Blacktown City Council

Your ref: SSD-29668067
File no: MC-22-00003

13 July 2022

NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Recipient Delivery patrick.copas@dpie.nsw.gov.au.

Attention: Patrick Copas

Dear Mr Copas,

SSD-29668067 - Request for advice re: South Street Warehousing Estate – at 311 South Street, Marsden Park

Thank you for your correspondence dated 7 June 2022 requesting our advice on the Environmental Impact Statement for the proposed 'warehousing estate' at 311 South Street, Marsden Park which is a State Significant Development proposal under section 4.36 of the Environmental Planning and Assessment Act 1979.

The submitted Environmental Impact Statement has been reviewed by our officers and we object to the proposal due to issues relating to engineering, traffic, recreation park and design, biodiversity and building design. These issues are detailed in the 2 attachments to this letter.

We request that all the matters as detailed in the 2 attachments to this letter are comprehensively addressed and the information referred back to Council for further consideration and conditions before any determination is made by the Department.

If you would like to discuss this matter further, please contact Judith Portelli, our Manager Development Assessment, on 9839 6228.

Yours faithfully

Peter Conroy
Director City Planning and Development

Blacktown City Council's submission to SSD 29668067- South Street Warehousing Estate – at 311 South Street, Marsden Park

1. Engineering issues

Development Engineer

a. An engineering plans/stormwater concept plans are to demonstrate how the additional buildings will connect into the existing stormwater network within the adjoining public road via gravity fed system into the recently constructed downstream basin. Ensure up to date as-built survey information are obtained.

b. The development shall be designed to allow for the future roundabout in the south east corner of the site as per the Indicative Layout Plan.

c. The location of the service vehicle driveway shall be suitably located away from the future roundabout mentioned in the above point.

d. The development shall be designed in accordance with AS2890 parts 1,2 and 6.

e. Permanent on-lot stormwater quality measures are required for the new development footprint. Stormwater quality measures are to meet the requirements of Part J under the Council's DCP. This requirement may possibly be addressed through a Voluntary Contribution for stormwater quality treatment offsite as per DCP Part J subject to concurrence by Council's Drainage and Section 7.11 Team.

f. The application shall be designed to complement the as-built levels of the half road construction (Duckworth Place), adjoining development to the east of subject site, surrounding infrastructures including recently constructed downstream regional basin and the existing and ultimate design levels of South Street. An up-to-date site survey information may need to be carried out for recently completed basin work.

g. The collector road design (Duckworth Place) shall be amended to comply with Figure 5.3 Typical Industrial collector road cross section (24m wide) in Schedule 3 Marsden Park Industrial Precinct.

h. Height details of the retaining walls shall be revised to be consistent between the plan drawings and section details.

i. Bio-retention basins will require access ramps for maintenance and repair inside the basin. As such, suitable access ramps for servicing vehicles will need to be provided. These shall be designed in accordance with AS2890 part 2 for the largest service vehicle.

j. Typical overflow weir detail shall be amended to be suitable for the proposed depth of the bio-retention basins.

Drainage Engineer

1. The CIVIL ENGINEERING REPORT INCORPORATING WATER CYCLE MANAGEMENT STRATEGY Project No. Co14243.01 by Costin Roe Consulting Rev B is to be amended to address:
    a. On page 21 reference for tertiary treatment is to syphon activated filtration (cartridges). In fact, this treatment is through bioretention.
    b. On page 23 reference is made to the timing of Basin L1.1. This basin construction has been delayed and will not commence until late 2022. Consequently, depending upon the timing of this project that may be consent conditions limiting operation until the practical completion of this basin.
    c. At Section 6.4 Stormwater Harvesting on page 32 the second irrigation area refers to Tank 1 when it likely should refer to Tank 2.
    d. For area of irrigation confirmation that the 3300 m^2 proposed for each tank only nominates planter beds and not lawn areas.
2. Amended Landscape Plans are required from Site Image Drawing Number 0015 (C) that addresses the planting density and pot size for the bioretention species to be in accordance with Sheet 12 of Council's Water Sustainable Urban Design standard drawings.
3. Amended MUSIC modelling are required from Costin Roe Consulting Project No. Co14243.01 to address the following requirements:
    a. The MUSIC model is to be provided digitally for assessment by Council. Currently not provided.
    b. On the snapshot in the Costin Roe Report one of the links from CP4 to the bioretention basin 2 is missing which will likely affect performance.
    c. Review the landscape water usage for the Rain Water Tank as detailed above.
    d. Separate the rainwater tank into two.
    e. Review the area of the available bioretention filter media area for use in MUSIC based on the requirements of section 11.8.4 of the Water Sustainable Urban Design developer handbook for solar access to the plants. Shadows form the adjacent buildings and retaining walls are to be assessed. Include details in the report.
    f. Provide two separate and additional MUSIC models (pre and post) to demonstrate that the Stream Erosion Index (SEI) is less than 3.5 based on the technique in Chapter 13 of Council's Water Sustainable Urban Design developer handbook available on Council's website. The pre-development is to consider a vacant pervious block. Provide all calculations used to determine $Q_{critical}$.
4. Amended drainage Plans are required from Costin Roe Consulting Project No. Co14243.01 to address the following requirements:

a. Provide internal pipe long sections with 5% AEP HGL at least for the major lines. The head loss for the splitter pit from the 1050 mm pipe via the 450 pipe to Basin 1 needs to be considered.

b. On drawing SSDDA40 (H):

    i. Number all pits.

    ii. The sizing of the pipes in and out of the bio basins is suspect. For bio basin 1 there are two 450 mm and one 525 mm pipes into the system but only a single 450 mm pipe out. Outflow capacity is to be maintained assuming the basin is full.

    iii. The outlet pipe changes from 1050 to 1200 mm where the outflow from Basin 1 joins. It is unclear whether the 1200 mm is sized due to change of grade or allows for the additional flows from the basin even though not nominated. Review, noting the pipe in South Street likely to be lifted to meet requirements from other sections of Council.

    iv. The sizing of the pipes in and out of the bio basins is suspect. For bio basin 2 there is a 300 mm and a 750 mm pipes into the system but only a single 750 mm pipe out.

c. On drawing SSDDA41 (C) there are too many lines to clearly understand the main catchment breakup. Shade catchments 1 and 2 and the bypass using different colours. Notate and identify which bio basin is which.

d. On drawing SSDDA46 (C) delete the references to dissipaters to the bioretention basin. All inlets to the basins must comply with Detail 10 of WSUD standard drawing A(BS)175M.Provide detail.

e. On drawing SSDDA47 (B).

    i. The “Typical Bioretention Detail” is incorrect. The filter profile is to be as per Detail 2 of Council’s Water Sustainable Urban Design standard drawing A(BS)175M. Note subsoil pipes are 150 mm slotted PVC laid flat.

    ii. Delete the “Temporary Bio-Retention Protection Detail” as this is not required where the building works will be completed at the same time as the basin. If the building works are to be staged relative to the basins it shall be in accordance with Sheet 14 of Council’s WSUD standard drawing A(BS)175M.

    iii. It is unclear whether the “Typical Overflow Weir Detail” actually applies. A pipe overflow is shown on the plan SSDDA40 (H). All pipe outlets from the basins must comply with Detail 12 of Council’s Water Sustainable Urban Design standard drawing A(BS)175M.

    iv. Delete the “Basin Inlet Pit – BIP” as incorrect. All inlets to the basins must comply with Detail 10 of Water Sustainable Urban Design standard drawing A(BS)175M.

v. It is unclear how the “Typical Detail – Basin Clay Core and Embankment” actually applies as this would typically be used with a detention basin and contracts the “Typical Overflow Weir Detail”. Only one or perhaps neither should apply.

vi. There are errors in the Bioretention Notes.
1. The permeability noted is to be 250 mm/hr.
2. Delete the note regarding partial installation as does not apply in this case.
3. Delete the reference to amelioration of the top 100 mm of filter media and addition of fertiliser.

vii. Delete the flow spreader detail.

f. A detailed plan view at a large scale is required for each bioretention basin. This will include the provision of permeable concrete pipes and upflow pits generally as per Plan 1 on Sheet 3 of Council’s WSUD standard drawing A(BS)175M. Due to multiple inlet pipes a variation of the standard arrangement will be required, but the principles of pit location and equal distribution of flows across the basin is required. E.g. an interconnection with the inflow pits may be required and some inflow points may combine to use the same upflow pits. Show the subsoil layout.

Section 7.11 Infrastructure (refer to Attachment 2)

- The timing associated with the delivery of works need to be addressed. In particular, the Interim Stormwater Strategy should be revised to demonstrate how the first 42 mm of runoff will be ‘captured and diverted’, in the event that the downstream basin (L1.1) and diversion pipe (L4.1) has not yet been constructed.

  The Interim Stormwater Strategy will need to ensure that the first 42mm of runoff across all developed areas is captured within a retention basin (or tank) and diverted away from the protected conversation area. The Interim Stormwater Strategy needs to be consistent with the “Protecting Little Creek” Stormwater Management Strategy Report (Bligh Tanner, 2015). The corresponding size of the detention basin (or tank) needs to cater for both detention and retention volumes.

- Trunk Drainage 3600x900 RCBC is to be extended at 1% minimum grade to allow connection for proposed 1350dia pipe (approximate invert 35.25). Existing 825dia pipe and headwall are to be removed. Temporary head wall is to be constructed to match culvert invert.

- Proposed 1350dia pipe must be must comply with minimum cover requirements in accordance with *Blacktown City Council-Engineering Guide for Development* for both existing and ultimate South Street configurations.

- Approximate Tail water levels at proposed pit 6 should be:
  - 50%AEP RL 35.75
  - 20%AEP RL 36.35
  - 10%AEP RL 36.60
  - 5% AEP RL 36.95
  - 1%AEP RL 37.15

- Proposed pits (Pit1 – Pit6) shall allow for future extension to match future South Street road levels
- Proposed 1350dia pipe to have sufficient clearance from 132Kv feeder. Transgrid approval will be required
- Proposed alignment including but not limited to sag location along Duckworth Street to match existing half road construction.
- Proposed stormwater pit and pipe system shall be connected to the existing stormwater infrastructure
- Proposed Bioretention basin retaining wall heights (4.1m high max) are inconsistent with details (2.0m high max)
- Proposed construction is within TransGrid Easement. TransGrid approval will be required
- Proposed finished surface levels adjacent to South Street to be intergraded with South Street in both existing and ultimate South Street configurations.
- Proposed primary truck access to be integrated with future Indicative Layout Plan road. The Indicative Layout Plan indicates future 4-way roundabout. Private truck access should be clear of roundabout intersection.

2. Traffic issues

a. The proposed car entry/exit at the T-intersection opposite Delarue Street is prohibited for a commercial driveway in accordance with AS2890.1:2004 and must be relocated.

b. The proposed shared driveway for heavy vehicles and passenger vehicles located on the southern boundary of the site should be separated.

3. Recreation Park and Design issues

a. No walls or inaccessible level change is permitted at the interface of development, adjacent roads, public open space and drainage land:

- The proposed retaining walls and batters will impact on connectivity and aesthetics.

b. Verge improvements:

- Due to the visual impact of the proposed development, and the adjoining residential zoning, the provision of verge improvements along South Street and the future collector road are required. This is to include accessible footpaths and street trees.
- Please also consider that Transport for NSW have prepared preliminary drawings for South Street, indicating a 2.5m shared path within a 4.5m verge on both sides of the road.

c. Street trees:

- At the time of planting, street trees shall have a minimum container size of 75L
- Street trees shall be planted at a rate of one (1) tree per six (6) lineal metres of street frontage, even in cases where a site has more than one street frontage. Street tree planning shall be consistent with Council's Street Tree Masterplan and species lists

d. Vegetation:

- In addition to street trees, the provision of screening vegetation and trees within the project lot boundary should be considered to reduce visual impact on adjoining residential zoning is required.

e. Carparks:

- Open car parking areas should be landscaped to reduce the impact of hard paving. Established tall trees with wide-spreading foliage provide desirable shade and reduce the effects of heat in open car parking areas at a ratio of one (1) tree per three (3) carparks at minimum container size of 45L at time of planting.

f. Transmission line open space

- Consider the design of the transmission easement space, its future linkage with the RE1 zoning to the north, and future connectivity opportunities that this easement may provide to future residents.

4. Biodiversity issues

- An Arboricultural Assessment Report is required.

The arborist is to work with the applicant to determine whether any trees can be retained as part of this development. The applicant is requested to look at what measures they are going to use to retain existing trees on site, located notably in this case at the boundaries with adjoining lots and providing habitat to local native parrots. The report must also cover how the trees on neighbouring lots will be protected from impact during the works.

- A Biodiversity Management Plan (BMP) is required.

This is to comprise of a detailed site plan and an accompanying report in a legible format prepared by a person who has qualifications and experience in respect of ecology, to be submitted by the proponent for Council's consideration. The BMP is to relate to the land within the proposal Lots and must contain full details of the actions proposed to be taken with respect to the management of fauna during the course of carrying out the development. The BMP is to be consistent with the NSW Department of Planning, Industry and Environment "Code of Practice for injured, sick and orphaned protected fauna" 2011 (the Code). It must include the following:

- Biodiversity management strategies for pre-construction, construction and post construction activities including environmental control measures for the pre-clearing process.
- A fauna rescue and release procedure. A licensed\wildlife carer or ecologist will be required on site as a fauna handler ('Rescuer' under the Code) during tree removal works including the dead trees at the rear of the property which are currently providing hollows for native parrots.

- a release site within 100m of the site is to be nominated by the Project Ecologist prior to clearing
- All identified tree hollows in living and dead trees proposed to be removed on site, are to be salvaged and placed in retained or nearby bushland areas under the direction of an ecologist to Council's satisfaction. For all tree hollows, not able to be salvaged, they are to be replaced with nest boxes or artificial hollows with three nest boxes/artificial hollows for every one hollow removed.
- A procedure for controlling the introduction and spreading of weeds and pathogens, including hygiene protocols and the arrangements for monitoring;

- A Dam Dewatering Plan is required for any of the three on-site dams proposed to be removed for the proposal. This is to be submitted to Council's Natural Areas team for approval.

  The Dam Dewatering Plan is to outline how water on the site will be managed during discharge and must include the requirement for a suitably qualified ecologist to be present during dam dewatering. It must include:

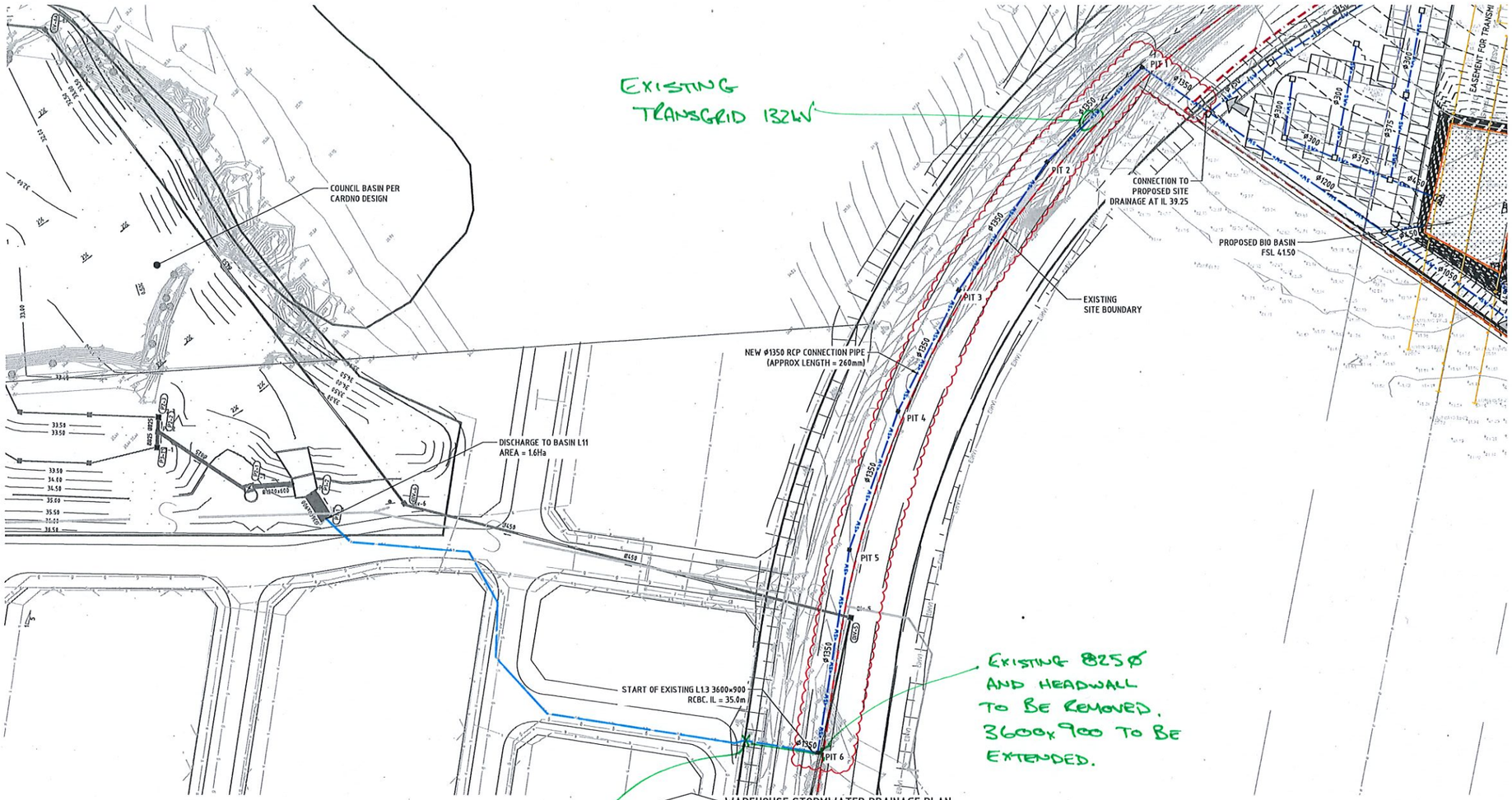
  - the proposed relocation sites for native fauna; Identification of the licence details required under the Fisheries Management Act 1994 and / or the Biodiversity Conservation Act 2016;
  - methods to prevent injury to fauna during pumping of water from the dam;
  - details of how exotic pest species will be humanely euthanised in a manner consistent with the Prevention of Cruelty to Animals Act 1979;
  - methods for disposing of dam water and preventing the spread of carp eggs, juvenile pest species or eggs;
  - details of the appropriate timing (season) for dewatering e.g., not while the black swans currently utilising the dam are nesting or rearing chicks; and
  - details on reporting of actions undertaken with tallies of fauna removed from the dam with details of their relocation destination (or destruction).

  Within 7 days of the works, the aquatic ecologist is to provide a report on the works, to be provided to Council through the Natural Areas Team.

5. Building design issues

g. The materials schedule nominated dark materials to the majority of the facades. It is recommended that lighter materials are used to reduce the impacts of urban heat island effects.

Attachment 2

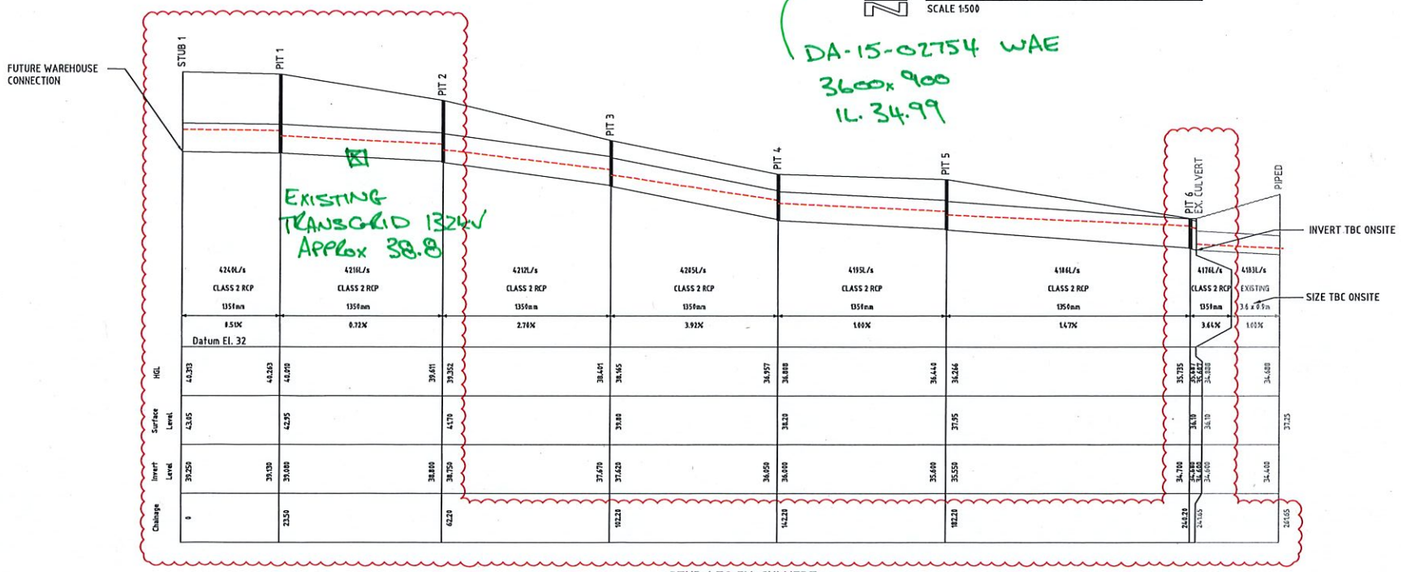


WAREHOUSE STORMWATER DRAINAGE PLAN
SCALE 1:500

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS TITLED SY074944.000.1.1 DATED 11/05/21.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- DRAINAGE LINE
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS



STUB 1 TO EX. CULVERT
SCALE 1:500 HORIZONTAL
SCALE 1:100 VERTICAL

NOTE:
H.G.L & FLOWRATE SHOWN FOR Q20 A.R.I STORM EVENT

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SIZE SHEET

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SIZE SHEET

FOR STATE SIGNIFICANT DEVELOPMENT APPILCATION

AMENDMENTS	DATE	ISSUE
REVISED AS CLOUDED	02.05.22	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	10.12.21	A

PROJECT MANAGER: ARCHILE PROJECTS
ARCHITECT: watson young
CLIENT: dexus

PROJECT: PROPOSED INDUSTRIAL DEVELOPMENT
SOUTH STREET, MARSDEN PARK

DESIGNED D.S. | DRAWN D.S. | DATE SEP '21 | CHECKED H.W. | SIZE A1 | SCALE AS SHOWN | CAD REF: 14243.01-SSDA49

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel (02) 8241-7900 Fax (02) 8241-8721
email: mail@costinroe.com.au

Costin Roe Consulting
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: ROAD STORMWATER PLAN & LONGSECTIONS
DRAWING No: Co14243.01-SSDA49 | ISSUE: B

WAREHOUSE 2A

VEHICULAR CROSSING IN ACCORDANCE TO BLACKTOWN CITY COUNCIL REQUIREMENTS TYPICAL

MATCH LINE

SITE BOUNDARY

DUCKWORTH STREET

EXISTING ROAD

SOUTH STREET

INTERSECTION AS T.B.C

DA-16-04983 WAE 525ø IL 41.59

EXISTING SAG DA-16-04983 WAE

DA.16.04983 WAE 375ø IL 41.10

INTERSECTION WITH SOUTH STREET T.B.C DURING DETAIL DESIGN

PROVIDE 900mm WIDE RAISED MEDIAN TO PROMOTE LEFT IN-LEFT OUT MANOEUVRES FROM THE PROPOSED CARPARK. EXTEND 2m MIN BEYOND DRIVEWAY SPLAY

DUCKWORTH STREET UPGRADE WORKS PLAN
SCALE 1:250

SITE KEY PLAN
NOT TO SCALE

SITE BOUNDARY
384.96 m (161° 13' 35")

SITE BOUNDARY
75.45m (272° 41' 25")

DUCKWORTH STREET UPGRADE WORKS PLAN
SCALE 1:250

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SIZE SHEET

FOR STATE SIGNIFICANT DEVELOPMENT APPILCATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	05.05.22	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	28.01.22	A

PROJECT MANAGER: ARCHILE PROJECTS
ARCHITECT: watson young
CLIENT: dexus

PROJECT: PROPOSED INDUSTRIAL DEVELOPMENT
SOUTH STREET, MARSDEN PARK

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF
D.S.	D.S.	SEP '21	H.W.	A0	AS SHOWN	14243.01-SSDA51

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 6 Windmill Street
Walsh Bay, Sydney NSW 2000
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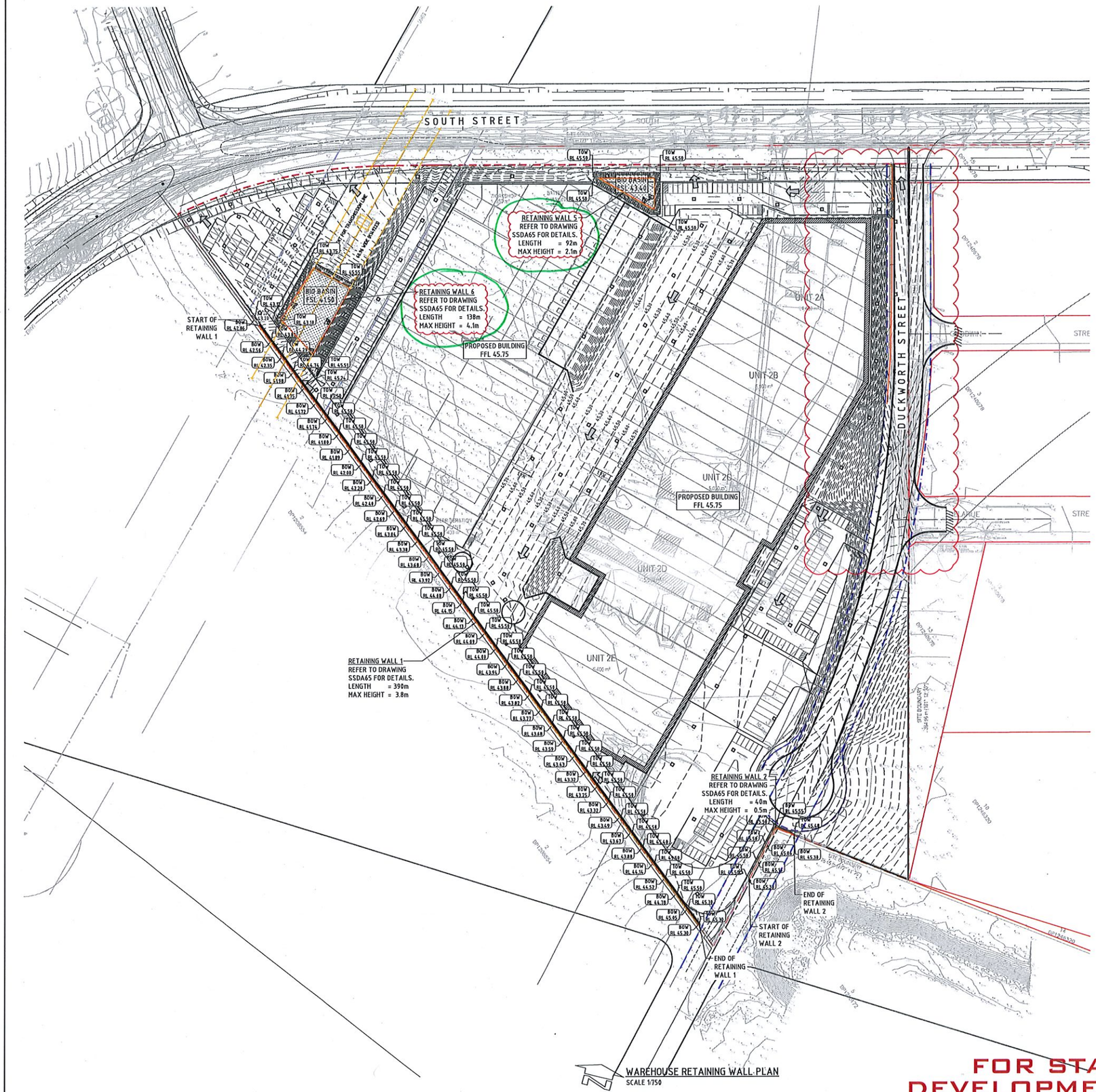
Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: DUCKWORTH STREET UPGRADE WORKS PLAN

DRAWING No: Co14243.01-SSDA51 ISSUE: B



WAREHOUSE RETAINING WALL PLAN
SCALE 1:750

LEVELS NOTE:

LEVELS SHOWN TO BE +/-500mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHEIVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

LEGEND:

LEVELS DATUM IS AHD.

- —50.00— — FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- —50.10— — FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- TOW RL 45.55 — TOW, TOP OF WALL
- BOW RL 45.55 — BOW, BOTTOM OF WALL

REINFORCED EARTH RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM HEIGHT (H) TO GEOGRID REINFORCEMENT LENGTH (L) TO BE 1.0.
3. MINIMUM BEARING CAPACITY OF FOUNDATION (BASED ON MINIMUM H/L RATIO OF 1.0) TO BE AS FOLLOWS :
   a. H MAX. 2.0m = 100 kPa
   b. H MAX. 3.5m = 150 kPa
   c. H MAX. 5.0m = 200 kPa

   BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
4. WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT, THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMDD AND PLACED WITHIN 2% OF OMC.
5. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O. ON PLAN:
   a. LIVE LOAD = 20 kPa
   b. DEAD LOAD = 5 kPa
   c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
6. THE GEOGRIDS SHALL BE OF THE TYPE AND INDEX STRENGTH NOMINATED ON THE DRAWINGS. THE MINIMUM GEOGRIDS SHALL BE A SINGLE LENGTH IN THE DIRECTION OF DESIGN TENSION, NOT LAPPED, MAKING PROVISION FOR CONNECTION TO THE FACING ACROSS THE WHOLE WIDTH OF THE FACING AND PROVIDING FOR THE SPECIFIED ANCHORAGE WITHIN THE DESIGNATED ANCHORAGE ZONE. GEOGRIDS SHALL COVER THE WHOLE OF THE PLAN AREA BEHIND THE WALL FOR THE SPECIFIED ANCHORAGE LENGTH AND SHALL BE LAPPED WITH ADJACENT SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm.
8. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
9. SELECT BACKFILL MATERIAL WITHIN THE REINFORCED SOIL BLOCK SHALL BE SOUND GRANULAR MATERIAL OF NATURAL OR INDUSTRIAL ORIGIN, NON-EXPANSIVE, FREE FROM ORGANIC OR OTHER DELETERIOUS MATERIAL CONFORMING TO THE PHYSICAL, CHEMICAL AND ELECTROCHEMICAL LIMITS AS SPECIFIED AND SHALL NOT BE SUBJECT TO BREAKDOWN UNDER COMPACTION. THE SELECT BACKFILL MATERIAL IS TO HAVE THE FOLLOWING PARAMETERS:
   a. MINIMUM INTERNAL FRICTION, Ø = 34°
   b. EFFECTIVE COHESION, C'= 0 kPa
   c. UNIT WEIGHT = 21 kN/m³
   d. PH BETWEEN 4 AND 9.
10. SELECT BACKFILL IS TO BE PLACED AND COMPACTED IN LAYERS NOT MORE THAN 300mm (LOOSE). COMPACTION TO NOT LESS THAN 100% SMDD WILL BE ACHIEVED AND MATERIAL PLACED WITHIN 2% OF OMC. DENSITY TESTING SHALL BE PERFORMED IN EACH COMPACTED LIFT IN ACCORDANCE WITH AS3798.
11. PROVIDE A DRAINAGE LAYER DIRECTLY BEHIND THE FACING UNITS IN A MINIMUM 300mm WIDE 12-20mm AGGREGATE LAYER. FACING UNIT VOIDS TO BE FILLED WITH AGGREGATE. PROVIDE 100mm MINIMUM AG. DRAIN IN GEOTEXTILE SOCK AT TOE OF WALL FACING AND CONNECT TO DRAINAGE SYSTEM AT 30m MAX. SPACING.
12. THE NEED FOR A CHIMNEY DRAIN OR DRAINAGE AT THE REAR OF THE MASS SOIL BLOCK IS TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER AND DESIGNER FOLLOWING PREPARATION OF THE FOUNDATION AND PRIOR TO CONSTRUCTION OF THE MASS SOIL BLOCK.
13. CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500KG STATIC WEIGHT IS TO BE KEPT BACK 1.5m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 1.5m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
14. ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES.
15. TOP OF WALL HEIGHTS ARE NOTED TO ALIGN WITH FINISHED PAVEMENT HEIGHTS. THE CONTRACTOR AND THEIR DESIGN AND CONSTRUCT WALLING CONTRACTORS ARE TO ENSURE THAT ALL WALL STRAPS ARE INSTALLED BELOW THE DESIGN EARTHWORKS SUBGRADE. CONTRACTOR TO ALLOW FOR WALL STRAPS TO BE GRADED AWAY FROM THE FACE OF THE WALL OR OTHERWISE INSTALLED TO SUIT EARTHWORKS DESIGN LEVELS AND GRADES.
16. DIFFERENTIAL SETTLEMENT NOTE:
    FUTURE BUILDING AND SERVICE DESIGNERS TO CONSIDER DIFFERENTIAL SETTLEMENT OF REINFORCED EARTH WALL BLOCK AND GENERAL FILL AREAS. PARTICULAR ATTENTION TO BE DRAWN TO HEAVILY LOADED AREAS, OR DIFFERING LOADED AREAS (INCLUDING SPRINKLER TANK AND TRUCK PAVEMENT AREAS) AND WHERE SIGNIFICANT CHANGES IN OVERALL WALL HEIGHT OR FILL AMOUNTS ARE EXPERIENCED. IT IS THE RESPONSIBILITY OF THE FUTURE DESIGNERS TO ENSURE APPROPRIATE DESIGN CONSIDERATION TO DIFFERENTIAL SETTLEMENT ARE MADE DEPENDING ON THE DESIGN ELEMENT AND INTERACTION WITH RETAINED ELEMENTS AND GENERAL FILL MATERIAL.

RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM BEARING CAPACITY OF FOUNDATION TO BE AS FOLLOWS :
   a. H MAX. 2.0m = 100 kPa
   b. H MAX. 3.5m = 150 kPa
   c. H MAX. 5.0m = 200 kPa

   BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
3. WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT, THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMDD AND PLACED WITHIN 2% OF OMC.
4. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O.
5. ON PLAN :
   a. LIVE LOAD = 20 kPa
   b. DEAD LOAD = 5 kPa
   c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
6. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm MINIMUM UNLESS NOTED OTHERWISE.
7. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
8. TIED WALLS ARE TO BE TEMPORARILY PROPPED AT TOP UNTIL SUCH TIME THE TOP OF WALL IS TIED TO THE SLAB AND 28-DAY CONCRETE STRENGTH HAS BEEN ACHIEVED.
9. CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500KG STATIC WEIGHT IS TO BE KEPT BACK 1.5m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 1.5m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
10. ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES.
11. WALL ELEVATIONS ALLOW FOR NOMINAL EMBEDMENT DEPTHS. WHERE DESIGN AND CONSTRUCT (D+C) WALL SYSTEMS ARE PROPOSED IT IS THE CONTACTORS RESPONSIBILITY TO ALLOW FOR THE FINAL EMBEDMENT DEPTHS AS PER THE D+C DESIGN. ALLOWANCE FOR OVERALL WALL AREAS TO CONSIDER THE FINAL EMBEDMENT DEPTH.
12. WALL ELEVATIONS AND AREAS ARE BASED ON THE VERTICAL PLAN AREA. CONTRACTOR TO ALLOW ADDITIONAL SURFACE AREA WHERE WALLS ARE NOT VERTICAL OR HAVE BACKSLOPES.

FOR STATE SIGNIFICANT DEVELOPMENT APPILCATION

6m 0 15 30 45 60 75m
SCALE 1:750 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
REVISED AS CLOUDED	15.05.22	D
REVISED AS CLOUDED	02.05.22	C
REVISED AS CLOUDED	28.01.22	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	10.12.21	A

PROJECT MANAGER: ARCHILE PROJECTS
ARCHITECT: watson young
CLIENT: dexus

PROJECT: PROPOSED INDUSTRIAL DEVELOPMENT
SOUTH STREET, MARSDEN PARK

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
D.S.	D.S.	SEP '21	N.V.	A0	AS SHOWN	14243.01-SSDA60

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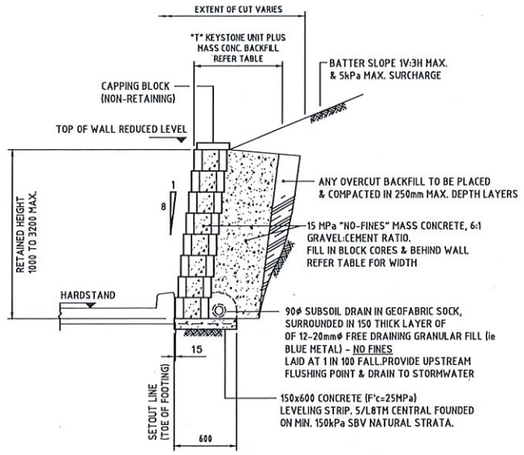
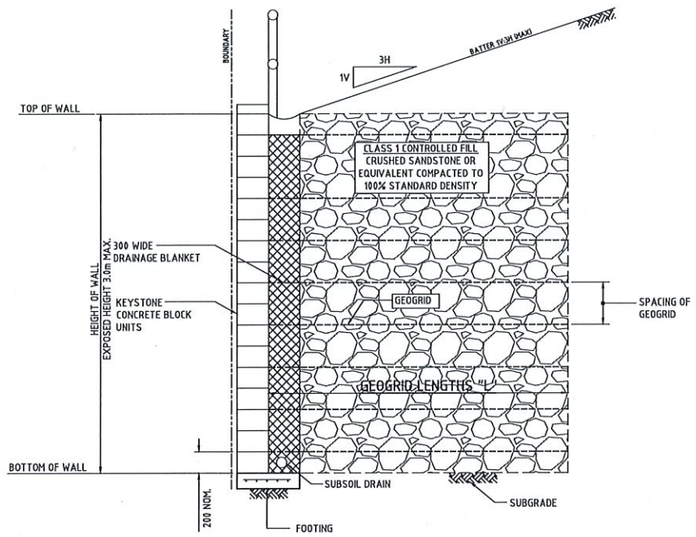
Costin Roe Consulting
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: WAREHOUSE RETAINING WALL PLAN
DRAWING No: Co14243.01-SSDA60 ISSUE: D



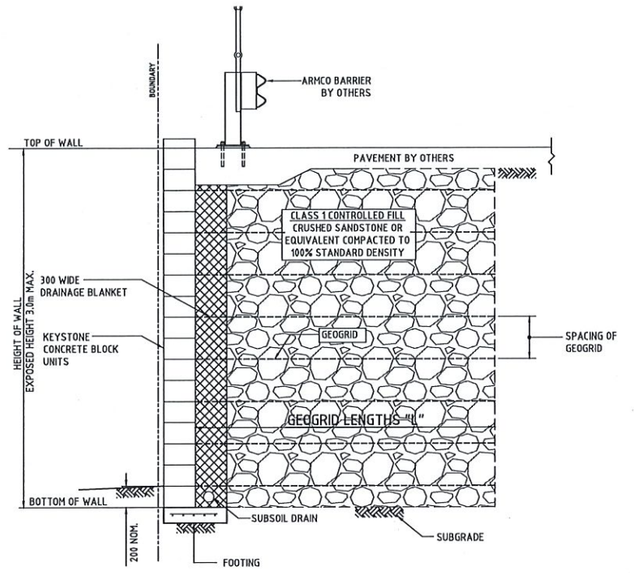
TYPICAL THRU' KEYSTONE RETAINING WALL
(1000 TO 2500 MAXIMUM RETAINED HEIGHT)

KEYSTONE WALL SPECIFICATIONS :	
RETAINED HEIGHT (mm)	OVERALL THICKNESS "T" (mm)
UP TO 1000	600 - NO FINES MASS. CONC. FILL
1000 TO 1200	700 - NO FINES MASS. CONC. FILL
1200 TO 1800	950 - NO FINES MASS. CONC. FILL
1800 TO 2400	1200 - NO FINES MASS. CONC. FILL
2400 TO 2500	1450 - NO FINES MASS. CONC. FILL



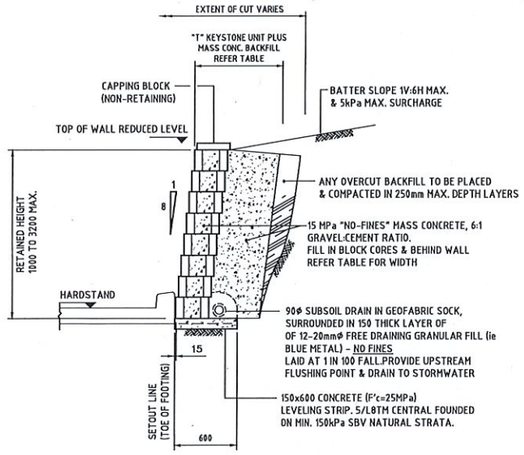
RETAINING WALL TYPE 1
(REINFORCED EARTH WALL)
SCALE 1:20

REINFORCED EARTH RETAINING WALL STRUCTURAL DESIGN TO UCBC DETAILS.



RETAINING WALL TYPE 2
(REINFORCED EARTH WALL)
SCALE 1:20

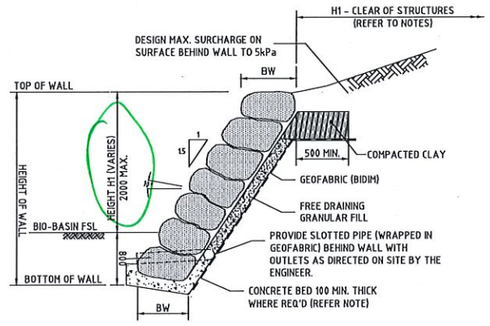
REINFORCED EARTH RETAINING WALL STRUCTURAL DESIGN TO UCBC DETAILS.



TYPICAL THRU' KEYSTONE RETAINING WALL
(1000 TO 2500 MAXIMUM RETAINED HEIGHT)

KEYSTONE WALL SPECIFICATIONS :	
RETAINED HEIGHT (mm)	OVERALL THICKNESS "T" (mm)
UP TO 1200	600 - NO FINES MASS. CONC. FILL
1200 TO 1600	750 - NO FINES MASS. CONC. FILL
1600 TO 2000	900 - NO FINES MASS. CONC. FILL
2000 TO 2400	1050 - NO FINES MASS. CONC. FILL
2400 TO 2500	1250 - NO FINES MASS. CONC. FILL

WALL DIMENSIONS	
HEIGHT H1	BW
500	500
1000	700
1500	800
2000	900



RETAINING WALL
(BIO-RETENTION BASIN BOULDER RETAINING WALL)
SCALE 1:20

BOULDER RETAINING WALL NOTES

MINIMUM BEARING CAPACITY OF FOUNDATION TO BE 100kPa ASSUMING THE FOLLOWING:
- CLAY FOUNDATION Cu=50kPa, ϕ=0

SLIDING STABILITY IS BASED ON THE FOLLOWING
- FRICTION ANGLE OF BOULDER WALL : NOT LESS THAN 40°
- EFFECTIVE FRICTION ANGLE OF SOIL SUBGRADE: NOT LESS THAN 30° FOR SOIL OR 35° FOR ROCK

SOIL AND ROCK DESIGN PARAMETERS SHALL BE CONFIRMED BY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF BOULDERS OR CONCRETE BED.

BOULDERS TO BE A NOMINAL 750mm DIA. (400mm DIA. UP TO 800mm DIA.) PLACED ON THEIR BROADEST BASE. BOULDERS TO BE PLACED IN AN INTERLOCKING ARRANGEMENT ON THE CONTACT SURFACES DIPPING TOWARDS BACK OF THE WALL AT 10° AND SHALL BE INSPECTED BY THE ENGINEER DURING CONSTRUCTION

DENSITY OF INDIVIDUAL BOULDERS SHALL BE MINIMUM 2.5 TONNES/m

FOR WALLS ABOVE 1000mm IN HEIGHT, THE FIRST LAYER OF BOULDERS ARE TO SET IN A BED OF N15 CONCRETE AND THE JOINTS BETWEEN SHALL BE FILLED WITH CONCRETE TO A LEVEL EQUAL TO THE SURFACE LEVEL OF THE TOE OF THE WALL.

NO STRUCTURE TO BE BUILT WITHIN H1 FROM THE BACK OF THE TOP OF THE WALL (WHERE H1=HEIGHT OF WALL), UNLESS THE STRUCTURE IS FOUNDED ON ROCK WITH SBV>150kPA

CONSTRUCTION METHODS AND SEQUENCE TO ENSURE THAT DESIGN MAX. SURCHARGE OF 5kPa IS NOT EXCEEDED.

CONSTRUCTION TO BE IN ACCORDANCE WITH AS 4678:2002

FOR STATE SIGNIFICANT DEVELOPMENT APPILCATION

6m 0 15 30 45 60 75m
SCALE 1:750 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
REVISED AS CLOUDED	02.05.22	B
ISSUED FOR STATE SIGNIFICANT DEVELOPMENT APPLICATION	10.12.21	A

PROJECT MANAGER: ARCHILE PROJECTS
ARCHITECT: watson young
CLIENT: dexus

PROJECT: PROPOSED INDUSTRIAL DEVELOPMENT
SOUTH STREET, MARSDEN PARK

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
D.S.	D.S.	SEP '21	H.W.	A1	AS SHOWN	14243.01-SSDA65

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Costin Roe Consulting
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: WAREHOUSE RETAINING WALL DETAILS
DRAWING No: Co14243.01-SSDA65 | ISSUE: B

A1

NOTE:
ALL WORKS, UNLESS OTHERWISE MARKED, ARE GENERALLY BUILT IN ACCORDANCE WITH THE CERTIFIED DESIGN

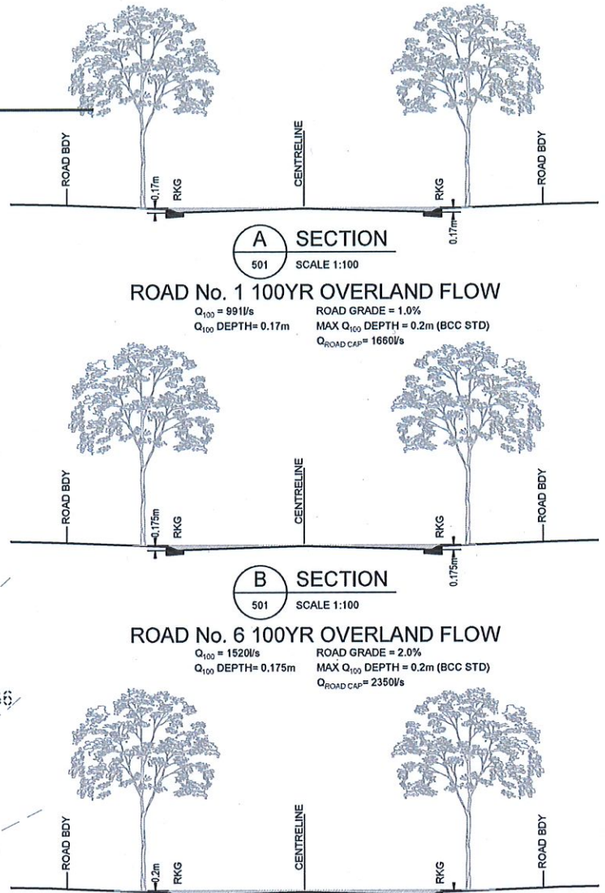
FOR CONTINUATION SEE DRG. No.015-15C-CC-501
WAE [03 $(-,??)

ROAD No.1
ROAD No.5
ROAD No.6
ROAD No.7
ACCESSWAY No.1
EXISTING DAM
FUTURE ROAD
SOUTH STREET

42 D.P.262886
44 D.P.262886
33 D.P.262886
32 D.P.262886

BM P.M.57781
R.L.39.336 (A.H.D.)

EXISTING P25Ø PIPE CULVERT



A 501 SECTION
SCALE 1:100

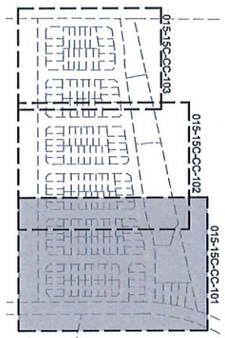
ROAD No. 1 100YR OVERLAND FLOW
Q_{100} = 991l/s
Q_{100} DEPTH= 0.17m
ROAD GRADE = 1.0%
MAX Q_{100} DEPTH = 0.2m (BCC STD)
$Q_{ROAD\ CAP}$= 1660l/s

B 501 SECTION
SCALE 1:100

ROAD No. 6 100YR OVERLAND FLOW
Q_{100} = 1520l/s
Q_{100} DEPTH= 0.175m
ROAD GRADE = 2.0%
MAX Q_{100} DEPTH = 0.2m (BCC STD)
$Q_{ROAD\ CAP}$= 2350l/s

C 501 SECTION
SCALE 1:100

ROAD No. 7 100YR OVERLAND FLOW
Q_{100} = 1660l/s
Q_{100} DEPTH= 0.2m
ROAD GRADE = 1.0%
MAX Q_{100} DEPTH = 0.2m (BCC STD)
$Q_{ROAD\ CAP}$= 1660l/s



KEY PLAN
NOT TO SCALE

PLAN
SCALE 1:500

0 1 2 3 4 6 8 10m
1:100
0 5 10 15 20 30 40 50m
1:500

CRAIG & RHODES
I hereby certify that engineering works shown on this plan have been constructed generally in accordance with Construction Certificate issued by Blacktown City Council.
WORK AS EXECUTED
MATTHEW COOPER
REGISTERED SURVEYOR
JOB REF.: 015-15
DATE: January 2018
FILE LOCATION: Z:\015-15\CR_PLANS\WAE\Dwgs
DWG REF.: 015-15C-CC-501 WAE [03]
SHEET REF.: D

These plans are referred to in certificate no 14516 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
LAND DEVELOPMENT CERTIFICATES
www.Ldcerts.com.au

CONSTRUCTION CERTIFICATE– WORK AS EXECUTED

REV	DATE	AMENDMENT DESCRIPTION
D	10.07.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
C	22.06.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
B	26.04.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
A	14.02.17	ISSUED FOR CONSTRUCTION CERTIFICATE

DIAL 1100 BEFORE YOU DIG

Project:
PROPOSED SUBDIVISION OF
LOT 43 D.P.262886
372 SOUTH STREET, MARSDEN PARK

Principal: BLUE CEDAR MF DEVELOPMENT PTY LTD
Scale: AS SHOWN @ A1
Date: 14.02.17
Council Ref.: DA-15-02754
Datum: AHD
L.G.A.: BLACKTOWN CITY COUNCIL
Cad's: M.P.
Drawn: F.K.
Proj.Man.: T.N.
Client Ref.:

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EPPING NSW 1710
ACN 050 209 991
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reception@crhodes.com.au
www.craigandrhodes.com.au

90th ANNIVERSARY

APPROVED COMPANY
ISO 9001 Quality Management Systems
QMS Certification Services

Drawing Title: INTERNAL CATCHMENT PLAN
SHEET 1 OF 3

C&R Ref.: 015-15
Drawing Ref.: 015-15C-CC-501
Revision: D

A1

CRAIG& RHODES

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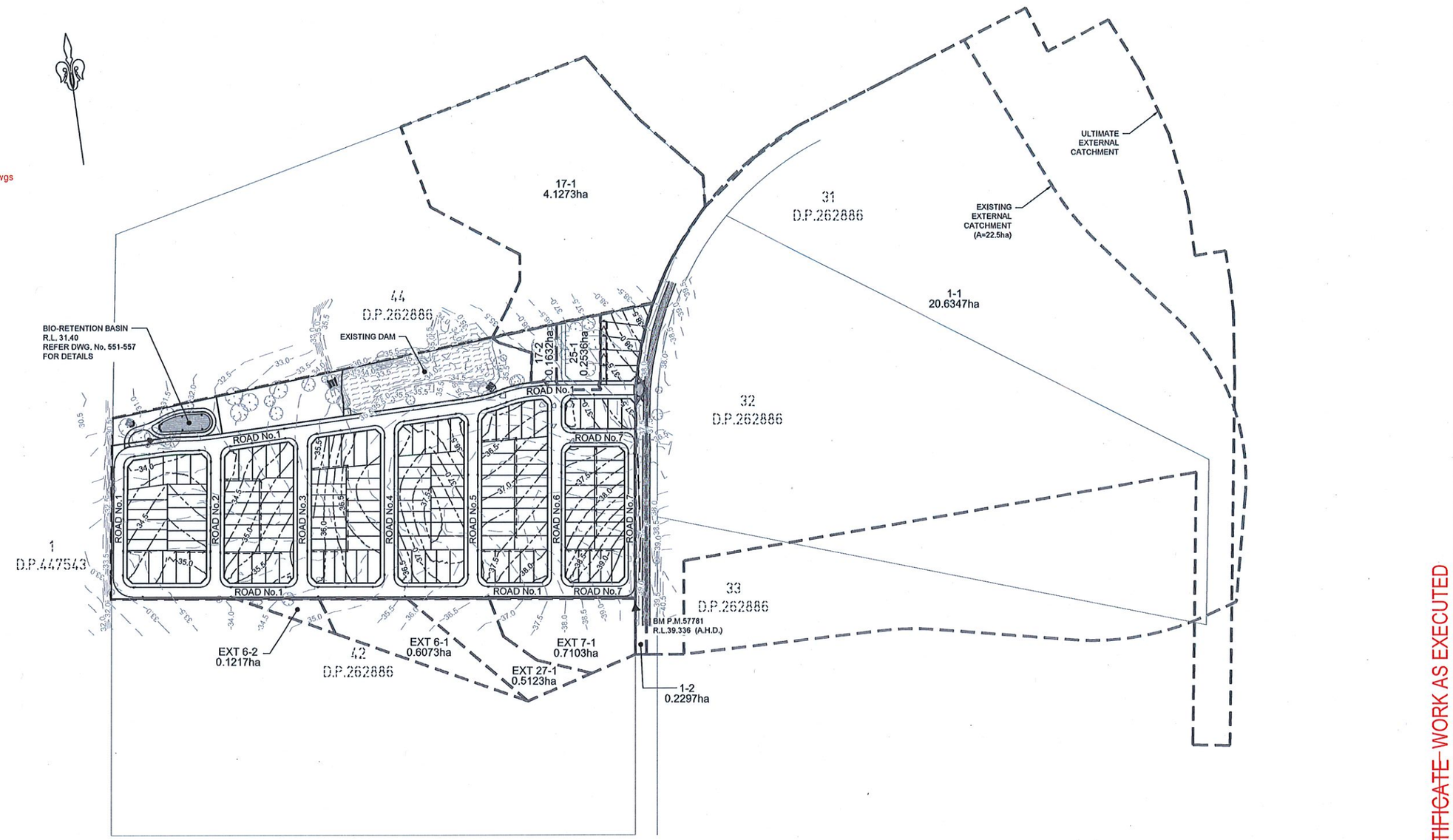
WORK AS EXECUTED

MATTHEW COOPER
REGISTERED SURVEYOR
JOB REF.: 015-15
DATE: January 2018
FILE LOCATION: Z:\015-15\CR_PLANS\WAE\Dwgs
DWG REF.: 015-15C-CC-504 WAE [04]
SHEET REF.: D



PLAN
SCALE 1:2000

NOTE:
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Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
LAND DEVELOPMENT CERTIFICATES
www.Ldcerts.com.au

0 20 40 60 80 120 160 200m
1:2000

CONSTRUCTION CERTIFICATE - WORK AS EXECUTED

REV	DATE	AMENDMENT DESCRIPTION
D	10.07.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
C	22.06.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
B	26.04.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
A	14.02.17	ISSUED FOR CONSTRUCTION CERTIFICATE

DIAL 1100 BEFORE YOU DIG

Project:
PROPOSED SUBDIVISION OF
LOT 43 D.P.262886
372 SOUTH STREET, MARSDEN PARK

Principal: BLUE CEDAR MF DEVELOPMENT PTY LTD

Scale	AS SHOWN @ A1	Date	14.02.17	Council Ref.	DA-15-02754
		Datum	AHD	L.G.A.	BLACKTOWN CITY COUNCIL
Calc's	M.P.	Drawn.	F.K.	Proj.Man.	T.N.
				Client Ref.	

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90th ANNIVERSARY

APPROVED COMPANY ISO 9001 Quality Management Systems QMS

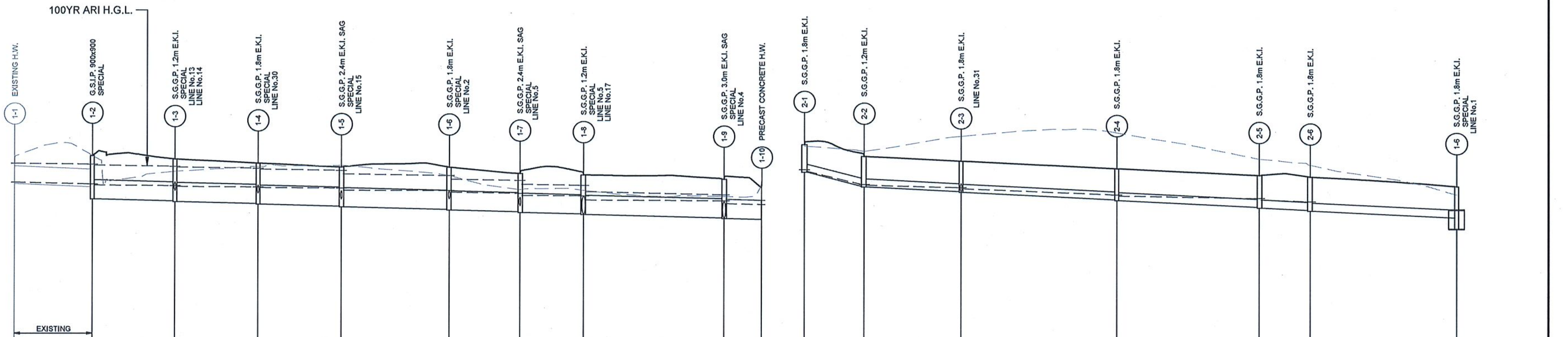
Drawing Title: EXTERNAL CATCHMENT PLAN

C&R Ref.	Drawing Ref.	Revision
015-15	015-15C-CC-504	D

A1

NOTE:

- FOR SPECIAL PIT DETAILS REFER TO DWG. No. 531 - 544.



LINE No.1

DATUM R.L 16.0

	1-1 to 1-2	1-2 to 1-3	1-3 to 1-4	1-4 to 1-5	1-5 to 1-6	1-6 to 1-7	1-7 to 1-8	1-8 to 1-9	1-9 to 1-10
PIPE VELOCITY (m/s)	3.62	2.87	2.68	2.48	2.5	2.39	2.59	3.53	3.72
DISCHARGE (cu.m/s)	6.747	6.81	6.876	6.968	7.007	7.219	7.371	8.655	9.271
PIPE SIZE (mm) & CLASS	825RRJ C2	3600x900RCBC	3600x900RCBC	3600x900RCBC	3600x900RCBC	3600x900RCBC	3600x900RCBC	3600x900RCBC	3600x900RCBC
DESIGN GRADE	0.86%	0.5% ~~0.5%~~	0.7% ~~0.5%~~	0.6% ~~0.5%~~	1% ~~0.5%~~	0.5% ~~0.5%~~	0.7% ~~0.5%~~	0.6% ~~0.5%~~	0.6% ~~0.5%~~
PIPE CHAINAGE (length)	18.47	19.546	19.65	19.6	25.444	16.676	15.042	33.1	8.939

	1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10
DEPTH TO INVERT	1.27	1.46 / 2.031	1.971 / 2.001	1.897 / 1.927	1.842 / 1.872	1.978 / 2.008	1.798 / 1.828	1.834 / 1.864	1.806 / 1.836	0.9
H.G.L. LEVEL	35.787	35.705 / 35.658	35.617 / 35.584	35.552 / 35.523	35.503 / 35.395	35.379 / 35.298	35.242 / 35.136	35.121 / 34.922	34.871 / 34.738	34.7
INVERT LEVEL	35.73	34.99 ~~35.571~~ / 35	34.88 ~~34.902~~ / 34.872	34.74 ~~34.774~~ / 34.744	34.6 ~~34.646~~ / 34.616	34.3 ~~34.489~~ / 34.459	34.3 ~~34.375~~ / 34.345	34.2 ~~34.27~~ / ~~34.24~~ 34.19	34.0 ~~34.075~~ / ~~34.045~~ 33.98	33.93 ~~34~~ / 34
SURFACE LEVEL	37	37.031	~~36.873~~ 36.8	~~36.671~~ 36.6	~~36.488~~ 36.44	~~36.467~~ 36.39	~~36.173~~ 36.18	~~36.104~~ 36.06	35.881	34.9
ROAD CHAINAGE		68.957	54.751	35.1	15.501	150.5	167.176	98.36	130.105	
PIPE CHAINAGE	0	18.47	38.017	57.667	77.267	102.71	119.386	134.428	167.527	176.466

LINE No.2

DATUM R.L 17.0

	2-1 to 2-2	2-2 to 2-3	2-3 to 2-4	2-4 to 2-5	2-5 to 2-6	2-6 to 1-6
PIPE VELOCITY (m/s)	1.87	1.2	1.71	1.89	1.42	1.72
DISCHARGE (cu.m/s)	0.016	0.022	0.08	0.119	0.157	0.19
PIPE SIZE (mm) & CLASS	375RRJ C2	375RRJ C2	375RRJ C2	375RRJ C2	375RRJ C2	375RRJ C2
DESIGN GRADE	3.5% ~~4.71%~~	1.4% ~~1%~~	1.1% ~~1%~~	1%	0.8% ~~1%~~	2.7% ~~1%~~
PIPE CHAINAGE (length)	14.074	22.874	36.9	33.6	11.993	34.55

	2-1	2-2	2-3	2-4	2-5	2-6	1-6
DEPTH TO INVERT	1.296	1.401 / 1.431	1.429 / 1.459	1.459 / 1.489	1.489 / 1.519	1.56 / 1.59	1.47 / 2.008
H.G.L. LEVEL	37.258	36.629 / 36.6	36.473 / 36.421	36.119 / 36.066	35.936 / 35.862	35.782 / 35.715	35.379 / 35.298
INVERT LEVEL	~~37.209~~ 37.13	36.63 ~~36.546~~ / ~~36.516~~ 36.61	36.3 ~~36.287~~ / ~~36.257~~ 36.28	35.88 ~~35.080~~ / ~~35.050~~ 35.85	35.52 ~~35.522~~ / ~~35.492~~ 35.49	35.39 ~~35.372~~ / ~~35.342~~ 35.38	34.46 ~~34.997~~ / ~~34.459~~ 34.39
SURFACE LEVEL	~~38.505~~ 38.5	~~37.947~~ 37.99	~~37.716~~ 37.74	~~37.347~~ 37.35	~~37.011~~ 36.96	~~36.932~~ 36.9	~~36.467~~ 36.39
ROAD CHAINAGE	254.128	14.649	37.523	74.423	108.023	115.95	150.5
PIPE CHAINAGE	0	14.074	36.948	73.848	107.448	119.441	153.991

STORMWATER DRAINAGE LONGITUDINAL SECTIONS

HORIZONTAL SCALE - 1:500
VERTICAL SCALE - 1:100

CRAIG& RHODES

I hereby certify that engineering works shown on this plan have been constructed generally in accordance with Construction Certificate issued by Blacktown City Council.

WORK AS EXECUTED

MATTHEW COOPER
REGISTERED SURVEYOR
JOB REF.: 015-15
DATE: January 2018
FILE LOCATION: Z:\015-15\CR_PLANS\WAE\Dwgs
DWG REF.: 015-15C-CC-511 WAE [03]
SHEET REF.: D

NOTE:
ALL WORKS, UNLESS OTHERWISE MARKED, ARE GENERALLY BUILT IN ACCORDANCE WITH THE CERTIFIED DESIGN

These plans are referred to in certificate no 14516 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
LAND DEVELOPMENT CERTIFICATES
www.Ldcerts.com.au

0 1 2 3 4 6 8 10m — 1:100
0 5 10 15 20 30 40 50m — 1:500

~~CONSTRUCTION CERTIFICATE~~ WORK AS EXECUTED

REV	DATE	AMENDMENT DESCRIPTION
D	10.07.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
C	22.06.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
B	26.04.17	RE-ISSUED FOR CONSTRUCTION CERTIFICATE
A	14.02.17	ISSUED FOR CONSTRUCTION CERTIFICATE

DIAL 1100 BEFORE YOU DIG

Project: PROPOSED SUBDIVISION OF LOT 43 D.P.262886, 372 SOUTH STREET, MARSDEN PARK

Principal: BLUE CEDAR MF DEVELOPMENT PTY LTD

Scale	AS SHOWN @A1	Date	14.02.17	Council Ref.	DA-15-02754
		Datum	AHD	L.G.A.	BLACKTOWN CITY COUNCIL
Calc's	M.P.	Drawn. F.K.	Proj.Man. T.N.	Client Ref.	

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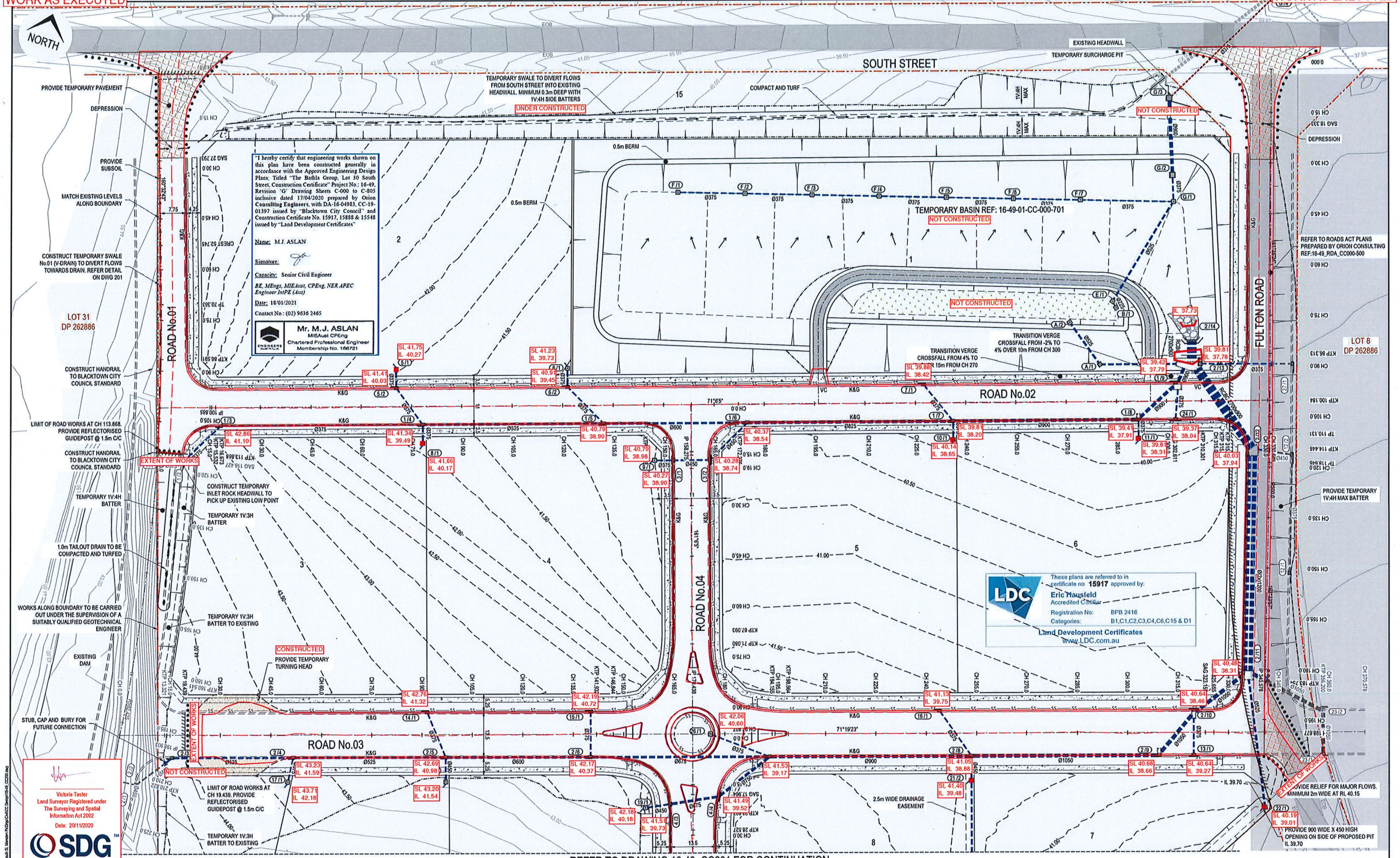
www.craigandrhodes.com.au

Drawing Title: DRAINAGE LONGITUDINAL SECTIONS
SHEET 1 OF 10

C&R Ref. 015-15 | Drawing Ref. 015-15C-CC-511 | Revision D

WORK AS EXECUTED



NORTH
SOUTH STREET
FULTON ROAD
ROAD No.01
ROAD No.02
ROAD No.03
ROAD No.04
LOT 31
DP 262886
LOT 8
DP 262886
PROVIDE TEMPORARY PAVEMENT
DEPRESSION
PROVIDE SUBSOIL
MATCH EXISTING LEVELS ALONG BOUNDARY
CONSTRUCT TEMPORARY SWALE No.01 (V-DRAIN) TO DIVERT FLOWS TOWARDS DRAIN. REFER DETAIL ON DWG 201
CONSTRUCT HANDRAIL TO BLACKTOWN CITY COUNCIL STANDARD
LIMIT OF ROAD WORKS AT CH 113.868. PROVIDE REFLECTORISED GUIDEPOST @ 1.5m C/C
EXTENT OF WORKS
TEMPORARY 1V:4H BATTER
CONSTRUCT TEMPORARY INLET ROCK HEADWALL TO PICK UP EXISTING LOW POINT
TEMPORARY 1V:3H BATTER
1.0m TAILOUT DRAIN TO BE COMPACTED AND TURFED
WORKS ALONG BOUNDARY TO BE CARRIED OUT UNDER THE SUPERVISION OF A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER
TEMPORARY 1V:3H BATTER TO EXISTING
EXISTING DAM
STUB, CAP AND BURY FOR FUTURE CONNECTION
CONSTRUCTED
PROVIDE TEMPORARY TURNING HEAD
NOT CONSTRUCTED
LIMIT OF ROAD WORKS AT CH 19.439. PROVIDE REFLECTORISED GUIDEPOST @ 1.5m C/C
TEMPORARY SWALE TO DIVERT FLOWS FROM SOUTH STREET INTO EXISTING HEADWALL. MINIMUM 0.3m DEEP WITH 1V:4H SIDE BATTERS
UNDER CONSTRUCTED
COMPACT AND TURF
EXISTING HEADWALL
TEMPORARY SURCHARGE PIT
TEMPORARY BASIN REF: 16-49-01-CC-000-701
TRANSITION VERGE CROSSFALL FROM 4% TO 2% OVER 15m FROM CH 270
TRANSITION VERGE CROSSFALL FROM -2% TO 4% OVER 10m FROM CH 300
REFER TO ROADS ACT PLANS PREPARED BY ORION CONSULTING REF:16-49_RDA_CC000-500
PROVIDE TEMPORARY 1V:4H MAX BATTER
2.5m WIDE DRAINAGE EASEMENT
PROVIDE RELIEF FOR MAJOR FLOWS. MINIMUM 2m WIDE AT RL 40.15
PROVIDE 900 WIDE X 450 HIGH OPENING ON SIDE OF PROPOSED PIT IL 39.70
These plans are referred to in certificate no 15917 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.LDC.com.au
Victoria Tester
Land Surveyor Registered under The Surveying and Spatial Information Act 2002
Date: 20/11/2020
SDG
LAND DEVELOPMENT SOLUTIONS
A.B.N. 85 213 523 621
REF: 7569

"I hereby certify that engineering works shown on this plan have been constructed generally in accordance with the Approved Engineering Design Plans; Titled "The Bathla Group, Lot 30 South Street, Construction Certificate" Project No.: 16-49, Revision 'G' Drawing Sheets C-000 to C-805 inclusive dated 17/04/2020 prepared by Orion Consulting Engineers, with DA-16-04983, CC-19-01397 issued by "Blacktown City Council" and Construction Certificate No. 15917, 15888 & 15548 issued by "Land Development Certificates"

Name: M.J. ASLAN

Signature:

Capacity: Senior Civil Engineer

BE, MEngs, MIEAust, CPEng, NER APEC Engineer IntPE (Aus)

Date: 18/01/2021

Contact No.: (02) 9636 2465

Mr. M.J. ASLAN
MIEAust CPEng
Chartered Professional Engineer
Membership No. 166721

REFER TO DRAWING 16-49_CC201 FOR CONTINUATION

ISSUED FOR CONSTRUCTION CERTIFICATE

Revision	Drawn	Design	Appd.	Date	Revision Description
B	MG	MP	SM	06/02/2019	REVISED TO SUIT CERTIFIER COMMENTS
C	BT	MP	-	13/03/2019	ROAD No.01 FORMATION AND PAVEMENT UPDATES
D	MG	MP	MP	03/09/2019	AMENDMENTS AS PER LDC COMMENTS
E	MG	MP	MP	28/11/2019	AMENDMENTS AS PER LDC COMMENTS
F	MG	MP	MP	11/03/2020	TEMPORARY BASIN LEVELS ADJUSTED
G	MG	MP	MP	17/04/2020	AMENDMENTS AS PER LDC COMMENTS
First Issue	MG	MP	SM	05/10/2018	

Scale: 0 5 10 15 20 25 30 35 40 45 50 — SCALE 1:500 (A1) — SCALE 1:1000 (A3)

For: The Bathla Group

By: Orion Consulting Engineers
CONSULT AUSTRALIA Member Firm
ABN:25 604 069 981 PO Box:7936, BAULKHAM HILLS NSW 2153 T:(02) 8660 0035 E:info@orionconsulting.com.au

Project: LOT 30 SOUTH STREET, MARSDEN PARK ROAD & DRAINAGE DESIGN

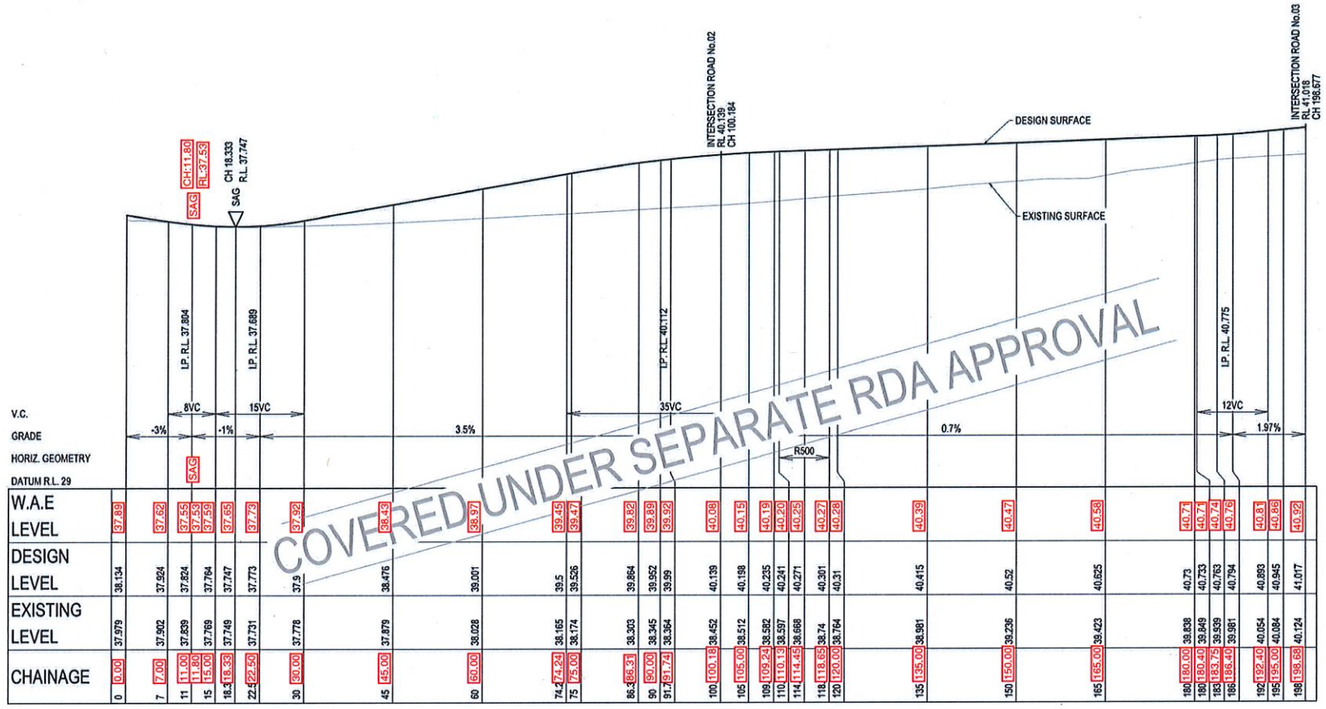
Title: ENGINEERING PLAN SHEET 01 OF 02

Project No. 16-49
Milestone CC
Plan 200
Revision G

WORK AS EXECUTED
WORK AS EXECUTED
WORK AS EXECUTED

WORK AS EXECUTED

WORK AS EXECUTED



LONGITUDINAL SECTION - FULTON ROAD (ULTIMATE)

SCALE 1:500 (H)
SCALE 1:100 (V)

FULTON ROAD APPROVAL BY BLACKTOWN CITY COUNCIL AS PART OF S318 ROADS ACT

"I hereby certify that engineering works shown on this plan have been constructed generally in accordance with the Approved Engineering Design Plans; Titled "The Bathla Group Lot 30 South Street, Construction Certificate" Project No.: 16-49, Revision 'G' Drawing Sheets C-000 to C-805 inclusive dated 17/04/2020 prepared by Orion Consulting Engineers, with DA-16-04983, CC-19-01397 issued by "Blacktown City Council" and Construction Certificate No. 15917, 15888 & 15548 issued by "Land Development Certificates"

Name: M.J. ASLAN

Signature:

Capacity: Senior Civil Engineer

BE, MEngg, MIEAust, CPEng, NER APEC Engineer IntPE (Aus)

Date: 18/01/2021

Contact No.: (02) 9636 2465

ENGINEERS AUSTRALIA
Mr. M.J. ASLAN
MIEAust CPEng
Chartered Professional Engineer
Membership No. 166721

LONGITUDINAL SECTION - ROAD No.01

SCALE 1:500 (H)
SCALE 1:100 (V)

Victoria Tester
Land Surveyor Registered under The Surveying and Spatial Information Act 2002
Date: 20/11/2020
SDG™ LAND DEVELOPMENT SOLUTIONS
A.B.N. 65 213 523 621
REF: 7589

LDC
These plans are referred to in certificate no: **15917** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.LDC.com.au

ISSUED FOR **CONSTRUCTION CERTIFICATE**

Revision					
B	MG	MP	SM	06/02/2019	REVISED TO SUIT CERTIFIER COMMENTS
C	BT	MP	-	13/03/2019	ROAD No.01 FORMATION AND PAVEMENT UPDATES
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F	MG	MP	MP	11/03/2020	TEMPORARY BASIN LEVELS ADJUSTED
G	MG	MP	MP	17/04/2020	AMENDMENTS AS PER LDC COMMENTS
First Issue	MG	MP	SM	05/10/2016	Revision Description
	Drawn	Design	Appd.	Date	

Scale:
0 5 10 15 20 25 30 35 40 45 50
SCALE 1:500 (A1) SCALE 1:1000 (A3)
0 1 2 3 4 5 6 7 8 9 10
SCALE 1:100 (A1) SCALE 1:200 (A3)

For: The Bathla Group

By: Orion Consulting Engineers — CONSULT AUSTRALIA Member Firm
ABN:25 604 069 981 PO Box:7936, BAULKHAM HILLS NSW 2153 T:(02) 8660 0035 E:info@orionconsulting.com.au

Project: LOT 30 SOUTH STREET, MARSDEN PARK
ROAD & DRAINAGE DESIGN

Title: ROAD LONG SECTIONS SHEET 01 OF 03

Project No. 16-49
Milestone CC
Plan 301
Revision G

WORK AS EXECUTED

Plotted: 17 April, 2020 2:08:20 PM File Name: O:\Projects\16-49 Lot 30 South St, Marsden Pk\Dwg\Civil\CC Design\16-49_CC301.dwg