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THE HERMITAGE

GOLF COURSE AND RESIDENTIAL DEVELOPMENT

Construction Environmental Management Plan

27 JUNE 2016

Incorporating Hyder

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GOLF COURSE AND RESIDENTIAL DEVELOPMENT

Construction Environmental Management Plan

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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

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APPENDICES

1 INTRODUCTION

1.1 Site Description

The site is an urban and recreational development within the south-western Sydney region of NSW. The site (incorporating both development and conservation areas) has an area of approximately 144.6 ha.

The development will comprise residential precincts set within a remodelled Camden Lakeside golf course and residential precincts set within a new 9 hole golf course, public parks and areas set aside for riparian and woodland conservation. The majority of the development areas are cleared of vegetation, having been previously used for golf course, tourist attractions, rural and cattle grazing purposes, with some stands of the EPBC listed Critically Endangered Threatened Ecological Community Cumberland Plain Woodland and Shale Gravel Transition Forest remaining.

The site is located within the Camden Council Local Government Area, in the south-west of the Greater Sydney region. The land is situated immediately south of the South-West Sydney Growth Centre Precinct of East Leppington and east of the Catherine Fields and Catherine Fields North Precincts and comprises 144.6 ha of land. The land is bound by Camden Valley Way to the north-west, Raby Road to the north-east, private property to the east, and the Sydney Water Canal in the south and south-east. The site includes three sections referred to as El Caballo Blanco, Gledswood, and Lakeside (refer Fig 1).

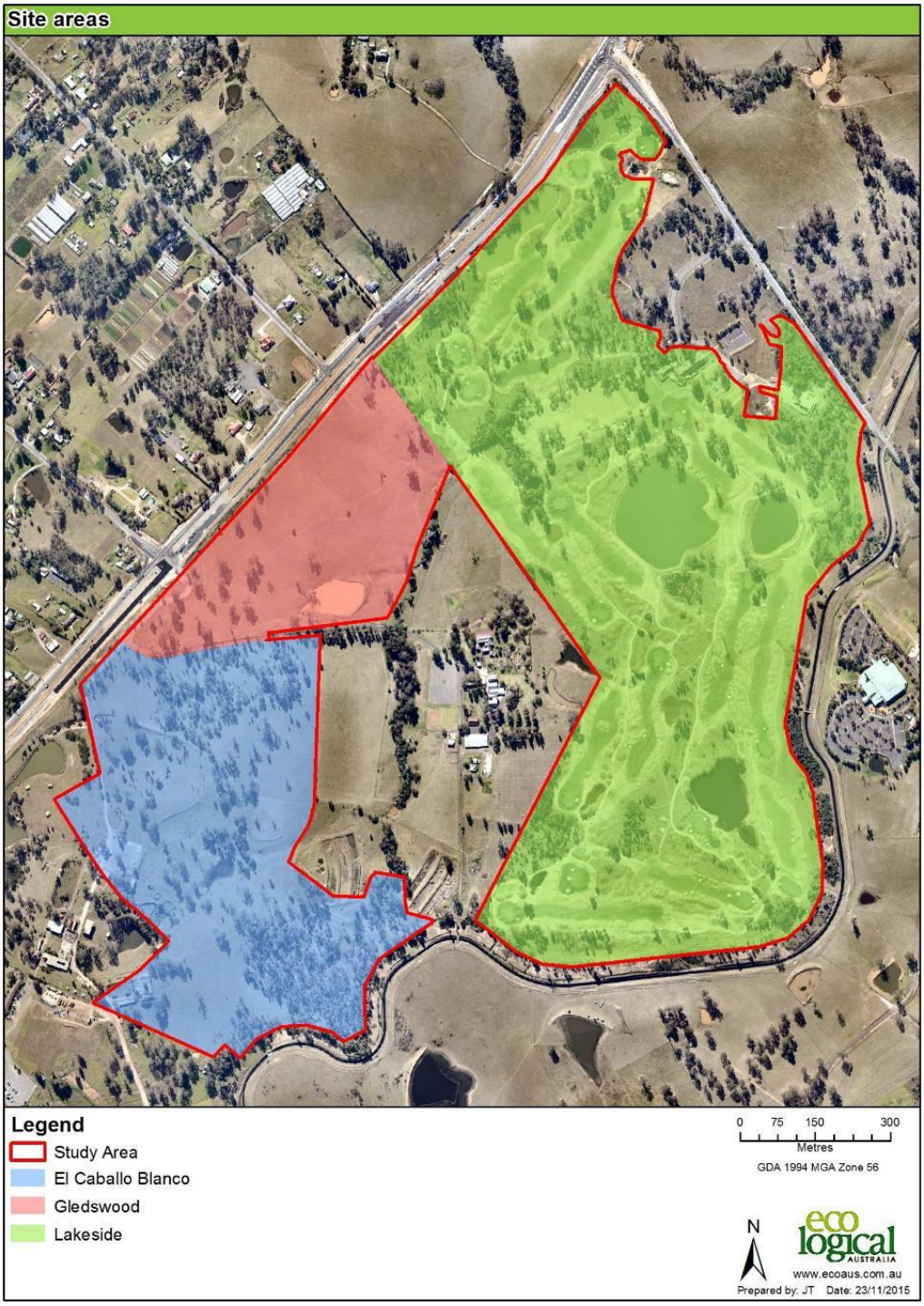

Figure 1 – ECBGL Site Location

1.2 Project Description

The Golf Course development includes the bulk earthworks and construction of thirteen golf holes, a driving range, filling of existing dams and excavation and lining of several proposed stormwater harvesting basins.

The residential development includes the construction of approximately 720 detached dwelling and all associated infrastructure (roads, services, etc.).

1.2.1 Construction Activities

The following outlines the general construction activities associated with the works that will be undertaken for the Golf Course and Residential development works.

Bulk earthworks

Construction activities for bulk earthworks would generally comprise:

- Undertake a Dial Before You Dig referral for any areas of the site to be excavated and consult with service providers to ascertain the location of existing services
- Conduct a Pre-Dilapidation survey of proposed haul routes and existing site structures and facilities
- Develop and implement a Construction Traffic Control Plan
- Establish site compound and place fencing around perimeter of construction site and areas of protected vegetation
- Mobilise plant and establish machine compound
- Install erosion and sediment controls as per Erosion and Sediment Control Plans as approved by Camden Council at each individual construction stage (see Council approved Soil and Water Management Plan for initial golf construction stage, **Appendix B**)
- Clearing of native vegetation in according to the Vegetation Management Plan.
- Construct earthworks for overland flow paths
- Install light vehicle access and establish haul roads
- Progressively strip topsoil and stockpile / dispose of offsite
- Excavate material from the site and relocate suitable material to areas requiring fill – place and compact
- Remove unsuitable material from the existing dams
- Filling of existing dams and excavation of new dams, including formation of bunds and placement of liners.
- Application of topsoil and site stabilisation
- Implementation of the Vegetation Management Plan and bushland regeneration works.

Installation of services

- Excavation of utilities trenches for installation of telecommunications, potable water, gas and electricity services
- Placement and compaction of bedding material
- Placement of electricity services, backfill and compaction of bedding material and placement of warning tape
- Placement and compaction of bedding material, placement of telecommunications cables and backfilling with bedding material, placement of warning tapes, prior to filling with approved material to final surface level
- Placement and compaction of bedding material
- Installation of service pipes and backfilling with bedding material

- Placement of warning tape above the service pipes and backfilling of the trench to final surface level
- Testing and commissioning of utilities

Installation of roads and permanent stormwater system

- Activities associated with the construction of roads and the permanent stormwater systems will include:
- Trimming of subgrade, re-compacting and stabilising
- Longitudinal and transverse drainage work
- Construction of culverts
- Haulage, spreading and placing of select material for road construction
- Construction of road surfaces consisting of bound and unbound granular material such as aggregates, lean mix concrete and bitumen seals
- Construction of kerbs and medians
- Installation of landscaping structures
- Placement of asphalt concrete
- Construction of shared pedestrian/cycle paths
- Installation of street lighting
- Installation of signs and line marking
- Application of topsoil and site stabilisation
- Installation of landscape finishing works.

Demobilisation

- Conduct a post-dilapidation survey of public roads used as haul routes and adjacent structures
- Demobilisation of all plant from site and removal of all waste materials
- Removal of fencing and temporary erosion and sediment controls
- Ongoing landscape management.
-

1.3 CEMP Context

This document is a draft Construction Environmental Management Plan (CEMP) which provides information on environmental issues, mitigation measures, monitoring, compliance standards, corrective actions, and reporting requirements relating to the construction works.

1.4 Purpose of this Draft CEMP

The purpose of this document is to provide a framework CEMP for adoption by Contractors engaged for each individual stage of works. It does not represent a comprehensive CEMP for the project. A final CEMP must be developed by the contractor to identify the specific environmental controls that will be implemented for their works. The CEMP for the project will need to be prepared by the relevant

Contractor(s), based on the processes and procedures specific to their environmental management system and will need to be approved by the Certifying Authority.

1.5 CEMP Objectives

The objectives of this CEMP are to:

- Provide an outline for Contractors engaged for the construction works for the preparation of site specific CEMPs for their works which, as a minimum, must address all issues raised within this framework CEMP;
- Identify environmental statutory requirements that works must comply with;
- Ensure environmental impacts are avoided where possible and that environmental risk is minimised;
- Ensure that sufficient monitoring is conducted to quickly identify environmental impacts of construction;
- Ensure that any necessary corrective actions are performed in a timely and appropriate manner; and
- Identify mechanisms to respond to changes in environmental conditions through review of the monitoring and control programs.

2 ENVIRONMENTAL MANAGEMENT

2.1 Environmental Policy

The Contractor shall provide details of their environmental policy within the final CEMP developed for their scope of work.

2.2 Legislative Requirements

All activities carried out on site will comply with all relevant legislation, regulations and guidelines. These include but are not limited to the following:

- Camden Local Environment Plan 2013
- *Local Government Act* 1993
- *Dangerous Goods Act* 1975
- *Environmental Planning and Assessment Act* 1979 (EP&A Act), refer to conditions of consent
- *Heritage Act* 1977, refer to general terms of approval
- *Fisheries Management Act* 1994
- *Environment Protection and Biodiversity Conservation Act* 1999 (Cth), refer to general terms of approval
- *Contaminated Land Management Act* 1997, refer to conditions of consent
- *Protection of the Environment Operations Act* 1997, refer to conditions of consent
- *Threatened Species Conservation Act* 1995, refer to general terms of approval
- *Native Vegetation Conservation Act* 1997
- *Water Management Act* 2000, refer to general terms of approval and controlled activity approval
- *Waste Avoidance and Resources Recovery Act* 2001
- *Roads Act* 1993
- *National Parks and Wildlife Act* 1974, refer to Aboriginal Heritage Impact Permit
- *Environmentally Hazardous Chemicals Act* 1985
- *Rural Fires Act* 1997, refer to general terms of approval

2.2.1 Controlled Activity Approval

The works have required the issue of two Controlled Activity Approvals by the NSW Office of Water. The conditions and requirements of these CAAs are to be considered in the preparation of the final CEMP by the Contractor.

2.3 Responsibilities for Implementation of the CEMP

2.3.1 General

All project personnel are responsible for the environmental performance of the project. All members of the Project team have environmental responsibilities. In general, all staff are required to:

- undertake all activities in accordance with the agreed plans of management, procedures and work methods;
- be made aware of the relevant supervisor for their area;
- report any activity that has resulted, or has potential to result, in an environmental incident; and
- attend environmental induction and task-specific training provided.

The following parties will have specific responsibilities for implementation of the CEMP for the project:

- SH Camden Valley Pty Ltd and SH Camden Lakeside Pty Ltd, as landowner
- Site Superintendent, as the landowner's representative
- Contractors.

Specific responsibilities for each of these parties are detailed below.

2.3.2 Responsibilities of the Site Superintendent/Landowner

The landowner's representative should induct the Site Superintendent and the Contractor's manager on the site specific approvals, permits and compliance obligations prior to commencement of the final CEMP.

The Site Superintendent will supervise the day-to-day activities of the Contractor and monitor the implementation of the CEMP on site. The Site Superintendent will participate in regular site inspections and compliance audits of all aspects of work including environmental management procedures. The Site Superintendent will communicate any non-conformances against the CEMP to the Contractors, and identify corrective actions and the timeframes for actions to be implemented.

The Site Superintendent will review the Contractor's CEMP to confirm they meet the project requirements, including all contractual requirements for the scope of works to be undertaken by the Contractor. The Site Superintendent will also confirm that Contractors have the requisite licenses, permits and approvals for their scope of works and review the CEMP to confirm that it meets those requirements. The Site Superintendent will not permit works to commence until all requisite approvals have been received and sighted.

2.3.3 Responsibilities of the Contractor

The Contractor will be responsible for environmental management of their works, including preparation and implementation of the final CEMP and monitoring the performance of their works. As a minimum the Contractor must:

- Obtain all licences and permits necessary to undertake the scope of works.
- Undertake dilapidation surveys and photographic recording of all public areas that may be impacted by the works, to the satisfaction of Council, prior to commencement of construction.

- Prepare a final CEMP for their scope of works that meet the requirements of the Development Consent, legislation, standards and codes.
- Implement all measures identified in the CEMP and ensure employees and contractors are aware of the requirements.
- Regularly review the performance of environmental control measures and update control measures in response to changes to the scope of works or environmental impacts.
- Implement corrective actions in a timely manner, in response to any non-conformances identified.
- Immediately report all environmental incidents to the Site Superintendent.
- Undertake inspections and reporting as prescribed in the CEMP.

The Contractor should reference any internal policies for all of the following in preparing the final CEMP:

- Air Quality
- Water Quality
- Soil Erosion
- Soil Contamination
- Waste
- Noise
- Flora & Fauna
- Traffic Management
- Services Management
- Young Workers Policy
- Electrical
- Consultation
- Personal Protective Equipment
- Hot Cold Policy
- Workers Compensation & Rehabilitation Statement
- Industrial Relations Management Plan
- Weed Management Plan

2.4 Amendment of the CEMP

This draft CEMP will be provided to all Contractors and the Site Superintendent. This document is to be amended and/or superseded by the Contractors' own CEMP as part of the Construction Certificate documentation.

An adaptive management approach will be applied to the project. Corrective actions arising out of the inspection and audit processes will be used to modify and improve the management of any potential environmental impacts. Should the review and corrective action processes identify any issues or items that are either redundant or in need of updating within this CEMP, the Site Superintendent will update the CEMP and re-issue the document to the Contractors.

2.5 Final CEMP Requirements

The Contractor will be responsible for preparing a final CEMP in accordance with this draft CEMP, the conditions of approval under the DA and the Controlled Activity Approval, and any requirements of the Sydney Catchment Authority for works adjacent to the Upper Canal.

2.5.1 Contractor's Environmental Management System

The final CEMP must include details of the Contractor's environmental management systems and its level of accreditation. The overview of the system should include a description of how environmental risks are identified and managed and how corrective actions are identified and implemented.

2.5.2 Contractor's Organisational Structure

The organisational structure of the Contractor's workforce, showing the reporting lines and job functions, should be identified. The environmental obligations of each level of responsibility should be clearly identified.

2.5.3 Environmental Training

The final CEMP must identify the environmental training that will be provided to all employees and contractors working on the site. At a minimum the following forms of environmental training must be provided on site:

- A project site induction, including environmental policy, roles and responsibilities;
- Toolbox talks;
- Pre-start meetings; and
- Environmental awareness training for specific issues.

The Contractor will be responsible for maintaining a register of environmental training carried out including a record of the topic, content, dates, name(s) and qualifications of trainers, names and signatures of personnel trained, dates, names and persons trained, the type of activity and location in which the person will be working and trainer details.

The final CEMP must identify when training will be provided, for example, in response to an incident or non-conformance, weekly occurrence of environmental toolbox talks.

2.5.4 Statutory and Legislative Obligations

The final CEMP must identify all legislative and regulatory requirements that must be complied with for the Contractor's scope of works. This section of the final CEMP should identify the legislation or regulation and state why it is applicable to the works.

2.5.5 Register of Project Specific Licences and Permits

The final CEMP must clearly identify any permit or licence requirements, and the current version of these must be appended to the final CEMP. The register should clearly identify the holder of the licence or permit (i.e. the person responsible) and the expiry renewal date.

2.5.6 Contract Requirements

The final CEMP should reference any contractual requirements relating to environmental management. The final CEMP should cross reference where these requirements have been addressed within the document.

2.5.7 Construction Methodology

A detailed construction methodology should be presented within the final CEMP in order to accurately identify those activities that pose environmental risk.

2.5.8 Environmental Risk Assessment

Based on the construction methodology, the final CEMP should contain an environmental risk assessment to identify the potential environmental risks associated with the Contractor's scope of works.

This section of the final CEMP should generally adhere to the following process:

1. List the activities to be undertaken.
2. Identify the actual or potential environmental impacts associated with each activity.
3. Identify where environmental impacts are significant.

This process should be revisited as construction methodologies change, if the site environmental conditions alter, or in response to an incident or non-conformance.

2.5.9 Environmental Management Plans

The information from the risk assessment must be used to design and adapt environmental management activities, controls and monitoring to prevent or minimise environmental impacts and achieve the legislative, regulatory and permit requirements. The management plans must identify compliance standards and corrective actions.

The minimum environmental management requirements are outlined in Section 3 and must be included in the final CEMP.

2.5.10 Emergency Response Management

Emergency response plans must be included in the final CEMP that detail how the Contractor will respond to emergency scenarios, such as spills, fire or flood events that exceed the design capacity of erosion and sediment control structures. The emergency response plan must include reporting requirements and lines of communication to the Site Superintendent.

In the event of a spill or event causing environmental harm, the EPA must be notified immediately. Contact details for the EPA and the Site Superintendent must be included in the plan.

The emergency response plan must identify the material and equipment needed to respond to the emergency scenarios identified. A map showing the location of these materials must be included in the plan.

2.5.11 Environmental Monitoring Program

Where identified as required in the environmental risk assessment (e.g. where dewatering is required or where management of ASS will be required), the Contractor must propose an environmental monitoring program. The program must detail the parameters to be monitored, the methods of testing, frequency of testing and the compliance standards.

The monitoring program must also identify contingency plans and corrective actions to be implemented should the project compliance standards be exceeded.

3 ENVIRONMENTAL MANAGEMENT ACTIVITIES AND CONTROLS

The following sections contain the minimum environmental management measures that must be implemented by Contractors for the project.

3.1 Flora and Fauna

The project site has been identified as comprising a mosaic of exotic grassland, native grassland and native woodland; Cumberland Plain Woodland and Alluvial Woodland. The native vegetation forms part of critically endangered ecological communities (CEEC) and must be protected unless clearly identified for removal in construction documentation.

3.1.1 Management Measures

- Implementation of a Vegetation Management Plan.
- Impacts on native flora and fauna populations are to be minimised through the implementation of weed control, erosion and sediment control measures.
- The Contractor shall minimise vegetation clearance where possible.
- Ensure construction activity is confined to fenced-off construction areas.
- Topsoil shall be stripped from earthworks areas and stockpiled. At the completion of earthworks, topsoil shall be reapplied and stabilised.
- All machinery and materials entering the site shall be free of weeds and soil potentially containing seeds, to prevent the introduction of weeds.
- All plant to undergo a full inspection prior to mobilisation to site. Following inspection, plant certification is to be issued for each individual plant item.
- Plant and other vehicles are to keep to access and haul roads (as shown in construction documentation) on site, and to avoid unnecessary movement through undisturbed areas and interactions with native fauna.
- Operators shall conduct vegetation clearance with care. While endangered flora and fauna are not expected to be found on site, if they are discovered they are not to be disturbed and advice sought from the Superintendent.
- Concurrent vegetation and restoration works by ecologists on CEEC areas.

3.1.2 Performance Indicators

- No unauthorised clearing or tracking through conservation or native vegetation areas.
- No new noxious weeds identified on the project site at the completion of works.
- No native fauna deaths observed on site.
- Monitoring of the performance of erosion and sediment controls is outlined in the SWMP.

3.1.3 Corrective Actions

- Fence off no-go areas.
- Chemical and mechanical treatment of noxious weed infestations.
- Investigate lowering of speed limits on site to reduce fauna fatalities.
- Corrective actions are identified in the SWMP.

3.2 Noise and Vibration

Noise and/or vibration impact during construction is likely to result from:

- Operation of construction plant and equipment; and
- Construction traffic to and from site.

3.2.1 Management Measures

- Noise generating activities including construction, excavation and delivery of equipment and materials must only be carried out during the times specified in the Development Consent.
- The quietest practical plant and construction methodologies must be selected for each element of the works and the Contractor shall ensure that plant noise attenuation equipment is installed and maintained. In particular the Contractor must utilise the most practical methods available of noise suppression on all compressors, jackhammers and other machinery.
- Where appropriate, reversing alarms should be ‘squawker’ alarms or alarms that adjust output sound levels based on the prevailing ambient noise level.
- Construction traffic must use the haul routes identified in the Construction Traffic Management Plan. Haul routes must be selected to minimise impacts on residents.

3.2.2 Performance Indicators

- No complaints from residents in relation to noise from the project.

3.2.3 Corrective Actions

- In response to several community complaints relating to noise the Contractor shall undertake community liaison and consultation in order to identify and implement any additional reasonable and feasible mitigation options.

3.3 Air Quality

Air quality impacts during construction are likely to result from:

- Smoke/fumes emitted from plant and equipment, including idling equipment; and
- Windblown dust, soil and sediment from cleared land and construction processes.

3.3.1 Management Measures

- At all times the Contractor must assess the prevailing weather conditions and modify and/or cease site operations where necessary in the case of adverse weather conditions, such as high wind conditions.
- Burning of any material on site is strictly prohibited.
- Idling of vehicles and construction machinery on site must be avoided.
- All vehicles and machinery entering the site must comply with EPA Emissions Standards.
- The operation of any plant and equipment found emitting visible smoke/fumes for periods longer than two minutes should be suspended until acceptable levels can be achieved.
- The area disturbed by works at any one time should be minimised and progressive stabilisation of the site must occur following the bulk earthworks.
- Water carts must be used to keep haulage roads moist during operational hours.
- Disturbed areas should be kept moist with water sprays during bulk earthwork activities.
- Ensure all watering equipment, including sprays, sprinklers and water carts are adequately maintained and readily available during the works.
- Minimise the quantity of PASS material exposed at any one time to minimise potential odour. Treat or dispose of PASS material as soon as practicable after excavation.
- Stabilise, seed and bitumen straw mulch disturbed areas on conclusion of construction.

3.3.2 Performance Indicators

- No dust emissions observed at the boundary of the site.
- No complaints from residents in relation to dust emissions or odour from the site.

3.3.3 Corrective Actions

- On observation of dust at the site boundary, all dust generating works should cease until water sprays or water trucks have been deployed and the potential for dust generation has been reduced.
- On receipt of a complaint relating to dust emissions from the site, dust generating activities should cease and further mitigation measures, including the use of water sprays and /or covering exposed surfaces, must be implemented. Activities should only recommence once the Contractor is confident that dust emissions will not occur.
- In response to community complaints, the need for a dust and/or odour monitoring program should be investigated. Any monitoring program for dust should comply with AS 3580/2003 *Determination of total suspended particulates (TSP)*. The accepted criterion for deposited dust is 4 mg/m^2/month as an annual average.

3.4 Traffic

The Contractor must prepare a Construction Traffic Management Plan to address the requirements for traffic management and route selection in the final CEMP, based on their work methods and this draft CEMP.

3.4.1 Management Measures

- Where possible, Golf Course and ECB Residential construction traffic should access the project site via the existing access at the intersection of Catherine Fields Road and Camden Valley Way to minimise impacts to the residential areas of The Hermitage.
- Lakeside Residential Development construction traffic should access the site via the existing intersection on Raby Road.
- Public access must be maintained at all times to the Gledswood Homestead and Winery.
- Construction access via the Gledswood access is strictly prohibited.
- Appropriate signage shall be installed at all gates to warn public road users of construction traffic, in accordance with AS 1742.3/2002 *Manual of uniform traffic control devices - Traffic control devices for works on roads*.
- A shaker ramp or wheel wash must be installed at egress points to the site to minimise the transport of mud onto public roads.
- Route selection within the site shall minimise vehicle conflicts and maximise safety of construction personnel. Routes within the site shall be documented and clearly marked on the ground.
- Any traffic accidents involving construction vehicles on or travelling to/from the site must be reported to the Site Superintendent.

3.4.2 Performance Indicators

- No unofficial haul roads formed on site and no evidence of vehicular disturbance to undisturbed areas.
- No complaints from residents relating to construction traffic.
- No accidents involving construction vehicles.

3.4.3 Corrective Actions

- Toolbox all workers on the designated haul routes and access routes.
- Revise the Construction Traffic Management Plan.

3.5 Archaeological Heritage Management

The site has been subject to an archaeological excavation to identify and remove items of Aboriginal heritage significance from the site. These works will be complete with final reports submitted to the OEH, detailing the outcomes, prior to golf and residential construction commencing. This has reduced the risk of impacts on archaeological heritage items; however, there is the potential to uncover items during the bulk earthworks on the site. Without management, uncovered items of significance could be harmed leading to a beach of the *National Parks and Wildlife Act* 1974. Refer to the Draft Aboriginal Cultural Heritage Assessment report prepared by EcoLogical Australia dated April 2015 for further guidance.

3.5.1 Management Measures

- Contractors and construction personnel that will be involved in site stripping or excavation tasks will be required to undergo a cultural heritage induction as part of the development site induction process before commencing ground breaking construction work.
- If Aboriginal ancestral remains (human remains) are identified during development activities, work shall cease in the immediate area of these remains. NSW Police and the Office of Environment and Heritage (OEH) will be notified as soon as practicable, and any directions given by these authorities shall be complied with. All works in the vicinity of the find must cease.
- The Contractor must immediately give the Superintendent written notice of the discovery of any objects of antiquity or anthropological or archaeological interest.

3.5.2 Performance Indicators

- Compliance with the relevant Aboriginal Heritage Impact Permit (AHIP) issued for the site.
- No damage caused to items of heritage significance.

3.5.3 Corrective Actions

- The Contractor supervisors are to be inducted into the AHIP by Sekisui House.
- The Contractor's site inductions for all people working on site must include the requirements for compliance with the AHIP.
- Archaeologist to attend site to monitor excavations and provide guidance to workers, should items of significance be uncovered.

3.6 Soil and Water

Impacts on soil and water may result from:

- Erosion of sediment from disturbed earth in excavations, stockpiles and haul roads
- Disturbance to soils caused by construction traffic
- Discharge of turbid stormwater captured in overland flow channels and other controls, or other site excavations
- Pollution from spills of sewage, fuel, oil, hydraulic fluids or other construction materials.

A Soil and Water Management Plan has been developed for the initial golf construction stage. This plan has been approved by Camden Council and is appended to this draft CEMP (see **Appendix B**). The Contractor will be responsible for meeting the requirements of the SWMP and the final CEMP. The sections below provide a general overview of soil and water management measures to be employed during construction; further detail is provided in the SWMP.

3.6.1 Management Measures

- Erosion control measures must be installed prior to any other ground disturbance occurring on the site.

- Diversion structures should be installed upslope of the site to divert clear water around areas of disturbance.
- Soil stockpiles must not be placed within floodways or 30m from a watercourse or water body and must be protected on the upslope side by a clean water diversion and on the downslope by a sediment barrier.
- Sediment capture devices, including sediment fences, must be installed downslope of the site.
- Disturbed areas must be stabilised as soon as practicable. Disturbed areas and stockpiles that will not be disturbed for a period of 28 days or greater should be stabilised with vegetation or an alternative cover.
- All temporary and permanent drainage diversions should be stabilised immediately.
- Erosion and sediment controls should be inspected regularly, particularly after rain events, and must be maintained until the site has been effectively stabilised.

3.6.2 Performance Indicators

- Development and implementation of progressive erosion and sediment control plans (ESCPs), sighted by the Site Superintendent.
- Compliance with the Soil and Water Management sub-plan and the ESCPs developed for the works; observed during site inspections.
- No evidence of sediment or turbid stormwater leaving site.
- Compliance with monitoring requirements and procedures during release from sediment basins.

3.6.3 Corrective Actions

- Review ESCPs and increase or upscale erosion and sediment controls.
- Restrict clearing of any new areas until existing areas have been stabilised.

3.7 Waste Management

Failure to appropriately manage waste generated on site may result in:

- Waste leaving site and causing pollution
- Cross contamination of waste streams, adding to disposal costs and lowering recovery options
- Negative visual impacts and complaints from residents.

3.7.1 Management Measures

- The Contractor must keep the site clean and tidy and regularly remove rubbish and surplus material.
- The Contractor must comply with the Site Waste Minimisation and Management Plan. A SWMP has been developed for the initial stage of golf construction and is included as **Appendix A** to this draft CEMP.
- A Site Waste Minimisation and Management Plan must be developed by the Contractor for each relevant stage of construction works that details the size and location of waste storage areas, the types and numbers of storage bins

required and the signage to be provided to facilitate the correct use of storage facilities. The Superintendent will review and approve the Site Waste Minimisation and Management Plan developed by the Contractor.

3.7.2 Performance Indicators

- No non-conformances issued by Site Superintendent against the Site Waste Minimisation and Management Plan during site inspections.
- No “clean up” directions issued by the Site Superintendent during site inspections.
- No litter from the site observed leaving site or at site boundary.
- No complaints from residents relating to the appearance of the site and/or waste leaving site.

3.7.3 Corrective Actions

- Review and revise the Contractor’s Site Waste Minimisation and Management Plan to better identify measures for the management of waste generated on site.
- Toolbox workers on appropriate waste management practices and the need to maintain a clean and tidy site.

3.8 Bushfire Management

The site is located in a bushfire prone area and particular care should be taken during construction to manage the risks of bushfires starting or spreading during construction.

All works must be undertaken in accordance with the NSW Rural Fire Service general terms of approval.

3.8.1 Management Measures

- Care to be taken during fire danger periods so as not to exacerbate fire conditions or cause sparking of fires.
- At all times the Contractor must assess the prevailing weather conditions and modify and/or cease site operations where necessary in the case of adverse weather conditions, such as high wind conditions.
- Burning of any material on site is strictly prohibited.
- Water carts must be used to keep haulage roads moist during operational hours.
- Ensure all watering equipment, including sprays, sprinklers and water carts are adequately maintained and readily available during the works.
- Follow directions from NSW Rural Fire Service at all times.

3.8.2 Performance Indicators

- No evidence of works within the site contributing to local fire events.

3.8.3 Corrective Actions

- Review and increase or upscale fire control measures.
- Increase the frequency and volume of water cart usage throughout job to reduce risk of flare ups.

3.9 European Heritage

The Gledswood golf site is located adjacent to Gledswood Homestead and the SCA Upper Canal, which both have been assessed as having high heritage value. No works will be permitted outside the defined works area. Lot 1201 has state heritage protection because of its historic links to Gledswood. Protection of trees within this site is of paramount importance. The access road to Gledswood House is also protected under State Heritage controls and must not be used for construction access. Works within Lot 1201 must adhere to any conditions imposed by the Heritage Office accompanying the Section 60 permit for the works.

Any trees marked for retention either within or outside the site boundary that may be impacted by the works are to be suitably protected at all times in accordance with the arborists advice. Refer to the Assessment of Heritage Impact prepared by Geoffrey Britton Environmental Design and Heritage Consultant dated July 2015 for further guidance.

3.9.1 Management Measures

- No works are to be undertaken outside the defined works area.
- Delineate no-go areas on site.
- All trees marked for retention are to be protected by use of suitable physical barriers prior to the commencement of works.
- No construction access via the Gledswood access road.
- No runoff is to be permitted to enter the SCA Upper Canal land at any time. The contractor is to ensure that all erosion control measures must be installed prior to any other ground disturbance occurring on the site.
- Soil stockpiles must not be placed within 30m of the SCA Upper Canal and must be protected on the upslope side by a clean water diversion and on the downslope by a sediment barrier.
- Sediment capture devices, including sediment fences, must be installed downslope of the site.
- All temporary and permanent drainage diversions should be stabilised immediately.
- Erosion and sediment controls should be inspected regularly, particularly after rain events, and must be maintained until the site has been effectively stabilised.
- In the event of an unexpected find of a heritage relic, work must cease in the immediate vicinity and the contractor must fence off the area, notify the principal and consultant archaeologist and seek further instructions.

3.9.2 Performance Indicators

- No unauthorised tree removal within the site.
- No unauthorised access via the Gledswood access road.
- Development and implementation of progressive erosion and sediment control plans (ESCPs), sighted by the Site Superintendent.

- Compliance with the Soil and Water Management Sub-plan and the ESCPs developed for the works; observed during site inspections.
- No evidence of sediment or turbid stormwater leaving site.
- Compliance with monitoring requirements and procedures during release from sediment basins.

3.9.3 Corrective Actions

- Review ESCPs and increase or upscale erosion and sediment controls.
- Restrict clearing of any new areas until retained trees have been adequately protected.
- Install signage to prohibit construction access via the Gledswood access road.

3.10 Salinity Management

All works on site are to be undertaken in accordance with the Salinity Management Plan and conditions of Development Consent. The bulk earthworks are to be planned and undertaken in accordance with the recommendations of the Salinity Management Plan. Refer to the Report on Salinity Investigation and Management Plan prepared by Douglas Partners dated April 2015 for further guidance.

3.10.1 Management Measures

- Sodic soils should be capped at the upper surface.
- Excavated fill is to be placed in areas with similar salinity characteristics.
- Potential amelioration of any highly saline soils including addition of organic matter, gypsum and lime can be considered.
- Pavements are to be well drained of surface water.
- Any future installation of concrete pipes up to a maximum diameter of Ø750mm within the site should employ fibre reinforced cement. Alternatively, concrete pipes in these areas should be encased in outer PVC conduits or should have a minimum equivalent strength as defined in the approved plans.
- Concrete pipes with a larger diameter than 750mm should utilise sulphate resistant cement.

3.10.2 Performance Indicators

- Compliance with the Salinity Management Plan developed for the works; observed during site inspections.
- No evidence of saline soils impacting on existing vegetation or waterways adjacent to the works.

3.10.3 Corrective Actions

- Review Salinity Management Plan and incorporation of the plan into the planning and completion of bulk earthworks activities within the site.

3.11 Contamination Management

All works on site are to be undertaken in accordance with the Remediation Action Plan and conditions of Development Consent. The bulk earthworks and dam de-silting works are to be planned and undertaken in accordance with the recommendations of the Remediation Action Plan. Refer to the Remediation Action Plan prepared by Douglas Partners dated July 2015 for further guidance.

3.11.1 Management Measures

- Excavation and manual screening/segregation of contaminated materials.
- Excavation and offsite disposal of contaminated materials.
- Excavation and onsite treatment and re-use of contaminated materials.
- Compliance with requirements and approvals from NSW EPA and Camden Council.

3.11.2 Performance Indicators

- Compliance with the Remediation Action Plan developed for the works; observed during site inspections.
- No evidence of contaminated materials impacting on existing vegetation or waterways adjacent to the works.

3.11.3 Corrective Actions

- Review Remediation Action Plan and incorporation of the plan into the planning and completion of bulk earthworks activities within the site.

APPENDIX A WASTE MANAGEMENT PLAN

WASTE MANAGEMENT PLAN

Project Name	The Hermitage, Golf Course	**Date**	26/02/2016
Site address:	Part of Lot 50 DP 1175424, Gledswood Hills		
Applicant:	SH Camden Valley Pty Ltd (property owner)		
Applicant's address	Ground Floor, 68 Waterloo Road Macquarie Park NSW 2113		
Applicants representative	Oliver Roborgh, 8817 1400 (SH Camden Valley Pty Limited)		
Buildings and other structures on site	Nil (previous demolition works completed under a separate DA)		
Brief description of proposal	The Golf Course site includes the bulk earthworks and construction of thirteen golf holes, a driving range, filling of existing dams, and excavation and lining of several proposed stormwater harvesting basins.		

Materials on site		Destination		
		Re-use and recycling		Disposal
Type of Material	Estimated Volume (m^3)	On-site	Off-site	Off-site
SECTION 1. DEMOLITION				
N/A - NO DEMOLITION WORKS				
SECTION 2. CONSTRUCTION				
Excavation Material - Cut	*86,100*	*Reuse as fill onsite*	*Excess material will be stockpiled on site for use as fill in future stages*	*Council approved landfill site*
Excavation Material - Fill	*49,100*			
Importation of Fill	*Nil*			
Exportation of Fill	*37,000*	*Stockpile and re-use*	*Excess material will be stockpiled on site for use as fill in future stages*	*Council approved landfill site*
Top Soil	*51,200*	*Stripped and reuse as topsoil onsite*	*Any excess will be stockpiled and reused in future stages within the El Caballo Blanco Development.*	
Concrete Kerb and Gutter	*1*	*Possibly used as recycled road base or structural fill onsite crushed on site. Any remainder to re-cycling plant.*	*Transported to crushers/recycling plant*	
Concrete Footpath	*2*	*Possibly used as recycled road base or structural fill onsite crushed on site. Any remainder to re-cycle plant.*	*Transported to crushers/recycling plant*	
Road Materials - AC	*1*	*Mill for reuse as structural fill*		
Road Materials - Base	*8*	*Possibly used as recycled road base, structural fill crushed on site. Any remainder to re-cycle plant.*	*Transported to crushers/recycling plant*	
Green Waste - Trees	*167 large shrubs and trees*	*Trees to be chipped onsite and reused as landscape mulch*		
Rubbish Generated from Construction	-			
Bricks	*N/A*			
Concrete	*4*		*Transported to crushers/recycling plant*	
Timber	*2*		*Transported timber recycling plant*	
Metal	*2*		*Transported metal recycling plant*	
Domestic Waste	*5*			*Council approved Landfill Site*
SECTION 3. ONGOING USE OF A PREMISE				
Individual DA's will be lodged for dwelling construction upon completion of the subdivision works.				
SECTION 4. ONGOING MANAGEMENT OF A PREMISE				
Waste disposal and a recycling requirement will be incorporated into the Construction and Environmental Management Plan to be implemented by the approved contractor.				

APPENDIX B SOIL AND WATER MANAGEMENT PLAN

REFER ECPO-CI-101 FOR CONTINUATION

TURNER ROAD
PRECINCT

POND 3

DE-WATER EXISTING DAM AND REMOVE UNSUITABLE MATERIAL AS SPECIFIED BY THE GEOTECHNICAL REPORT (76631.07, AUGUST 2015) OR SUITABLY QUALIFIED GEOTECHNICAL ENGINEER.

EXISTING POND
(POND 2) TO REMAIN

DURING EARTHWORKS DIRECT WATER TO SEDIMENT BASINS TO PROTECT POND 1 FROM SEDIMENT

RAINGARDEN A2 TO BE USED AS SEDIMENT CONTROL BASIN DURING CONSTRUCTION
MINIMUM VOLUME=500M³
SEDIMENT STORAGE=120M³
SETTLING ZONE=305M³

POND 1 TO BE USED AS SEDIMENT CONTROL BASIN DURING CONSTRUCTION

POND 1

RAINGARDEN A1 TO BE USED AS SEDIMENT CONTROL BASIN DURING CONSTRUCTION
MINIMUM VOLUME=1,500m³
SEDIMENT STORAGE=680m³
SETTLING ZONE=810m³

REMEDIATE
EXISTING BASINS

LEGEND

- SEDIMENT FENCE — REFER SD 6-8 FOR DETAILS
- 8 — 1.8m HIGH CHAINWIRE BARRIER FENCE — LOCATION TO BE CONFIRMED ON SITE BY CONTRACTOR
- STABILISED SITE ACCESS (SD 6-14) AND TRUCK WASH DOWN AREA. LOCATION TO BE CONFIRMED ON SITE BY CONTRACTOR.
- ACCESS GATE
- STAGE BOUNDARY
- PROPOSED STOCK PILE — PROVIDE SEDIMENT FENCE TO DOWNHILL EXTENT
- PROPOSED SWALE / EARTH BUND (SD 5-5)
- PROPOSED GOLF WORKS
- PROPOSED RAINGARDEN FILTER AREA
- HAY BALE FILTER (SD 6-7)
- IMPACTED TREE TO BE REMOVED
- EXISTING TREE TO REMAIN
- FUTURE WORKS
- TOP OF BANK EXTENT (PROVIDED BY ECOLOGICAL AUSTRALIA (DATED 07/05/2015)
- RIPARIAN EXTENT (PROVIDED BY ECOLOGICAL AUSTRALIA (DATED 07/05/2015)

NOTE:
SD___ INDICATES STANDARD DRAWINGS, REFER MANAGING URBAN STORMWATER, SOIL AND CONSTRUCTION 4th EDITION MARCH 2004.
LOCATION AND STAGING TO BE CO-ORDINATED BY CONTRACTOR

Issue	Description	Date
03	ISSUE FOR CONSTRUCTION CERTIFICATE	25.02.16
02	ISSUE FOR CONSTRUCTION CERTIFICATE	04.12.15
01	ISSUE FOR CO-ORDINATION AND REVIEW	12.11.15

0 20 40 60 80 100m
1 : 1000

Client: SEKISUI HOUSE

Status: CONSTRUCTION CERTIFICATE

		Current Issue Signatures	
Scales	1:1000	Drawn M.Olaya	
Original Size	A1	Designed A. Hill	
Height Datum	AHD	Checked C.McClelland	
Grid	MGA	Approved M.Kurtz	

Filename: ECPO-CI-100-ErosionAndSedimentControlPlan-Sheet1.dwg

Project: EL CABALLO BLANCO GOLF COURSE PONDS

Title: EROSION AND SEDIMENT CONTROL PLAN SHEET 1

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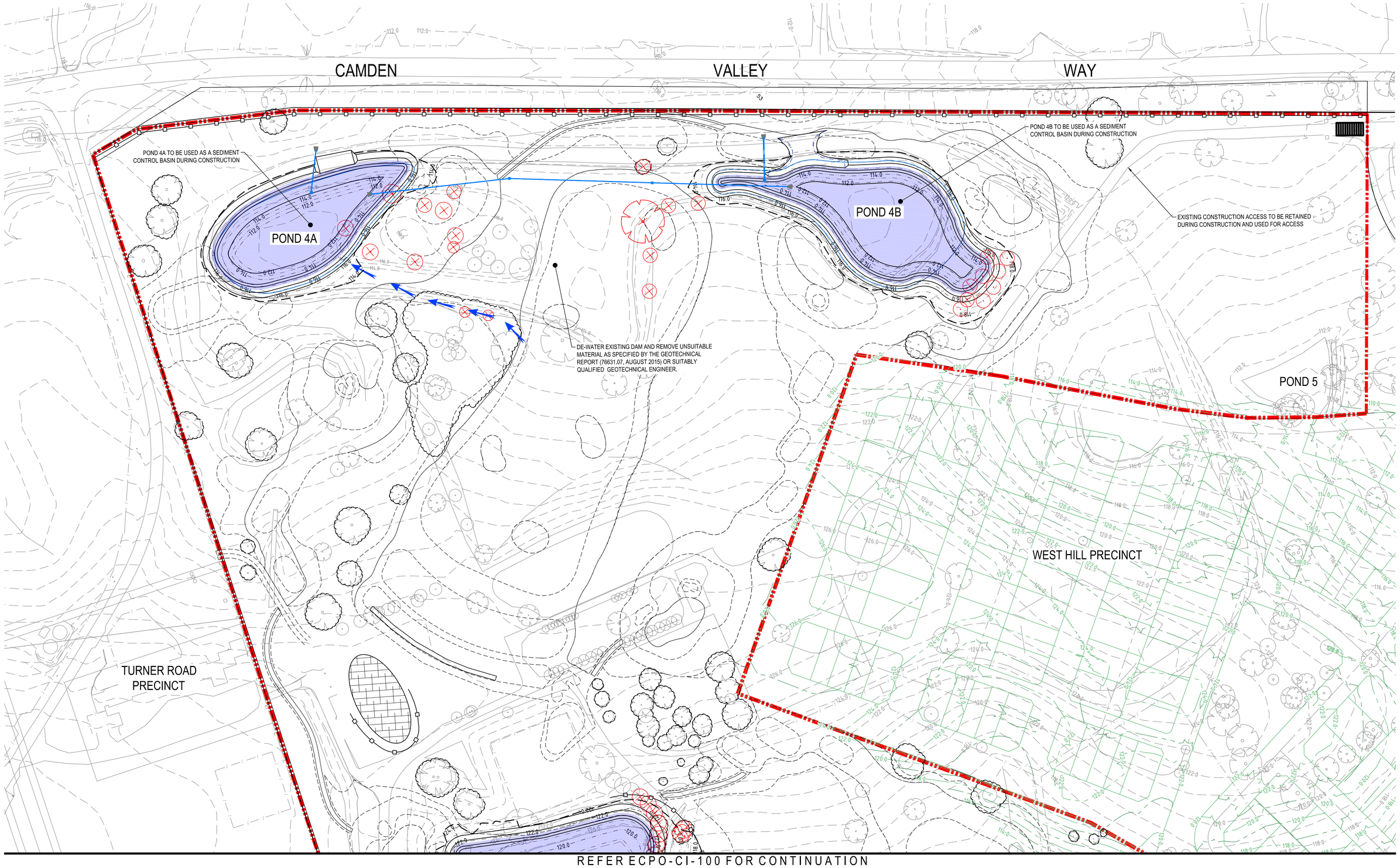
Drawing No.	Project No.	Issue
ECPO—CI—100—	AA007442 —	03

100mm on Original

Date Plotted: 25 Feb 2016 - 03:36PM File Name: F:\AA007442\E-CAD\C-Civil\D-Final\El Caballo Blanco [EC]\Ponds CC\ECPO-CI-100-ErosionAndSedimentControlPlan-Sheet1.dwg V1



REFER ECPO-CI-100 FOR CONTINUATION

Issue	Description	Date
03	ISSUE FOR CONSTRUCTION CERTIFICATE	25.02.16
02	ISSUE FOR CONSTRUCTION CERTIFICATE	04.12.15
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100mm on Original

0 20 40 60 80 100m

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Original Size	A1	Designed A. Hill	
Height Datum	AHD	Checked C.McClelland	
Grid	MGA	Approved M.Kurtz	

Filename: ECPO-CI-101-ErosionAndSedimentControlPlan-Sheet2.dwg

Project: EL CABALLO BLANCO GOLF COURSE PONDS

Title: EROSION AND SEDIMENT CONTROL PLAN SHEET 2

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Drawing No.	Project No.	Issue
ECPO—CI—101—	AA007442 —	03

Date Plotted: 25 Feb 2016 - 03:36PM File Name: F:\AA007442\E-CAD\C-Civil\D-Final\El Caballo Blanco [EC]\Ponds CC\ECPO-CI-101-ErosionAndSedimentControlPlan-Sheet2.dwg V1

ARCADIS Design & Consultancy for natural and built assets