

~~PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL~~

~~Approval no: DEV2017/903~~

~~Date: 15 February 2018~~



PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1639

Date: 23 July 2025



Cullen Avenue West, Eagle Farm

Site Based Stormwater Management Plan Addendum

Truck and Earthworks Equipment Auction Yard



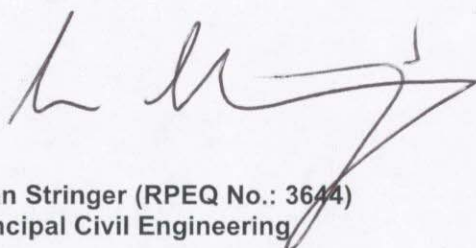
Northshore Group Pty Ltd

Document No.: 17C052BSDC_66 Cullen Avenue - SBSMP - DV/dv

Revision: A

RPEQ Notice

This document has been reviewed and approved by the following appropriately qualified and experienced Registered Professional Engineer of Queensland (RPEQ)



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A	DV	Issue for Assessment	12/12/2017	SS

Distribution

Company Name	Contact Name	Revision	Date
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Executive Summary

Sedgman Consulting provides multidisciplinary consulting and engineering services to the building and property, mining and resources and infrastructure sectors. We provide comprehensive business solutions from initial environmental assessments, planning and approvals management, and project feasibility analyses through to detailed design and construction.

With offices in Queensland, New South Wales, Victoria and Western Australia, we deliver for clients across Australia and the Asia Pacific region.

Our comprehensive management systems are certified to ISO 9001, ISO 14001 and AS/NZS 4801 standards for quality, environmental, and health and safety management.

A key component of our successful delivery is Sedgman Consulting's integrated services model. We strive to build sustainable partnerships, providing tailored support for individual projects while delivering long-term business success for clients.

Service overview

We provide integrated solutions with experience across commercial and industrial facilities, multi-storey, residential and mixed-use developments, as well as master-planned communities.

Our diverse client base in the building and property sector includes architectural firms, property developers, government agencies, investors, builders, schools, universities and sporting and community groups.

Comprehensive consulting services include:

- Feasibility studies;
- Master plans;
- Planning and approvals management;
- Environmental assessment and management;
- Detailed design (civil, structural, building hydraulics);
- Project management; and
- Contract documentation, construction supervision and certification.

1 Introduction

1.1 Background

The following Site Based Stormwater Management Plan (SBSMP) Addendum has been prepared to support an already approved stormwater management plan for a site located at 66 Cullen Avenue West, Eagle Farm, being Lot 1093 on SL8401 and Lot 100 on RP275551, within the local authority of the Brisbane City Council (BCC) and Economic Development Queensland (EDQ). The development proposes to modify the existing temporary carpark for use as an auction yard for trucks and earthworks equipment.

1.2 Scope

This plan addresses the proposed stormwater management strategy, including:

- Pre and post development flows for various Average Recurrence Interval (ARI) design events;
- Nomination of the legal point of discharge;
- Sediment and erosion control.

1.3 Proposed Development

The proposal is for modification of the existing temporary carpark facility into an auction yard for trucks and earthworks equipment. The development will also include a 2000m² warehouse to be used as a showroom. The proposal includes the discontinuation of the site as a temporary carpark.

Refer to Appendix A for the proposed development layout.

1.4 Site Description

1.4.1 Location

Street Address: 66 Cullen Avenue West, Eagle Farm
RP Description: Lot 1093 on SL8401 and Lot 100 on RP275551
Total Site Area: 6.03Ha
Proposed Use: Auction Yard
Local Authority: Economic Development Queensland (EDQ)

Refer to Figure 1.1 for the site location.

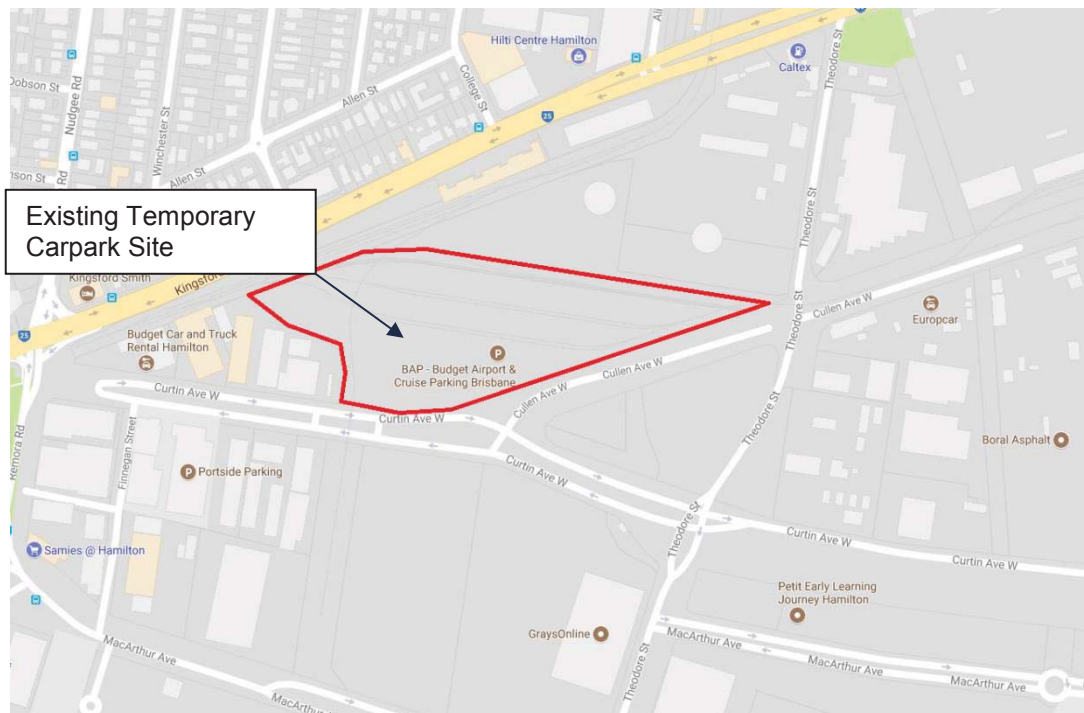


Figure 1.1 Site Location (Source: Google Maps)



Figure 1.2 Site Location - Aerial (Source: Nearmap)

1.4.2 Topography

The development site is currently a Temporary carpark with bitumen pavement hardstand surrounds. There is an existing tidal drainage swale traversing through the southern half of the site and an existing drainage channel along the northern boundary. The development site grades generally from a ridge in the middle of the site to these drainage locations with the site reaching a maximum RL of approximately 5.4m, and a minimum RL of approximately 1.1m.

Refer to Figure 1.2 for existing aerial view.

Refer to Appendix B for the topographic survey of the site.

1.4.3 Existing Drainage System

Stormwater runoff from the site is currently directed to existing field inlet pits which ultimately drain to the drainage easements described above. The major flows from site are directed to the drainage easements via overland flow. The drainage easement drains via a tidal movement, mangrove channel to the Brisbane River approximately 1.5km to the east.

2 Stormwater Quantity

2.1 Hydrologic Objectives

Hydrologic objectives for the site have been set in accordance with specification of Economic Development Queensland and the Queensland Urban Drainage Manual (QUDM), including but not limited to:

- Post-development flows, up to and including the 100 year ARI
- No adverse impact on adjoining or downstream properties;
- Legal point of discharge;
- Major System Design standard 100 year ARI; and
- Minor System Design standard 10 year ARI.

2.2 Pre-development Hydrology

The hydrology of the site has been assessed using the Rational Method, in accordance with QUDM. The various input parameters required for the pre-developed calculations are summarised below with detailed calculations in Appendix D:

- IFD Data: Bureau of Meteorology
- Total Catchment Area: .03 Ha
- Development Category: Commercial and industrial
- Fraction Impervious (f_i): 1.0
- 10 Year Co-efficient of runoff (C_{10}): 0.88
- Frequency Factors (F_y): QUDM
- Time of Concentration (T_c): 5.0 minutes

Table 2.1 Pre-development Peak Discharge Summary

Catch Name	Catch Area (Ha)	Impervious Area (Ha)	Q2 (m^3/s)	Q10 (m^3/s)	Q20 (m^3/s)	Q50 (m^3/s)	Q100 (m^3/s)
Site Total	6.03	6.03	1.910	3.165	3.807	4.813	5.345

2.2.1 Post-development Hydrology

The hydrology of the post developed site has been assessed using the Rational Method, in accordance with QUDM. The various input parameters required for the post calculations are summarised below with detailed calculations in Appendix D:

- IFD Data: Bureau of Meteorology
- Total Catchment Area: 6.03 Ha
- Development Category: Commercial and industrial
- Fraction Impervious (f_i): 1.0
- 10 Year Co-efficient of runoff (C_{10}): 0.88
- Frequency Factors (F_y): QUDM
- Time of Concentration (T_c): 5.0 minutes

Table 2.2 Post-development Peak Discharge Summary

Catch Name	Catch Area (Ha)	Impervious Area (Ha)	Q2 (m^3/s)	Q10 (m^3/s)	Q20 (m^3/s)	Q50 (m^3/s)	Q100 (m^3/s)
Site Total	6.03	6.03	1.910	3.165	3.807	4.813	5.345

A comparison of Tables 2.1 and 2.2 shows no increase in peak discharge from the subject site in the post-developed scenario. Therefore we believe that the implementation of stormwater detention devices is unwarranted and conclude that no formal mitigation measures are required for the post-developed scenario.

2.3 Legal Point of Discharge

The Legal Point of Discharge for the site has been taken as the existing tidal flow drainage channel to the south and north as detailed in section 1. This is considered to be in accordance with the processes set out by Economic Development Queensland.

3 Water Quality Objectives

3.1 Relevant Water Quality Objectives

The subject site is located within a tidal flow area and as such it is expected that the salt water will provide some water quality assistance to the discharge from site. The site is proposed to be only used as a temporary vehicle auction facility. The site is to be maintained in its current hydrological condition which does not include water quality devices. Due to this it is believed the provision of Stormwater Quality Improvement devices, either bio-retention basin or proprietary devices, are **not** warranted, and therefore have not been proposed.

Although formal quality improvement devices have been deemed unnecessary for the development is proposed to provide best management stormwater quality methods to the post developed site.

3.1.1 Pollutant Identification - Construction Phase

The following table identifies the pollutants which are to be controlled and mitigation strategies employed in order to achieve the water quality objectives during the construction phase for the proposed development.

Table 3.1 Pollutant identification and Mitigation Strategies during Construction

Target Pollutants	Target Pollutant Examples	Mitigation Strategies
Litter	Paper, construction packaging, food packaging, cement bags, off-cuts	Education through site inductions, provision of refuse bins and regular removal of collected refuse
Sediment	Unprotected exposed soils and stockpiles during earthworks and building	Sediment and Erosion Controls. Refer Section 4, below
Hydrocarbons	Fuel and oils spills, leaks from construction equipment	Provision of a vehicle storage area for contractors.
Toxic Materials	Cement slurry, asphalt prime, solvents, cleaning agents, wash waters (eg. From tile works)	Provision of onsite wash facilities which do not allow runoff to enter Council's stormwater system
pH altering substances	Acid Sulphate Soils (ASS), cement slurry and wash waters	If Acid Sulphate Soils are detected a management plan will be required. Provision of onsite wash facilities which do not allow runoff to enter Council's stormwater system

3.1.2 Pollutant Identification – Operational Phase

The flowing table identifies the pollutants which will be required to be controlled and strategies employed in order to achieve the water quality objectives during the operational phase of the proposed development.

Table 3.2 Pollutant identification and Mitigation Strategies during Operation

Target Pollutants	Target Pollutant Examples	Mitigation Strategies
Litter	Paper, construction packaging, food packaging, cement bags, off-cuts	Education of owners and body corporate, provision of refuse bins and regular removal of refuse
Sediment	Unprotected exposed soils and stockpiles during construction	Provision of grassed buffer strips and landscaped areas
Nutrients	Nitrogen and Phosphates	Provision of grassed buffer strips and landscaped areas
Pathogens	Faecal coliforms, bacteria and viruses	Provision of a reticulated sewerage system and education in the proper removal of such waste (pets)
Heavy Metals	Associated with fine sediments	Provision of grassed buffer strips and landscaped areas
Surfactants	Detergents from car washing	Provision of a car wash area on site with appropriate drainage (if required)
Thermal Pollution	Heat produced from metal or concrete surfaces	Architectural features which reduce thermal pollution (covered concrete areas) (if required)

3.2 Summary

With the introduction of the above strategies for the construction and operational phases of the development it is believed water quality objectives will be achieved for the site. Due to this, the development has been deemed to satisfy the Economic Development Queensland's specifications for Water Quality.

4 Erosion and Sediment Management

The objective of Erosion and Sediment Management is to limit soil erosion and control sediment discharge from the proposed development by using suitable control devices during the four (4) primary phases, Pre-development, Bulk Earthworks, Construction and the Post-development.

Typical erosion and sediment control measures that will be incorporated into these development phases are highlighted in Section 4.2 and 4.3 respectively.

4.1 Erosion and Sediment Management during Development Phases

4.1.1 Pre-development

Prior to construction commencing, the following sediment and erosion control measures will be implemented to minimise disturbance and ensure water quality is maintained.

- Designation of transport routes to ensure minimal vegetation disturbance. Transport routes will have construction exits in accordance with IEAust Guidelines;
- Maximise vegetated open space areas to reduce soil disturbance and provide filter strip treatment for runoff;
- Construction entry/exit to be installed and will comprise of a designed gravel pad or placement of hardwood logs in accordance with the IEAust Guidelines;
- Install sediment fences around the proposed bulk earthworks site (along toe of batter alignment); and
- Install dust control fences adjacent to the proposed bulk earthworks site (along property boundary).

4.1.2 Bulk Earthworks

Filling during the bulk earthworks phase is to occur so as to direct runoff towards sediment and erosion controls. The following measures will be implemented:

- Construct chutes to control runoff over earthworks batters;
- Construction of temporary bund at the top of all earthwork batters to ensure runoff is directed to chutes and away from exposed batters;
- Sediment fences will be installed at all down slope areas of material stockpile bases; and
- All batters to be top-soiled and seeded immediately upon reaching finished earthworks levels.

4.1.3 Construction

The following measures will be undertaken to mitigate water quality impacts during construction phase:

- Sediment fences to be erected at the base of all batters and stockpiles to prevent sediment transportation off site;
- Grass filter strips to be placed along all road verges;
- Re-vegetation of all disturbed areas within two weeks of completion;
- All sediment control structures to be maintained in an effective manner and inspected after each storm event. No structure is to accumulate sediment above 40% of its capacity; and

- Regular monitoring of water quality to determine the effectiveness of the sediment and erosion control measures.

4.1.4 Post-development

Once construction is completed and the development has been certified “On-Maintenance” the following strategies will be implemented to limit soil erosion and control sediment discharge leaving the site:

- A monitoring program will be established for the stormwater treatment devices as outlined in stormwater management plan;
- All monitoring activities associated with the operation of the vegetated treatment areas, including weed inundation, erosion, vegetation density, determination and inappropriate access shall be included in the general monitoring of the landscaped areas;
- The Developer will be responsible for all monitoring activities associated with the operation of the trenches/swales during the maintenance period (minimum 12-months period or as otherwise advised by Council) with the Council responsible following the maintenance period; and
- A report shall be prepared for Council submission following the maintenance period containing all erosion & sediment monitoring results and a brief description of the same (including any incidences of non-compliance and corrective actions implemented).

4.2 Erosion Controls

The time of disturbance on-site should be kept to a minimum by ensuring that construction works immediately follow the earthworks phase. Consideration to staging works should be given to minimise the area of exposed works at any given time.

Areas that may be subject to concentrated flow and that have been cleared may require turfing to ensure gully erosion does not start.

Any overburden that is not to be taken off-site should be stockpiled nearby and covered to prevent the mobilization of any particles in to the drainage system.

The remaining exposed areas of the site are to be damped down as deemed necessary by the site supervisor to prevent dust. All batters are to have mulch or erosion control mats installed immediately after achieving final level.

Dust fencing is to be installed around the perimeter of earthworks to prevent wind velocities at ground level over the site.

The site is to be landscaped and re-vegetated in accordance with the Landscape Plan immediately after completion of construction activities to minimise the risk of erosion from exposed earthworks.

4.3 Sediment Controls

With reference to the IEAust Guidelines and Current Best Practice, there are seven (7) fundamental sediment control principles that have been identified for use during construction:

- Construction Exit
- Sediment Fences
- Buffer Zones
- Sediment Basins

- Sediment Barriers
- Turfed Filter Strips
- Check Dams

4.3.1 Construction Exit

A dedicated construction exit is to be located at the sites entry and exit point for vehicles. This exit will be established to facilitate the removal of soil, mud, dust and debris from the tyres of vehicles prior to leaving the construction site. The construction exit can comprise of a gravel pad designed or placement of hardwood logs, constructed and maintained in accordance with the IEAust Guidelines. Alternatively, a vibratory grid system can be hired or constructed. The advantages of the grid system include ease of movement and they can be used for several years.

4.3.2 Sediment Fences

Sediment fencing is to be established down slope of any exposed earthworks where there is a risk of contaminated water leaving the site prior to clearing and earthworks commencing. Sediment fencing may be required at regular spacing down the disturbed grade to limit rutting caused by concentration of sheet flow. Sediment fences shall be used to protect any temporary stockpile areas on an as-needs basis. Sediment collected from sediment barriers is to be regularly removed and either taken off site as part of the earthworks phase of the proposed development or stockpiled for use during re-vegetation.

4.3.3 Buffer Zones

Buffer zones consisting of the existing grassed areas down slope of all bulk earthworks and around the existing vegetated area to the east of the site are to be fenced off. Buffer zones are corridors of vegetation that separate disturbed land from adjacent receiving environments. No vegetation is to be removed from this area whilst construction is in progress as it aids in the slowing and filtering of runoff.

4.3.4 Sediment Basins

Sediment basins are to be constructed at the location of the proposed stormwater detention basins. The sediment basins are to be constructed as early as possible, and prior to bulk earthworks. The installation of a sediment basin does not negate the use of other sediment and erosion control measures detailed in this report. Sediment basins are to be designed, constructed and maintained in accordance with the IEAust Soil Erosion and Sediment Control Guidelines for Queensland Construction Sites.

4.3.5 Sediment Barriers

Sediment barriers are to be constructed around all stormwater drainage inlet pits where contaminated water may drain to. This will aid in ensuring sediments are settled out prior to flows entering the underground stormwater drainage system. Sediment barriers are to be gravel wrapped in geotextile 'sausage' or similar.

4.3.6 Turf Filter Strips

Turf filter strips approximately 600mm wide are to be placed on the top of the fill batters and adjacent to all paved areas where possible. These will act in conjunction with the sediment fences to further treat any overland flow from the site. Turf filter strips are to be constructed and maintained in accordance with the IEAust Guidelines.

4.3.7 Check Dams

Check dams are to be installed in the road pavement and are to be maintained until adequate pavement is installed. The primary purpose of a check dam is to control flow velocity in the road boxing until road pavement is installed. A secondary purpose is to entrap sediment in a similar way to sediment barriers.

4.4 Monitoring and Maintenance

The following monitoring and maintenance procedures are to be undertaken by the site supervisor during all phases of the development:

1. Inspections of Stormwater, Sediment and Erosion Controls are to be conducted at the end of each construction day and after each rainfall event (>25mm).
2. If any validated complaints or evidence of water quality deterioration is reported downstream of the site the following actions are to be taken:
 - Locate source of water quality deterioration.
 - Construct temporary controls to prevent continuing short term deterioration.
 - Repair existing controls, modify procedures or construct additional controls to prevent further deterioration.

5 Strategy Summary and Conclusions

A stormwater management strategy has been developed to manage potential impacts due to the proposed auction yard located at 66 Cullen Avenue West, Eagle Farm. The stormwater management strategy has the following components:

- Generally maintaining the existing drainage regimes and drainage discharge locations;
- post-development storm flows discharging from the subject site;
- Implementation of typical erosion and sediment control devices during the four (4) primary phases of the proposed development.

It is considered that the development of the site, with the implementation of the stormwater management strategy developed in this report, will result in no significant worsening in drainage conditions upstream or downstream of the site.

6 References

Brisbane City Council Plan 2014

DERM (2013) State Planning Policy

Institution of Engineers, Australia (2001) "Australian Rainfall and Runoff – A guide to flood estimation".

Neville Jones & Associates (2008) "Queensland Urban Drainage Design Manual (QUDM)", Edition 2.

Healthy Waterways 'Water Sensitive Urban Design – Technical Design Guidelines for South East Queensland – Version 1, June 2006

Queensland Government. 2013,. "State Planning Policy 2013" Version 1.

XP Software (2013) "XP-RAFTS – Runoff Analysis and Flow Training Simulation Program", Version 6.

MUSIC Modelling Guidelines for South-East Queensland – December 2009

Appendix A

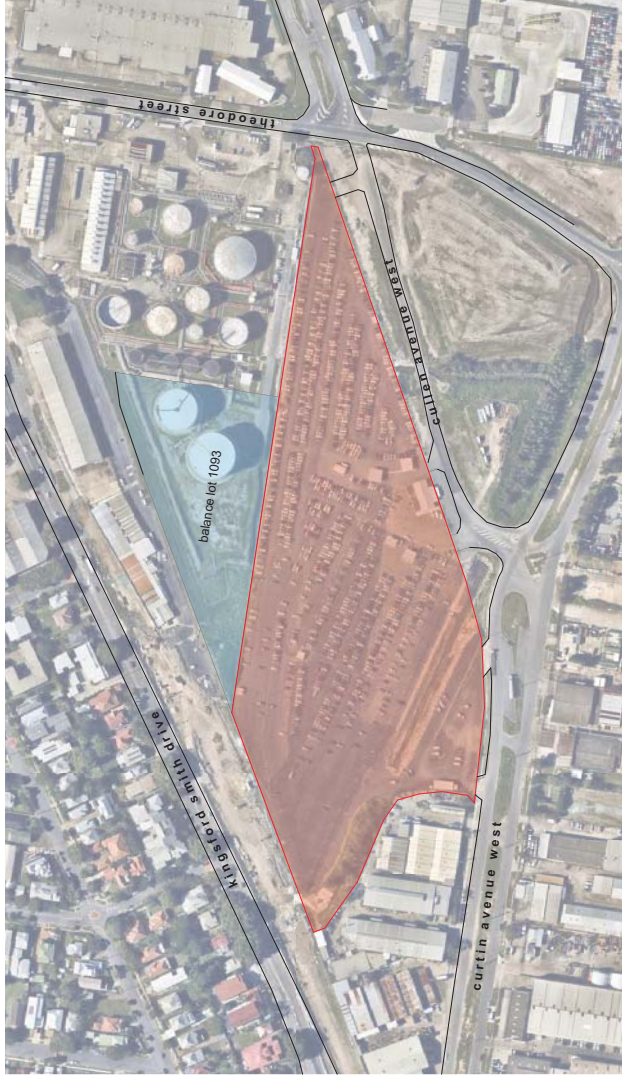
Proposed Development

proposed industrial development

66 Cullen Avenue, Eagle Farm

aerial locality plan

site of works

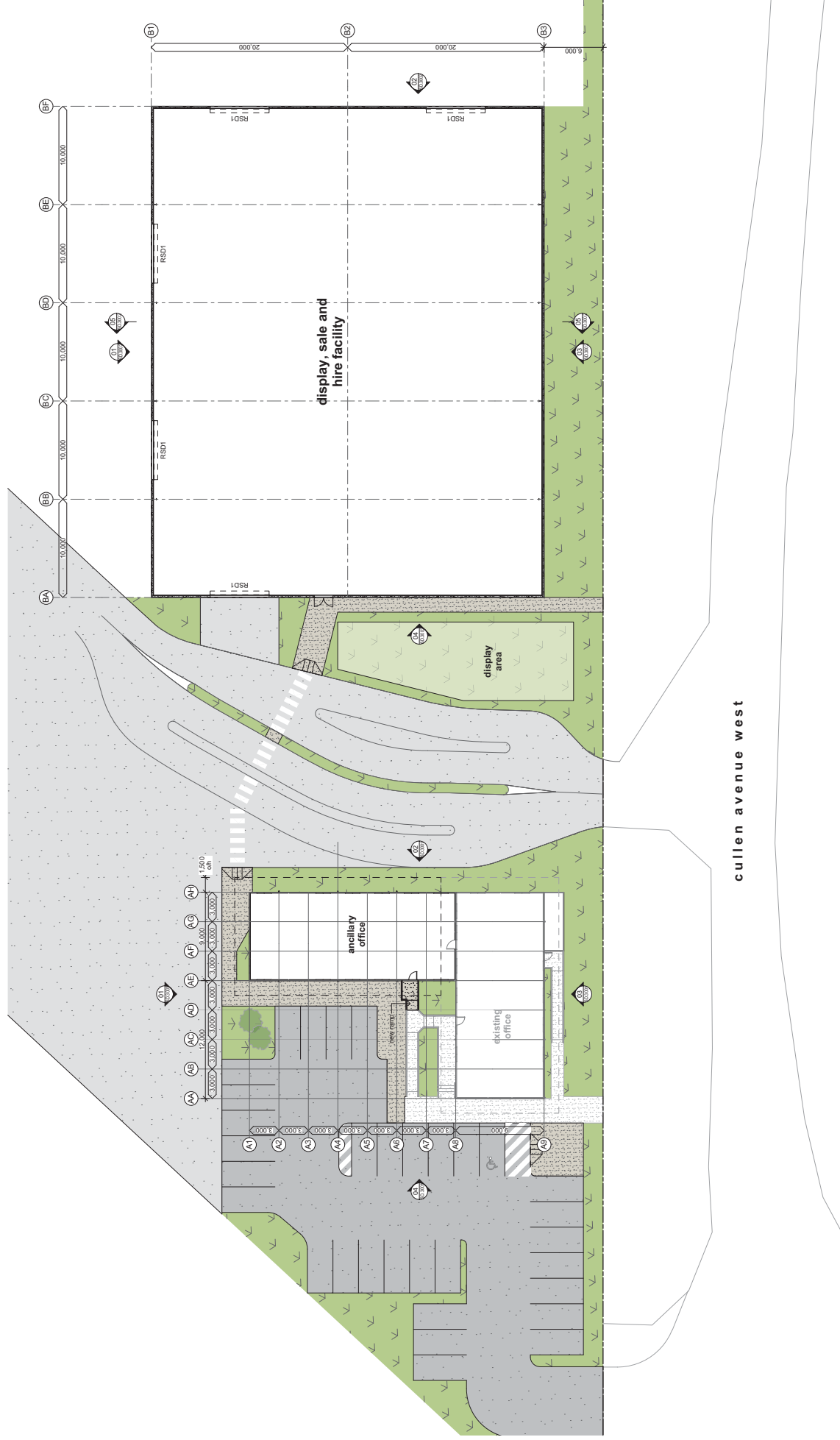


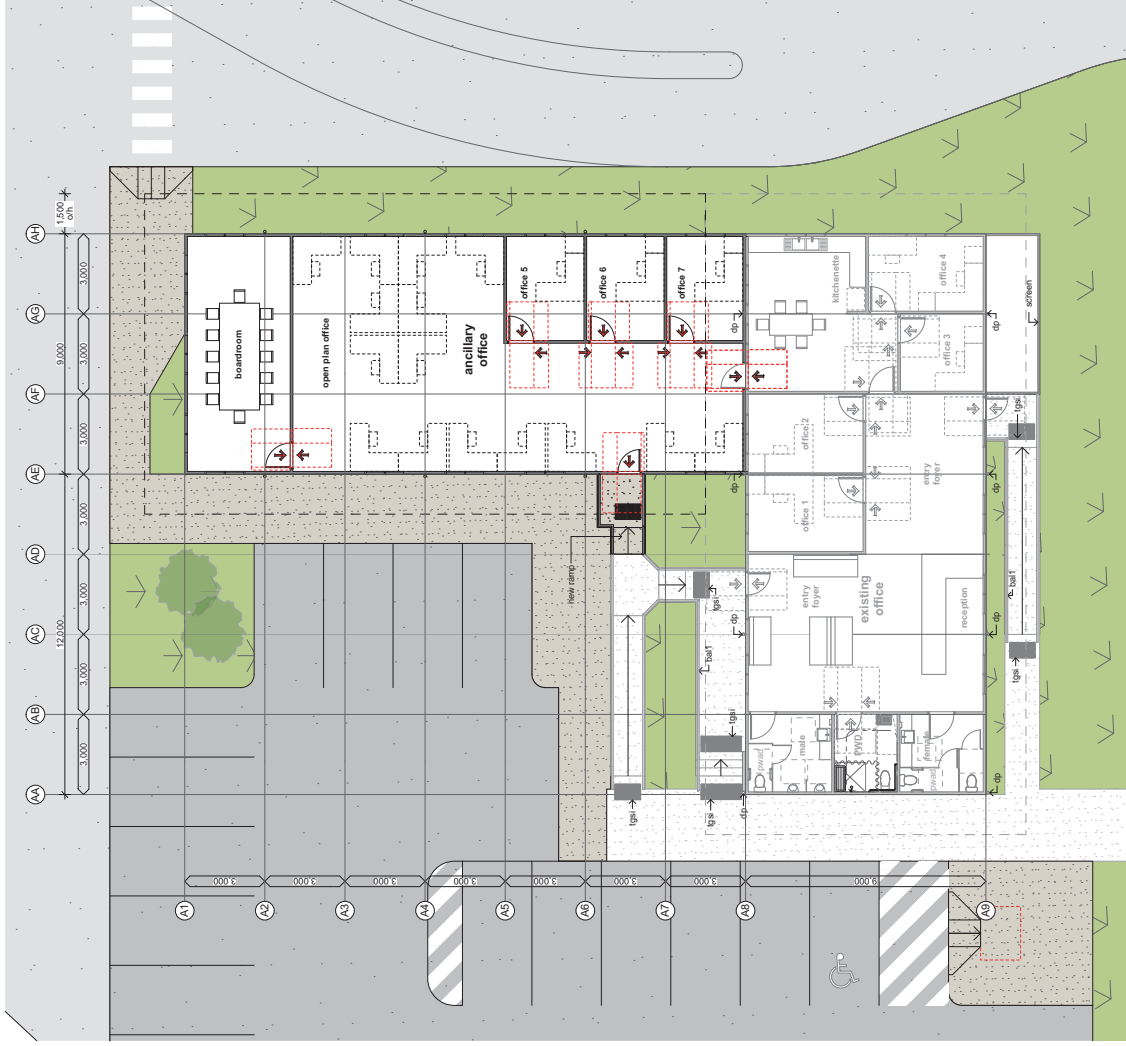
site information

site address 66 Cullen Avenue, Eagle Farm
parcel information Lot 100 on SP275551
local government area - brisbane city council
parish of foornbul
county of stanley

drawing schedule

SD.0001 cover page and drawing schedule
SD.1001 site plan
SD.1002 roof plan
SD.1003 site cover calculations
SD.2001 ground floor plan
SD.2101 office floor plan
SD.3001 elevations - office
SD.3002 elevations - display, sale and hire





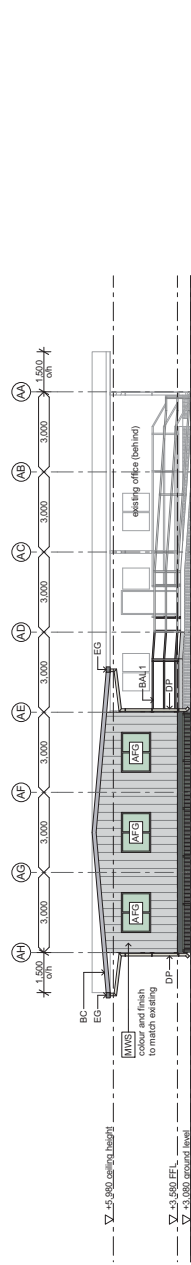
legend

AFG aluminium framed glass
BC beige cladding
EG eaves gutter
MRS metal roof sheet
MWS translucent metal sheet
PCP precast concrete panel
TRS translucent roof sheet

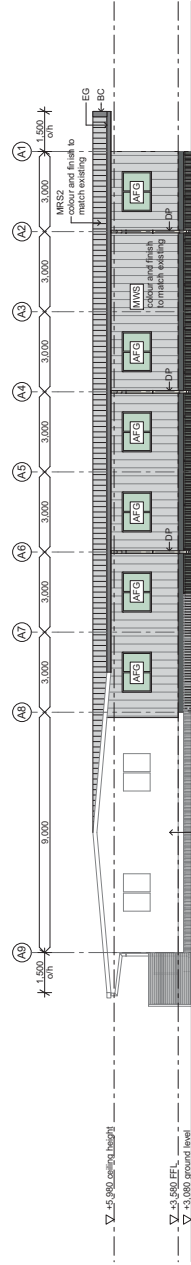
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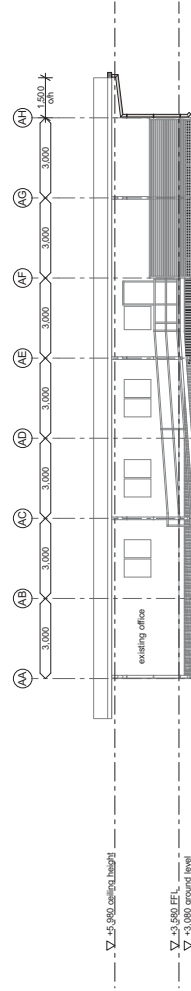
note: finishes to be advised



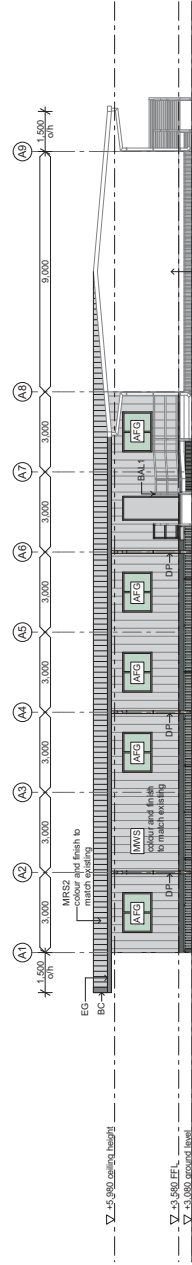
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02 east elevation
SCALE 1:100



03 south elevation
SCALE 1:100



04 west elevation
SCALE 1:100

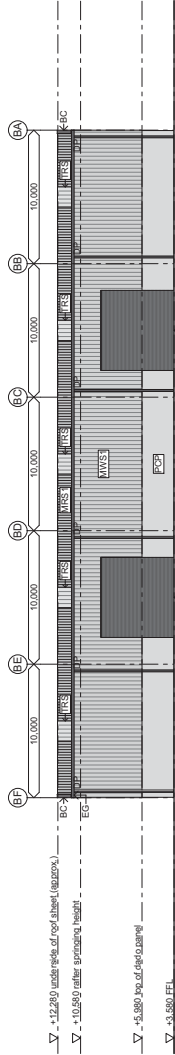
legend

AFG aluminium framed glass
BC large cladding
BC medium cladding
EG eaves gutter
MRS metal roof sheet
MRS translucent roof sheet
PCP precast concrete panel
TRIS translucent roof sheet

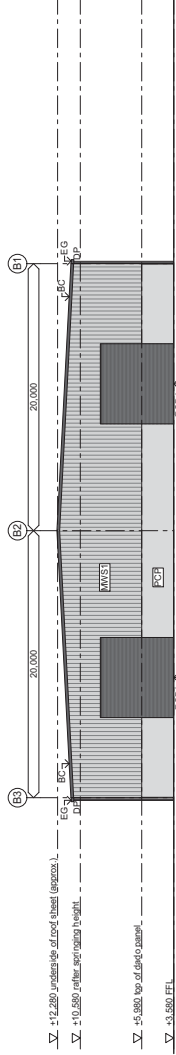
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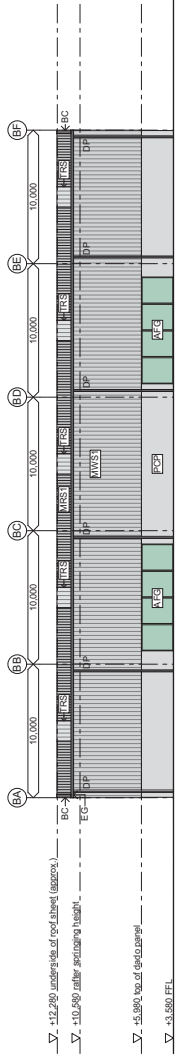
note: finishes to be advised



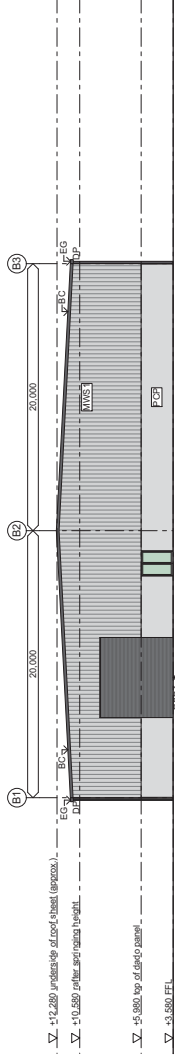
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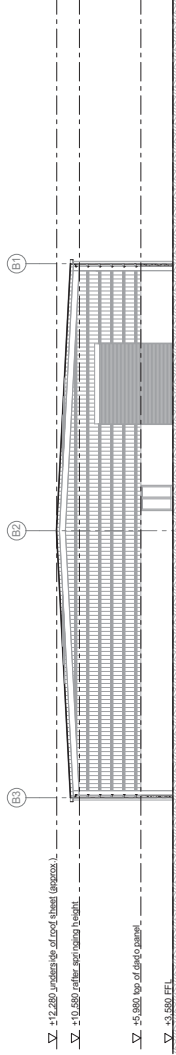
02 east elevation
SCALE 1:200



03 south elevation
SCALE 1:200



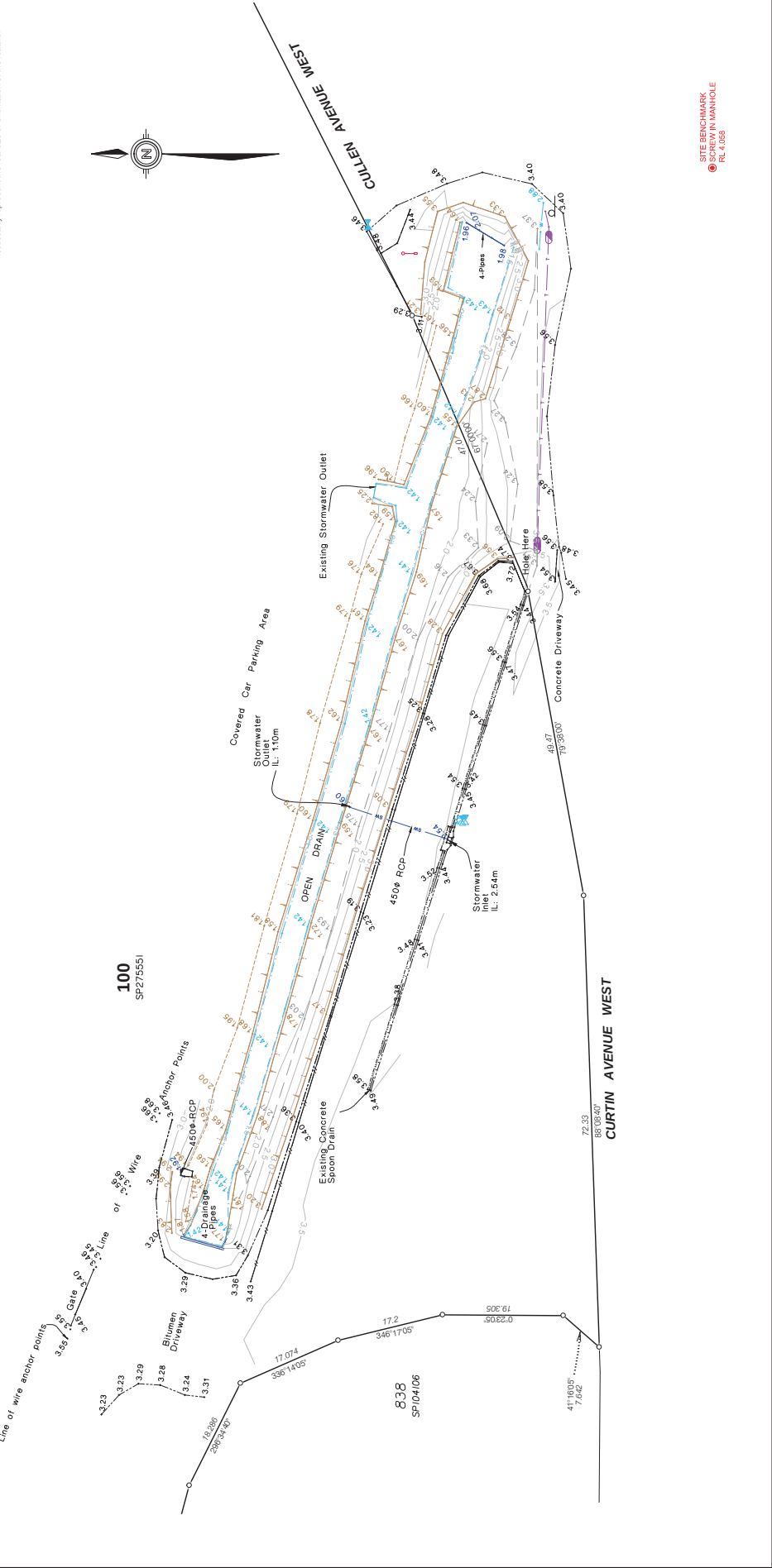
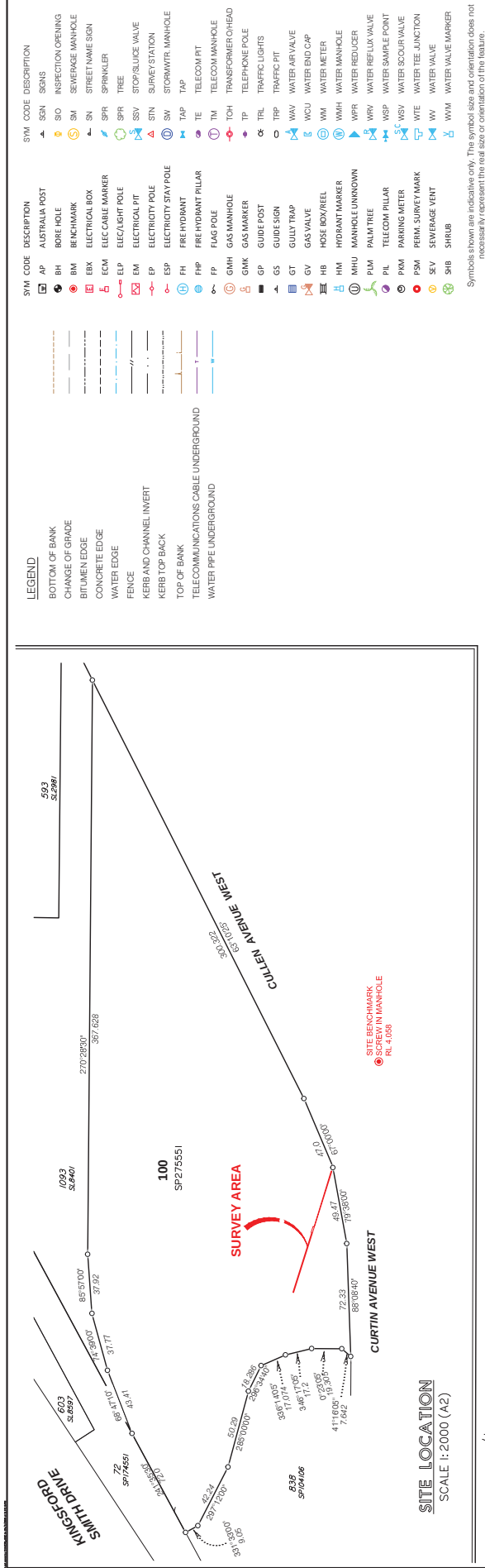
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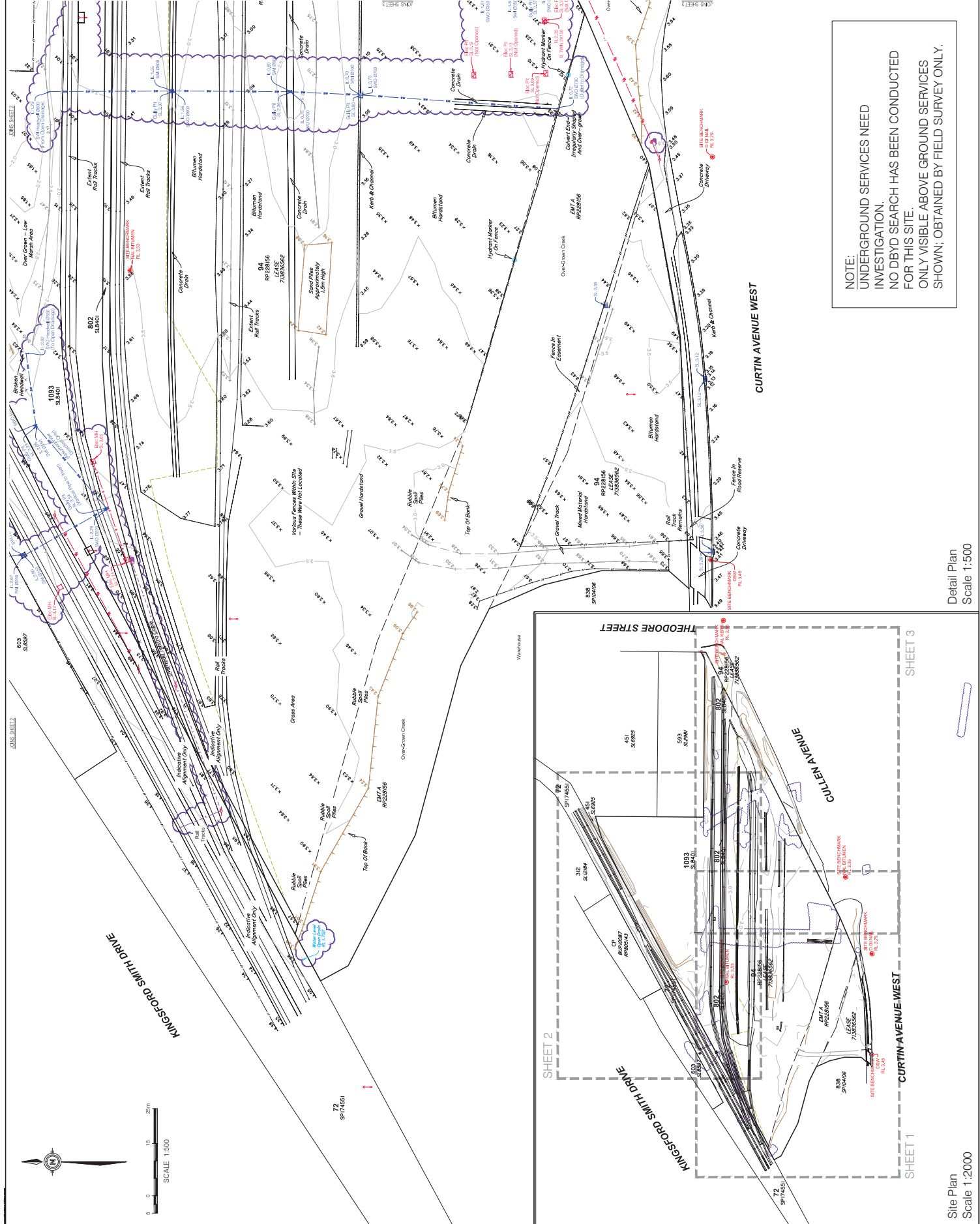


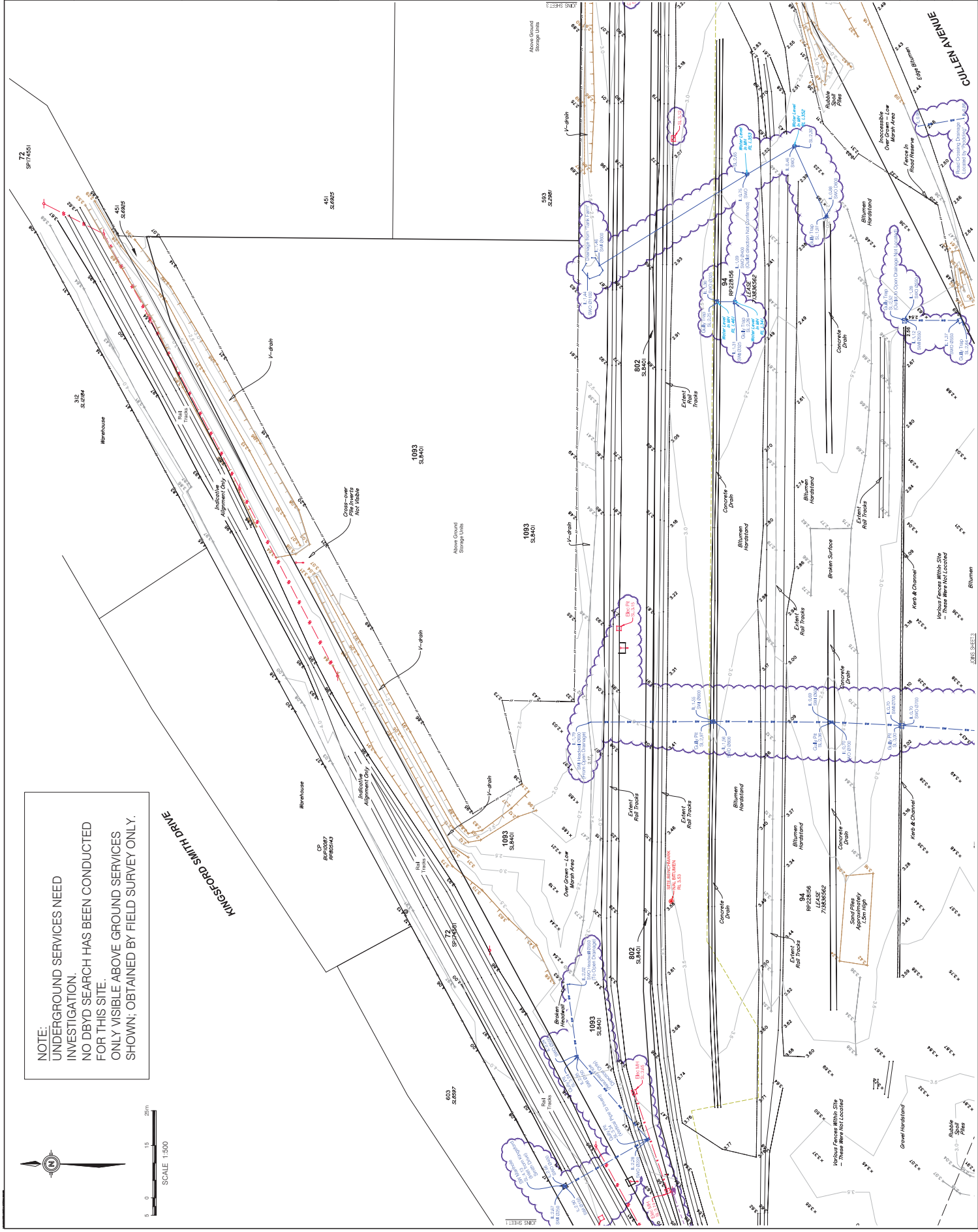
05 section
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Appendix B

Topographic Survey

[illegible]





NORTHSHORE
CORPORATION

PART DETAIL SURVEY
OF
Lot 72 on SP174551,
Lot 1093 on SL8401,
Lot 802 on SL8401 and
Lot 94 on RP228156

NOTES

The title boundaries shown hereon were not marked at the time and have been determined by plan dimensions only and not by survey.

Services shown hereon have been located where possible by field methods. If not able to be so located, services have been plotted from the best available information and may not be in their actual location in the plan. Where such records do not exist or are inadequate a note has been made hereon.

Prior to any demolition, excavation or construction on the site, the authority should be contacted for possible location of further underground services and detailed locations of all services.

Areas in purple revision cloud surveyed on 12/06/2014.				
001A/1	MEA	16/09/2014		NEW SERVICES DETAIL SURVEY ADDED
001A/0	RUL	01/11/2013		ORIG. ISSUE

SPN	CODE	DESCRIPTION	SPN	CODE	DESCRIPTION
1	00	REMARK	100	00	INSPECTION OPENING
2	00	REMARK	101	00	SEVERE DAMAGE
3	00	REMARK	102	00	SEVERE DAMAGE
4	00	REMARK	103	00	SEVERE DAMAGE
5	00	REMARK	104	00	SEVERE DAMAGE
6	00	REMARK	105	00	SEVERE DAMAGE
7	00	REMARK	106	00	SEVERE DAMAGE
8	00	REMARK	107	00	SEVERE DAMAGE
9	00	REMARK	108	00	SEVERE DAMAGE
10	00	REMARK	109	00	SEVERE DAMAGE
11	00	REMARK	110	00	SEVERE DAMAGE
12	00	REMARK	111	00	SEVERE DAMAGE
13	00	REMARK	112	00	SEVERE DAMAGE
14	00	REMARK	113	00	SEVERE DAMAGE
15	00	REMARK	114	00	SEVERE DAMAGE
16	00	REMARK	115	00	SEVERE DAMAGE
17	00	REMARK	116	00	SEVERE DAMAGE
18	00	REMARK	117	00	SEVERE DAMAGE
19	00	REMARK	118	00	SEVERE DAMAGE
20	00	REMARK	119	00	SEVERE DAMAGE
21	00	REMARK	120	00	SEVERE DAMAGE
22	00	REMARK	121	00	SEVERE DAMAGE
23	00	REMARK	122	00	SEVERE DAMAGE
24	00	REMARK	123	00	SEVERE DAMAGE
25	00	REMARK	124	00	SEVERE DAMAGE
26	00	REMARK	125	00	SEVERE DAMAGE
27	00	REMARK	126	00	SEVERE DAMAGE
28	00	REMARK	127	00	SEVERE DAMAGE
29	00	REMARK	128	00	SEVERE DAMAGE
30	00	REMARK	129	00	SEVERE DAMAGE
31	00	REMARK	130	00	SEVERE DAMAGE
32	00	REMARK	131	00	SEVERE DAMAGE
33	00	REMARK	132	00	SEVERE DAMAGE
34	00	REMARK	133	00	SEVERE DAMAGE
35	00	REMARK	134	00	SEVERE DAMAGE
36	00	REMARK	135	00	SEVERE DAMAGE
37	00	REMARK	136	00	SEVERE DAMAGE
38	00	REMARK	137	00	SEVERE DAMAGE
39	00	REMARK	138	00	SEVERE DAMAGE
40	00	REMARK	139	00	SEVERE DAMAGE
41	00	REMARK	140	00	SEVERE DAMAGE
42	00	REMARK	141	00	SEVERE DAMAGE
43	00	REMARK	142	00	SEVERE DAMAGE
44	00	REMARK	143	00	SEVERE DAMAGE
45	00	REMARK	144	00	SEVERE DAMAGE
46	00	REMARK	145	00	SEVERE DAMAGE
47	00	REMARK	146	00	SEVERE DAMAGE
48	00	REMARK	147	00	SEVERE DAMAGE
49	00	REMARK	148	00	SEVERE DAMAGE
50	00	REMARK	149	00	SEVERE DAMAGE
51	00	REMARK	150	00	SEVERE DAMAGE
52	00	REMARK	151	00	SEVERE DAMAGE
53	00	REMARK	152	00	SEVERE DAMAGE
54	00	REMARK	153	00	SEVERE DAMAGE
55	00	REMARK	154	00	SEVERE DAMAGE
56	00	REMARK	155	00	SEVERE DAMAGE
57	00	REMARK	156	00	SEVERE DAMAGE
58	00	REMARK	157	00	SEVERE DAMAGE
59	00	REMARK	158	00	SEVERE DAMAGE
60	00	REMARK	159	00	SEVERE DAMAGE
61	00	REMARK	160	00	SEVERE DAMAGE
62	00	REMARK	161	00	SEVERE DAMAGE
63	00	REMARK	162	00	SEVERE DAMAGE
64	00	REMARK	163	00	SEVERE DAMAGE
65	00	REMARK	164	00	SEVERE DAMAGE
66	00	REMARK	165	00	SEVERE DAMAGE
67	00	REMARK	166	00	SEVERE DAMAGE
68	00	REMARK	167	00	SEVERE DAMAGE
69	00	REMARK	168	00	SEVERE DAMAGE
70	00	REMARK	169		

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the features.

CHARGE PRE LUG
 DOWN
 ELECT CABLE A/G
 ELECT CABLE LUG
 GAS PIPE
 FENCE LINE
 SUNSHADE PIPE
 TELEPHON CABLE
 WATER PIPE



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077 3842 1001
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Land Partners
610 507 2018
610 5 3303

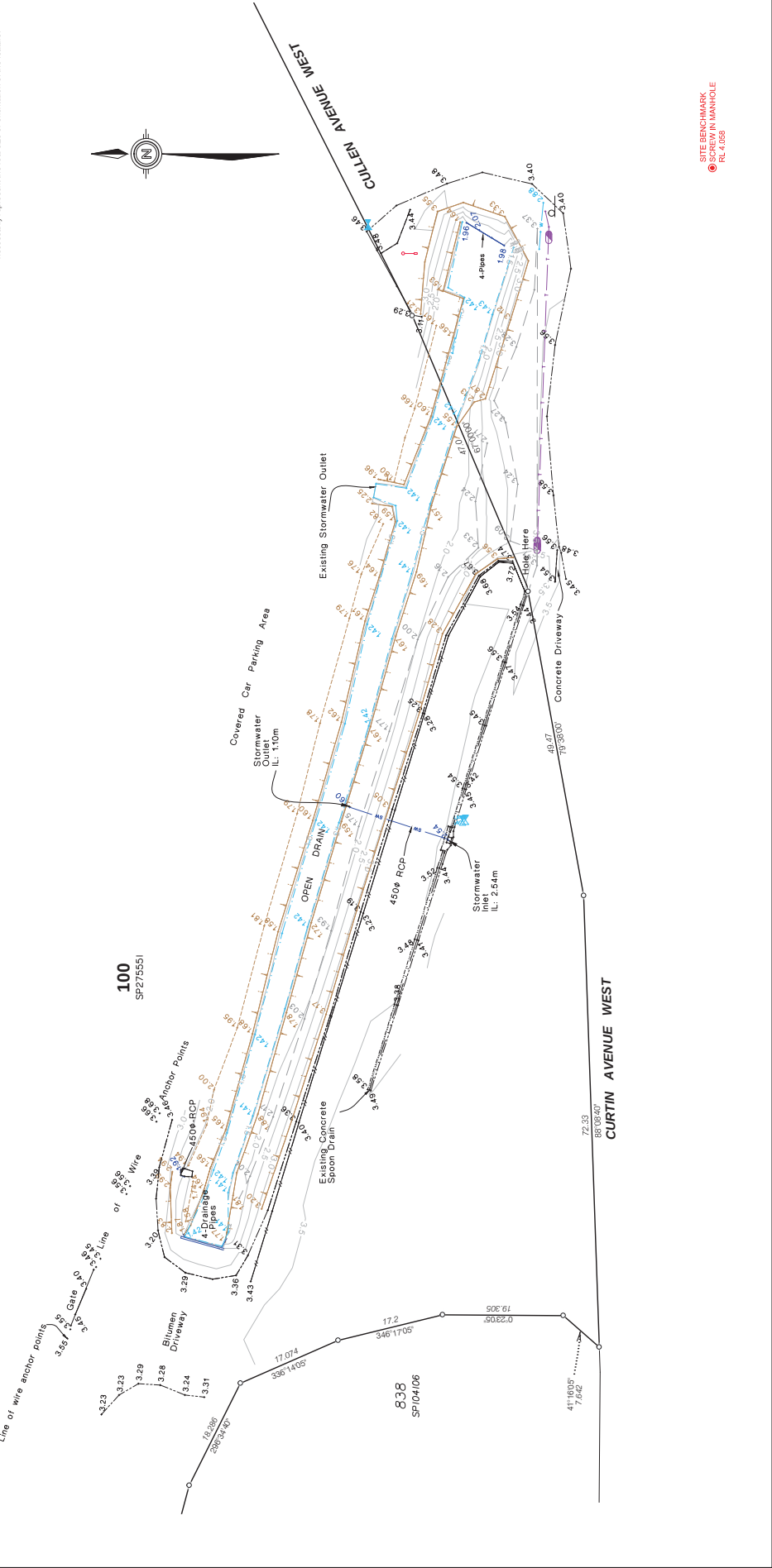
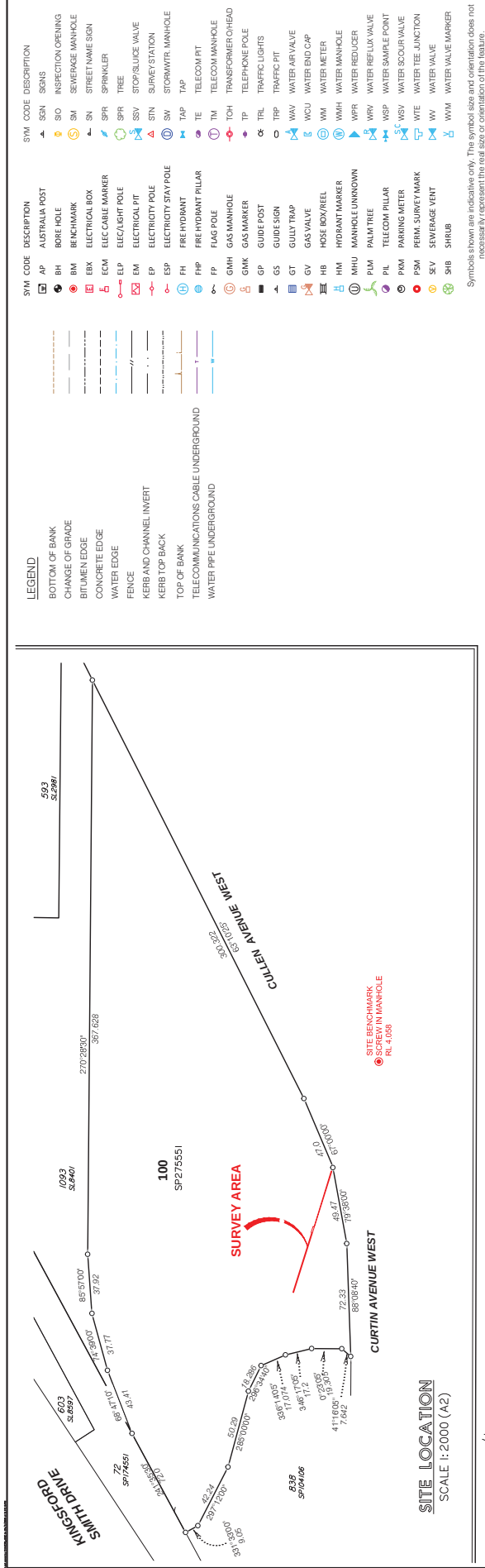
[illegible]

BRLS6571.100-001	A
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NOTE:
UNDERGROUND SERVICES NEED
INVESTIGATION.
NO DBYD SEARCH HAS BEEN CONDUCTED
FOR THIS SITE.
ONLY VISIBLE ABOVE GROUND SERVICES
SHOWN; OBTAINED BY FIELD SURVEY ONLY.

Tidal Water Levels Taken at
11:00am Friday 12/09/14

[illegible]

Appendix C

Rational Method Output

RATIONAL METHOD CALCULATIONS

Project:	66 Cullen Avenue West, Eagle Farm
Date:	12-Dec-17
Designed:	Darius vearncombe
Comments:	Pre Developed Catchment



PARAMETERS

VALUE

Catchment Name	Auction Yard
Catchment Size	6.03 ha
C10 Coefficient of Runoff	0.88

Total Time of Concentration

QUDM, Standard inlet time Section 4.06

Total time of Concentration (tc)

5.0 mins

Rational Method for Peak Catchment flow

$Q = 0.00278 \times C \times I \times A$

ARI	Rainfall Intensity (mm/h)	Rainfall Depth (mm)	Fy	Coefficient of Runoff	Discharge (m ³ /s)
3 month					0.702
1	119.11	9.93	0.80	0.70	1.405
2	152.47	12.71	0.85	0.75	1.910
5	191.70	15.97	0.95	0.84	2.684
10	214.71	17.89	1.00	0.88	3.165
20	245.98	20.50	1.05	0.92	3.807
50	287.32	23.94	1.15	1.00	4.813
100	319.10	26.59	1.20	1.00	5.345

RATIONAL METHOD CALCULATIONS

Project:	66 Cullen Avenue West, Eagle Farm
Date:	12-Dec-17
Designed:	Darius vearncombe
Comments:	Post Developed Catchment



PARAMETERS

VALUE

Catchment Name	Auction Yard
Catchment Size	6.03 ha
C10 Coefficient of Runoff	0.88

Total Time of Concentration

QUDM, Standard inlet time Section 4.06

Total time of Conentration (tc)

5.0 mins

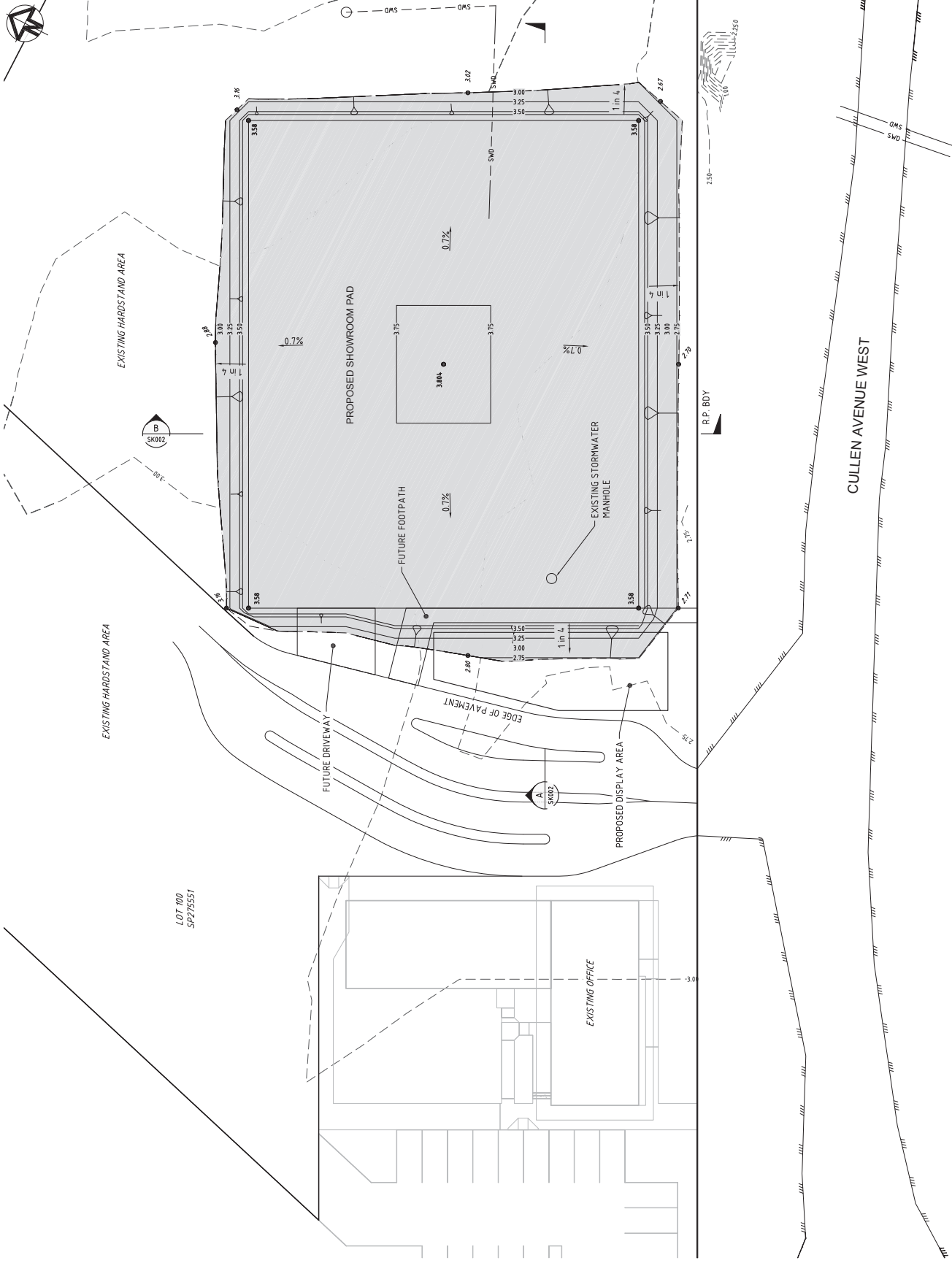
Rational Method for Peak Catchment flow

$Q = 0.00278 \times C \times I \times A$

ARI	Rainfall Intensity (mm/h)	Rainfall Depth (mm)	Fy	Coefficient of Runoff	Discharge (m ³ /s)
3 month					0.702
1	119.11	9.93	0.80	0.70	1.405
2	152.47	12.71	0.85	0.75	1.910
5	191.70	15.97	0.95	0.84	2.684
10	214.71	17.89	1.00	0.88	3.165
20	245.98	20.50	1.05	0.92	3.807
50	287.32	23.94	1.15	1.00	4.813
100	319.10	26.59	1.20	1.00	5.345

Appendix D

Stormwater Management Layout



LEGEND	
	CUT
	FILL
	SETBACK LINE
	DESIGN CONTOURS (0.25m INTERVAL)
	EXISTING CONTOURS (0.25m INTERVAL)
	BOTTOM OF BATTER
	TOP OF BATTER
	EDGE OF BITUMEN
	EXISTING STORMWATER
	PROPERTY BOUNDARY
	DESIGN SURFACE SPOT HEIGHT
	EXISTING SURFACE SPOT HEIGHT

VOLUMES	
REQUIRED IMPORT	1893m ³

* VOLUME IS COMPACTED IN PLACE QUANTITY

CLIENT		PROJECT		TITLE	
NORTHSHORE CORPORATION		PROPOSED SHOWROOM 66 CULLEN AVENUE WEST EAGLE FARM		PRELIMINARY EARTHWORKS PLAN	
THIS DESIGN AND PLAN IS COPYRIGHT AND IS NOT TO BE USED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF YATAC CONSULTING PTY LTD		STAGE / PHASE		FOR INFORMATION	
SCALE DRAWING IS NOT TO BE SCALED SCALE 1:1000 ORIGINAL SHEET SIZE A1		REV		DRAWN	
DATE		DESCRIPTION		DATE	
A		ORIGINAL ISSUE		13.12.17	
J.A.		DRAWN		13.12.17	
J.A.		DESIGN		13.12.17	
S.B.		REVIEW		13.12.17	
BY		INITIAL		DATE	
TASK		APPROVED		REVISION	
DRAWN		DRAWING NUMBER		17C0052-1-SK001	
A		RFP# No		A	



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Appendix E

Ebimap Extracts

