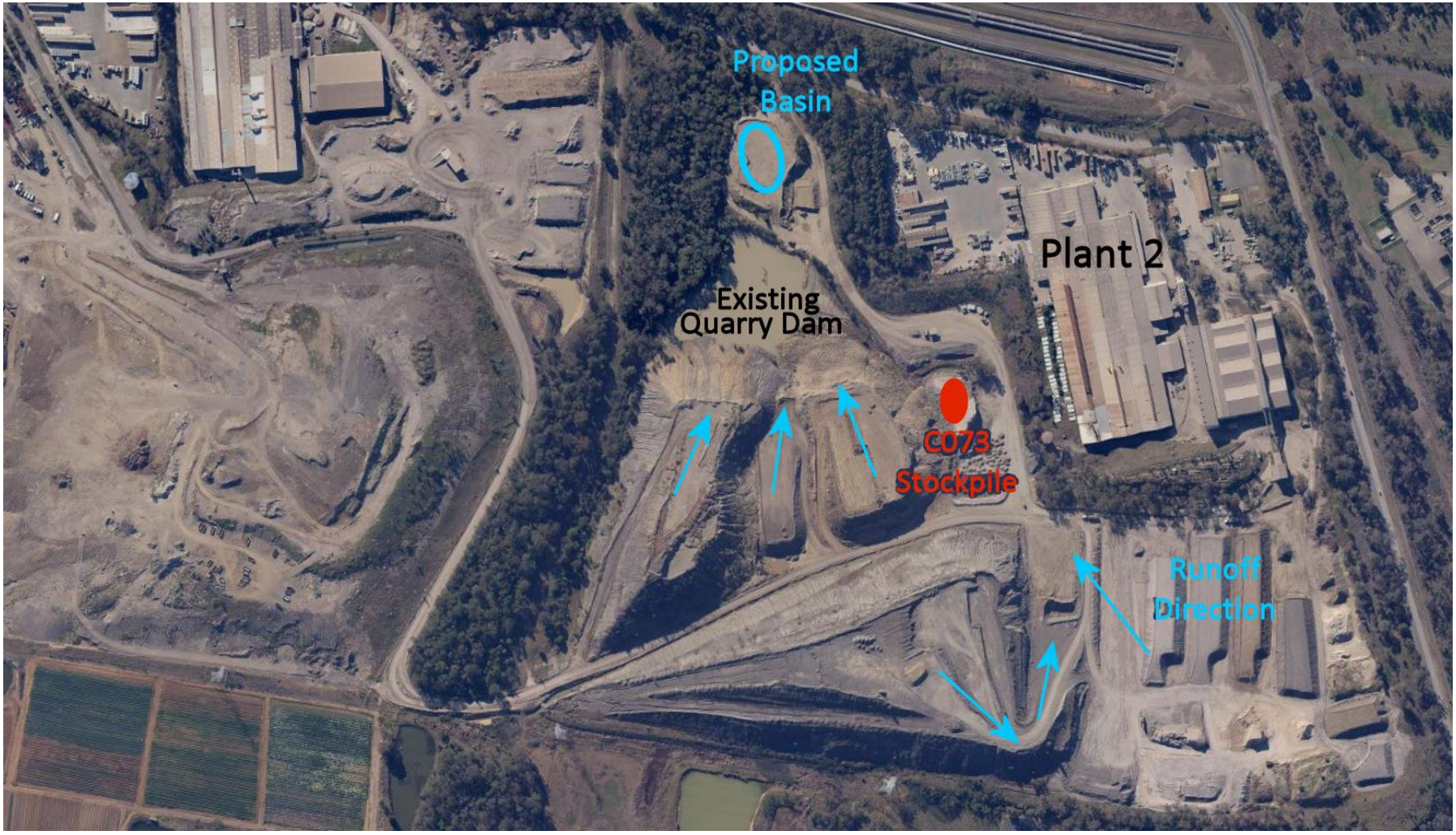


Figure 8-2 – Aerial photo of Plant 2 area, with approximate Stockpile location from AT&L drawing C073, existing quarry dam and runoff directions

(ii) Regular dust suppression on exposed areas by water truck or the use of chemical dust suppressant; -

Austral Bricks employs a contract water truck on the Horsley Park site on a "full-time" basis. This service will continue through the construction. The hours may be adjusted during construction, depending on weather conditions and the stage of the earthworks to ensure excess dust is not generated. The use of dust suppression is not as simple as just driving around anywhere with the water cart sprinklers turned on. Muddy areas can be created which eventually cause mud on tyres and dirt and then dust getting spread further than under proper conditions. Austral Bricks has the experience to run the dust suppression operation efficiently.

(iii) Progressive stabilisation of filled and disturbed areas; -

Austral Bricks plans to progressively stabilise all disturbed areas as they are completed to the design grade levels. There will be no "filled" areas except minor grading where cuts have been made to simplify the work schedule or where cut-off drains and diversion drains have been dug. Item 8 of the Erosion and Sediment Control Notes on AT&L DC002

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

(iv) Sediment fences to be erected around soil stockpiles;

Stockpiles and cleared area exists on several hectares of the Plant 2 site. **Figure 8-2** shows an aerial photo with the runoff flow directions all directed to the existing Quarry Dam There would be no point in putting a sediment fence around a 3000 m^2 stockpile and leaving 100,000 m^2 of exposed earth with no sediment fences. The runoff from the current exposed quarry area used to win brickmaking clay is directed toward the existing quarry Dam. This runoff treatment system has been used for many years and is part of EPA Licence 546.

There may be some small soil stockpiles near the excavations made for the retaining walls around the perimeter of Plant 2. These stockpiles, which could potentially runoff into drains near Plant 2 will be appropriately protected by either silt fence, gravel sausages or other methods. In most cases they will be located to take advantage of the existing silt fence and other erosion and sedimentation controls.

The stockpile location on sheet C073 (**Figure 8-1)** is indicative of the possible stockpile location to be used by the earthworks contractor that would drain to the existing quarry dam, as does all the other brickmaking clay soils stockpiles in that area.

The following note is included on AT&L drawings C073 and C075 to clarify the erosion and sedimentation control measures planned for the soil stockpiles in the brickmaking quarry area.

INDICATIVE LOCATION OF SPOIL STOCKPILE.
SUPERINTENDENT TO CONFIRM LOCATION ON
SITE TO SUIT QUARRY ACTIVITIES.
AS PER EXISTING BRICKMAKING STOCKPILES
IN THIS AREA, RUNOFF WILL FLOW TO QUARRY
DAM FOR TREATMENT.

(v) Regular inspections as soon as practicable after storm events to check and maintain controls;

Inspection and Maintenance of erosion and sedimentation control measures is primarily the responsibility of the civil engineering contractor. Section 2.4.5.2 of the AT&L SWMP (March 2020) details the site inspection and maintenance requirements of the Contractors site representative. The AT&L drawings which will be part of the contractors contractual obligations include Item 5 of the Erosion and Sediment Control Notes on AT&L DC002 and C076.

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.

Austral Brick will also undertake site inspections and report at minimum monthly to DPIE in the Environmental Status report described in Section 1.3 of the CEMP.

(vi) Sediment to be removed from fences when controls are 40% full and at the completion of construction. All material to be reused or stored onsite in a controlled manner or taken offsite for reuse or disposal at a licensed waste disposal facility;

As described above maintenance is the responsibility of the civil works contractor and the AT&L drawings will be part of the contractual obligations. The AT&L drawing DC002 and C076 include Item 5 as part of the Erosion and Sediment Control Notes.

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.

There will be no requirement to remove excavated soil from site. It will all be stockpiled and reused. Any wastes or materials that are inappropriate for reuse will be disposed at a licenced waste disposal facility.

(vii) Filter rolls or geotextile inlet filters (e.g. Blue Book SD 6-11 & 6-12) to be installed around all new stormwater inlet gullies; and -

Drainage inlets, floor drains and inlet gullies will be protected from direct inflow of sediment laden water, by controls like the Blue Book SD 6-11 & 6-12, where appropriate, by a field inlet sediment trap (also shown on the Details sheet C076) or by a combination of these controls depending on the flow patterns around the inlet and the access needed around the inlet.

(viii) Monitoring of water quality to determine the effectiveness of the sediment and erosion control management practices;

NSW EPA Licence 546 requires water sampling. The monitoring locations are listed in section 3.1 (**Table 8-1**) and the water quality limits are listed in section L3.5 (**Table 8-2**). The sample point locations may change following the completion of the Plant 2 upgrade to better reflect where the water is being discharged from the site. Monitoring will be carried on through the construction period as required by the EPA Licence.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters and water quality monitoring	Discharge to waters and water quality monitoring	Overflow outlet from sediment pond at Plant 1 to Eastern Creek on the eastern side of Pit 1 - MGA coordinates advised by licensee in correspondence to EPA dated 13 March 2020 (DOC20/294924).
2	Discharge to waters and water quality monitoring	Discharge to waters and water quality monitoring	End of 200 mm diameter pipe from pump located adjacent to Plant No. 2 Pit - MGA coordinates advised by licensee in correspondence to EPA dated 13 March 2020 (DOC20/294924).
3	Discharge to waters and water quality monitoring	Discharge to waters and water quality monitoring	Outlet of 150 mm pipe that discharges from a pump located adjacent to Pit 3 - MGA coordinates advised by licensee in correspondence to EPA dated 13 March 2020 (DOC20/294924).

Table 8-1 – Water and land monitoring points from EPL 546 item P1.3

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre	-	-	-	10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre	-	-	-	50
Turbidity	nephelometric turbidity units	-	-	-	150

Table 8-2 – Water quality limits for Points 1, 2 and 3 from EPL 546 item L3.5

The defining section is L3.1

L3.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

Inspections of the site in general including the water quality in the sedimentation basin will also be carried out by the Environmental Coordinator and the Project Manager. If they have concerns, they may also instigate extra water monitoring. Any water quality testing and results when they come back from the lab will be included in the Environmental Status report described in Section 1.3 of the CEMP.

(ix) Erosion and sediment control measures would remain in place for the duration of construction works and following completion until the site is fully stabilised;

As described above maintenance is the responsibility of the civil works contractor and the AT&L drawings will be part of the contractual obligations. The AT&L drawing DC002 and C076 include Items 8 and 12 as part of the Erosion and Sediment Control Notes.

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

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

Reporting when erosion controls are removed will also be part of the Environmental Status report described in Section 1.3 of the CEMP.

9. Commitments to meet DPIE Condition Appendix 2 (g) c)

(g) The following management measures would be implemented to mitigate potential erosion and sediment impacts from occurring as a result of the proposed development:

c) Site inspection and maintenance measures to be undertaken so long as earthworks are being conducted or site subsoils are exposed, after every rainfall event and at least weekly:

(i) Inspect and assess the effectiveness of the Soil and Water Management Plan and identify any inadequacies that may arise during normal work activities or from a revised construction methodology. Construct additional erosion and sediment control works as necessary to ensure the desired protection is given to downstream lands and waterways;

(ii) Ensure that drains operate properly and to affect any repairs;

(iii) Remove spilled sand or other materials from hazard areas, including lands closer than 5 metres from areas of likely concentrated or high velocity flows especially waterways and paved areas;

(iv) Remove trapped sediment whenever less than design capacity remains within the structure;

(v) Ensure rehabilitated lands have affectively reduced the erosion hazard and to initiate upgrading or repair as appropriate;

Inspection and Maintenance of erosion and sedimentation control measures is primarily the responsibility of the civil engineering contractor. Section 2.4.5.2 of the AT&L SWMP (March 2020) details the site inspection and maintenance requirements of the Contractors site representative. The AT&L drawings which will be part of the contractor's contractual obligations include Item 5 of the Erosion and Sediment Control Notes on AT&L DC002 and C076.

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.

Austral Brick will also undertake site inspections and report at minimum monthly to DPIE in the Environmental Status report described in Section 1.3 of the CEMP.

(vi) Maintain erosion and sediment control measures in a fully functioning condition until all construction activity is completed and the site has been rehabilitated; and - - -

(vii) Remove temporary soil conservation structures as the last activity in the rehabilitation. - -

As described above maintenance is the responsibility of the civil works contractor and the AT&L drawings will be part of the contractual obligations. The AT&L drawing DC002 and C076 include Items 8 and 12 as part of the Erosion and Sediment Control Notes.

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

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

Reporting when erosion controls are removed will also be part of the Environmental Status report described in Section 1.3 of the CEMP.

10. Erosion and Sedimentation Control Drawings

AT&L has provided six Erosion and Sedimentation drawings for the Plant 2 site. All the drawings for each of the stages are included to allow reference for the current review and ease of understanding of the entire system. The details drawing C076 applies to all drawings.

AT&L has produced Concept Erosion and Sediment Control Plans for Stage 1A, Stage 1B and Stage 2. These are concept plans because the civil engineering contractor will install the erosion and sediment control measures as the project develops. There is no need to install a drainage inlet protection filter when the drainage inlet has not yet been installed. The Stage 2 Concept shows the controls for the completed area of construction but the construction can't leap like that so the controls will be installed as Stage 1B transitions to Stage 2.

The catchments and flow patterns for the existing factory, Stage 1A, Stage 1B and Stage 2 are included in the following sections with a brief assessment for each stage so that the transition of the erosion and sediment controls can be more clearly understood.

10.1 Existing Catchments

The existing catchments at Plant 2 are divided about in half. Catchment A drains to the existing sedimentation basin, through overland flow and open channels. This will be upgraded to a 1200mm diameter drain pipe draining to a new sedimentation basin fitted with pollution traps. Catchment A is increased in size in the Plant 2 Upgrade. Catchment B is reduced in size and will continue to drain in the same manner to the existing discharge point just upstream of the discharge to Easter Creek.

Figure 3 – *Existing Stormwater Catchments*

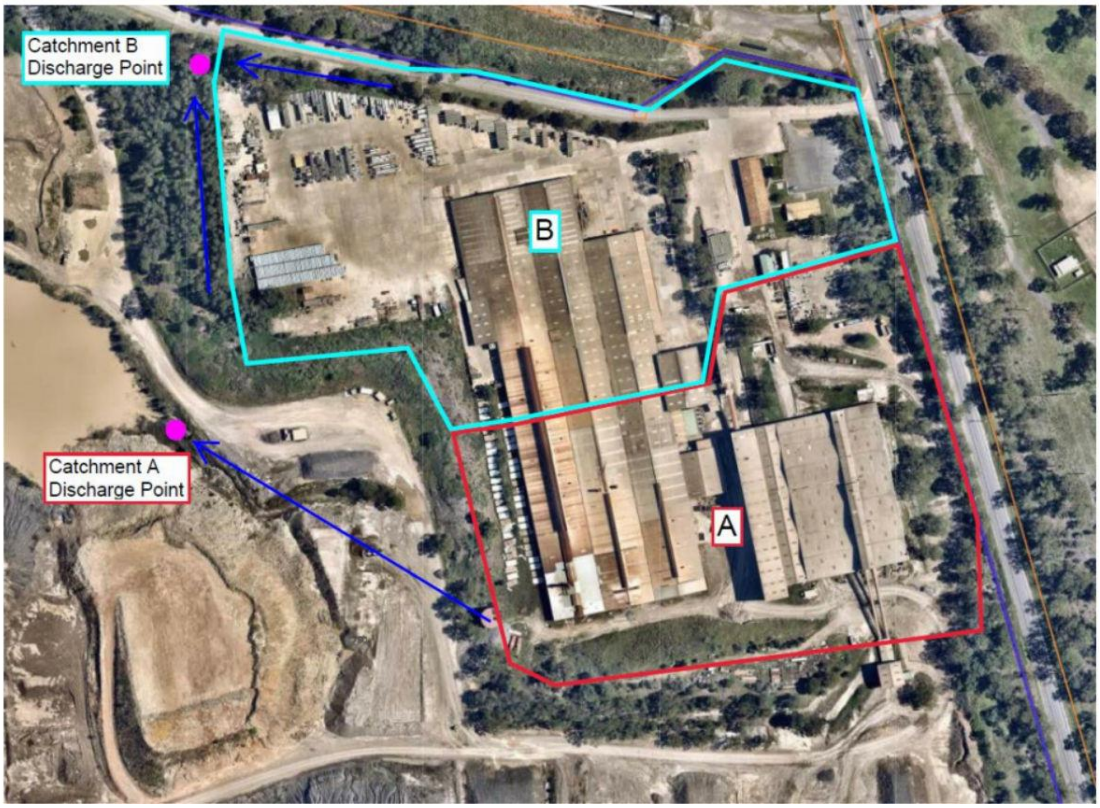


Figure 10-1 - Existing catchments for Plant 2 as shown in Figure 3 of each AT&L Civil Engineering Report

10.2 Stage 1A

A summary of some of the key elements of the Stage 1A construction are shown in the dot points below.

- Detention Basin Construction
- Masonry Utilize Yard – Use rear yard access only
- Install Temporary Fencing 25 metres off Factory Wall for External Access
- Internal Demolition – Kiln and Dryers.
- Demolish East Side of Factory and Outbuildings
- Demolish Clay Storage Bin Area
- "HOLD" – Infrastructure Works and Front Retaining Wall Works

AT&L Drawing C072 shows the Detention / Sedimentation Basin. There is considerable earthworks required for completion of the Basin. The southern sediment fences will provide a barrier between the earthworks and the Eastern Creek riparian zone. It is likely that the northern sediment fences will require adaptation to the contours as the construction progresses.

The drawing notes that the two specialised sediment removal systems are not to be installed while the basin is being used to manage the gross pollutants from earthworks and construction:

- OCEAN PROTECT FILTER CARTRIDGES NOT TO BE INSTALLED UNTIL UPSTREAM CATCHMENT IS STABILISED
- OCEAN PROTECT GROSS POLLUTANT TRAP NOT TO BE INSTALLED UNTIL UPSTREAM CATCHMENT IS STABILISED

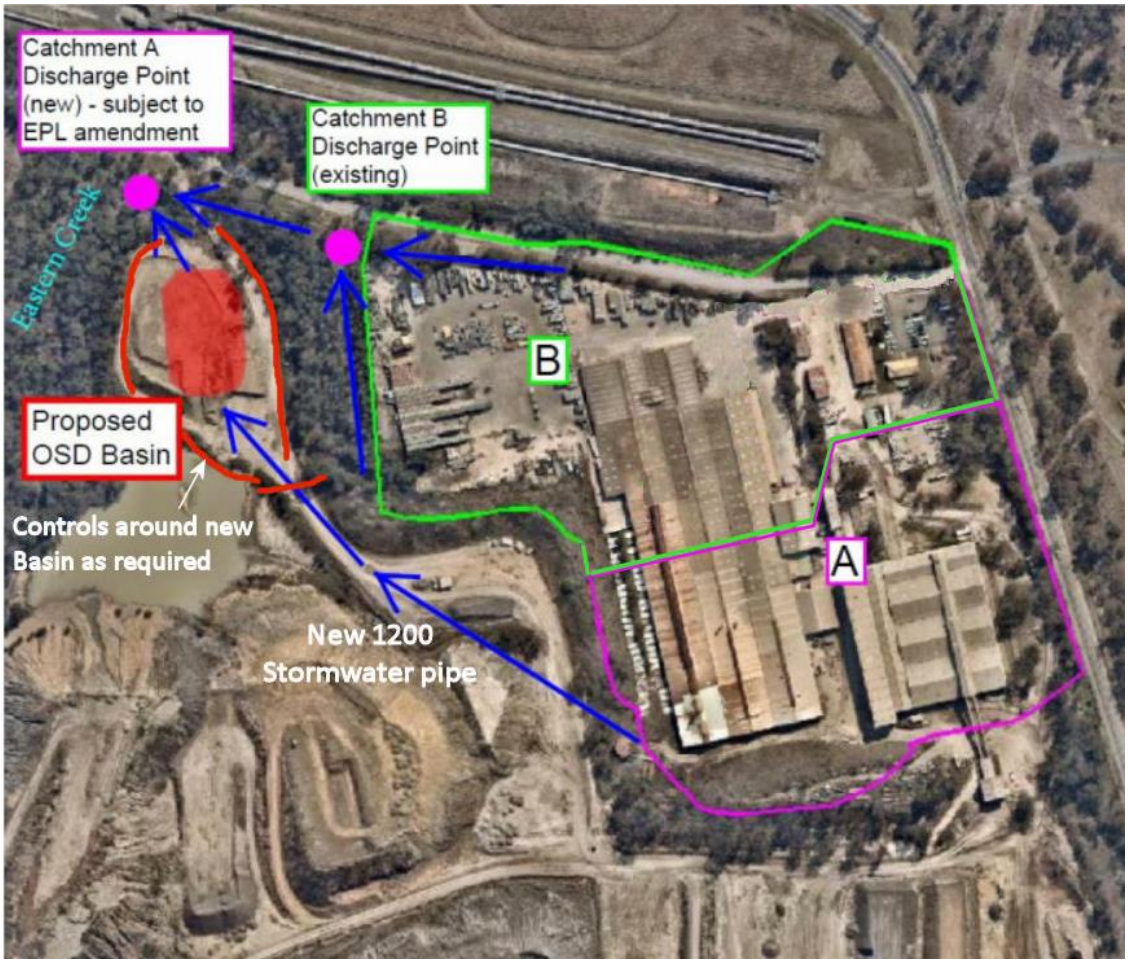


Figure 10-2 - Catchments for Stage 1A using Figure 4 from each AT&L Civil Engineering Report and modifying based on AT&L Concept Erosion and Sediment Control Drawings

10.3 Stage 1B

A summary of some of the key elements of the Stage 1B construction are shown in the dot points below.

- Masonry Utilize Yard – Use Rear Yard Access Only
- Complete Civil Works along East side for New Building Bay Area
- Install New Retaining Walls along Pan Room West Wall Areas
- Complete Civil Works – Storm water run from Basin to Factory and Local Factory External Areas
- ~~Complete New Cladding to West Wall on Pan Room~~ – This was included inappropriately in the Stage 1A submittal. The New cladding is not part of the Plant 2 upgrade.
- Complete Make Good Works Scope on Existing Building Area.
- Erect New Building Extension – Part Construction.

The AT&L drawings (C072 and C073) show that each drainage inlet is protected. As the hardstand is installed the type of inlet protection will need to be adapted. The blue lined temporary Catch drains symbols are sometimes difficult to see but they show that the drainage will be controlled with assistance from the sediment fences. As noted earlier the erosion and sedimentation controls must be installed with the development of the construction. In many cases this means gravel sausages and other measures that are moved during a dry day to allow the most efficient work areas and then replaced at night to protect the site in case of rain.

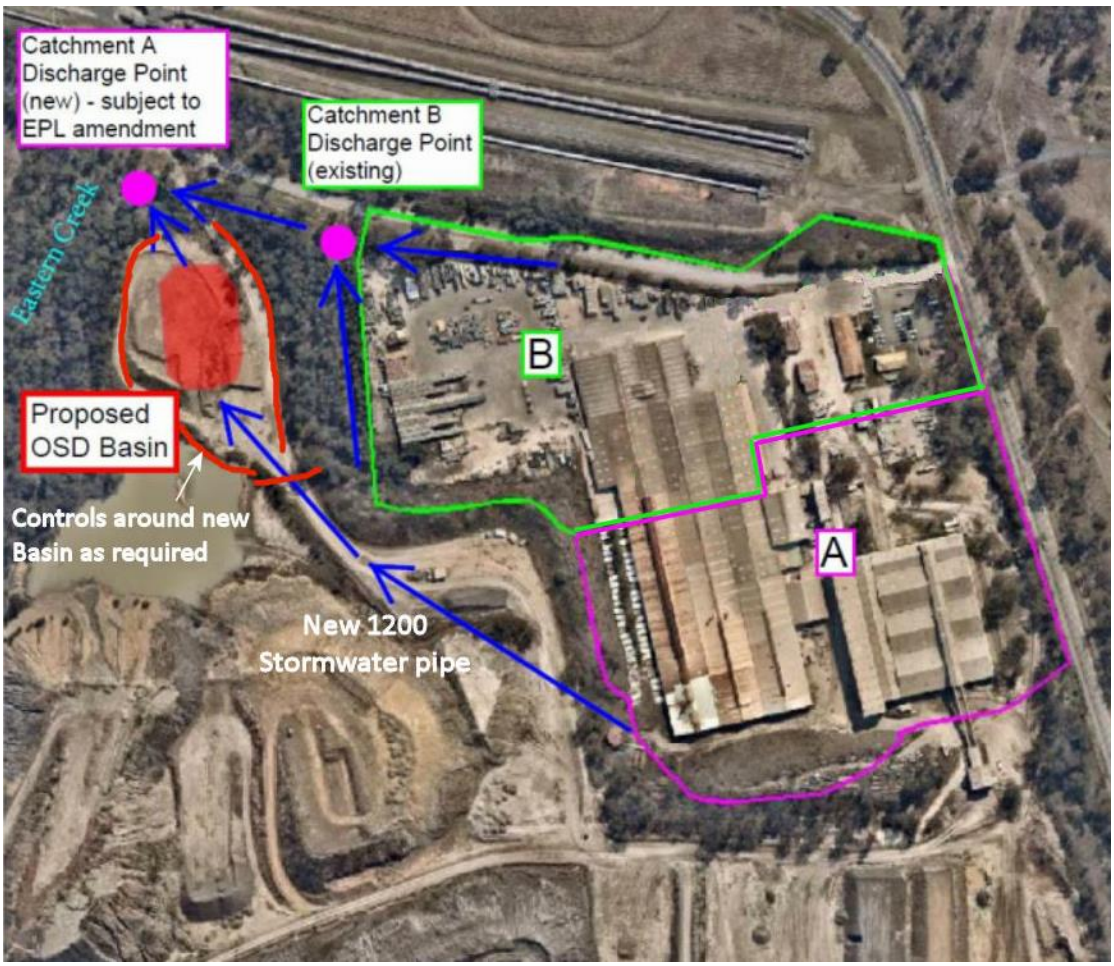


Figure 10-3 - Catchments for Stage 1B using Figure 4 from each AT&L Civil Engineering Report and modifying based on AT&L Concept Erosion and Sediment Control Drawings C072 and C073.

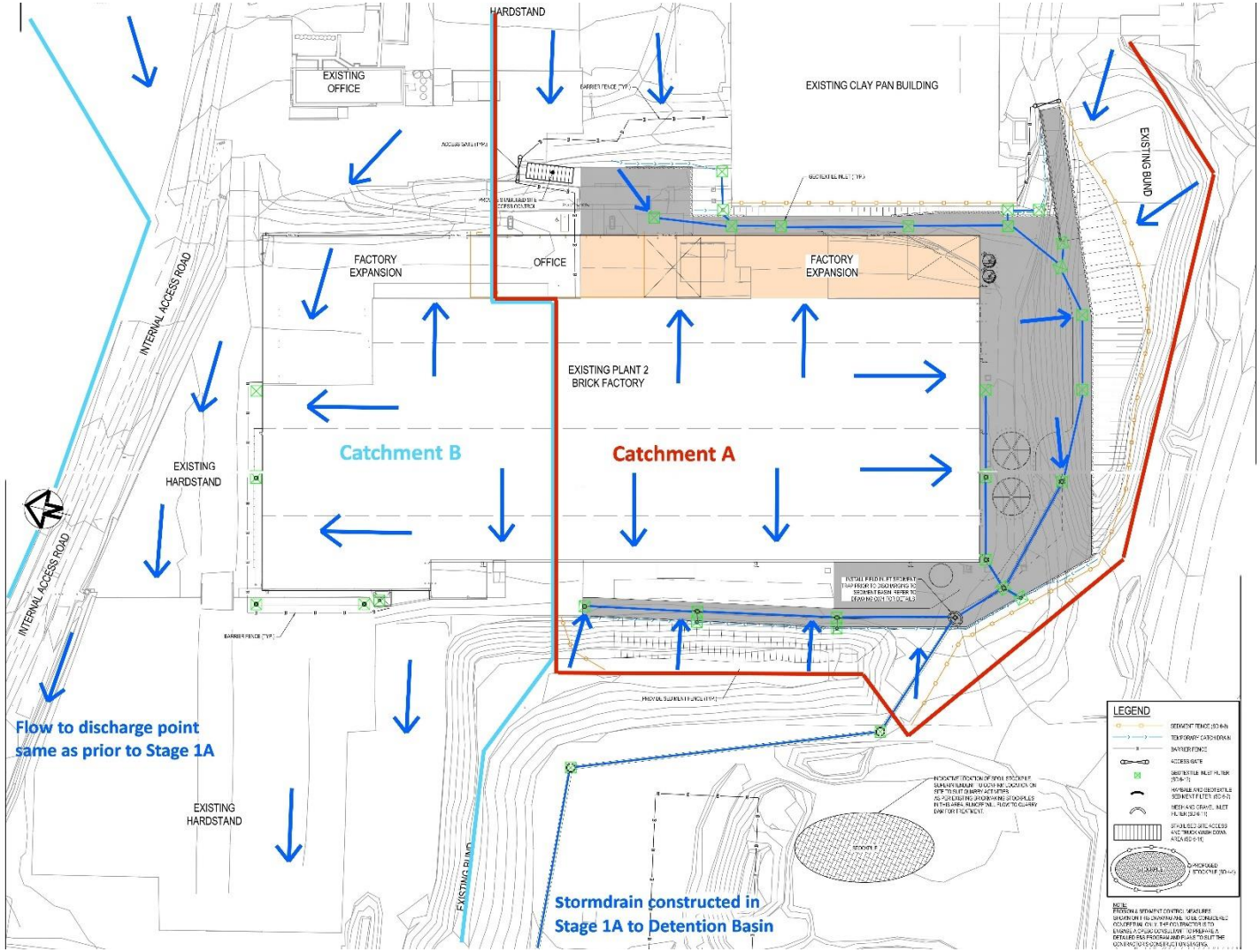


Figure 10-4 – Catchments and flow patterns for Stage 1B.

10.4 Stage 2

A summary of some of the key elements of the Stage 2 construction are shown in the dot points below.

- Masonry Utilize Yard – Use Rear Yard Access Only – Relocate to gain Additional Space to Factory Area – Revised planning now makes this irrelevant
- Close off front area for Retaining Wall & Stormwater works – North / West Area.
- Complete New Access Ramp
- Install remaining Building Extension Area Leave North and Front Walls off for Access
- Extruder Footings and Bin area Civil works
- ~~Accelerate Pan Building – Asbestos Removal and New Cladding Works – Staged~~ – This was included inappropriately in the Stage 1A submittal. The New cladding is not part of the Plant 2 upgrade.

The AT&L drawings (C074 and C075) show the essentially completed works. These plans again show that each drainage inlet is protected. This finalised plan will need to be worked toward as the construction progresses. Also as the construction progresses the drainage control measures that work best and the erosion and sedimentation control measures that work best will be found by the construction teams and the methods of protection will become refined.

Figure 4 – *Proposed Stormwater Catchments*

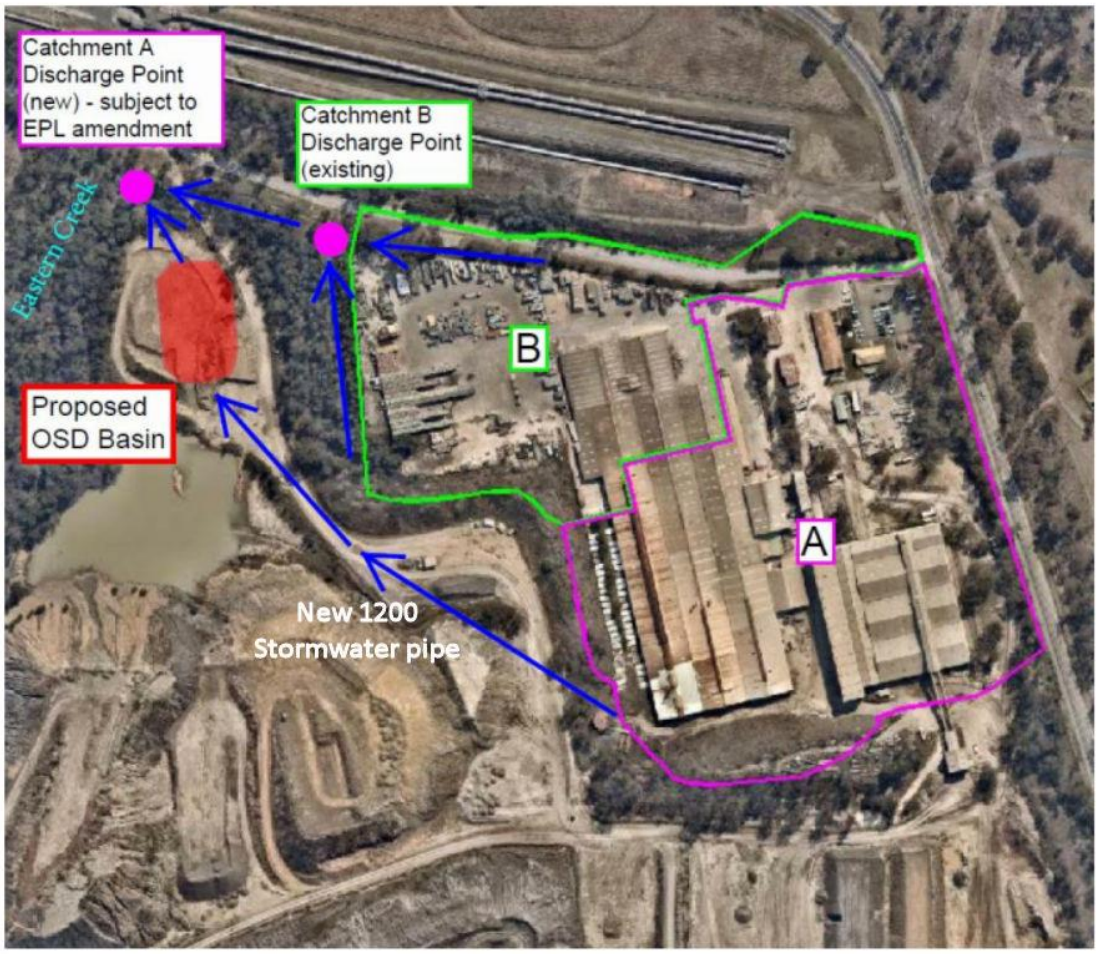


Figure 10-5 – AT&L SWMP and Civil Engineering Design Report (March 2020) Figure 4 Proposed Catchments A and B as they will be divided when the full area of Stage 2 has been developed. During the early parts of Stage 2 there will be a gradual transition from the Stage 1B catchments to the Stage 2 catchments.

The details of the smaller sub-catchments are shown on AT&L C050 entitled STORMWATER DRAINAGE CATCHMENT PLAN and included in the Appendices.

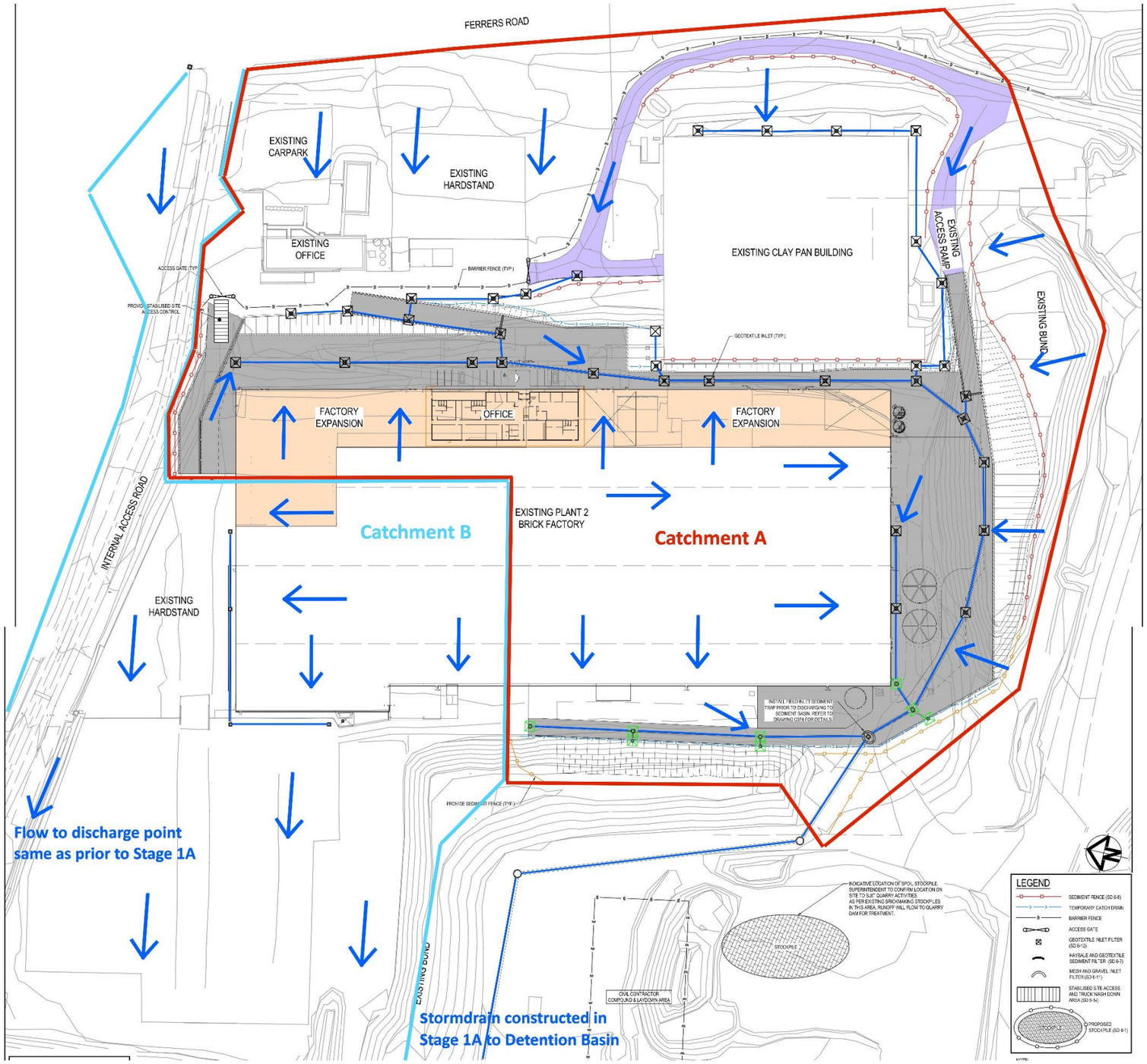


Figure 10-6 – Catchments and flow patterns for Stage 2

11. References

AT&L Civil Engineers and Project Managers, **Brickworks Plant 2 Upgrade, Soil and Water Management Plan & Civil Engineering Design Report**, May 2019, Code: R001-02-18-577. Referenced through EIS Appendix 4
https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-9601%2120190919T061728.434%20GMT

AT&L Civil Engineers and Project Managers, [**Revised] Brickworks Plant 2 Upgrade, Soil and Water Management Plan & Civil Engineering Design Report**, March 2020, Code: R001-02-18-577, Referenced through Willow Tree Planning, Additional Information, Response to Submissions, Appendix 3
https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=RFI-3008%2120200507T055458.059%20GMT

Development Consent, Application Number SSD-9601, Consent Authority: Minister for Planning and Public Spaces, NSW Government, Department of Planning, Industry Environment, Applicant: The Austral Brick Co. Pty Ltd, Date: 18/5/2020, File EF19/12179
https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-9601%2120200520T230637.426%20GMT

Fairfield Council, Stormwater Management Policy 2017.
http://www.fairfieldcity.nsw.gov.au/downloads/file/1827/stormwater_management_policy_-_september_2017

NSW EPA Licence 546, Licensee: The Austral Brick Co Pty Ltd, Premises: Austral Brick, Plants 1, 2, 3 738-780 Wallgrove Road, Horsley Park NSW 2175
https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=PAE-2012%2120200224T005909.855%20GMT

Willow Tree Planning, **Environmental Impact Statement for State Significant Development 9601**, Proposed Plant 2 Upgrade Works, 780 Wallgrove Road, Horsley Park, August 2019, Document Reference WTJ18-222
https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-9601%2120190919T061724.484%20GMT

Appendices – AT&L Erosion Control Drawings

Dwg No.	Title
C071	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 1A
C072	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 1B SHEET 1
C073	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 1B SHEET 2
C074	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 2 SHEET 1
C075	CONCEPT EROSION AND SEDIMENT CONTROL PLAN Stage 2 SHEET 2
C076	CONCEPT EROSION AND SEDIMENT CONTROL DETAILS & NOTES
C050	STORMWATER DRAINAGE CATCHMENT PLAN

LEGEND

- SEDIMENT FENCE (SD 6-8)
- TEMPORARY CATCH DRAIN
- BARRIER FENCE
- ACCESS GATE
- GEOTEXTILE INLET FILTER (SD 6-12)
- HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)
- MESH AND GRAVEL INLET FILTER (SD 6-11)
- STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)
- STOCKPILE — PROPOSED STOCKPILE (SD 4-1)

NOTE:
EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THIS DRAWING ARE TO BE CONSIDERED CONCEPTUAL ONLY. THE CONTRACTOR IS TO ENGAGE A CPESC CONSULTANT TO PREPARE A DETAILED E&S PROGRAM AND PLANS TO SUIT THE CONTRACTOR'S CONSTRUCTION STAGING.

SEDIMENT BASIN CALCULATION

SOIL TYPE F

- Minimum Settling Zone Volume (V_{sz})
  = 10xCvxAxR
  = 10x0.5x6x35
  = 1,050m³
- Minimum Sediment Storage Zone Volume (V_{ssz})
  = 0.5xV_{sz}= 525m³
- Total Volume Required = 1050+525m³
  = 1,575m³

SEE DWG. C072 & C073 FOR ADJOINING STAGE 1B INFORMATION

EXISTING EXPOSED QUARRY AREA TO CONTINUE TO DRAIN TO QUARRY DAM FOR TREATMENT UNDER EXISTING AUSTRAL ENVIRONMENTAL CONTROLS

EXISTING BUND

PROVIDE SEDIMENT FENCE (TYP.)

PROVIDE STABILISED SITE ACCESS CONTROL.

HAUL ROAD

EXISTING QUARRY ACCESS GATE

HAYBALE AND GEOTEXTILE SEDIMENT FILTER (TYP.)

PROPOSED STORMWATER DETENTION \ SEDIMENT BASIN

OCEAN PROTECT GROSS POLLUTANT TRAP NOT TO BE INSTALLED UNTIL UPSTREAM CATCHMENT IS STABILISED

EXISTING QUARRY DAM

POND

POND

BATTER TO BE STAILISED WITH 100mm TOPSOIL, COIR NETTING OR APPROVED EQUIVALENT AND HYDROMULCHED.

USE ULTIMATE BASIN LOCATION AS TEMPORARY SEDIMENT CONTROL BASIN DURING CONSTRUCTION PHASE

OCEAN PROTECT FILTER CARTRIDGES NOT TO BE INSTALLED UNTIL UPSTREAM CATCHMENT IS STABILISED

INSTALL TEMPORARY SANDBAG COFFERDAM TO PROVIDE DRY WORK ZONE FOR HEADWALL WORKS AND PREVENT SEDIMENT RELEASE TO CREEK

EASTERN CREEK

EASTERN CREEK

APPROXIMATE GAS PIPELINE EASEMENT

APPROXIMATE GAS PIPELINE EASEMENT

HYDROGRAPHIC SURVEY LEVELS SHOWN COLOURED BLUE

Issue	Description	Date
E	ISSUED FOR CONSTRUCTION CERTIFICATE	07-07-20
D	ISSUED FOR TENDER	14-05-20
C	ISSUED FOR DEVELOPMENT APPROVAL	10-05-19
B	ISSUED FOR REVIEW	09-04-19
A	ISSUED FOR INFORMATION	03-11-18

Bar Scales

0 10 20 30 40 50m

1 : 500 @ A1 1 : 1000 @ A3

100mm on Original

Client: BRICKWORKS LIMITED

Scales	1 : 500
Grid	MGA
Height Datum	AHD
Drawn	QD
Designed	QD
Checked	SH
Approved	SH

Project: BRICKWORKS PLANT2 UPGRADE 780 WALLGROVE ROAD HORSLEY PARK

Title: CONCEPT EROSION AND SEDIMENT CONTROL PLAN STAGE 1A

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 9423 1055
www.atl.net.au
info@atl.net.au

Status: FOR CC
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C071	18-577	E

Date Plotted: 7 Jul 2020 - 03:56PM File Name: F:\18-577 Brickworks Plant 2\Drgs\Civil\Final\DA\C071.dwg

LEGEND

- SEDIMENT FENCE (SD 6-8)
- TEMPORARY CATCH DRAIN
- BARRIER FENCE
- ACCESS GATE
- GEOTEXTILE INLET FILTER (SD 6-12)
- HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)
- MESH AND GRAVEL INLET FILTER (SD 6-11)
- STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)
- STOCKPILE — PROPOSED STOCKPILE (SD 4-1)

NOTE:
EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THIS DRAWING ARE TO BE CONSIDERED CONCEPTUAL ONLY. THE CONTRACTOR IS TO ENGAGE A CPESC CONSULTANT TO PREPARE A DETAILED E&S PROGRAM AND PLANS TO SUIT THE CONTRACTOR'S CONSTRUCTION STAGING.

FERRERS ROAD

EXISTING CARPARK

EXISTING HARDSTAND

EXISTING OFFICE

EXISTING CLAY PAN BUILDING

EXISTING BUND

BARRIER FENCE (TYP.)

ACCESS GATE (TYP.)

PROVIDE STABILISED SITE ACCESS CONTROL.

PLANT NORTH

GEOTEXTILE INLET (TYP.)

FACTORY EXPANSION

OFFICE

FACTORY EXPANSION

INTERNAL ACCESS ROAD

EXISTING PLANT 2 BRICK FACTORY

EXISTING HARDSTAND

SEE DWG. C073 FOR ADJOINING INFORMATION

Issue	Description	Date
E	ISSUED FOR CONSTRUCTION CERTIFICATE	07-07-20
D	ISSUED FOR TENDER	14-05-20
C	ISSUED FOR DEVELOPMENT APPROVAL	10-05-19
B	ISSUED FOR REVIEW	09-04-19
A	ISSUED FOR INFORMATION	03-11-18

100mm on Original

Bar Scales

0 10 20 30 40 50m

1 : 500 @ A1 1 : 1000 @ A3

Client: BRICKWORKS LIMITED

Scales	1 : 500
Grid	MGA
Height Datum	AHD
Drawn	QD
Designed	QD
Checked	SH
Approved	SH

Project: BRICKWORKS PLANT2 UPGRADE
780 WALLGROVE ROAD
HORSLEY PARK

Title: CONCEPT EROSION AND SEDIMENT CONTROL PLAN STAGE 1B SHEET 1

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 9423 1055
www.atl.net.au
info@atl.net.au

Status: FOR CC
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C072	18-577	E

Date Plotted: 7 Jul 2020 - 03:47PM File Name: F:\18-577 Brickworks Plant 2\Drgs\Civil\Final\DA\C072.dwg

SEE DWG. C072 FOR ADJOINING INFORMATION

INTERNAL ACCESS ROAD

BARRIER FENCE (TYP.)

INSTALL FIELD INLET SEDIMENT TRAP PRIOR TO DISCHARGING TO SEDIMENT BASIN. REFER TO DRAWING C074 FOR DETAILS.

PROVIDE SEDIMENT FENCE (TYP.)

EXISTING HARDSTAND

EXISTING BUND

INDICATIVE LOCATION OF SPOIL STOCKPILE. SUPERINTENDENT TO CONFIRM LOCATION ON SITE TO SUIT QUARRY ACTIVITIES. AS PER EXISTING BRICKMAKING STOCKPILES IN THIS AREA, RUNOFF WILL FLOW TO QUARRY DAM FOR TREATMENT.

STOCKPILE

CIVIL CONTRACTOR COMPOUND & LAYDOWN AREA

HAUL ROAD

EXISTING EXPOSED QUARRY AREA TO CONTINUE TO DRAIN TO QUARRY DAM FOR TREATMENT UNDER EXISTING AUSTRAL ENVIRONMENTAL CONTROLS

EXISTING BUND

ROAD

EXISTING QUARRY DAM

SEE DWG. C071 FOR ADJOINING INFORMATION

LEGEND

- SEDIMENT FENCE (SD 6-8)
- TEMPORARY CATCH DRAIN
- BARRIER FENCE
- ACCESS GATE
- GEOTEXTILE INLET FILTER (SD 6-12)
- HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)
- MESH AND GRAVEL INLET FILTER (SD 6-11)
- STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)
- PROPOSED STOCKPILE (SD 4-1)

NOTE:
EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THIS DRAWING ARE TO BE CONSIDERED CONCEPTUAL ONLY. THE CONTRACTOR IS TO ENGAGE A CPESC CONSULTANT TO PREPARE A DETAILED E&S PROGRAM AND PLANS TO SUIT THE CONTRACTOR'S CONSTRUCTION STAGING.

Issue	Description	Date
F	ISSUED FOR CONSTRUCTION CERTIFICATE	14-07-20
E	ISSUED FOR CONSTRUCTION CERTIFICATE	07-07-20
D	ISSUED FOR TENDER	14-05-20
C	ISSUED FOR DEVELOPMENT APPROVAL	10-05-19
B	ISSUED FOR REVIEW	09-04-19
A	ISSUED FOR INFORMATION	03-11-18

Bar Scales

0 10 20 30 40 50m

1 : 500 @ A1 1 : 1000 @ A3

Client: BRICKWORKS LIMITED

Scales: 1 : 500

Drawn	QD
Designed	QD
Checked	SH
Approved	SH
Grid	MGA
Height Datum	AHD

Project: BRICKWORKS PLANT2 UPGRADE
780 WALLGROVE ROAD
HORSLEY PARK

Title: CONCEPT EROSION AND SEDIMENT CONTROL PLAN STAGE 1B SHEET 2

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 9423 1055
www.atl.net.au
info@atl.net.au

Status: FOR CC
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C073	18-577	F

100mm on Original

Date Plotted: 14 Jul 2020 - 04:53PM File Name: F:\18-577 Brickworks Plant 2\Drgs\Civil\Final\DA\C073.dwg

LEGEND

- SEDIMENT FENCE (SD 6-8)
- TEMPORARY CATCH DRAIN
- BARRIER FENCE
- ACCESS GATE
- GEOTEXTILE INLET FILTER (SD 6-12)
- HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)
- MESH AND GRAVEL INLET FILTER (SD 6-11)
- STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)
- STOCKPILE — PROPOSED STOCKPILE (SD 4-1)

NOTE:
EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THIS DRAWING ARE TO BE CONSIDERED CONCEPTUAL ONLY. THE CONTRACTOR IS TO ENGAGE A CPESC CONSULTANT TO PREPARE A DETAILED E&S PROGRAM AND PLANS TO SUIT THE CONTRACTOR'S CONSTRUCTION STAGING.

FERRERS ROAD

EXISTING CARPARK

EXISTING HARDSTAND

EXISTING OFFICE

EXISTING CLAY PAN BUILDING

EXISTING ACCESS RAMP

EXISTING BUND

ACCESS GATE (TYP.)

BARRIER FENCE (TYP.)

PROVIDE STABILISED SITE ACCESS CONTROL.

GEOTEXTILE INLET (TYP.)

PLANT NORTH

FACTORY EXPANSION

OFFICE

FACTORY EXPANSION

INTERNAL ACCESS ROAD

EXISTING PLANT 2 BRICK FACTORY

EXISTING HARDSTAND

SEE DWG. C075 FOR ADJOINING INFORMATION

Issue	Description	Date
E	ISSUED FOR CONSTRUCTION CERTIFICATE	07-07-20
D	ISSUED FOR TENDER	14-05-20
C	ISSUED FOR DEVELOPMENT APPROVAL	10-05-19
B	ISSUED FOR REVIEW	09-04-19
A	ISSUED FOR INFORMATION	03-11-18

100mm on Original

Bar Scales

0 10 20 30 40 50m

1 : 500 @ A1 1 : 1000 @ A3

Client: BRICKWORKS LIMITED

Scales	1 : 500
Grid	MGA
Height Datum	AHD
Drawn	QD
Designed	QD
Checked	SH
Approved	SH

Project: BRICKWORKS PLANT2 UPGRADE 780 WALLGROVE ROAD HORSLEY PARK

Title: CONCEPT EROSION AND SEDIMENT CONTROL PLAN STAGE 2 SHEET 1

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 9423 1055
www.atl.net.au
info@atl.net.au

Status: FOR CC
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C074	18-577	E

Date Plotted: 7 Jul 2020 - 03:48PM File Name: F:\18-577 Brickworks Plant 2\Drgs\Civil\Final\DA\C074.dwg

HARDSTAND

SEE DWG. C074 FOR ADJOINING INFORMATION

INSTALL FIELD INLET SEDIMENT TRAP PRIOR TO DISCHARGING TO SEDIMENT BASIN. REFER TO DRAWING C074 FOR DETAILS.

PROVIDE SEDIMENT FENCE (TYP.)

INDICATIVE LOCATION OF SPOIL STOCKPILE. SUPERINTENDENT TO CONFIRM LOCATION ON SITE TO SUIT QUARRY ACTIVITIES. AS PER EXISTING BRICKMAKING STOCKPILES IN THIS AREA, RUNOFF WILL FLOW TO QUARRY DAM FOR TREATMENT.

STOCKPILE

CIVIL CONTRACTOR COMPOUND & LAYDOWN AREA

EXISTING BUND

EXISTING BUND

HAUL ROAD

ROAD

EXISTING EXPOSED QUARRY AREA TO CONTINUE TO DRAIN TO QUARRY DAM FOR TREATMENT UNDER EXISTING AUSTRAL ENVIRONMENTAL CONTROLS

EXISTING QUARRY DAM

SEE DWG. C071 FOR ADJOINING INFORMATION

LEGEND

- SEDIMENT FENCE (SD 6-8)
- TEMPORARY CATCH DRAIN
- BARRIER FENCE
- ACCESS GATE
- GEOTEXTILE INLET FILTER (SD 6-12)
- HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)
- MESH AND GRAVEL INLET FILTER (SD 6-11)
- STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)
- PROPOSED STOCKPILE (SD 4-1)

NOTE:
EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THIS DRAWING ARE TO BE CONSIDERED CONCEPTUAL ONLY. THE CONTRACTOR IS TO ENGAGE A CPESC CONSULTANT TO PREPARE A DETAILED E&S PROGRAM AND PLANS TO SUIT THE CONTRACTOR'S CONSTRUCTION STAGING.

Issue	Description	Date
B	ISSUED FOR CONSTRUCTION CERTIFICATE	14-07-20
A	ISSUED FOR CONSTRUCTION CERTIFICATE	07-07-20

Bar Scales

0 10 20 30 40 50m

1 : 500 @ A1 1 : 1000 @ A3

Client: BRICKWORKS LIMITED

Scales	1 : 500
Grid	MGA
Height Datum	AHD
Drawn	QD
Designed	QD
Checked	SH
Approved	SH

Project: BRICKWORKS PLANT2 UPGRADE 780 WALLGROVE ROAD HORSLEY PARK

Title: CONCEPT EROSION AND SEDIMENT CONTROL PLAN STAGE 2 SHEET 2

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 9423 1055
www.atl.net.au
info@atl.net.au

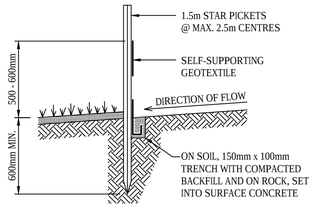
Status: FOR CC
NOT TO BE USED FOR CONSTRUCTION

A1

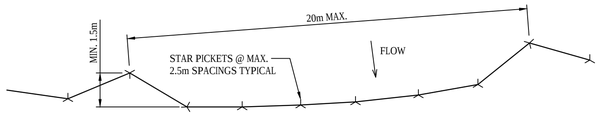
Drawing No.	Project No.	Issue
C075	18-577	B

100mm on Original

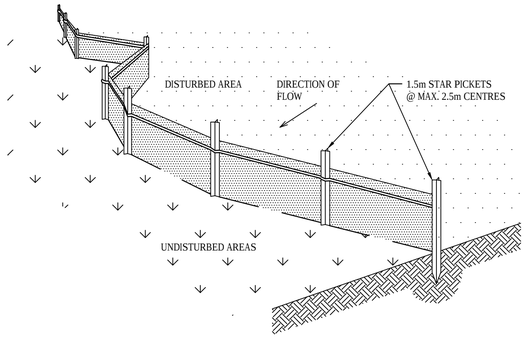
Date Plotted: 14 Jul 2020 - 05:03PM File Name: F:\18-577 Brickworks Plant 2\Drgs\Civil\Final\DA\C075.dwg



SECTION DETAIL

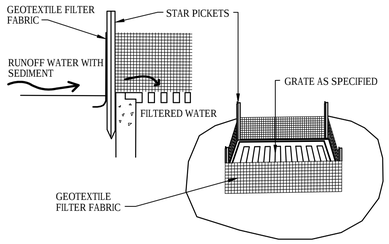


PLAN



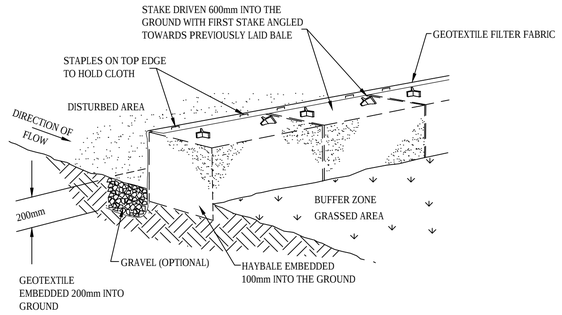
SEDIMENT FENCE (SD 6-8)

NTS



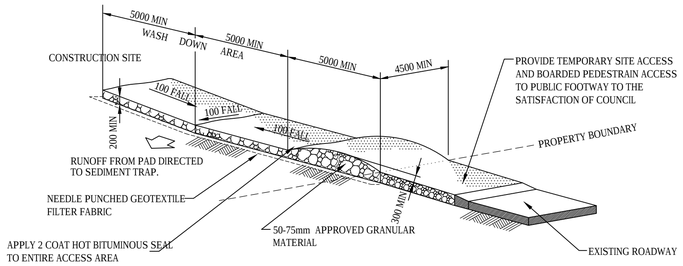
GEOTEXTILE FILTER PIT SURROUND (SD 6-12)

NTS



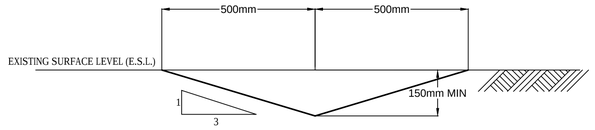
HAYBALE AND GEOTEXTILE SEDIMENT FILTER (SD 6-7)

NTS



STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA (SD 6-14)

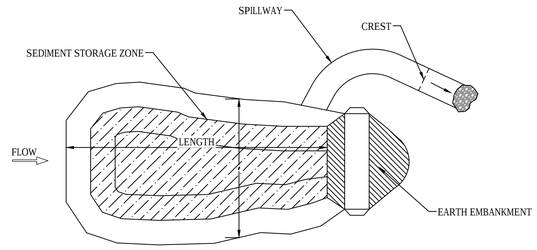
NTS



TEMPORARY CATCH DRAIN

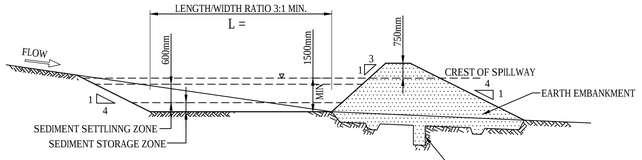
(MIN FALL 1%)

NTS



PLAN VIEW

N.T.S.

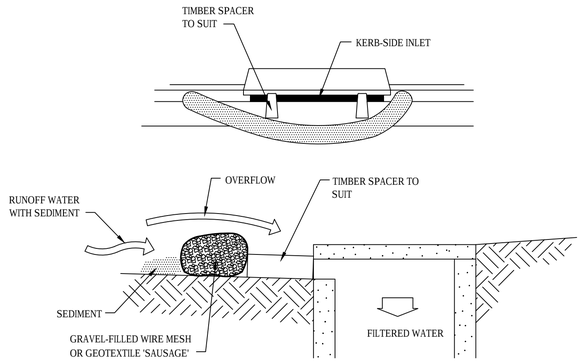


EARTH BASIN - WET TYPE F (SD 6-4)

N.T.S.

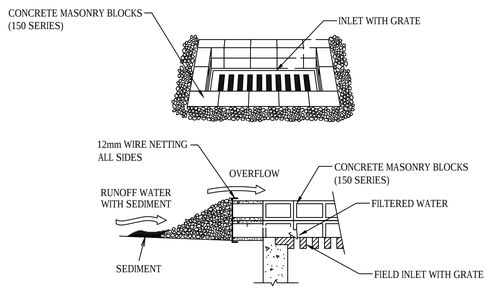
BASIN CONSTRUCTION NOTES:

1. REMOVE ALL VEGETATION AND TOPSOIL FROM BASIN AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1200mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT SPECIFIED IN THE SWMP TO 95% STANDARD PROCTOR DENSITY.
4. SELECT FILL ACCORDING TO THE DIRECTIONS OF THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OF FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING AT LEAST 100mm DEEP TO HELP BOND COMPACTED FILL TO EXISTING SUBSTRATE.
6. SPREAD FILL IN 100mm TO 1500mm LAYERS AND COMPACT AT OPTIMUM MOISTURE CONTENT.
7. CONSTRUCT EMERGENCY SPILLWAY.
8. PLACE A "FULL OF SEDIMENT" MARKER TO SHOW WHEN LESS THAN DESIGN CAPACITY OCCURS AND SEDIMENT REMOVAL IS REQUIRED.
9. SPILLWAY MAXIMUM BATTER SLOPE SHALL BE 4(H) : 1(V)



INLET SEDIMENT TRAP (SD 6-11)

NTS



FIELD INLET SEDIMENT TRAP

NTS

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. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBANS STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004.
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 SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (B) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
   (C) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
   (D) 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 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
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.

Issue	Description	Date
A	ISSUED FOR INFORMATION	07-07-20

Bar Scales

Client: BRICKWORKS LIMITED

Scales	AS SHOWN	Drawn	QD
		Designed	QD
Grid	MGA	Checked	SH
Height Datum	AHD	Approved	SH

Project: BRICKWORKS PLANT2 UPGRADE
780 WALLGROVE ROAD
HORSLEY PARK

Title: CONCEPT EROSION AND SEDIMENT CONTROL DETAILS & NOTES

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 9423 1055
www.atl.net.au
info@atl.net.au

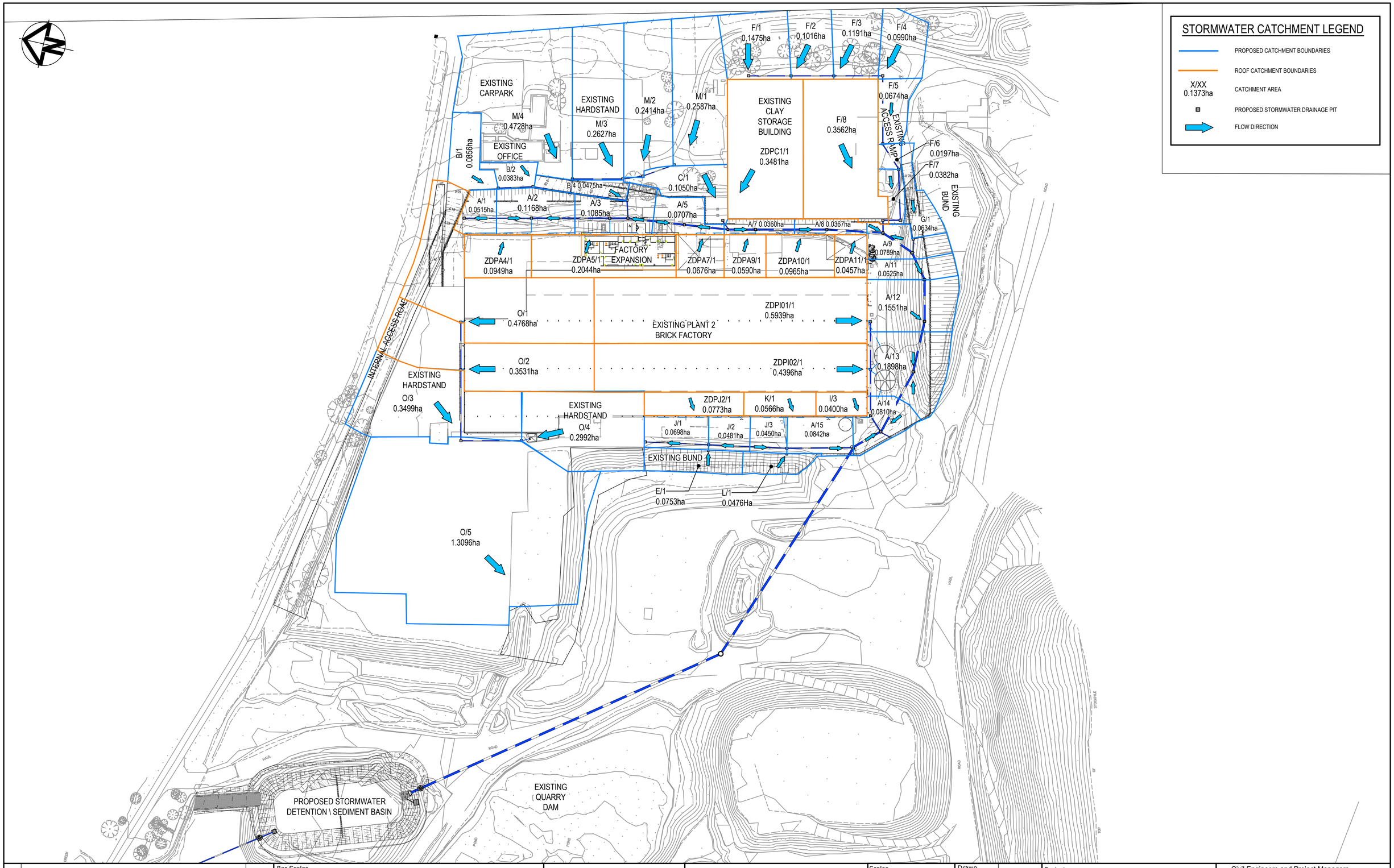
Status: FOR CC
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C076	18-577	A

100mm on Original

Date Plotted: 7 Jul 2020 - 04:02PM File Name: F:\18-577 Brickworks Plant 2\Drgs\Civil\Final\DA\C076.dwg



STORMWATER CATCHMENT LEGEND

- PROPOSED CATCHMENT BOUNDARIES
- ROOF CATCHMENT BOUNDARIES
- X/XX 0.1373ha — CATCHMENT AREA
- PROPOSED STORMWATER DRAINAGE PIT
- FLOW DIRECTION

Issue	Description	Date
D	ISSUED FOR TENDER	14-05-20
C	ISSUED FOR DEVELOPMENT APPROVAL	10-05-19
B	ISSUED FOR REVIEW	09-04-19
A	ISSUED FOR INFORMATION	03-11-18

Bar Scales

0 20 40 60 80 100m

1 : 1000 @ A1 1 : 2000 @ A3

Client: BRICKWORKS LIMITED

Scales: 1 : 1000

Grid: MGA

Height Datum: AHD

Drawn: QD

Designed: QD

Checked: SH

Approved: SH

Project: BRICKWORKS PLANT2 UPGRADE
780 WALLGROVE ROAD
HORSLEY PARK

Title: STORMWATER DRAINAGE CATCHMENT PLAN

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 9423 1055
www.atl.net.au
info@atl.net.au

Status: FOR TENDER
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
C050	18-577	D

100mm on Original

Date Plotted: 15 May 2020 - 11:42AM File Name: F:\18-577 Brickworks Plant 2\Drgs\Civil\Final\DA\C050.dwg