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- CONSTRUCTION CERTIFICATES
- FIRE SAFETY/BUILDING CONSULTANTS

NSW BUILDING CERTIFIERS

General Manager
Pittwater Council
PO Box 882
MONA VALE NSW 1660

Dear Sir/Madam,

Premises: 256 Powderworks Road, Ingleside
Development Consent No: N0041/10

Please find attached a copy of the Construction Certificate issued by NSW Building Certifiers in relation to the subject development.

We have also attached a cheque to the value of $36.00 for the registration of this certificate.

Please forward a receipt for this payment at your earliest convenience.

If you need more information, please contact me on 0400 113 802.

Yours sincerely,

Paul Rigon
Accredited Certifier

26 October 2012

RECEIVED
- 1 NOV 2012
PITTWATER COUNCIL

$36 Rec: 337548 1/11/12

MOBILE 0400 113 802
PHONE (02) 9518 7776
FAX (02) 9518 6310
EMAIL nswcertifiers@bigpond.com.au

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CONSTRUCTION CERTIFICATE

Section 109C(1)(b) of the Environmental Planning and Assessment Act 1979

Construction Certificate No. 113/12						
Applicant	Name:	**Monash Country Club**				
	Address:	**256 Powderworks Road**				
	Suburb:	**Ingleside**	State:	**NSW**	Postcode:	**2101**
Location of the Property	Address:	**256 Powderworks Road**				
	Suburb:	**Ingleside**	State:	**NSW**	Postcode:	**2101**
	Real Property Description:	**Lot 1 DP 792962**				
Building description	**Stage 1 – Alterations and additions to the maintenance facilities of an existing golf club (Blocks A & B)**					
Exclusions	**Block C**					
Building Code of Australia Classification	**Class 7b & 8**					
Determination	**Approved**					
	Date of Determination:	**26 October 2012**				
Development Consent	Development Consent Number:	**N0041/10** dated **31 August 2010**				
		N0041/10/S96/1 dated **23 August 2012**				
	Consent Authority:	**Pittwater Council**				

I, Paul Rigon certify that work completed in accordance with documentation accompanying the application for this certificate (with such modifications verified by me as may be shown on that documentation) will comply with the requirements of this Regulation as referred to in section 81A (5) of the Environmental Planning and Assessment Act 1979.

Paul Rigon
NSW BUILDING CERTIFIERS

Date: **26 October 2012** Accreditation Body: **BPB** Accreditation No: **0346**

MOBILE 0400 113 802
PHONE (02) 9518 7776
FAX (02) 9518 6310
EMAIL nswcertifiers@bigpond.com.au

Design documentation approved for Construction Certificate 113/12 for 256 Powderworks Road, Ingleside:-

Drawing No.	Revision	Date	Drawn by
CC1000, CC1100, CC2000, CC2001, CC2002, CC2003, CC2010, CC2011, CC2020	C	04.09.12	Sgammotta Architects

Documentation relied upon to issue Construction Certificate 113/12 for 256 Powderworks Road, Ingleside:-

Item No.	Description	Date
1.	Application for Construction Certificate	-
2.	Bushfire Risk Assessment by Planning for Bushfire Protection Pty Ltd	11.01.09
3.	BCA Compliance Assessment Report by NSW Building Approvals report no.2261	21.12.11
4.	Levy online payment receipt	03.04.12
5.	Hydraulic services specification by Walton Hydraulics Pty Ltd	27.12.11
6.	Water management plan by Walton Hydraulics Pty Ltd	03.08.10
7.	Colour schedule by Sgammotta Architects	-
8.	Landscape details by Wallman Partners Pty Ltd drawing no.L1/1 Issue A	-
9.	Structural details by Partridge drawing no.S1-S7 Revision P3	09.12.11
10.	Structural design certificate by Partridge	24.05.12
11.	Hydraulic details by Walton Hydraulics Pty Ltd drawing no.H-00 to H-04 Revision CC	20.12.11
12.	Stormwater design statement by Walton Hydraulics Pty Ltd	09.05.12
13.	Fire safety schedule	26.10.12
14.	Notification of critical stage inspections	26.10.12
15.	Email from Council regarding Neil Walton's qualifications	19.10.12
16.	Disabled access path plan	-
17.	Hebel Commercial and Industrial wall systems installation guide	Dec 08
18.	Addenda 01 by Sgammotta Architects	-

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NOTIFICATION OF CRITICAL STAGE INSPECTIONS

Environmental Planning and Assessment Act 1979 Sections 81A & 86 and Regulation 2000 Clauses 103A & 135A

Address	**256 Powderworks Road, Ingleside**			
Description of Works	**Alterations and additions to maintenance block**			
Development Consent No.	**N0041/10**			
Construction Certificate No.	**113/12**			
Principal Certifying Authority	Name:	**Paul Rigon**	Accreditation No:	**BPB0346**
	Telephone:	**0400 113 802**	Facsimile:	**9518 6310**

THE FOLLOWING ARE CRITICAL MANDATORY INSPECTIONS REQUIRED TO BE CARRIED OUT BY NSW BUILDING CERTIFIERS

They are required pursuant to section 109E(3)(d) of the Act & Clause 162A of the Regs

1. After excavation for, and prior to the placement of, any footings, and
2. Prior to covering any stormwater drainage connections, and
3. Prior to covering waterproofing in any wet areas, and
   (Class 2,3 & 4 ONLY for a minimum of 10% of rooms with wet areas within a building), and
4. After the building work has been completed and prior to any occupation certificate

Please Note: if a builder is appointed the legislation requires you to notify them of these inspections. A missed inspection may result in the PCA being prohibited from issuing an Occupation Certificate.

Paul Rigon
NSW BUILDING CERTIFIERS

Date: **26 October 2012**

SUITE 15/2-12 GLEBE POINT ROAD
GLEBE
NSW 2037
WWW.NSWCERTIFIERS.COM.AU

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EMAIL nswcertifiers@bigpond.com.au

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FIRE SAFETY SCHEDULE

Clause 168 of the Environmental Planning and Assessment Regulation 2000

Premises	**256 Powderworks Road, Ingleside**
Development Consent No.	**N0041/10**
Construction Certificate No.	**113/12**

The following essential fire safety measures shall be implemented in the whole of the building premises and each of the fire safety measures must satisfy the standard of performance listed in the schedule which, for the purposes of Clause 168 of the Environmental Planning and Assessment Regulation 2000, is deemed to be the current fire safety schedule for the building.

Existing Essential Fire and Other Safety Measures	**Standard of Performance**
Exit signs	AS2293.1
Portable fire extinguishers	AS2444
Proposed Essential Fire and Other Safety Measures	**Standard of Performance**
Emergency Lighting	BCA Clauses E4.2/E4.4 & AS/NZS 2293.1-2005
Exit signs	BCA Clauses E4.5/NSW E4.6/E4.7/E4.8 and AS/NZS 2293.1-2005
Lightweight Construction (fire wall)	BCA Specification C1.8
Portable fire extinguishers	BCA Clause E1.6 and AS 2444-2001

Paul Rigon
NSW BUILDING CERTIFIERS

Date: **26 October 2012**

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Fire Safety/Building Consultants
Construction Certificates
Accredited Certifiers
BCA Reports

BCA COMPLIANCE ASSESSMENT REPORT

PROPOSED ALTERATIONS AND ADDITIONS TO MAINTENANCE FACILITIES

256 Powderworks road, INGLESIDE

Building Code of Australia 2011
FIRE SAFETY

DATE > 21 December 2011
REPORT No. > 2261
PREPARED FOR > Sgammotta Architects
PREPARED BY > NSW BUILDING APPROVALS

SUITE 15/2-12 GLEBE POINT ROAD
GLEBE
NSW 2037
WWW.NSWBUILDING.COM.AU

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EMAIL pd@nswbuilding.com.au

CONTENTS

1.0 EXECUTIVE SUMMARY

This report provides a part Building Code of Australia (BCA) Fire Safety assessment for proposed alterations and additions to the maintenance facilities of an existing golf club. The construction works comprise predominantly new staff amenities building ('Block A' – staff amenities), additions to the service and maintenance building ('Block B' – maintenance shed) and proposed storage rooms known as ('Block C' – wash down / chemical facilities). The proposal is located at 256 Powderworks Road, Ingleside which is part of the Monash Country Club (the 'proposal').

The primary purpose of this report is to identify significant non-compliance matters contained in the proposed Block A and existing Block B and C in comparison with the 'deemed-to satisfy' requirements of the BCA, particularly relevant clauses within Volume 1, Section C, D and E with respect to the existing fire safety and proposed works. It should be noted that the existing building was constructed under superseded building codes and is therefore not expected to fully comply with the current BCA.

Max Sgammotta Architects on behalf of the owners have engaged NSW Building Approvals to carry out an audit of the subject proposal and provide this Fire Safety BCA report.

There are some issues requiring specific attention that have been noted as recommendations (below and in Section 4.0) and should be read in conjunction with the BCA compliance summary.

1.1 Basis of Report

This report is prepared to address compliance with the fire safety provisions, Section C, D and E of the Building Code of Australia.

This report is based on a non-invasive inspection carried out on the 16 December 2011 and plan sheet Drawing No: DA1100, 1200, 1300, 2001, 2000 prepared by Sgammotta Architects (dated August 2010) and Consent No: N0041/10 from Pittwater Council dated 31/08/2010 incorporates the requirements of the Building Code of Australia 2011, including the NSW Variations (as a guide).

Condition C6.

In accordance with Clause 94 of the Environmental Planning and Assessment Regulation 2000, plans are to be submitted with the Construction Certificate application demonstrating how the building will be brought into full conformity with fire and spread of fire requirements of the Building Code of Australia.

1.2 Purpose of the Report

The purpose of this report is to assess the following:

- Assessment under the current Building Code of Australia 2011, (Fire Safety Requirements within Section C, D and E).

1.3 Limitations of the Report

This report does not assess the following:

- Access and facilities for people with disabilities is addressed however compliance with Disability Discrimination Act 1992 (DDA) is outside the scope of this report. It should be noted that BCA compliance does not necessarily meet the requirements of the Disability Discrimination Act (DDA).
- Reporting on hazardous materials, OH&S matters or site contamination
- Assessment of any structural elements or geotechnical matters relating to the building, including any structural or other assessment of the existing fire resistant levels of the building
- Consideration of any fire services operations (including hydraulic, electrical or other systems)
- Assessment of plumbing and drainage installations, including stormwater
- Assessment of mechanical plant operations, electrical systems or security systems
- Heritage significance
- Consideration of energy or water authority requirements
- Consideration of Council's local planning policies
- Environmental or planning issues
- Requirements of statutory authorities
- Glazing, shading, lighting calculations and the like required by Section J of the BCA not been carried out

NOTE: The inspection was a 'visual' inspection, limited to those areas and sections of the property fully accessible and visible to the inspector on the date of inspection. The inspection DID NOT include breaking apart, dismantling, removing or moving objects including but not limited to, foliage, moldings, roof insulation / insulation, floor or wall coverings, sidings, ceilings, floors, furnishings, appliances or personal possessions. The inspector CANNOT see inside walls, between floors, inside skillion roofing, behind stored goods in cupboards, other areas that are concealed or obstructed. The inspector DID NOT dig, gouge, force or perform any other invasive procedures. Visible timbers cannot be destructively probed or hit without the written permission of the property owner.

This report does not and cannot make comment upon: defects that may have been concealed, the assessment or detection of defects (including rising damp and leaks) which may be subject to the prevailing weather conditions, the presence or absence of timber pests, gas fittings, common property areas, environmental concerns; the proximity of the property to flight paths, railways, or busy traffic; noise levels; health and safety issues; heritage concerns; security concerns; site drainage (apart from surface water drainage); swimming pools and spas (non-structural); detection and identification of illegal building work ; detection and identification of illegal plumbing work ; durability of exposed finishes ; neighborhood problems ; document analysis ; electrical installation; any matters that are solely regulated by statute; any area(s) or item(s) that could not be inspected by the consultant. Accordingly this Report is not a guarantee that defects and/or damage does not exist in any inaccessible or partly inaccessible areas or sections of the property. (NB: such matters may upon request be covered under the terms of a special purpose property report.)

2.0 BCA ASSESSMENT DATA

Assessment data regarding the current Building Code of Australia.

BCA Building Classification/s:	**5 (staff amenities and office – Block A);** **8 (assembling and maintenance – Block B);** **7b (storage – Block C)**
Building rise in storeys:	**1**
Type of Construction:	**C**

2.1 Location of Fire Source features

North:	Front Boundary	(>3m) Location from boundary of allotment
South:	Rear boundary	(>3m) Location from boundary of allotment
East:	Side boundary	(>3m) Location from boundary of allotment
West:	Side boundary	(>3m) Location from boundary of allotment

3.0 RECOMMENDATIONS

Based on the non-compliance matters identified in comparison to the current Deemed-to-Satisfy Provisions of the BCA based upon the proposal the following should be considered. 'Deemed to Satisfy' (i.e. prescriptive) provisions have been recommended within this report. Where considered appropriate, possibility of an alternate, performance based solution (fire-engineered approach) may be considered by the Principal Certifying Authority in lei of these recommendations.

BCA Issues raised within the building design & plan amendments required

Fire protection/separation

1. All new surface finishes, assemblies and linings to comply with Specification C1.10 with regard to Fire Hazard Properties. Details of material including material test sheets should be provided to the Certifying Authority prior to occupation of the building.

   The critical radiant flux (CRF in kW/m^2) of the floor materials and floor coverings within the building are to be no greater than 2.2, material test sheets should be provided prior to occupation.

Access/Egress, & Disability provisions

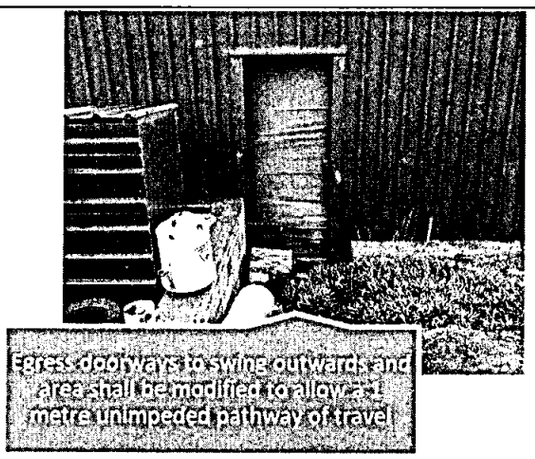
1. Not less than three 'exits' are required to serve Block B. The three exit doorways serving Block B are to be constructed as follows;

   i. Exit doorways to be re-swung so that they swing in the direction of egress.

   ii. The two exit doorways, leading from the front of the building, shall be provided with bollards as these exits discharge into an area used for car parking.

   iii. Recommended that prior to issue of an Occupation Certificate (OC) all existing and new door hardware be reviewed and where required, upgraded to determine compliance, self-closing doorsets are also required.
   A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single hand downward action or pushing action on a single device which is located between 900mm and 1100mm from the floor.

   iv. The link between open space and the road are not considered to be a safe means of travel particularly from the western exit doorway which discharges to a lowered landscaped area. This landscaped area impedes the evacuation pathway and is recommended to be modified to facilitate a 1 metre unimpeded travel way (see next page).



2. The future roller shutter or tilt-up doors to the areas within Block C are to be held in the open position while the building or part is lawfully occupied.

3. Not less than one 'exit' is required to serve Block A. Recommended that the egress doorway discharging to the stairway becomes the nominated 'exit'.

4. The future stairway within Block A and C to comply with Clause D2.3, D2.13 and D2.16 of the BCA, that is;

   i. The proposed stairway is to be constructed of –

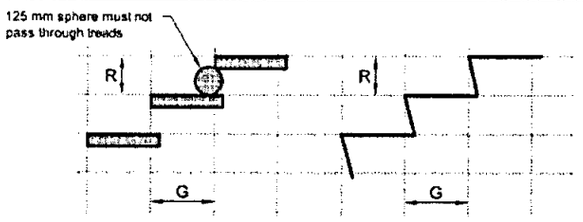
   a. Reinforced or prestressed concrete; or
   b. Steel in no part less than 6 mm thick; or
   c. Timber that –

      ii. Has a finished thickness of not less than 44 mm; and
      iii. (ii) Has an average density of not less than 800 kg/m3 at a moisture content of 12%; and
      iv. (iii) Has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

5. The future stairway including riser and going dimensions to comply with D2.13 (table D2.13 below).

Table D2.13 RISER AND GOING DIMENSIONS (mm)

	Riser (R)		Going (G)[b]		Quantity (2R+G)	
	Max	Min	Max	Min	Max	Min
Public stairways	190	115	355	250	700	550
Private stairways[a]	190	115	355	240	700	550



Note:

(a) Private stairways are—

(i) stairways in a sole-occupancy unit in a Class 2 building or Class 4 part; and

(ii) in any building, stairways which are not part of a required exit and to which the public do not normally have access.

(b) The going in tapered treads (except winders in lieu of a quarter or half landing) in a curved or spiral stairway is measured—

(i) 270 mm in from the outer side of the unobstructed width of the stairway if the stairway is less than 1 m wide (applicable to a non-required stairway only); and

(ii) 270 mm from each side of the unobstructed width of the stairway if the stairway is 1 m wide or

6. Balustrades and handrails to future stairways are to be a height not less than 865 mm above the nosings to the stair treads and the height of the balustrade is not less than 1m. Within Block C where rails are used, a rail must be provided at a height of not more than 150 mm above the nosings of the stair treads or the floor of the landing, balcony or the like and the space between rails must not be more than 460 mm.

7. The electrical switchboards located within the Block A, B & C shall be fully enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure. Appropriate documentation is to be provided by a suitably qualified person or company attesting compliance upon completion.

8. Access for people with disabilities (D3) –

Adjustments are required to the principal entrance to Block A and B to comply with AS1428.1-2009.

i. At least one accessible carparking space shall be provided, the dimensions shall comply with AS/NZS 2890.6.

ii. Within Block A and B access shall be provided to and within all areas normally used by the occupants.

iii. The main entry doorway to Block A and B is recommended to be accessible, that is, the leaf must have a clear opening width of not less than 850mm. A compliant disabled sanitary facility is also recommended within Block A.

Services and Equipment

1. Fire Hose Reels (serve Block B)

   i. In order to achieve appropriate coverage an additional fire hose reel system shall be installed to serve Block B. Fire hose reels must be located within 4 m of an exit.

   ii. The existing fire hose reel system, outside the front of Block B, shall be up-to-date tested from a suitably qualified person or company attesting compliance with BCA Clause E1.4 & AS2441 on completion of the works.

2. Fire Hydrants (serve Block B)

   i. Design and installation to comply with BCA clause E1.3 & AS 2419.1. In particular, please note the following:

   ii. External hydrants located within 10m of the external walls of the building must be protected in accordance with AS 2419.

   Any fixed on-site pumpset which is located within the building must be in a clearly indicated room:

   a. having direct egress to a road or open space; and

   b. if the building is not protected throughout with a sprinkler system complying with Specification E1.5, separated from the remainder of the building by construction having an FRL of not less than 120/120/120.

   Alternative to Fire Hydrants – Building Block B can be separated into two separate fire compartments with a floor area measuring <500m². A fire wall constructed in accordance with Specification C1.1 (90/90/90 FRL) extended to the covering of the roof and any opening in this fire wall be protected in accordance with C3.5. Building elements, other than roof battens with dimension of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire resisting performance of the fire wall is maintained.

3. Within all Blocks - Portable fire extinguishers shall be provided to the building in accordance with AS2444-2001.

   i. Each extinguisher shall be located in a visible and readily accessible position. Wall mounted extinguishers shall be minimum 100mm and maximum 1200mm from the finished floor and there signage to be a minimum 2000mm above the subject extinguisher location.

4. A system of emergency lighting must be installed to assist evacuation of occupants in the event of a fire. It is recommended that complying system of emergency lighting be installed within the Block B in accordance with BCA Clauses E4.2/E4.4 & AS/NZS 2293.1-2005. A suitably qualified person or company attesting compliance with the above requirements upon completion of the works.

5. To orientate people out of the building effectively, exit signs and directional exit signs, in accordance with AS/NZS 2293.1-2005 are recommended within the exit pathways within Block A and B.

6. An updated Fire Safety Schedule should be developed for the building and the fire safety measures contained within the Schedule should be maintained annually in the form of a Annual Fire Safety Statement, as required by the Environmental Planning & Assessment Act 1979. This statement should be displayed within the building.

4.0 CONCLUSION

This report has identified a number of matters in relation to the current level of fire and life safety, in the proposed alterations and additions to the maintenance facilities of the existing golf club. The proposal is to comply with the 'Deemed to Satisfy' (i.e. prescriptive) provisions of BCA unless an acceptable Performance Based Alternate Solution is formulated.

The primary purpose of this report is to identify (by visual non-invasive inspection) and plan assessment the significant non-compliance matters in comparison to the current Deemed-to-Satisfy provisions of the BCA in relation to fire safety, which are addressed in the Recommendations within Section 3.0.

Patrick Doherty
Grad. Dip. Bldg, Dip Applied SC (Bldg)
Accreditation Number BPB0094; NSW Planning
NSW Building Approvals

ATTACHMENT A - INSPECTION & MAINTENANCE

Fire Safety Measures

The fire safety measures within the building must be maintained to ensure correct operation at all times the building is occupied. All fire fighting equipment should be tagged when tested/inspected and log books kept upto-date for all smoke detection, warning systems and sprinkler systems (where installed).

An annual fire safety certificate must be submitted to the local consent authority and the NSW Fire Brigade each year indicating satisfactory performance of the fire safety measures contained within the building. The annual fire safety statement should be displayed in a prominent place within the building (i.e. the main entry foyer) The correct operation and maintenance of the building's fire safety measures ARE critical in affording an adequate level of fire safety.

Good Housekeeping

The ongoing management of the building should ensure good housekeeping procedures. The following matters should be considered by building management:

- Ensure exits and paths of travel to exits remain unobstructed (in particular stairways)
- Avoid storage of materials in unoccupied areas
- Limit storage of flammable/combustible materials to designated and approved areas
- Prevent chocking open fire/smoke doors
- Prevent storage of materials that could hinder access to fire fighting equipment

SECTION J BCA - COMPLIANCE SPECIFICATION

Part J6 – Lighting and power to comply with the requirements of Part J6 BCA

Part J8 – Access for maintenance of plant and equipment will be provided in accordance with BCA I2

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- PRINCIPAL CERTIFYING AUTHORITY
- CONSTRUCTION CERTIFICATES
- FIRE SAFETY/BUILDING CONSULTANTS

NSW BUILDING CERTIFIERS

Construction Certificate Application

Under Section 109C (1) (b), 81A (2) and 81A (4) of the Environmental Planning and Assessment Act 1979

1. Details of the applicant

Mr ☐ Ms ☐ Mrs ☐ Other: Monash Country Club

First name | Family name | Company/ Organisation: Monash Country Club

Flat/street no.: 256 | Street name: Powderworks Road

Suburb: Ingleside | State: NSW | Postcode: 2101

Daytime telephone: 02 9913 8282 | Fax | Mobile

Email

2. Identify the land

Level / Flat no. | Street no. & Street name: 256 Powderworks Road

Suburb: Ingleside | Postcode: 2101

Lot no.: 1 | DP/ MPS no.: 792962 | Section

Building Name: Monash Country Club - Maintenance Facilities | Volume/ folio

3. Estimated cost of the development

$ 500,830.00 *including GST*

4. Describe the development

What type of work do you propose to carry out?

Building work ☒ Subdivision work ☐

Describe the work

Alteration and Addition to maintenance compound Including but not limited to existing shed, new amenities, new above ground fuel storage tank, new wash down and chemical store facilities and parking.

BCA Classification:

Class 8

SUITE 15/2-12 GLEBE POINT ROAD
GLEBE
NSW 2037
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PHONE (02) 9518 7776
FAX (02) 9518 6310
EMAIL nswcertifiers@bigpond.com.au

Certificate Application Form

5. Development Consent

Development Consent Number:	Date Consent Determined	Consent Authority (Local Government)
N0041/10	31 Aug 2010	Pittwater Council

6. Signatures

Applicant's Signature

Signature ▷ [signature]

Date

Owners' Consent

- Every owner of the land must sign this application.
- If the owner is a company, this form must be signed by an authorised director of the company.
- If the property is a unit under strata title, or a lot in a community title, this form must be signed by the chairperson or the secretary of the Body Corporate or the appointed managing agent.
- If you are signing on the owner's behalf as the owner's legal representative, you must state the nature of your legal authority and attach documentary evidence (e.g. power of attorney, executor, trustee, company director, etc

As the owner(s) of the above property, I/we consent to this application. I also consent for NSW Building Certifiers staff to enter the land to carry out inspections relating to this application.

Owners Signature

Signature ▷

Name Of Person and/ or Company Name & Address: Monash Country Club

Date

Owners Signature

Signature

Name Of Person and/ or Company Name & Address

Date

7. Details of the principal contractor/builder

Builder's name: TBA

Builder's licence number

Flat/street no. | Street name

Suburb or town | State | Postcode

Daytime telephone | Fax | Mobile

OFFICE USE ONLY: date received 1-9-11

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8. Information to be attached to the application

You need to provide material with your application that is relevant to the type of work you propose to do. Please indicate the material you have attached by placing a cross in the appropriate boxes ☐:

1. If you are going to carry out **building work:**

☒ a copy of any compliance certificates on which you rely

☒ detailed plans of the building (4 copies)

The plans must be drawn to a suitable scale and consist of a general plan and a block plan. The general plan of the building is to:

- show a plan of each floor section
- show each elevation of the building
- show the level of the lowest floor, the level of any yard or unbuilt area on that floor and the level of the ground
- indicate the fire safety and fire resistance measures (if any), and their height, design and construction

Where you propose to alter, add to or rebuild a building that is already on the land, or modify plans that have already been approved, please mark the general plan (by colour or otherwise) to show the change you propose to make.

☒ detailed specifications of the building (4 copies)

The specifications are to:

- describe the construction (including the standards that will be met), the materials which will be used to construct the building and the methods of drainage, sewerage and water supply
- state whether the materials proposed to be used are new or second hand and give details of any second-hand materials to be used.

Where you propose to modify specifications that have already been approved, please mark the approved specifications (by colour or otherwise) to show the modification.

☒ a plan of the existing building, drawn to scale, where the application involves building work to alter, enlarge or extend that building
This plan will assist NSW Building Certifiers, being the certifying authority to assess whether the work will reduce the fire protection capacity of the building.

☐ evidence of any accredited component, process or design on which you seek to rely
Components, processes or designs that relate to the erection or demolition of a building are accredited under the Environmental Planning and Assessment Regulation 2000.

☐ details of the fire safety measures, unless you are building a single dwelling or a non-habitable building or structure (such as a private garage, carport, shed, fence, antenna, wall or swimming pool). These details are to include:

- a list of any fire safety measures you propose to include in the building or on the landfill you propose to alter, add to or rebuild a building that is already on the land, a list of the fire safety measures that are currently used in the building or on the land

The lists must describe the extent, capability and the basis of design of each measure.

☒ the attached schedule, completed for the development

The information in the schedule will be used by the Australian Bureau of Statistics to report each quarter on the building activity that occurs in the economy. Building statistics allow governments and businesses to accurately identify main areas of population growth and demand for products and services.

☒ a long service levy to construct a building, unless:

- the cost of construction is less than $25,000

SUITE 15/2-12 GLEBE POINT ROAD
GLEBE
NSW 2037
WWW.NSWCERTIFIERS.COM.AU

MOBILE 0400 113 602
PHONE (02) 9518 7776
FAX (02) 9518 6310
EMAIL nswcertifiers@bigpond.com.au

9. Schedule to application for a construction certificate

Please complete this schedule. The information will be sent to the Australian Bureau of Statistics.

All new buildings

Please complete the following:

- Number of storeys (including underground floors): 1
- Gross floor area of new building (m²): 144 sqm
- Gross site area (m²):

Residential buildings only

Please complete the following details on residential structures:

- Number of dwellings to be constructed:
- Number of pre-existing dwellings on site:
- Number of dwellings to be demolished:
- Will the new dwelling(s) be attached to other new buildings? Yes ☐ No ☐
- Will the new building(s) be attached to existing buildings? Yes ☐ No ☐
- Does the site contain a dual occupancy? (NB dual occupancy = two dwellings on the same site) Yes ☐ No ☐

Materials – residential buildings

Please indicate the materials to be used in the construction of the new building(s):

Walls		Code	Roof		Code	Floor		Code	Frame		Code
Brick (double)	☐	11	Tiles	☐	10	Concrete or slate	☒	20	Timber	☐	40
Brick (veneer)	☐	12	Concrete or slate	☐	20	Timber	☐	40	Steel	☒	60
Concrete or stone	☐	20	Fibre cement	☐	30	Other	☐	80	Aluminium	☐	70
Fibre cement	☐	30	Steel	☒	60	Not specified	☐	90	Other	☐	80
Timber	☐	40	Aluminium	☐	70				Not specified	☐	90
Curtain glass	☐	50	Other	☐	80						
Steel	☒	60	Not specified	☐	90						
Aluminium	☐	70									
Other	☐	80									
Not specified	☐	90									

SUITE 15/2-12 GLEBE POINT ROAD
GLEBE
NSW 2037
WWW.NSWCERTIFIERS.COM.AU

MOBILE 0400 113 802
PHONE (02) 9518 7776
FAX (02) 9518 6310
EMAIL nswcertifiers@bigpond.com.au

WATER MANAGEMENT PLAN

PROJECT:

MONASH COUNTRY CLUB
MAINTENANCE FACILITIES
255 POWDER WORKS ROAD,
INGLESIDE NSW 2101

ARCHITECT:

Sgammotta Architects
Level 1,169 Maroubra Road,
Maroubra NSW 2035
Ph: (02) 9344 6188
Fax: (02) 2931 2139

SERVICES ENGINEER:

Walton Hydraulics Pty Ltd
5 Marne Street
Vaucluse NSW 2030
Ph: 93371725
Mob: 0411 178 528

Issue	Development Application
Date	26.01.10 draft
Revised	03.08.01 DA. 1

1. INTRODUCTION

1.1 SCOPE OF WORK

The following Water Management Plan was produced by Walton Hydraulics Pty Ltd at the request of the directors of Monash Country Club.

The site is located at 256 Powder Works Road Ingleside NSW. The site consists of an eighteen hole golf course, a club house towards the Northern boundary adjacent a large dam, and maintenance facilities depot adjacent a smaller dam on the South Eastern boundary.

The existing site infrastructure is in place and has been operational for many years; this report is to cover the lesser portion of the site known as the maintenance facilities area. We would point out that this area is currently an operational maintenance facilities area.

The proposed improvements to this area generally consist of but not limited to the following:

- Addition of concrete car parking areas and regarding of existing concrete surfaces, this will insure 100% collection of surface rain water and returning of same to adjacent dam for re-use in irrigation and fertilizer spraying.
- The collection and specialised treatment of trade waste water to provide "A" Class water for re -use in plant washing facilities.
- Provision of a new fuel depot complete with spill provisions and signage at the filling point. Any spilt / hydrocarbons will be contained and treated in accordance with EPA requirements.
- The amenities area and sanitary fixtures are to be removed from existing workshop area and replaced with a new amenities building and same number of fixtures to cater for the current staff levels.
- The existing sewer drainage system will be modified as required to serve the revised fixture locations and maintain code compliance.
- The existing fertilizer and chemical store will be relocated and be complete with spill protection with alarm provisions.
- The existing domestic Sydney Water supply will be extended to the new fixture locations and modified to current code compliance.
- The existing site stormwater re-use system from the adjacent smaller site dam serving the mobile watering tanker refill and vehicle wash area will be relocated and extended as required for the proposed development in compliance with code compliance.

The following reports are attached in response to the requirements of Pittwater Council to submit a Water Management Plan addressing the following prescribed sections:

B5.1 Water Management Plan.

B5.2 Waste Water Disposal.

B5.3 Grey Water Re-use.

B5.4 Stormwater Harvesting.

2. WATER MANAGEMENT PLAN (PART B5.1 REQUIREMENTS)

2.1 WATER MANAGEMENT DRAWINGS

The water management drawings numbered H-00 H-01 and H-02 are attached and form part of the overall report.

The attached drawings have been prepared to comply with the minimum prescribed scale of 1:200 and show the existing development surface contours and the proposed levels to the revised ground surfaces

All components of the proposed integrated water management plan are shown on the plans and have been specifically addressed in the following individual reports.

2.2 DRAWING DETAILS

It should be noted that the attached water management drawings are conceptual only and do not purport to show all levels or construction detail as this level of detail would be further developed and be provided as construction certificate documentation.

2.3 EXISTING SITE SURVEY PLAN

A site survey plan prepared by Landscape Surveys to a scale of 1:250 has been included to identify the extent of the existing buildings and site works, surface water drainage and the points of surface water discharge to the adjacent irrigation storage dam.

This plan is in tendered as a compassion document to show the minimal concept changes in the preposed development in order to direct all roof and maximise surface water catchment and grading of same to the adjacent dam for irrigation re-use.

4. GREY WATER RE-USE (PART B5.3 REQUIREMENTS)

This sub-section must be read in conjunction with the attached Water Management drawings numbered H-01,

4.1 SYSTEM DESCRIPTION

Grey water generated from the designated vehicle wash down bay shown as item 10 and the lower grate on the fertilizer tank filling bay shown as item 5 on drawing H-01 is to be re-used as described in the following system.

Both bays are roofed to limit collection rain water in the grates. These grates are the drained back to a common collection well so that all collected water can be then pumped up for grass screening, hydrocarbons and fertilizer removal, water processing and finally UV and Ozone sterilization.

The domestic water supplied to the wash bay is to be proportionally monitored such to insure that available re-use water has priority use. All processed water is to be collected in localised storage tanks to be safely being re-used for vehicle washing, mixing with fertilizer as distribution product and for irrigation.

The storage tanks are to be sized to contain all available treated water until used on site

4.2 PROCESS EQUIPTMENT

The process equipment would be similar or equal too a "WaterStax" system a proprietary item manufactured by Water treatment Systems. The current Model number is WSR-1000K. This or equivalent equipment would generally consist of the following major components:

- Waste water collection tank and transfer tank. (Part of site works)
- Pre-treatment and solids separation tank
- Bioremediation tank.
- Enhanced digestion and polishing tank.
- Re-cycled water holding tank with ozone sterilization unit. *(The sterilized water in this tank being suitable for human contact and vehicle washing)*

4.3 PROCESS FUNCTION

The installed system will remove by an all natural bioremediation process all oils; grease, hydrocarbons, herbicides, pesticides and insecticides form the collected waste process water. Sterilised water from the unit is returned to the holding tank for re-use in the vehicle washing, fertilizer mixing or irrigation water.

4.4 TECHNICAL DATA

A copy of typical manufactures technical data is appended to this report for review and any further additional information on this type of equipment may be sourced from the manufactures.

5. STORMWATER HARVESTING (B5.4 REQUIREMENTS)

This sub-section must be read in conjunction with the attached Water Management drawings numbered H-01 and H-02

5.1 EXISTING STORMWATER HARVESTING

The site consists of the Monash Country Club being an 18 hole golf course with club house, a maintenance facilities area and three existing site dams that have been previously been designed to provide to provide harvested water for irrigation of the golf course, gardens and washing of maintenance vehicles. The three existing site dams are shown in the aerial photo appended to this report

5.2 THE EXISTING WATER COURSE

The existing operational system forming portion of this Development Application relates to the two Northern most site dams and the existing natural water course that flows diagonally across the upper portion site.

These two dams have been previously constructed water along the upper end of a natural water course; the weir of the lower dam overflows to return excess into the natural water course again to supply water to lower off site dams. The water not harvested for re-use in the series of upper dams eventually flows on to Mullet Creek and then Narrabeen Lakes.

For information a map of the upper dams and water course is appended to this report.

5.3 EXISTING OPERATIONAL HARVESTING SYSTEM

The existing operational harvesting system consists of the two upper dams built across a natural water course. Numerous sections of in-ground drainage have been installed to insure maximum collection of surface run-off to the dams.

Site water is currently managed so that water levels within the dams are rationalized for maximum available storage capacity and surface irrigation, this is achieved by a vast net-work of in ground irrigation pipes and transfer pumps and a computer control centre to insure maximum results with minimum water usage.

5.4 HEALTH MANAGEMENT

It should be noted that the golf course above ground irrigation area is operated in out of play times or on out of play areas. This therefore public exposure to the harvested water in minimised in accordance with current government guidelines

5.5 NEW WORKS WATER HARVESTING

As indicated on the H-01 and H-02 revision DA.1 drawings it is proposed that the new impervious areas generally consisting of the paved car parking areas and new roof surfaces will be drained by gravity to the existing lower dam located at the rear of building B .

The proposed new pipe system will include an upgrade of some of the existing site pipe work, discharge head walls along with the new works. Water quality

5.9 OPERATION AND MAINTENANCE

The golf club would be responsible for the operation and maintenance and ongoing reporting of water management provisions to the dam and the management and testing of water quality within the dam.

5.10 CONCLUSION

We are of the opinion that if the installed system is managed as proposed, that proposed system would not support any negative health issues, be environmentally friendly and a real asset to the club by the provision of additional irrigation water and cleaner water flowing on to the lower community.

7. STORMWATER MANAGEMENT–WATER QUAILITY (PART B5.9)

This section is to be read in conjunction with the attached Water Quality Management drawing numbered H-01

7.2 QUALITY WATER PROVISIONS

It is proposed that water quality provisions to the proposed development area will be improved by the proposed modification and or replacement of existing pipe work and the addition of new services incorporating the following features as indicated on the drawings:

- Sediment control basins
- Collection pits with sediment traps.
- Headwall energy dissipaters.
- Oil and grit separators.
- Removal of the in ground fuel tank and site on ground filling facility.
- Providing a fuel vault for the containment of on site fuel.

7.3 FUEL FILLING AREA

As shown on the drawings the pavement surface adjacent to the proposed fuelling area has been separated from the fuel area by a series of grated drains to insure that the storm water cannot be contaminated by spilt fuel. Surface from the fuelling area is to be collected and processed through an oil / grit separator ensuring that all spilt fuel is collected and correctly disposed of.

7.3 EXISTING FUEL TANK

The existing in ground fuel tank will be de commissioned pumped out and the tank removed from site in accordance with the DECCW policy guidelines. This will reduce the potential for on going site spillage and tank leakage and stormwater contamination in the future.

7.4 DESIGN CRITERIA

The treatments that have been used to provide a managed water quality with consideration the environmental and health and safety is generally as recommended in the EPA publication Managing Urban Stormwater.

7.5 RECOMMENDATION

We are of the opinion that if the noted water quality measures were adopted and correctly maintained by the facilities manager, then the risk of environmental damage caused by a fuel spill would be minimised and in addition there would be an improvement in water quality both on and off the site.

8. MONASH COUNTRY CLUB AERIAL PHOTO

9. AERIAL PHOTO OF MAINTENANCE FACILITY AREA

10. NATURAL WATER COURSE MAP

11. TREATMENT PLANT DETAILS

The attached data is typical of the type of equipment that may be installed.

11.1 WATERSTAX TREATMENT PLANT DETAILS

11.2 SEWAGE WASTE WATER TREATMENT PLANT

The Most Advanced Biore

FURTHER BENEFITS

- *All natural Discharge System or Recycle System*
- *Modular System allows greater installation flexibility*
- *Low Maintenance requirements includes Auto-purge features*
- *No Costly waste disposal or chemical treatments*
- *Non-Toxic microbes, free of pathogens*
- *Patented Air Stick injects dissolved oxygen, maximising aerobic digestion rates*
- *Tested for compliance with EPA and local regulations (Test results available)*

WATERSTAX WATER TREATMENT SYSTEMS BY WATERMAZE

WaterMaze makes it easier to meet your environmental requirements and help stop your profits going down the drain. Using advanced bioremediation technology, WaterMaze treats golf course, turf industry and agricultural wash water so that it can be re-used as irrigation water or legally discharged into the sewer.

WATERMAZE BIOREMEDIATION TECHNOLOGY

Economically removes oil, grease, hydrocarbons, herbicides, pesticides and grass clippings from waste water typically generated by cleaning equipment.

Unlike filtration systems, which can create a hazardous sludge requiring regular cleaning, chemical treatment and waste disposal - the WaterStax combines specialised BioStax microbes and BioNutrient to naturally convert wastes into harmless water and carbon dioxide.

BY CHOOSING THE RECYCLE OPTION

The process incorporates an additional high output UV Ozone Generator for additional polishing which means treated water can be recycled as wash water for equipment.

EXTRA DURABLE TANKS

High density, cross-linked polyethylene, resistant to chemical fatigue and UV exposure. Polyethylene also attracts oils and organics providing additional surface area for biological attachment.

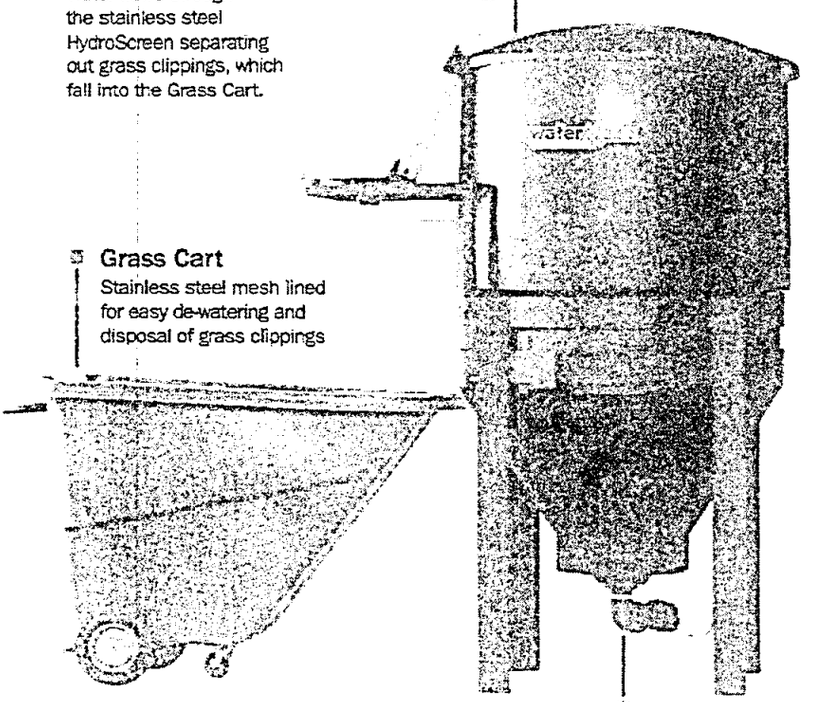
TANK 1

Pre-treatment and Solids Separation

Cone-bottom CLT tanks enhance the settling and removal of suspended solids in the waste stream.

Easy Grass Removal

Water flows through the stainless steel HydroScreen separating out grass clippings, which fall into the Grass Cart.



Grass Cart

Stainless steel mesh lined for easy de-watering and disposal of grass clippings

Auto Purge Valves

Easy maintainance with timer controlled purge feature to automatically remove sludge.

Submersible Sump Pump

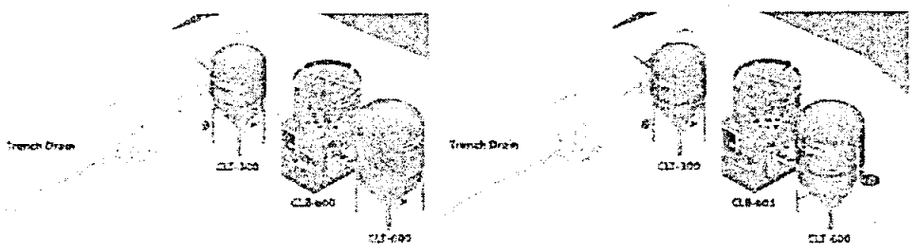
Handles grass clippings and transfers water into the HydroScreen for grass separation. Pump and plumbing are designed to agitate solids in the sump pit and to transfer water and heavy solids without clogging.

Trench Drain

For capture and easy removal of dirt and mud.

Specifications

Typical 18 hole golf course arrangement, tanks placed in-line



	Standard System	Recycle System
Code	WS-1000K	WSR-1000K
Number of tanks	3	4
Tank Construction	High density cross-linked polyethylene – UV and chemical resistant.	
Daily Capacity (nominal)	4500 Litres	5400 Litres
Processing Rate	The processing rate varies for each site. Factors that must be considered are: · Average daily flow (litres per day) · Biological Oxygen Demand (BOD) levels (ppm) · Oxygen input (dissolved oxygen) · Hydraulic retention time (HRT) · Total petroleum hydrocarbons (TPH) · Water temperature and pH A site survey with an Enware sales engineer will calculate the estimated processing rate and make recommendation as to the size of system needed.	
Flow Capacity (nominal)	Factory set at 70 litres per minute – can be adjusted up to 120 litres per minute.	
Recommended space on pad	6m x 2.5m approximately – contact Enware for pad concept drawings.	
Surface Area of Bio-Media	193 Sq.m (2087 sq.ft)	193 Sq.m (2087 sq.ft)
Electrical	240V 1ph 15amps	240V 1ph 25amps
Items included	· 1/2 hp Sump pump · Hydroscreen & mounting bracket · Grass Cart · CLT-300 pre-treatment tank with auto purge valve · CLB-600 main biodigestion unit with automated controls, AirStick technology transfer and circulation pumps · CLT-600 enhanced biodigestion and oclishing tank with auto purge valve.	· 1/2 hp Sump pump · Hydroscreen & mounting bracket · Grass Cart · CLT-300 pre-treatment tank with auto purge valve · CLB-603 main biodigestion unit with automated controls, AirStick technology, transfer and circulation pumps and High-output UV Ozone generator · CLT-600 enhanced biodigestion and polishing tank with auto purge valve. · Recycle Water Holding Tank (2000L)
Options	· PH controller	· PH controller
Biology Used	Non-pathogenic, 100% gram positive, aerobic microbes. 100% of the BioStax microbes are designed to eat hydrocarbons.	
How and when Biology is added	The automated control centre in Tank 2 provides daily microbe addition, using a peristaltic pump for exact dosage. Daily injection guarantees the presence of hydrocarbon eating microbes, even if the microbe colony is damaged, to ensure the wash water is effectively treated prior to discharge or re-use.	

IMPORTANT: The effective installation of a WaterStax wash water treatment system depends upon the wash pad design.
For a detailed WaterStax information pack, call 1800 671 864 or visit www.water-treatment.com.au.
An Enware representative can also provide and obligation-free onsite assessment of your current facility, including recommendations and concept wash pad drawings.

Also Available from Enware

- Spill prevention and containment
- Emergency shower and eyewash systems
- Spill pallets and bunding
- Vandal resistant tapware
- Food service tapware
- FastAct chemical spill neutralisation
- Water efficient tapware
- Drinking fountains and chillers

ENWARE AUSTRALIA PTY LIMITED
ACN 073 985 014
Quality Endorsed Company
9-11 Endeavour Road, Caringbah, NSW 2229 Australia PO. Box 2545 Taren Point NSW 2229
Ph: 61-2- 9525 9511 · Fax: 61-2- 9525 9536

2

1. **Inexpensive**. Replacement cost is included in the annual maintenance fee.
2. **Minimal Power usage**. Utilising low wattage Globe.
3. **Stainless Steel Casing**. Ensuring longevity of the UV System.
4. **No Chemicals**. UV works continuously, **Cannot** run out between services and is **Safe** for the environment and your family.

- To Supply and install a Wastewater Treatment System to treat a daily wastewater flow of Approximately 1500 - 3,500litres per day

The first stage of treatment is to separate the solids from the liquids, solids remaining in this first chamber where an anaerobic digestion process takes place. The digestion is accelerated by the presence of anaerobic micro–organisms which multiply rapidly under ideal conditions and that will ensure that the offensive faecal solids are turned into an inert waste.

The System is designed to regulate the flow of wastewater influent for consistent treatment. Eliminating surge flows reduces the cost and size of the biological_treatment process. Flow balancing is achieved by means of sub-surface inlet and outlet heights, dispersing the treated waste at the final stage at a constant flow rate.

Treatment liquids flow into the aeration chambers where the liquid is aerated by means of a submerged diffused system. The water is circulated periodically around contact media that has a large surface area to volume ratio. The media sustains the growth of an attached biomass that remains stationary encouraging slow growing of slow multiplying nitrifying bacteria to develop.

Following aeration, the effluent is allowed to settle under quiescent conditions in the clarification chamber. Settled solids are periodically pumped back to the first chamber via a venturi system activated by the air blowers.

Supernatant effluent from the sedimentation contains coliform and other noxious bacteria. Ultra-violet light will be used in the disinfection process. The disinfected water will be pumped through an underground main irrigation line to an irrigation network.

Krystal Kleer

12. DESIGN CERTIFICATION

Paul Rigon

From: Max Sgammotta [max@sgammotta.com.au]
Sent: Monday, 22 October 2012 6:45 PM
To: Paul Rigon
Subject: FW: Monash golf Club Maintenance Facility

Please find attached a copy of the reply form council regarding Neil Walton's qualifications

Regards
Max Sgammotta
B.Sci(Arch) B.Arch
Chartered Architect
ARAIA

MAX SGAMMOTTA || SGAMMOTTA ARCHITECTS
LEVEL 1, 169 MAROUBRA ROAD, MAROUBRA, NSW 2035, AUSTRALIA
TELEPHONE +(612) 9344 6188 FAX +(612) 9314 2139
EMAIL: max@sgammotta.com.au WEB:www.sgammotta.com.au

From: Neil Walton [mailto:nw_hydraulics@walton.net.au]
Sent: Monday, 22 October 2012 6:43 PM
To: 'Max Sgammotta'
Subject: FW: Monash golf Club Maintenance Facility

Hi Max,

I hope this will finally resolve all issues.

Kind regards,

Neil Walton
Director
Mobile: 0411178528
WALTON Hydraulics Pty Ltd

From: Peter_Rodham@pittwater.nsw.gov.au [mailto:Peter_Rodham@pittwater.nsw.gov.au]
Sent: Friday, 19 October 2012 1:51 PM
To: nw_hydraulics@walton.net.au
Subject: Re: Monash golf Club Maintenance Facility

Neil.

Council acknowledges you are an engineer (Hydraulic Engineer) and with your current experience/memberships are eligible to become a member of the Institute Engineers Australia.
This therefore satisfies the condition requirements.

Regards

Pete Rodham

Environmental Health Officer
T: [illegible]
F: [illegible]
E: pittwater_council@pittwater.nsw.gov.au
W: [illegible]

PITTWATER
COUNCIL

www.pittwater.nsw.gov.au

PITTWATER 2025
YOUR VOICE. YOUR VISION

.....

From: "Neil Walton" <nw_hydraulics@walton.net.au>
Sent: 17/10/2012 05:50:22 PM
To: <pittwater_council@pittwater.nsw.gov.au>
CC: '"Max Sgammotta"' <max@sgammotta.com.au>
Subject: Re: Monash golf Club Maintenance Facility

Attention: PETER RODHAM Hi Peter, Further to our previous discussion with regard to Paul Rigon of NSW Building Certifiers request for (MIE Aust) certification of hydraulic and stormwater Services in order to issue the Construction certificate. As advised previously I am a full member of the Hydraulic Services Consultants Australia (NSW) INCORPORATED, with forty two years industry experience and having a full quota of Continued Professional development (CPD)points as noted on the attached published CPD register. In order to progress the issue of the Construction Certificate I would be pleased you could provide a statement advising that my qualifications are acceptable to Council as satisfying the(OR WHO IS ELIGIBLE TO BECOME A CORPORATE MEMBER AND HAS APPROPIATE EXPERIENCE AND COMPETENCE IN THE RELATED FIELD) portion of the condition C.1 and C.2 of the approval (Refer attached copy). We thank you for your attention to this matter. Kind regards,

 - Council condition C1.jpg - 003.jpg

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Pittwater Council.
www.pittwater.nsw.gov.au

MONASH COUNTRY CLUB MAINTENANCE FACILITY ADDENDA & MODIFICATIONS

ADDENDA 01

The following items shall form part of the specification and drawings for works undertaken at the Monash Country Club Maintenance Facilities.

A. FIRE WALL – HEBEL WALL

1 Structural Engineer –

Allow for new portal frame along western wall of Area B8 to ensure new extensions are structurally independent to that of the existing structure and will support the new Hebel 150mm panels to create a 90/90/90 fire wall between Area B5,B6,B9 and Area B8

2 Architectural Drawings- **New Fire Wall - Hebel Panels.**

A new fire wall shall be erected between the existing amenities of Area B5, B6, B9 and Area B8.

Retain existing metal cladding, except where new opening is created between B8 & B9 Provide 150mm Hebel panels to span between the new concrete floor slab to Area B8 and to the underside of the new roof sheeting.

Hebel panels shall be installed flush with external metal cladding. This will require the purlins to abut the Hebel panels

Install strictly in accordance with manufacturers specifications, allow for all fixings, cleats, glues and accessories.

Provide certificates and tags as required upon completion certifying wall has been installed and compliance with fire rating requirements.

6 DOORS AND HARDWARE

New Fire Doors D20 – Provide for a new 1 hour rebated fire doors- D20 include but not limited to;

2400mm x 1800mm x 35mm solid core.
Provide new 1 hour fire rated steel frame
Manual flush bolt equal to Lockwood 002 door closer
Surface mounted door closer equal to Kaba 9200 series
Sequence selector equal to Kaba 1240 series
Tagging and certification on completion of works

B. FIRE REPORT

4. In addition to the fire reports the development shall comply with the bush fire report, BCA report, and conditions B1-B32 of the DA.

End of Addendum

[Type text]

Ref: 2012 004 Cert
May 9, 2012

The Principal Certifier

C/- Max Sgammotta Architects
Level 1,169 Maroubra Road,
Maroubra NSW 2035

SUBJECT PREMISES:
MONASH COUNTRY CLUB MAINTENANCE FACILITIES DA N0041/10

RE: DESIGN STATEMENT – STORMWATER HARVESTING & WASTE WATER

Dear Sir,

Pursuant to Pittwater Council requirements, I hereby State that the above design is in accordance with normal engineering practice and generally meets the requirements of the Australian Standards and the relevant conditions of Pittwater Councils Development application Consent

In particular Condition C matters:

1. That the stormwater harvesting system is generally in accordance with Councils approved drawings and Pittwater DCP.21

2. That the stormwater quality systems are generally in accordance with Councils approved drawings and Pittwater DCP.21

I am an appropriately qualified and competent person in this area and a full member of The Association of Hydraulic Services Consultants Australia. As such I can state that the design and performance of the CC design drawings will generally comply with the above the concepts and that of the approved DA drawings. These conditions are incorporated in the project hydraulic specification revision CC and detailed on the following CC drawings:

Cover Sheet H-00 Rev CC.1
Site Services plan H-01 CC
Roof and gutter plan H-02 CC.1
Building services plan H-01 CC
Detail Sheet H-04 CC

Neil Walton (AHSCA)
Director

Levy Online Payment Receipt

LONG SERVI
CORPORAT

Thank you for using our Levy Online payment system. Your payment for this building ap processed.

Applicant Name:	SGAMMOTTA ARCHITECTS
Levy Application Reference:	5026030
Application Type:	DA
Application No.:	N0041/10
Local Government Area/Government Authority:	PITTWATER COUNCIL
Site Address:	256 POWDERWORKS ROAD
	INGLESIDE
	NSW
	2021
Value Of Work:	$500,830
Levy Due:	$1,752
Levy Payment:	$1,752
Online Payment Ref.:	647277205
Payment Date:	3/04/2012 3:29:47 PM

24 May 2012

PARTRIDGE

Sgammotta Architects
Level 1
169 Maroubra Road
MAROUBRA NSW 2035

Attention: Mr Max Sgammotta

STRUCTURAL DESIGN CERTIFICATE

Project Description: NEW WORKS

Site Address: **MONASH GOLF COURSE**
Powderworks Road, INGLESIDE

We, Partridge Structural Pty Limited, being professional Structural Engineers within the meaning of the Building Code of Australia, hereby certify that the structural design of the building work shown on the Certified Structural Drawings was carried out under the supervision of a structural engineer certified under NPER, and that this work was designed in accordance with accepted engineering practice and principles and with the following:

(a) Clauses B1.1, B1.2, B1.3 and B1.4 (for the codes listed below) of the Building Code of Australia (BCA)

(b) The current edition of the relevant Australian Standards listed in the BCA as follows:

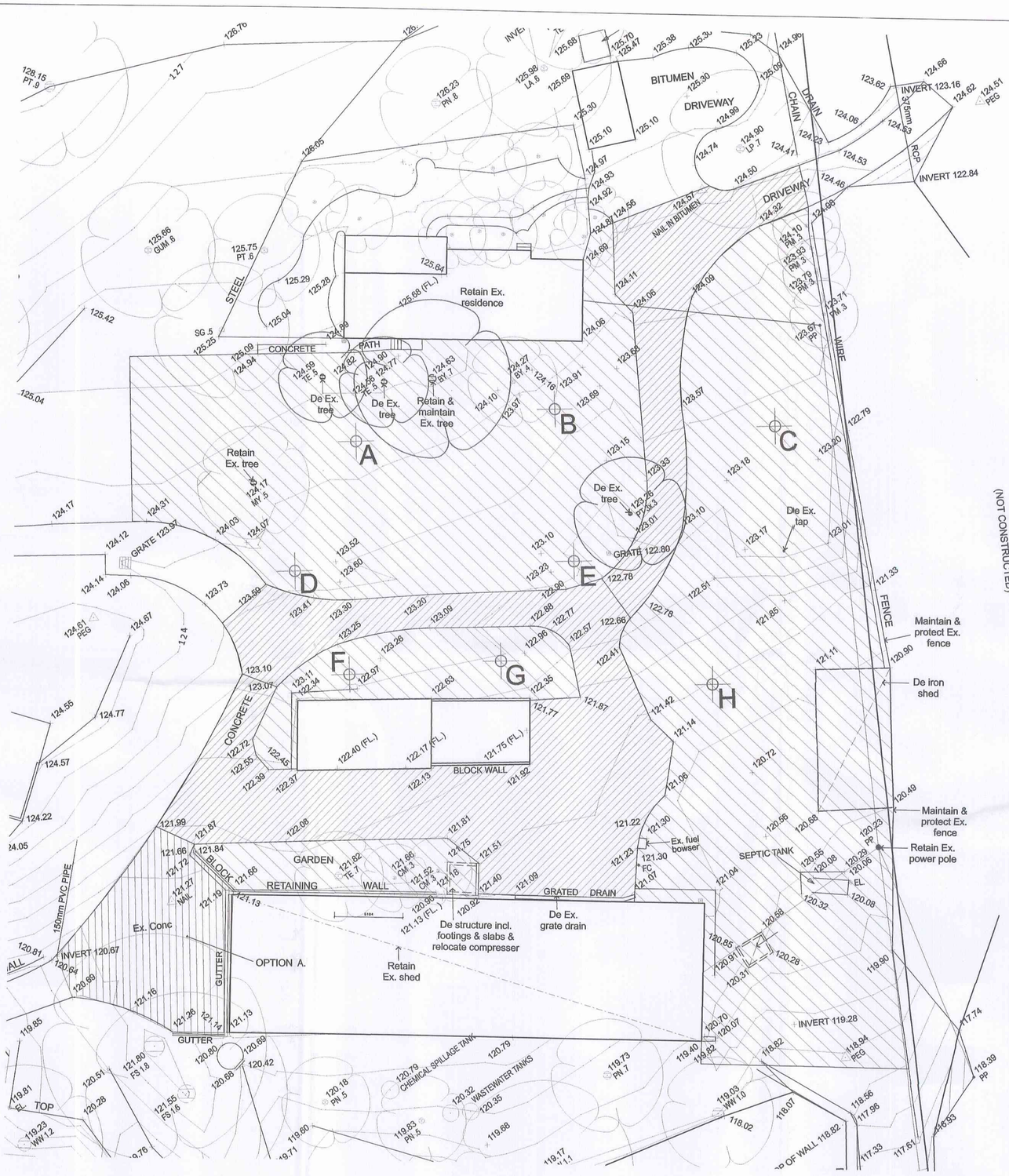
AS/NZS 1170.1, 2, 3 & 4	Structural Design Actions
AS 1720	Timber Structures
AS 3600	Concrete Structures
AS 3700	Masonry Structures
AS 4100	Steel Structures
AS/NZS 4600	Cold Formed Steel Structures

(c) Certified Structural Drawing Nos:- 20100713 S1A, S2A, S3A, S4A, S5A, S6A & S7A

This certificate shall not be construed as relieving any other party of their responsibilities, liabilities or contractual obligations.

Nicholas Joannides
BE(Hons1) MEngSc FIEAust CPEng
NPER(Structural) RPEQ
Director
For and on behalf of:
Partridge Structural Pty Ltd

Level E 1 Chandos Street St Leonards NSW 2065 Australia
[illegible]



1 SITE DEMOLITION PLAN
Scale 1:200

STRUCTURAL ENGINEER	HYDRAULICS ENGINEER
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Contact Nicholas Joannides	Contact Neil Walton
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Company Riz Engineering Pty Ltd	Company NSW Building Certifiers
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Fax (02) 9360 3559	Fax (02) 9538-6310
Mobile 0412 244 109	Mobile 0400 113 802
Email neil@rizeng.com.au	Email nswcertifiers@bigpond.com.au

LEGEND

BLK A BLOCK A
- A1 Car Wash Bay
- A2 Water Treatment System Area
- A3 Car Wash Bay – Work Station
- A4 Existing Store Room
- A5 Existing Store Room
- A6 Chemical Store Room – Locked Area
- A7 Chemical Store Room
- A8 Chemical Mixing Area
- A9 Passage Way
- A10 Fuelling Area
- A11 Drive Way to Chemical Bay
- A12 Chemical Loding Area
- A13 Drive Way to Block B

BLK B BLOCK B
- B1 Existing Main Shed
- B2 Existing Store Room
- B3 New Assistant's Office
- B4 New Manager's Office
- B5 Existing Bathroom/Change Room
- B6 Existing Lunch Room
- B7 New Office
- B8 New Workshop Area
- B9 New Deck to Lunch Room

Block B Legend
1. Oil & general storage
2. Reused work bench
3. Main hoist
4. Scissor lift
5. Work bench
6. Roller parking
7. Office
8. Toilet
9. Washing trough
10. Compactus
11. Welding bench
12. Water closet
13. Shower
14. Wash machine
15. Fridge
16. Sink

BLK C BLOCK C

BLK D BLOCKD
- D1 Car Parking Area 1
- D2 Car Parking Area 2
- D3 Drive Way
- D4 Drive Way to Main Gate
- D5 Waste Bin Area

BLK E BLOCK E

GENERAL
- Bo Steel bollard filled with concrete
- BW Reinforced concrete block work
- Cl Column
- Dd Dish Drain (900 wide)
- Dp Down pipe
- Eb Electrical board
- Ex Existing
- FFL Finish floor level
- Fl Above ground fuel tank
- Gl Glavanized
- Hr Handrail
- Ko Kerb only
- Mb Mixing bench
- Rc Reinforced concrete
- Rk Rollover kerb & gutter
- Rv Roof ventilation
- Sk Standard kerb & gutter
- SWG Strom water grate
- TWG Treated water grate

Grates

Existing structure

NSW
Ph: 0400 113 802
The builder must construct the building in accordance with the Building Code of Australia and the Development Consent conditions
CONSTRUCTION CERTIFICATE

LEGEND

Extent of excavation and or infilling

Extent to demolition of exisitng driveway/paving/slab

Existing structure

A Location of indicative rock depth sample

* Confirm all dimension & indicative rock depth on site

INDICATIVE ROCK DEPTH

A	370mm	B	300mm
C	300mm	D	300mm
E	300mm	F	600mm
G	800mm	H	500mm

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

SGAMMOTTA ARCHITECTS
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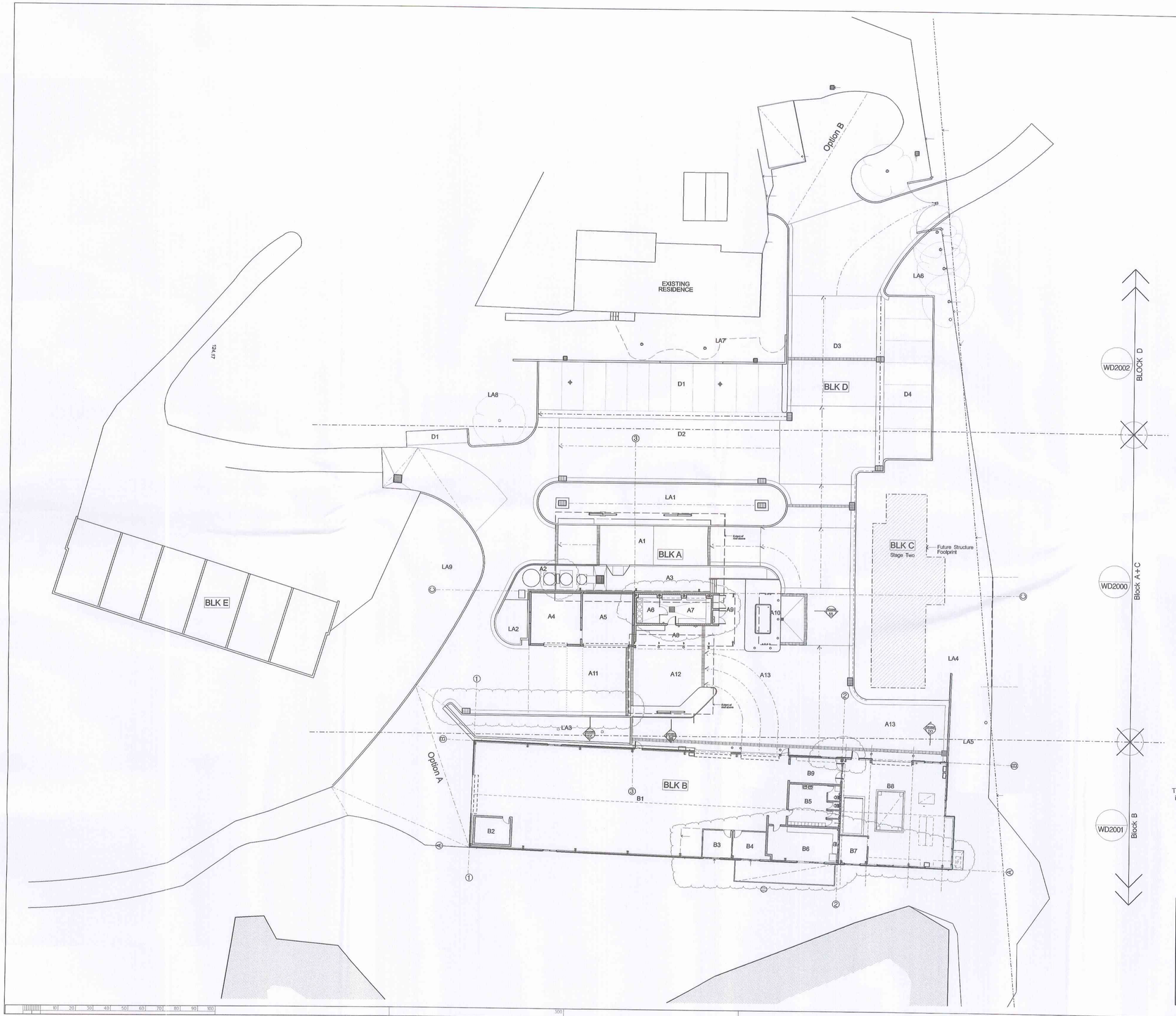
email: max@sgammotta.com.au

project title
MONASH COUNTRY CLUB, INGLESIDE
Maintenance Facilities

drawing title
DEMOLITION PLAN

project no.	09/104
date	June 2012
drawn by	CC SL
SCALE	1: 200
drawing no.	CC 1000
revision	C



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15. Fridge
16. Sink

BLK C BLOCK C

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- D2 Car Parking Area 2
- D3 Drive Way
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- D5 Waste Bin Area

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- Rk Rollover kerb & gutter
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- Sk Standard kerb & gutter
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- TWG Treated water grate

Grates

Existing structure

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CONSTRUCTION CERTIFICATE

NOTE

DA condition B 17
All new construction shall comply with Australia Standard AS3959–2009 "Construction of buildings in bush fire–prone areas" levelt.

DA condition B 18
Roofing shall be gutterless or guttering and valleys are to be screened to prevent the build up of flammable material.

DA condition B 19
All roller doors, tilt–a–doors and other such doors shall be sealed to prevent the entry of embers in to the building

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

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project title
MONASH COUNTRY CLUB INGLESIDE
Maintenance Facilities

MONASH COUNTRY Club AUSTRALIA

drawing title
MASTER PLAN

project no.	09/104
date	June 2012
drawn by	CC SL
SCALE	1: 200
drawing no.	revision
CC1100	C

10 20 30 40 50 60 70 80 90 100
300
700 ON ORIGINAL

NOTE

DA condition B 17
All new construction shall comply with Australia Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" level1.

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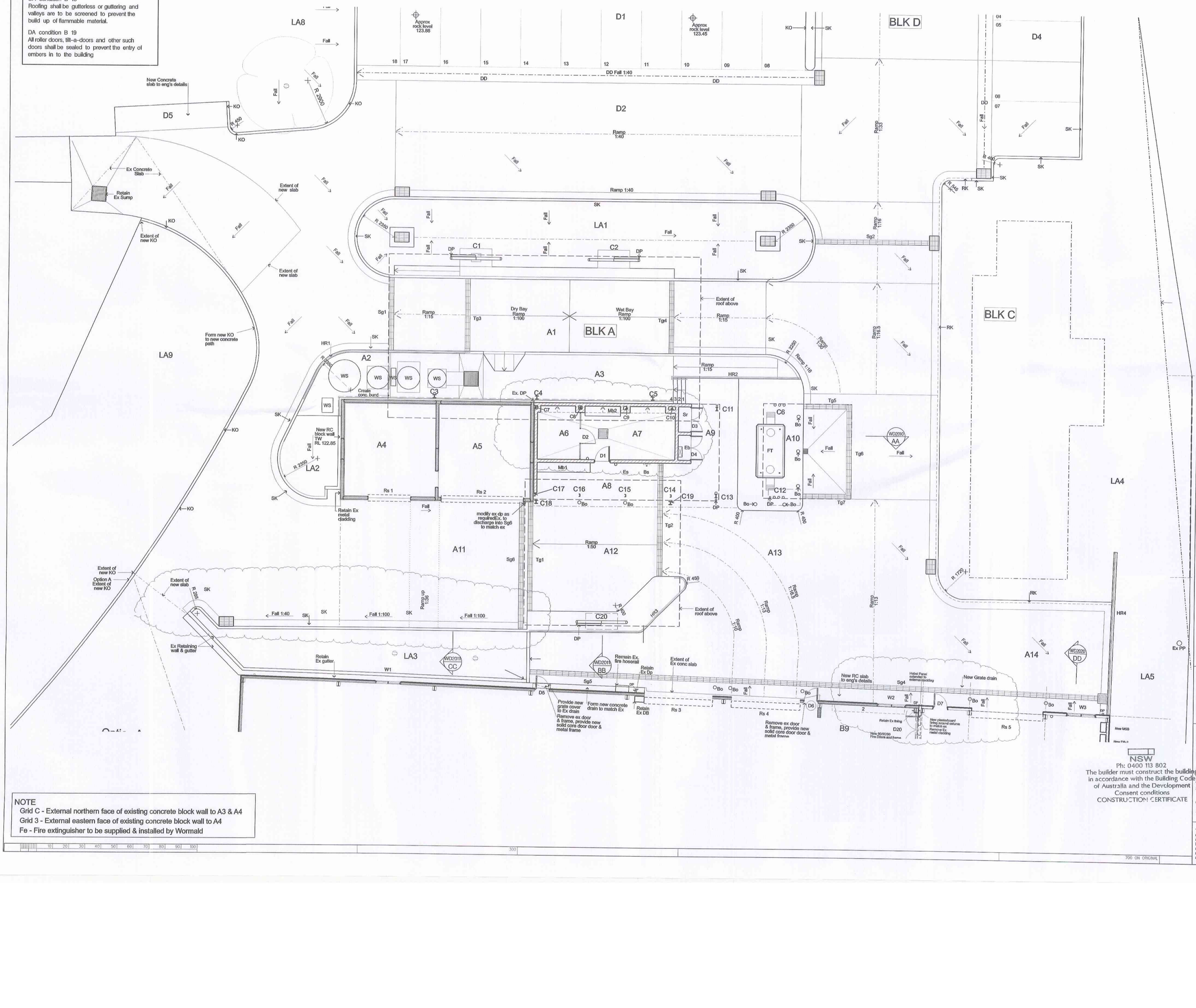

NOTE
Grid C - External northern face of existing concrete block wall to A3 & A4
Grid 3 - External eastern face of existing concrete block wall to A4
Fe - Fire extinguisher to be supplied & installed by Wormald

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LEGEND

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- A1 Car Wash Bay
- A2 Water Treatment System Area
- A3 Car Wash Bay – Work Station
- A4 Existing Store Room
- A5 Existing Store Room
- A6 Chemical Store Room – Locked Area
- A7 Chemical Store Room
- A8 Chemical Mixing Area
- A9 Passage Way
- A10 Fuelling Area
- A11 Drive Way to Chemical Bay
- A12 Chemical Loading Area
- A13 Drive Way to Block B

BLK B BLOCK B
- B1 Existing Main Shed
- B2 Existing Store Room
- B3 New Assistant's Office
- B4 New Manager's Office
- B5 Existing Bathroom/Change Room
- B6 Existing Lunch Room
- B7 New Office
- B8 New Workshop Area
- B9 New Deck to Lunch Room

Block B Legend
1. Oil & general storage
2. Reused work bench
3. Main hoist
4. Scissor lift
5. Work bench
6. Roller parking
7. Office
8. Toilet
9. Washing trough
10. Compactus
11. Welding bench
12. Water closet
13. Shower
14. Wash machine
15. Fridge
16. Sink

BLK C BLOCK C

BLK D BLOCKD
- D1 Car Parking Area 1
- D2 Car Parking Area 2
- D3 Drive Way
- D4 Drive Way to Main Gate
- D5 Waste Bin Area

BLK E BLOCK E

GENERAL
- Bo Steel bollard filled with concrete
- BW Reinforced concrete block work
- Cl Column
- Dd Dish Drain (900 wide)
- Dp Down pipe
- Eb Electrical board
- Ex Existing
- FFL Finish floor level
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- Hr Handrail
- Ko Kerb only
- Mb Mixing bench
- Rc Reinforced concrete
- Rk Rollover kerb & gutter
- Rv Roof ventilation
- Sk Standard kerb & gutter
- SWG Strom water grate
- TWG Treated water grate

Grates

Existing structure

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

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project title
MONASH COUNTRY CLUB INGLESIDE Maintenance Facilities

drawing title
BLOCK A - Wash/Chem/Fuel Floor Plan

project no.	09104
date	Dec. 2011
drawn by	CC
scale	1: 100
drawing no.	CC2000
revision	C

NOTE

DA condition B 17
All new construction shall comply with Australia Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" level1.

DA condition B 18
Roofing shall be gutterless or guttering and valleys are to be screened to prevent the build up of flammable material.

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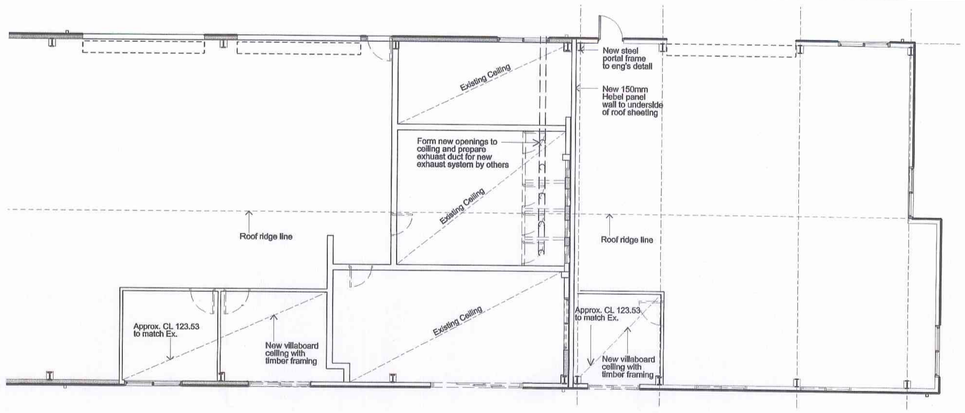

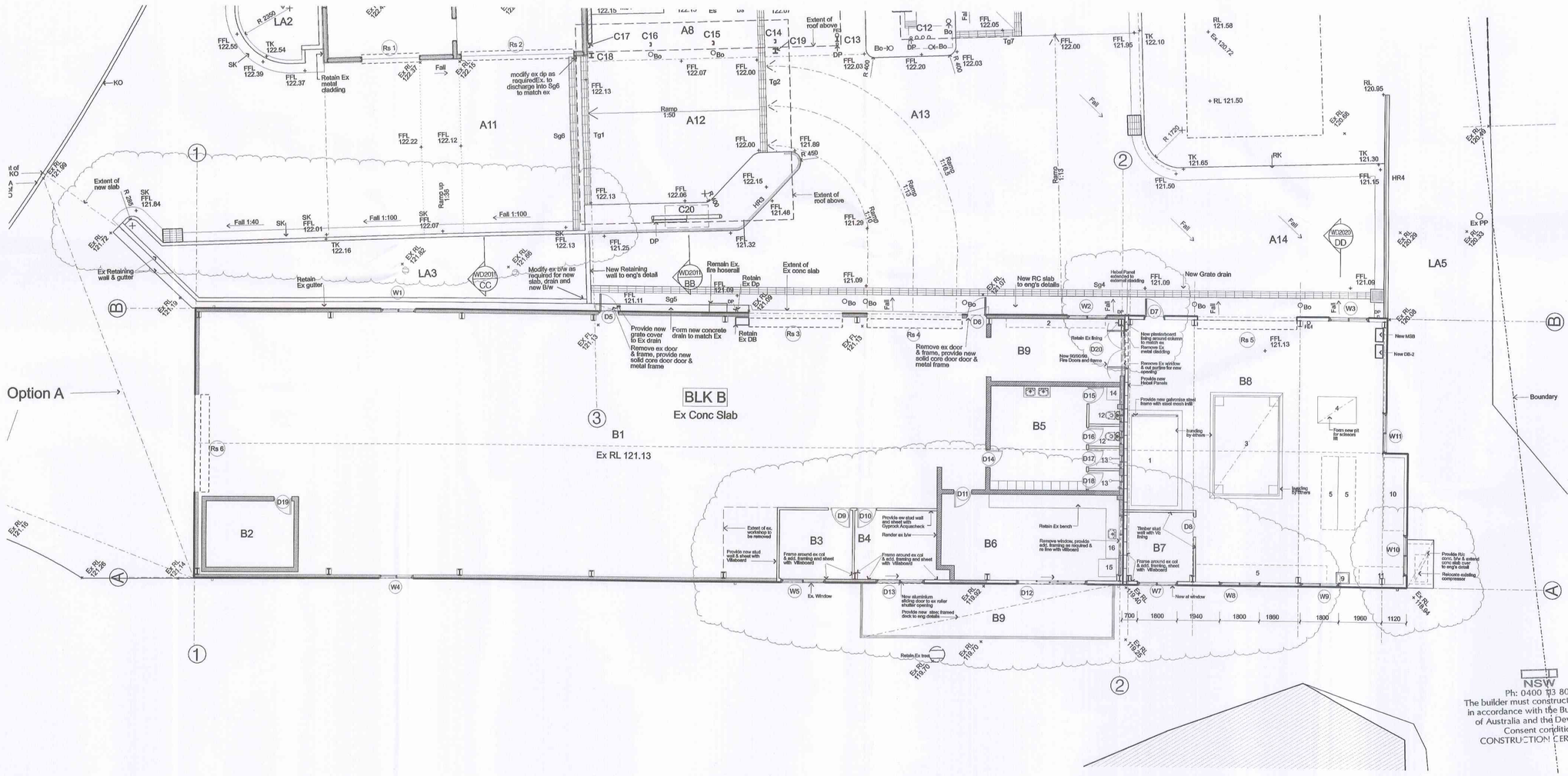

NOTE
Grid 3 - External eastern face of existing concrete block wall to A4
Fe - Fire extinguisher to be supplied & installed by Wormald

1 BLOCK B PLAN
Scale 1:100

NSW
Ph: 0400 113 802
The builder must construct the building in accordance with the Building Code of Australia and the Development Consent conditions
CONSTRUCTION CERTIFICATE

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LEGEND

BLK A BLOCK A
- A1 Car Wash Bay
- A2 Water Treatment System Area
- A3 Car Wash Bay – Work Station
- A4 Existing Store Room
- A5 Existing Store Room
- A6 Chemical Store Room – Locked Area
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- A10 Fuelling Area
- A11 Drive Way to Chemical Bay
- A12 Chemical Loding Area
- A13 Drive Way to Block B

BLK B BLOCK B
- B1 Existing Main Shed
- B2 Existing Store Room
- B3 New Assistant's Office
- B4 New Manager's Office
- B5 Existing Bathroom/Change Room
- B6 Existing Lunch Room
- B7 New Office
- B8 New Workshop Area
- B9 New Deck to Lunch Room

Block B Legend
1. Oil & general storage
2. Reused work bench
3. Main hoist
4. Scissor lift
5. Work bench
6. Roller parking
7. Office
8. Toilet
9. Washing trough
10. Compactus
11. Welding bench
12. Water closet
13. Shower
14. Wash machine
15. Fridge
16. Sink

BLK C BLOCK C

BLK D BLOCKD
- D1 Car Parking Area 1
- D2 Car Parking Area 2
- D3 Drive Way
- D4 Drive Way to Main Gate
- D5 Waste Bin Area

BLK E BLOCK E

GENERAL
- Bo Steel bollard filled with concrete
- BW Reinforced concrete block work
- Cl Column
- Dd Dish Drain (900 wide)
- Dp Down pipe
- Eb Electrical board
- Ex Existing
- FFL Finish floor level
- Fl Above ground fuel tank
- GI Galvanized
- Hr Handrail
- Ko Kerb only
- Mb Mixing bench
- Rc Reinforced concrete
- Rk Rollover kerb & gutter
- Rv Roof ventilation
- Sk Standard kerb & gutter
- SWG Strom water grate
- TWG Treated water grate
- Grates
- Existing structure

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

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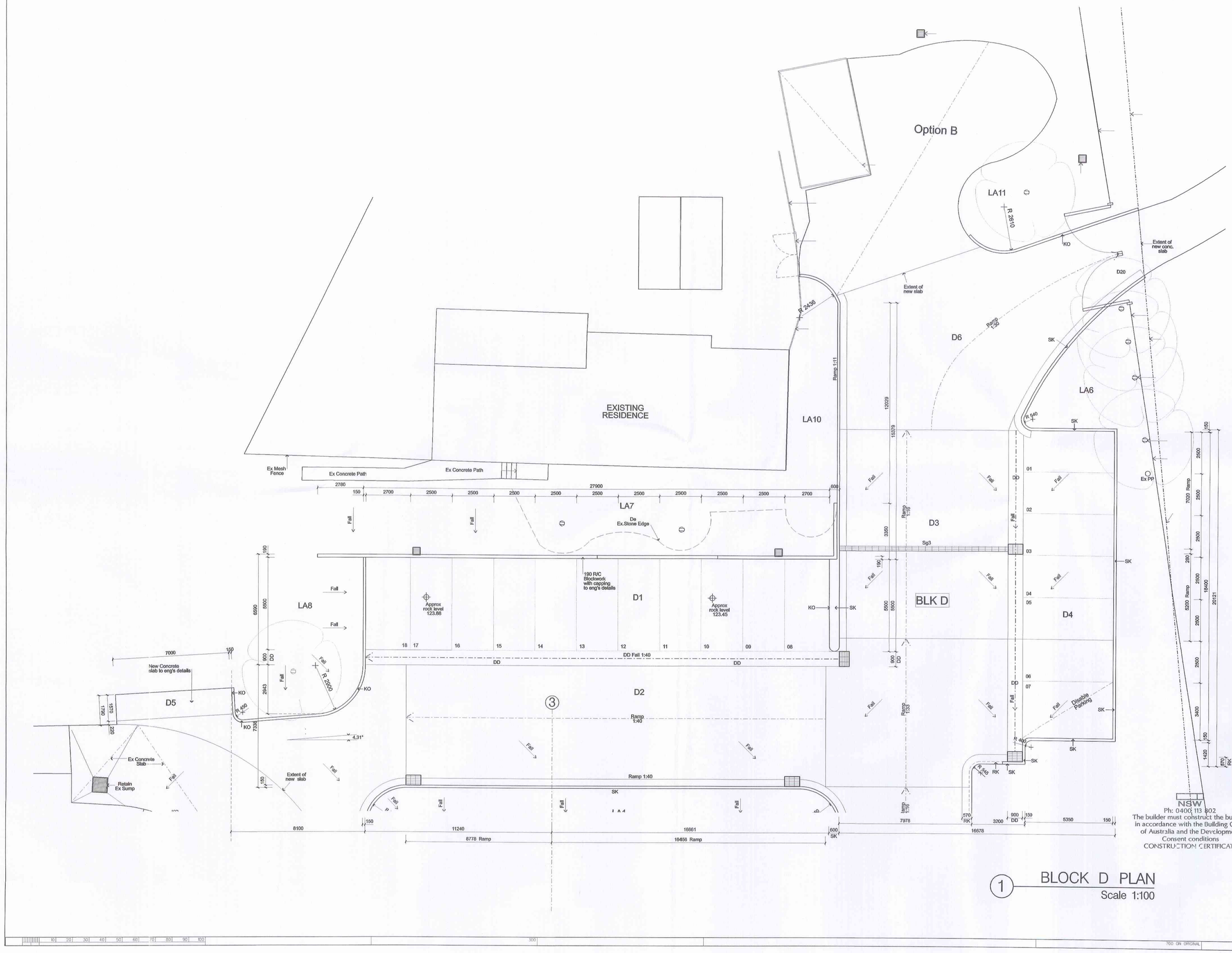
project title
MONASH COUNTRY CLUB INGLESIDE
Maintenance Facilities

drawing title
BLOCK B
Maintenance Shed Floor Plan

project no.	09104
date	Jan. 2012
drawn by	CC
scale	1: 100
drawing no.	revision
CC 2001	C

10 20 30 40 50 60 70 80 90 100
300
700 ON ORIGINAL



1 BLOCK D PLAN
Scale 1:100

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Block B Legend
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- Grates
- Existing structure

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

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project title
MONASH COUNTRY CLUB INGLESIDE Maintenance Facilities

drawing title
BLOCK D PLAN Car Parking Area

project no.	09104
date	Dec. 2011
drawn by	CC
scale	1: 100
drawing no.	revision
CC 2002	C

10 20 30 40 50 60 70 80 90 100 300 700 ON ORIGINAL

NOTE

DA condition B 17
All new construction shall comply with Australia Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" level1.

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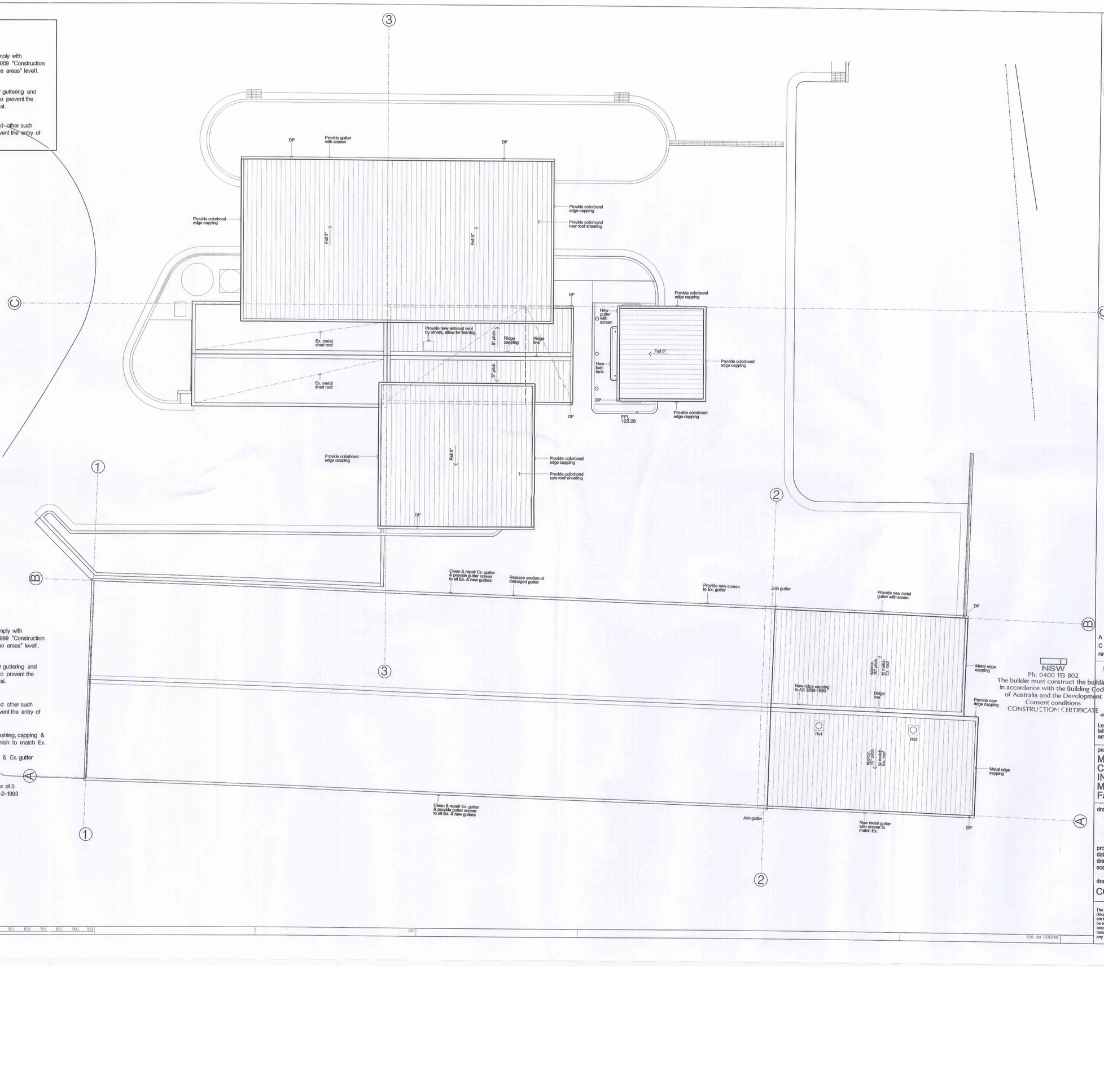

NOTE

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All roof sheeting & profiles, flashing, capping & the like shall be colorbond finish to match Ex.

Provide leaf guard to all new & Ex. gutter

All roof sheeting & wall cladding & gutter guards shall have a flammability index of 5 in accordance with AS 1530-2-1993

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Existing structure

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

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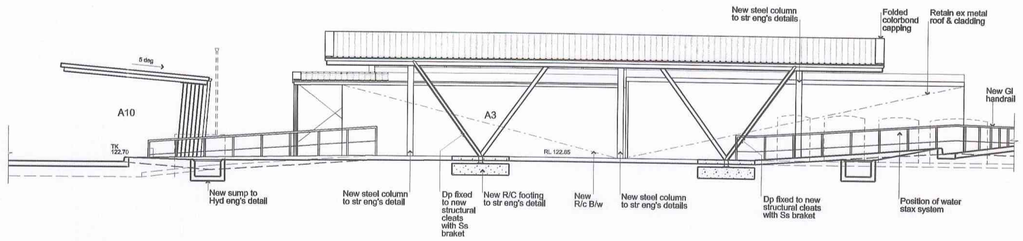
project title
MONASH COUNTRY CLUB INGLESIDE
Maintenance Facilities

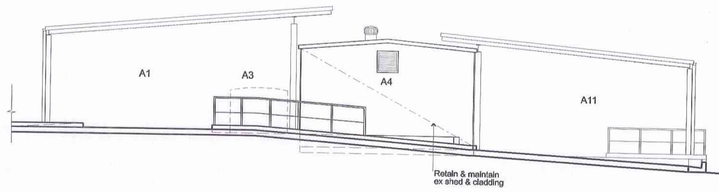
drawing title

project no.	09104
date	Dec. 2011
drawn by	CC
scale	1: 100
drawing no.	revision
CC 2003	C

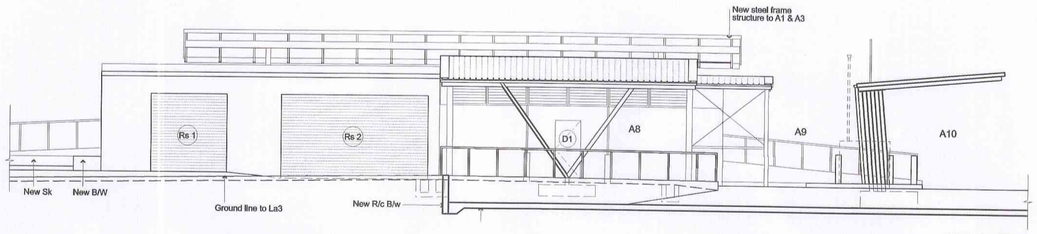
10 20 30 40 50 60 70 80 90 100 500 700 ON ORIGINAL



2 NORTH ELEVATION
Scale 1:100



4 WEST ELEVATION
Scale 1:100



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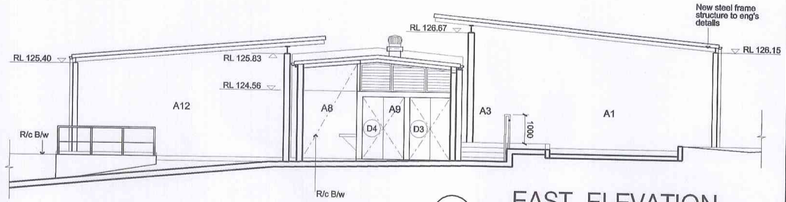
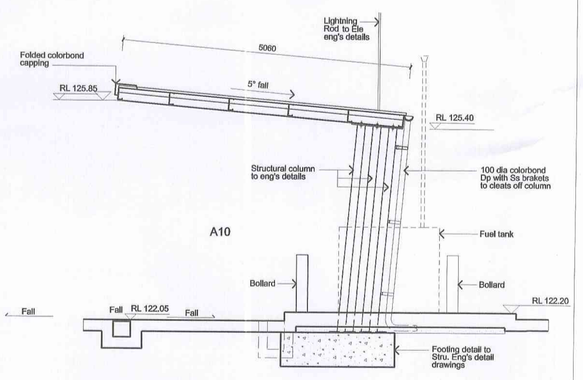
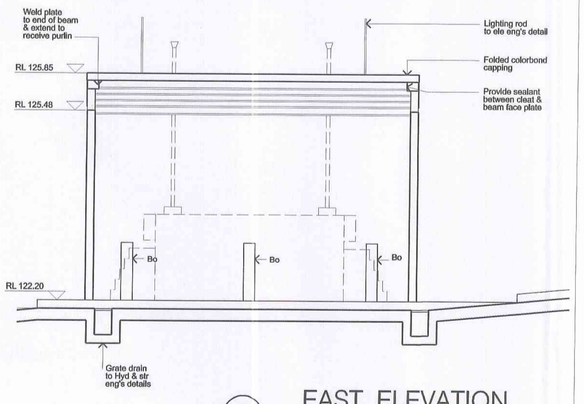
Scale 1:100



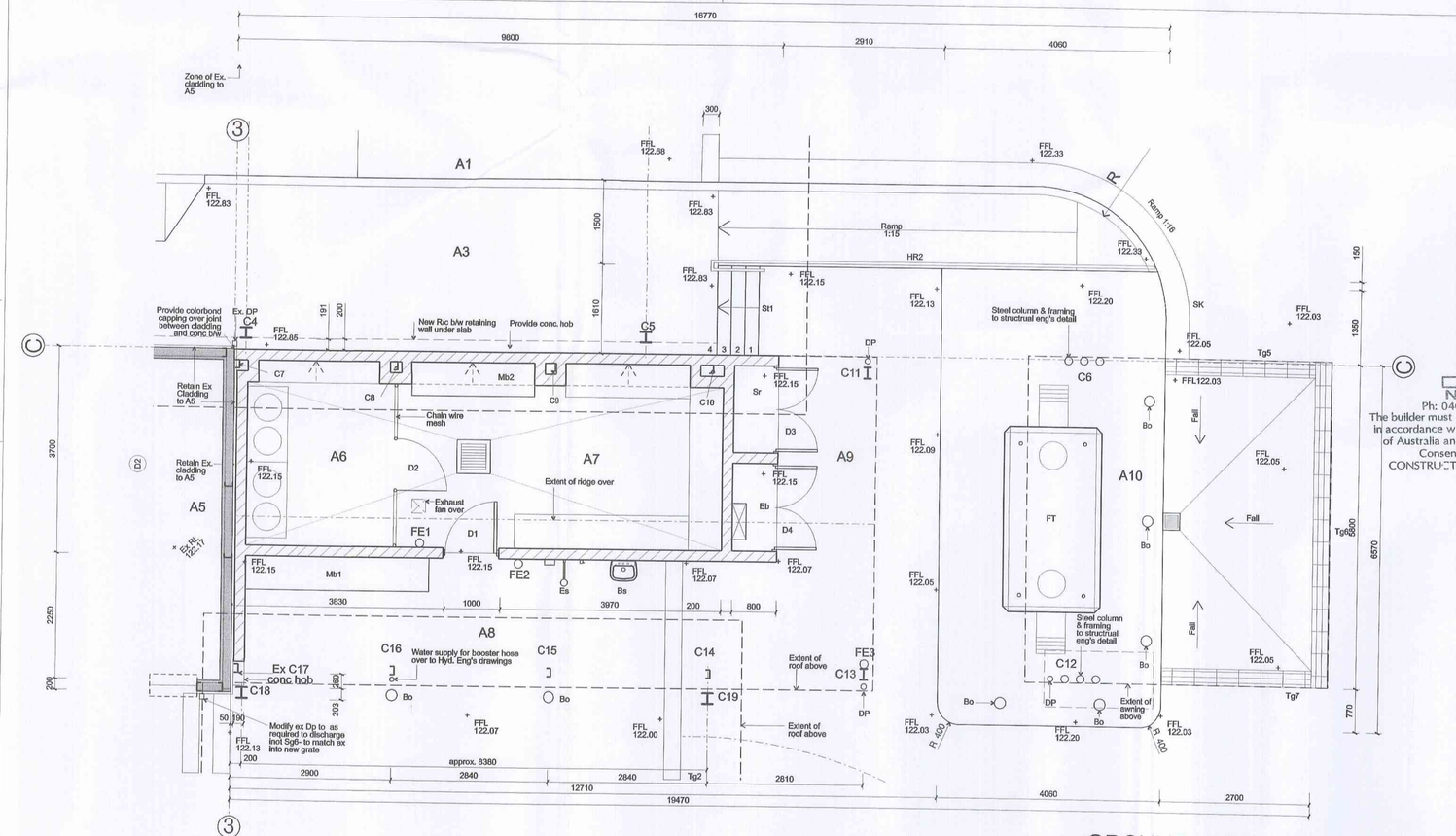
5 EAST ELEVATION
Scale 1:100



6 SECTION AA
Fueling Shelter Scale 1:50



8 EAST ELEVATION
Fueling Shelter Scale 1:50



1 GROUND LEVEL PLAN
Chemical Store Area Scale 1:50

STRUCTURAL ENGINEER
Company Partridge Partners Pty Ltd
Contact Nicholes Joannides
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ELECTRICAL ENGINEER
Company Rlz Engineering Pty Ltd
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Fax (02) 9360 3559
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Email neil@rlzeng.com.au

PCA – Principal Certifying Authority
Company NSW Building Certifiers
Contact Paul Rizzo
Tel (02) 9518–7776
Fax (02) 9518–6310
Mobile 0400 113 802
Email nswcertifiers@bigpond.com.au

LEGEND

BLK A BLOCK A
- A1 Car Wash Bay
- A2 Water Treatment System Area
- A3 Car Wash Bay – Work Station
- A4 Existing Store Room
- A5 Existing Store Room
- A6 Chemical Store Room – Locked Area
- A7 Chemical Store Room
- A8 Chemical Mixing Area
- A9 Passage Way
- A10 Fuelling Area
- A11 Drive Way to Chemical Bay
- A12 Chemical Loding Area
- A13 Drive Way to Block B

BLK B BLOCK B
- B1 Existing Main Shed
- B2 Existing Store Room
- B3 New Assistant's Office
- B4 New Manager's Office
- B5 Existing Bathroom/Change Room
- B6 Existing Lunch Room
- B7 New Office
- B8 New Workshop Area
- B9 New Deck to Lunch Room

Block B Legend
1. Oil & general storage
2. Reused work bench
3. Main hoist
4. Scissor lift
5. Work bench
6. Roller parking
7. Office
8. Toilet
9. Washing trough
10. Compactus
11. Welding bench
12. Water closet
13. Shower
14. Wash machine
15. Fridge
16. Sink

BLK C BLOCK C

BLK D BLOCKD
- D1 Car Parking Area 1
- D2 Car Parking Area 2
- D3 Drive Way
- D4 Drive Way to Main Gate
- D5 Waste Bin Area

BLK E BLOCK E

GENERAL
- Bo Steel bollard filled with concrete
- BW Reinforced concrete block work
- Cl Column
- Dd Dish Drain (900 wide)
- Dp Down pipe
- Eb Electrical board
- Ex Existing
- FFL Finish floor level
- Ft Above ground fuel tank
- Gl Glavanized
- Hr Handrail
- Ko Kerb only
- Mb Mixing bench
- Rc Reinforced concrete
- Rk Rollover kerb & gutter
- Rv Roof ventilation
- Sk Standard kerb & gutter
- SWG Strom water grate
- TWG Treated water grate

Grates

Existing structure

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

NSW
Ph: 0400 113 802
The builder must construct the building in accordance with the Building Code of Australia and the Development Consent conditions
CONSTRUCTION CERTIFICATE

SGAMMOTTA ARCHITECTS
abn: 58 065 479 288 reg no: 4911
Level 1, 169 Maroubra Road, NSW 2035, Australia
tel: +61 2 9344 6188 fax: +61 2 9314 2139
email: max@sgammotta.com.au

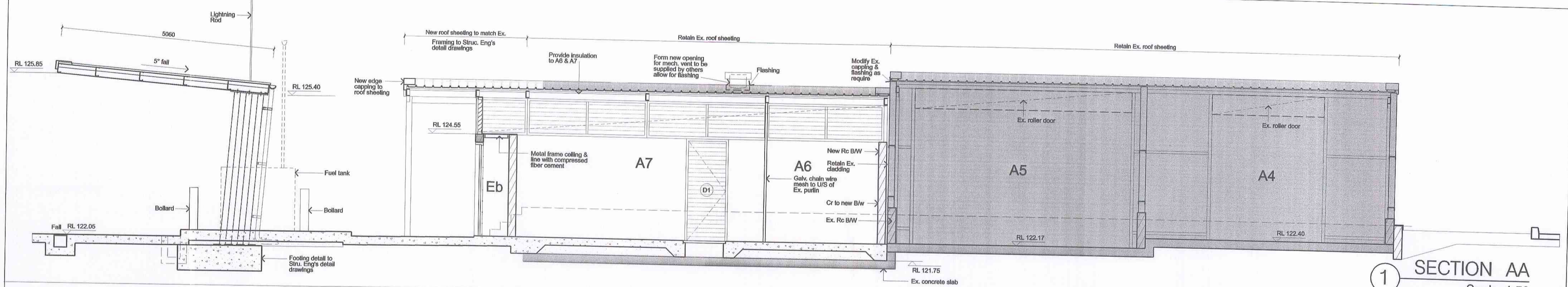
project title
MONASH COUNTRY CLUB, INGLESIDE
Maintenance Facilities

drawing title
BLOCK A ELEVATIONS, & SETOUT PLAN

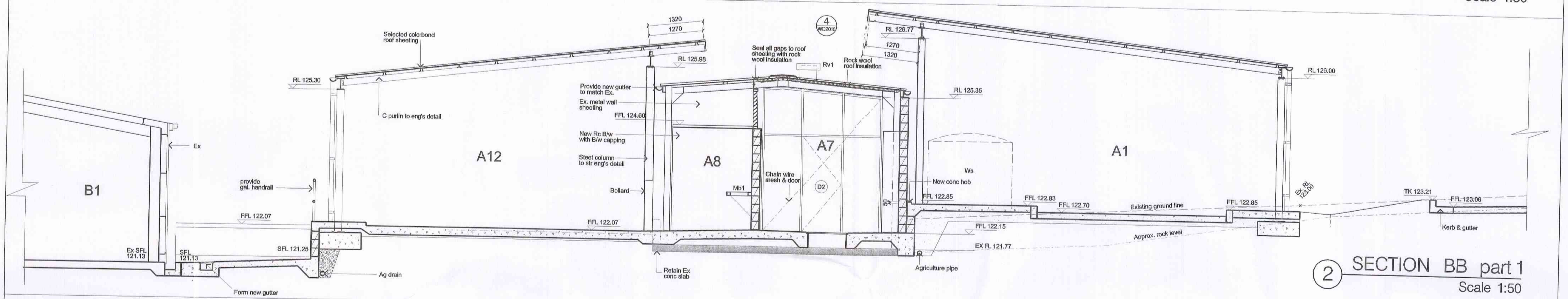
project no.
date
drawn by
scale

drawing no. CC2010
revision C

700 ON ORIGINAL



1 SECTION AA
Scale 1:50



2 SECTION BB part 1
Scale 1:50

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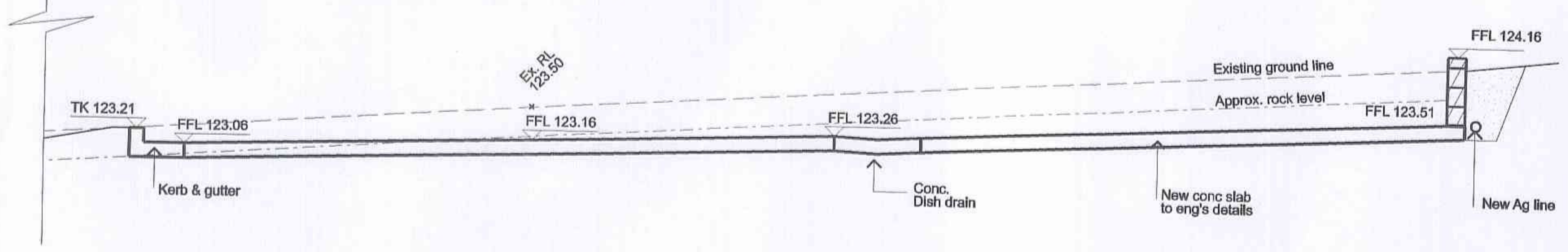
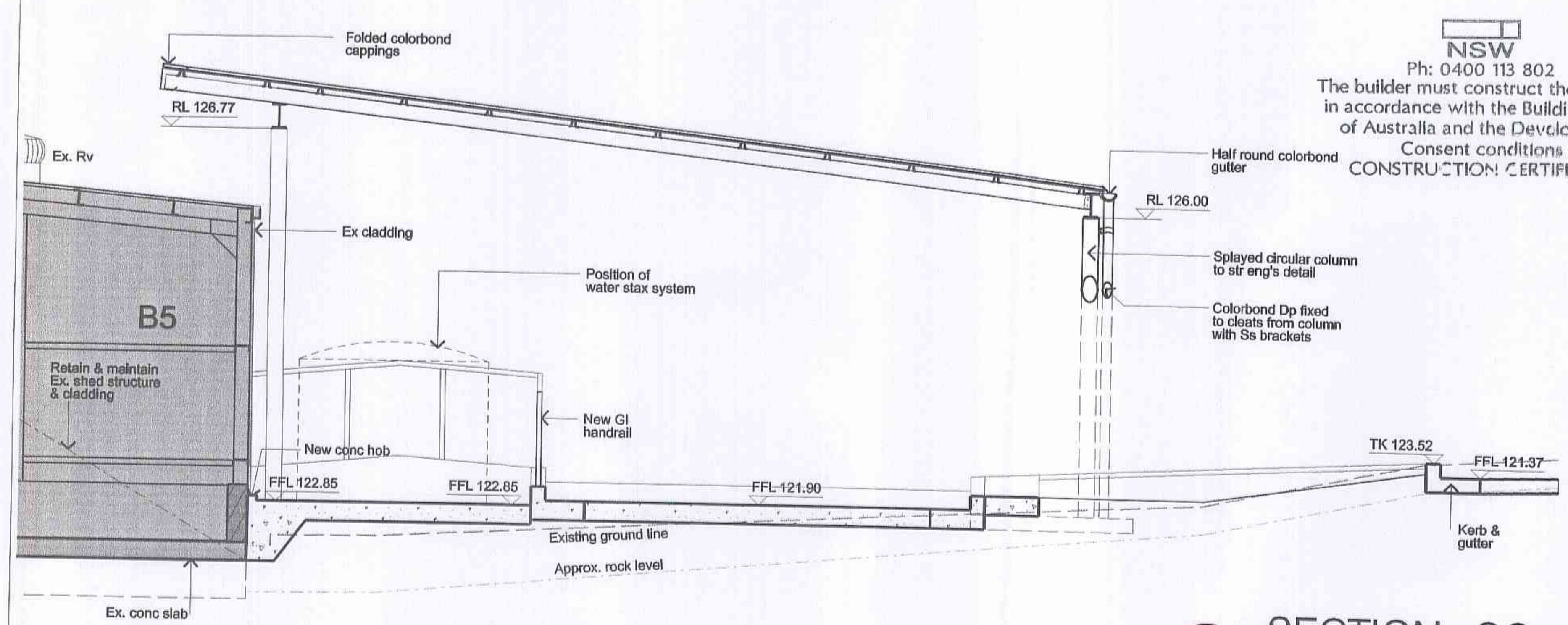


3 SECTION BB part 2
Scale 1:50



8 SECTION CC
Scale 1:50

NOTE

DA condition B 17
All new construction shall comply with Australia Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" level1.

DA condition B 18
Roofing shall be gutterless or guttering and valleys are to be screened to prevent the build up of flammable material.

DA condition B 19
All roller doors, tilt-a-doors and other such doors shall be sealed to prevent the entry of embers in to the building

LEGEND

BLK A BLOCK A
- A1 Car Wash Bay
- A2 Water Treatment System Area
- A3 Car Wash Bay – Work Station
- A4 Existing Store Room
- A5 Existing Store Room
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- A9 Passage Way
- A10 Fuelling Area
- A11 Drive Way to Chemical Bay
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- A13 Drive Way to Block B

BLK B BLOCK B
- B1 Existing Main Shed
- B2 Existing Store Room
- B3 New Assistant's Office
- B4 New Manager's Office
- B5 Existing Bathroom/Change Room
- B6 Existing Lunch Room
- B7 New Office
- B8 New Workshop Area
- B9 New Deck to Lunch Room

Block B Legend

1. Oil & general storage
2. Reused work bench
3. Main hoist
4. Scissor lift
5. Work bench
6. Roller parking
7. Office
8. Toilet
9. Washing trough
10. Compactus
11. Welding bench
12. Water closet
13. Shower
14. Wash machine
15. Fridge
16. Sink

BLK C BLOCK C

BLK D BLOCKD
- D1 Car Parking Area 1
- D2 Car Parking Area 2
- D3 Drive Way
- D4 Drive Way to Main Gate
- D5 Waste Bin Area

BLK E BLOCK E

GENERAL
- Bo Steel bollard filled with concrete
- BW Reinforced concrete block work
- Cl Column
- Dd Dish Drain (900 wide)
- Dp Down pipe
- Eb Electrical board
- Ex Existing
- FFL Finish floor level
- Ft Above ground fuel tank
- Gl Galvanized
- Hr Handrail
- Ko Kerb only
- Mb Mixing bench
- Rc Reinforced concrete
- Rk Rollover kerb & gutter
- Rv Roof ventilation
- Sk Standard kerb & gutter
- SWG Storm water grate
- TWG Treated water grate

Grates

Existing structure

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

NSW
Ph: 0400 113 802
The builder must construct the building in accordance with the Building Code of Australia and the Development Consent conditions
CONSTRUCTION CERTIFICATE

SGAMMOTTA ARCHITECTS

SGAMMOTTA ARCHITECTS
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email: max@sgammotta.com.au

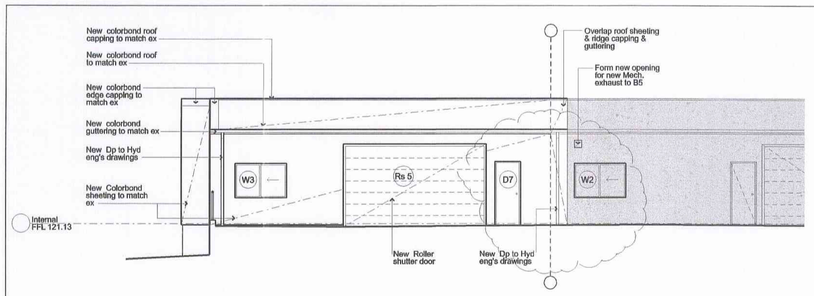
project title
MONASH COUNTRY CLUB, INGLESIDE
Maintenance Facilities

MONASH COUNTRY Club AUSTRALIA

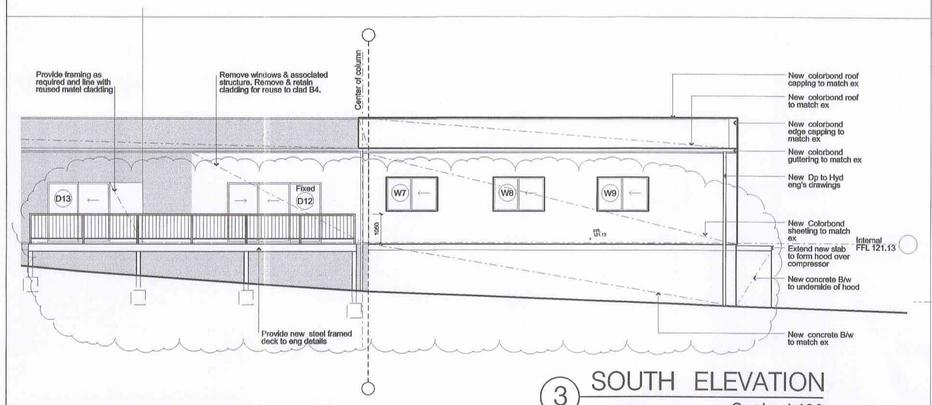
drawing title
BLOCK A SECTIONS & DETAILS

project no.
date
drawn by
scale

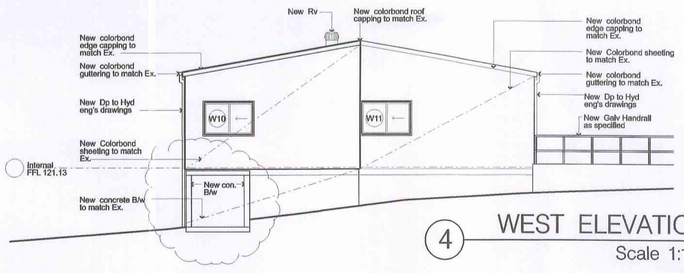
drawing no. CC 2011 revision C



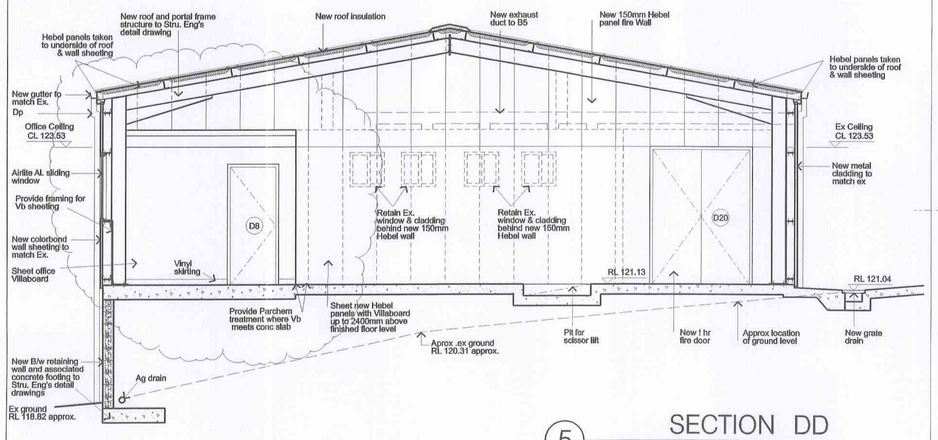
2 NORTH ELEVATION
Scale 1:100



3 SOUTH ELEVATION
Scale 1:100



4 WEST ELEVATION
Scale 1:100



5 SECTION DD
Scale 1:50

NOT USED

NOTE

DA condition B 17
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DA condition B 18
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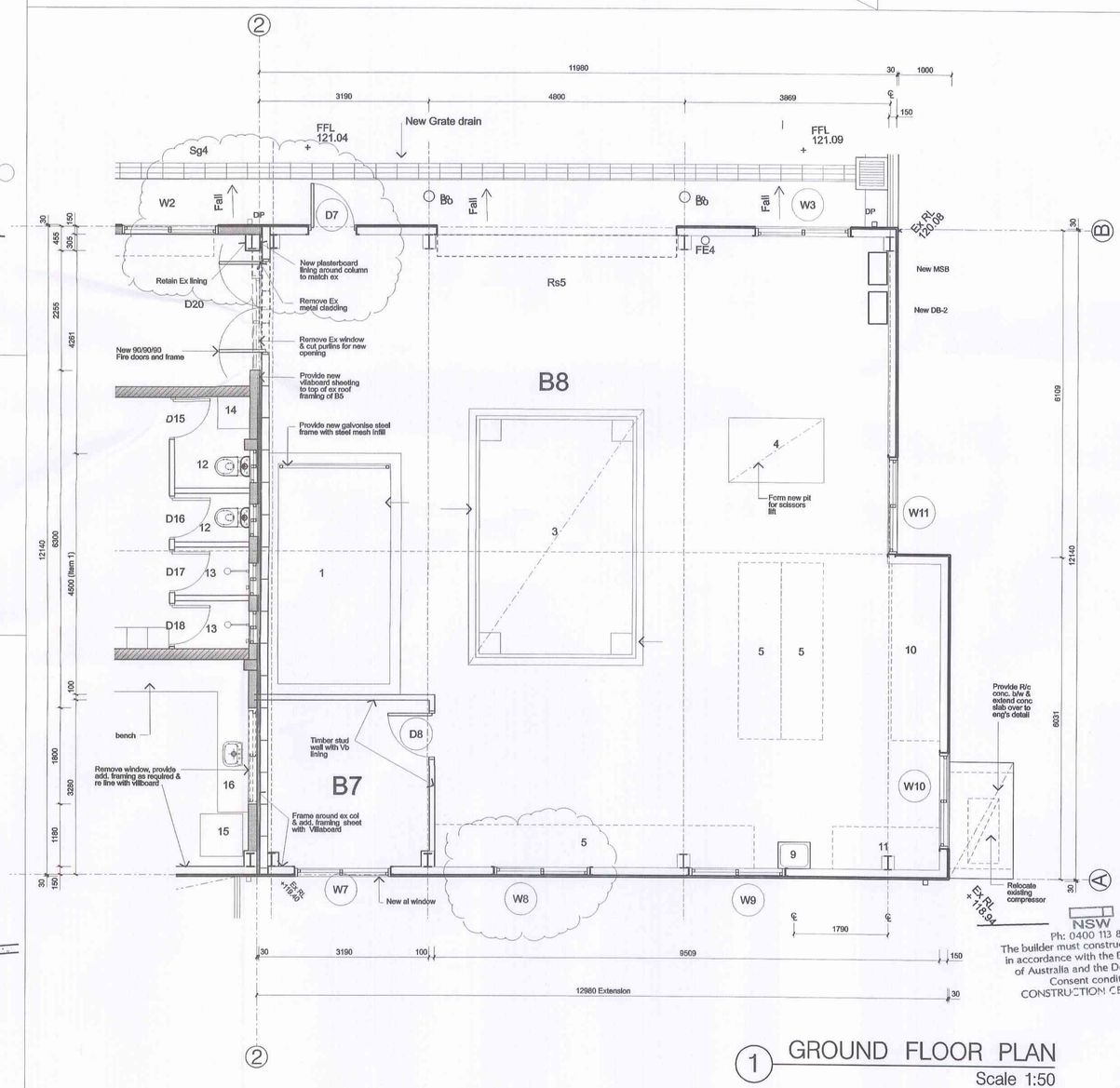

1 GROUND FLOOR PLAN
Scale 1:50

STRUCTURAL ENGINEER
Company Partridge Partners Pty Ltd
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ELECTRICAL ENGINEER
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Email neil@rizeng.com.au

PCA – Principal Certifying Authority
Company NSW Building Certifiers
Contact Paul Rigon
Tel (02) 9518–7778
Fax (02) 9518–6280
Mobile 0400 113 802
Email nswcertifiers@bigpond.com.au

LEGEND

BLK A BLOCK A
- A1 Car Wash Bay
- A2 Water Treatment System Area
- A3 Car Wash Bay – Work Station
- A4 Existing Store Room
- A5 Existing Store Room
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9. Washing trough
10. Compactus
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- Rc Reinforced concrete
- Rk Rollover kerb & gutter
- Rv Roof ventilation
- Sk Standard kerb & gutter
- SWG Strorm water grate
- TWG Treated water grate

Grates

Existing structure

revision	date	amendments
A	2012/01/12	CC
C	2012/09/04	Amended

SGAMMOTTA ARCHITECTS
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project title
MONASH COUNTRY CLUB, INGLESIDE Maintenance Facilities

drawing title
BLOCK B PLAN, ELEVATIONS SECTION & DETAILS

project no.
date
drawn by
scale
drawing no. CC2020
revision C

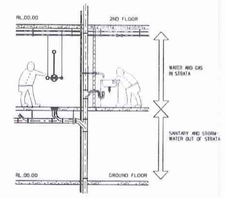
NSW
Ph: 0400 113 802
The builder must construct this building in accordance with the Building Code of Australia and the Development Consent conditions and CONSTRUCTION CERTIFICATE

MONASH COUNTRY CLUB

MAINTENANCE FACILITIES

HYDRAULIC SERVICES

STRATA ZONES



GENERAL NOTES

ALL WORK CARRIED OUT SHALL COMPLYWITH WITH THE REQUIREMENTS OF AS 3500, THE NEW SOUTH WALES PLUMBING & DRAINAGE 'CODE OF PRACTICE', AND ALL OTHER RELEVANT AUSTRALIAN STANDARDS AND CODES INCLUDING THE B.C.A..

THE CONTRACTOR MUST VERIFY ALL EXISTING SERVICES, DIMENSIONS AND RELEVANT LEVELS PRIOR THE COMMENCEMENT OF ANY WORK. REPORT ALL DISCREPANCIES TO THE SUPERINTENDENT.

THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURALAND MECHANICAL DRAWINGS, SPECIFICATIONS AS WELL AS WRITTEN INSTRUCTIONS ISSUED THROUGHOUT THE CONTRACT.

THE CONTRACTOR MUST CO-ORDINATE THIS TRADE WITH ALL OTHER TRADES AND COMPLYTHE CONSTRUCTION PROGRAMME.

ALL DIMENSIONS SHALL BE TAKEN AS DOCUMENTED FROM CURRENT AND APPROVED ARCHITECTURAL AND STRUCTURAL DRAWINGS. DO NOT SCALE FROM THESE DRAWINGS.

ALL WORK SHALL BE CARRIED OUT TO A STANDARD EXCEPT ABLE UNDER THE RELEVANT CODES WITH MATERIALS NEW AND OF FIRST QUALITY

THE CONTRACTOR SHALL SUBMIT TO THE BUILDER FOR APPROVAL, SAMPLES OF THE NOMINATED EQUIPMENT, FITTINGS AND FIXTURES TO BE USED FOR THE PROJECT. THIS ALSO APPLIES AND MUST BE STRICTLY ADHERED TO WHEN OFFERING ALTERNATIVES TO SPECIFIED ITEMS.

ANY DISCREPENCY OR VARIATIONS OF DESIGN SHALL BE REFEREED TO THE PRINCIPLE FOR DECISION PRIOR THE COMMENCEMENT OF ANY SUCH WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SET OUT AND PLACEMENT OF ALL CORE HOLES, WALL, FLOOR AND BEAM PENETRATIONS. ALL PENETRATIONS SHALL BE APPROVED PRIOR PLACEMENT. SEAL HOLES AND REPAIR CHASES IN WALLS AFTER INSTALLATION OF PIPEWORK.

ALL FLOOR AND WALL PENETRATIONS SHALL BE FIRE RATED TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA.

THE DRAWINGS DOCUMENTED HEREAFTER DO NOT PURPORT TO SHOW ALL ARCHITECTURAL, STRUCTURAL OR HYDRAULIC SERVICES DETAILS. THEY ARE TO BE USED AS A GUIDE ONLY, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ALLOW FOR ALL NECESSARY LEVEL ADJUSTMENTS FITTINGS, PIPES, PENETRATIONS, DROPPERS, RISERS AND ANCILLARY ITEMS FOR A COMPLETE AND COMPLIANT INSTALLATION.

THE CONTRACTOR SHALL TEST ALL INSTALLED SERVICES TO THE REQUIREMENTS AND SATISFACTION OF THE RELEVANT AUTHORITIES AND SUPERINTENDENT .

ALL BUILDING SURROUNDS SHALL BE GRADED TO ENSURE OVERLAND FLOW FROM UPSTREAM AREAS CAN DRAIN AROUND THE FOUNDATIONS, WALLS AND BUILDING.

PROVIDE 100% FAIL SAFE OVERFLOWS OF NO LESS THAN 50mm DIAMETER TO ALL BOS GUTTERS, BALCONIES AND TERRACES

EXISTING SERVICES

THE LOCATION OF UNDERGROUND SERVICES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED FOR THE AUTHORITIES OWN USE AND MAY NOT BE ACCURATE.

THE CONTRACTOR MUST CONFIRM THE EXACT LOCATION AND EXTENT OF ALL UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF ANY WORK.THIS SHALL INCLUDE BUT BE NOT LIMITED TO THE "DIAL BEFORE YOU DIG" SERVICE. ANY DISCREPANCY SHALL BE IMMEDIATELY NOTIFIED TO THE ENGINEER / SUPERINTENDENT.

DISCONNECTION AND REMOVAL OF ANY EXISTING SERVICE (IF REQUIRED) SHALL BE REFERRED TO THE MAIN CONTRACTOR PRIOR TO COMMENCEMENT AND SHALL BE EXECUTED IN ACCORDANCE WITH THE RELEVANT AUTHORITIES REQUIREMENTS AND APPROVAL.

DRAINAGE PIPES

MINIMUM GRADE OF ANY DRAINAGE PIPES TO BE 1% (U.N.O).

ALL DRAINAGE PIPES LESS THAN 300mm IN DIAMETRE SHALL BE SEWER GRADE UPVC WITH SOLVENT WELDED / WATS (U.N.O) ALL PIPE JUNCTIONS AND TAPERS SHALL BE VIA PROPRIETRY MADE FILITINGS.

ALL DRAINAGE PIPES 300mm AND GREATER IN DIAMETRE SHALL BE REINFORCED CONCRETE RUBBER RING JOINTED CLASS '2' (U.N.O) MANUFACTURED TO AS 4058.

MINIMUM PIPE DIAMETER 100mm U.N.O.

FINAL LOCATION OF RAINWATER DOWNPIPES SHALL BE CO-ORDINATED ON-SITE WITH THE BUILDER, TO THE APPROVAL OF THE ARCHITECT AND ENGINEER AND IN ACCORDANCE WITH AS 3500 AS /NS4198 AND ARR.97.

ALL BOX GUTTERS AND RAINWATER HEADS SHALL BE FITTED WITH FAILSAFE OVERFLOWS SIZED AND INSTALLED TO AS 3500.

ALL DRAINPIPES LOCATED IN NOISE SENSITIVE AREAS AS DEEMED BY THE ARCHITECT, ACOUSTIC ENGINEER OR EQUIVALENT PERSONS, SHALL BE ACOUSTICLY INSULATED USING A SYSTEM NO LESS AN STANDARD THAN "SOUNDLAGG 45255" INSTALLED TO THE MANUFACTURES RECOMMENDATIONS.

DRAINAGE PITS

STORMWATER PIT INTERNAL DIMENSIONS AS FOLLOWS:
TOTAL DEPTH LESS THAN 600mm = 450mm SQUARE OR 600mm DIAMETER
TOTAL DEPTH 601 TO 900mm = 600mm SQUARE OR 900mm DIAMETER
TOTAL DEPTH 901 TO 1200mm = 600x900mm OR 1050mm DIAMETER
TOTAL DEPTH GREATER THAN 1200mm = 900mm SQUARE OR 1050 DIAMETER

PITS DEEPER THAN 1200mm SHALL BE FITTED WITH STEP IRONS AT 300MM CENTRES.

APPROVED PRE-CAST PITS WITH SUITABLE STRUCTURAL STRENGTHS MAY BE USED.

PIT GRATES, FRAMES AND SOLID COVERS SHALL BE TYPE B IN NON-TRAFFIC ABLE AREAS AND TYPE D IN TRAFFIC ABLE AREAS OR IN ACCORDANCE WITH AS 3996 AND AS 1428.1

ALL CONNECTIONS TO DRAINAGE PITS SHALL BE MADE IN A TRADESMAN LIKE MANNER AND THE INTERNAL WALL OF THE PIT AND THE PIPE ENTRY SHALL BE MADE GOOD AND HAVING A SMOOTH FINISH.

SUBSOIL DRAINAGE AS NOTED BELOW SHALL EXTEND 3M UPSTREAM OF ANY DRAINAGE PIT AND BE SEALED WITH A SUITABLE CAP. THE OUTLET SHALL TERMINATE A MINIMUM OF 100MM ABOVE THE INVERT OF THE SUBJECT PIT.

SUBSOIL DRAINAGE

SUBSOIL DRAINAGE SHALL BE CONSISTENT WITH THE STRUCTURAL ENGINEERS DETAILS AND SUBJECT TO THE FINDINGS OF THE GEOTECHNICAL REPORT.

SUBSOIL DRAINAGE SHALL BE LAID TO SUIT SITE CONDITIONS AND GROUNDWATER PRESENCE AS DIRECTED.

SUBSOIL DRAINS SHALL BE SLOTTED UPVC 100MM DIAMETER INSTALLED WITH A MINIMUM ENCASEMENT OF 150MM OF NO-FINES GRANULAR FILL OVER WRAPED IN GEOFABRIC

SUBSOIL DRAINAGE SHALL BE LAID AT A MINIMUM GRADE OF 0.5% U.N.O.

SUBSOIL DRAINAGE SHOULD BE INSTALLED ON THE UPSTREAM END OF ANY PROPOSED PAVED AREAS AND CONNECTED TO THE PIPED DRAINAGE SYSTEM OR WATERCOURSE.

SCHEDULE OF DRAWINGS

DRG No	SCALE	TITLE
H-00	NTS	COVER SHEET, LEGEND AND DRAWING SCHEDULE
H-01	1:200	SITE SERVICES
H-02	1:100	ROOF + GUTTERS
H-01	1:100	SITE SERVICES + WATER & AIR
H-02	NTS	DETAIL SHEET

LEGEND

FFL	FINISHED FLOOR LEVEL
IL	INVERT LEVEL
RL	REDUCED LEVEL
US	UNDERSIDE
CIS	CAST INTO SLAB
CIC	CAST INTO COLUMN
STW	STORMWATER
TOW	TOP OF WALL
+45.67	EXISTING SURFACE LEVEL
23.31	FINISHED SURFACE LEVEL
DP 80	DIRECTION OF SERVICE TYPE OF SERVICE SIZE OF SERVICE
	RISE IN SERVICE
	DROP IN SERVICE
	STORMWATER PIPE
	SUB-SOIL PIPE
DP	DOWN PIPE
RWO	RAINWATER OUTLET 150DIA U.N.O
BRWO	BALCONY RAIN WATER OUTLET 100 DIA U.N.O
PBDO	PLANTER BOX DRAINAGE OUTLET 100 DIA U.N.O
D.T.U	DRAINAGE TURN UP POINT 100 DIA U.N.O
CO	CLEAR OUT
	GRATED TRENCH DRAIN 150WIDE U.N.O.
	GRATED STORMWATER INLET PIT
	CONCRETE COVERED JUNCTION PIT
	FAILSAFE OVERFLOW PROVISION
	KERB INLET PIT
	STORMWATER PUMP WELL

REV	REASON FOR ISSUE	BY	CKD	DATE
CC	CONSTRUCTION CERTIFICATE TENDER		NW	05.09.11
CC	CONSTRUCTION CERTIFICATE		NW	05.09.11
DA.11	DEVELOPMENT APPLICATION		NW	03.08.10
DA 1	DEVELOPMENT APPLICATION		NW	27.01.10

REFERENCE FILES	
ARCHITECTURAL:	
STRUCTURAL:	NIL
MECHANICAL:	NIL
ELECTRICAL:	NIL
OTHERS:	

N

CLIENT:
Monash Country Club

ARCHITECTS
Sgammotta Architects
Level1, 169 Maroubra Road
Maroubra, NSW 2035
Tel: (02) 9344 6188
Fax: (02) 9314 2139

HYDRAULIC & FIRE ENGINEERS:
WALTON Hydraulics PTY LTD
5 Marne Street, Vaucluse NSW 2030
Mobile: 0411 178 528
Phone: (02) 9337 1725

PROJECT:
MAINTENANCE FACILITIES
MONASH COUNTRY CLUB
INGLESIDE

DRAWING TITLE: NSW DETAILS NOTED
COVER SHEET & LEDGEND

PROJECT No:	DRAWING No:	REVISION:	DESIGN:
10–001	H–00	CC.T	NW
CAD REF:	DATE:	SCALE:	CHECKED:
WH–11	09–11	NTS	

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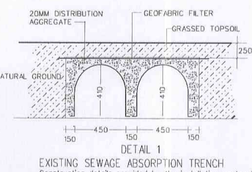

DETAIL 1

EXISTING SEWAGE ABSORPTION TRENCH

Construction details provided by the installation contractor.

EXISTING LENGTH = 27 METRES
EXISTING CAPACITY = 9000 LITRES
REQUIRED PEAK CAPACITY = 3500 LITRES

ALL SERVICE LEVELS ARE INDICATIVE AND HAVE BEEN PROVIDED AS A GUIDE FOR TENDERING ONLY. THEY SHALL BE CONFIRMED WITH OTHER SERVICES, EXISTING GROUND LEVELS AND SUITABILITY WITH INDIVIDUAL DRAINAGE PRODUCTS BEING USED BY THE CONTRACTOR.

NOTES

- FOR GENERAL NOTES & LEGEND REFER TO DRAWING NO. H-00
- READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND ASSOCIATED ENGINEERING DOCUMENTS
- USE ARCHITECTURAL FIGURED DRAWINGS IN PREFERENCE TO SCALE FOR ALL SET OUT PURPOSES
- SUBMIT ALL PERMITS & ALLOW TO PAY ALL FEES AND CHARGES ASSOCIATED WITH THE WORKS
- ALL WORK SHALL COMPLY WITH THE REAVENT REGULATIONS/STANDARDS AND AS-3500 AND MEET WITH APPROVAL OF THE REGULATING AUTHORITY
- STORMWATER AND DOWNPIPES TO BE AT 1Z MINIMUM GRADE
- SUB-SOIL PIES TO BE AT A MINIMUN GRADE OF .5z
- PROVIDE 100Y FAIL SAFE OVERFLOWS TO ALL GUTTERS BALCONYS AND ROOF AREAS
- ALL STORMWATER PITS SHALL HAVE SILT TRAPS WITH WEEP HOLES THROUGH BASE OF PIT
- THE LOCATION OF EXISTING SERVICES ARE GENERALLY DIAGRAMATIN AND THE CONTRACTOR SHALL CARRY OUT HIS OWN INVESTIGATIONS TO DETERMIN PIPE LOCATIONS AND DEPTH BEFORE COMMENCING ANY WORK

STORMWATER QUALITY IMPROVEMENT SYSTEMS

ALL GRATED STORMWATER PITS TO HAVE A 150MM SILT TRAP AS DETAILED ON THE DRAWINGS

ALL KERB PITS ARE TO HAVE SERVICABLE LITTER BASKETS INSTALLED.

GOLF CLUB MANAGEMENT TO PLAN FOR ON GOING PLANTING OF BUFFER ZONES AROUND DAM EDGE WITH NATIVE GRASSES AND SHRUBS.

SITE SEWER WASTE TREATMENT SYSTEM

THE TWO EXISTING DOMESTIC SEPTIC TANKS WILL BE REPLACED WITH ONE COMMERCIAL "ADVSTEL KLEER' SEWER WASTE WATER TREATMENT SYSTEM COMPLETE WITH UV DISINFECTION.

TWO TANK UNIT MODEL: ADV15. SUITABLE FOR FLOW RATES TO 3,500 LITRES PER DAY (This tank is sized on the following criteria)

DOMESTIC HOUSE POPULATION: 5 PERSONS @ 150 L/s. P/ D = 750
MAINTENANCE FACILITY STAFF: 18 PERSONS @ 50 L/s P/D = 900
TOTAL REQUIRED =1650

THE SUPERMANTANT EFFLUENT IS TO BE UV DISINFECTED IN DISINFECTANT PUMP CHAMBER AND TRANSFERED TO THE EXISTING PREPEARED ABSORBTION TRENCH WHICH HAS EXCESS CAPACITY AS NOTED ON DETAIL 1

DRAWING NOTES:

(1) 65MM GALVANIZED VENT PIPE SET 2.5 M WITH U BEND AT TOP SET WITHIN 150MM SPECIFIED BOLLARD

(2) SERVICE BRACKET FROM UNISTRUT P1000 CHANEL WITH COVERS AND END CAPS TO ATTACH ALL SERVICES AND THE SPECIFIED SERVICE SIGNAGE ALL ATTACHED TO A WHITE GLOSS ENAMLE PAINTED WATERPROOF TIMBER PANEL

CC	CONSTRUCTION CERTIFICATE TENDER		NW	20.12.11
CC	CONSTRUCTION CERTIFICATE		NW	30.11.11
CC	CONSTRUCTION CERTIFICATE		NW	05.09.11
DA 1	DEVELOPMENT APPLICATION		NW	03.08.10
DA 1	DEVELOPMENT APPLICATION		NW	27.01.10
REV	REASON FOR ISSUE	BY	CKD	DATE

REFERENCE FILES	
ARCHITECTURAL:	11.12.20
STRUCTURAL:	NIL
MECHANICAL:	NIL
ELECTRICAL:	NIL
OTHERS:	

N / NW

CLIENT:

Monash Country Club

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PROJECT:

MAINTENANCE FACILITIES
MONASH COUNTRY CLUB
INGLESIDE

DRAWING TITLE:

SITE SERVICES

NSW DETAILS NOTED

PROJECT No:	DRAWING No:	REVISION:	DESIGN:
10–001	H–01	CC	NW
CAD REF:	DATE:	SCALE:	CHECKED:
WH–11	09–11	1:200	

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NOTES

- FOR GENERAL NOTES & LEGEND REFER TO DRAWING NO. H-00
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISION OF ALL STRUCTURAL, ARCHITECTURAL AND ASSOCIATED DRAWINGS.
- USE ARCHITECTURAL FIGURED DRAWINGS IN PREFERENCE TO SCALE FOR ALL SET OUT PURPOSES
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- STORMWATER AND DOWNPIPES TO BE AT 1% MINIMUM GRADE
- SUB-SOIL PIES TO BE AT A MINIMUN GRADE OF .5%
- PROVIDE 100% FAIL SAFE OVERFLOWS TO ALL GUTTERS BALCONYS AND ROOF AREAS
- ALL STORMWATER PITS SHALL HAVE SILT TRAPS WITH WEEP HOLES THROUGH BASE OF PIT
- GENERALLY ALL DOWN PIPE AND ROOFING MATERIALS SHALL MATCH THE EXISTING UNLESS OTHERWISE DOCUMENTED BY THE ARCHITECT
- PROVIDE APPROVED FIRE MESH SCREENS TO ALL ROOF GUTTERS

NOTE

PROVIDE FIRE MESH FILTER SCREENS WITH A FLAMMABILITY INDEX NO GREATER THAN 5 TO ALL NEW AND EXISTING GUTTERS AND VALLEYS IN ACCORDANCE COUNCIL CONDITION No17

PERVIOUS GRAVEL TRUCK TURNING AREA

MATERIALS STORAGE BAYS BLOCK

BATTER

EXISTING ABSORBTION TRENCH

WALL

LANDSCAPED

EMBANKMENT

INSTALL GUTTER FIRE MESH TO CONDITION No 20.

COORDINATE DP WITH CANTER-LEAVERED COLUMN FOOTING

CLEAN OUT EXISTING GUTTERING AND INSTALL FIRE MESH TO CONDITION No 20.

COORDINATE DP WITH CANTER-LEAVERED COLUMN FOOTING TO ARCHITECTS DETAIL

CLEAN OUT EXISTING GUTTERING AND INSTALL FIRE MESH TO CONDITION No 20.

CLEAN OUT EXISTING GUTTERING AND INSTALL FIRE MESH TO D.A CONDITION No 20.

DAM LEVEL

DAM LEVEL

STONE BUTTRESS

DAM WEIR 118.06

REV	REASON FOR ISSUE	BY	CKD	DATE
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CC	CONSTRUCTION CERTIFICATE		NW	05.09.11
DA 1	DEVELOPMENT APPLICATION		NW	03.08.10
DA 1	DEVELOPMENT APPLICATION		NW	27.01.10

REFERENCE FILES	
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STRUCTURAL:	NIL
MECHANICAL:	NIL
ELECTRICAL:	NIL
OTHERS:	

N

CLIENT:

Monash Country Club

ARCHITECTS

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PROJECT:

MAINTENANCE FACILITIES
MONASH COUNTRY CLUB
INGLESIDE

DRAWING TITLE:

ROOF & GUTTER PLAN

NSW DETAILS NOTED

PROJECT No:	DRAWING No:	REVISION:	DESIGN:
10–001	H– 02	CC.1	NW
CAD REF:	DATE:	SCALE:	CHECKED:
WH–11	09–11	1:200	

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NOTES

- FOR GENERAL NOTES & LEGEND REFER TO DRAWING NO. H-00
- READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND ASSOCIATED ENGINEERING DOCUMENTS
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- ALL WORK SHALL COMPLY WITH THE RELAVENT REGULATIONS/STANDARDS AND AS-3500 AND MEET WITH APPROVAL OF THE REGULATING AUTHORITY
- STORMWATER AND DOWNPIPES TO BE AT 1% MINIMUM GRADE
- SUB-SOIL PIES TO BE AT A MINIMUN GRADE OF 5%
- PROVIDE 100% FAIL SAFE OVERFLOWS TO ALL GUTTERS BALCONYS AND ROOF AREAS

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STRUCTURAL:	NIL
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ELECTRICAL:	NIL
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Monash Country Club

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WALTON Hydraulics PTY LTD

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Phone: (02) 9337 1725

PROJECT:

MAINTENANCE FACILITIES
MONASH COUNTRY CLUB
INGLESIDE

DRAWING TITLE:

BUILDING SERVICES + INTERNAL WATER & AIR

NSW DETAILS NOTED

PROJECT No:	DRAWING No:	REVISION:	DESIGN:
10-001	H-03	CC	NW
CAD REF:	DATE:	SCALE:	CHECKED:
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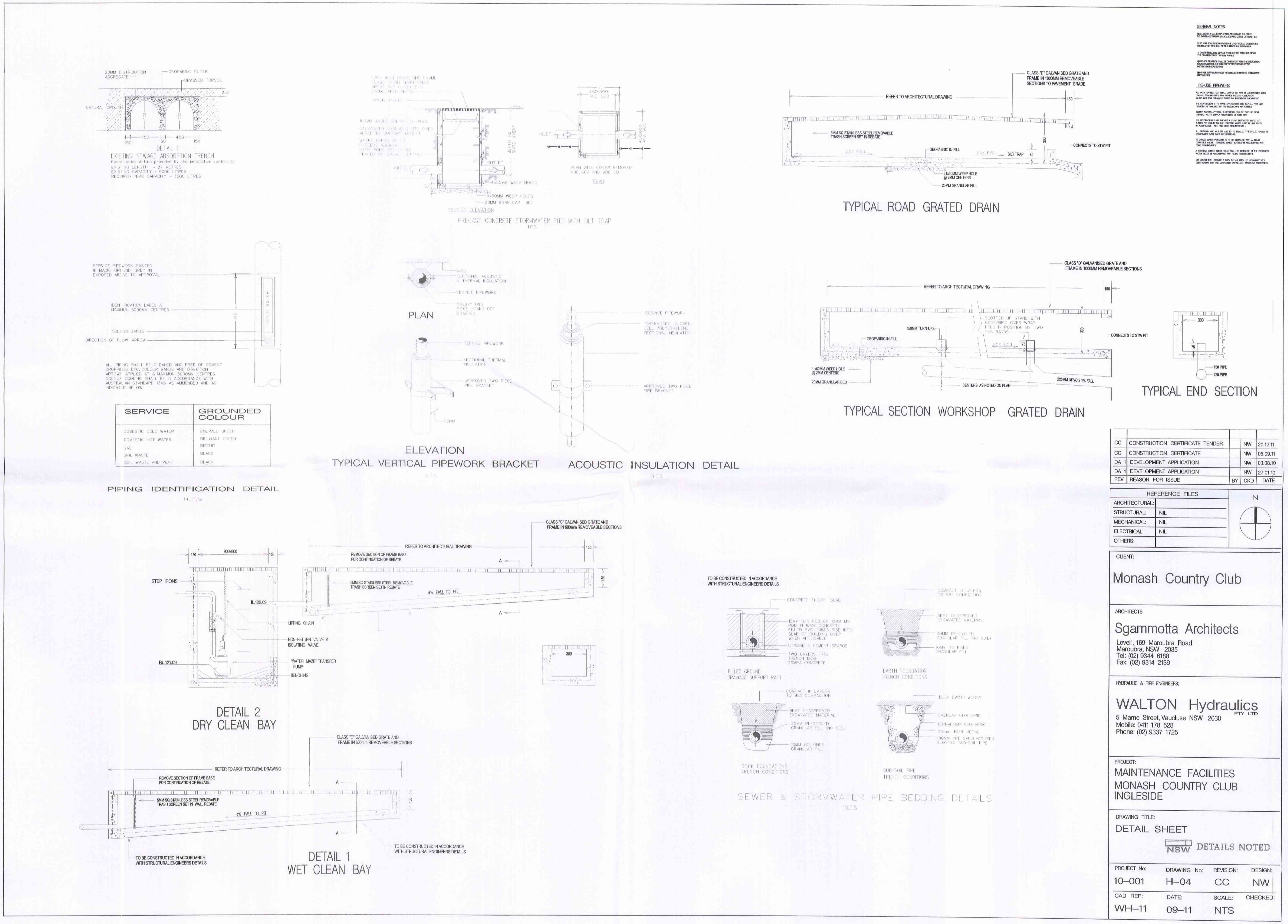
GENERAL NOTES
RE-USE PIPEWORK
20MM DISTRIBUTION AGGREGATE
GEOFABRIC FILTER
GRASSED TOPSOIL
NATURAL GROUND
DETAIL 1
EXISTING SEWAGE ABSORPTION TRENCH
Construction details provided by the installation contractor
EXISTING LENGTH = 27 METRES
EXISTING CAPACITY = 9000 LITRES
REQUIRED PEAK CAPACITY = 3500 LITRES
SECTION ELEVATION
PRECAST CONCRETE STORMWATER PITS WITH SILT TRAP
NTS
CLASS "D" GALVANISED GRATE AND FRAME IN 1000MM REMOVEABLE SECTIONS TO PAVEMENT GRADE
REFER TO ARCHITECTURAL DRAWING
5MM SQ STAINLESS STEEL REMOVABLE TRASH SCREEN SET IN REBATE
GEOFABRIC IN-FILL
SILT TRAP
CONNECTS TO STW PIT
2x50MM WEEP HOLE @ 2MM CENTERS
20MM GRANULAR FILL
TYPICAL ROAD GRATED DRAIN
SERVICE PIPEWORK PAINTED IN BACK-GROUND 'GREY' IN EXPOSED AREAS TO APPROVAL
IDENTIFICATION LABEL AT MAXIMUM 3000MM CENTRES
COLOUR BANDS
DIRECTION OF FLOW ARROW
COLD WATER
ALL PIPING SHALL BE CLEANED AND FREE OF CEMENT DROPPINGS ETC. COLOUR BANDS AND DIRECTION ARROW: APPLIED AT A MAXIMUM 3000MM CENTRES. COLOUR CODING SHALL BE IN ACCORDANCE WITH AUSTRALIAN STANDARD 1345 AS AMMENDED AND AS INDICATED BELOW
SERVICE
GROUNDED COLOUR
DOMESTIC COLD WATER
EMERALD GREEN
DOMESTIC HOT WATER
BRILLIANT GREEN
GAS
BISCUIT
SKIL WASTE
BLACK
SOIL WASTE AND VENT
BLACK
PIPING IDENTIFICATION DETAIL
N.T.S
PLAN
SERVICE PIPEWORK
ELEVATION
TYPICAL VERTICAL PIPEWORK BRACKET
ACOUSTIC INSULATION DETAIL
CLASS "D" GALVANISED GRATE AND FRAME IN 1000MM REMOVEABLE SECTIONS
150MM TURN-UPS
GEOFABRIC IN-FILL
1x50MM WEEP HOLE @ 2MM CENTERS
20MM GRANULAR BED
CENTERS AS NOTED ON PLAN
225MM UPVC 2 1% FALL
CONNECTS TO STW PIT
TYPICAL SECTION WORKSHOP GRATED DRAIN
150 PIPE
225 PIPE
TYPICAL END SECTION
CLASS "C" GALVANISED GRATE AND FRAME IN 600mm REMOVEABLE SECTIONS
REFER TO ARCHITECTURAL DRAWING
REMOVE SECTION OF FRAME BASE FOR CONTINUATION OF REBATE
5MM SQ STAINLESS STEEL REMOVABLE TRASH SCREEN SET IN REBATE
4% FALL TO PIT
STEP IRONS
IL.122.09
LIFTING CHAIN
NON-RETURN VALVE & ISOLATING VALVE
"WATER MAZE" TRANSFER PUMP
BENCHING
RL.121.09
DETAIL 2
DRY CLEAN BAY
TO BE CONSTRUCTED IN ACCORDANCE WITH STRUCTURAL ENGINEERS DETAILS
CONCRETE FLOOR SLAB
FILLED GROUND DRAINAGE SUPPORT RAFT
EARTH FOUNDATION TRENCH CONDITIONS
ROCK FOUNDATIONS TRENCH CONDITIONS
SUB-SOIL PIPE TRENCH CONDITIONS
SEWER & STORMWATER PIPE BEDDING DETAILS
N.T.S
CLASS "C" GALVANISED GRATE AND FRAME IN 600mm REMOVEABLE SECTIONS
REFER TO ARCHITECTURAL DRAWING
REMOVE SECTION OF FRAME BASE FOR CONTINUATION OF REBATE
5MM SQ STAINLESS STEEL REMOVABLE TRASH SCREEN SET IN WALL REBATE
4% FALL TO PIT
TO BE CONSTRUCTED IN ACCORDANCE WITH STRUCTURAL ENGINEERS DETAILS
DETAIL 1
WET CLEAN BAY
TO BE CONSTRUCTED IN ACCORDANCE WITH STRUCTURAL ENGINEERS DETAILS

REV	REASON FOR ISSUE	BY	CKD	DATE
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CC	CONSTRUCTION CERTIFICATE	NW		05.09.11
DA 1	DEVELOPMENT APPLICATION	NW		03.08.10
DA 1	DEVELOPMENT APPLICATION	NW		27.01.10

REFERENCE FILES	
ARCHITECTURAL:	
STRUCTURAL:	NIL
MECHANICAL:	NIL
ELECTRICAL:	NIL
OTHERS:	

N

CLIENT:

Monash Country Club

ARCHITECTS

Sgammotta Architects

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HYDRAULIC & FIRE ENGINEERS:

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Mobile: 0411 178 528
Phone: (02) 9337 1725

PROJECT:

MAINTENANCE FACILITIES
MONASH COUNTRY CLUB
INGLESIDE

DRAWING TITLE:

DETAIL SHEET

NSW DETAILS NOTED

PROJECT No:	DRAWING No:	REVISION:	DESIGN:
10-001	H-04	CC	NW
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WH-11	09-11	NTS	

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HYDRAULIC SERVICES SPECIFICATION

WALTON hydraulics

PROJECT:

MONASH COUNTRY CLUB PTY LTD
256 POWDER WORKS ROAD,
ENGLESIDE NSW

CLIENT:

Monash Country Club

ARCHITECT:

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HYDRAULIC ENGINEERS:

WALTON Hydraulics
Walton Hydraulics Pty Ltd
ACN 002503 166
2/5 Marne Street,
Vaucluse NSW 2030
Mob: 0411 178 528
Email: nw_hydraulics@walton.net.au

Issue	Amendment	By	Date
Construction certificate		N W	27/12/11

Contents

1. Preliminaries

1.1 SCOPE OF WORK

This specification is to be read in conjunction with all other tender documents particularly the Preliminaries and Head Contract Conditions.

The following specified works shall be carried out by the Sub- Contractor and comprise the complete and compliant supply, installation, testing and commissioning of works inclusive of all authority fees/charges, excavation and backfilling as required, for the following services

Drainage Systems	Water Services
Detention Systems	Off site stormwater services
Sanitary Plumbing System	Rainwater Plumbing System
Pollution control Systems	Fire Hydrant Systems
Fixtures, Faucets & Taps	Hose Reel Systems
Gas Service	Controls and Monitoring

On completion of the works the sub-contractor shall supply:

- Work-as-Executed documentation that shall include a full set of CAD Drawings, Maintenance, and Operation Manuals along with technical data sheets.
- Installed products warranty certificates
- Certificates of compliance for relevant services prior to final payment of the works
- A twelve-month defect liability period will also be applicable to the installation.

The completed works shall be to the entire satisfaction of the Architects/Consulting Engineers.

1.2 DEFINITIONS

The following terms used through the specification shall be deemed to mean: construction:

Principle: The building owner or his nominated agent ie (Architect, Consulting Engineers or Project Manager)
Sub-Contractor: Shall mean the nominated contractor performing the work as specified in this specification and as shown on the accompanying drawings.
Contractor: Shall mean the Head Contractor for the main building contract.
Consulting Engineer: Shall mean Walton Hydraulics Pty Ltd
Authoriy: The regularity authority having jurisdiction over the service
Approved Where the term "approved" is used in this specification it shall be taken to mean approved or selected by the Principle. The Principle will be the sole judge and will determine what is and what is not approved and items mentioned as being approved shall be formally accepted by the Architect/Consulting Engineers before the Sub-Contractor orders same or uses same.
Practical Completion: The date on which all sub-contractors contractual works have commencement date of the twelve month defect warranty period.

1.3 PROVISIONAL ALLOWANCE

The provisional allowance noted in the tender schedule shall be included in the tender summand can only be claimed/expended as directed by the principal.

1.4 AUTHORITIES AND STANDARDS

All work shall be carried out by or under the full supervision of a fully licensed plumber, in accordance the Drawings and Specification to the standards and regulations of the Authorities having jurisdiction over the works.

Provide new materials, the best of their kinds being in accordance with the specification, relevant authority regulations and requirements of the Australian standard Codes.

All work shall comply with the relevant Australian Standard Codes and Authority having jurisdiction and shall include but not limited to the following Australian Standards, Codes of practice and publications as amended:

- AS 3500 National Plumbing & Drainage Code
- AS 1260 PVC Pipes & Fittings for Waste and Vent Applications
- AS 1432 Copper tubing for Plumbing, Gas fitting & Drainage
- AS 5601 Gas Fitting Rules, -
- NSW Plumbing & Drainage Code
- AS 2419 Fire Hydrant Installations
- AS2441 Installation Of Hose Reels
- AR&R Australian Rainfall & Runoff Volume 1
- BCA Building Code of Australia
- The Plumbing Code Of Australia
- Pittwater Council Stormwater Code

1.5 CONFORMING TENDERS

All submitted tenders shall include all requirements as set out in architectural and hydraulic specification/drawings and shall include completed tender forms, schedules and services break-ups. Where these documents are not provided the Principle will have the sole discretion to apportionment of monies and rates for the purpose of contract and any variations

1.6 ALTERNATIVE TENDERS

Alternative tenders must submitted along side the conforming tender, they must clearly state the alternative offer, identify any material changes along with time and money savings.

1.7 SCOPE OF WORKS

The contract drawings are diagrammatic only and as such the do not purport to all structural and architectural details, building services, fittings and service deflections. The subcontractor shall allow for all necessary services

coordination fittings, plant and equipment as required completing the installation in accordance with the design intent.

All construction measurements shall be taken from current architectural and structural drawings with figured dimensions being used in preference to scale, all plant and equipment locations shall be approved prior to installation.

1.8 WITTNESS INSPECTIONS

It is a requirement under this contract that all in-ground works is inspected by the principal or his nominated engineer prior to covering over. The contractor is required to prepare an inspection program and provide due notice in order too minimize the number of inspections required. A signed off log of all inspections shall be kept on site as an accurate record of the passed work.

1.9 NON-COMPLIANT AND DEFECTIVE WORKS

Where works are found to be non-compliant and or defective the principal reserves his right to deduct from the contract sum the cost to re-inspect and pass the works previously found non-compliant and or defective.

1.10 SUB-CONTRACTOR DRAWINGS

During construction maintain an up-to-date set of working drawings on the job. This set shall be used for marking-up and signing off by the relevant Authorities as testing proceeds and to maintain an accurate record of the work.

Where a change from the contract drawing is proposed, allow to re-submit a shop drawing fully detailing the proposed changes prior to commencement. Scheduling of the submission of shop drawings shall be made so as not to delay or give cause for an extension of time.

Before final payment provide a complete and accurate set of work "As Executed Drawings" on CAD (Microstation). The drawings shall show the installed position of all services, inspection openings, equipment, valves and sundry pipework. In ground drainage shall include AHD levels of pipes and pit surfaces levels. The minimum size, scale and drafting standards shall be at least equivalent to those used on the contract drawings.

1.11 SITE CONDITIONS

The sub-contractor shall make himself aware of the current site conditions. It is advisable to obtain a geotechnical report and visit the site prior submission of their tender. The tender will be deemed to have included for any adverse conditions including restricted work hours or tidal or traffic conditions.

1.12 EXCAVATION

Conduct all necessary searches of other services prior excavation. Contact the 'Dial before you dig' services prior any excavation.

Excavate to accurately determine the location and depth of all existing service lines affecting the new work. Problems arising from interference of these lines with the new services system shall be referred before excavation for the new system is commenced. Other buried services may also cross the route of the proposed systems and every precaution is to be taken to ensure their safety. Be responsible for the repair of all damaged services.

Provide de-watering and keep excavations free of water; provide for construction of sumps or temporary drains as may be necessary. All trenches and pits shall be kept free from water until any concrete or other works therein are cured and inspected.

All de-watering discharged off site must be treated and be in compliance with EPA regulations.

The ground shall be excavated in the form of trenches to enable the various pipelines to be constructed and installed. Trenches shall be excavated at uniform grades in straight lines.

For the purpose of the Hydraulic portion of this contract, the nature of ground will be as classified as 'Materials as found', and no extra payment shall be made for excavation in rock.

Concrete and bitumen surfaces shall be cut with a concrete saw to a minimum depth of 100 mm prior to excavation. Trenches across access roads and paths will only be approved where underground boring is not practical, then only shall trenches be excavated and the pipeline constructed therein so half the roadway is always maintained open to traffic.

1.13 BACKFILL

Unless otherwise specified, all trenches shall be backfilled with fine granular fill to 200MM above the installed pipe or structures, the remainder of the bulk excavation level shall, if approved by the engineer be backfilled with the excavated material. Where the excavated material is not considered suitable the remainder shall be filled with approved fine granular fill or sand compacted in layers to 95% modified AASHO.

Where the engineer considers the ground has not been compacted to the specified standard the contractor may be requested to provide a certified compaction test at his expense.

1.14 SURPLUS SPOIL

Shall mean such excavated material or structures that is no longer required for the purpose of the works. All spoil shall progressively removed from the site at the sub-contractors cost.

1.15 SURFACE RESTORATION

Be entirely responsible for the restoration of any concrete, bitumen, grass or natural surface removed or damaged as a result of the work. Any road, path etc so affected shall be restored with materials of the same nature and of equal quality as those contained in the original construction and to the same depth.

At the end of the maintenance period all restored surfaces shall at least equal in all respects those existing before the commencement of the works.

1.16 OCUPATION HEALTH & SAFETY

All works are to be carried out in accordance with the OH&S and EPA regulations this shall apply in particular to off site discharges, dust control barricades and traffic control, work platforms scaffolds and ladders, trench shoring, electrical leads and equipment.

At no time will the principal be responsible for providing or acting in relation to any of the above requirements.

1.17 STERILISATION OF WATER SERVICES

Disinfect pipework installation in accordance with AS 3500 before practical completion. All storage tanks and pipelines shall be flushed clean then charged with disinfectant using 50mg of chlorine per litre of water. The system should remain charged for a period of at least three days, checked and adjusted for free residual chlorine and flushed out thoroughly with clean water before being used. Repeat procedure where necessary.

1.18 EXISTING SERVICES

The sub-contractor shall be responsible for locating and identifying existing services. It is the contractor's responsibility to notify all utility service providers and locating private services prior any excavation or work that may or may not be adjacent to other services i.e., Telstra, Energy Australia, Optus, AGL, Sydney Water Corporation, Local Councils, and the like.

All existing services that are made redundant shall be removed and sealed in accordance with the requirements of the Authority having jurisdiction over the work.

The hydraulic engineer shall be notified prior to disconnection or removal of any redundant service.

1.19 MATERIALS AND WORKMANSHIP

All work shall be carried out in a tradesman like manner to the satisfaction of the principal
All pipes shall be run parallel or at right angles too adjacent walls and slabs. Pipes shall be bracketed independently of each with a 25mm clear space from adjacent slabs or walls and thermal insulation, all valves and inspection opening given access by cupboards or access panels.

All material used in this work shall be new, of first quality and of an approved manufacture and type.

1.20 BRACKETING AND SUPPORTS

All pipework shall be free to move without causing stresses in the pipework or in the pipe joints. The works shall be entirely free of system noises and water hammer.

Generally supports shall be similar and equal in all respects to galvanised mild steel hot dipped galvanised "Milstrut" channel complete with purpose made fittings and pipe clamps alternatively Abbey" plastic coated pipe supports system may be used on small bore pipes on internal pipework only .

All pipes fixed horizontally along walls must be fixed clear of wall with "Milstrut" channel and two part pipe clips

No pipe shall be supported from or to an adjacent pipe or service. All pipes shall be installed 25mm clear of adjacent structures or services

Special care shall be taken to avoid contact of dissimilar metals likely to cause electrolytic corrosion. Separate all pipes from dissimilar metals with 2mm thick PVC strip or similar approved material. Adhesive tape will not be accepted.

All fixings shall be similar to "Hilti" manufacture or approved equal. Power driven fixings and knock in's are not approved for this contract.

All fixings within pump wells and pits shall be of 316 stainless steel.

All other supports shall comply with manufacturer's and authorities requirements.

1.21 EXPANSION BEND AND ANCHORAGES

All service lines subject to thermal expansion and contraction shall have approved pipe anchors and expansion loops or provisions arranged to avoid any strain on the piping system, plant and equipment.

All pipes crossing over building construction joints shall be installed with expansion provisions.

1.22 ACOUSTIC LEVELS

The sub-contractor in conjunction with the builder is required to insure that acoustic levels as set out in the BCA and council regulations are maintained to this end the following minimum standards shall apply:

- All plant and equipment shall be installed complete with flexible mountings, couplings and inertia blocks.

- All sanitary waste pipes and stormwater pipes located in noise sensitive areas shall be insulated with a 25mm thick open cell acoustic insulation over bound with barium vinyl sheeting of 4Kg/ m2 similar or equal to "Soundlag" manufacture.

- All pipes shall be supported 25mm clear of adjacent structures or services.

Noise sensitive areas are normally considered to be all areas other than bathrooms laundries car parks and external area.

1.23 WATERSTOP SEALS & FLANGES

It is the sub-contractors responsibility to insure that all pipes passing through slabs are made watertight.

Water stop flanges or sleeves set 50mm above the slab are to be installed on all pipes and cables passing through wet area floors, planter boxes, plant room floors and balcony slabs.

Gully risers shall be set watertight to prevent any leakage through the floor and incorporate a "Gains" or the "WonderCap "product to insure a positive leak control system. " Wondercap" Phone 1300308 205

1.24 FIRE STOPS

Fire stop collars and seals are to be provided on all floor, ceiling and wall penetrations as required and shall meet the minimum standards set out in the Building Code of Australia. All fire stopping shall be in accordance with the manufactures recommendation and instructions and comply with AS 1530

1.25 PLANT AND EQUIPTMENT

Details of all plant and equipment are required to be submitted for approval prior to ordering and installation, these details are to include flow rates, capacities construction materials size along with proposed set out locations and mountings.

1.26 SERVICE AND FIXTURE PROTECTION

The sub-contractor is to be responsible for the protection of all installed services, plant and fixtures installed under this contract until such time as practical completion has been achieved.

All work and finishes/coatings not to the standard of the Principal shall be replaced at the sub-contractors cost

1.27 PIPEWORK IN CUPBOARDS

All pipework installed in cupboards shall be made removable by the means of approved unions. All pipes passing through the cupboard shall be fitted with flat white cover plates
That shall adequately cover the penetration provided by the cabinet installer. Where this is not possible the sub contractor is required to advise the head contractor that making good is required by the cabinet installer .

1.28 PIPE FINISHES AND SERVICE IDENTIFICATION

All internal exposed piping throughout, adjacent to plumbing fixtures excluding traps and fittings if PVC shall be chromium plated. Where exposed pipes pass through a finished wall, floor or ceiling they shall be fitted with an approved chromium plate.

All other piping, fittings, hangers and permanent parts of the installation, except as otherwise directed or specified below, shall be cleaned free of cement droppings, etc, primed and painted by others with minimum two (2) coats of best quality oil paint, to approval with the exception of concealed pipes in ducts, false ceilings and other concealed positions which shall only be provided with a 450mm long colour band.

Colour coding of pipework shall be in accordance with Australian Standards.

Colour bands shall be at a maximum of 3000mm centres. Fit supplementary markers at all colour bands similar to '3M Safetyman' manufacture or approved equal.

1.29 SERVICE IDENTIFICATION SIGNS

Service signs shall be made from multi layered plastic as noted with 20mm engraved upper case lettering. The signs are to bed screwed fixed to suitable supports adjacent the applicable service.

Allow to supply the following signs:

RECYCLED WATER NOT SUITABLE FOR DRINKING (White on Red- 6 Required)

IRRIGATION WATER NOT SUITABLE FOR DRINKING (White on Green- 6 Required)

FIRE HOSE REEL CONNECTED. DO NOT ISOLATE (Red on White- 6 Required)

COMPRESSED AIR SUPPLY Kpa. ???? (Blue on White 6 Required)

Valves are to be labelled with a circular plate of traffolyte material engraved with their respective function and mounted in an approved manner on top of valve spindles with brass ring.

1.30 FLEXIBLE FAUCET CONNECTIONS

Flexible hot/cold connections will only be permitted under the following conditions:

- When the manufactured product has warranty of at least twenty years.
- When the product is installed strictly in accordance with the manufactures installation procedures, specifically in regards to offsets and bends.
- Where the connection is connected directly to an isolation stop valve
- When the product is supplied by a manufacturer as part of a cistern or pillar mixer tap and installed in accordance with above.
- In all other such locations annealed or hard drawn copper tube shall be used.

1.31 SYSTEM RESISTANCE

Pumps shall deliver the required quantities against actual installed system resistance. Be responsible for exact matching of pump performance according to final system resistance, resulting from the pipework installation.

1.32 ELECTRICAL WORK

All electrical work to be installed under this contract shall be by others and carried out by a licensed electrician and in accordance with the electrical specification for this project, the S.A.A. Wiring Rules and the requirements of the local supply authority.

1.33 WARRANTY GUARANTEE

The sub-contractor shall warrant the installation and technical performance of the services installed under this contract for a period of twelve months commencing from the date of practical completion.

The sub-contractor will be liable for the rectification of items found defective or not preforming to code requirements.

The costs for all rectification works not carried out by the sub-contractor will be deducted from the sub-contractors detention fund by the principal.

An extended twelve month warranty will be required on all rectified works as required by the principal.

This warranty shall not limit the sub-contractors responsibilities under state laws

1.34 INSTALLATION STATEMENTS

The plumbing contractor is required to complete the following installation statements as required under E. Matters of the Council Consent:

Item 2 and item 6 parts (a) to (k) (See attachment)
Item 7 (See attachment)

1.35 TESTING AND COMMISSIONING

Witness testing shall be progressively carried and all test logs recorded and signed off to the satisfaction of the principal.

Dry hydrant lines shall be installed and tested and valved off ready to be charged and operated by the fire department if required. The service shall be maintained two stories below that being constructed as required by code

The sub-contractor shall be responsible for all fees; labour, materials, and instruments required for the carrying out of tests, all work found to fail the tests shall make good.

All systems shall be commissioned prior practical completion, which shall include but not limited to:

- Clearing of all sewer, trade waste and stormwater drainage lines inclusive of gully traps
- Flushing all hot/cold and re-cycled water lines inclusive of aerators, line filters a and valve seats
- Adjust, test and certify all tempering valves to code compliance

- Confirm all Hot water systems are operation and returned lines and circulating pumps balanced.
- Ensure all tempering are preceded with line filters and isolation valves
- Ensure that all level controllers and pressure switches are correctly set
- Confirm all hose reels are fully charged and operational

- Insure that all pumps have been correctly commissioned by the pump supplier
- Confirm all services and isolation valves are located in accordance with the "Work As Executed Drawings".
- Remove all product labels and packaging tapes

1.36 PROJECT MANUALS

Prior to practical completion the sub-contractor shall submit two copies of Hydraulic Services Operational and Service Manual. This shall be bound in an A4 PVC three ring binder complete with spine and cover identification.

- The manual shall include the following minimum information:
- A full set of Sub-contractor drawings as noted in clause 1.5
- A certified copy of all services witness testing identifying service date time and the certifier contact details
- A copy of the Hose Reel certification
- A description of each service from the point of commencement to their termination
- A detailed maintenance schedule of all fixtures , fittings, plant and equipment in the completed installation
- A detailed maintenance schedule setting out all check points and service intervals
- Product and technical brochures the installed plant/equipment, sanitary fixtures, and faucets
- Manufactures guarantees and warranties noting place and date of purchase
- Details of nominated suppliers including address and phone numbers

2. SEWER DRAINAGE

This sub-section must be read in conjunction with the preliminaries section of this specification

2.1 SCOPE OF WORKS

The work specified in this section comprises the complete coordination and management to insure that all existing facilities can be maintained during the installation of the new work. The new systems shall be included but not limited too the complete supply and installation of the sewer drainage system including reflux valves, plant /equipment, accessories, testing and commissioning of the following work:-

- **Sewerage system:**

The system is to comprise the complete pumping out and removal of two existing disused septic systems in accordance with code requirements along with the safe removal and disposal of all rubbish from site. On completion the contractor is to provide a signed statement of compliance evidencing this work.

The complete supply and installation of the new system as detailed on the drawings. AWTS Envirocycle the supplier of the equipment is required to make all applications for the complete plant and absorption system and gain all approvals as required by the authorities prior to any installation work.

The installed system is to be complete with audible and visual strobe light located above the entrance door to the work shop /office. The power supply and alarm conduits will be provided under the electrical contract.

The existing transfer pump-out line shall be part replaced in class 18 PVC as noted on the drawings with all bends and offsets being kept to a minimum and the completed line pressure tested priot to being placed in operation.

The system shall be fully commissioned by AWTS Envirocycle and a compliance certificate issued for the operating system prior to final payment.

- **Internal sewer** :

Supply, install and commission a new domestic sewer drainage system including all fittings, pipes, traps, reflux valves and venting systems as required for code compliance.

Reticulate and test pipework to all sanitary fixtures in the existing house, workshop and amenities, and as generally indicated on the hydraulic and architectural drawings.

- **Work Sequence:**

The installation and staging of services shall be in accordance with the head contractors program. Allow for any temporary connections or sequenced work as required to minimise disruption to the existing facilities until change

2.2 UPVC PIPES AND FITTINGS

UPVC pipes and fittings shall be DWV grade comply with AS 1254 and shall be installed to code compliance. Joints shall be solvent cement type and conform to Australia Standard. Rubber ring joints shall be used to code in mine subsidence areas and to pit connections or in other locations as directed

2.3 PIPE SCHEDULE

:-Service	Size	Material
Sewer Drainage	65 -150	UPVC (SEH) <3m
Vent Pipes	50 – 150	UPVC
Trade Waste	5 0- 100	UPVC (SEH) <3m
Pump Lines	40 -100	Class 18 UPVC

NOTE: All pipes cast in concrete shall be HDPE

2.4 HIGH DENSITY POLYETHYLENE PIPES AND FITTINGS

HDPE pipes and fittings for drainage shall comply with AS 2033 & AS 3500. The installation and be in accordance with the 'GEBERIT' drainage application manual.

2.5 PIPE INSTALLATION

All drainage levels should be confirmed prior to pipe laying. All pipes shall be laid on 1oomm bed of 12mm granular fill so that the pipe barrels have solid bearing throughout their length otherwise bracketed to code compliance, all pipes shall be tested recorded and signed off by the head contractor prior to covering or building in.

2.6 ACCESS CHAMBERS / STRUCTURES

Access chambers and structures shall be constructed with approved pre-cast systems or cast in situ with 150mm thick walls of 20 Mpa concrete. The dimensions of the pit and number of step irons will be dependant on the depth as noted in AS 3500.

Galvanized covers and frames of specified class shall be provided on all pits. Where pits are in concrete paved areas the sub-contractor shall adjust the cover level and the Head Contractor will cast it in situ. In all other areas the sub-contractor will provide a concrete rebate for the frame.

The contractor shall allow for lifting all covers and conducting a joint inspection with the engineer prior to practical inspection. All covers shall be greased prior to final installation.

The contractor shall provide lifting keys for each type of cover used on the project.

2.7 PIT COVERS

Covers and grates shall be cast iron equal in manufacture to Icon Pty Ltd set level and the installation shall conform to the following:

- Class A Internal pedestrian precincts only. No vehicular traffic
- Class B External areas including footpaths, footways, light vehicular only
- Class D Cars, trucks (highway traffic) and commercial vehicular traffic
- Class E Heavy duty forklifts and earthmoving equipment.

The contractor shall supply to the engineer one set of lifting keys to suite each type of cover installed on the project.

2.8 DRAINAGE RECORDS

During construction submit progressive 'Work as Executed' as previously set out under Sub-contractor Drawings show the locations and depths of pipes and fittings including inspection openings, cleaning eyes, pits, inverts of underground services.

2.9 SEWER SURCHARGE GULLY

Provide a surcharge gully located as required by the authorities comprising 'P' trap with riser extended to a finishing collar and grate set at an approved height above finished floor level, complete with concrete surround, charged by a suitable hose tap or fixture.

2.10 FLOOR WASTE

Floor wastes shall be 100mm in diameter and be charged with an approved fixture, condensate drain or trap priming device

2.11 CLEAROUTS

Where indicated on the drawings or otherwise required by code install 100mm / 150MM diameter CP brass clearouts internally and externally where set in concrete. The clearout is to be set level with the finished floor or surrounding ground. Where in external ground works provide an approved PVC clearout with a concrete surround set 25 above the adjacent ground surface and in trafficable areas provide a HD CI box over with a 25mm clearance to the IO cover.

2.12 FLOOR GRATES

All floor grates shall be 100mmϕ CP Brass of the "Rimo" type unless otherwise specifically approved generally plastic based drop-in units will not be approved.

2.13 TUNDISH LOCATIONS

Where required for air conditioning condensate, hot water heater installations, coffee machines and refrigerators provide an approved tundish connected to the drainage in accordance with code compliance

2.14 TESTING AND COMMISSIONING

Refer to the preliminaries clause 1.30

3. TRADE WASTE

This section shall comprise the complete supply and installation testing and commissioning of the following systems along with a compliance certificate prior to payment of the works. The work shall include the comprising the Pollution Control systems as noted on the hydraulic drawings, extension of drainage to pollution control equipment. Connect all trade waste fixtures and required vents through the pollution control device. Provide all materials and sundry items. Include for making application to the authorities and payment of all fees and charges associated with the connection, testing and commissioning of the work to meet with the full approval of the governing authorities.

3.1 ACCESS CHAMBERS

Supply and install all access chambers, covers and frames in locations as noted on the drawings or as directed by the supervising authority.

3.2 PUMP STATIONS

Supply and install complete pump stations as noted on the design drawings. The installation shall include all pipework, rising mains and, electrics to equipment scheduled under pumps and controls. Include for making application to the authorities and payment of all fees and charges associated with the connection, testing and commissioning of the work to meet with the full approval of the governing authorities.

3.3 WATERMAZE TREATEMENT SYSTEM

The"Water maze" treatment system is to be supplied and installed by others this contract is to include for the connecting of in-ground drainage, grated pump-out pit, review of the suppliers installation drawing and the co-ordination of other required connecting pipes.

3.4 OIL SEPARATOR

Where indicated on the drawings supply and install 15000 litre oil separator similar and equal to Mascot Engineering P/L type OS150 complete with riser, skimmer pipe and cast iron Class D water tight cover set at fall 3MM above the adjacent pavement concrete.

3.5 OIL STOTAGE TANK

Supply and install a 1000 litre stored capacity oil storage tank with BCP TypeOWP-01000 with "Icon" Type CICINF600D CI bolt down gas tight cover set raised 3mm in the adjacent integral concrete pavement slab. Allow for the connection of two alarm status level switches in cable conduit and vent lines to tank.

3.6 WATERMAZE COLLECTION SUMP

Provide and install 1.2x1.2x1.2 deep pump well Mascot Type DS6 fully concrete encased to allow for step irons and fixings in wall provide a 900x900 double hinged lockable galvanised hinged grate set integral with the adjacent pavement slab. Include to bench base of pit to pump and cast in 40mm pump discharge line and conduits as required and generally indicated on the drawings.

The pump, and level switches and power to pump will be supplied and installed by the equipment supplier.

3.7 CHEMICAL MIXING PUMP CHAMBER

Provide and install a "Mascot Engineering Pit type DS6 fully concrete encased to allow for step irons and fixings in wall to under side of new concrete floor and provide Galvanised Hinged / Lockable 600x600 grate set in the new concrete slab. Include to bench base of pit to pump and for the installation of conduits to control panel located above and 50mm class 18 pumped transfer line to the" Watermaze" collection sump.

3.8 TESTING AND COMMISSIONING

Refer to the preliminaries clause 1.30

4. STORMWATER

4.1 SCOPE OF WORKS

This sub-section must be read in conjunction with the preliminaries section of this specification and the required allowances included.

The work specified in this section comprises the complete coordination, supply and installation of the stormwater drainage system including reflux valves, plant /equipment, accessories, testing and commissioning of the works indicated on the drawings and noted below

4.2 STORMWATER DRAINAGE

Allow for the complete supply installation and testing of the detailed drainage lines. The installation shall include for all excavation removal of spoil, the supply and installation of all pipework fittings, connections to down pipes existing and new.

The supply and installation of all pits, grated drains, and pollution control equipment and final connection to main lines.

4.3 HEADWALLS

(a) Construct headwall for 225mm pipe equal to that manufactured by BCP products Code NoHWH-10225 allow an additional two metre long concrete apron covered with 50MM blue metal between 225 x 75mm treated pine side rails and construct a 2mx2mx .7 silt trap with a level overflow weir toward the dam include to re- profile the existing grassed dam bank to blend in.

(b) Construct headwall for the 450MM drainage line and arrange for a structural engineers approval to core drill a 500mm hole in existing wall and provide rock energy. A rock base energy disapator is to be provided on the dam bed at the pipe outlet by the golf club. The contractor is required to coordinate the installation of these works.

4.4 SUBSOIL DRAINAGE

Supply and install 100mm sub-soil pipes behind all retaining walls and structures noted on the structural drawings and as generally shown on the hydraulic drawing H-01. Include for full flushing clearouts on all lines in accordance with code requirements.

4.5 ACCESS CHAMBERS

Supply and install all access chambers, covers and frames as required by code and in locations as noted on the drawings or as directed by the supervising authority.

4.6 PIPE SCHEDULE

Pipes and fittings shall be of the following materials-

Service	Size	Material
Stormwater drainage	65 -150	UPVC (SEH)<3m
Stormwater drainage	150 -600	RCP/UPVC (SEH)<3m
Pump Lines	40 -100	Class 18 UPVC
Sub-Soil Pipes	100	Slotted DWV grade
Curved areas and Planters	65 - 100	Socked Drain Coil Pipe

4.7 UPVC PIPES AND FITTINGS

UPVC pipes and fittings shall be DWV grade comply with AS 1254 and shall be installed to code compliance. Joints shall be solvent cement type and conform to Australia Standard. Rubber ring joints shall be used to code in mine subsidence areas and to pit connections or in other locations as directed

4.8 HIGH DENSITY POLYETHYLENE PIPES AND FITTINGS

HDPE pipes and fittings for drainage shall comply with AS 2033 & AS 3500. The installation shall be in accordance with the 'GEBERIT' drainage application manual.

4.9 CONCRETE PIPES

RCP pipes and fittings shall be of the socket and spigot rubber ring type with the class being determined by the installed depth and applied loadings,. Jointing rings shall be as supplied by the manufacturer and installed to code

4.10 PIPE INSTALLATION

All drainage levels should be confirmed prior to pipe installation. All pipes shall be laid so that the pipe barrels have solid bearing throughout their length and backfilled and compacted as noted ion the drawing detailsn otherwise bracketed to code compliance, all pipes shall be tested prior to covering or building in. The completed installation shall comply with AS 3500 and the local Council Stormwater Code

4.11 STORMWATER PITS AND ACCESS CHAMBERS

All stormwater inlet pits are to be sized as noted on the drawings and be complete with silt traps and trash baskets in accordance with the DA conditions. Access pits do not require either silt traps or baskets. All pits shall be similar or equal to BCP Pty Ltd reinforced concrete products the dimensions of the pit and number of step irons will be dependant on the depth as noted in AS 3500 and or as noted on the drawings.

Galvanised iron grates/covers and frames of specified class shall be provided on all pits. Where pits are in concrete paved areas the sub-contractor shall adjust the cover level and the Head Contractor will cast it in situ. In all other areas the sub-contractor will provide a concrete rebate for the frame.

4.12 SILT TRAPS.

The specified silt traps are a DA requirement and must be installed and the installed pit must be constructed so that any residual water can soak away.. Dependant on the adjacent ground conditions this may be achieved with a base granular material and weep holes in the pit base or side alternately using short sections of sub-soil pipe attached to drain the pit. What ever method is used the end result must be proven to work.

4.13 PIT COVERS AND GRATES

Covers and grates shall be lockable and of hot dipped galvanised Icon Pty Ltd set level and cast in integrally with the adjacent concrete the installation shall conform to the following:

- Class A Internal pedestrian precincts only. No vehicular traffic
- Class B External areas including footpaths, footways, light vehicular only
- Class D Cars, trucks and commercial vehicular traffic

Grates shall be of the following types:

- Where in roll kerbs- be a purpose made roll kerb grate to fit the designed kerb
- Where in standard kerb double or single hinged grates as noted on the drawing all grates are to be set against the vertical up stand of the kerb to insure that no water by-passes the grate. Generally grates shall be similar or equal to Wilmac type 96CGF installed over the required inlet pit size.
- Where in V drains

4.14 DRAINAGE RECORDS

During construction submit progressive 'Work as Executed' as previously set out under Sub-contractor Drawings show the locations and depths of pipes and fittings including inspection openings, cleaning eyes, pits, inverts of underground services.

4.15 FAIL SAFE SURCHARGE

Provide a 100% fail safe surcharge point to all stormwater pavement and catchment areas in order to prevent flooding in extreme rain events.

4.16 CLEAROUTS

Provide and install 100mm diameter CP brass clearouts at finished floor/ground level as necessary for maintenance and complete access of the stormwater and sub-soil drainage system.

4.17 TRENCH DRAINS

Trench drains shall be formed by the builder to the sizes nominated on the drawings and have a 75mm deep silt trap before overflowing and to the piped system. Each drain is required to have 90mm holes filled with geo-fabric spaced at 1.5 metres apart or as required to insure that any residual water within the silt trap will filter into the ground below

4.18 ANTI POLLUTION ARRESTORS

Refer to oil arrestor listed under trade waste item. Allow to connect same to stormwater outlet pipe.

4.19 SUB-SOIL PIPE LAYING

Sub-soil pipes shall be as set out in the material section; all pipes shall be laid at .5% in basements and 1% minimum fall in all other locations. Lay pipes on 100mm bed of 20mm washed granular material and backfill the remainder with same to 150mm above the pipe as detailed on the drawings. The granular fill shall be encapsulated in a geo-fabric with a 300mm lap on the top and covered with a further 50mm of approved granular material.

4.20 ON COMPLETION

Refer to the preliminaries clause 1.30

5. RAINWATER PLUMBING SYSTEM

This sub-section must be read in conjunction with the preliminaries section of this specification

5.1 SCOPE OF WORK

All roof work and rainwater plumbing is to be carried out by the roofer. This contract is to include for the complete coordination and alignment of connection drainage specified under stormwater to the required down pipes. In addition the contractor is required to review the existing workshop b down pipes and make due allowance for making good to the existing connections.

The head contractor shall allow for the cleaning of existing retained gutters and for the installation of fire rated leaf guards to all gutters.

6. SANITARY / TRADE WASTE PLUMBING

This sub-section must be read in conjunction with the preliminaries section of this specification

6.1 SCOPE OF WORK

The work in this section comprises the supply and installation of the sanitary and trade waste plumbing systems including all necessary accessories, testing and commissioning required to complete the installation of all fixtures, fittings and associated plant.

6.2 PIPE SCHEDULE

Service	Size	Material
Soil wastes and vents	100	UPVC/CU/CI
Waste pipes and vents	40 – 80	UPVC/CU
Within cupboards	40 - 50	UPVC/CU
Trade waste vents	40 - 100	UPVC

6.3 UPVC PIPES AND FITTINGS

UPVC pipes and fittings shall be DWV grade comply with AS 1254 and shall be installed to code compliance. Joints shall be solvent cement type and conform to Australia Standard.

6.4 HIGH DENSITY POLYETHYLENE PIPES AND FITTINGS

HDPE pipes and fittings for drainage shall comply with AS 2033 & AS 3500. The installation shall be in accordance with the 'GEBERIT' drainage application manual.

6.5 GRADIENTS

Soil, waste and vent pipes shall be installed at the minimum gradients approved by the Authorities.

6.6 INSPECTION / TEST OPENINGS

Inspection openings shall be provided at each floor and required to conform to the authority's requirements, or additionally as required to hydrostatically test the entire system.

6.7 FIXTURE TRAPS

In disabled areas fixtures shall have integral traps. All other concealed fixture traps shall be polypropylene universal 'S' or 'P' type, Exposed traps shall be copper finished in chrome plating.

6.8 FLOOR WASTES

Floor wastes shall be 100 diameter with 75mm water seal complete with CP outlet grate set level to ensure correct drainage of floor areas.

6.9 EXPANSION JOINTS

Expansion joints shall be provided at intervals to comply with authorities' requirements and in positions to prevent stress in pipework. Provide expansion joints between fixed points more than 2m apart and at a minimum of 6m centres where there are not fixed points.

6.10 TUNDISHES

Where indicated on the drawings exposed tundishes shall be type 50x40mm chrome plated tundishes with pipe drainage connected to the sanitary plumbing system. Also, where indicated on the hydraulic drawings chrome plated tundishes of a larger size shall be supplied and installed.

Provision shall also be made to allow for a connection point at each laundry tub waste for future connection of air conditioning tundish by Mechanical Contractor.

6.11 AIR EMITTANCE VALVES

Air emittance valves (AEV) shall be of approved brands and installed in accordance the recommended code of practice

6.12 VENT TERMINATIONS

.All vents passing through roofs shall pass through an upturned flashing being over-flashing to form watertight seal and then extended to the minimum allowable height and terminated with an approved cowl

6.13 TESTING AND COMMISSIONING

Refer to the preliminaries clause 1.30

7. DOMESTIC WATER SUPPLY

This sub-section must be read in conjunction with the preliminaries section of this specification

7.1 SCOPE OF WORK

The work specified in this section comprises the following work:-

- **Domestic Cold Water;**

The supply and installation and commissioning of the service commencing from the existing water pump located at the Southern end of the site dam wall. The line shall be extended to serve both the new and existing services to the maintenance facility and the attached residence.

The contractor shall allow locating and reconnecting all existing branch lines and connect to the new service indicated on the drawings.

The 65MM copper pipe across the dam wall shall be supported on hot dipped "Unistrut" channel bolt fixed to top of dam wall and a heavy duty a hot dipped saddle attaching the pipe. Purpose made isolation barrier is required between the non-compatible surfaces.

Reduced pressure zone protection shall be provided at the following locations:

(a) The branch line to the existing facilities building.
(b) The 50mm branch to the chemical bay filling point
(c) On the branch serving the remainder of the wash bay facilities.

Provide connections too the new fixtures in both the workshop and wash bay facility.

- **Domestic Hot Water;**

The supply and installation and commissioning of the hot water heater and plant noted on the drawings and hereafter specified.

Extend from the existing hot water in the workshop wash room in 15mm copper with 20mm "Bradflex" insulation to the new basin located in the workshop

7.2 PIPE SCHUDULE

Pipes and fittings shall be in materials as follows:-

Domestic cold water (Mains & risers)	15-100	Copper tube type B
Domestic cold water (rough-ins only)	15 -25	Rehau /Copper
Domestic cold water (internally exposed)	15 -25	Chrome Plated Copper

Note: Flexible fixture connections will not be permitted

7.3 COPPER PIPES AND FITTINGS

Pipework shall be installed in a neat workmanlike manner and shall include all necessary sets and be complete with sufficient unions, flanges and isolating valves for satisfactory removal of piping and fittings for maintenance or repairs.

Copper tube shall conform to Australian Standard AS 1432-1983 Type B.

Fittings Manufactured fittings shall be of approved long radius type constructed from either non-dezinctifiable brass or correctly formed copper as approved by the Authorities

Compression fitting fittings with nylon olives will not be accepted

7.4 CROSS LINKED POLYETHYLENE PIPES

Cross link polypropylene piping shall be Rehau / complete with brass fittings tees, elbows and couplings installed in accordance with the manufactures installation procedures.

7.5 THERMAL INSULATION

Hot water pipr to the new workshop basin shall be fully insulated with 20mm Bradflex flexable insulation and be fully sealed to the pipe.

7.6 VALVES

Control valves shall be provided on all branches off the main line and as required for a complete and compliant installation. Valves shall be rated for a minimum working pressure of 2000Kpa, where for isolation purposes shall be of the back seating type with a packing gland stem seal.

Valves connected to all plant and equipment shall be complete with inline unions except when over 65mm where the unions will be replaced with bronze flanges.

All valves shall be of approved type suitable for the fluid and pressures within the system being equal to and installed in accordance with the following:

- Gate Valves - Shall be of approved manufacture suitable for a working pressure of not less than 2000 kPa.
- Ball Valves - Shall be of approved manufacture suitable for a working pressure of not less than 2000 kPa.
- Pressure Limiting Valves - Shall be bronze of 'RMC' manufacture.
  Provide pressure gauges and isolation valves up and down stream of the gauges
- Check Valves: 25mm and over shall be bronze horizontal swing check type of approved manufacture, valves less than 25mm may be of the spring loaded in-line type.
- Stop Valves: Shall be of approved manufacture with tested brass body and loose valve. Stop valves located in walls in exposed locations shall be chrome plated recess cocks, designated hot and cold. All external stop valves of 100mm and above shall be cast iron bodied wedge type and gunmetal trim and forged manganese bronze non rising stem.
- TMV Valves: TMV valves shall be complete with strainers and isolation valves for servicing. TMV valves shall limit the temperature of hot water to that prescribed by law to all fixtures other than kitchens and laundries. TMV valves shall be equal to RMC brand.
- Thermostatic mixing valves: Thermostatic valves shall be used for all child care facilities, hospitals and disabled areas - valves shall be equal to 'Aqua Blend' 2000 installed in accordance with AS 3500.

Where positioned underground, control valves shall be complete with C.I. path box with hinged lid. The box shall be set over the valves with concreted surround to finish flush, and shall be arranged to allow a minimum of 75mm clearance between the top of the valve and spindle and the underside of the lid of the box.

External hose taps: Unless noted elsewhere all external hose taps shall be 20mm fullway type being chrome plated when in finished areas

7.7 WATER HEATERS

Water heaters shall be as noted on the drawings or hereafter specified.

The sub-contractor shall allow for the complete supply install and commissioning of a 50 litre 3.6 storage heater as noted on the drawings for the chemical mixing area.

The contraction shall be responsible to coordinate with the electrical contractor for positioning of the required supply.

7.8 TESTING AND COMMISSIONING

Refer to the preliminaries clause 1.30

8. COMPRESSED AIR SYSTEM

8.1 SCOPE OF WORK

The work specified in this section comprises the following work:-

Removal of the existing compressor and it's relocation to new position as indicated on the drawings the compressor is to be mounted on suitable vibration eliminators and flexible hose connection shall be used for the final connections to the compressor.

Extend from the compressor back to the existing line in copper tube to the size nominated on the drawing all pipework shall have a fall back to the valved connections. Each dropper shall terminate with a 20mm ball valve and be positioned as directed by the course manager site

8.2 PIPE SCHUDULE

Pipes and fittings shall be in materials as follows:-

Compressed air lines (Mains & risers)	20-25	Copper tube type B

8.3 TESTING

Pressures test all pipework on completion.

9. FIRE HYDRANT SYSTEM

There is no requirement for a hydrant system to this project as all fire compartments have been designed under the 500M/2 code requirements.

10. HOSE REEL SYSTEM

This sub-section must be read in conjunction with the preliminaries section of this specification

10.1 SCOPE OF WORK

The sub-contractor shall supply, install and commission the work specified in this section comprising a new water connection to the existing fire hose reel and the capping off of the existing connected irrigation supply. The new supply and installation of pipe work shall be to the approval and satisfaction of the New South Wales Rural Fire Brigade, local Council, BCA and the Superintendent The system shall be supplied and installed so as to maintain a minimum running pressure in accordance with Building Code of Australia and AS2419.1.

10.2 PIPE SCHEDULE

Service	**Material**
Fire Hose Reel System	Copper Type B

10.3 WATER SUPPLY

A 25mm copper fire hose reel supply shall extend from the combined 50mm domestic /hose reel supply indicated on the drawings.

The line shall be identified as Fire Hose/Domestic supply and have no control valves on the main run valves within the supply and pump system are to be labelled stating *"Fire Hose Reel Do Not Isolate"*

10.4 SIGNAGE

The Signage contractor shall provide signage to all areas to authorities' requirements and architects' approval.

10.5 SYSTEM RESISTANCE

The pump which is the responsibility of the club shall deliver the required quantities against actual installed system resistance. Be responsible for testing the combined domestic /fire pump performance testing according to final system resistance, resulting from the pipe work installation. The flow at the Hose Reel shall be not less than 0.33 litres/second at a pressure of 210 kPa.

10.6 LABELS AND IDENTIFICATION

Each item of plant and equipment including switches, fuses, contactors, relays, lamps and similar items, panels and circuits, shall be designated with an approved type label to clearly indicate its respective function.

Surface mounted labels shall be of white traffolyte or an approved equal with engraved white on black type lettering, and shall be secured by approved means. Labels shall be fitted to all equipment and switchboards to identify all control equipment, terminals, etc.

Pipework shall be identified in accordance with AS13145-1972 by means of ground, colour, safety colour and lettering.

10.7 COMMISSIONING

The tests in this section shall be conducted as commissioning tests. All work shall be guaranteed for automatic operation and to be free of defects and shall remain so for a period of twelve (12) months after completion. Completion will be given following the acceptance of the testing and commissioning of the system.

The system, including external piping, shall be tested hydrostatically for 2 hours at not less than 1.4 MPa or at 400 Kpa in excess of the expected highest working pressure (including pressure surge from the pump) where this pressure is in excess of 1 Mpa. During tests there shall be no significant leakage.

A flow test shall be conducted at the hose reel with the least hydraulic head, in each zone if applicable.

- The flow at the Hose Reel shall be not less than 0.33 litres/second at a pressure of 210 kPa.

10.8 TESTING AND COMMISSIONING

Refer to the preliminaries clause 1.30

11. PUMPS AND LEVEL CONTROLERS

Engage the nominated pump supplier to be responsible for the, supply, installation, testing and commissioning of the following specified equipment /systems, all work shall be to the satisfaction of the authorities and the principal.

Electric power will be supplied at each control panel by others; the contractor is required to complete all electrical work from the panel to the pumps and or level controllers including the installation of concealed conduits during the construction process. All wiring shall comply with the respective wiring codes particular to the respective installation.

This pump set and controllers shall be manufactured to code requirement by accredited pump suppliers with expertise in the fire pump industry and all units shall conform to code compliance and the following minimum standards:

The contractor is required to submit for approval and sign off the technical details of all equipment prior to purchase, failure to do so may result in the installed equipment being rejected purchased.

- All equipment and controls and operation instructions shall be labelled on engraved traffolyte plastic of dual colour.
- Have a pump duties badge on the base plates.
- All pumps shall be submitted for approval prior to purchase for the contract

11.1 CHEMICAL BAY SUMP PUMP

The chemical bay pump system shall comprise of the following:

Kwikflow submersible pump kit model1211RC1941comprising of:
One (1) Sabre-SSV-037 stainless steel 0.37 Kw 240 Volt submersible pump.
One (1) Kwikflow single pump DOL control panel featuring:

- Emergency push to stop button
- Auto/Manual control switch
- Thermal pump overload
- Relay logic controls
- Mid and high level alarm
- 22mm Indicator lights for:
  - Power supply
  - Pump fault
  - Mid level
  - High level
- Warning strobe light
- Audible alarm and mute
- All mounted in a weather proof powder coated enclosure with controls on an inner door and an emergency push to stop button on the exterior of the enclosure.

11.2 RECYCLED WATER STORAGE TANK

This system shall comprise the installation of the following nominated equipment complete with the level switches installed in the recycled water tank with conduits back to the adjacent building wall.

Kwikflow water storage tank medium and high model 1211RC1942 one controller featuring:

Relay logic controls

- 22mm Indicator lights for:
  - Power supply
  - Mid level
  - High level
- Warning strobe light
- Audible alarm and mute
- All mounted in a weather proof powder coated enclosure

Two (2) Kwikflow float level switches with 20 metres of oil resistant cable.

11.3 OIL RECOVERY TANK ALARM CONTROLS

This system shall comprise the installation of the following nominated equipment complete with the level switches installed in the oil tank with conduits back to the wash bay building.

Kiwkflow water storage tank medium and high model 1112RC1942 one controller featuring:

Relay logic controls

- 22mm Indicator lights for:
  - Power supply
  - Mid level
  - High level
- Warning strobe light
- Audible alarm and mute
- All mounted in a weather proof powder coated enclosure

Two (2) Kwikflow float level switches with 20 metres of oil resistant cable

11.4 WASH BAY PUMP PIT

This system shall comprise the installation of the following nominated equipment complete with the level switches installed in the wash bay pump pit with conduits back to the adjacent building wall. Note that the pump and controls for this pit is by others.

Kwikflow water storage tank medium and high model 1211RC1942 one controller featuring:

Relay logic controls

- 22mm Indicator lights for:
  - Power supply
  - Mid level
  - High level
- Warning strobe light
- Audible alarm and mute
- All mounted in a weather proof powder coated enclosure

Two (2) Kwikflow float level switches with 10 metres of oil resistant cable.

12. SCHEDULE OF FIXTURES, FAUCETS & TAPS

The contractor shall take delivery, store and install all sanitary ware, faucets and outlets fittings as specified by the architect they are:

- Two only wash basins (Contractor to supply brackets and fixings)
- Two only tap sets (Leaver action Provide preceding isolation valves)
- Only Safety combined shower and eye wash unit (25mm water connection required)

Be responsible for fixing of all faucets, taps and outlet fittings to the fixtures and appliances as scheduled specified by the Architect and/or shown on the drawings and necessary for the complete installation.

13. FORM OF TENDER

Company Name

.....

Address: .....

.....

Contact Name: .....

Contact Title: .....

Telephone: ..... Fax: .....

12.1 CONFORMING TENDER

All submitted tenders shall include all requirements as set out in architectural and hydraulic specification/drawings and shall include completed tender forms, schedules and services break-ups. Where these documents are not provided the Principle will have the sole discretion to apportionment of monies and rates for the purpose of contract and any variations

We, the undersigned, hereby submit our conforming tender for the complete supply, delivery, installation, commissioning and testing of the hydraulic services package as generally described in this specification and accompanying drawings prepared by Walton Hydraulics Pty Ltd.

Total Fixed Price $ .....

In words: .....

Prices are to be fixed and firm for the duration of the contract. Prices are to be valid for a period of ninety (90) days from the date of this form of tender.

12.2 ALTERNATIVE TENDERS

Alternative tenders may be submitted however must be submitted along side the conforming tender, they must clearly state the alternative offer; identify any material changes along with time and money savings. Accepted alternatives will form part of the contract and contractor will be bound by all other conditions.

The contractor is to be aware that the client at his discretion may give instructions for removal or make adjustments to the contract sum for non-compliant installations or materials.

12.3 TENDER SCHEDULE

The above total price comprises the following components:

Preliminaries:	$ .....
Sewer Drainage	$.....
Trade Waste	$ .....
Stormwater Drainage	$ .....
Subsoil Drainage	$ .....
Sanitary Plumbing System	$ .....
Domestic Hot Water	$ .....
Cold Water	$ .....
Fire Hose Reel System	$.....
Pumps and Controls	$ .....
Fit Out of Fixtures & Faucets	$ .....
Provisional allowance (For expenditure only as directed by principal).	**$ 4,000.00** .....
TOTAL	**$ .....**

I/We, the undersigned unconditionally guarantee the performance of the installation and completion of the works in accordance with this specification and accompanying drawings.

Signature: ..... Witness:

Print Name: ..... Print Name: .....

Position: ..... Position: .....

For and on behalf of:

Company Name.....

Date: ....

14. SCHEDULE OF WORK BY OTHERS

The following schedule is issued as a guide to work associated with the Hydraulic Services work.

Co-ordinate all work and issue all necessary amendments or additions associated with the final requirements of plant and equipment selected with this contract.

14.1 BUILDER

- Protection of finished work including sanitary fixtures.
- Datum set outs at each floor level and site.
- Membranes to all planters and catchments surfaces.
- Bracing behind walls for support of fixtures.
- Upturned flashing of roof penetrations, over flashing provided by hydraulic.
- Hoisting and lifting of plant and equipment.
- Awning gutters and final connections to down pipes.
- Grading of finished surfaces to floor drain outlets.
- Rebates to receive trench gates in concrete slabs and spoon drains.
- Safety overflows for roof gutters, balconies and roof.
- Waterproof membrane to bathroom/shower recesses.
- Trench grates and frames.

14.2 ELECTRICAL

The following services are required to be provided by the electrical contractor.

	Equipment	Power Supply	Location	Note
1	Chemical mix bay Sump pump	240 Volt, GPO	Above chemical bay sump pit	Power supply.37 Kw 240V
2	Oil tank alarm	10 amp 240V	End of chemical bay ramp adjacent switch board	Connect to control panel located as indicated in drawings
3	Wash bay sump high level alarm	10 amp 240V	Wash bay wall adjacent pump well	I Connect to control panel located as indicated in drawings
4	Re-cycled water storage tank	10 amp 240V	Dry bay wall adjacent water storage tank	I Connect to control panel located as indicated in drawings
5	Hot water heater	240V 3.6 Kw	Inside storage shed behind basin in chemical mix area	Hard wired to heater
6	Sewage treatment plant	TWO x 240 v 10 amp supply	Adjacent treatment plant	For final connection by AWTS tank installer

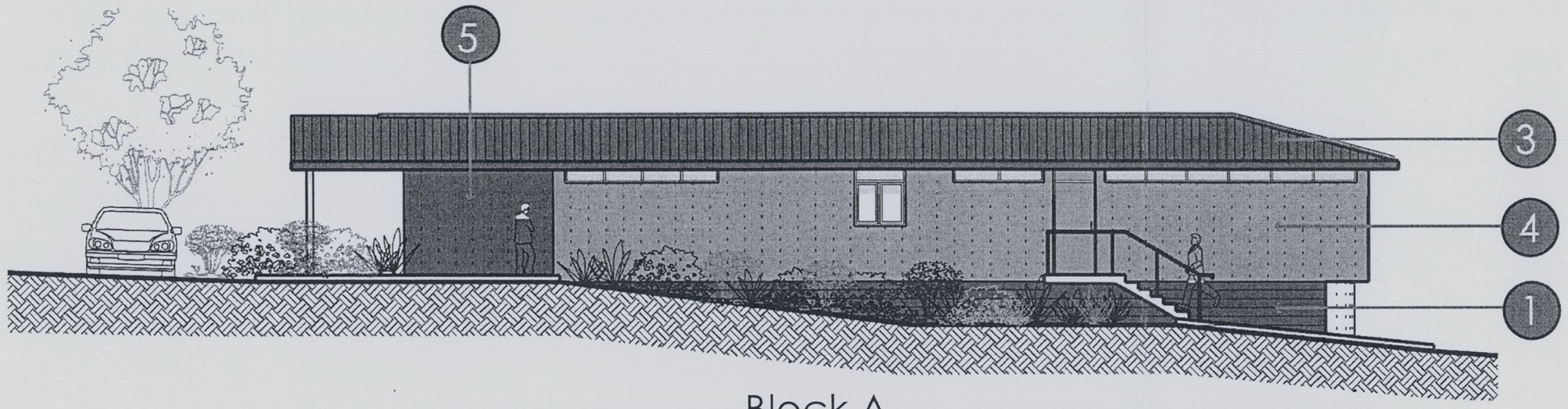
15. COMPLIANCE STATEMENTS

In compliance with Councils development consent conditions the attached installallation and operational statements are required to be completed and signed by the respective contractor or specialist sub contractor.

MONASH COUNTRY CLUB, INGLESIDE -- Maintenance Facilities

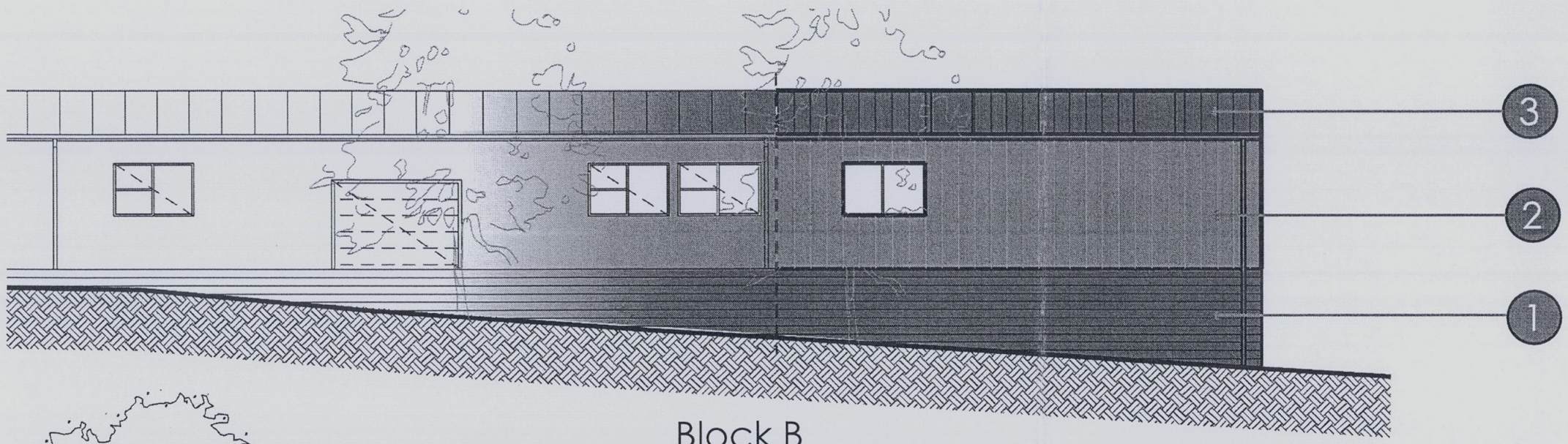
Colour Schedule

1. Concrete block work
   (to match existing)
2. Colorbond -- WILDERNESS
   (to match existing)
3. Colorbond -- WOODLAND GREY
4. Colorbond -- BUSHLAND
5. Colorbond -- DARKMOSS



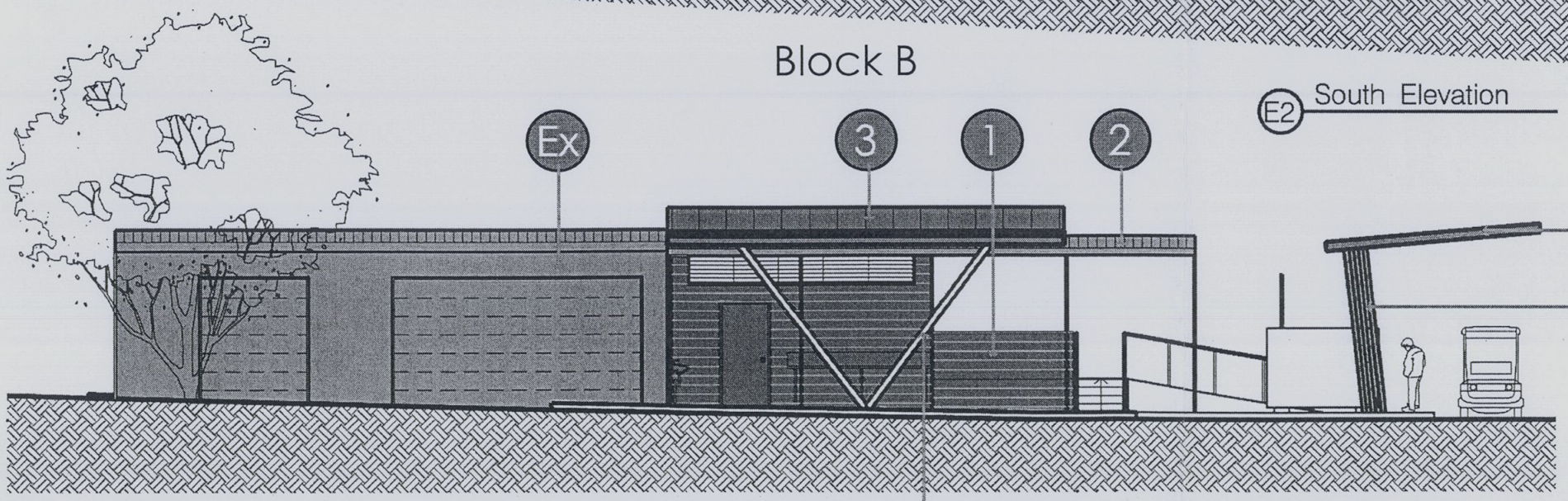
Block A

E1 West Elevation



Block B

E2 South Elevation

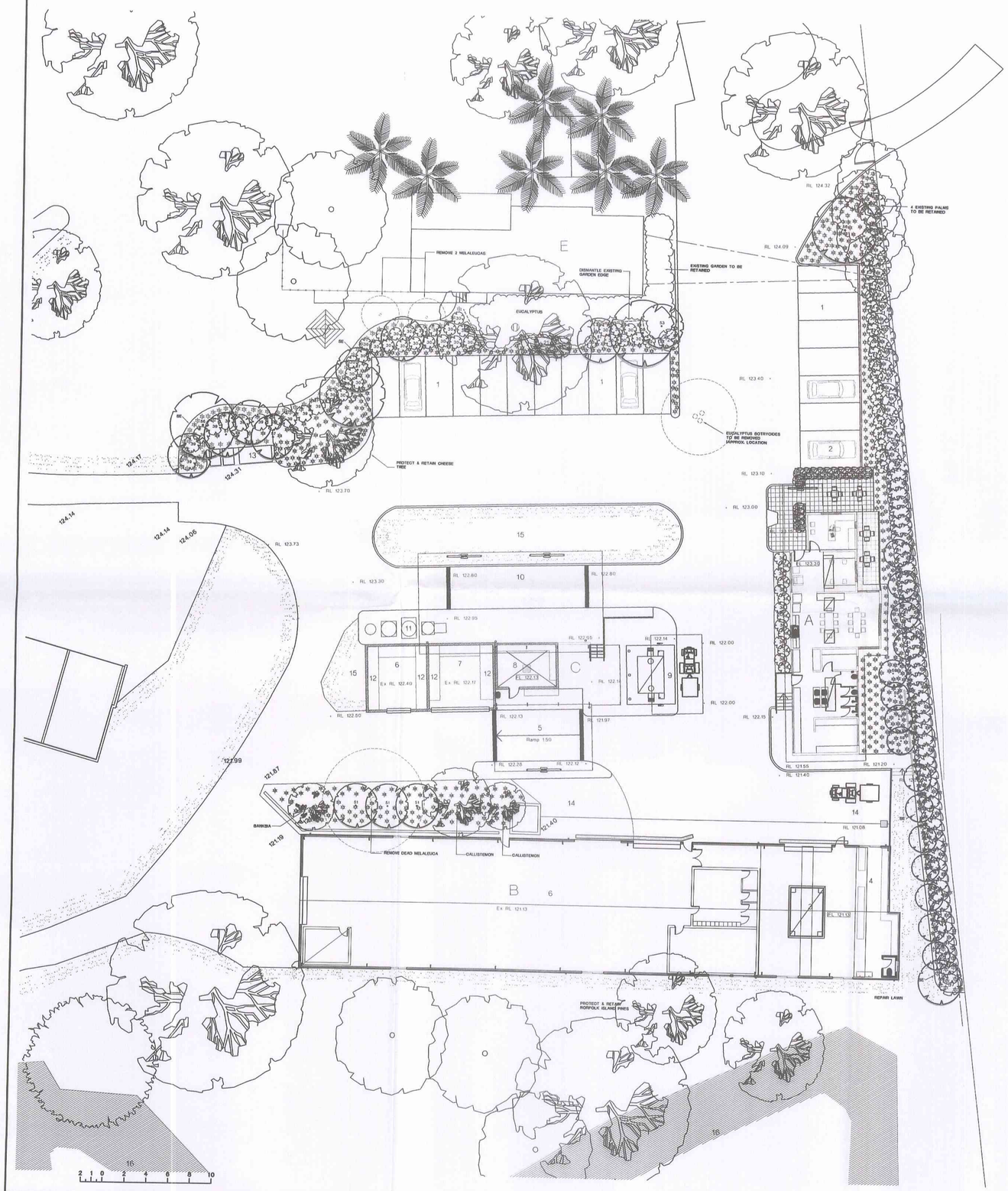


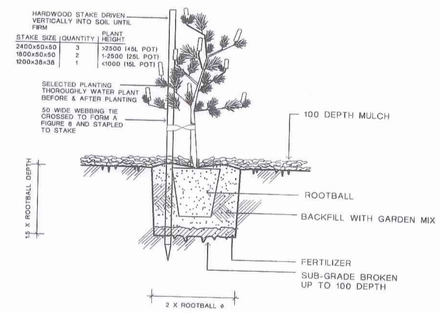
Block C

E3 South Elevation

NSW DETAILS NOTED

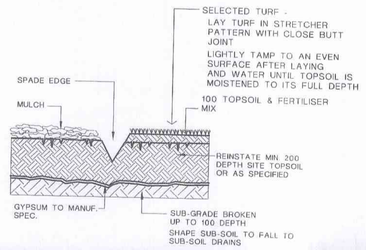
SGAMMOTTA ARCHITECTS





1. TREE & SHRUB PLANTING IN GARDEN BED

NOTE :
DO NOT PLANT IN UNSUITABLE WEATHER CONDITIONS SUCH AS EXTREME HEAT, COLD, WIND OR RAIN
CLAY SOIL IS TO BE TREATED WITH CLAY BREAKER AND ORGANIC COMPOST



2. GARDEN & TURF

REV	DESCRIPTION	INT. BY	REVISION DATE
A	PRELIM ISSUE		XXXXX

LEGEND

- RL 123.30 — EXISTING RL
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- 89 / A / 3.1 — PROPOSED TREES, SHRUBS & GROUND COVER (REFER NO. TO PLANT SCHEDULE) DETAIL 1
- LAWN AREA
- SE — SPADE EDGE DETAIL 2

PROPOSED PLANT SCHEDULE

LOW SHRUBS, GROUND COVERS, CLIMBERS

	BOTANICAL NAME	COMMON NAME	Pot Size	APPROX. CENTRES (mm)	Approx Mature Hgt	QUANTITY
1	Lomandra longifolia 'Nyalla'	Matt Rush	150mm	600	.6 x .7m	92
2	Ajuga 'Catlins Giant'	Blue Bugle	150mm		.5 x .5m	20
3	Lomandra 'Tanika'	Dwarf Matt Rush	150mm		.5 x .5m	43
5	Convolvulus maureticanus	Convolvulus	150mm		.2 x 1m	14
7	Isolepis nodosa	Knobby club bush	150mm	700	.1 x 1m	18
10	Pennisetum alo. Purple Lea	Swamp Grass	150mm		1 x 1m	147
13	Dianella 'Revelation'	Dianella	150mm		.6 x .6m	262
16	Dianella caerulea 'Breeze'	Dianella	150mm		.6 x .6m	65
17	Hibbertia scandens	Snake Vine	150mm		n/a	19
18	Tibouchina 'Jules'	Dwarf Tibouchina	150mm		.7 x 1.2m	43
20	Viola hederacea	Native Violet	50mm	600	.15 x 1.2m	140

SHRUBS

21	Acacia floribunda	Gossimer Wattle	150mm		4 x 2.5m	30
23	Acacia sophorae	Dwarf Golden Wattle	150mm		1.2 x 2m	20
30	Dodonaea viscosa 'Purple'	Dodonaea	300mm		2 x 2m	32
35	Nandina domestica	Sacred Bamboo	200mm		1.2 x 1m	16
37	Syzigium Southern Form	Lilly-Pilly	300mm		4 x 2m	52
38	Westringia fruticosa	Coastal Rosemary	200mm		1.5 x 1.5m	14
39	Banksia marginata	Honeysuckle	200mm		2 x 1.5m	11

TREES

51	Cupaniopsis anardioides	Tuckeroo	300mm		8 x 6m	3
53	Acmena smithii	Lillypilly	300mm		8 x 6m	2
56	Angophora costata	Smooth Barked Apple	75 litre		15 x 10m	4
57	Glochidion fernandi	Cheese Tree	300mm		6 x 4m	7
59	Backhousia citriodora	Lemon Scented Myrtle	300mm		4 x 3m	4
61	Elaocarpus reticulatis	Blueberry Ash	300mm		6 x 4m	11

NOTE:

1. Contractors must verify all dimensions at the site before commencing any work or making any shop drawings which must be approved before manufacturing.
2. Do not scale drawing, if in doubt - ASK
3. This drawing is to be read in conjuction with Architectural, Hydraulic and survey plans
4. All Existing trees to remain shall be protected as per arborist report & council requirements
5. All pruning shall be in accordance with the AS 4373
6. Thoroughly eradicate weeds from all garden areas.
7. No variation to the works to be carried out without prior approval from owner.
8. All materials to be the best of their respective kinds and shall comply with approved sample type submitted or specified.
9. Substitution of plant species or varieties will not be permitted.
10. Unless otherwise specified or directed, all instructions are to be issued by the consulting landscape designer.
11. All storm water outlets & surface run off shall be to Hydraulic Engineers detail.
12. Provide sub-soil drainage to garden beds & lawn areas where required - To be confirmed on site.
13. Refer to survey plan for position of all existing services.
14. Refer to Architectural elevations & Sections for existing and proposed ground lines.
15. All landscape works shall comply with all councils DA & CC conditions and all relevant "AUSTRALIAN STANDARDS" and AUS SPEC NO.1 Specification C273-Landscaping.
16. Irrigation system - If required, shall be designed & installed to comply with AS 2698, AS 2698.1-1994, AS 2698.2-1985, AS 2698.3-1990, water board and other relevant authority regulations.
17. MAINTENANCE- All landscape works are to be maintained for a period of 26 weeks after final completion. Replace all plants which have failed with the same species. Mulch is to be maintained at specified depth. All plants and turf shall be watered on a regular basis to maintain moisture levels required for optimum growth. All garden areas are to be maintained free from weeds.

CLIENT: MONASH COUNTRY CLUB

PROJECT: MAINTENANCE FACILITY at MONASH COUNTRY CLUB

DRAWING: LANDSCAPE PLAN

WALLMAN PARTNERS PTY LTD
LANDSCAPE ARCHITECTS
3/10 OCEAN ROAD, MANLY NSW 2095
T: 02 99766663 M: 0412 836 143
EM: wallman@bigpond.net.au

PROJECT No.: 10:7:3

SCALE: 1 : 200 @ A1

DRAWING No.: L1/1

ISSUE: A

NORTH

NSW DETAILS NOTED

Partridge Partners

Structural Engineers
Domestic Commercial
Facade Forensic Events

ALTERATIONS & ADDITIONS

AT

POWDERWORKS ROAD
INGLESIDE

FOR

MONASH COUNTRY GOLF CLUB

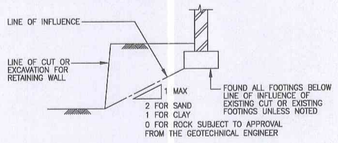
CONSTRUCTION NOTES

GENERAL

G1. Read these drawings in conjunction with all architectural and other working drawings, specifications and with such other written instructions as may be issued during the course of the contract.
G2. Provide all workmanship and materials in accordance with the requirements of the current editions of the BCA, the Australian Standards and the By-Laws and Ordinances of the relevant Building Authority.
G3. The Builder must comply with requirements of the Occupational Health & Safety Act.
G4. Refer any conflict between these notes, the specification, the drawings or any other relevant documents to the Engineer (Partridge Partners Pty Ltd) for decision prior to proceeding with the work.
G5. Do not obtain dimensions by scaling the drawings. For setting out dimensions and levels refer to architectural drawings.
G6. The Builder is responsible for the provision of all shoring to maintain the stability and integrity of excavations and adjacent structures. Provide details, for review by the Engineer, of any necessary temporary works, including shoring, prior to commencing construction.
G7. During construction it is the Builder's responsibility to maintain the structure in a stable condition and to ensure no part is overstressed.
G8. The design and drawings are copyright and may not be used or reproduced in whole or in part without the written permission of Partridge Partners Pty Ltd
G9. Fire-Resistant Levels (FRLs) required for the various structural elements must be confirmed by the BCA consultant or Architect.

FOUNDATIONS

F1. The minimum safe bearing capacity of foundation material shall be:
Pad footings : 600 kPa. in ROCK
Strip footings : 600 kPa. in ROCK
Raft slabs : 600 kPa. in ROCK
Piers : 600 kPa. in ROCK 100 min embedment
F2. Foundation material shall be approved by the Geotechnical Engineer prior to placing concrete.
F3. The bases of footing excavations shall be finished clean and horizontal.
F4. All walls and columns shall be concentric with the supporting footings unless noted otherwise on the drawings.
F5. Founding levels where shown are for tender purposes only.
F6. Any proposed footing excavation near boundaries, other structures or services shall be approved by the Engineer.
F7. Subgrade shall be approved material compacted to 98% Standard Dry density determined by testing to AS 1289.5.1.1 u.n.o.
F8. Locate all new footings relative to line of cut/excavation including excavations for retaining walls as follows:



LOADINGS

L1. Importance Levels of Building: 2
L2. Superimposed floor live loads are generally in accordance with AS/NZS1170.1 and specifically: 1.5 kPa. GENERALLY
2.0 kPa. BALCONIES
2.0 kPa. STAIRS
L3. Wind loads have been determined in accordance with AS4055
Wind Region: A Terrain Category: 2.5
Topographic Class: T4 Shielding: PS
Wind Classification = N3
L4. The relevant provisions of AS1170.4 have been applied for the following Earthquake Design:
Probability factor k_p: 1 Hazard Factor Z: 0.08
Site Sub-Soil Class: Ae
Earthquake Design Category: N/A

REINFORCED CONCRETE

C1. Provide all workmanship and materials in accordance with AS3600, the SAA standards cited in AS3600, the drawings and the specification.
C2. Provide concrete composition and minimum clear concrete cover to reinforcement as follows:-

Element	AS3600 f'_c MPa	Cover mm
EXTERNAL PAVEMENT SLAB	32	30
FOOTINGS	25	50

C3. Support all reinforcement at 1m maximum centres both ways on mild steel plastic tipped chairs, plastic chairs or concrete chairs. Use only plastic chairs for externally exposed soffits.
C4. Provide all concrete with 80mm maximum slump, 20mm maximum aggregate with no admixtures, unless approved by the Engineer.
C5. Sizes of concrete are net, exclusive of applied finishes. Beam depths are written first and include slab thickness.
C6. Properly form construction joints and use only where shown or approved by the Engineer.
C7. Make no holes or chases in concrete members without the approval of the Engineer.
C8. Reinforcement is represented diagrammatically and is not necessarily shown in true projection.
C9. Weld or splice reinforcement only in positions approved by the Engineer.
C10. Provide the minimum clear spacing between conduits, cables, pipes and bars as required by AS3600 but not less than three bar diameters. Do not place conduits in slabs above top reinforcement or below bottom reinforcement.
C11. S denotes hot rolled deformed bars Grade 230S.
N denotes hot rolled deformed bars Grade 500N.
R denotes hot rolled plain round bars Grade 230R.
SL, RL, L(size)TM denotes hard drawn wire fabric Grade 500.
C12. Notify the Engineer a minimum of 24 hours before reinforcement has been completed. Allow 2 hours after the completion of the reinforcement for the Engineer's inspection. Do not order concrete until reinforcement has been approved by the Engineer.
C13. Cure concrete in accordance with AS3600. Commence curing within two hours of finishing operations and continue for a minimum of seven days by using an approved proprietary compound or by keeping continuously wet.
C14. Tie all unsupported bars in transverse direction to N12–300, lapped 500 U.N.O.
C15. Lap fabric in accordance with details fig.13.2.4 of AS3600.
C16. Provide hooks, laps and bends in accordance with AS3600 U.N.O.
C17. Provide Chamfers, drip grooves etc. in accordance with the Architect's details.
C18. Design, construct and strip formwork in accordance with AS3610 & AS3600.
C19. Pre camber formwork upwards by 1/500 of the clear span U.N.O. where supported beams and slabs span greater than 5m.

FABRIC LAP DIAGRAM

STEELWORK

S1. Ensure materials, fabrication and erection are in accordance with AS4100, the SAA Standards cited in AS4100 and the specification.
S2. Submit three copies of all workshop drawings to the Architect and the Engineer to obtain their written approval prior to fabrication.
S3. Provide all welds as 6mm continuous fillet from E41XX Electrodes, all bolts as M20 4.6/S and all cleats and gussets as 10mm plate u.n.o.
S4. For bolts, the following notation is used:
4–M16 4.6/S denotes 4 x M16 commercial grade bolts snug tight.
6–M20 8.8/TF denotes 6 x M20 high strength structural bolts fully tensioned in a no slip joint.
8–M24 8.8/TB denotes 8 x M24 high strength structural bolts fully tensioned in a bearing joint.
S5. Leave mating surfaces of TF connections unpainted and free of mill scale and rust.
S6. Tighten bolts in TF and TB connections using the part turn method or load indicating washers. Do not use calibrated torque wrenches. Use a hardened washer under the bolt head or nut, whichever is rotated. The re-use of fully tensioned bolts is prohibited.
S7. Provide all cleats and drill all holes necessary for fixing steel to steel or timber.
S8. Fabricate steel beams and trusses spanning greater than 5m with an upward pre camber of 1/500 span u.n.o.
S9. Prepare structural steelwork to class 2 and paint with Zinc Phosphate Primer to a thickness of 70 micrometres u.n.o.
S10. Hot dip galvanise all exposed external steelwork and all steelwork built into an external masonry skin, in accordance with grade HDG600 to AS/NZS2312. Within 100m from the non-surf coast or 1 km from the surf coast, hot dip galvanise above in accordance with grade HDG900 to AS/NZS2312.
S11. Provide fire protection to all steelwork as required.
S12. Ensure all cold formed sections conform to AS1538 and are roll-formed from steel strip, minimum yield stress 450 MPa, 300g/m² minimum zinc coating mass U.N.O.

ALL CHEMICAL ANCHORS FOR THREADED FIXINGS OR REINFORCEMENT, SHALL BE HILTI HIT-RE 500 ADHESIVE ANCHOR SYSTEM OR APPROVED EQUIVALENT INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

ALL THREADED CHEMICAL ANCHORS SHALL BE HOT DIP GALVANISED UNLESS NOTED OTHERWISE:
M12 MIN. 100 EMBEDMENT, MIN. 60 EDGE DISTANCE, MIN. 70 SPACING
M16 MIN. 125 EMBEDMENT, MIN. 70 EDGE DISTANCE, MIN. 100 SPACING

SPECIFICATION FOR PAINT SYSTEMS (ALTERNATIVE TO HOT-DIP-GALVANISING):

PROVIDE ALL EXTERNAL STEELWORK WITH THE FOLLOWING CORROSION PROTECTION SYSTEM AS MANUFACTURED BY INTERNATIONAL PROTECTIVE COATINGS:
PREPARATION: ABRASIVE BLAST CLEAN TO CLASS 2½.
PRIMER – INTERZINC 52 AT 75 MICRONS DRY FILM THICKNESS (DFT.)
INTERMEDIATE COAT – INTERCURE 420 AT 125 MICRONS DFT
FINAL COAT – INTERFINE 629 AT 75 MICRONS DFT.
OR APPROVED EQUIVALENT SYSTEM.
PROVIDE WRITTEN CERTIFICATION ISSUED BY THE STEELWORK FABRICATOR CONFIRMING THE THICKNESS OF THE APPLIED PAINT SYSTEM WAS MEASURED ON SITE AND COMPLIES WITH THE ABOVE SPECIFICATION.

MASONRY

M1. Ensure all workmanship and materials are in accordance with AS3700, the Standards cited in AS3700, the drawings and the APPL Standard Technical Specification STD-D905.
M2. Where masonry supports concrete slabs or beams, lay the top course with frogs down and covered with 2 layers of approved slip joint material.
M3. Walls shown shaded on plan are load bearing. Separate non-load bearing walls under slabs from the slab by 15mm of approved compressible material. Where masonry abuts slab downturns, provide 15mm gap between brickwork and side of downturn.
M4. Do not erect masonry supported by concrete slabs or beams until all formwork and props under have been removed.
M5. Provide all bricks of strength f'uc= 20 MPa u.n.o.
M6. Provide all hollow concrete masonry of strength f'uc=15 MPa u.n.o.
M7. Provide classification M3 masonry mortar u.n.o. Note that within 100m from non-surf coast, or 1km surf coast, provide classification M4 masonry mortar.
M8. Cut no chases into loadbearing masonry without the approval of the Engineer.
M9. Provide movement control joints vertically for full height of wall as follows:-
for general masonry = 8m maximum centres & 4m maximum from corners.
for articulated masonry = 6m maximum centres & 4m maximum from corners.
Provide 15mm minimum joints with an approved compressible filler, tied together every 4th course with an MET 3.3 masonry sliding tie or approved equal.
M10. Construct hollow walls to full height or maximum 3m before filling cores. Provide cleanout openings at the base of all cores to be filled.
M11. Provide hollow F'c 20 MPa core filling concrete with 10mm aggregate, 180 slump. UNO.
M12. Construct hollow masonry retaining walls u using "double U blocks".
M13. Unreinforced masonry walls have not been designed unless noted.

TIMBER

T1. Ensure all workmanship and materials are in accordance with AS1720 and AS1684, the SAA Standards cited in AS1720, AS1684 and the specification.
T2. Provide all timber as undressed MGP10 stress grade SEASONED PINE u.n.o. Provide all external timber as undressed hardwood or appropriately treated seasoned pine u.n.o.
T3. Where the use of treated pine for durability is noted on the structural drawings ensure it complies with the following treatments levels:
Interior above ground = H2
Exterior above ground = H3
Exterior in ground = H4 & H5
} All in accordance with AS1684
T4. Install proprietary timber connectors in accordance with the manufacturer's written instructions.
T5. Retighten bolted connections in unseasoned timber prior to the fixing of cladding.
T6. Timber elements or timber framing have not been designed unless noted.
T7. Provide all new construction with protection from subterranean termites in accordance with AS3660.1–1995. Provide the protection system or systems as specified by the architect.
T8. Submit three copies of all truss workshop drawings to the Engineer for checking prior to fabrication. All trusses to be pre-cambered upward 1/240 span u.n.o.
T9. For bushfire prone areas, use timber species classified as "fire-retardant-treated timbers" in accordance with AS3959 1999, ie. untreated Blackbutt, Kwila (Merbau), Red Iron Bark, River Red gum, Silver Top ash, Spotted Gum or Turpentine.

ALL TIMBER CONNECTIONS, TIE DOWNS BRACING AND TIMBER SIZES NOT NOMINATED ARE TO BE IN STRICT ACCORDANCE WITH AS1684 RESIDENTIAL TIMBER-FRAMED CONSTRUCTION CODE
ALL TIE DOWNS TO BE DESIGNED FOR ULTIMATE LIMIT STATE GUST WIND SPEED OF 50 m/s (CATEGORY N3 AS DETERMINED FROM AS4055 – WIND LOADS FOR HOUSING)

EXISTING STRUCTURES (ALTERATIONS & ADDITIONS)

E1. After exposing the structure of the existing building, the Builder must advise the Engineer to allow for inspection to confirm suitability of documented strengthening requirements, prior to commencing structural alterations and additions.

TENDER NOTES

TN1. To determine the full extent of work, read these drawings in conjunction with the architectural drawings and other contract documents. Allow for all items shown on architectural and other drawings as not all items are shown on the structural drawings.
TN2. Should any ambiguity, error, omissions, discrepancy, inconsistency or other fault exist or seem to exist in the documents, immediately notify the superintendent in writing.
TN3. Rates shown on the drawings are for the final structure in place and do not allow for any wastage, rolling margins, over supply or fabrication requirements. etc.
TN4. These drawings are preliminary drawings issued for tender as an indication of the extent of works only. They are not a complete construction set of drawings.

NSW DETAILS NOTED

FOR TENDER NOT FOR CONSTRUCTION

Rev.	Issue/Amendment	By	App.	Date
P1	PRELIMINARY ISSUE	L.A	N.J	29.11.11
P2	PRELIMINARY ISSUE	L.A	N.J	06.12.11
P3	ISSUED FOR TENDER	L.A	N.J	09.12.11

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Web: www.partridge.com.au

Client: MONASH COUNTRY GOLF CLUB

Architect: SGAMMOTTA ARCHITECTS

Project: ALTERATIONS AND ADDITIONS POWDERWORKS ROAD INGLESIDE

Title: CONSTRUCTION NOTES

ELECTRONIC SIGNATURE:
THIS DRAWING HAS BEEN ASSIGNED AN ELECTRONIC SIGNATURE CODE. THE PRESENCE OF THIS CODE SIGNIFIES THAT THIS IS THE CERTIFIED DRAWING ISSUED FOR CONSTRUCTION.

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		N.J
Scale at A1	Date	Drawn
N/A	OCT 2011	L.A
Job No.	Drawing No.	Revision
2010.0713	S1	P3

DRIVEWAY SLAB PLAN 175 THICK SLABS U.N.O.

SLAB ON GROUND NOTES SL82 TOP THROUGHOUT

1. CAST ALL SLABS ON A "CROMFORD" 0.2 THICK HIGH-IMPACT RESISTANT POLYETHYLENE FILM DAMP PROOF MEMBRANE, OR APPROVED EQUIVALENT, OVER 20 MAXIMUM SAND COMPACTED BY WETTING.
2. REFER TO NOTE M9 FOR DETAILS AND SPACING OF WALL JOINTS IN MASONRY WALLS.
3. REINFORCE ALL SLABS AS NOTED ON PLAN.

FABRIC LAP DIAGRAM

GROUND PREPARATION:

1. REMOVE ALL TOPSOIL AND ORGANIC MATERIAL. IF SOFT AND/OR WET CONDITIONS ARE ENCOUNTERED THE SUBGRADE IS TO BE INSPECTED BY THE SUPERVISING ENGINEER AND HIS WRITTEN INSTRUCTIONS RECEIVED PRIOR TO PROCEEDING.
2. DIG OUT ANY SOFT SPOTS AND REPLACE WITH FILL.
3. PROVIDE "CONTROLLED FILL" OR "ROLLED FILL" COMPACTED IN ACCORDANCE WITH AS2870, PART 6.4.2.

LEGEND:

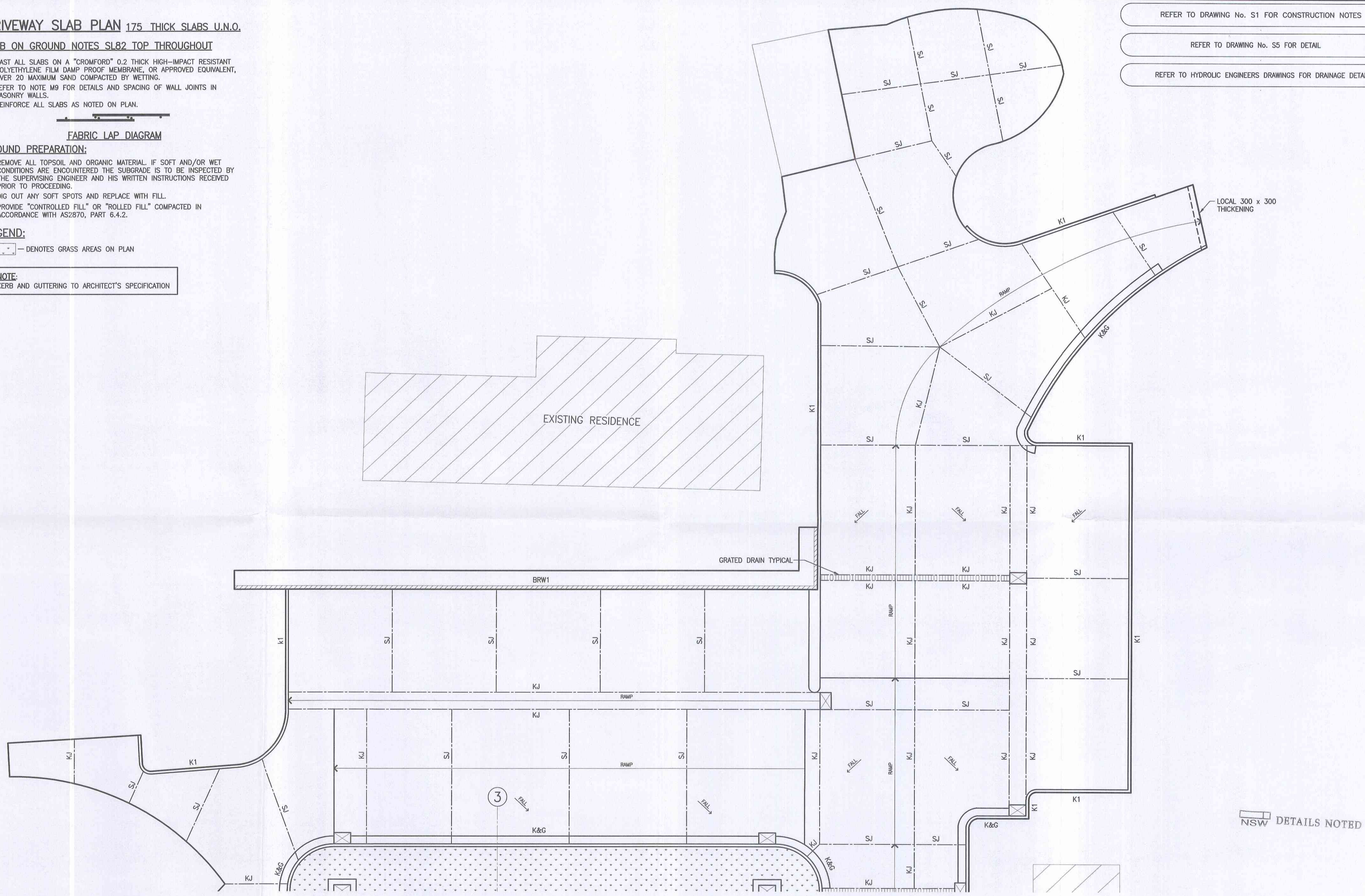
— DENOTES GRASS AREAS ON PLAN

NOTE:
KERB AND GUTTERING TO ARCHITECT'S SPECIFICATION

REFER TO DRAWING No. S1 FOR CONSTRUCTION NOTES

REFER TO DRAWING No. S5 FOR DETAIL

REFER TO HYDROLIC ENGINEERS DRAWINGS FOR DRAINAGE DETAILS



FOR CONTINUATION REFER TO DRAWING S3

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P1	PRELIMINARY ISSUE	L.A	N.J	29.11.11
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Web: www.partridge.com.au

Client: MONASH COUNTRY GOLF CLUB

Architect: SGAMMOTTA ARCHITECTS

Project: ALTERATIONS AND ADDITIONS POWDERWORKS ROAD INGLESIDE

Title: DRIVEWAY SLAB PLAN SHEET 1

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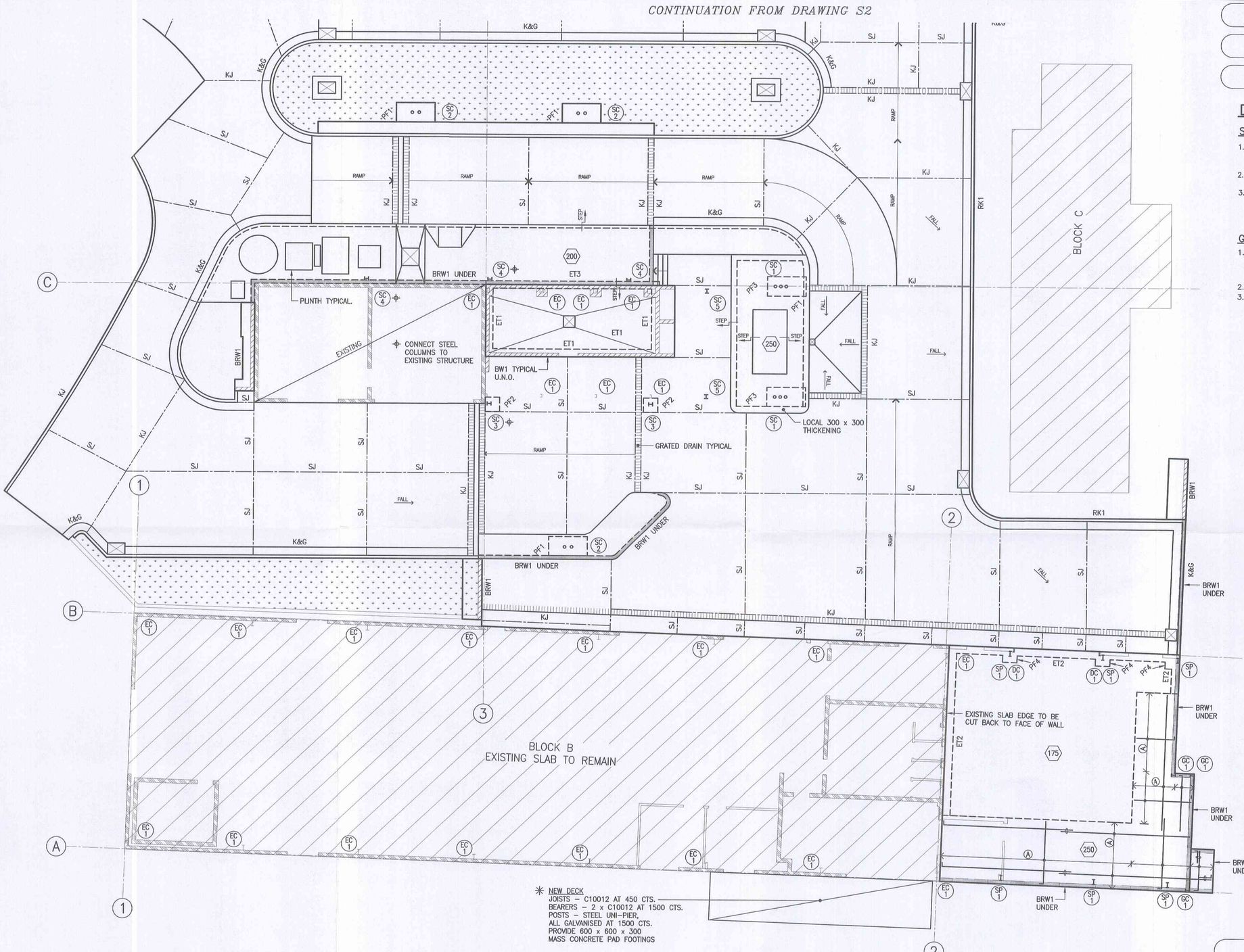
Scale at A1: 1:100	Date: OCT 2011	Drawn: L.A
Job No.: 2010.0713	Drawing No.: S2	Revision: P3

CONTINUATION FROM DRAWING S2



REFER TO DRAWING No. S1 FOR CONSTRUCTION NOTES

REFER TO DRAWING No. S5 FOR DETAIL

REFER TO HYDROLIC ENGINEERS DRAWINGS FOR DRAINAGE DETAILS

DRIVEWAY SLAB PLAN 175 THICK SLABS U.N.O.

SLAB ON GROUND NOTES SL82 TOP THROUGHOUT

1. CAST ALL SLABS ON A "CROMFORD" 0.2 THICK HIGH–IMPACT RESISTANT POLYETHYLENE FILM DAMP PROOF MEMBRANE, OR APPROVED EQUIVALENT, OVER 20 MAXIMUM SAND COMPACTED BY WETTING.
2. REFER TO NOTE M9 FOR DETAILS AND SPACING OF WALL JOINTS IN MASONRY WALLS.
3. REINFORCE ALL SLABS AS NOTED ON PLAN.

FABRIC LAP DIAGRAM

GROUND PREPARATION:

1. REMOVE ALL TOPSOIL AND ORGANIC MATERIAL. IF SOFT AND/OR WET CONDITIONS ARE ENCOUNTERED THE SUBGRADE IS TO BE INSPECTED BY THE SUPERVISING ENGINEER AND HIS WRITTEN INSTRUCTIONS RECEIVED PRIOR TO PROCEEDING.
2. DIG OUT ANY SOFT SPOTS AND REPLACE WITH FILL.
3. PROVIDE "CONTROLLED FILL" OR "ROLLED FILL" COMPACTED IN ACCORDANCE WITH AS2870, PART 6.4.2.

MEMBER SCHEDULE

MARK	SIZE
SC1	3 x 139 x 3.5 CHS
SC2	2 x 168 x 7.1 CHS
SC3	200 UC 46
SC4	200 UC 46
SC5	200 UB 25
SP1	STEEL PORTAL FRAME
DC1	250 UB 31
GC1	200 UB 25
EC1	EXISTING COLUMN

NOTE:
REFER TO STEEL NOTES DWG S1 FOR FABRICATION REQUIREMENTS AND SURFACE TREATMENT U.N.O.

LEGEND:

- (150) — DENOTES SLAB THICKNESS
- (SC1) — DENOTES COLUMN/POST OVER REFER MEMBER SCHEDULE
- — DENOTES LOAD BEARING WALLS UNDER
- — DENOTES STUD/LIGHTWEIGHT WALLS OVER
- BW1 — DENOTES 190 REINFORCED CONCRETE BLOCK WALLS ALL CORES FILLED.
- — DENOTES EXISTING WALLS.
- — DENOTES GRASS AREAS ON PLAN

NOTE:
KERB AND GUTTERING TO ARCHITECT'S SPECIFICATION

REINFORCEMENT SCHEDULE

MARK	SIZE
(A)	N16–200 BOTTOM

FOR TIE BARS NOT SHOWN REFER TO DWG S1 CONSTRUCTION NOTE C14.
FOR SLABS ON GROUND, FIX ALL TOP BARS TO UNDERSIDE OF FABRIC

NSW DETAILS NOTED

BAR LAPS & COGS

LAID 1ST / BTM. — LAID LAST / TOP — REINFORCEMENT LAYER ORDER

BAR SIZE	SLAB & WALL LAPS	BEAM LAPS	BAR COGS
N12	400	400	180
N16	600	600	210

LAPS ARE MINIMUM U.N.O.
INCREASE LAP BY 25% IF DEPTH OF CONCRETE BELOW BAR IS ⩾ 300
TURN COG SIDEWAYS IF SLAB DEPTH INSUFFICIENT

FOR TENDER NOT FOR CONSTRUCTION

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Web: www.partridge.com.au

Client: MONASH COUNTRY GOLF CLUB

Architect: SGAMMOTTA ARCHITECTS

Project: ALTERATIONS AND ADDITIONS POWDERWORKS ROAD INGLESIDE

Title: GROUND FLOOR LEVEL PLAN & DETAILS

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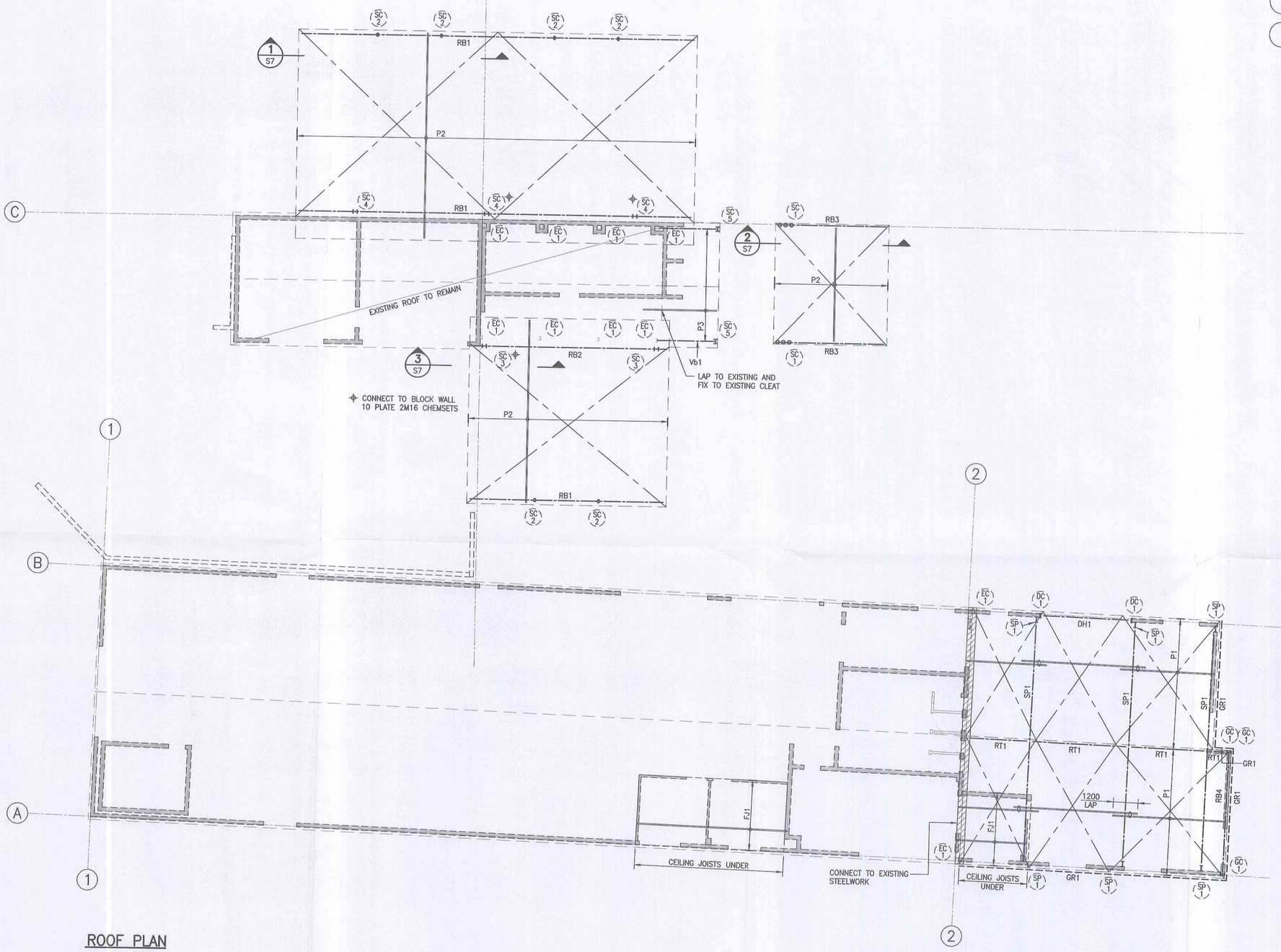
Job No.: 2010.0713	Drawing No.: S3	Revision: P3



ROOF PLAN

REFER TO DRAWING No. S1 FOR CONSTRUCTION NOTES

REFER TO DRAWING No. S6 & S7 FOR DETAILS

MEMBER SCHEDULE

MARK	SIZE
SC1	3 x 139 x 3.5 CHS
SC2	2 x 168 x 7.1 CHS
SC3	200 UC 46
SC4	200 UC 46
SC5	200 UB 25
SP1	REFER TO STEEL PORTAL ELEVATION ON S06
DC1	200 PFC
GC1	200 UB 25
RT1	101 x 6.0 CHS
RB1	250 UB 31
RB2	250 UB 37
RB3	200 UB 30
RB4	200 UB 25
CJ1	C15019 AT 450 CTS.
GR1	C20019 AT 1200 CTS.
DH1	200 PFC (DOES UP) ⌊
P1	Z20015 AT 1200 CTS.
P2	C20019 AT 1200 CTS.
P3	TO MATCH EXISTING
EC1	EXISTING COLUMN
Vb1	REFER DETAIL ON S6

NOTE:
REFER TO STEEL NOTES DWG S1 FOR FABRICATION REQUIREMENTS AND SURFACE TREATMENT U.N.O.

LEGEND:

(SC 1) — DENOTES COLUMN/POST UNDER REFER MEMBER SCHEDULE

— DENOTES LOAD BEARING WALLS UNDER

PROVIDE 30 X 0.8 GALVANISED HOOP IRON BRACING EQUAL TO PRYDA SB083/30. WRAP AROUND END PURLINS & FIX EACH END WITH 3 "TEK" SCREWS TYPICAL. PROVIDE STRAP TENSIONER TO REMOVE ALL SLACK. THEN FIX STRAP TO TOP OF EACH PURLIN. TYPICAL.

NSW DETAILS NOTED

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Client: MONASH COUNTRY GOLF CLUB

Architect: SGAMMOTTA ARCHITECTS

Project: ALTERATIONS AND ADDITIONS POWDERWORKS ROAD INGLESIDE

Title: ROOF PLAN

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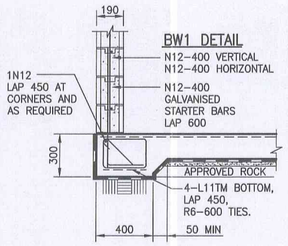
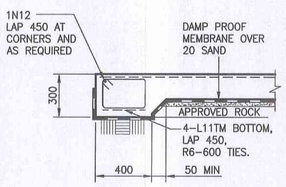
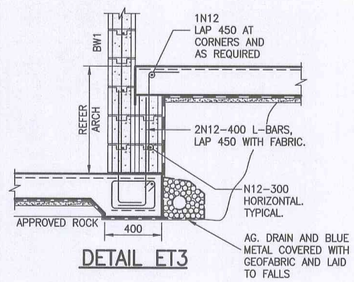
Job No.: 2010.0713	Drawing No.: S4	Revision: P3



DETAIL ET1



DETAIL ET2



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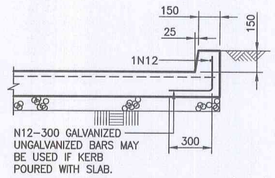
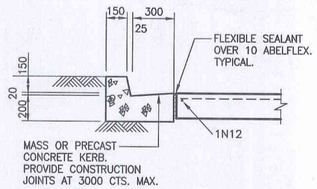
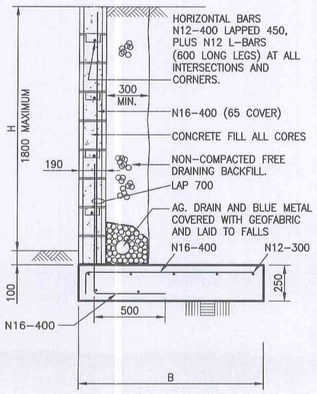


KERB DETAIL – (K1)



KERB & GUTTER DETAIL – (K&G)

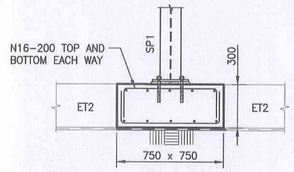
REFER TO ARCHITECTS DRAWINGS FOR DETAILS



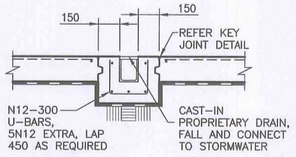
BRW1 RETAINING WALL DETAILS

RETAINING WALL SCHEDULE	
	GRAVELLY SANDS, COMPACTED SANDS, CONTROLLED CRUSHED SANDSTONE & GRAVEL FILLS, DENSE WELL GRADED SANDS. ø=35°, C=0kPa
H	B
800	600
1000	700
1200	800
1400	900
1600	1000
1800	1100

NOTE:
1.– THIS WALL HAS BEEN DESIGNED FOR SURFACE SURCHARGE OF 5kPa
2.– POSITION WALL STARTER BARS ACCURATELY BY TEMPLATES OR SIMILAR MEANS.
3.– FOUNDATION AND RETAINED MATERIAL ASSUMED TO BE THE SAME SOIL TYPE.

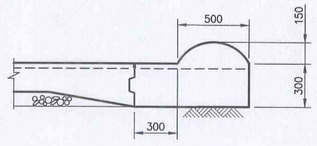


PF4 DETAIL



TYPICAL GRATED DRAIN DETAIL

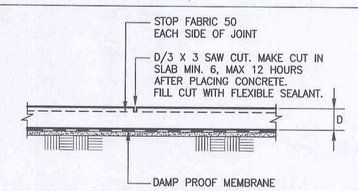
REFER TO HYDRAULIC DRAWINGS FOR DETAILS



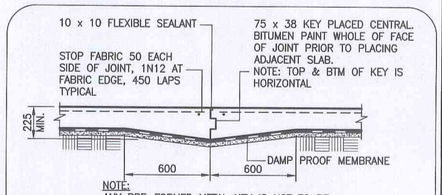
ROLLOVER KERB DETAIL – (RK1)

REFER TO ARCHITECTS DRAWINGS FOR DETAILS

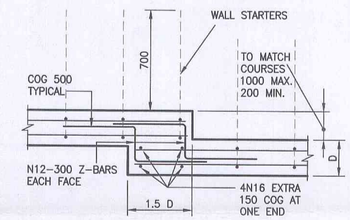
REFER TO DRAWING No. S1 FOR CONSTRUCTION NOTES



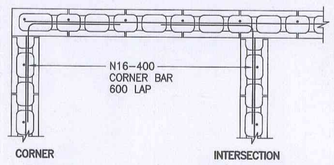
SAWN JOINT DETAIL – (SJ)



KEYED JOINT DETAIL – (KJ)



BRW FOOTING STEP (UP TO 1000)



PLAN ON BLOCK WALL JUNCTION DETAILS

NSW DETAILS NOTED

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Client: MONASH COUNTRY GOLF CLUB

Architect: SGAMMOTTA ARCHITECTS

Project: ALTERATIONS AND ADDITIONS
POWDERWORKS ROAD
INGLESIDE

Title: DRIVEWAY SLAB
SECTIONS AND DETAILS

ELECTRONIC SIGNATURE:
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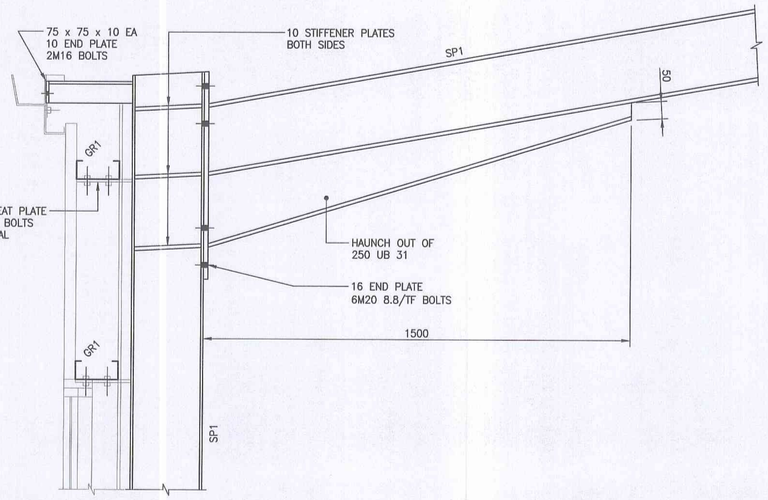
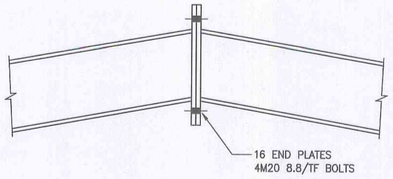
Job No.	Drawing No.	Revision
2010.0713	S5	P3

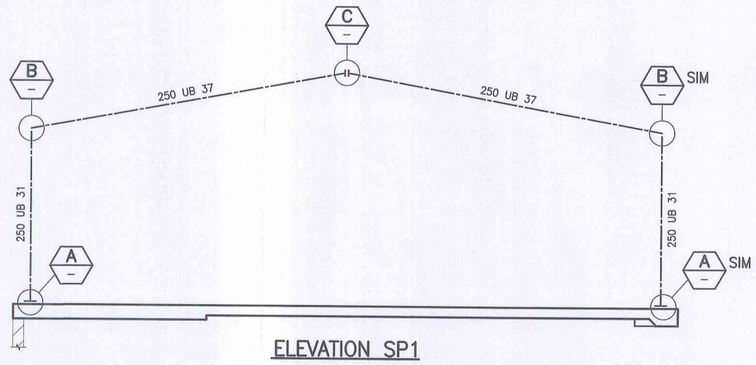
REFER TO DRAWING No. S1 FOR CONSTRUCTION NOTES



DETAIL B

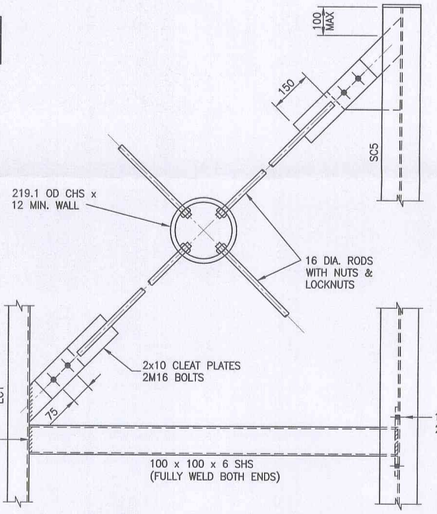


DETAIL C

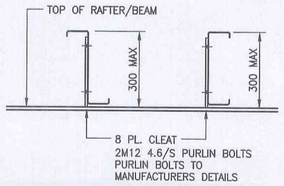


ELEVATION SP1

NOTE:
PURLIN CLEATS NOT SHOWN
FOR CLARITY ON DETAILS

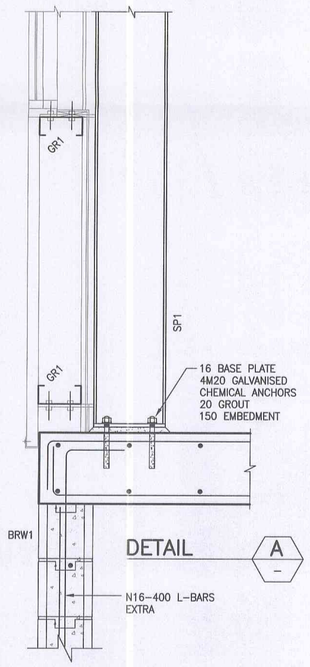


Vb1 VERTICAL BRACING DETAIL



CONTINUOUS / LAPPED PURLINS

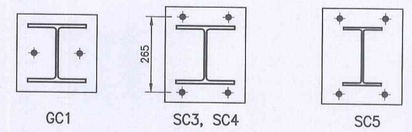
TYPICAL PURLIN DETAILS – GIRT DETAILS SIMILAR



DETAIL A

N16–400 L–BARS
EXTRA

NSW DETAILS NOTED



ALL BASE PLATES 16 PLATE
M16 CHEMICAL ANCHORS
125 EMBEDMENT
20 GROUT

COLUMN BASE PLATE DETAILS
SCALE 1:10

FOR TENDER NOT FOR CONSTRUCTION

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS

ACEA COVER OF EXCELLENCE

Liability limited by a scheme approved under Professional Standards Legislation

Rev.	Issue/Amendment	By	App.	Date
P1	PRELIMINARY ISSUE	L.A	N.J	29.11.11
P2	PRELIMINARY ISSUE	L.A	N.J	06.12.11
P3	ISSUED FOR TENDER	L.A	N.J	09.12.11

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Client: MONASH COUNTRY GOLF CLUB

Architect: SGAMMOTTA ARCHITECTS

Project: ALTERATIONS AND ADDITIONS
POWDERWORKS ROAD
INGLESIDE

Title: PORTAL FRAME ELEVATIONS
SECTIONS AND DETAILS

ELECTRONIC SIGNATURE:
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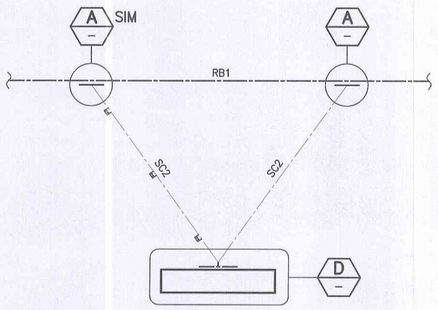
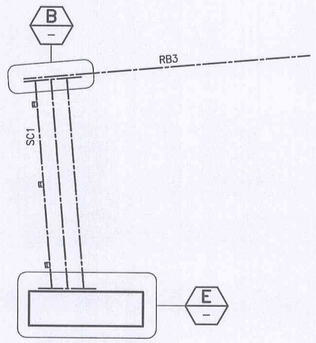
		N.J
Scale at A1	Date	Drawn
1:50, 1:20, 1:10	OCT 2011	L.A
Job No.	Drawing No.	Revision
2010.0713	S6	P3

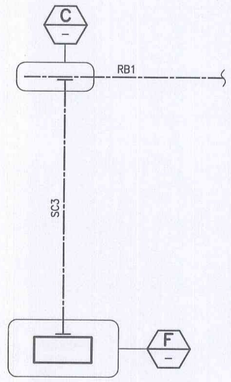
REFER TO DRAWING No. S1 FOR CONSTRUCTION NOTES



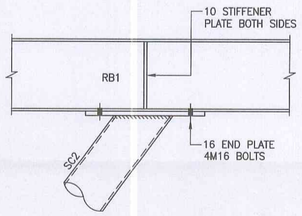
ELEVATION 1 S4



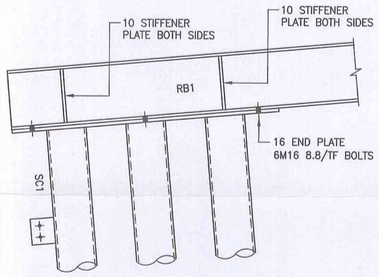
ELEVATION 2 S4



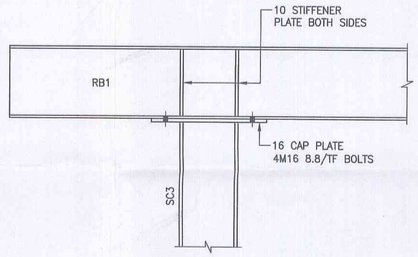
ELEVATION 3 S4



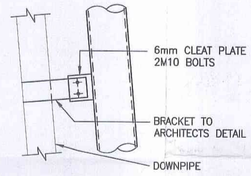
DETAIL A



DETAIL B

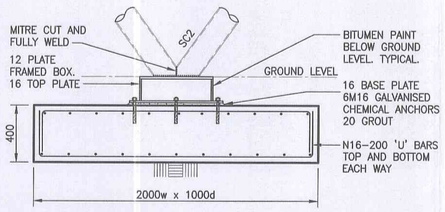


DETAIL C

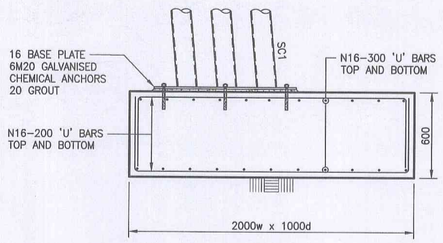


TYPICAL DOWNPIPE CONNECTION DETAIL

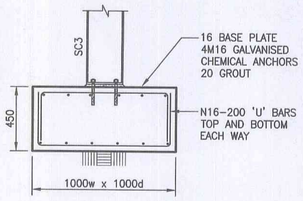
NSW DETAILS NOTED



DETAIL PF1 DETAIL D



DETAIL PF3 DETAIL E



DETAIL PF2 DETAIL F

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