

# STORMWATER MANAGEMENT PLAN

## GRENFELL POULTRY FARMS




mpn consulting

Prepared By:  
MPN CONSULTING PTY LTD  
Level 5  
39 Sherwood Road  
Toowong  
Queensland  
4066 • Australia

**REVISION STATUS**

MPN Reference No: 8719  
Client: Baiada Properties Pty Ltd  
Site Address: 1130 Gooloogong Road, Grenfell, New South Wales  
Report Title: Stormwater Management Plan

**DOCUMENT CONTROL**

Version	Date	Author	Reviewer	Approved
Draft	11/07/2021	Peter Derrington	Lachlan Stephenson	
Issue A	27/08/2021	Peter Derrington	Lachlan Stephenson	

## EXECUTIVE SUMMARY

This report has been commissioned by Baiada Properties Pty Limited for the Development Application and to address the Planning Secretary's Environmental Assessment Requirements (SEAR's) for the preparation of an Environmental Impact Statement (EIS) for the proposed poultry farms at 1130 Gooloogong Road, Grenfell.

This report addresses the following Engineering aspects of the proposed development:

- Topography
- Flooding
- Stormwater quality management
- Stormwater quantity management
- Erosion and sediment control

## Table of Contents

<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>1 PURPOSE</b>	<b>5</b>
<b>2 INTRODUCTION</b>	<b>5</b>
2.1 Project Description	5
<b>3 SITE CHARACTERISTICS</b>	<b>7</b>
3.1 Site Location	7
3.2 Topography and Existing Site Drainage	8
<b>4 SITE DATA</b>	<b>8</b>
<b>5 STORMWATER</b>	<b>9</b>
5.1 Flooding	9
5.2 Site Based Stormwater Management Plan	9
5.3 Operational Phase	9
5.3.1 Proposed Site Drainage	9
5.3.2 Stormwater Quantity Management Strategy	10
5.3.3 Stormwater Quality Management Strategy	11
5.3.4 Construction Phase (Sediment and Erosion Control)	15
<b>6 CONCLUSION</b>	<b>18</b>
<b>7 LIMITATIONS OF REPORT</b>	<b>18</b>

## Figures

Figure 1 – Proposed Development	6
Figure 2 – Site Location	7
Figure 3 – Treatment Plan	13

## Tables

Table 1 – Detention Basin Properties	10
Table 2 – Existing and Proposed Peak Flows with Detention	11
Table 3 – MUSIC Rainfall Runoff Parameters	12
Table 4 – Pollutant Export Parameters	12
Table 5 – Water Quality Objectives	13
Table 6 – Percentage Based Load Reduction Results	14

## Appendices

Appendix 1 Layout Plans	19
Appendix 2 MPN Plans	20

## **1 PURPOSE**

This Stormwater Management Plan has been prepared to support the Development Application for the proposed Grenfell poultry farms located at 1130 Gooloogong Road, Grenfell.

## **2 INTRODUCTION**

### **2.1 Project Description**

The current proposal includes the construction of four new poultry farms. Each farm will comprise 10 sheds with associated amenities buildings, water and gas tanks, combined bioretention/detention basins and access roads.

A new bridge will be built across Wallah Wallah Creek to service sheds 2-4. The new bridge will be immune to major flood events in Wallah Wallah Creek ensuring access to the sheds is maintained.

Existing internal overland flow paths will be diverted around the locations of the new sheds to provide flood immunity to the sheds with culverts running under the new roads to ensure that stormwater runoff conveyance is maintained generally in accordance with the existing conditions.

The site will be accessed from Gooloogong Road to the West, with a new internal road constructed to provide the site access.

The proposed development is depicted on the plan prepared by PSA Consulting attached in Appendix 1, with excerpt below.

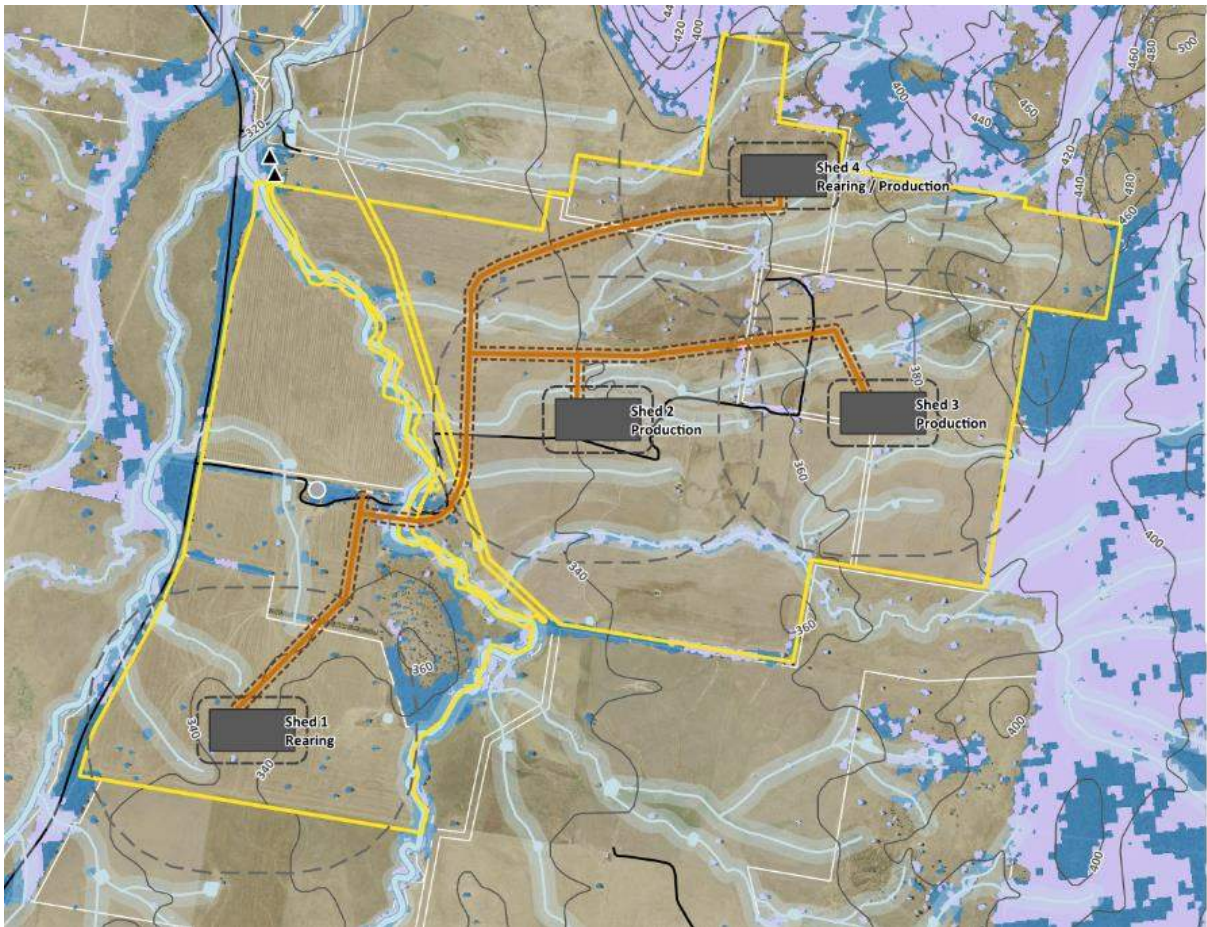


Figure 1 - Proposed Development

## 3 SITE CHARACTERISTICS

### 3.1 Site Location

The site is located at 1130 Gooloogong Road, Grenfell on land described as Lot 1 on DP 1022013, Lot 1 on DP 1206485, Lot 22 on DP 866857 and Lots 2 and 3 on DP 1206485.

The site is bounded by Gooloogong Road to the West and undeveloped rural land to the North, East and South.

The site is located approximately 12km North of Grenfell town centre.

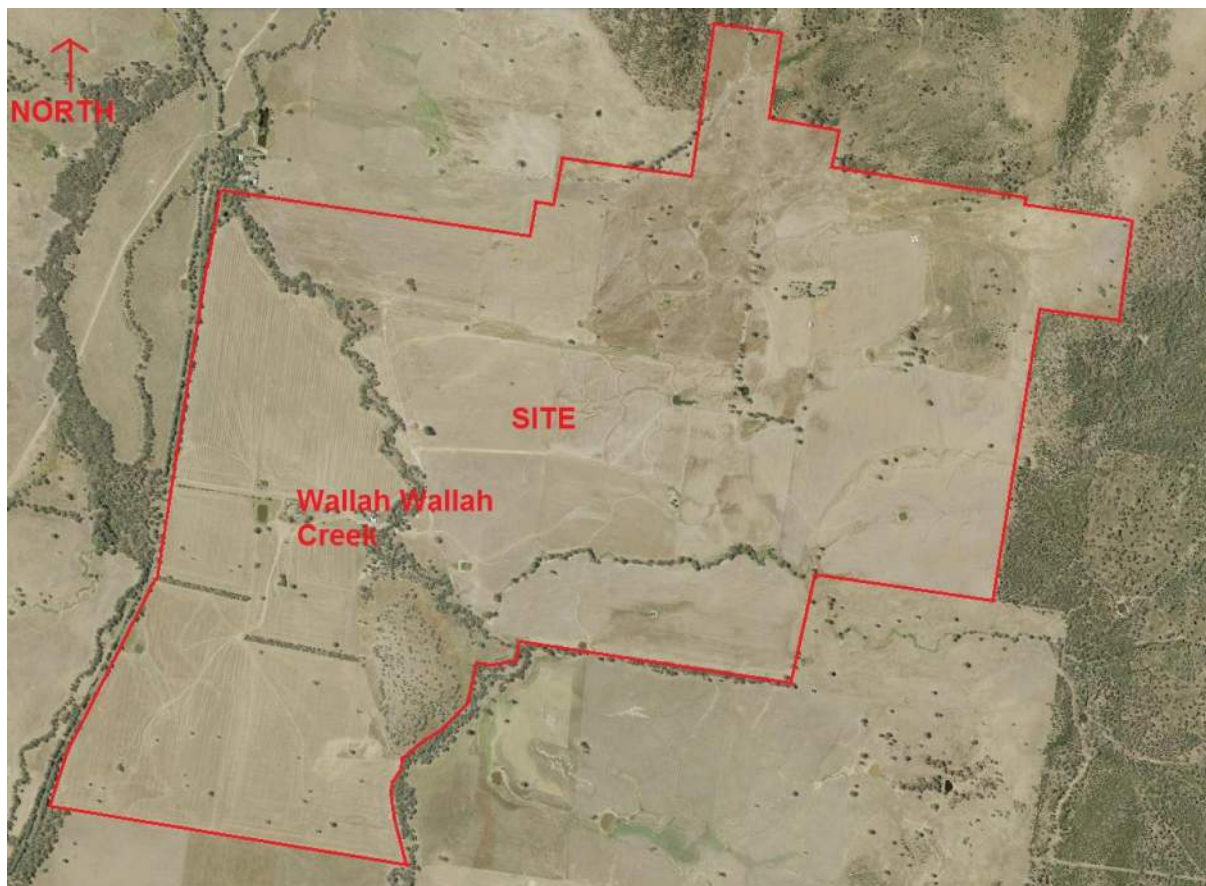


Figure 2 – Site Location

### **3.2 Topography and Existing Site Drainage**

The site is currently vacant, cleared of most vegetation and utilised for grazing and cropping land. Wallah Wallah Creek traverses the site from the South to the North West. Wallah Wallah Creek feeds into Warraderry Creek at the site's North West boundary.

The site generally falls inwards, towards Wallah Wallah creek. A portion of the site located towards the South Western boundary falls West towards Gooloogong Road and Warraderry Creek.

Stormwater runoff from the site discharges as overland flow into Wallah Wallah Creek where it is conveyed into Warraderry Creek at the North West of the site.

There are existing catchments to the North, East and South of the site that drain via overland flow paths, informal creeks and Wallah Wallah Creek through the site.

## **4 SITE DATA**

Site data has been obtained from the following sources of information:

- Australian Rainfall and Runoff
- Bureau of Meteorology (BOM)
- Dial Before You Dig (DBYD)
- Discussions with relevant authorities
- New South Wales Environmental Protection Authority (EPA)
- Relevant reports
- Satellite imagery
- Site Inspection
- Survey plans
- Weddin Shire Council

## 5 STORMWATER

### 5.1 Flooding

The site is subject to flooding. The flooding aspects of the proposed development are addressed in the Hydraulic Impact Assessment Report prepared by Stormflood Engineering Pty Ltd lodged under separate cover.

The new swale diversions, access roads and new bridge across Wallah Wallah Creek have been sized from the flood assessments.

### 5.2 Site Based Stormwater Management Plan

The aim of the Stormwater Management Plan outlined below is to:

- Prevent or minimise adverse social or environmental impacts from stormwater runoff originating from the proposed development.
- Achieve acceptable levels of stormwater runoff quality and quantity.

The Stormwater Management Plan aims to identify Stormwater Quantity and Quality Best Management Practice for the site and demonstrate that water quantity and quality impacts will be minimised in receiving waters.

The Stormwater Management Plan outlines the site in two sections, the operational phase and the construction phase. The operational phase addresses treatment of contaminated runoff from the developed site by natural methods before discharging into receiving waters whilst the construction phase of the Stormwater Management Plan addresses erosion and sediment control to prevent contamination of water sources by stormwater runoff during construction of the site.

### 5.3 Operational Phase

#### 5.3.1 Proposed Site Drainage

Roofwater and stormwater runoff from each farm will be collected and conveyed in a new internal stormwater open swale and pit and pipe network, prior to discharge to five separate detention basins.

The runoff from the shed roof areas and surrounding pavements will discharge to swales between the sheds which will then be conveyed to the detention basins via a new pipe system under the surrounding road

A separate stormwater system is proposed for each of the four farms. Roofwater and stormwater runoff from each farm will drain to Wallah Wallah Creek with the exception of Farm 1 which is situated on top of a ridge. Flows from the Eastern half of Farm 1 will drain to Wallah Wallah Creek, whilst the Western half will drain to the West of the site where it enters Warraderry Creek.

Farm 1 will therefore have two separate detention basins and Farms 2-4 will have one basin each.

Treated stormwater will discharge from the basins via v notch weirs into the existing natural overland flow paths as per the existing condition.

The existing overland flow paths will be diverted around the new building locations via open swales and channelised to new culvert systems constructed under the new access roads. The culvert systems will ensure the new roads are passable during the major flood events maintaining access to the new sheds.

A new bridge for the development will be constructed over Wallah Wallah Creek with immunity from the major flood events. This bridge will provide access to sheds 2-4 from Gooloogong Road.

The proposed site stormwater infrastructure is shown on MPN General Arrangement and Stormwater plans attached in Appendix 2.

### 5.3.2 Stormwater Quantity Management Strategy

For the management of stormwater quantity for the proposed development, a DRAINs computer model was used to calculate the stormwater runoff quantity for the existing and post-development conditions.

In order to limit the site stormwater discharge, stormwater runoff from each farm will be detained in five separate above ground basins. The basins have been oversized to compensate for the negligible increase in stormwater runoff from the internal roads which will bypass detention. The location and configuration of the basins are shown on MPN General Arrangement and Stormwater Plans attached in Appendix 2. The properties of the basins are listed in Table 1 below.

Parameter	Detention Basin 1E	Detention Basin 1W	Detention Basin 2	Detention Basin 3	Detention Basin 4
Storage (incl. Freeboard)	1,748m <sup>3</sup>	1,524m <sup>3</sup>	3,491m <sup>3</sup>	2,954m <sup>3</sup>	3,392m <sup>3</sup>
Outlet (V-Notch Weir)	2.22m Width @ RL 343.11 1.11m High	2.48m Width @ RL 344.24 1.24m High AND 225mm dia low flow pipe @ IL 343.0m	2.5m Width @ RL 340.25 1.25m High	2.58m Width @ RL 368.79 1.29m High	2.52m Width @ RL 359.28 1.26m High
Invert Level	RL 342.0	RL 343.0	RL 339.0	RL 367.5	RL 358.0
Q100 Water Level	RL 342.81	RL 343.94	RL 339.95	RL 368.49	RL 358.98
Top of Bund (min)	RL 343.11	RL 344.24	RL 340.25	RL 368.79	RL 359.28
Freeboard	0.30m	0.30m	0.30m	0.30m	0.30m

Table 1 – Detention Basin Properties

Runoff flows for the Annual Recurrence Intervals from 5 to 100 years and durations of 5 minutes to 2 hours were calculated to ensure that peak runoff flows from the proposed development would not exceed peak runoff flows from the existing site. The most critical stormwater events for the site's catchment are compared in Table 2 below.

ARI	Existing Discharge from Site (m <sup>3</sup> /sec)	Proposed Discharge from Site (m <sup>3</sup> /sec)
5	2.86	2.24
10	3.84	2.73
20	5.32	3.39
50	7.00	4.13
100	8.67	4.85

Table 2 – Existing and Proposed Peak Flows with Detention

### 5.3.3 Stormwater Quality Management Strategy

In order to reduce overall post-development pollutant loads and concentrations being discharged from the site, treatment solutions have been provided to remove hydrocarbons, suspended solids and nutrients prior to being discharged from site.

#### 5.3.3.1 Potential Pollutants Generated

The pollutants that could be potentially generated as a result of the development use are as follows:

- Litter
- Sediment
- Nutrients (Nitrogen and Phosphorous)
- Hydrocarbons (oils and grease)
- Surfactants
- Pathogens/Faecal Coliforms (bacteria and viruses)

The MUSIC computer modelling program developed by the Co-operative Research Centre for Catchment Hydrology was used to predict the performance of the proposed stormwater treatment train.

At this stage the pollutants modelled in MUSIC are Total Suspended Solids (TSS), Total Phosphorous (TP) and Total Nitrogen (TN).

#### 5.3.3.2 Rainfall

The rainfall data used in the model was based on the Bureau of Meteorology data from rainfall station 063023 Cowra Research Centre (Evans St). The model was run from 31 October 1941 to 28 February 2010. The modelling time step was 6 minutes. Mean PET values were derived from the Climatic Atlas of Australia maps of evapotranspiration.

### 5.3.3.3 Rainfall Runoff Properties

The rainfall runoff properties listed in Table 3 below were adopted for the MUSIC modelling undertaken for the development.

PARAMETER	VALUE		
	Roof	Road	Ground Level
Rainfall Threshold (mm)	0.3	1.5	1.5
Soil Storage Capacity (mm)	100	100	100
Initial Storage (% of capacity)	25	25	25
Field Capacity (mm)	87	87	87
Infiltration Capacity Co-efficient a	250	250	250
Infiltration Capacity Co-efficient b	1.3	1.3	1.3
Initial Depth (mm)	10	10	10
Daily Recharge Rate (%)	60	60	60
Daily Base Flow Rate (%)	45	45	45
Deep Seepage (%)	0	0	0

Table 3 – MUSIC Rainfall Runoff Parameters

### 5.3.3.4 Pollutant Export Parameters

The adopted Pollutant Export Parameters for each source node type are presented in Table 4 below.

Runoff pollutant concentrations are generated stochastically from the defined mean and standard deviation.

		Log10 TSS (mg/L)		Log10 TP (mg/L)		Log10 TN (mg/L)	
		Base Flow	Storm Flow	Base Flow	Storm Flow	Base Flow	Storm Flow
Roof	Mean	0	1.30	0	-0.89	0	0.30
	Std. Dev.	0	0.32	0	0.25	0	0.19
Roads	Mean	0	2.43	0	-0.30	0	0.34
	Std. Dev.	0	0.32	0	0.25	0	0.19
Ground Level	Mean	1.20	3.00	-0.85	-0.30	0.11	0.34
	Std. Dev.	0.17	0.32	0.19	0.25	0.12	0.19

Table 4 – Pollutant Export Parameters

### 5.3.3.5 Water Quality Objectives

In the absence of specific Water Quality Objectives from Weddin Shire Council, the industry standard pollutant reduction targets listed in Table 5 below have been adopted.

WATER QUALITY OBJECTIVES				
Total Suspended Solids (TSS) % Reduction	Total Nitrogen (TN) % Reduction	Total Phosphorous (TP) % Reduction	Litter/ Gross Pollutants % Reduction	Oils/ Grease
85	45	65	90	No visible films or odours

Table 5 – Water Quality Objectives

### 5.3.3.6 Treatment Plan

In order to achieve the pollutant load reduction targets for the development, it is proposed to use natural treatment methods to treat the runoff prior to discharge from the site.

Stormwater runoff from the sheds will be treated by grassed swales and the detention basins prior to discharge to receiving waters.

Stormwater runoff from the internal roads will be treated by a roadside swale proposed along the low side of the road.

The swales and detention for the site is depicted on the MPN General Arrangement and Stormwater Plans attached in Appendix 2, with MUSIC excerpt shown below.

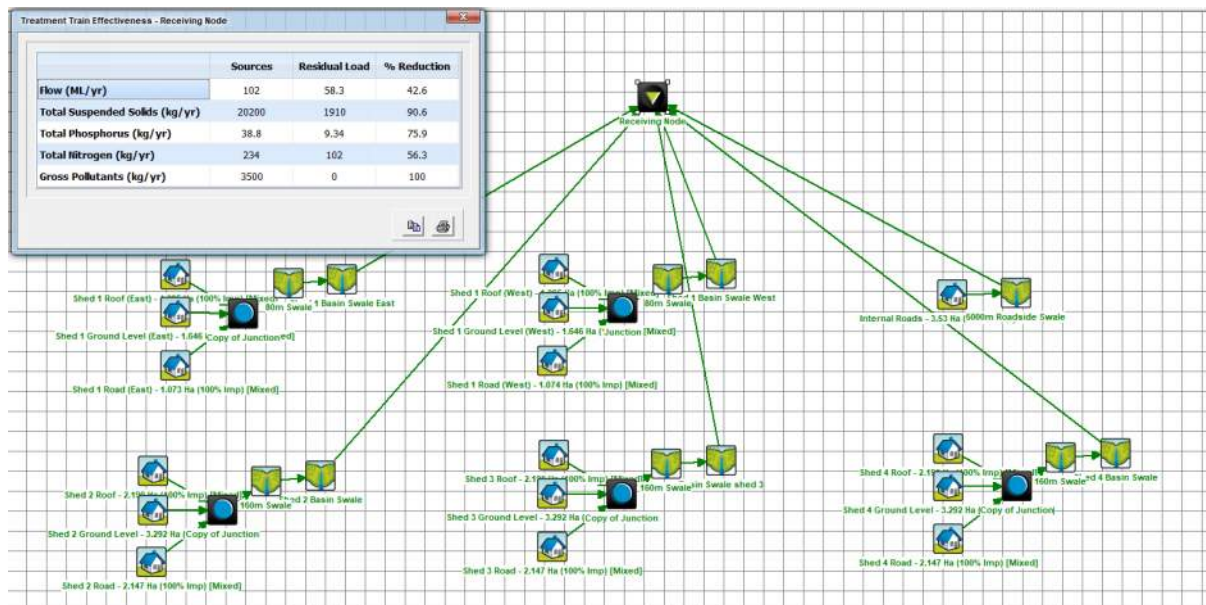


Figure 3 – Treatment Plan

### 5.3.3.7 MUSIC Results

The resulting percentage-based load reductions at the site outlet is shown in Table 6 below, together with the Water Quality Objectives for the receiving waters.

	Sources	Residual Load	% Reduction	Target %
Total Suspended Solids (kg/yr)	20200	1910	90.6	85
Total Phosphorous (kg/yr)	38.8	9.34	75.9	65
Total Nitrogen (kg/yr)	234	102	56.3	45
Gross Pollutants (kg/yr)	3500	0	100	90

Table 6 – Percentage Based Load Reduction Results

### 5.3.3.8 POD Pollutant Reduction

#### 5.3.3.8.1 Litter

Rubbish bins will be located within the development buildings for use by staff and visitors. As a result of this, levels of litter exiting the site via stormwater are expected to be negligible.

#### 5.3.3.8.2 Sediment

The TSS outflow is identified in Table 6 above. As can be seen the pollutant load reduction achieves the Water Quality Objectives. The TSS level is therefore considered acceptable.

#### 5.3.3.8.3 Nitrogen and Phosphorous

The TN and TP loads are identified in the above Table 6. As can be seen the TN and TP loads leaving the site achieve the Water Quality Objectives. Significant reductions in Nitrogen and Phosphorous have been achieved. The Nitrogen and Phosphorous residual loads are therefore considered acceptable.

#### 5.3.3.8.4 Hydrocarbons

Hydrocarbons will be digested and processed by soil microorganisms within the swales and attachment to vegetation where biological breakdown of the hydrocarbons can occur.

#### 5.3.3.8.5 Surfactants

If car or truck washing occurs on site it will be within a bunded area where surfactants will be captured and treated prior to discharging into the stormwater network.

#### 5.3.3.8.6 Heavy Metals

Heavy metals in stormwater runoff generally become attached to fine sediment. The swales will remove the majority of this fine sediment. The removal of the fine sediment should effectively remove most of the heavy metals in the runoff.

#### 5.3.3.8.7 Pathogen/ Faecal Coliforms

Live birds will be contained inside the sheds and as such will not affect stormwater quality.

### 5.3.3.9 Proposed Stormwater Quality Treatment Devices

#### 5.3.3.9.1 Locations

The location of the proposed stormwater quality treatment devices is shown on the MPN General Arrangement and Stormwater Plans, attached in Appendix 2.

A single basin along with treatment and conveyance swales will be provided for sheds 2-4 with two basins and the associated swales for shed 1.

#### 5.3.3.9.2 Device and Size

The device type and sizes are shown on the MPN General Arrangement and Stormwater Plans, attached in Appendix 2.

### 5.3.4 Construction Phase (Sediment and Erosion Control)

#### 5.3.4.1 Intent of Erosion and Sediment Control Management Plan

To prevent stormwater contamination (of watercourses) and the release of contaminated stormwater and wastewater by ensuring compliance with the Protection of the Environment Operations Act 1997. The following documentation has been consulted as part of the concept designs and will be utilised for the finalisation of the detail design plans.

Managing Urban Stormwater: Soils & Construction (Landcom, 2004)

Soil and Landscape Issues in Environmental Impact Assessment (DLWC, 2000)

Wind Erosion – 2nd Edition (DIPNR, 2003)

The site earthworks will be staged so as to minimise the area of soil exposed to surface runoff and wind mitigating the erosion potential over the site. Concept Erosion and Sediment Control plans have been provided as part of this report to illustrate the design intent with detail design to be completed with the overall site detail design package.

The proposed detention basins around the sheds will be utilised as sedimentation basins during the construction phase. The Erosion and Sediment Control concept plans are attached in Appendix 2.

#### 5.3.4.2 Implementation Strategy

Establish control measures and best practice approaches to prevent stormwater contamination and minimise the risk and adverse effects of erosion and sedimentation. All Erosion and Sediment Control measures must be designed, constructed and maintained in a manner that is commensurate with the site's erosion risk.

#### 5.3.4.3 Erosion and Sediment Control Measures

- Obtain a license or approval to operate activities that are classed as environmental relevant activities (i.e. they have the potential to cause environmental harm).
- Implement and maintain appropriate control measures to prevent sediment laden wastewater and other potential pollutants such as oil, paint and wet concrete from entering the stormwater system via stormwater drains and gullies. The control measures which must be considered to be adopted are:
  - Limitation of site access during construction to minimise disruption to traffic. Install a temporary construction entry/ exit sediment trap at all site accesses to minimise mud and sediment from the site being tracked onto public road, particularly during wet weather or when the site is muddy.
  - Install and maintain appropriate sediment fences around construction areas.

- Divert clean stormwater runoff, using catch drains, around construction areas to existing or new stormwater drainage system.
- Install sandbags and other pollution containment devices around stormwater drains and any other locations where required to prevent sediment entering the trunk stormwater system.
- Cover open earth/ soil areas progressively (with concrete slabs and pavements or mulch) to minimise areas of bare earth/ soil.
- Any stockpiles of excavated soil and demolition/ construction waste must be located where risk of erosion and sedimentation is minimal, and must be protected from wind and water erosion.
- Implement and maintain appropriate control measures such as catch drains and sediment fences to prevent ponding of stormwater or discharge of stormwater from the site to adjacent properties.
- Provision of spill/ pollution control equipment that is readily accessible to clean up spills and leaks.
- Ensure spill/ pollution control measures are available and maintained in working condition.
- Sediment contained by the sediment control devices such as sandbags, sediment fences and containment bunds must be frequently removed and placed in a controlled area.
- Implement an inspection schedule for any spill or leaks of any potential polluting areas or activities.

#### 5.3.4.4 Erosion and Sediment Control Management Goals

- Licenses, approvals, permits and inspection reports are in order.
- Sediment or pollution control devices such as sandbags, sediment fences and containment bunds are in place, maintained and effective.
- Spill/ pollution control equipment is readily accessible at designated locations.
- No accumulated sediment is contained by the sediment control devices such as hay bales, sediment fences and containment bunds.
- No sediment exceeding a depth of 300mm in the pollution control devices (e.g. silt trap).

#### 5.3.4.5 Erosion and Sediment Control Implementation Program

- Licenses, permits or approvals for each environmentally relevant activity must be obtained prior to the commencement of the particular activity.
- Appropriate control measures such as sediment fences, temporary construction entry/ exit sediment traps, pollution containment devices (e.g. sandbags), stormwater diversion and administrative controls must be installed and established prior to commencement of the earthworks and construction activities.
- Pollution control devices such as spill control equipment must be inspected on a regular basis (at least weekly).
- Other sediment and pollution control equipment such as containment bunds, hay bales and sediment fences must be inspected on a regular basis (at least daily).
- Inspection for any leaks, spills or potential contaminating activity must be performed on a regular basis (at least daily).
- Remove accumulated sediment or other contaminants from sediment/ pollution control devices on a regular basis.

- All erosion and sediment control measures must be inspected within 24 hours of expected rain and within 18 hours of a rainfall event.

#### 5.3.4.6 Responsible Person or Organisation

The contractor shall be responsible for the implementation and maintenance of the Erosion and Sediment Control Measures.

#### 5.3.4.7 Reporting/ Review

Records such as licenses, approvals, permits and inspection reports must be reviewed on a regular basis (e.g. at least monthly) to ensure that legal compliance is met, complaints are reviewed and systems are working to prevent contamination.

#### 5.3.4.8 Corrective Actions

- Perform clean-up of any spills immediately.
- Any mud or sediment which is tracked onto public roads is to be immediately removed using dry clean-up methods (i.e. shovel and broom).
- Remove or relocate any stockpiles of waste where there is a reasonable risk of erosion and sedimentation.
- Replace or repair sediment or pollution control devices if they are not maintained in good working condition.

## 6 CONCLUSION

This Stormwater Management Plan demonstrates that under the proposed concept plan, stormwater quality and quantity treatment is achievable to the levels required by Weddin Shire Council and Industry Best Management Practice.

Site Sediment and Erosion Control measures will be implemented to prevent rain and wind erosion of subsoils. The final detention basins for the shed sites will be used as sedimentation basins during the construction phase.

Stormwater detention and quality treatment will be provided for each of the four proposed farms. Farm 1 will have two detention basins located to treat stormwater runoff prior to discharge from the site, whilst Farms 2-4 will have a single detention basin to treat each shed site.

The basins will be oversized to compensate for the area of internal road which bypasses detention.

Swales located between the sheds within the farms will convey the stormwater and roofwater runoff to the basins. A roadside swale is proposed along the low side of the internal roads to provide stormwater treatment and ensure a non-worsening before discharging to Wallah Wallah Creek. The diversion and roadside swales will be conveyed under the new access roads by culvert systems which are sized to ensure conveyance of flows whilst achieving immunity to the roads.

A new bridge will be constructed over Wallah Wallah Creek to provide access to sheds 2-4 during major flood events.

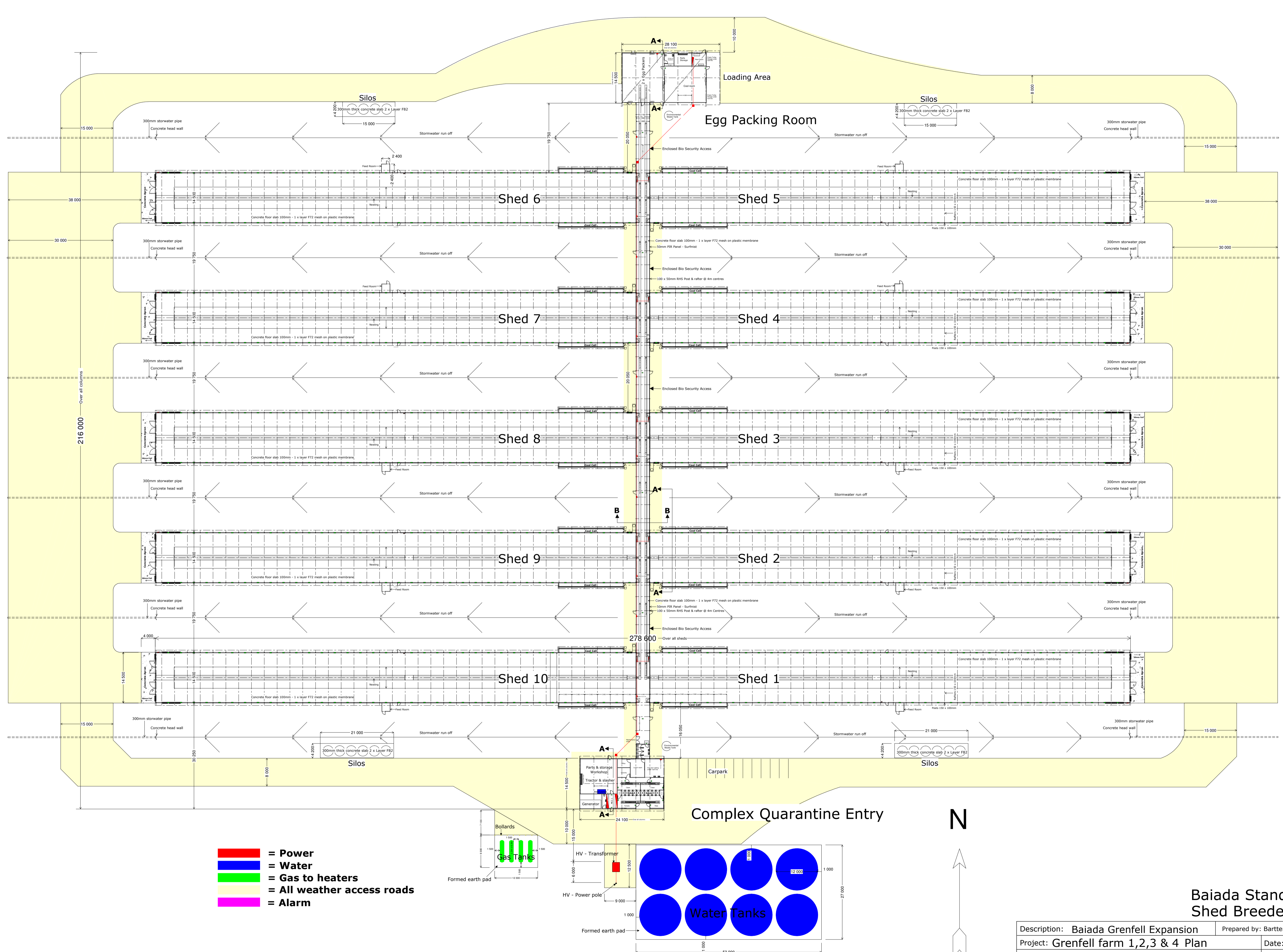
## 7 LIMITATIONS OF REPORT

MPN have prepared this report for the proposed Grenfell farms in accordance with MPN's proposal to Baiada Properties Pty Limited. This report is provided for the exclusive use of Baiada Properties Pty Limited for this specific project and its requirements. It should not be used or relied upon by a third party and MPN accept no responsibility for the use of this report by any party other than Baiada Properties Pty Limited.

27 August 2021



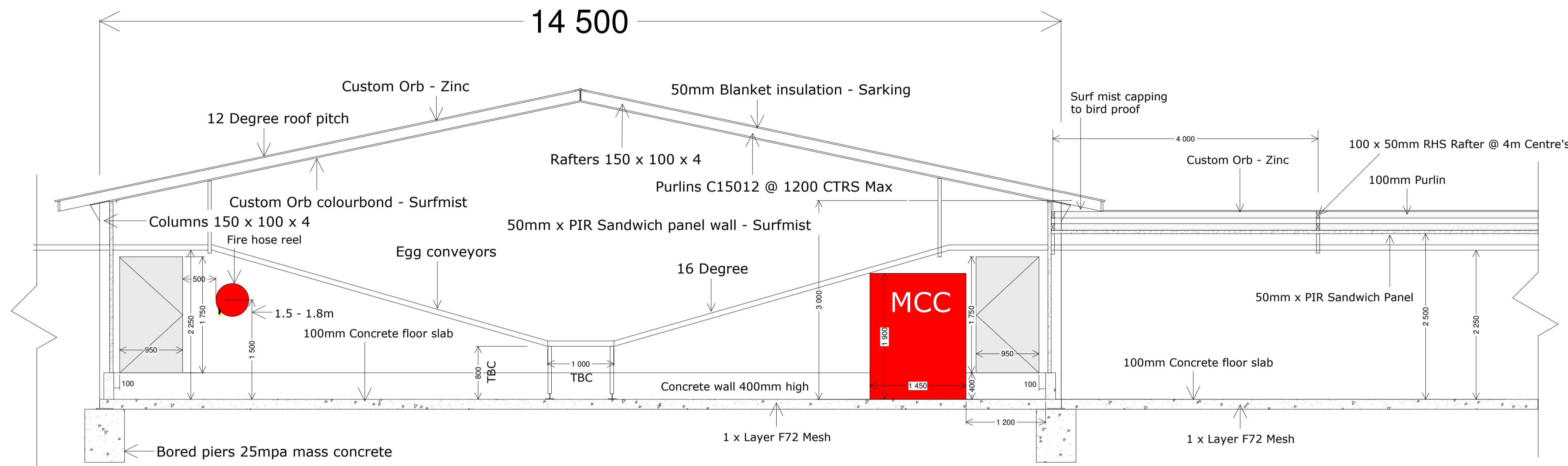
**Appendix 1  
Layout Plans**



- █ = Power
- █ = Water
- █ = Gas to heaters
- █ = All weather access roads
- █ = Alarm

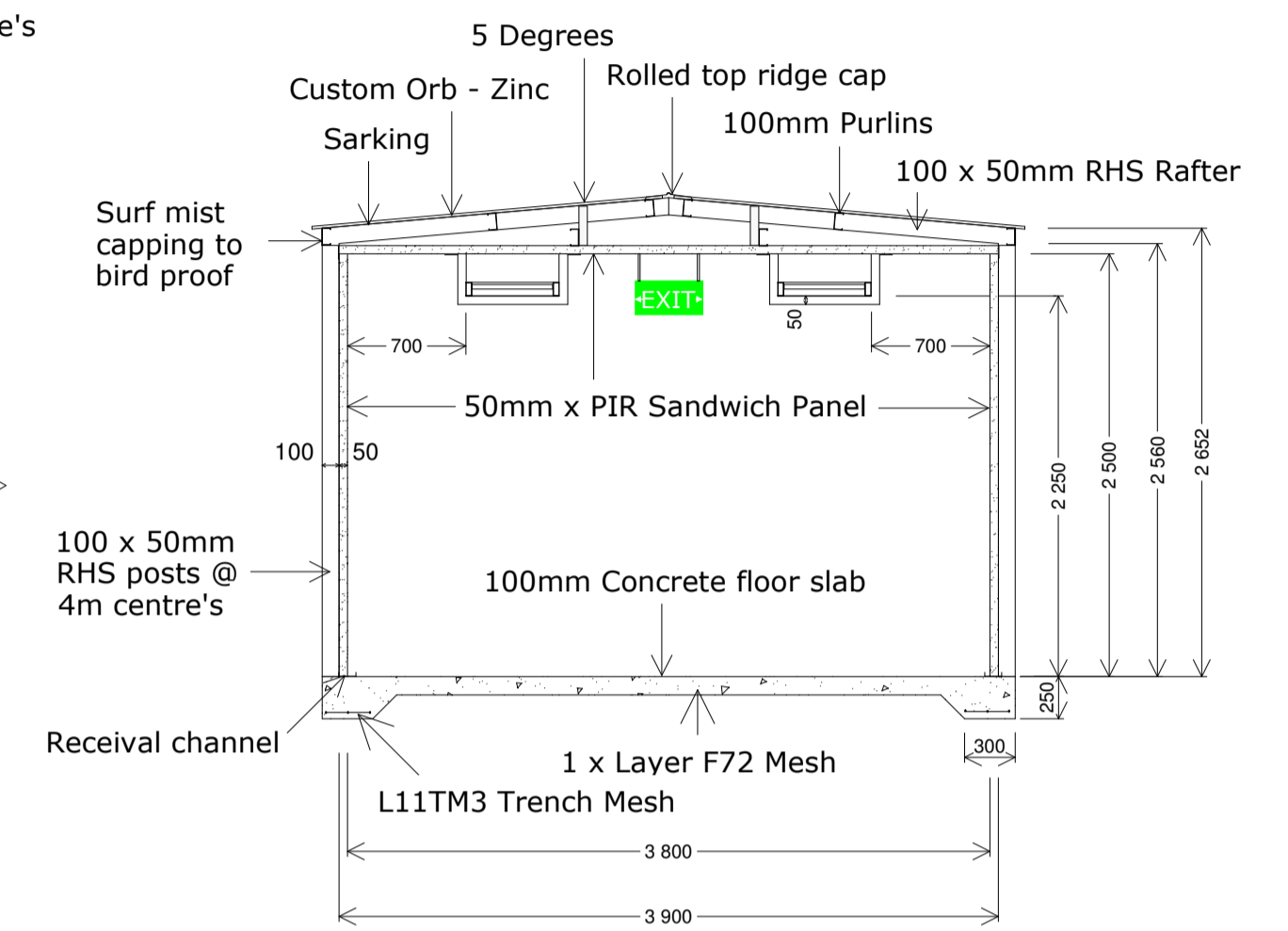
Street Address: 1130 Gooloogong Road. Town: Grenfell NSW 2810. Local Government area : Weddin shire council. Lot 1 DP1022013, Lot 1 - 3 DP1206485 & Lot 22 DP866857. Site: 598ha. Site is located approximately 9.4km north of the town of Grenfell.

Description: Baiaida Grenfell Expansion		Prepared by: Bartter Enterprises Pty Limited	
Project: Grenfell farm 1,2,3 & 4 Plan		Date: 18th Mar 2021	
Client:	Baiaida Properties Pty Limited c/- PSA Consulting, PO Box 10824 Adelaide Street, Brisbane QLD 4000	Scale: 1 : 500	A1
Revision No:		Drawn:	DD
		Drawing Number:	1 of 8

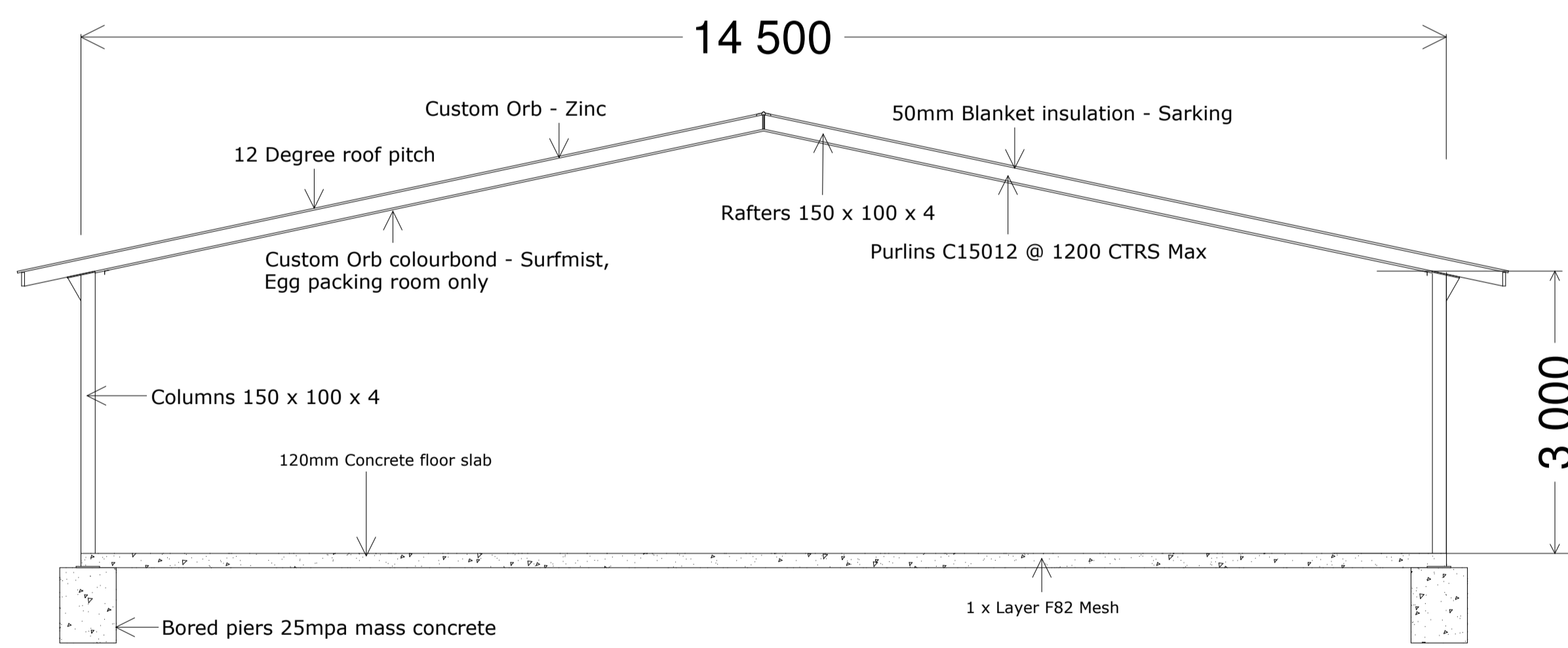


Shed Section A - A

Enclosed Access Section A - A



Enclosed Access Section B - B



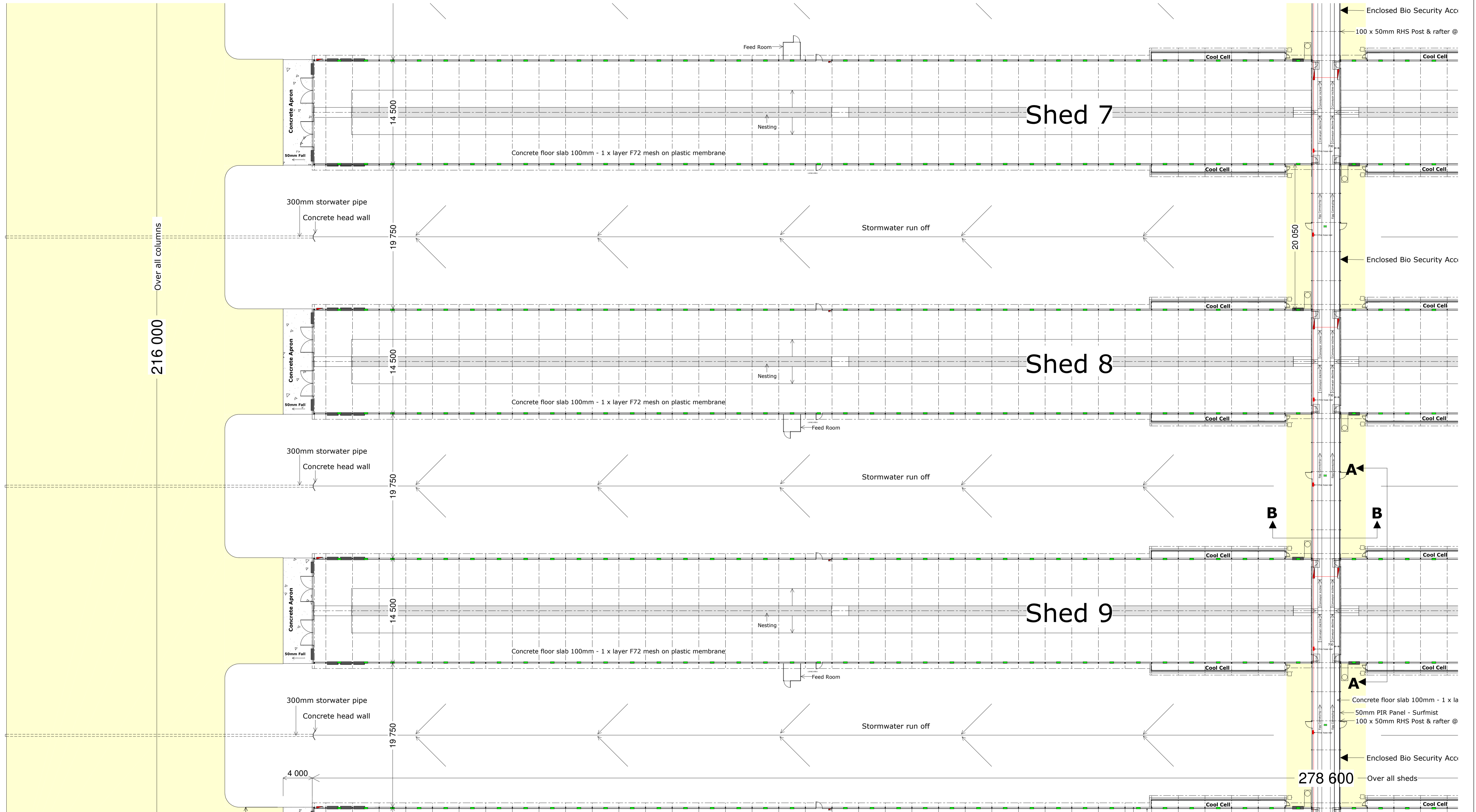
Egg packing building - Section A - A



Street Address: 1130 Gooloogong Road. Town: Grenfell NSW 2810. Local Government area : Weddin shire council. Lot 1 DP1022013, Lot 1 - 3 DP1206485 & Lot 22 DP866857. Site: 598ha. Site is located approximately 9.4km north of the town of Grenfell.

**Baiaida Standard 10 x Shed Breeder Complex**

Description: Baiaida Grenfell Expansion		Prepared by: Bartter Enterprises Pty Limited	
Project: Grenfell farm 1,2,3 & 4 Sections		Date: 18th Mar 2021	
Client:		Scale: 1 : 40 & 1 : 50 A1	
Baiaida Properties Pty Limited c/- PSA Consulting, PO Box 10824 Adelaide Street, Brisbane QLD 4000		Revision No:	
		Drawn: DD	Drawing Number: 2 of 8



Street Address: 1130 Gooloogong Road. Town: Grenfell NSW 2810. Local Government area :  
 Weddin shire council. Lot 1 DP1022013, Lot 1 - 3 DP1206485 & Lot 22 DP866857. Site: 598ha.  
 Site is located approximately 9.4km north of the town of Grenfell.

**Baiaida Standard 10 x  
 Shed Breeder Complex**

Description: Baiaida Grenfell Expansion		Prepared by: Bartter Enterprises Pty Limited	
Project: Grenfell farm 1,2,3 & 4 Plan Portion		Date: 18th Feb 2021	
Client:	Baiaida Properties Pty Limited c/- PSA Consulting, PO Box 10824 Adelaide Street, Brisbane QLD 4000	Scale: 1 : 250	A1
		Revision No:	
		Drawn: DD	Drawing Number: 3 of 8



North Elevation



South Elevation




East Elevation

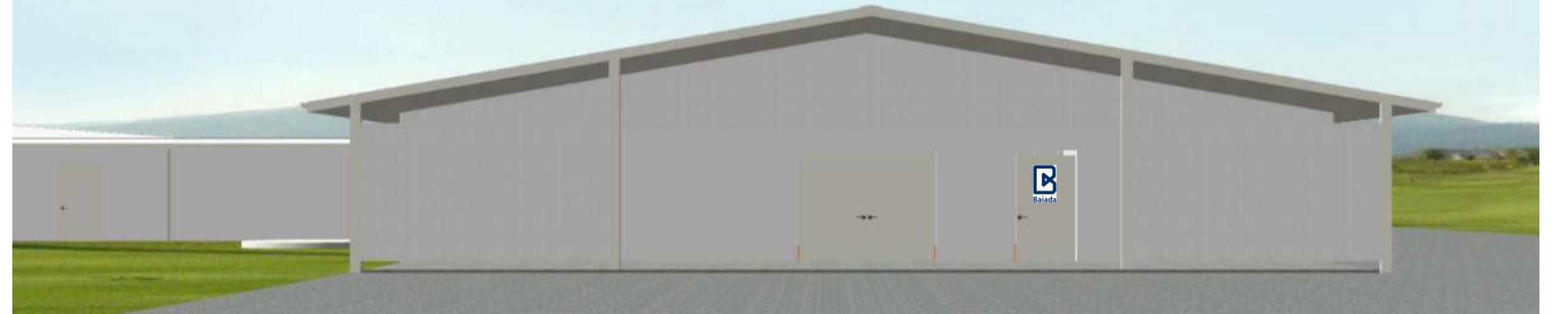
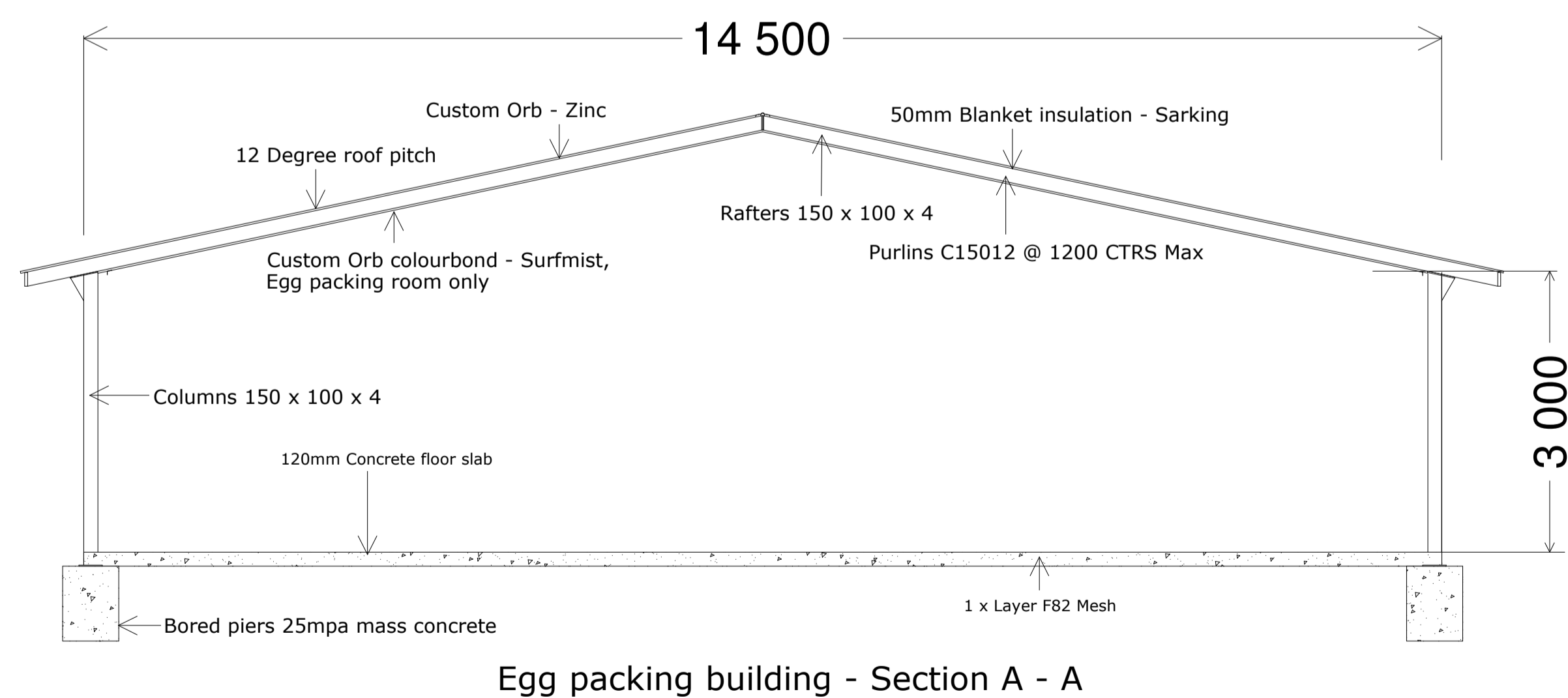
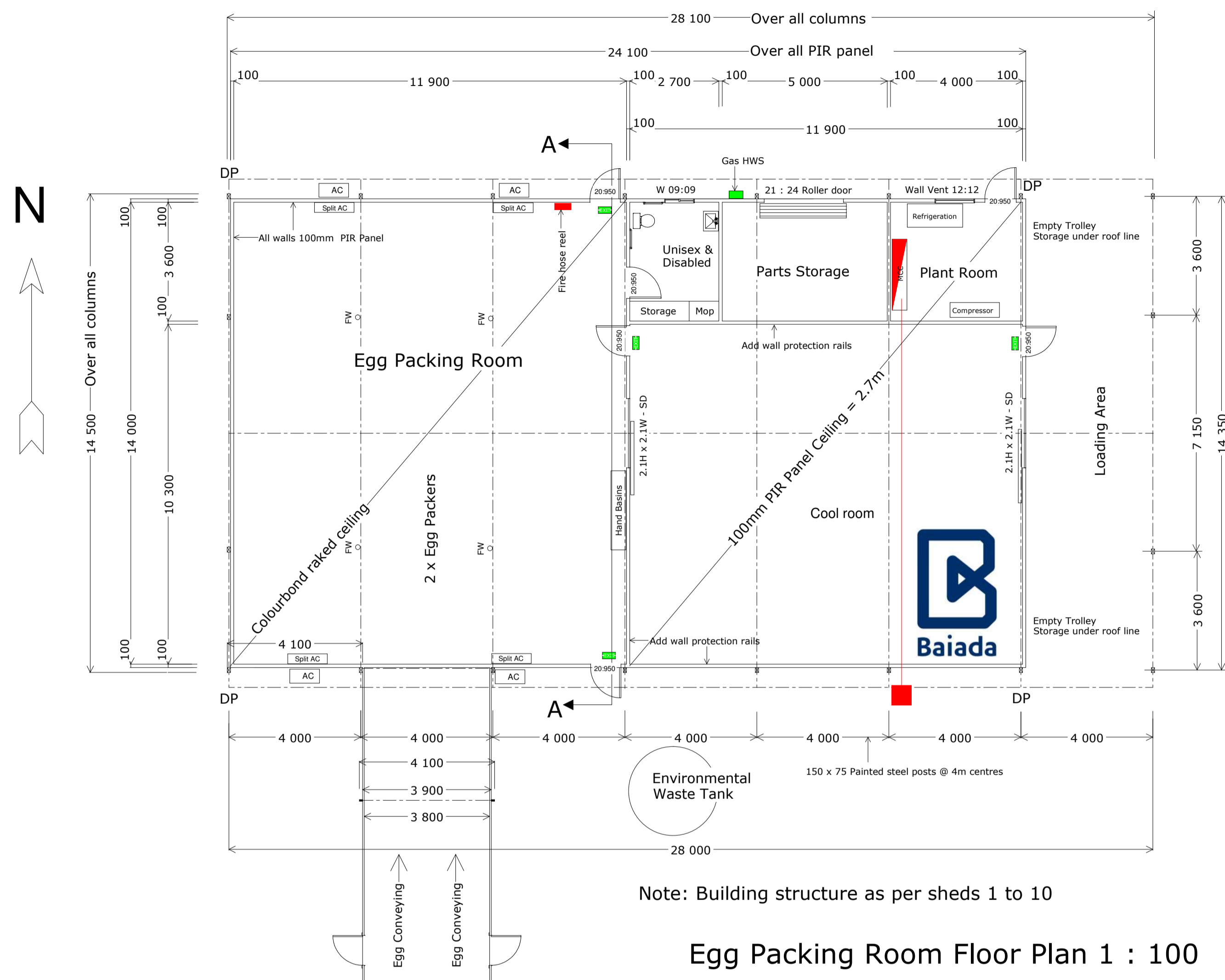


West Elevation

**Baiaida Standard 10 x  
Shed Breeder Complex**

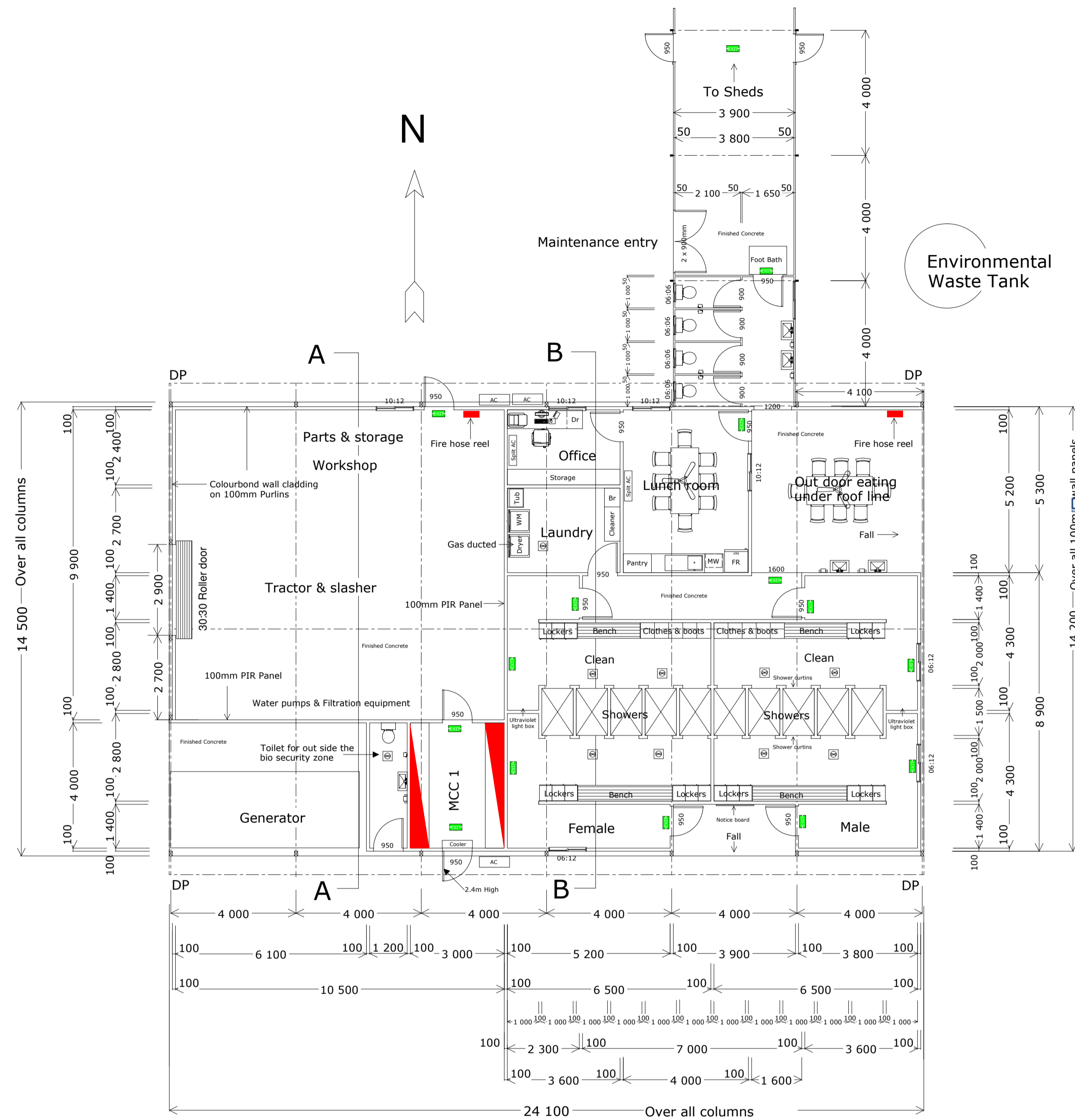
Street Address: 1130 Gooloogong Road. Town: Grenfell NSW 2810. Local Government area :  
Weddin shire council. Lot 1 DP1022013, Lot 1 - 3 DP1206485 & Lot 22 DP866857. Site: 598ha.  
Site is located approximately 9.4km north of the town of Grenfell.

Description: Baiaida Grenfell Expansion		Prepared by: Bartter Enterprises Pty Limited	
Project: Grenfell farm 1,2,3 & 4 Elevations		Date: 18th Feb 2021	
Client:		Scale: 1:400 & 1:100 A1	
 Baiaida Properties Pty Limited c/- PSA Consulting, PO Box 10824 Adelaide Street, Brisbane QLD 4000		Revision No:	
		Drawn: DD	Drawing Number: 4 of 8



Street Address: 1130 Gooloogong Road. Town: Grenfell NSW 2810. Local Government area : Weddin shire council. Lot 1 DP1022013, Lot 1 - 3 DP1206485 & Lot 22 DP866857. Site: 598ha. Site is located approximately 9.4km north of the town of Grenfell.

Description: Baiada Grenfell Expansion		Prepared by: Bartter Enterprises Pty Limited	
Project: Grenfell farm 1,2,3 & 4 Egg packing		Date: 18th Mar 2021	
Client:	Baiada Properties Pty Limited c/- PSA Consulting, PO Box 10824 Adelaide Street, Brisbane QLD 4000	Scale: NA	A1
Revision No:		Drawing Number:	
DD		5 of 8	



North East Elevation



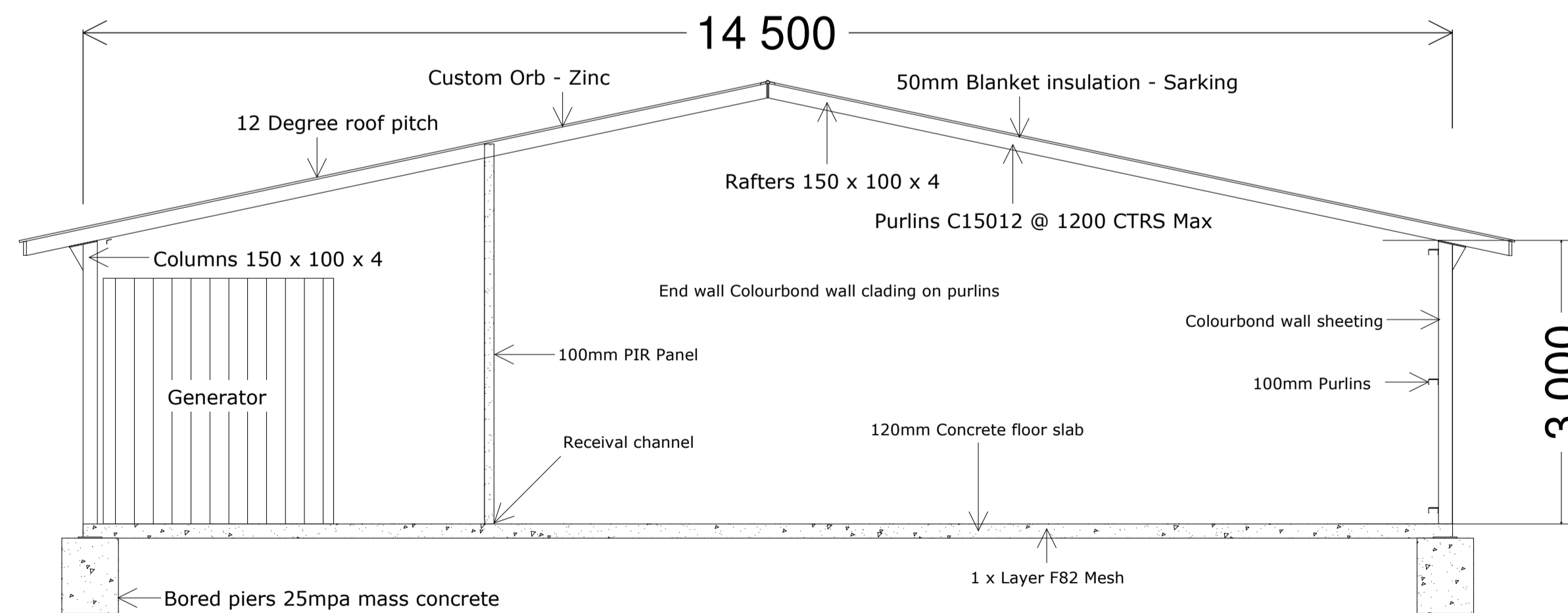
North Elevation



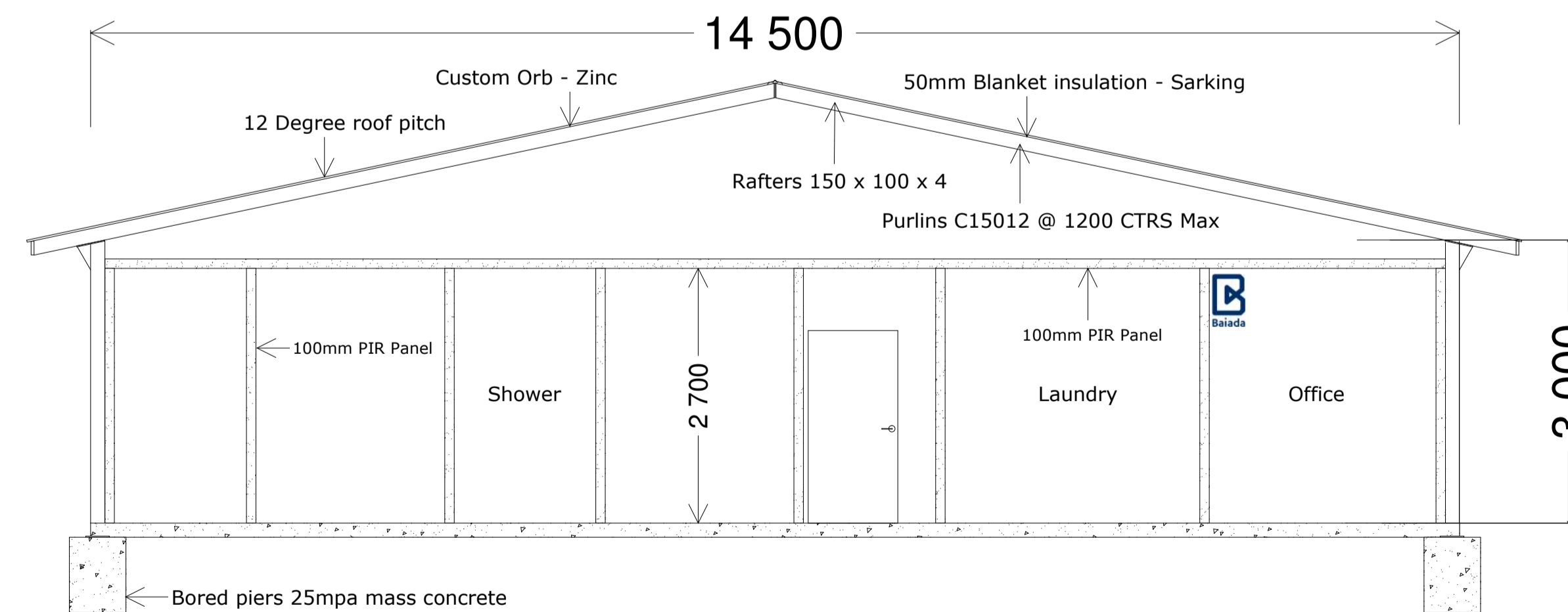
South Elevation



West Elevation



Amenties buildings - Section A - A



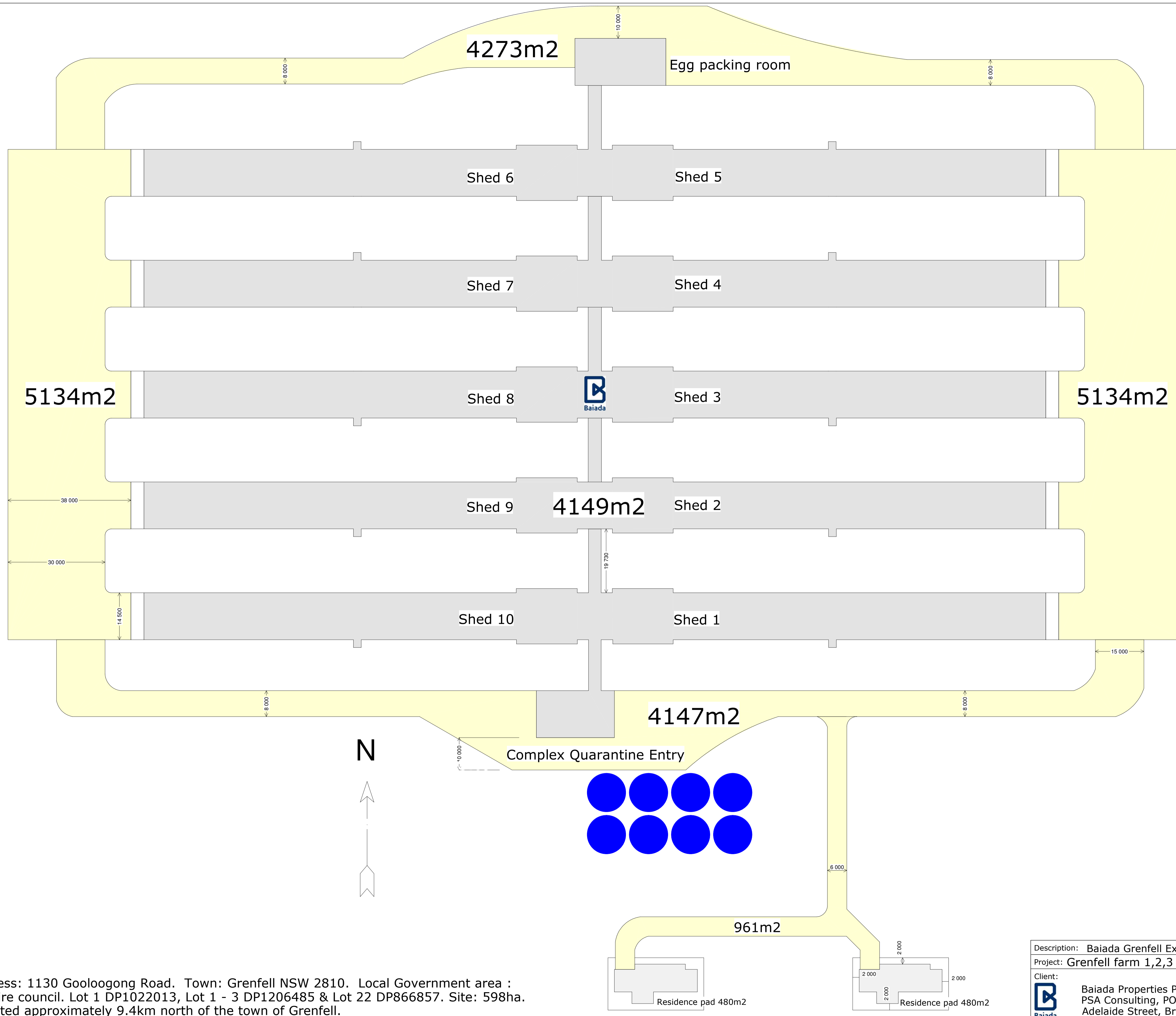
Amenties buildings - Section B - B

Street Address: 1130 Gooloogong Road. Town: Grenfell NSW 2810. Local Government area : Weddin shire council. Lot 1 DP1022013, Lot 1 - 3 DP1206485 & Lot 22 DP866857. Site: 598ha. Site is located approximately 9.4km north of the town of Grenfell.

**Baiaida Standard 10 x Shed Breeder Complex**

Description: Baiaida Grenfell Expansion		Prepared by: Bartter Enterprises Pty Limited	
Project: Grenfell farm 1,2,3 & 4 Entry building		Date: 18th Mar 2021	
Client: Baiaida Properties Pty Limited c/- PSA Consulting, PO Box 10824 Adelaide Street, Brisbane QLD 4000		Scale:	A1
Revision No:		Drawn:	DD
		Drawing Number:	6 of 8





Street Address: 1130 Gooloogong Road. Town: Grenfell NSW 2810. Local Government area : Weddin shire council. Lot 1 DP1022013, Lot 1 - 3 DP1206485 & Lot 22 DP866857. Site: 598ha. Site is located approximately 9.4km north of the town of Grenfell.

**Baiaida Standard 10 x Shed Breeder Complex**

Description: Baiaida Grenfell Expansion		Prepared by: Bartter Enterprises Pty Limited	
Project: Grenfell farm 1,2,3 & 4 Foot Print		Date: 18th Mar 2021	
Client:		Scale: A1	
Baiaida Properties Pty Limited c/- PSA Consulting, PO Box 10824 Adelaide Street, Brisbane QLD 4000		Revision No:	
		Drawn: DD	Drawing Number: 8 of 8

27 August 2021



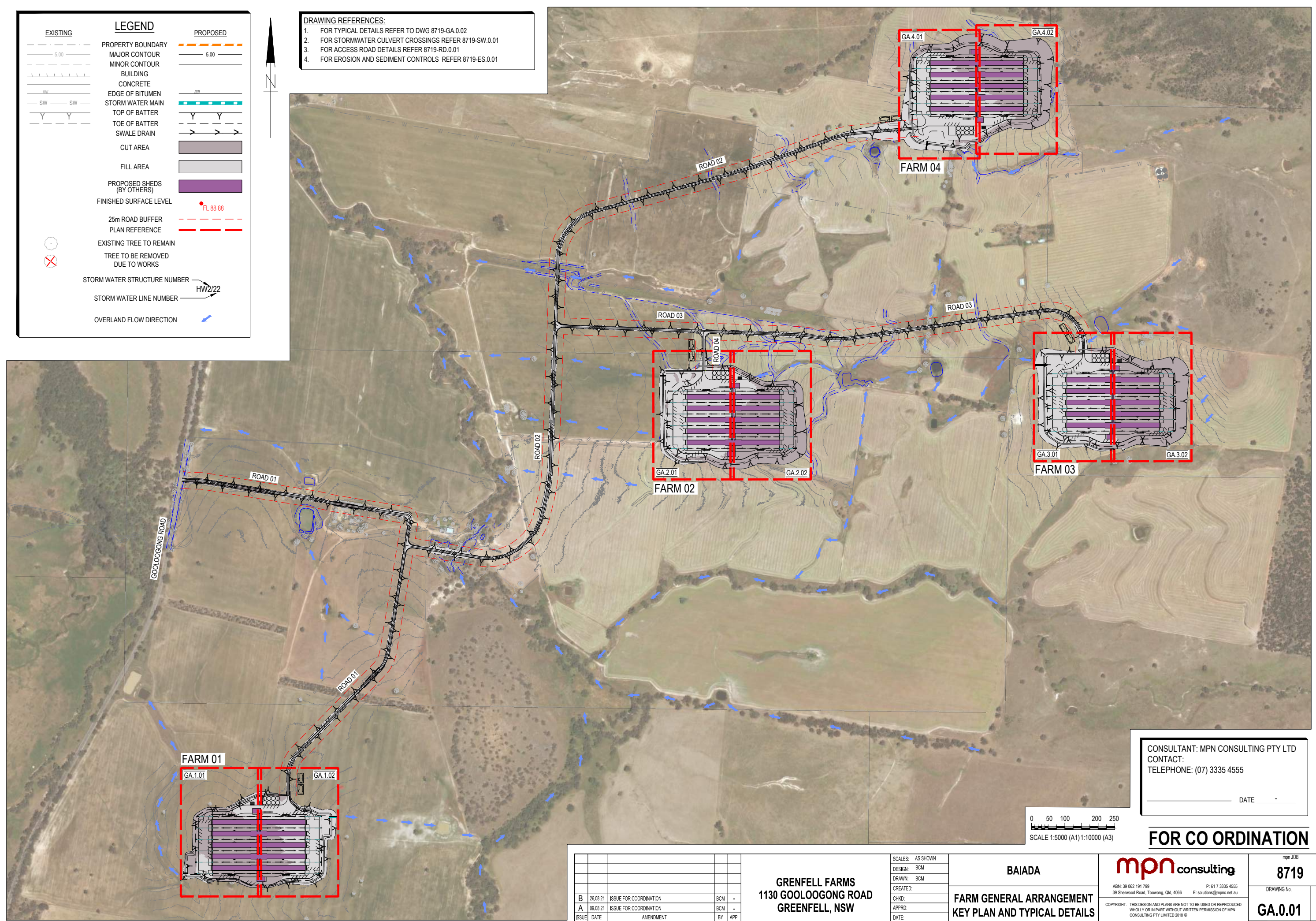
**Appendix 2  
MPN Plans**

**LEGEND**

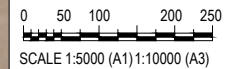
<b>EXISTING</b>		<b>PROPOSED</b>
--- 5.00 ---	PROPERTY BOUNDARY	--- 5.00 ---
-----	MAJOR CONTOUR	-----
- - - - -	MINOR CONTOUR	- - - - -
	BUILDING	
	CONCRETE	
--- SW --- SW	EDGE OF BITUMEN	--- SW --- SW
--- SW --- SW	STORM WATER MAIN	--- SW --- SW
Y Y	TOP OF BATTER	Y Y
Y Y	TOE OF BATTER	Y Y
--->--->	SWALE DRAIN	--->--->
	CUT AREA	█
	FILL AREA	█
	PROPOSED SHEDS (BY OTHERS)	█
	FINISHED SURFACE LEVEL	● FL 88.88
	25m ROAD BUFFER	--->---
	PLAN REFERENCE	---
○	EXISTING TREE TO REMAIN	
⊗	TREE TO BE REMOVED DUE TO WORKS	
	STORM WATER STRUCTURE NUMBER	HW2/22
	STORM WATER LINE NUMBER	---
	OVERLAND FLOW DIRECTION	→

**DRAWING REFERENCES:**

1. FOR TYPICAL DETAILS REFER TO DWG 8719-GA.0.02
2. FOR STORMWATER CULVERT CROSSINGS REFER 8719-SW.0.01
3. FOR ACCESS ROAD DETAILS REFER 8719-RD.0.01
4. FOR EROSION AND SEDIMENT CONTROLS REFER 8719-ES.0.01



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 DATE: \_\_\_\_\_



**FOR CO ORDINATION**

ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
 1130 GOOLOGONG ROAD  
 GREENFELL, NSW

SCALES: AS SHOWN  
 DESIGN: BCM  
 DRAWN: BCM  
 CREATED:  
 CHKD:  
 APPRD:  
 DATE:

**BAIADA**  
**FARM GENERAL ARRANGEMENT**  
**KEY PLAN AND TYPICAL DETAILS**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. REV  
**GA.0.01** B

**NOT FOR CONSTRUCTION**

## GENERAL NOTES

PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR IS TO IDENTIFY AND BE SATISFIED OF THE CORRECT LOCATION OF ALL EXISTING SERVICES WHETHER INDICATED OR NOT ON THE PLANS. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.

ANY WORK ON EXISTING SERVICES THAT REQUIRE RELOCATION BY AUTHORITIES SHALL BE CARRIED OUT BY THE RELEVANT AUTHORITY BUT WITHIN TERMS OF THE CONTRACT AND SHALL BE CO-ORDINATED BY THE CONTRACTOR.

PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR WILL PROVIDE SCOUR AND EROSION PROTECTION INCLUDING PROVISION OF SEDIMENT TRAPS AND FENCES TO MINIMISE DEPOSITION OF MATERIAL ONTO DOWNSTREAM OF THE PROPERTY AS INDICATED ON THE DRAWINGS.

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER WORKING DRAWINGS, SPECIFICATIONS AND REPORTS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF CONSTRUCTION. ALL DISCREPANCIES AND VARIATIONS SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL LEVELS ARE TO BE TO A.H.D LEVEL DATUM P.S.M. SURVEY ORIGIN IS PERMANENT BENCHMARK NO. SSM98145 RL 335.235 (MGA2020) LOCATED ON EASTERN SIDE OF GOOLOOGONG ROAD, CONTACT BATH STEWART ASSOCIATES ON Ph (02) 6766 5966 FOR MORE INFORMATION

ALL WORK TO CONFORM TO WEDDIN SHIRE COUNCIL OR IPWEA STANDARDS AND SPECIFICATIONS UNLESS OTHER WISE SHOWN ON PLANS OR DIRECTED BY THE SUPERINTENDENT.

ALL 'WORKS AS CONSTRUCTED' INFORMATION SHALL BE SUPPLIED IN BOTH HARD COPY AND ELECTRONIC DATA FORMAT TO THE RELEVANT AUTHORITIES REQUIREMENTS.

DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS.

'U.N.O.' STANDS FOR UNLESS NOTED OTHERWISE.

## IN CASE OF DOUBT, ASK!

## IMPORTANT SAFETY NOTICE

MPN CONSULTING PTY LTD RECOGNISES THE IMPORTANCE OF OCCUPATIONAL HEALTH AND SAFETY. HOWEVER, MPN CONSULTING PTY LTD HAS NOT BEEN ENGAGED TO DEVELOP, CHECK, SUPERVISE OR CONTROL WORKERS OR METHODS OF WORK.

MPN CONSULTING PTY LTD DOES NOT HAVE THE CAPACITY OR AUTHORITY TO CONTROL WORKERS OR METHODS OF WORK.

NOTHING IN THESE DESIGNS SHOULD BE INTERPRETED AS GOING BEYOND THE STRUCTURAL INTEGRITY OF THE SUBJECT MATTER OF THE DESIGNS AND THEY SHOULD NOT BE USED AS AN INDICATOR OF THE APPROPRIATE METHODS OF WORK ON, IN OR AROUND THE SUBJECT MATTER.

CONCERNS ABOUT THE CONDUCT OF WORKERS OR METHODS OF WORK SHOULD BE RAISED WITH THE APPROPRIATE SAFETY OFFICIAL ON SITE.

## PEDESTRIAN SURFACES

ALL SURFACES SUBJECT TO PEDESTRIAN TRAFFIC SHALL MEET THE MINIMUM PENDULUM OR RAMP RECOMMENDATIONS CONTAINED IN TABLE 3 OF AUSTRALIAN STANDARD HANDBOOK HB197:1999 - AN INTRODUCTORY GUIDE TO THE SLIP RESISTANCE OF PEDESTRIAN SURFACE MATERIALS. COMPLIANCE WITH THE RECOMMENDATIONS SHALL BE VERIFIED BY TESTING TO EITHER:- AS/NZS 4586:2004 - SLIP RESISTANCE CLASSIFICATIONS OF NEW PEDESTRIAN SURFACE MATERIALS, OR AS/NZS 4663:2004 - SLIP RESISTANCE MEASUREMENT OF EXISTING PEDESTRIAN SURFACES AS APPROPRIATE IN BOTH INSTANCES COMPLIANCE SHALL BE DEMONSTRATED BY APPLYING CLAUSE 5.3 - MEANS OF DEMONSTRATING COMPLIANCE OF AS/NZS 4586:2004 - SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS.

IN GENERAL, THE CLASSIFICATION OF A SURFACING MATERIAL OR FINISH SHALL BE MADE ON A WORST CASE BASIS AS DETERMINED BY PENDULUM TESTING USING BOTH THE FOUR S AND TRL RUBBER SLIDER. WHERE ADDITIONAL TEST RESULTS ARE AVAILABLE (OIL -WET RAMP, WET/ BAREFOOT RAMP) THESE MAY BE TAKEN INTO CONSIDERATION.

## EROSION AND SEDIMENTATION

### CONTROL NOTES

ALL WORK TO BE IN ACCORDANCE WITH THE INTERNATIONAL EROSION CONTROL ASSOCIATION GUIDELINES.

REFER TO EROSION AND SEDIMENT CONTROL PLANS FOR DETAILS OF MEASURES TO BE INSTALLED

## ENVIRONMENTAL CONDITIONS

### VEGETATION PROTECTION

ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH VEGETATION CLEARING AND FAUNA MANAGEMENT PLAN.

TREES LOCATED WITHIN EXTENT OF CLEARING SHOULD BE, WHERE POSSIBLE TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED. REFER VEGETATION CLEARING AND FAUNA MANAGEMENT PLAN.

WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHOULD BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES MUST BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.

### SOIL

TOPSOIL AND SUBSOIL SHOULD BE STOCKPILED SEPARATELY. CARE SHOULD BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.

### CREEK/WATERWAY

SILTATION CONTROL MEASURES SHOULD BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.

APPROPRIATE SEDIMENT CONTROLS SHOULD BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK/WATERWAYS.

NO SOIL SHOULD BE STOCKPILED WITHIN 50m OF THE CREEK.

### REHABILITATION

PRE-DISTURBANCE SOIL PROFILES AND COMPACTION LEVELS ARE TO BE REINSTATED.

PRE-DISTURBANCE VEGETATION PATTERNS SHOULD BE RESTORED. FOR FURTHER INFORMATION CONTACT COUNCIL ECOLOGICAL ASSESSMENT OFFICER.

**NOTE:** ALL ENVIRONMENT PROTECTION MEASURES SHOULD BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.

## BULK EARTHWORKS NOTES

### 1. GENERAL

EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROCEDURES SET DOWN IN AS 3798 GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS.

SURFACE TREATMENT TO BE PLACED ON COMPLETION OF BULK EARTHWORKS FOR EACH FARM PLATFORM.

FILL BATTERS ARE TO BE OVER FILLED AND COMPACTED TO 1.0m BEYOND FINAL BATTER FACE THEN CUT BACK TO FINAL BATTER. REFER DETAIL ON THIS PLAN

SOFT SPOTS IN CLAY ARE TO BE DRAINED BY RUBBLE OR AGRICULTURAL DRAINS TO PREVENT 'SUMPS' FORMING.

AT COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT LICENSED SURVEYOR TO CARRY OUT A 'WORKS AS CONSTRUCTED' SURVEY AND SUBMIT THE DETAILS SHOWN ON A PLAN TO THE SUPERINTENDENT.

### 2. SOILS REPORT

A SOILS INVESTIGATION AND TESTING SPECIFICATION PROVIDED BY A GEOTECHNICAL ENGINEER IS REQUIRED. WHERE THE REQUIREMENT OF THIS SPECIFICATION IS REQUIRES GREATER TREATMENT THEN INFORMATION IN THIS DRAWINGS PACKAGE, THE ADVICE OF THE GEOTECH SHALL BE FOLLOWED

THIS REPORT MUST BE READ IN ITS ENTIRETY PRIOR TO CONSTRUCTION BEING UNDERTAKEN.

### 3. SITE PREPARATION

CLEAR THE SITE OF ALL DEBRIS INCLUDING EXISTING BUILDING RUBBLE AND CONCRETE SLABS. TREES EXCEPT FOR THOSE TO BE RETAINED, GRASS AND TOP SOIL TO A DEPTH OF 200mm AND ORGANIC MATERIAL SUCH AS TREE ROOTS WHERE REQUIRED. STRIPPED TOP SOIL TO BE STOCKPILED ON SITE FOR REUSE IF REQUIRED

PRIOR TO THE PLACEMENT OF ANY FILLING PROOF ROLL THE SITE USING SIX PASSES OF A 10 TONNE MINIMUM STATIC WEIGHT VIBRATORY PAD TYPE ROLLER. SUBGRADE TO BE COMPACTED TO 100% MAXIMUM DRY DENSITY STANDARD COMPACTION TO E1.1 AS 1289. MOISTURE CONTENT OF THE SUBGRADE IS TO BE WITHIN THE RANGE OF 2% WET TO 0% DRY OF STANDARD OPTIMUM MOISTURE CONTENT.

SOFT SPOTS AND / OR LOOSE AREAS WHICH DO NOT IMPROVE WITH COMPACTION ARE TO BE EXCAVATED TO A MINIMUM DEPTH OF 300mm AND REPLACED. THESE AREAS ARE TO BE INSPECTED BY A GEOTECHNICAL ENGINEER TO ASSESS WHETHER FURTHER EXCAVATION IS REQUIRED OR IF OTHER MEASURES (SUCH AS CONSTRUCTION OF A BRIDGING LAYER) CAN BE ADOPTED. SELECT REPLACEMENT MATERIAL TO BE (MINIMUM CBR15) PLACED IN LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS, COMPACTED TO THE COMPACTION REQUIREMENTS.

## 4. FILL MATERIAL

IMPORTED FILL MATERIAL SHALL BE APPROVED GRANULAR MATERIAL FREE OF VEGETABLE MATTER AND CONFORMING TO THE FOLLOWING:-

AS SIEVE	% PASSING
75mm	100
4.75mm	30 - 100
0.075mm	3 - 30
LIQUID LIMIT	35% MAX.
PLASTICITY INDEX	15% MAX.
CBR	5% MIN.
LINEAR SHRINKAGE	8% MAX.

ALL FILL MATERIAL INCLUDING ROAD PAVEMENT U.N.O. IS TO BE PLACED IN LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS AND COMPACTED TO THE FOLLOWING DENSITIES:

BUILDING AREA	100%	MAXIMUM DRY DENSITY STANDARD COMPACTION
UNDER ROADS	98%	MAXIMUM DRY DENSITY STANDARD COMPACTION
A) >500mm BELOW SUBGRADE		
B) <500mm BELOW SUBGRADE	100%	MAXIMUM DRY DENSITY STANDARD COMPACTION

**REFER TO GEOTECHNICAL REPORT AND SPECIFIC CASE** FILL SHALL BE COMPACTED AND MAINTAINED AT MOISTURE CONTENTS AT PLACEMENT WITHIN THE RANGE OF 2% WET TO 0% DRY OF STANDARD OPTIMUM MOISTURE CONTENT U.N.O. (REFER GEOTECHNICAL REPORT AND SPECIFIC CASE.)

## 5. GEOTECHNICAL INSPECTIONS AND TEST CERTIFICATES

COMPACTION TESTS, TO BE CARRIED OUT IN ACCORDANCE WITH AS 3798 (REFER TO GEOTECHNICAL REPORT AND SPECIFIC CASE).

'LEVEL 1' GEOTECHNICAL SUPERVISION AS DEFINED IN SECTION 8 OF AS 3798 GUIDELINES OF EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS, SHALL BE PROVIDED UNDER ALL BUILDING AREAS AND ROADS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ORGANISING THE COMPACTION TESTS AND APPOINTING THE GEOTECHNICAL SUPERVISION UTILISING THE ENGINEER WHO COMPLETED THE SITE INVESTIGATION IN ACCORDANCE WITH AS 3798

## 6. SERVICES

PRIOR TO THE COMMENCEMENT OF WORKS THE CONTRACTOR IS TO IDENTIFY AND BE SATISFIED OF THE CORRECT LOCATIONS OF ALL EXISTING SERVICES WHETHER INDICATED OR NOT ON THE PLANS. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SET OUT OF ALL SERVICES & AUXILIARY ITEMS WITHIN THEIR CORRECT ALLOCATION AREA.

## 7. DISPERSIVE / UNSUITABLE SOILS

A SOIL ASSESSMENT SHALL BE UNDERTAKEN TO DETERMINE THE SUITABILITY OF TOPSOIL, INSITU EARTH AND IMPORTED MATERIAL ENCOUNTERED ON SITE THIS SHALL INCLUDE TESTING FOR DISPERSIVE SOILS AND PROVIDING A TESTING AND TREATMENT PLAN FOR RELATIVE SOILS (AMELIORATION AND COMPACTION ETC.)

ALL EARTHWORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE SOIL ASSESSMENT REPORT.

## STORMWATER DRAINAGE NOTES

ALL STORMWATER DRAINAGE PIPES Ø225 OR SMALLER SHALL BE HEAVY DUTY CLASS DWV uPVC.

ALL STORM WATER PIPES Ø300 OR GREATER SHALL BE CLASS '3' RCP UNLESS NOTED OTHERWISE.

### FRC PIPES SHALL NOT BE USED.

ALL STORMWATER PIPES 600Ø OR SMALLER SHALL BE RUBBER RING JOINTED.

ALL STORMWATER BEDDING SHALL BE TYPE 'H2' U.N.O.

SLOTTED SUBSOIL DRAINS TO BE INSTALLED TO BOTH SIDES OF ALL STORMWATER PIPES FOR 1.0m (MIN) LENGTH PRIOR TO DOWNSTREAM HEADWALL TO ENSURE FREE DRAINING OF TRENCHES.

FILL BETWEEN MULTI CELL BOX CULVERTS TO BE DRY LEAN MIX.

BITUTHENE TAPE TO BE USED ON BOX CULVERT JOINTS.

ALL DOWN PIPE CONNECTIONS SHALL BE PVC PIPE, RUBBER RING JOINTED CLASS DWV. REFER HYDRAULIC / ARCHITECT PLANS FOR DETAILS

DE-WATERING WHERE REQUIRED TO BE AT THE CONTRACTOR'S COST.

MINIMUM COVER TO STORMWATER PIPES TO BE AS FOLLOWS:  
PIPES IN ROADWAYS - 600mm COVER  
PIPES IN LANDSCAPE AREAS - 450mm COVER U.N.O.

**ALL STORMWATER TO HAVE A HEAVY DUTY TRAFFICABLE LID U.N.O.**

## STORMWATER DRAINAGE NOTES

ALL STORMWATER HEADWALLS ARE SLOPING FACE HEADWALLS (ROCLA HWL300AH OR SIMILAR) WITH A TOTAL HEIGHT BEING 695mm (TO SUIT INTERNAL SWALE DEPTHS)

ALTERNATIVELY HEADWALLS MAY BE CHANGED TO PARTIAL BASE SMALL PIPE HEADWALL (ROCLA HWA300P OR SIMILAR)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING HEADWALLS IN RELATION TO THE FINAL BATTER SLOPES.

THE CONTRACTOR SHALL VERIFY THE INVERT LEVEL OF THE HEADWALL CONNECTIONS TO LAYING PIPES.

ALL TRENCHES SHALL BE BACK FILLED UNDER ANY FUTURE ACCESS ROADS IN LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS NOT LESS THAN 100% MAXIMUM DRY DENSITY STANDARD COMPACTION TEST (AS 1289).

TRENCH BACKFILL TESTING SHALL BE CARRIED OUT ON EACH ALTERNATE COMPACTED LAYER AT A MAXIMUM 50m CENTRES AND NO MORE THAN 3m FROM MANHOLE STRUCTURE.

THE CONTRACTOR IS TO ENSURE THE METHOD OF COMPACTION OF THE BACKFILL IS SUITABLE FOR THE CLASS OF PIPE INDICATED ON THE DRAWINGS.

IF NECESSARY THE CONTRACTOR IS TO ADJUST HIS COMPACTION METHODS TO SUIT THE PIPE CLASS.

WHERE THE TRENCH IS EXCAVATED IN WATERLOGGED GROUND OR WHERE THE FOUNDATION IS CONSIDERED UNSUITABLE IN THE OPINION OF THE SUPERINTENDENT, A LAYER OF CRUSHED ROCK, 40mm TO 20mm SIZE OR OTHER MATERIALS APPROVED BY THE INSPECTING ENGINEER SHALL BE LAID IN A 500mm THICK LAYER BELOW THE CULVERT BASE OR PIPE. THESE AREAS ARE TO BE INSPECTED BY THE GEOTECHNICAL ENGINEER TO ASSESS WHETHER FURTHER EXCAVATION IS REQUIRED OR OTHER MEASURES CAN BE ADOPTED.

THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT LICENSED SURVEYOR TO CARRY OUT A 'WORKS AS CONSTRUCTED' SURVEY TO SUBMIT DETAILS SHOWN ON PLAN TO THE SUPERINTENDENT AT COMPLETION OF CONSTRUCTION. 'WORKS AS CONSTRUCTED' SURVEY IS TO SHOW BUT NOT BE LIMITED TO LEVEL AND LOCATION OF ALL DRAINAGE STRUCTURES, PIPES SIZES AND INVERT LEVELS.

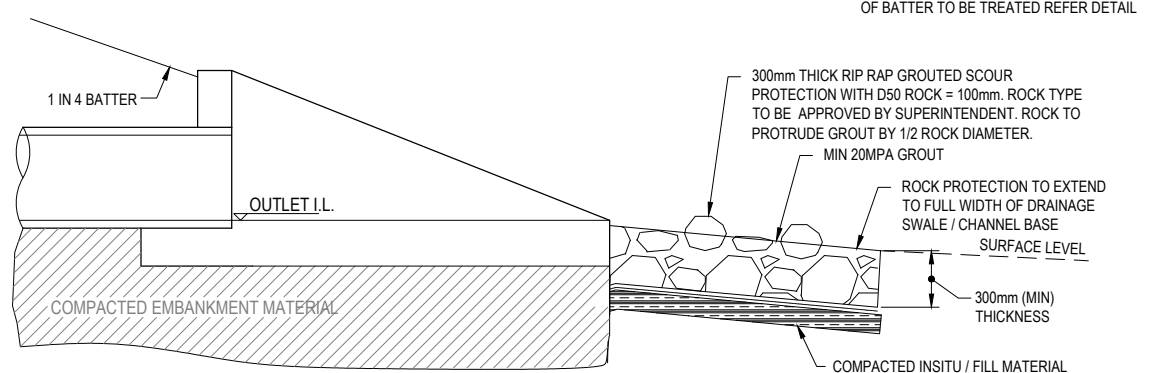
PRIOR TO WORKS GOING ON MAINTENANCE OR A WORKS COMPLETION CERTIFICATE IS PROVIDED, THE CONTRACTOR SHALL ARRANGE FOR A CCTV TO BE CARRIED OUT.

## MAINTENANCE NOTES - DEFECTS

### LIABILITY

SUCH MAINTENANCE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROVISIONS OF THE GENERAL CONDITIONS OF CONTRACT WITH RESPECT TO MAKING GOOD DEFECTS AND OTHER FAULTS DUE TO FAULTY REPAIR AND/OR WORKMANSHIP AND SHALL INCLUDE CLEANING UP AND REPAIR DUE TO STORM DAMAGE.

THE DEFECTS LIABILITY PERIOD SHALL BE FOR TWELVE MONTHS FROM THE DATE OF PRACTICAL COMPLETION.



TYPICAL ROCK PROTECTION DETAIL

NOT TO SCALE

**GRENFELL FARMS**  
1130 GOOLOOGONG ROAD  
GREENFELL, NSW

SCALE: AS SHOWN

DESIGN: BCM

DRAWN: BCM

CREATED:

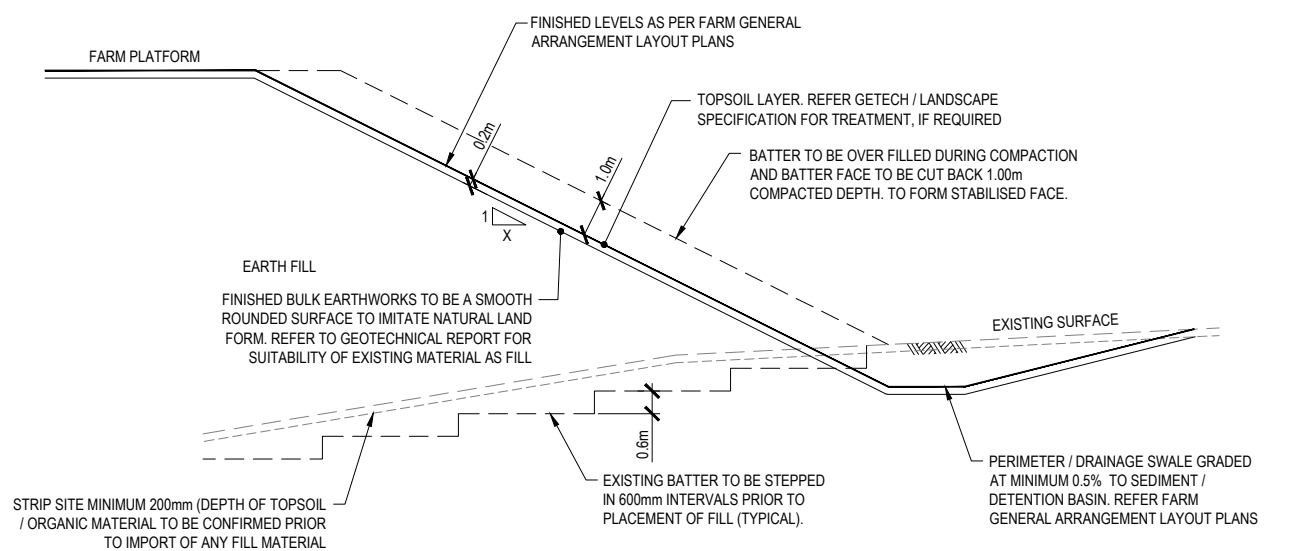
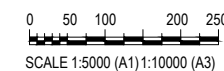
CHKD:

APPRD:

DATE:

**BAIADA**

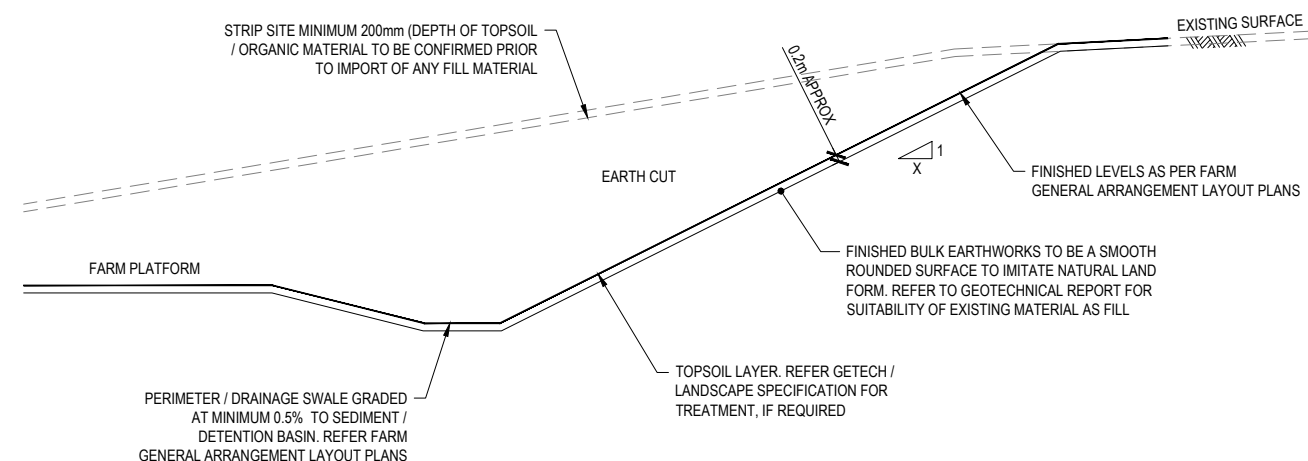
**GENERAL FARM EXTENT**  
**TYPICAL NOTES AND DETAILS**



## TYPICAL FILL BATTER FACE TREATMENT

SCALE 1:100(A1)

NOTE: ALL DISTURBED SURFACES AND FACE OF BATTER TO BE TREATED REFER DETAIL



## TYPICAL CUT BATTER FACE TREATMENT

SCALE 1:100(A1)

NOTE: ALL DISTURBED SURFACES AND FACE OF BATTER TO BE TREATED REFER DETAIL

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
DATE \_\_\_\_\_

## FOR CO ORDINATION

**mpn consulting**

ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB

**8719**

DRAWING No.

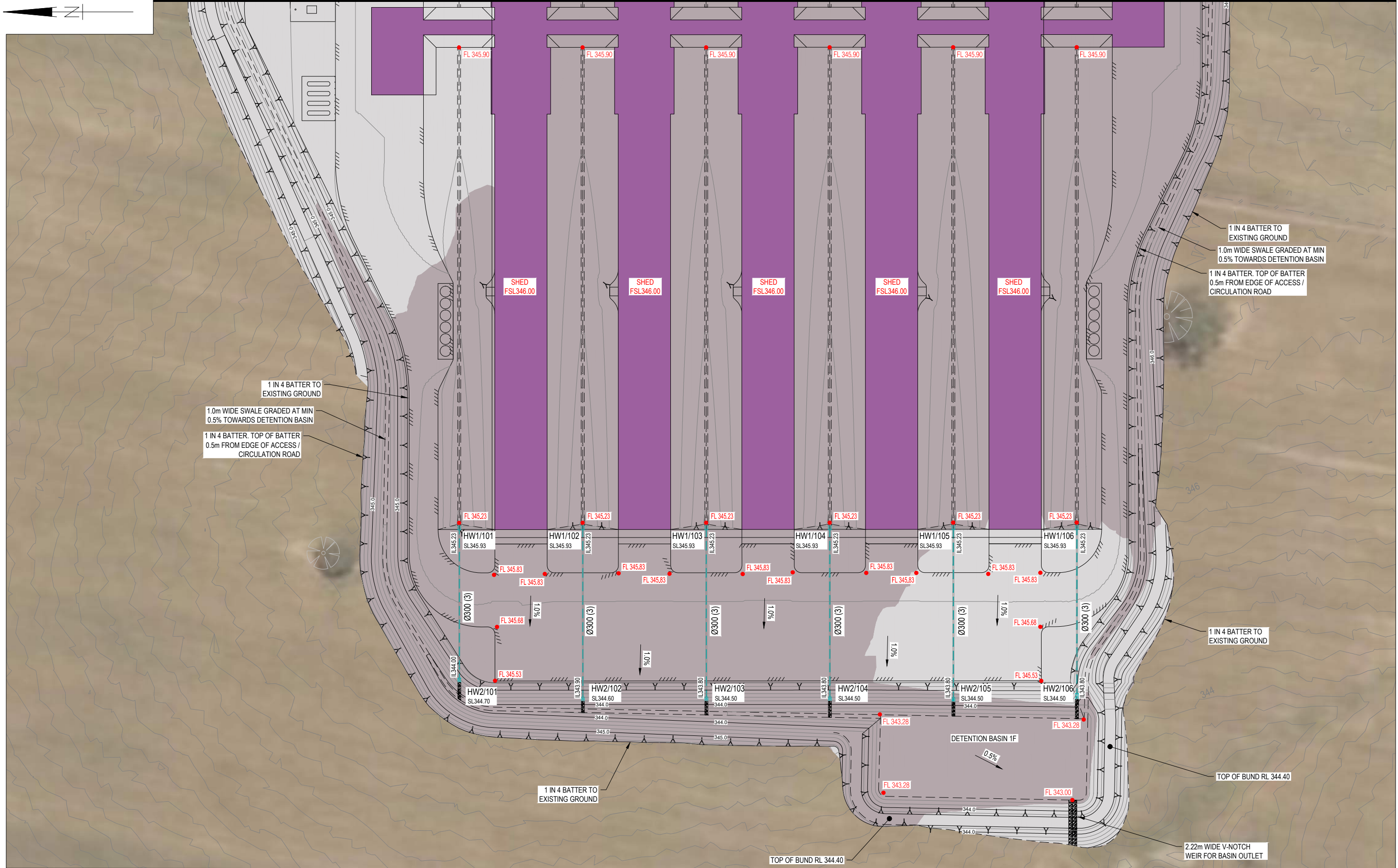
REV

**GA.0.02**

**A**

NOT FOR CONSTRUCTION

FOR CONTINUATION REFER DWG No. GA.1.02



1 IN 4 BATTER TO EXISTING GROUND  
1.0m WIDE SWALE GRADED AT MIN 0.5% TOWARDS DETENTION BASIN  
1 IN 4 BATTER, TOP OF BATTER 0.5m FROM EDGE OF ACCESS / CIRCULATION ROAD

1 IN 4 BATTER TO EXISTING GROUND  
1.0m WIDE SWALE GRADED AT MIN 0.5% TOWARDS DETENTION BASIN  
1 IN 4 BATTER, TOP OF BATTER 0.5m FROM EDGE OF ACCESS / CIRCULATION ROAD

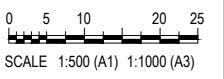
1 IN 4 BATTER TO EXISTING GROUND

1 IN 4 BATTER TO EXISTING GROUND

TOP OF BUND RL 344.40

2.22m WIDE V-NOTCH WEIR FOR BASIN OUTLET

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
1130 GOOLOONGONG ROAD  
GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

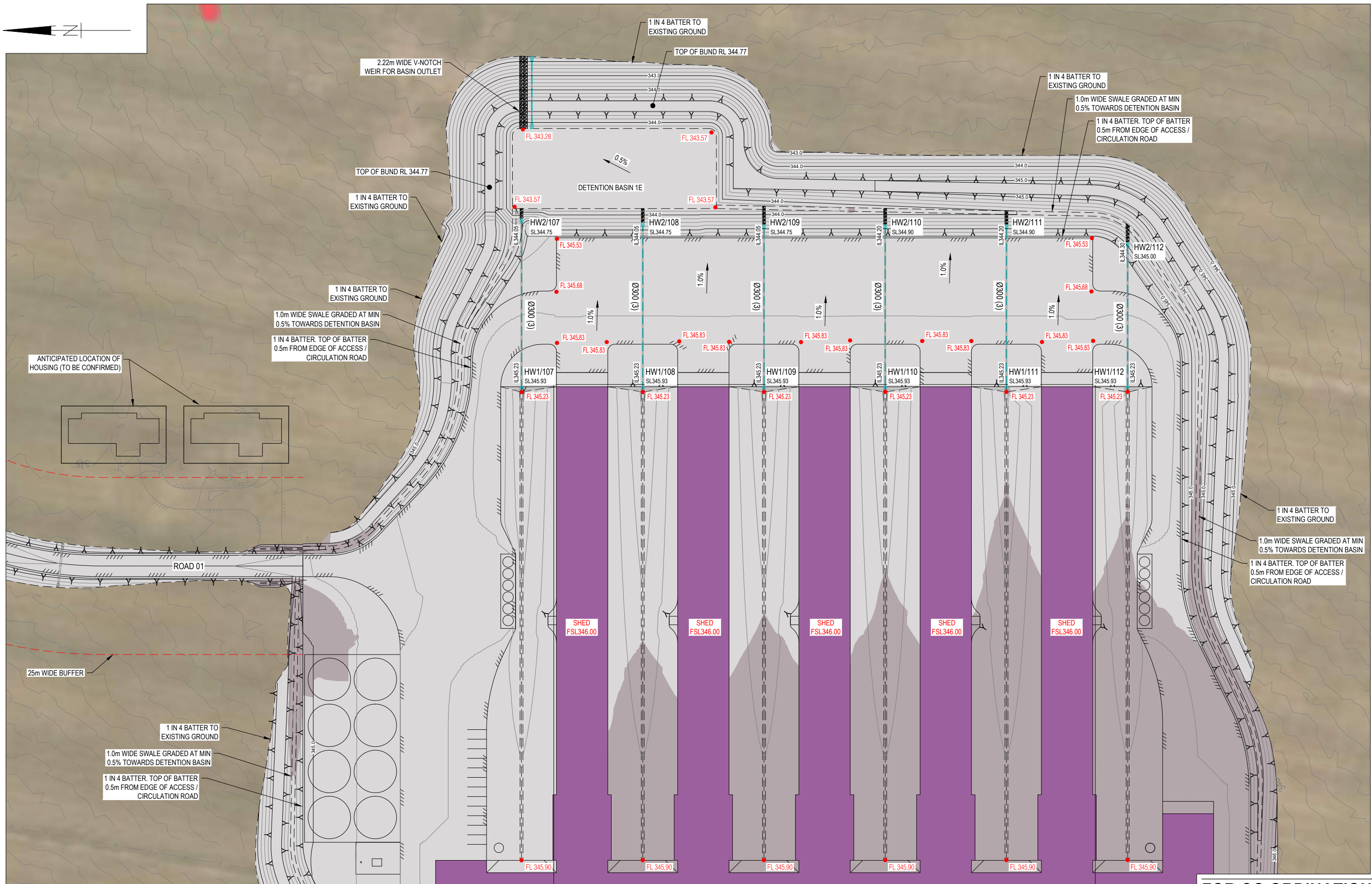
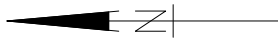
**BAIADA**  
**FARM 1 GENERAL ARRANGEMENT**  
LAYOUT PLAN - SHEET 1 OF 2

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
DRAWING No. **GA.1.01** REV **B**

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**



ANTICIPATED LOCATION OF HOUSING (TO BE CONFIRMED)

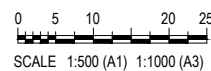
25m WIDE BUFFER

FOR CONTINUATION REFER DWG No. GA.1.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE - - -



ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
 1130 GOOLOONG ROAD  
 GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**FARM 1 GENERAL ARRANGEMENT**  
 LAYOUT PLAN - SHEET 2 OF 2

**mpn consulting**

ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB

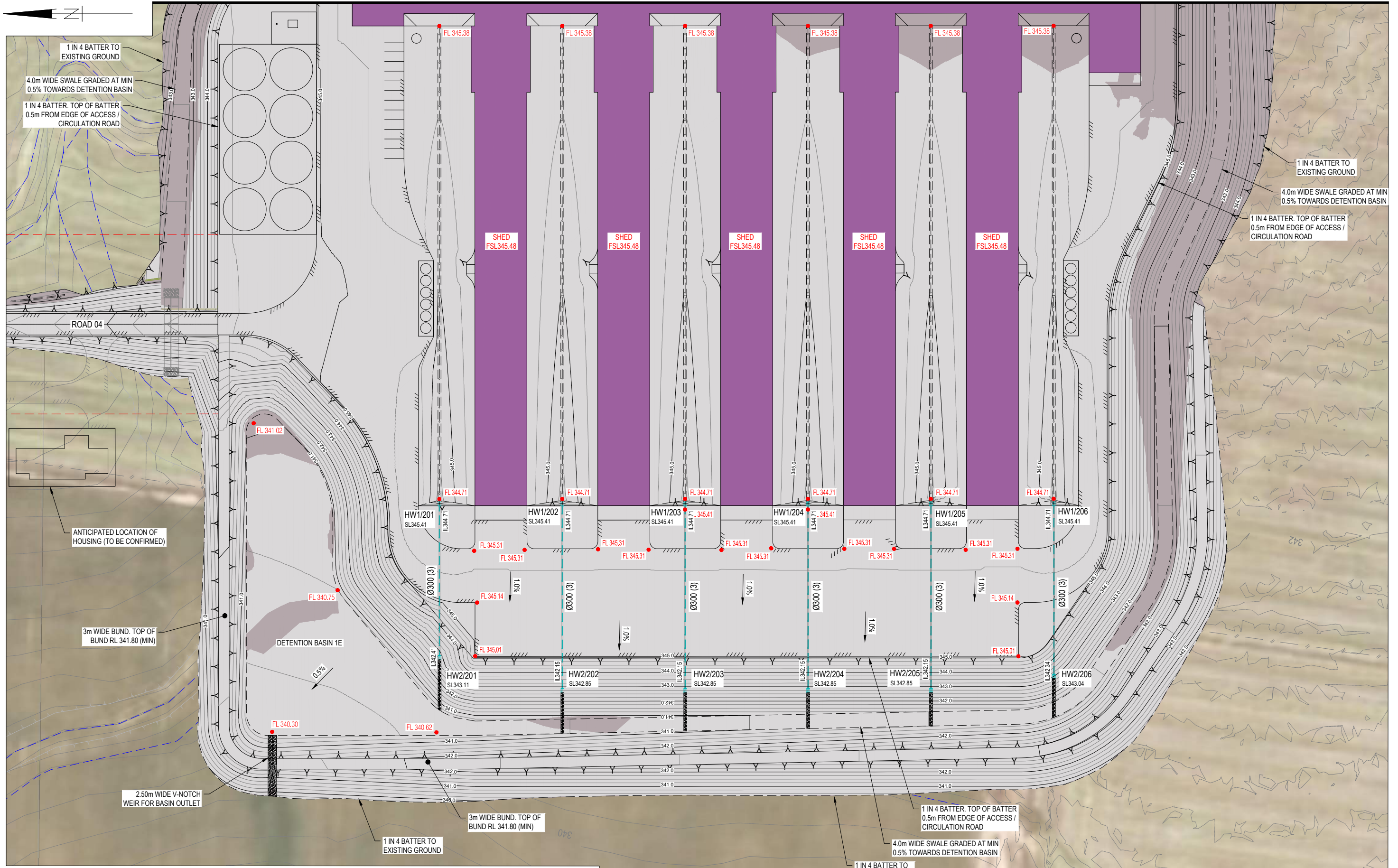
**8719**

DRAWING No. REV

**GA.1.02** B

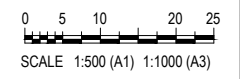
NOT FOR CONSTRUCTION

FOR CONTINUATION REFER DWG No. GA.2.02



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
 1130 GOOLOONG ROAD  
 GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**FARM 2 GENERAL ARRANGEMENT**  
 LAYOUT PLAN - SHEET 1 OF 2

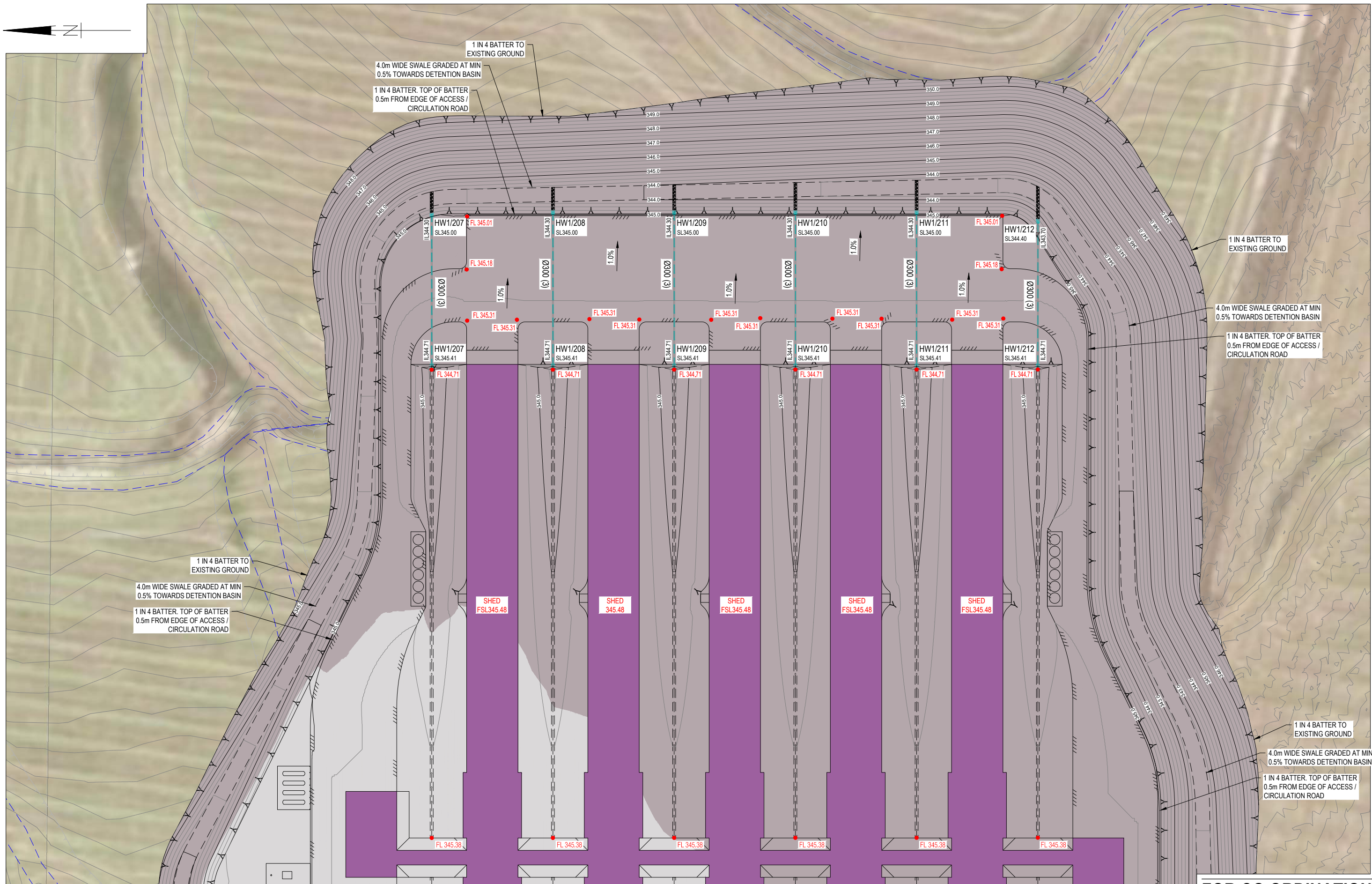
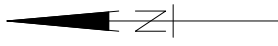
**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. **GA.2.01** REV **B**

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**

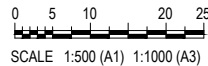


FOR CONTINUATION REFER DWG No. GA.2.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE - - -



ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
 1130 GOOLOONG ROAD  
 GREENFELL, NSW

SCALES: AS SHOWN  
 DESIGN: BCM  
 DRAWN: BCM  
 CREATED:  
 CHKD:  
 APPRD:  
 DATE:

**BAIADA**

**FARM 2 GENERAL ARRANGEMENT**  
 LAYOUT PLAN - SHEET 2 OF 2

**mpn consulting**

ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB

**8719**

DRAWING No.

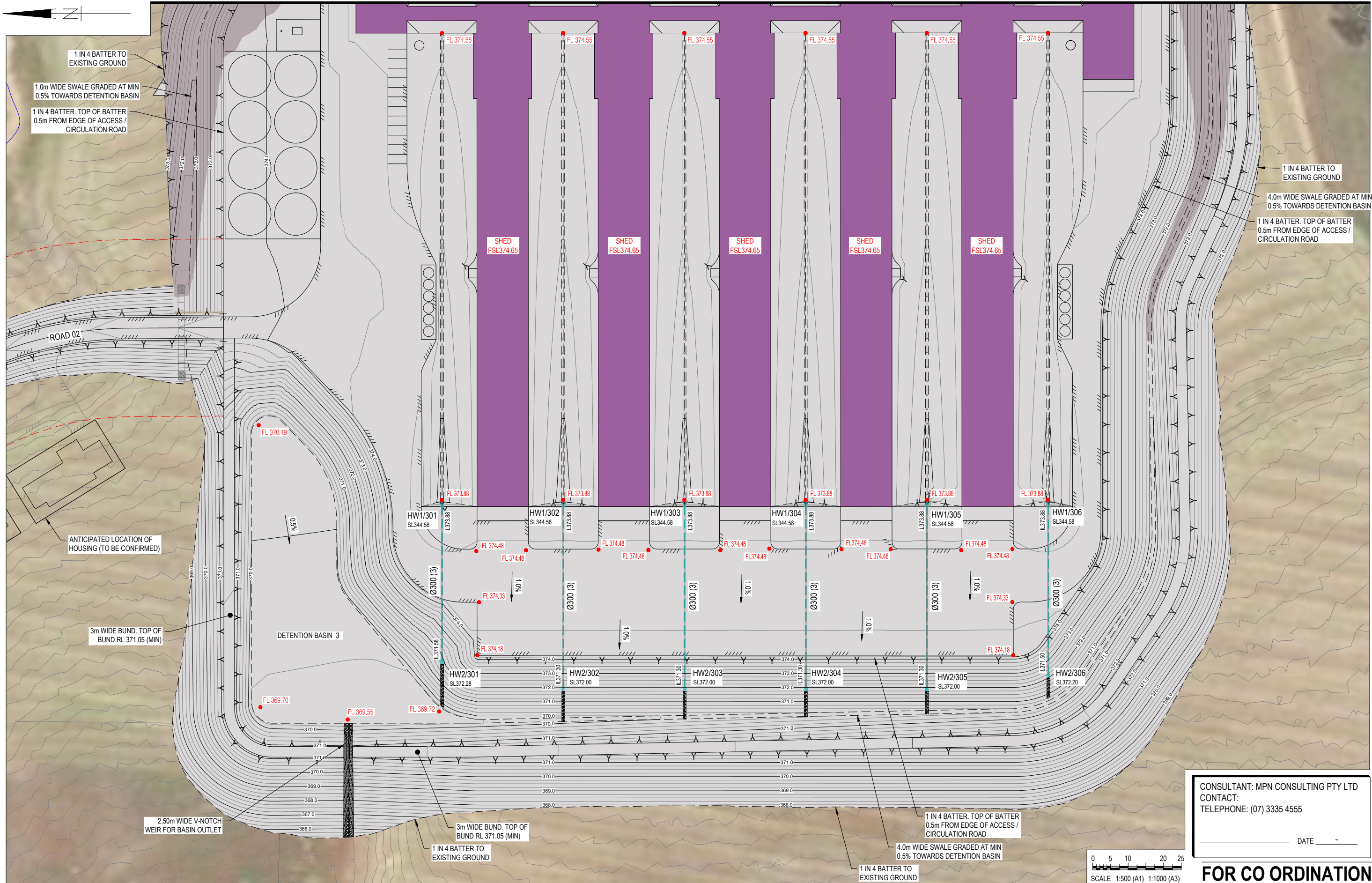
**GA.2.02**

REV

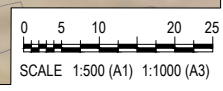
**B**

NOT FOR CONSTRUCTION

FOR CONTINUATION REFER DWG No. GA.3.02



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 DATE \_\_\_\_\_



**FOR CO ORDINATION**

NOT FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

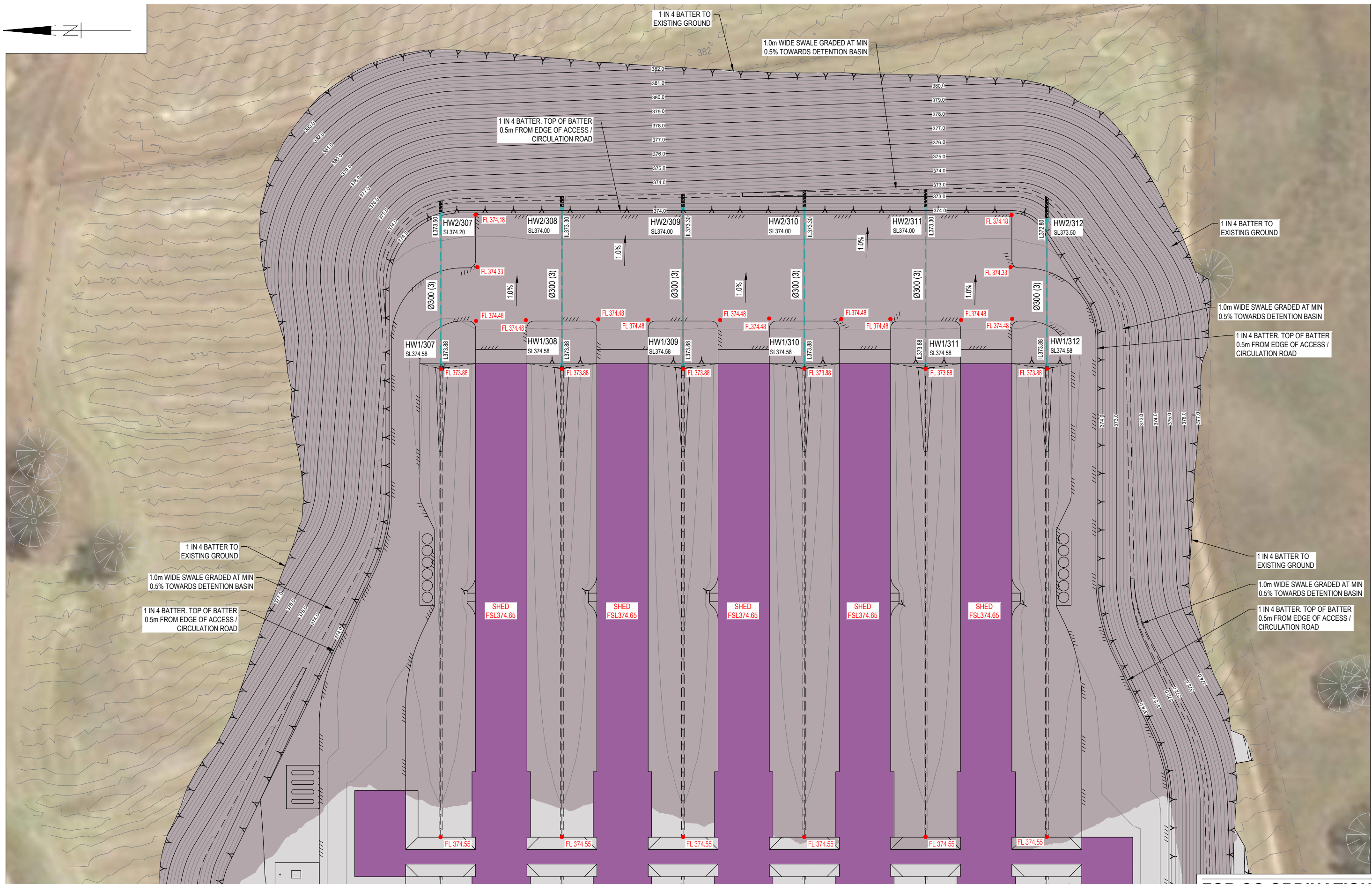
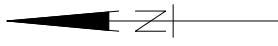
**GRENFELL FARMS**  
 1130 GOOLOONG ROAD  
 GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**FARM 3 GENERAL ARRANGEMENT**  
 LAYOUT PLAN - SHEET 1 OF 2

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

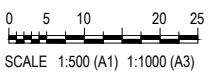
mpn JOB  
**8719**  
 DRAWING No. REV  
**GA.3.01** B



FOR CONTINUATION REFER DWG No. GA.3.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 \_\_\_\_\_ DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

SCALES: AS SHOWN  
 DESIGN: BCM  
 DRAWN: BCM  
 CREATED:  
 CHKD:  
 APPRD:  
 DATE:

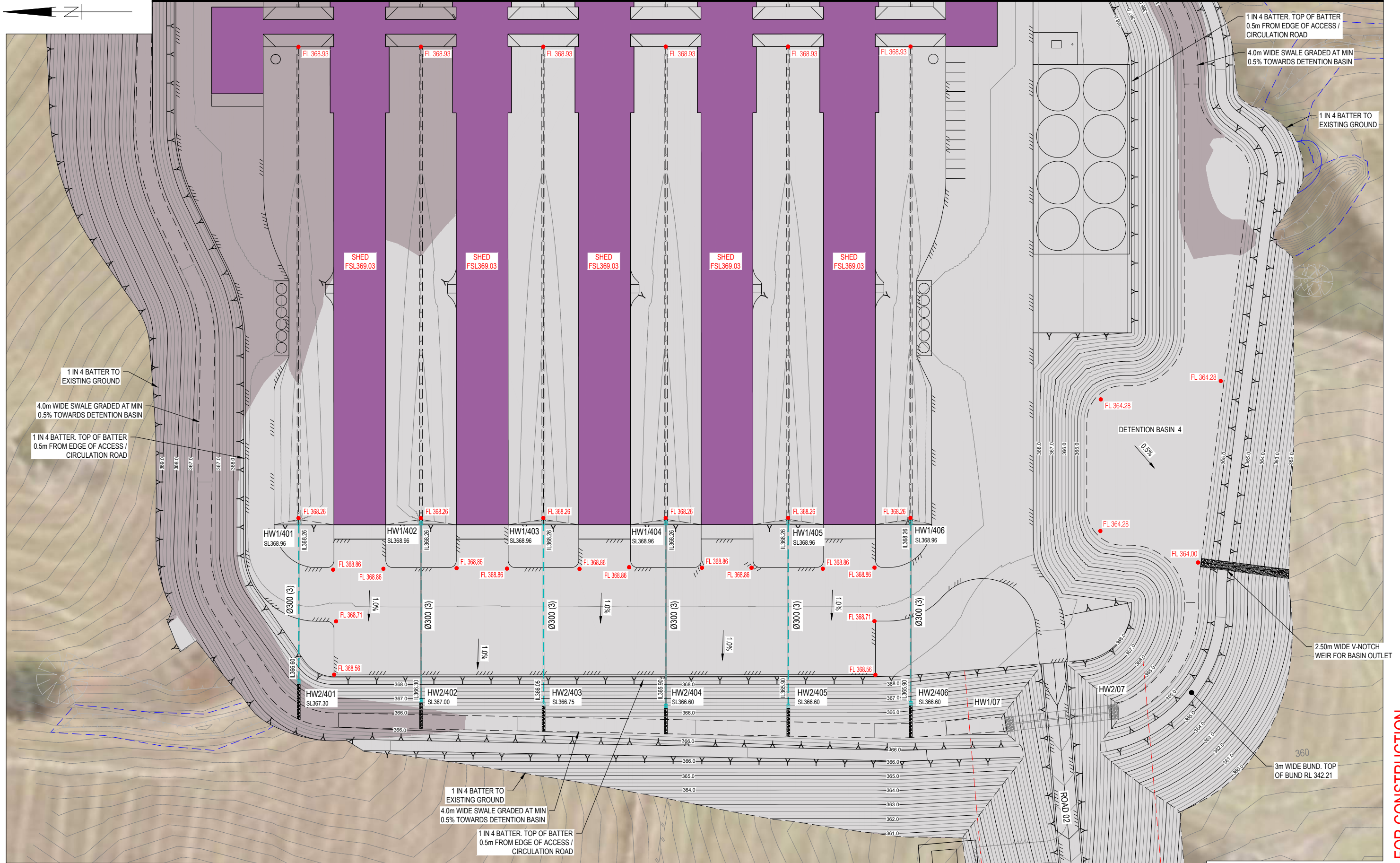
**BAIADA**  
**FARM 3 GENERAL ARRANGEMENT**  
 LAYOUT PLAN - SHEET 2 OF 2

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. REV  
**GA.3.02** B

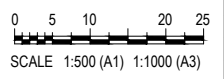
NOT FOR CONSTRUCTION

FOR CONTINUATION REFER DWG No. GA.4.02



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE: \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
B	26.08.21	ISSUE FOR COORDINATION	BCM	-
A	09.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENPELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**FARM 4 GENERAL ARRANGEMENT**  
 LAYOUT PLAN - SHEET 1 OF 2

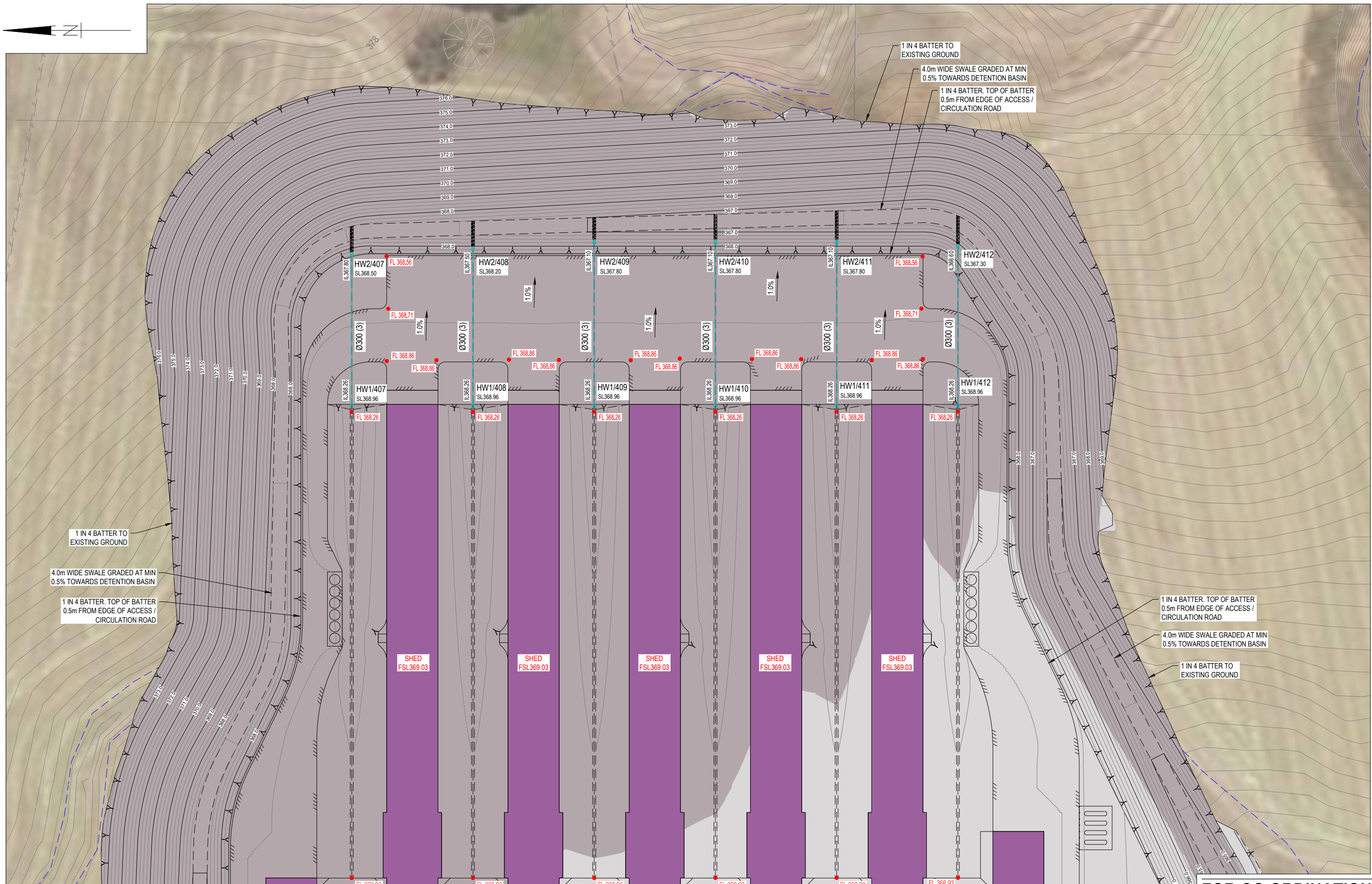
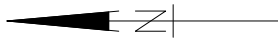
**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld. 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. REV  
**GA.4.01** B

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**

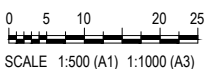


FOR CONTINUATION REFER DWG No. GA.4.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE - - -



ISSUE	DATE	AMENDMENT	BY	APP
A	09.08.21	ISSUE FOR COORDINATION	BCM	-
B	26.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

SCALES: AS SHOWN  
 DESIGN: BCM  
 DRAWN: BCM  
 CREATED:  
 CHKD:  
 APPRD:  
 DATE:

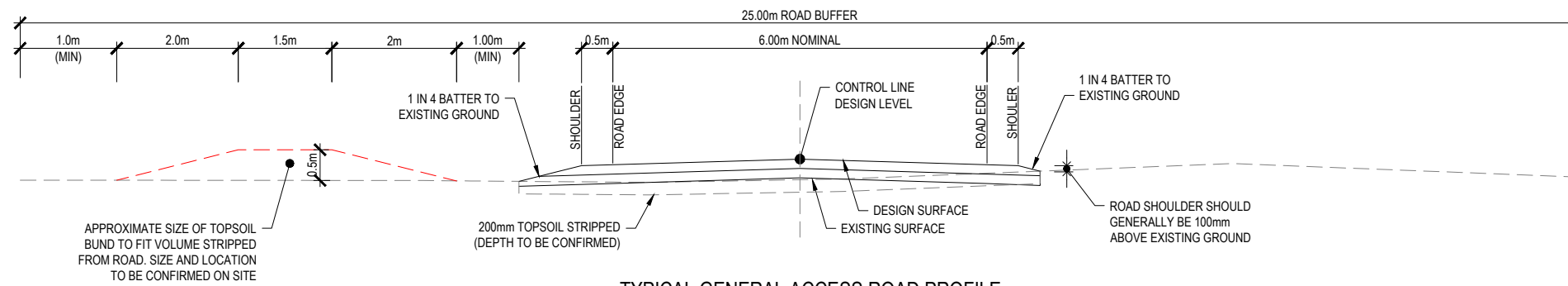
**BAIADA**  
**FARM 4 GENERAL ARRANGEMENT**  
**LAYOUT PLAN - SHEET 2 OF 2**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. REV  
**GA.4.02** B

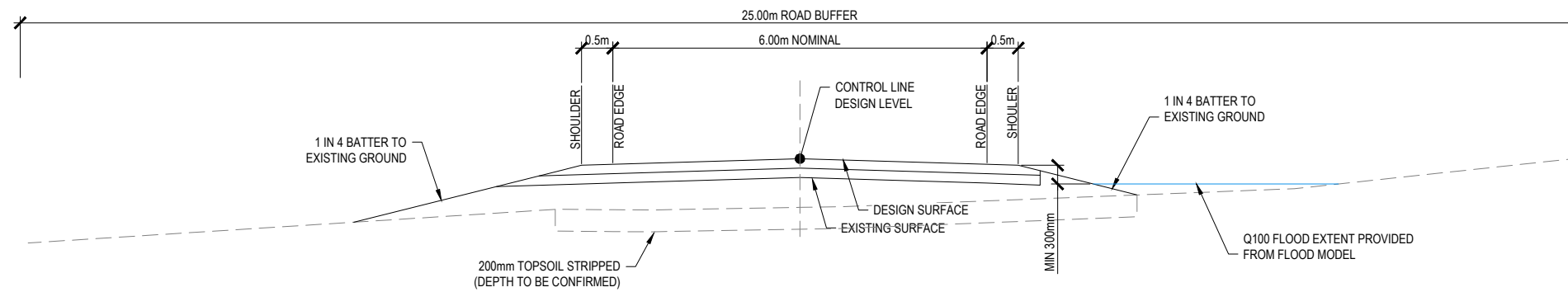
NOT FOR CONSTRUCTION





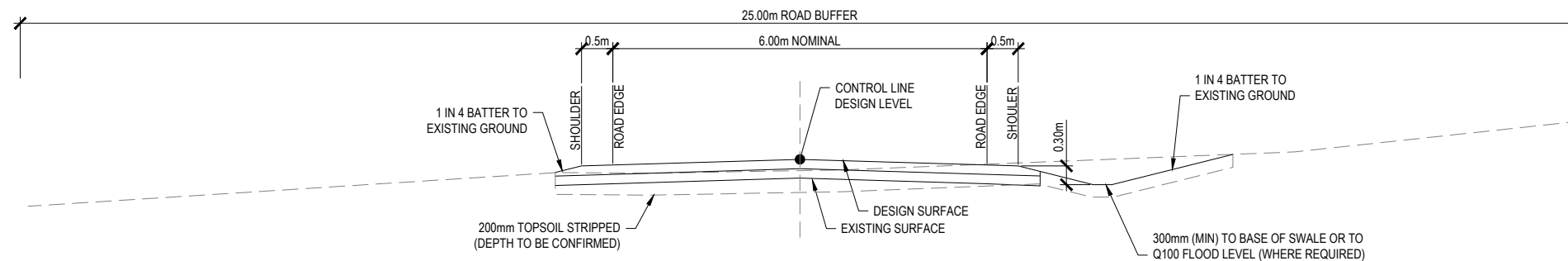
**TYPICAL GENERAL ACCESS ROAD PROFILE**

SCALE 1:50  
 NOTE: THIS IS THE MINIMUM STANDARD ROAD PROFILE TO BE USED WHERE ROAD IS CLEAR OF Q100 FLOOD AND NO UPSTREAM FLOWS DISCHARGE TOWARDS ROAD (ROAD GRADE FALLS WITH NATURAL)



**TYPICAL ACCESS ROAD - IN FILL PROFILE**

SCALE 1:50  
 NOTE: WHERE ROAD SHOULDER IS >300mm ABOVE NATURAL GROUND, THE BATTER WILL CREATE A SWALE PROFILE. ENSURE NATURAL GROUND HAS MINIMUM 0.5% FALL AND DOES NOT CAUSE PONDING ADJACENT THE ROAD PAVEMENT. WHERE REQUIRED EXISTING GROUND DISCHARGES TO SWALES OR STORMWATER CULVERTS. ROADS TO REMAIN FLOOD FREE FOR ALL EVENTS UP TO AND INCLUDING Q100. REFER LONGITUDINAL SECTIONS FOR DETAILS



**TYPICAL ACCESS ROAD - IN CUT PROFILE**

SCALE 1:50  
 NOTE: WHERE ROAD SHOULDER IS <300mm ABOVE NATURAL GROUND, THE INCLUSION OF A SWALE IS REQUIRED TO COLLECT UPSTREAM FLOWS AND DISCHARGE TO EXISTING SWALES OR STORMWATER CULVERTS. ROADS TO REMAIN FLOOD FREE FOR ALL EVENTS UP TO AND INCLUDING Q100. REFER LONGITUDINAL SECTIONS FOR DETAILS

**PAVEMENT LEGEND**

GRAVEL ACCESS TRACK  
 150mm CBR 45 BASE COURSE  
 150mm CBR 15 SUB BASE COURSE

- NOTES:  
 1. SUB BASE MAY BE OMITTED WHERE EXISTING GROUND IS FREE FROM CONTAMINATES, IS GREATER THAN CBR 10 AND ACHIEVES MIN 98% COMPACTION)  
 2. DESIGN IS SUBJECT TO DETAILED DESIGN

**MODELLED EARTHWORKS QUANTITIES**

ROADWORKS:	STRIPPING (200mm) =	16,000m <sup>3</sup>
	CUT VOLUME =	860m <sup>3</sup>
	150mm CBR 45 VOLUME =	8,320m <sup>3</sup>
	150mm CBR 15 VOLUME =	7,430m <sup>3</sup>
	200mm TOPSOIL (BATTERS) =	2,250m <sup>3</sup>
	EXCESS CUT TO STOCKPILE =	1,140m <sup>3</sup>

FARM 01:	STRIPPING (200mm) =	20,500m <sup>3</sup>
	CUT VOLUME =	45,145m <sup>3</sup>
	150mm CBR 45 VOLUME =	3,315m <sup>3</sup>
	150mm CBR 15 VOLUME =	3,315m <sup>3</sup>
	200mm TOPSOIL (BATTERS) =	11,730m <sup>3</sup>
	IMPORT FILL MATERIAL =	4,826m <sup>3</sup>

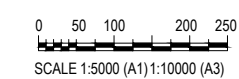
FARM 02:	STRIPPING (200mm) =	23,650m <sup>3</sup>
	CUT VOLUME =	122,048m <sup>3</sup>
	150mm CBR 45 VOLUME =	3,315m <sup>3</sup>
	150mm CBR 15 VOLUME =	3,315m <sup>3</sup>
	200mm TOPSOIL (BATTERS) =	14,900m <sup>3</sup>
	IMPORT FILL MATERIAL =	2,710m <sup>3</sup>

FARM 03:	STRIPPING (200mm) =	24,850m <sup>3</sup>
	CUT VOLUME =	167,956m <sup>3</sup>
	150mm CBR 45 VOLUME =	3,315m <sup>3</sup>
	150mm CBR 15 VOLUME =	3,315m <sup>3</sup>
	200mm TOPSOIL (BATTERS) =	16,085m <sup>3</sup>
	IMPORT FILL MATERIAL =	1,675m <sup>3</sup>

FARM 04:	STRIPPING (200mm) =	26,000m <sup>3</sup>
	CUT VOLUME =	172,629m <sup>3</sup>
	150mm CBR 45 VOLUME =	3,315m <sup>3</sup>
	150mm CBR 15 VOLUME =	3,315m <sup>3</sup>
	200mm TOPSOIL (BATTERS) =	17,220m <sup>3</sup>
	EXCESS CUT TO STOCKPILE =	5,272m <sup>3</sup>

SUMMARY:	OVERALL IMPORT FILL MATERIAL =	2,800m <sup>3</sup>
	EXCESS TOPSOIL TO STOCKPILE =	48,800m <sup>3</sup>

- NOTES:  
 1. REFER DWG 8719-GA.0.2 FOR GENERAL NOTES



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 DATE \_\_\_\_\_

**FOR CO ORDINATION**

NOT FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUE FOR COORDINATION	BCM	-

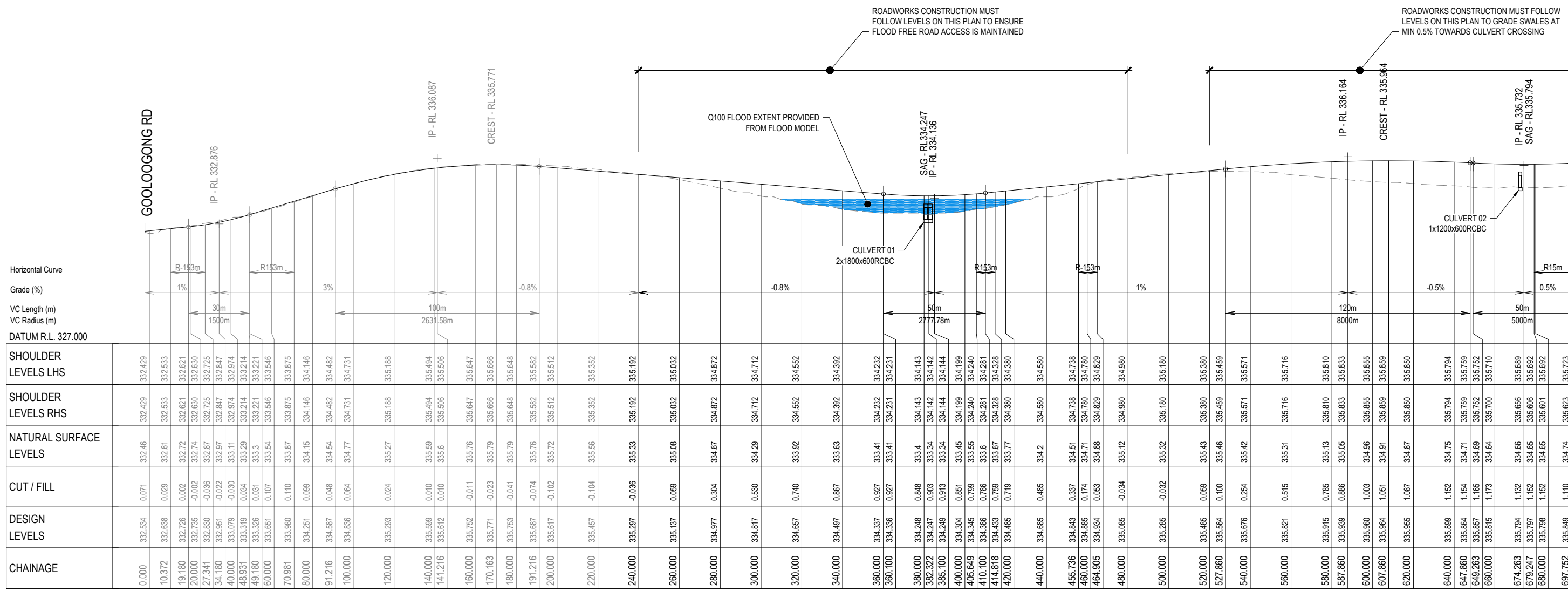
**GRENFELL FARMS  
 1130 GOOLOOGONG ROAD  
 GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**OVERALL ACCESS ROAD  
 TYPICAL ROAD DETAILS**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

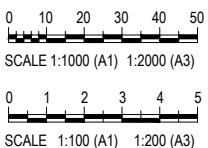
mpn JOB	<b>8719</b>
DRAWING No.	<b>RD.0.02</b>
REV	<b>A</b>



SHOULDER LEVELS LHS	SHOULDER LEVELS RHS	NATURAL SURFACE LEVELS	CUT / FILL	DESIGN LEVELS	CHAINAGE
332.429	332.429	332.46	0.071	332.534	0.000
332.533	332.533	332.61	0.029	332.638	10.372
332.621	332.621	332.72	0.002	332.726	19.180
332.630	332.630	332.74	-0.002	332.735	20.000
332.725	332.725	332.87	-0.036	332.830	27.341
332.847	332.847	332.97	-0.022	332.951	34.180
332.974	332.974	333.11	-0.030	333.079	40.000
333.214	333.214	333.29	0.034	333.319	48.931
333.221	333.221	333.3	0.031	333.326	49.180
333.546	333.546	333.54	0.107	333.651	60.000
333.875	333.875	333.87	0.110	333.980	70.981
334.146	334.146	334.15	0.099	334.251	80.000
334.482	334.482	334.54	0.048	334.587	91.216
334.731	334.731	334.77	0.064	334.836	100.000
335.188	335.188	335.27	0.024	335.293	120.000
335.494	335.494	335.59	0.010	335.599	140.000
335.506	335.506	335.6	0.010	335.612	141.216
335.647	335.647	335.76	-0.011	335.752	160.000
335.666	335.666	335.79	-0.023	335.771	170.163
335.648	335.648	335.79	-0.041	335.753	180.000
335.582	335.582	335.76	-0.074	335.687	191.216
335.512	335.512	335.72	-0.102	335.617	200.000
335.352	335.352	335.56	-0.104	335.457	220.000
335.192	335.192	335.33	-0.036	335.297	240.000
335.032	335.032	335.08	0.069	335.137	260.000
334.872	334.872	334.67	0.304	334.977	280.000
334.712	334.712	334.29	0.530	334.817	300.000
334.552	334.552	333.92	0.740	334.657	320.000
334.392	334.392	333.63	0.867	334.497	340.000
334.232	334.232	333.41	0.927	334.337	360.000
334.231	334.231	333.41	0.927	334.336	360.100
334.143	334.143	333.4	0.848	334.248	380.000
334.142	334.142	333.34	0.903	334.247	382.322
334.144	334.144	333.34	0.913	334.249	385.100
334.199	334.199	333.45	0.851	334.304	400.000
334.240	334.240	333.55	0.769	334.345	405.649
334.281	334.281	333.6	0.786	334.386	410.100
334.328	334.328	333.67	0.769	334.433	414.818
334.380	334.380	333.77	0.719	334.485	420.000
334.580	334.580	334.2	0.485	334.685	440.000
334.738	334.738	334.51	0.337	334.843	455.736
334.780	334.780	334.71	0.174	334.885	460.000
334.829	334.829	334.88	0.063	334.934	464.905
334.980	334.980	335.12	-0.034	335.085	480.000
335.180	335.180	335.32	-0.032	335.285	500.000
335.380	335.380	335.43	0.069	335.485	520.000
335.459	335.459	335.46	0.100	335.564	527.860
335.571	335.571	335.42	0.254	335.676	540.000
335.716	335.716	335.31	0.515	335.821	560.000
335.810	335.810	335.13	0.785	335.915	580.000
335.833	335.833	335.05	0.886	335.939	587.860
335.855	335.855	334.96	1.003	335.960	600.000
335.859	335.859	334.91	1.051	335.964	607.860
335.850	335.850	334.87	1.087	335.955	620.000
335.794	335.794	334.75	1.152	335.899	640.000
335.759	335.759	334.71	1.154	335.864	647.860
335.752	335.752	334.69	1.165	335.857	649.263
335.710	335.710	334.64	1.173	335.815	660.000
335.689	335.689	334.66	1.132	335.794	674.263
335.692	335.692	334.65	1.152	335.797	679.247
335.601	335.601	334.65	1.152	335.798	680.000
335.623	335.623	334.74	1.110	335.849	697.752

LONGITUDINAL SECTION - RD01  
SCALE 1 : 1000 Horiz.  
1 : 1000 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
1130 GOOLOOGONG ROAD  
GREENFELL, NSW

SCALE:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**ROAD 01 LONGITUDINAL SECTION - SHEET 1 OF 3**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

DRAWING No.		REV	
<b>8719</b>			
<b>RD.1.01</b>		<b>B</b>	

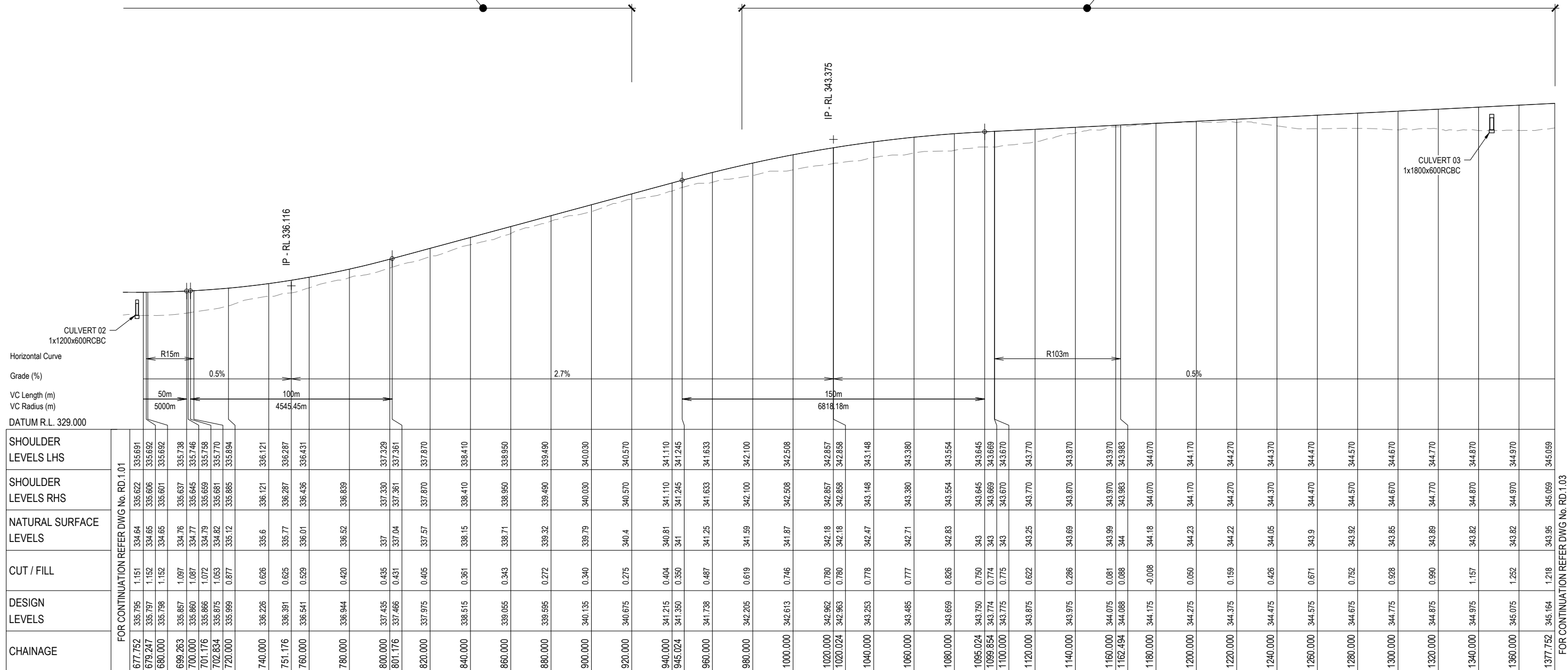
FOR CONTINUATION REFER DWG No. RD.1.02

**NOT FOR CONSTRUCTION**

**FOR CO ORDINATION**

ROADWORKS CONSTRUCTION MUST FOLLOW LEVELS ON THIS PLAN TO ENSURE FLOOD FREE ROAD ACCESS IS MAINTAINED

ROADWORKS CONSTRUCTION MUST FOLLOW LEVELS ON THIS PLAN TO GRADE SWALES AT MIN 0.5% TOWARDS CULVERT CROSSING



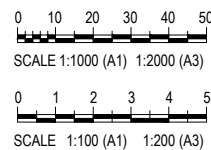
CHAINAGE	FOR CONTINUATION REFER DWG No. RD.1.01	SHOULDER LEVELS LHS	SHOULDER LEVELS RHS	NATURAL SURFACE LEVELS	CUT / FILL	DESIGN LEVELS
677.752	335.795	1.151	334.64	335.691		
679.247	335.797	1.152	334.65	335.692		
680.000	335.798	1.152	334.65	335.692		
699.263	335.857	1.087	334.76	335.637		
700.000	335.860	1.087	334.77	335.645		
701.176	335.866	1.072	334.79	335.659		
702.834	335.875	1.053	334.82	335.681		
720.000	335.999	0.877	335.12	335.885		
740.000	336.226	0.626	335.6	336.121		
751.176	336.391	0.625	335.77	336.287		
760.000	336.541	0.529	336.01	336.436		
780.000	336.944	0.420	336.52	336.839		
800.000	337.435	0.435	337	337.329		
801.176	337.466	0.431	337.04	337.361		
820.000	337.975	0.405	337.57	337.870		
840.000	338.515	0.361	338.15	338.410		
860.000	339.055	0.343	338.71	338.950		
880.000	339.595	0.272	339.32	339.490		
900.000	340.135	0.340	339.79	340.030		
920.000	340.675	0.275	340.4	340.570		
940.000	341.215	0.404	340.81	341.110		
945.024	341.350	0.350	341	341.245		
960.000	341.738	0.487	341.25	341.633		
980.000	342.205	0.619	341.59	342.100		
1000.000	342.613	0.746	341.87	342.508		
1020.000	342.962	0.780	342.18	342.857		
1020.024	342.963	0.780	342.18	342.858		
1040.000	343.253	0.778	342.47	343.148		
1060.000	343.465	0.777	342.71	343.380		
1080.000	343.659	0.826	342.83	343.554		
1095.024	343.750	0.750	343	343.645		
1099.854	343.774	0.774	343	343.669		
1100.000	343.775	0.775	343	343.670		
1120.000	343.875	0.622	343.25	343.770		
1140.000	343.975	0.286	343.69	343.870		
1160.000	344.075	0.081	343.99	343.970		
1162.494	344.088	0.088	344	343.983		
1180.000	344.175	-0.008	344.18	344.070		
1200.000	344.275	0.050	344.23	344.170		
1220.000	344.375	0.159	344.22	344.270		
1240.000	344.475	0.426	344.05	344.370		
1260.000	344.575	0.671	343.9	344.470		
1280.000	344.675	0.752	343.92	344.570		
1300.000	344.775	0.928	343.85	344.670		
1320.000	344.875	0.990	343.89	344.770		
1340.000	344.975	1.157	343.82	344.870		
1360.000	345.075	1.252	343.82	344.970		
1377.752	345.164	1.218	343.95	345.059		

LONGITUDINAL SECTION - RD01

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
1130 GOOLOONG ROAD  
GRENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

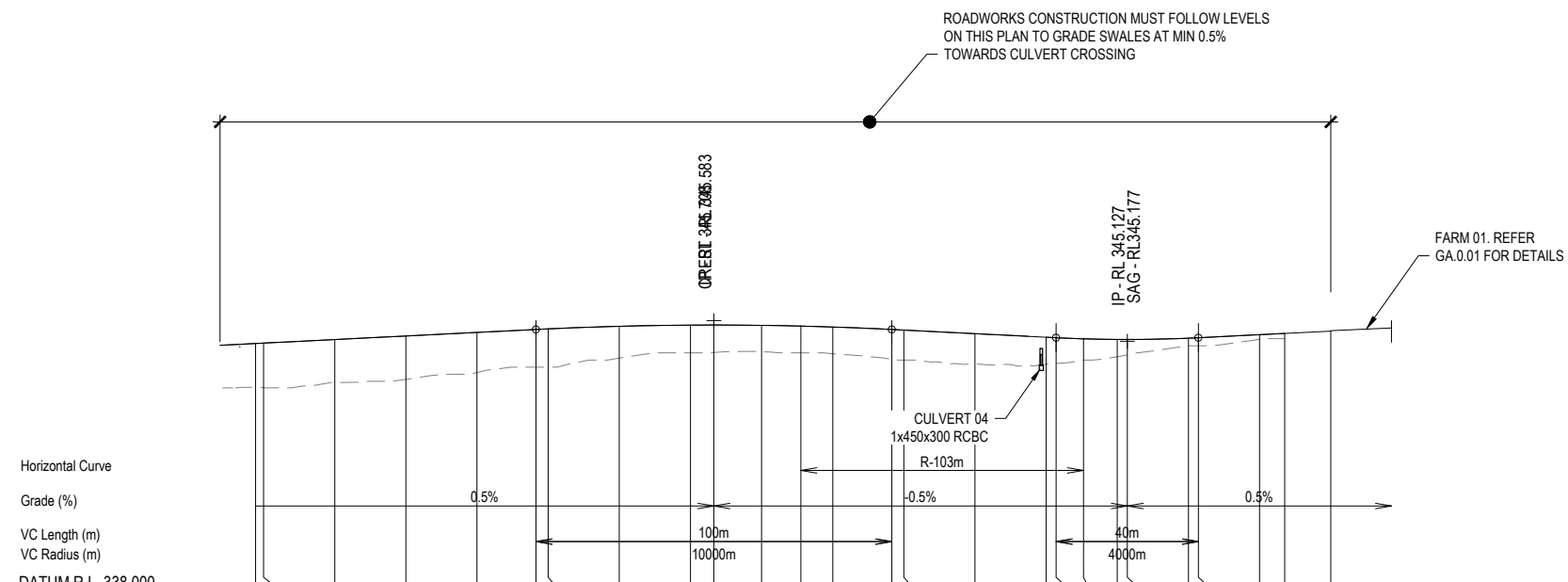
**BAIADA**  
**ROAD 01 LONGITUDINAL SECTION - SHEET 2 OF 3**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

DRAWING No.	
<b>8719</b>	
REV	
<b>RD.1.02</b>	<b>B</b>

FOR CONTINUATION REFER DWG No. RD.1.03

**NOT FOR CONSTRUCTION**



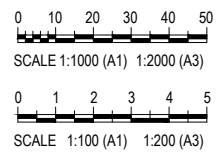
	FOR CONTINUATION REFER DWG No. RD.1.02									
SHOULDER LEVELS LHS	1357.752	345.064	1.230	343.83	344.959	344.959	344.970	344.970	344.970	344.970
SHOULDER LEVELS RHS	1360.000	345.075	1.252	343.82	344.970	344.970	344.970	344.970	344.970	344.970
NATURAL SURFACE LEVELS	1380.000	345.175	1.208	343.97	345.070	345.070	345.070	345.070	345.070	345.070
CUT / FILL	1400.000	345.275	1.218	344.06	345.170	345.170	345.170	345.170	345.170	345.170
DESIGN LEVELS	1420.000	345.375	1.128	344.25	345.270	345.270	345.270	345.270	345.270	345.270
CHAINAGE	1436.590	345.468	1.058	344.4	345.353	345.353	345.353	345.353	345.353	345.353
	1440.000	345.475	1.075	344.4	345.370	345.370	345.370	345.370	345.370	345.370
	1460.000	345.546	0.892	344.66	345.443	345.443	345.443	345.443	345.443	345.443
	1480.000	345.581	0.781	344.8	345.476	345.476	345.476	345.476	345.476	345.476
	1486.590	345.583	0.770	344.81	345.478	345.478	345.478	345.478	345.478	345.478
	1500.000	345.574	0.740	344.83	345.469	345.469	345.469	345.469	345.469	345.469
	1511.027	345.553	0.753	344.8	345.448	345.448	345.448	345.448	345.448	345.448
	1520.000	345.527	0.752	344.78	345.422	345.422	345.422	345.422	345.422	345.422
	1536.590	345.458	0.828	344.63	345.353	345.353	345.353	345.353	345.353	345.353
	1540.000	345.441	0.841	344.6	345.336	345.336	345.336	345.336	345.336	345.336
	1560.000	345.341	0.850	344.49	345.236	345.236	345.236	345.236	345.236	345.236
	1580.000	345.241	0.756	344.48	345.136	345.136	345.136	345.136	345.136	345.136
	1582.815	345.227	0.727	344.5	345.122	345.122	345.122	345.122	345.122	345.122
	1590.488	345.196	0.596	344.6	345.091	345.091	345.091	345.091	345.091	345.091
	1600.000	345.178	0.488	344.69	345.073	345.073	345.073	345.073	345.073	345.073
	1602.815	345.177	0.433	344.74	345.072	345.072	345.072	345.072	345.072	345.072
	1620.000	345.214	0.214	345	345.109	345.109	345.109	345.109	345.109	345.109
	1622.815	345.227	0.227	345	345.122	345.122	345.122	345.122	345.122	345.122
	1640.000	345.313	0.135	345.18	345.208	345.208	345.208	345.208	345.208	345.208
	1647.072	345.348	0.148	345.2						
	1660.000	345.413								

LONGITUDINAL SECTION - RD01

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
1130 GOOLOGONG ROAD  
GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

BAIADA

ROAD 01 LONGITUDINAL  
SECTION - SHEET 3 OF 3

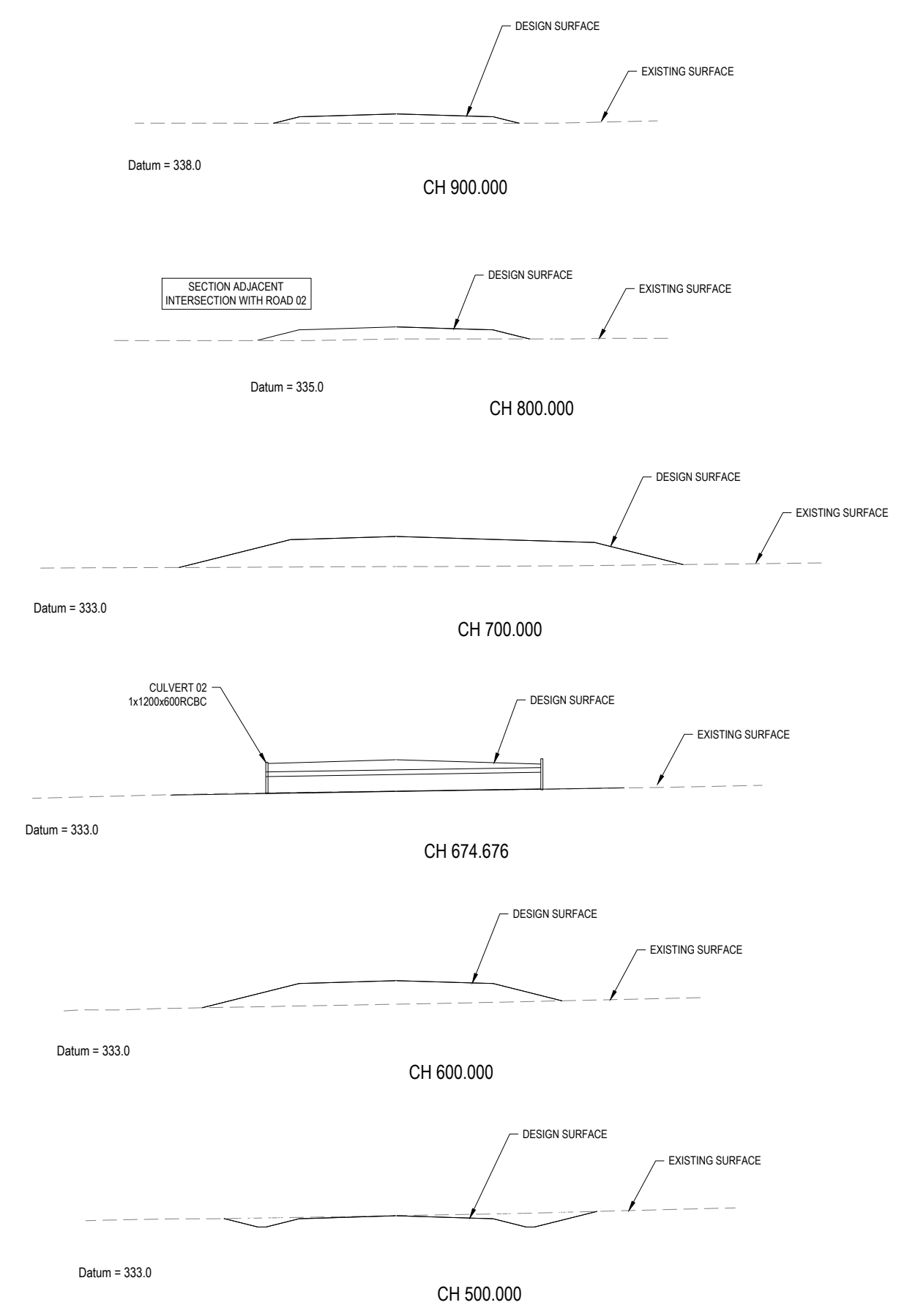
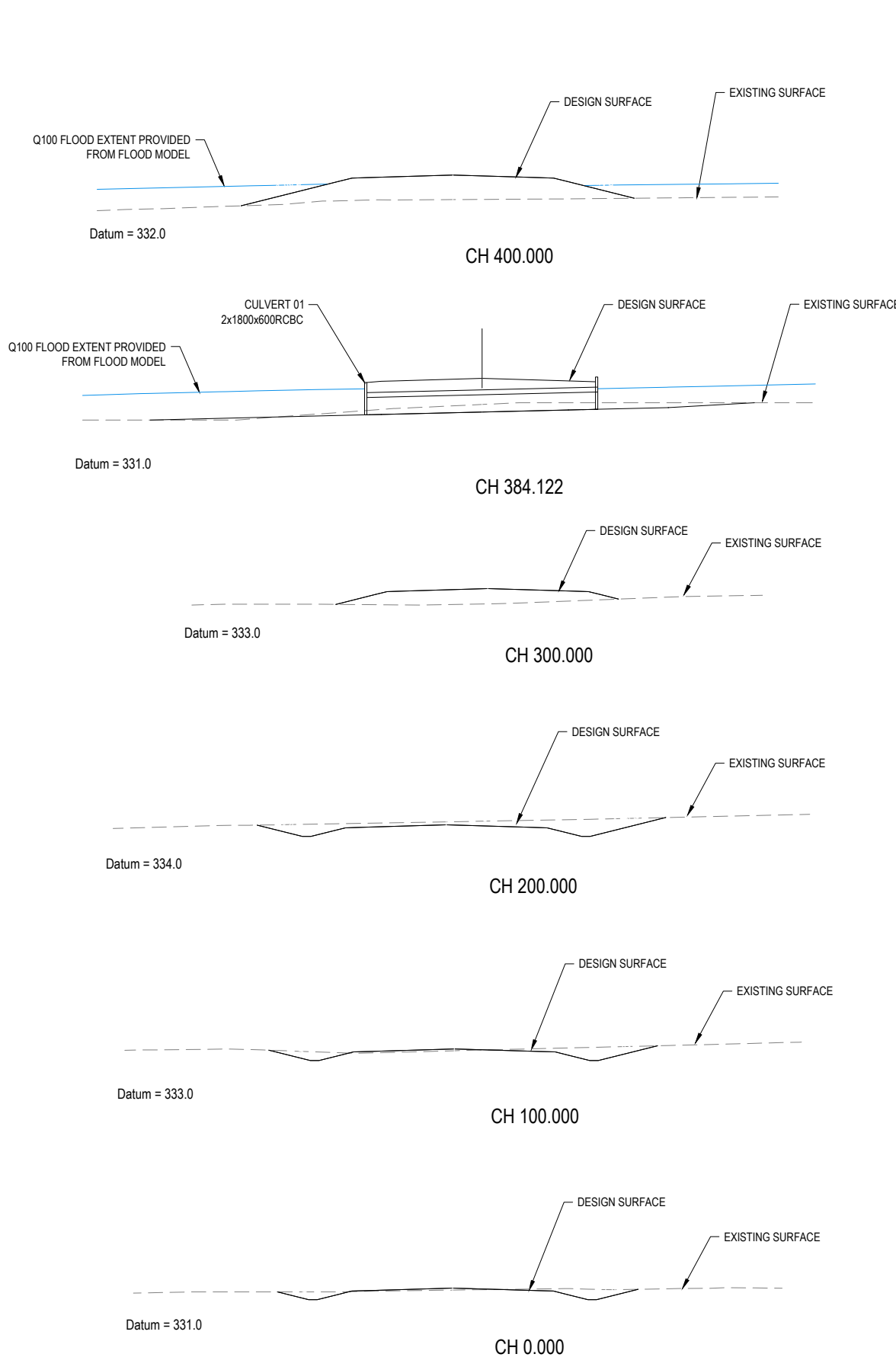
**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

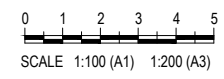
FOR CO ORDINATION

mpn JOB	
8719	
DRAWING No.	REV
RD.1.03	B

NOT FOR CONSTRUCTION



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 \_\_\_\_\_ DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

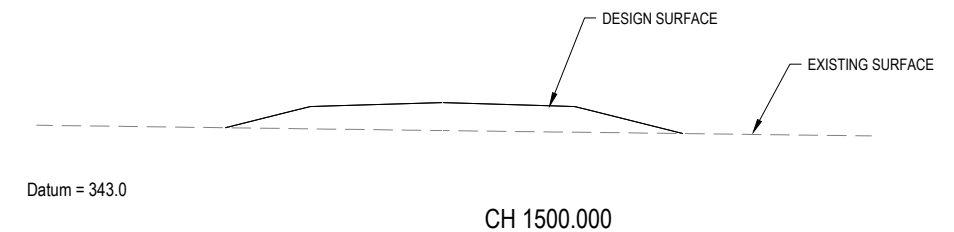
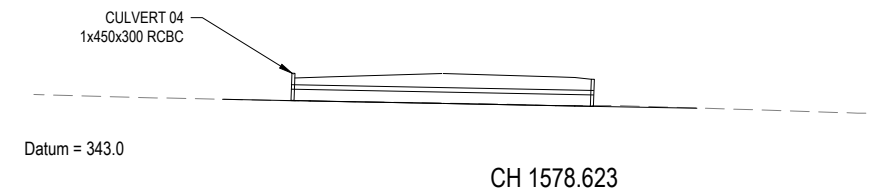
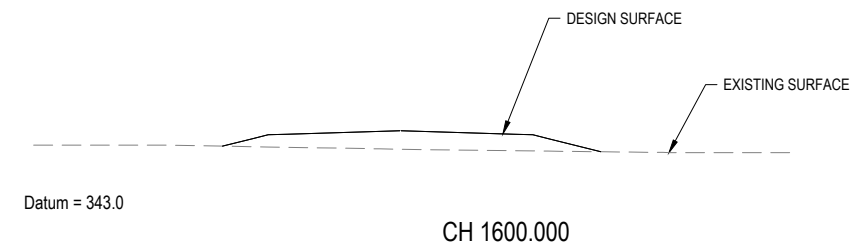
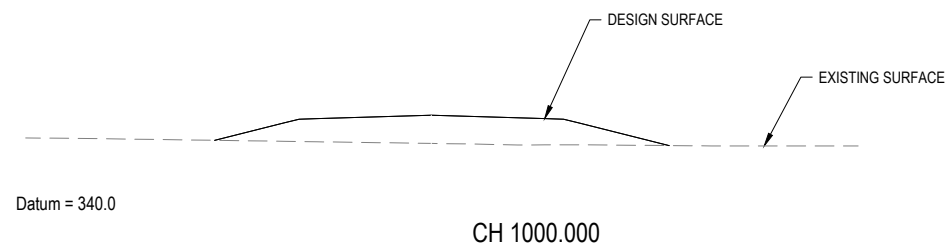
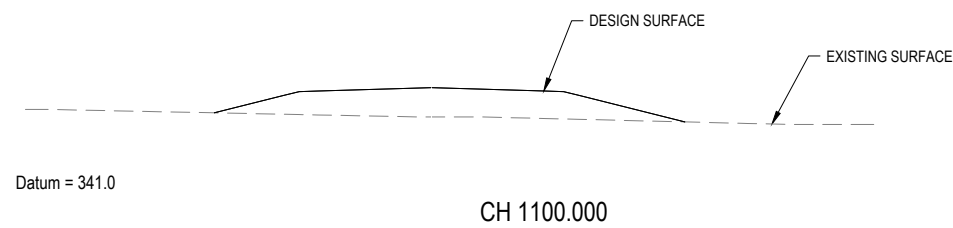
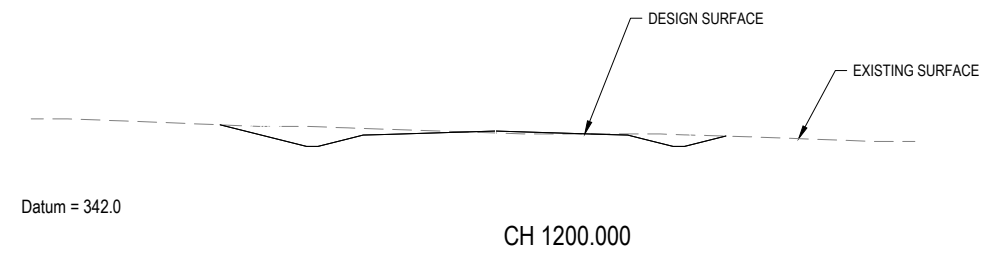
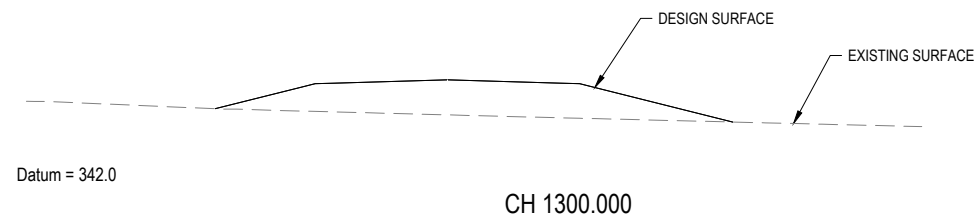
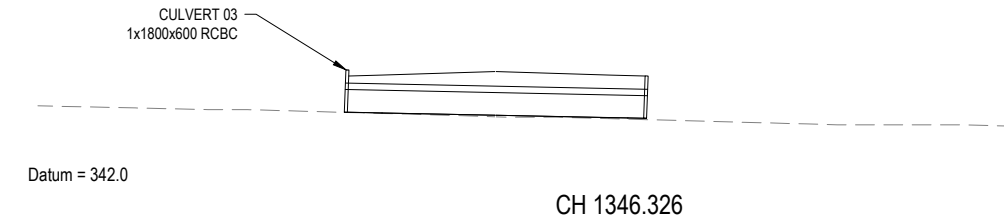
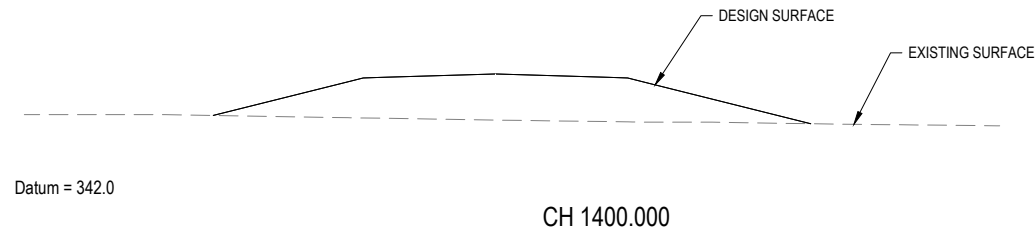
**BAIADA**  
**ROAD 01 CROSS SECTIONS**  
**SHEET 1 OF 2**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

**FOR CO ORDINATION**

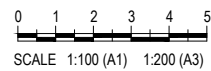
mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>RD.1.04</b>	<b>B</b>

**NOT FOR CONSTRUCTION**



CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
1130 GOOLOGONG ROAD  
GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

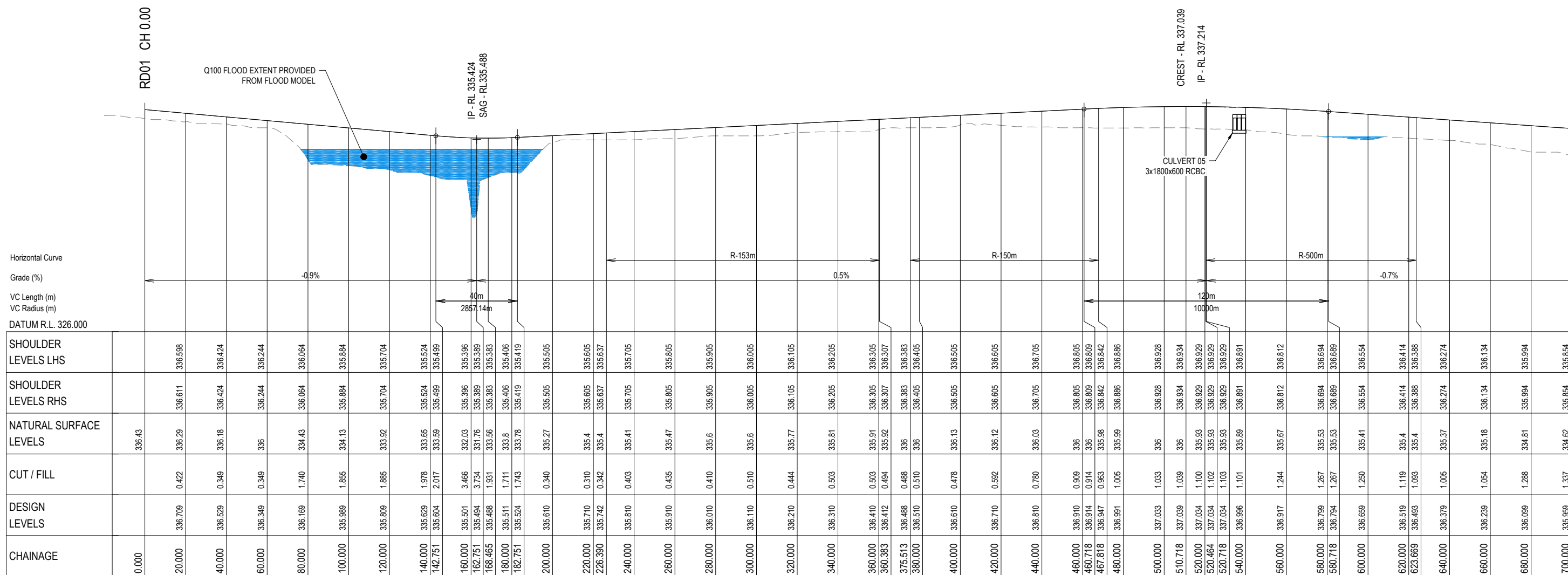
**BAIADA**  
**ROAD 01 CROSS SECTIONS**  
**SHEET 2 OF 2**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
8719	
DRAWING No.	REV
RD.1.05	B

**FOR CO ORDINATION**

NOT FOR CONSTRUCTION

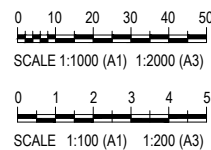


LONGITUDINAL SECTION - RD02

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

GRENFELL FARMS  
1130 GOOLOONG ROAD  
GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

BAIADA

ROAD 02 LONGITUDINAL  
SECTION - SHEET 1 OF 4

**mpn consulting**

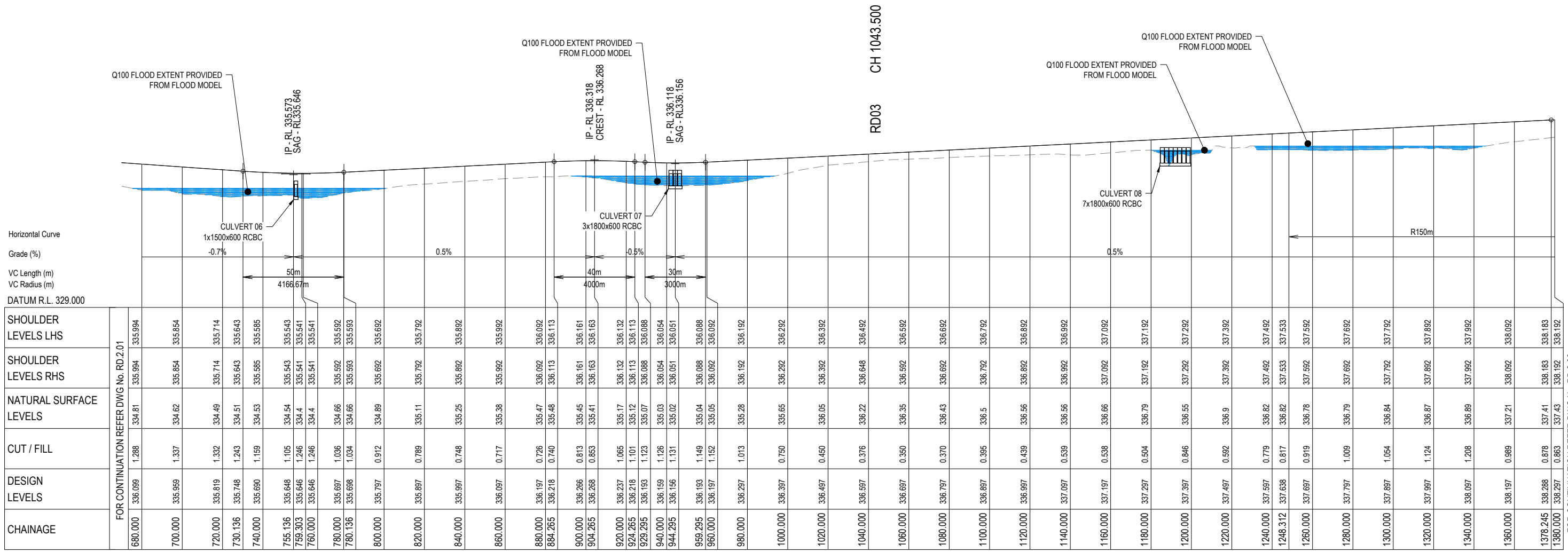
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
8719	
DRAWING No.	REV
RD.2.01	B

FOR CONTINUATION REFER DWG No. RD.2.02

NOT FOR CONSTRUCTION

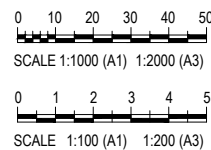


LONGITUDINAL SECTION - RD02

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
B	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

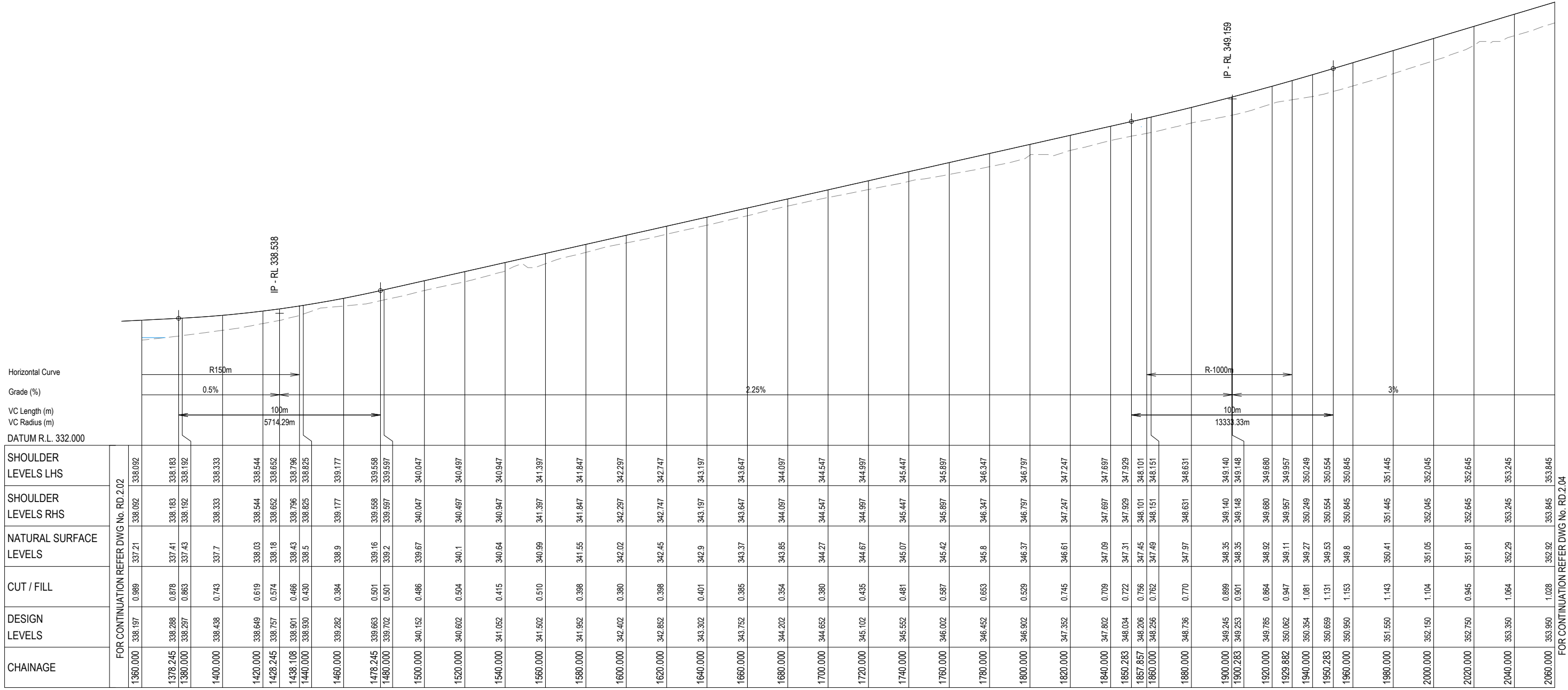
**BAIADA**  
**ROAD 02 LONGITUDINAL**  
**SECTION - SHEET 2 OF 4**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>RD.2.02</b>	<b>B</b>

FOR CONTINUATION REFER DWG No. RD.2.03  
**NOT FOR CONSTRUCTION**



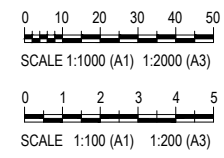
Horizontal Curve  
Grade (%)  
VC Length (m)  
VC Radius (m)  
DATUM R.L. 332.000

	FOR CONTINUATION REFER DWG No. RD.2.02	
SHOULDER LEVELS LHS	338.092	338.092
SHOULDER LEVELS RHS	337.21	337.21
NATURAL SURFACE LEVELS	337.21	337.21
CUT / FILL	0.989	0.989
DESIGN LEVELS	338.197	338.197
CHAINAGE	1360.000	1360.000
	1378.245	1378.245
	1390.000	1390.000
	1400.000	1400.000
	1420.000	1420.000
	1428.245	1428.245
	1438.108	1438.108
	1440.000	1440.000
	1460.000	1460.000
	1478.245	1478.245
	1480.000	1480.000
	1500.000	1500.000
	1520.000	1520.000
	1540.000	1540.000
	1560.000	1560.000
	1580.000	1580.000
	1600.000	1600.000
	1620.000	1620.000
	1640.000	1640.000
	1660.000	1660.000
	1680.000	1680.000
	1700.000	1700.000
	1720.000	1720.000
	1740.000	1740.000
	1760.000	1760.000
	1780.000	1780.000
	1800.000	1800.000
	1820.000	1820.000
	1840.000	1840.000
	1850.283	1850.283
	1857.857	1857.857
	1860.000	1860.000
	1880.000	1880.000
	1900.000	1900.000
	1900.283	1900.283
	1920.000	1920.000
	1929.882	1929.882
	1940.000	1940.000
	1950.283	1950.283
	1960.000	1960.000
	1980.000	1980.000
	2000.000	2000.000
	2020.000	2020.000
	2040.000	2040.000
	2060.000	2060.000

LONGITUDINAL SECTION - RD02

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

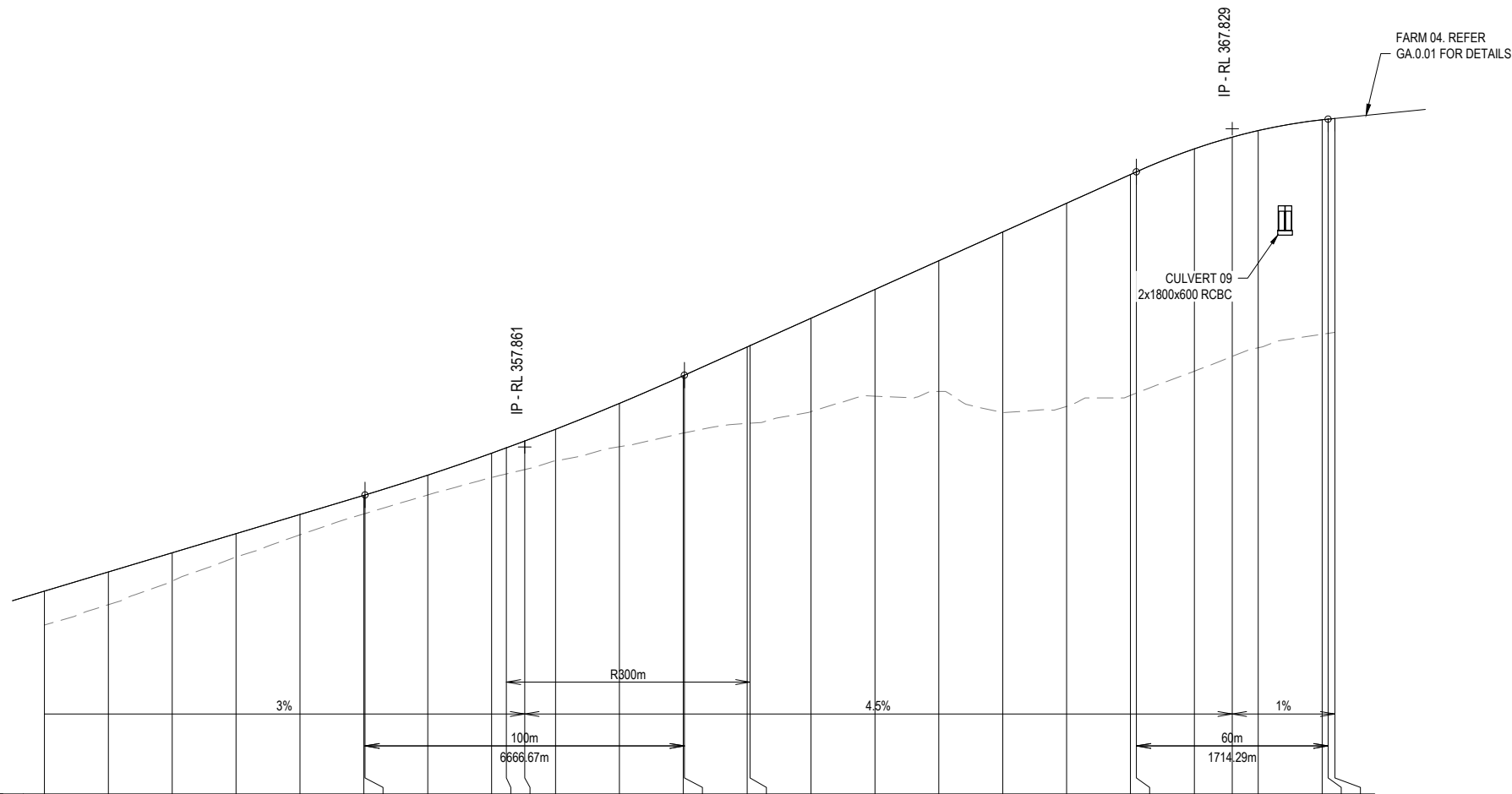
**BAIADA**  
**ROAD 02 LONGITUDINAL SECTION - SHEET 3 OF 4**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	REV
DRAWING No.	
<b>RD.2.03</b>	<b>B</b>

NOT FOR CONSTRUCTION

Horizontal Curve  
Grade (%)  
VC Length (m)  
VC Radius (m)  
DATUM R.L. 347.000



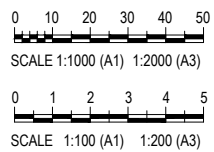
	FOR CONTINUATION REFER DWG No. RD.2.03	
SHOULDER LEVELS LHS	2040.000	353.245
SHOULDER LEVELS RHS	2060.000	353.845
NATURAL SURFACE LEVELS	2080.000	354.445
CUT / FILL	2100.000	355.045
DESIGN LEVELS	2120.000	355.645
CHAINAGE	2140.000	356.245
	2140.351	356.256
	2160.000	356.874
	2180.000	357.563
	2184.595	357.730
	2190.351	357.943
	2200.000	358.312
	2220.000	359.121
	2240.000	359.990
	2240.351	360.006
	2260.000	360.890
	2260.900	360.931
	2280.000	361.790
	2300.000	362.690
	2320.000	363.590
	2340.000	364.490
	2360.000	365.390
	2380.000	366.290
	2381.864	366.374
	2400.000	367.094
	2411.864	367.461
	2420.000	367.666
	2440.000	368.004
	2441.864	368.024
	2443.976	368.145

LONGITUDINAL SECTION - RD02

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOONG ROAD**  
**GRENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

BAIADA

**ROAD 02 LONGITUDINAL SECTION - SHEET 4 OF 4**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

**FOR CO ORDINATION**

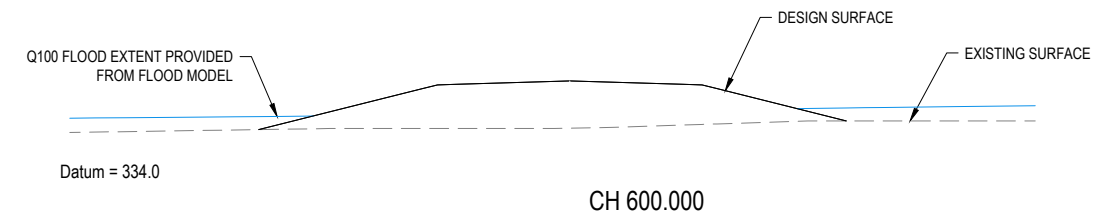
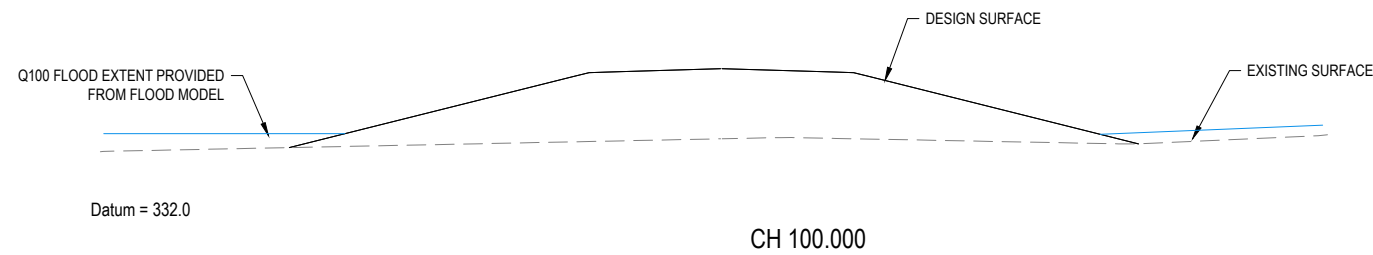
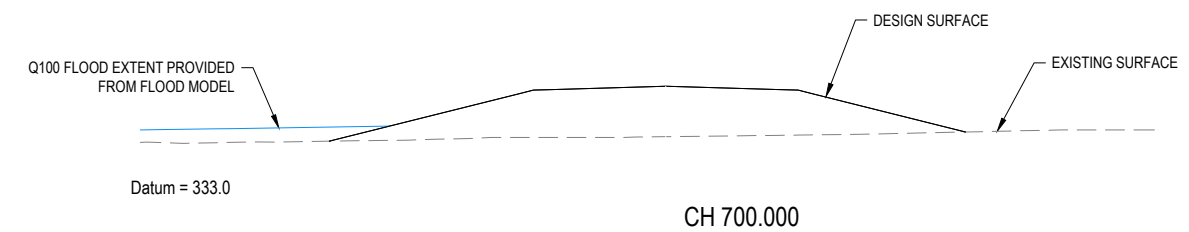
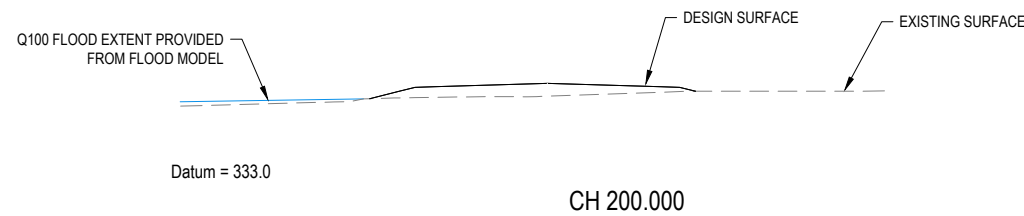
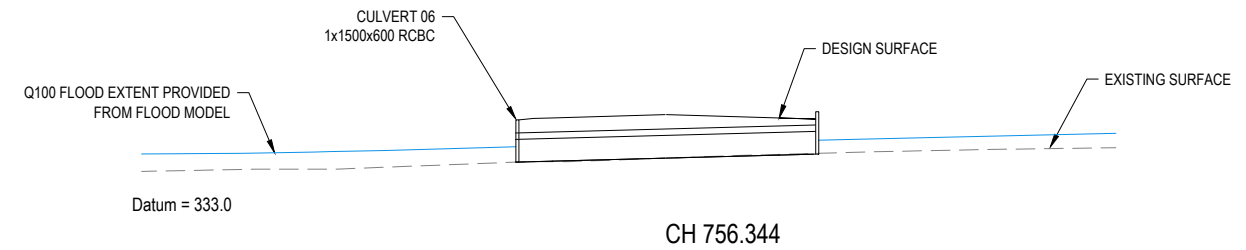
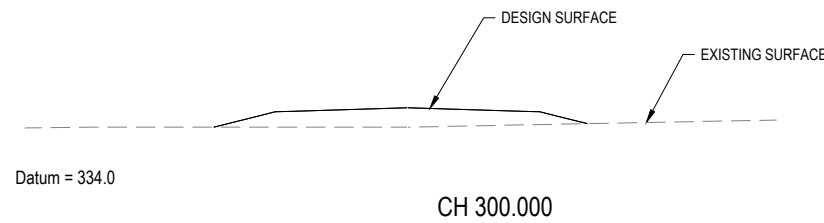
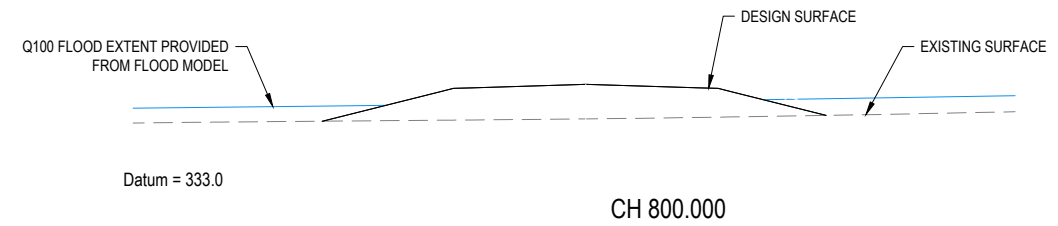
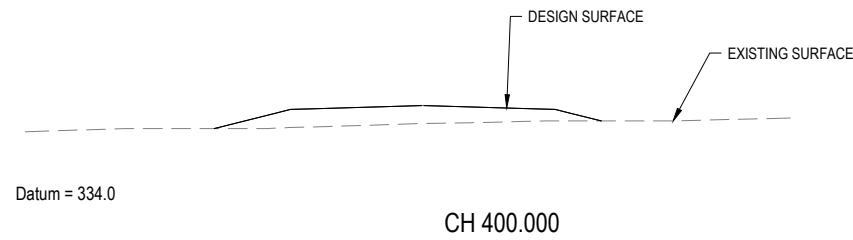
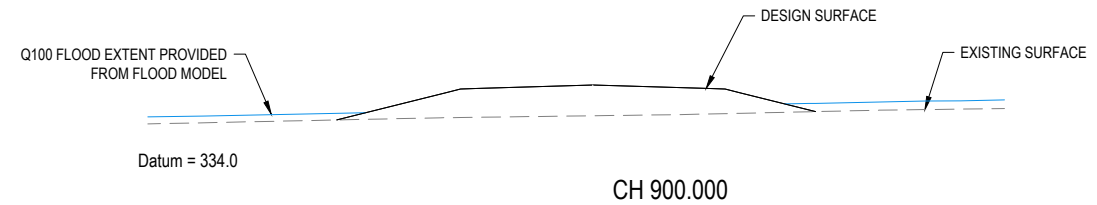
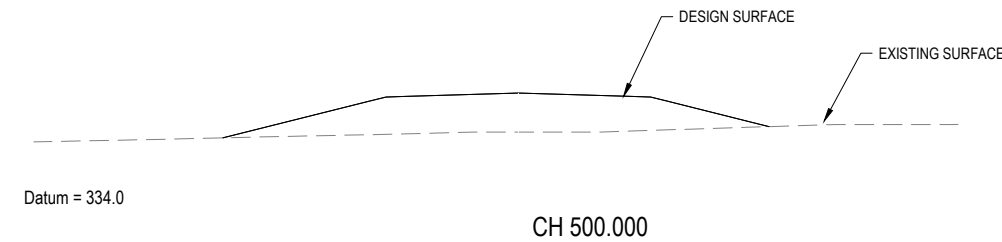
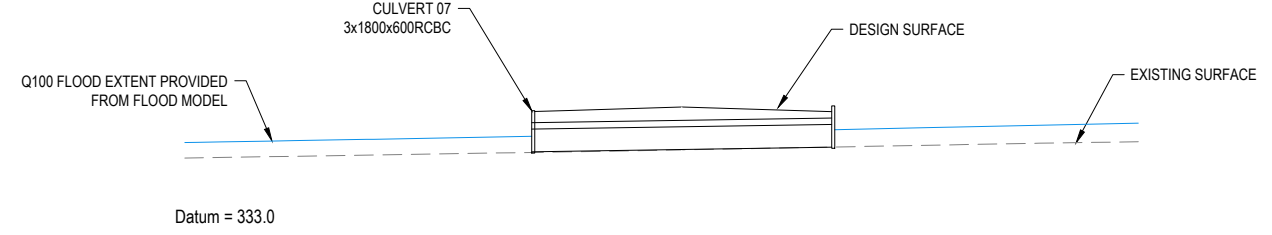
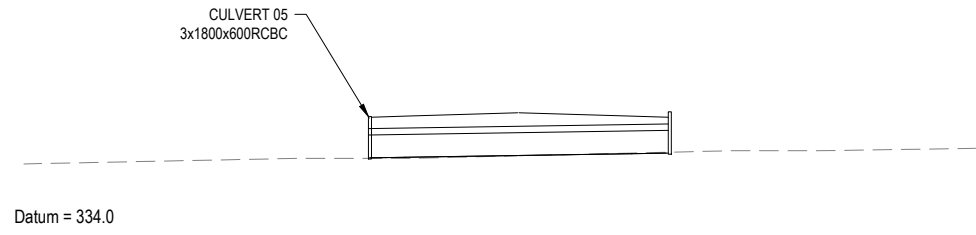
mpn JOB

**8719**

DRAWING No. REV

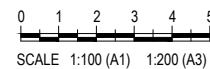
**RD.2.04** **B**

**NOT FOR CONSTRUCTION**



CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

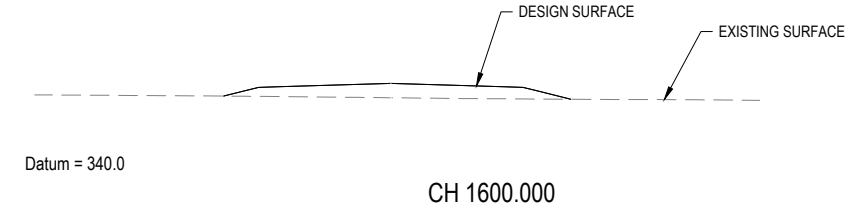
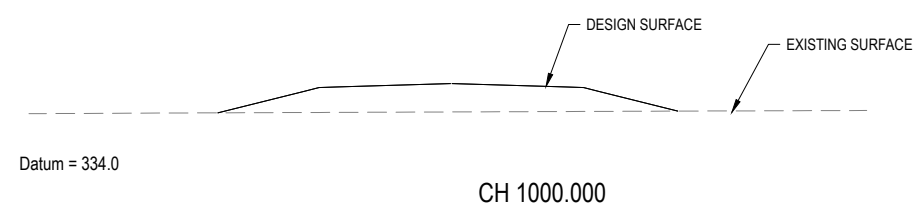
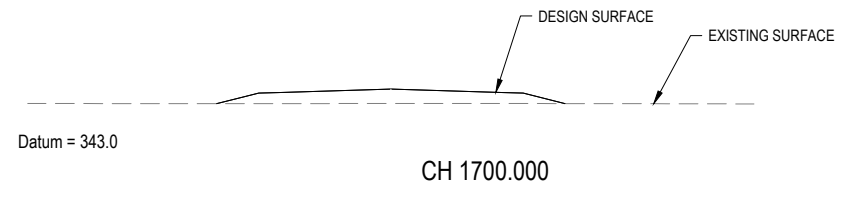
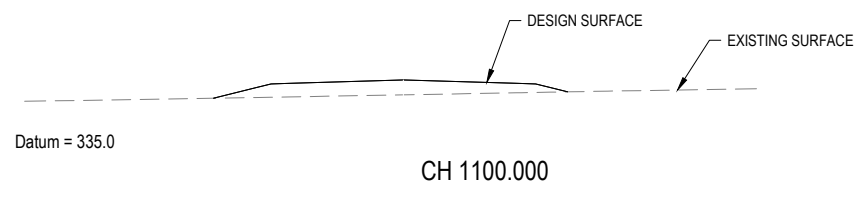
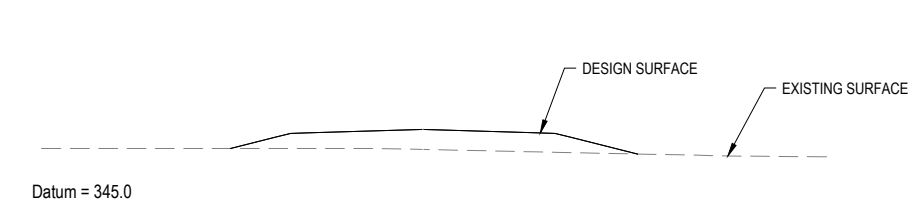
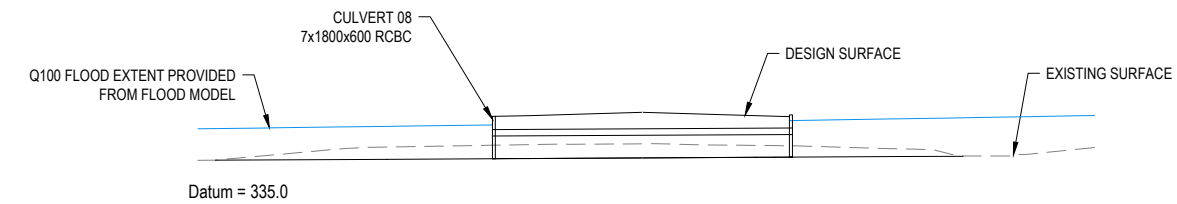
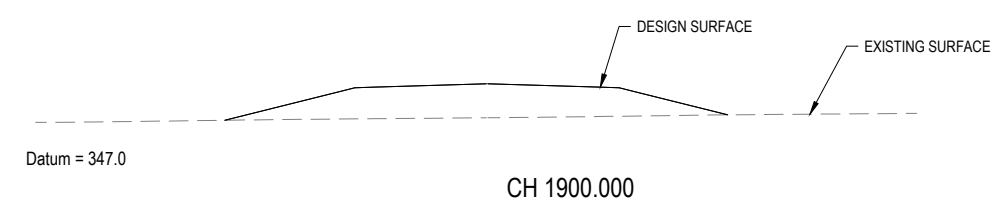
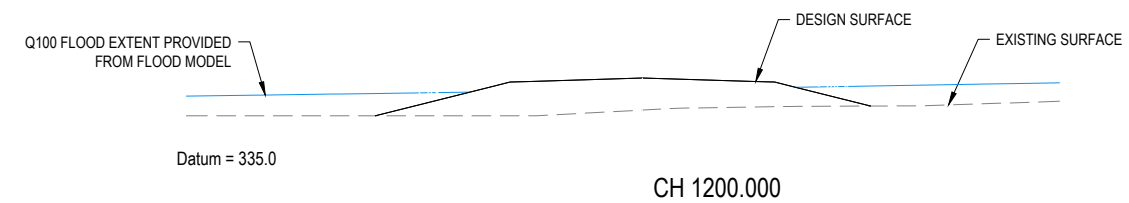
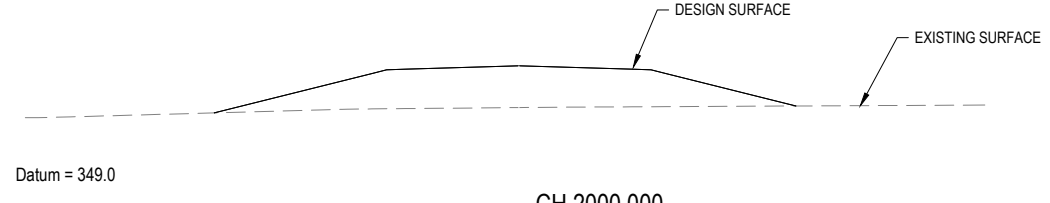
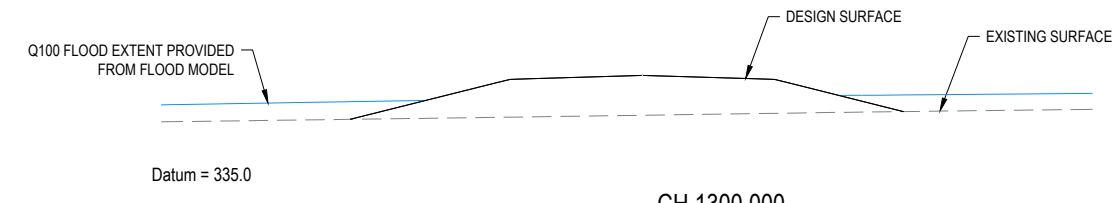
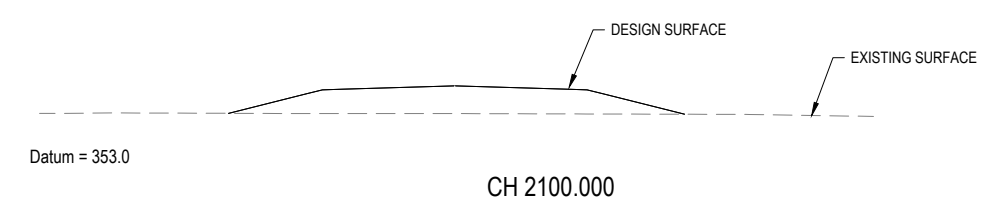
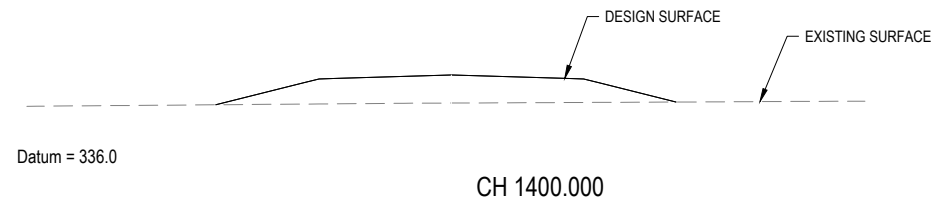
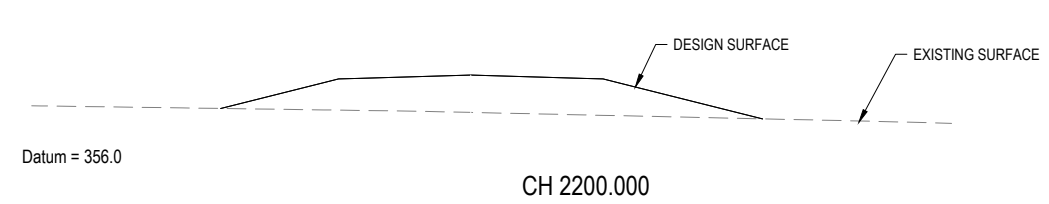
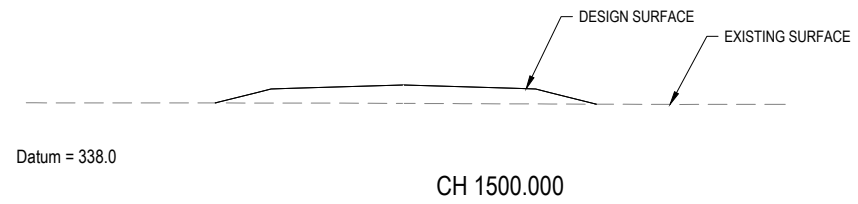
**BAIADA**  
**ROAD 02 CROSS SECTIONS**  
**SHEET 1 OF 2**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

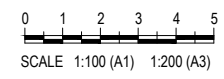
DRAWING No.	
RD.2.05	
REV	B

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**



CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
1130 GOOLOGONG ROAD  
GRENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

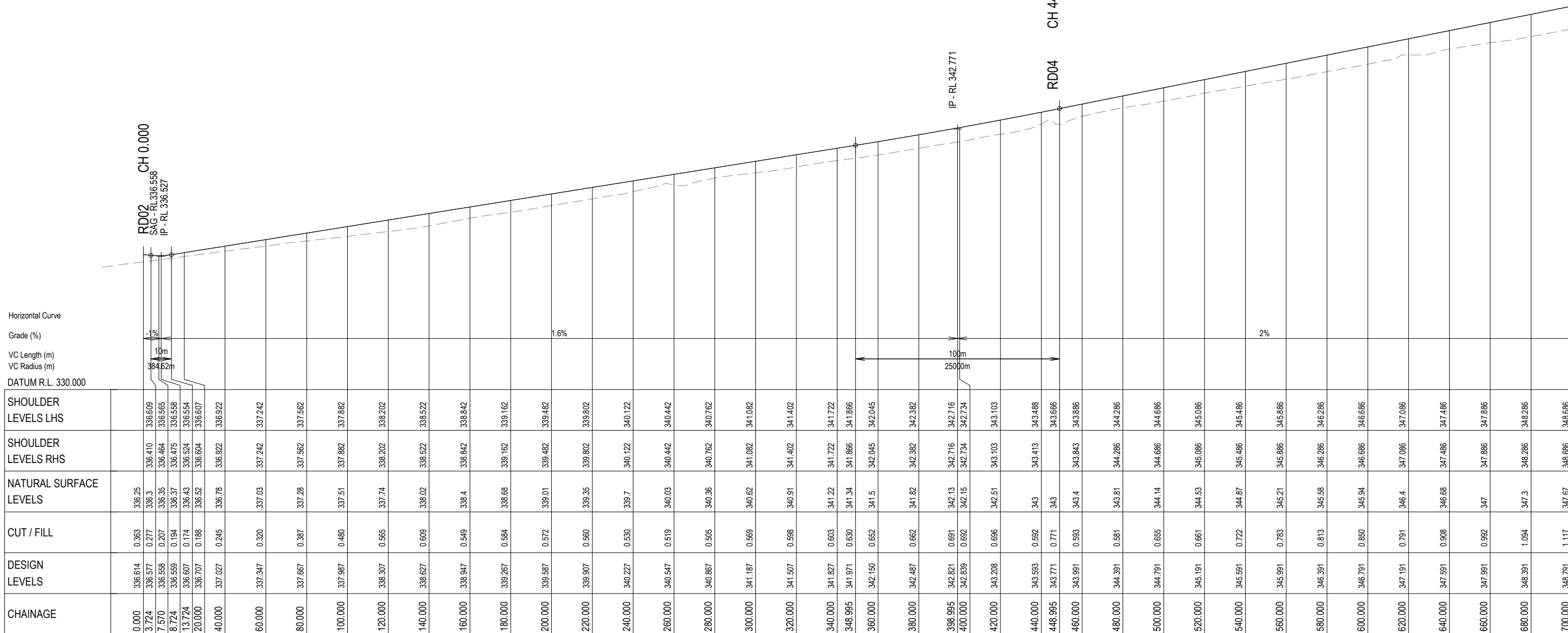
**BAIADA**  
**ROAD 02 CROSS SECTIONS**  
**SHEET 2 OF 2**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

**FOR CO ORDINATION**

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>RD.2.06</b>	<b>B</b>

**NOT FOR CONSTRUCTION**



Horizontal Curve  
Grade (%)  
VC Length (m)  
VC Radius (m)  
DATUM R.L. 330.000

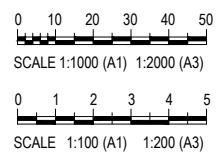
CHAINAGE	DESIGN LEVELS	CUT / FILL	NATURAL SURFACE LEVELS	SHOULDER LEVELS RHS	SHOULDER LEVELS LHS
0.000	336.614	0.363	336.25		
3.724	336.577	0.277	336.3	336.410	336.609
7.570	336.558	0.207	336.35	336.464	336.585
8.724	336.559	0.194	336.37	336.475	336.558
13.724	336.607	0.174	336.43	336.524	336.554
20.000	336.707	0.188	336.52	336.604	336.607
40.000	337.027	0.246	336.78	336.922	336.922
60.000	337.347	0.320	337.03	337.242	337.242
80.000	337.667	0.387	337.28	337.562	337.562
100.000	337.987	0.480	337.51	337.882	337.882
120.000	338.307	0.565	337.74	338.202	338.202
140.000	338.627	0.609	338.02	338.522	338.522
160.000	338.947	0.549	338.4	338.842	338.842
180.000	339.267	0.584	338.68	339.162	339.162
200.000	339.587	0.572	339.01	339.482	339.482
220.000	339.907	0.560	339.35	339.802	339.802
240.000	340.227	0.530	339.7	340.122	340.122
260.000	340.547	0.519	340.03	340.442	340.442
280.000	340.867	0.505	340.36	340.762	340.762
300.000	341.187	0.569	340.62	341.082	341.082
320.000	341.507	0.598	340.91	341.402	341.402
340.000	341.827	0.603	341.22	341.722	341.722
348.995	341.971	0.630	341.34	341.866	341.866
360.000	342.150	0.652	341.5	342.045	342.045
380.000	342.487	0.662	341.82	342.382	342.382
398.995	342.821	0.691	342.13	342.716	342.716
400.000	342.839	0.692	342.15	342.734	342.734
420.000	343.208	0.696	342.51	343.103	343.103
440.000	343.593	0.592	343	343.413	343.488
448.995	343.771	0.771	343	343.666	343.666
460.000	343.991	0.593	343.4	343.843	343.843
480.000	344.391	0.581	343.81	344.286	344.286
500.000	344.791	0.655	344.14	344.686	344.686
520.000	345.191	0.661	344.53	345.086	345.086
540.000	345.591	0.722	344.87	345.486	345.486
560.000	345.991	0.783	345.21	345.886	345.886
580.000	346.391	0.813	345.58	346.286	346.286
600.000	346.791	0.850	345.94	346.686	346.686
620.000	347.191	0.791	346.4	347.086	347.086
640.000	347.591	0.908	346.68	347.486	347.486
660.000	347.991	0.992	347	347.886	347.886
680.000	348.391	1.094	347.3	348.286	348.286
700.000	348.791	1.117	347.67	348.686	348.686

LONGITUDINAL SECTION - RD03

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

BAIADA

**ROAD 03 LONGITUDINAL**  
**SECTION - SHEET 1 OF 3**

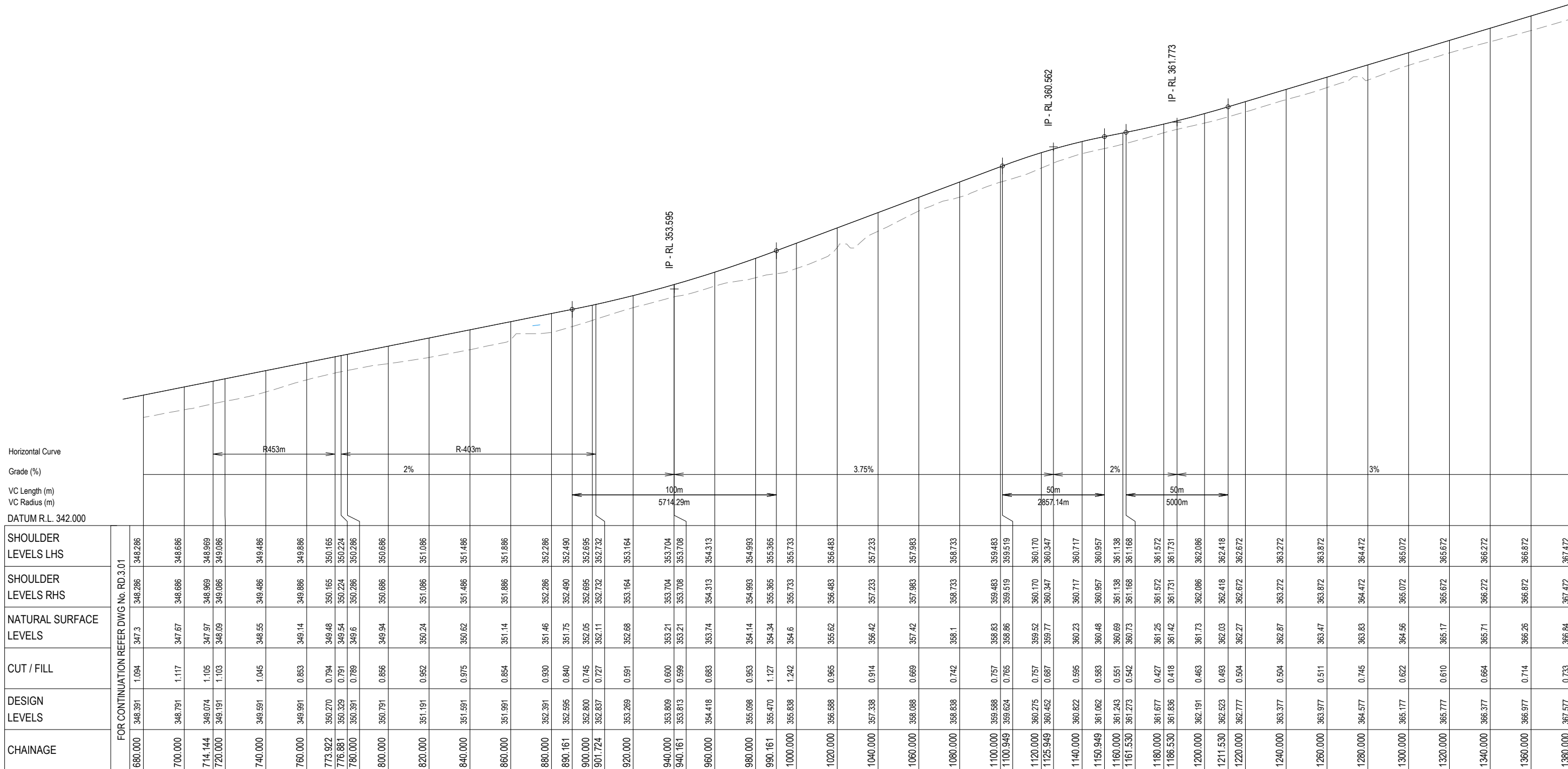
**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
8719	
DRAWING No.	REV
<b>RD.3.01</b>	<b>B</b>

FOR CONTINUATION REFER DWG No. RD.3.02

**NOT FOR CONSTRUCTION**



Horizontal Curve  
Grade (%)  
VC Length (m)  
VC Radius (m)  
DATUM R.L. 342.000

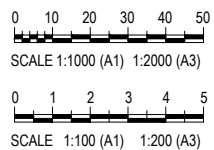
CHAINAGE	FOR CONTINUATION REFER DWG No. RD.3.01				
	SHOULDER LEVELS LHS	SHOULDER LEVELS RHS	NATURAL SURFACE LEVELS	CUT / FILL	DESIGN LEVELS
680.000	348.391	347.3	348.286	1.094	347.3
700.000	348.791	1.117	348.686	1.117	348.686
714.144	349.074	1.105	348.969	1.105	348.969
720.000	349.191	1.103	349.086	1.103	349.086
740.000	349.591	1.045	349.486	1.045	349.486
760.000	349.991	0.853	349.886	0.853	349.886
773.922	350.270	0.794	350.165	0.794	350.165
776.881	350.329	0.791	350.224	0.791	350.224
780.000	350.391	0.789	350.286	0.789	350.286
800.000	350.791	0.856	349.94	0.856	350.686
820.000	351.191	0.952	350.24	0.952	351.086
840.000	351.591	0.975	350.62	0.975	351.486
860.000	351.991	0.854	351.14	0.854	351.886
880.000	352.391	0.930	351.46	0.930	352.286
890.161	352.595	0.840	351.75	0.840	352.490
900.000	352.800	0.745	352.05	0.745	352.695
901.724	352.837	0.727	352.11	0.727	352.732
920.000	353.269	0.591	352.68	0.591	353.164
940.000	353.809	0.600	353.21	0.600	353.704
940.161	353.813	0.599	353.21	0.599	353.708
960.000	354.418	0.683	353.74	0.683	354.313
980.000	355.098	0.953	354.14	0.953	354.993
990.161	355.470	1.127	354.34	1.127	355.365
1000.000	355.838	1.242	354.6	1.242	355.733
1020.000	356.598	0.965	355.62	0.965	356.483
1040.000	357.338	0.914	356.42	0.914	357.233
1060.000	358.088	0.669	357.42	0.669	357.983
1080.000	358.838	0.742	358.1	0.742	358.733
1100.000	359.588	0.757	358.83	0.757	359.483
1100.949	359.624	0.765	359.86	0.765	359.519
1120.000	360.275	0.757	359.52	0.757	360.170
1125.949	360.452	0.687	359.77	0.687	360.347
1140.000	360.822	0.595	360.23	0.595	360.717
1150.949	361.062	0.583	360.48	0.583	360.957
1160.000	361.243	0.551	360.69	0.551	361.138
1161.530	361.273	0.542	360.73	0.542	361.168
1180.000	361.677	0.427	361.25	0.427	361.572
1186.530	361.836	0.418	361.42	0.418	361.731
1200.000	362.191	0.463	361.73	0.463	362.086
1211.530	362.523	0.483	362.03	0.483	362.418
1220.000	362.777	0.504	362.27	0.504	362.672
1240.000	363.377	0.504	362.87	0.504	363.272
1260.000	363.977	0.511	363.47	0.511	363.872
1280.000	364.577	0.745	363.83	0.745	364.472
1300.000	365.177	0.622	364.56	0.622	365.072
1320.000	365.777	0.610	365.17	0.610	365.672
1340.000	366.377	0.664	365.71	0.664	366.272
1360.000	366.977	0.714	366.26	0.714	366.872
1380.000	367.577	0.733	366.84	0.733	367.472

LONGITUDINAL SECTION - RD03

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	14.08.21	ISSUE FOR COORDINATION	BCM	-
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOONG ROAD**  
**GREENFELL, NSW**

SCALE:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**ROAD 03 LONGITUDINAL**  
**SECTION - SHEET 2 OF 3**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>RD.3.02</b>	<b>B</b>

FOR CONTINUATION REFER DWG No. RD.3.03

**NOT FOR CONSTRUCTION**

**FOR CO ORDINATION**

Horizontal Curve  
Grade (%)  
VC Length (m)  
VC Radius (m)  
DATUM R.L. 361.000

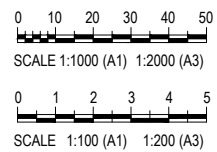
	FOR CONTINUATION REFER DWG No. RD.3.02	
SHOULDER LEVELS LHS	366.872	366.872
SHOULDER LEVELS RHS	367.472	367.472
NATURAL SURFACE LEVELS	366.26	366.84
CUT / FILL	0.714	0.733
DESIGN LEVELS	366.977	367.577
CHAINAGE	1360.000	1360.000
	1400.000	1400.000
	1420.000	1420.000
	1440.000	1440.000
	1460.000	1460.000
	1474.383	1474.383
	1480.000	1480.000
	1496.492	1496.492
	1500.000	1500.000
	1520.000	1520.000
	1540.000	1540.000
	1546.492	1546.492
	1560.000	1560.000
	1580.000	1580.000
	1596.492	1596.492
	1600.000	1600.000
	1620.000	1620.000
	1640.000	1640.000
	1649.971	1649.971
	1660.000	1660.000
	1677.286	1677.286

LONGITUDINAL SECTION - RD03

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	22.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOONGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

BAIADA

**ROAD 03 LONGITUDINAL SECTION - SHEET 3 OF 3**

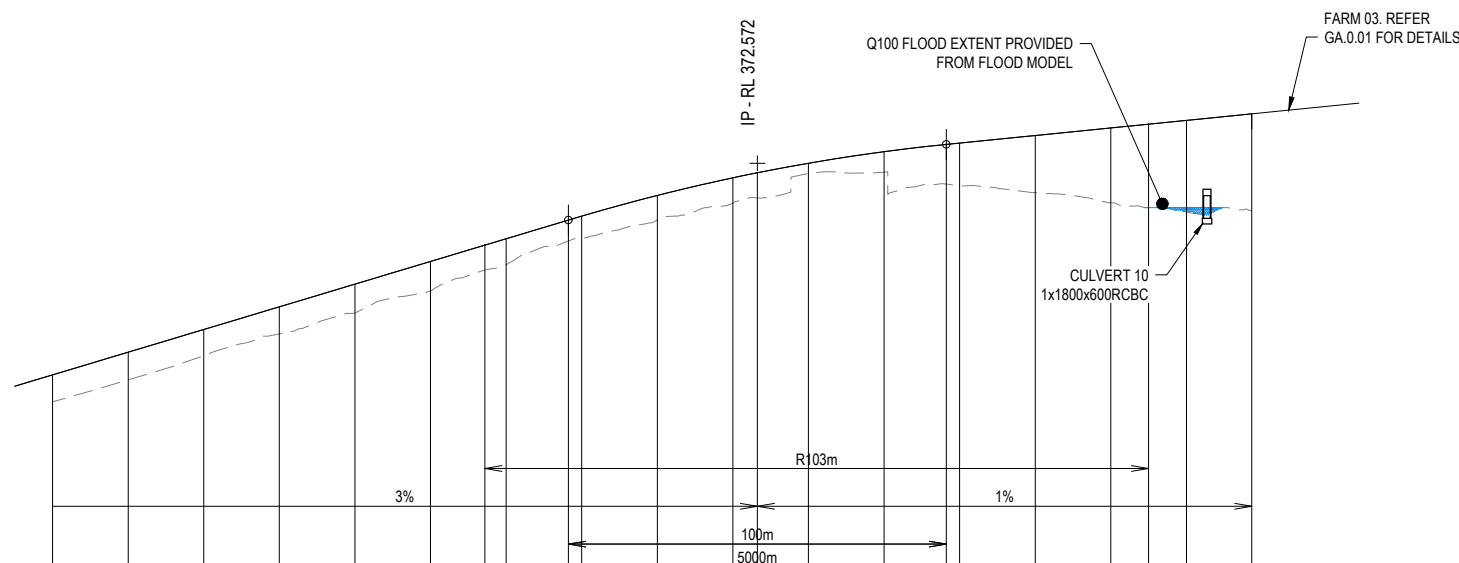
**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld. 4066 E: solutions@mpnc.net.au

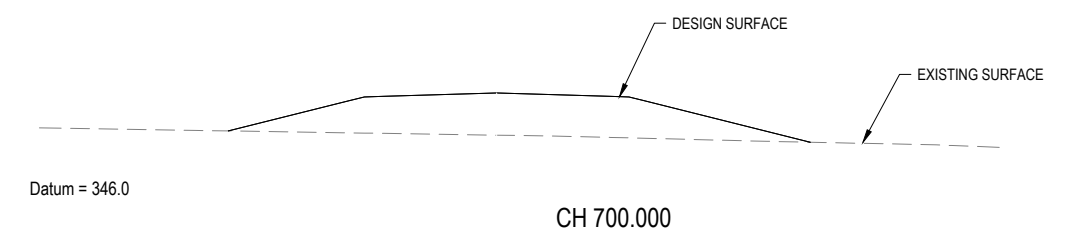
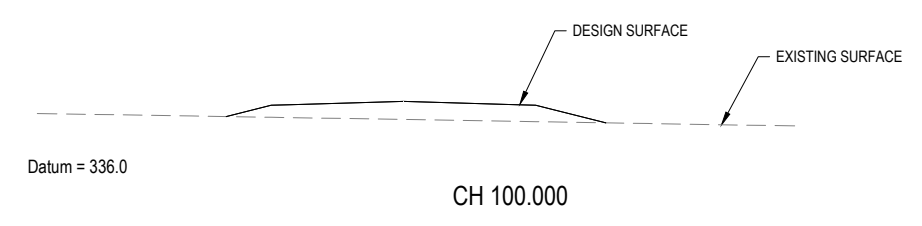
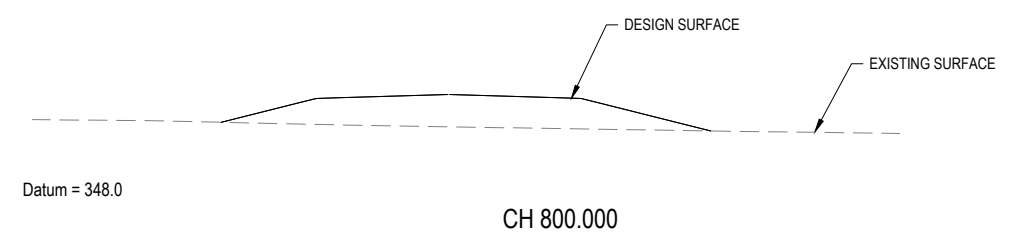
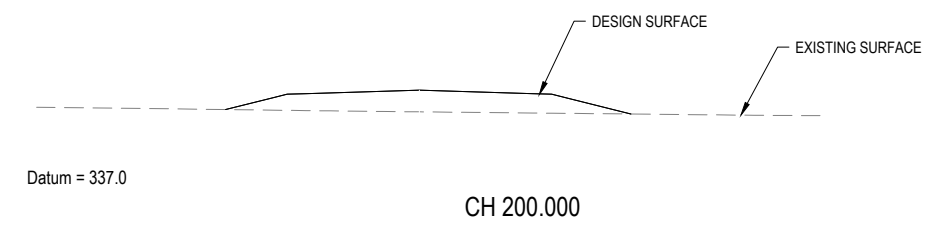
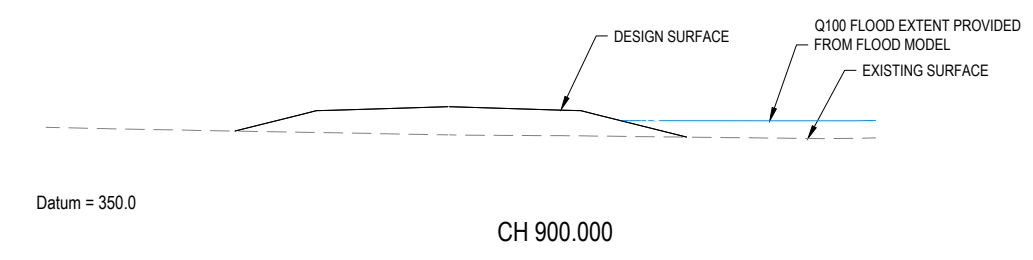
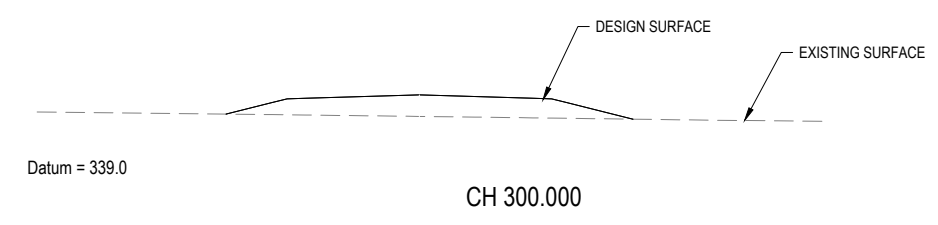
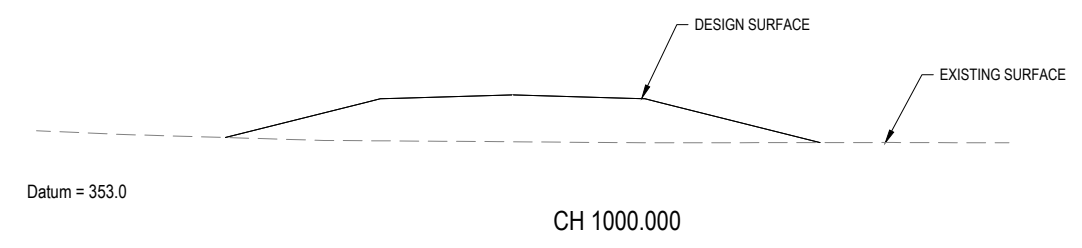
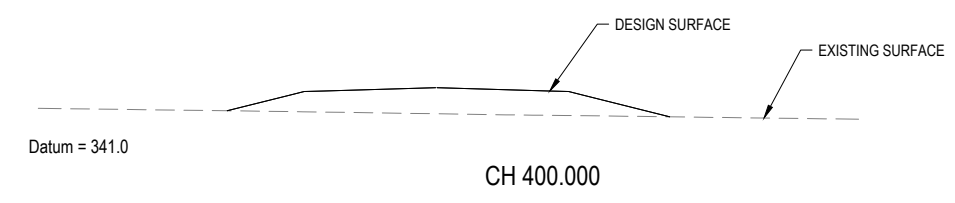
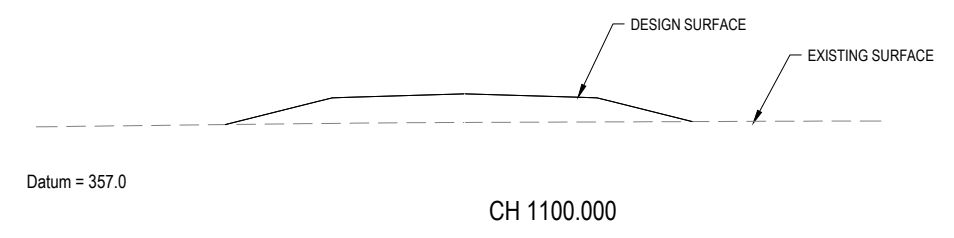
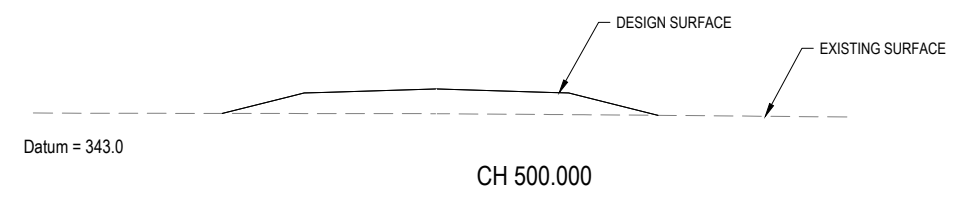
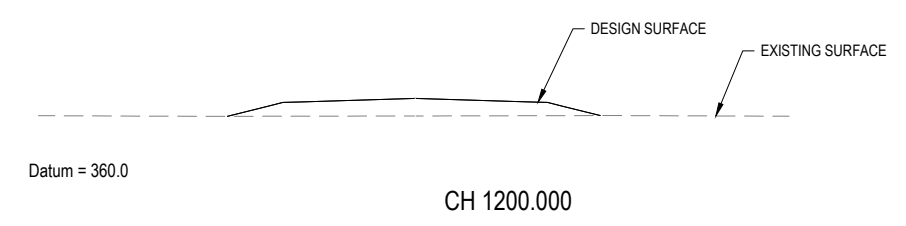
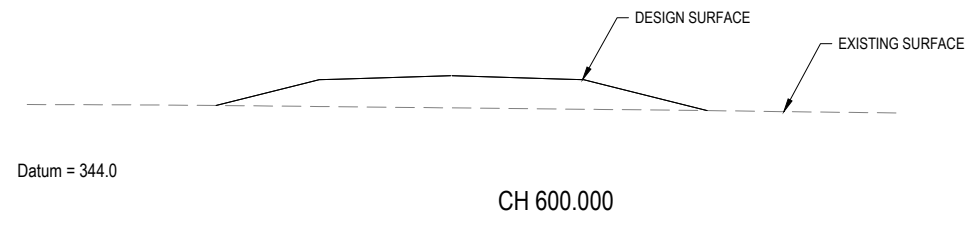
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

DRAWING No.		REV
<b>RD.3.03</b>		<b>B</b>

**FOR CO ORDINATION**

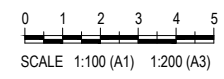
**NOT FOR CONSTRUCTION**





CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**

**ROAD 03 CROSS SECTIONS**  
**SHEET 1 OF 2**

**mpn consulting**

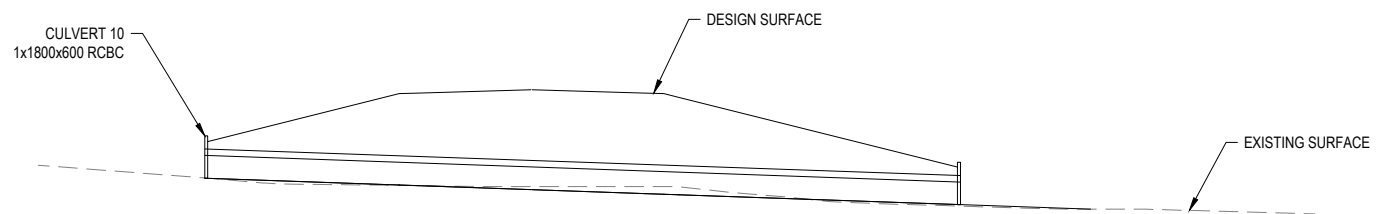
ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>RD.3.04</b>	<b>B</b>

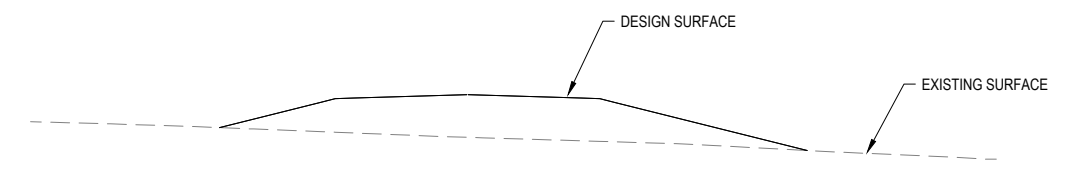
**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**



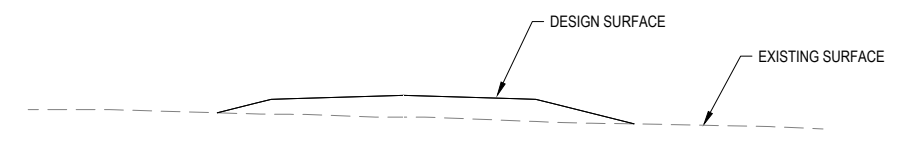
Datum = 369.0

CH 1665.445



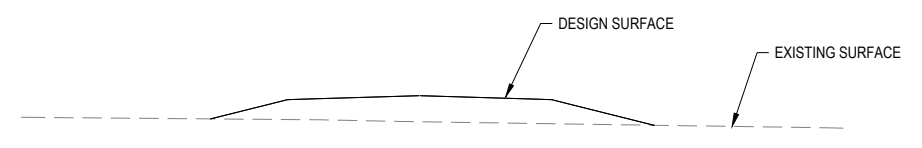
Datum = 370.0

CH 1600.000



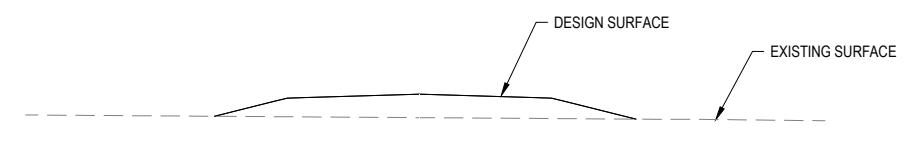
Datum = 369.0

CH 1500.000



Datum = 366.0

CH 1400.000

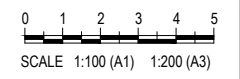


Datum = 363.0

CH 1300.000

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**

**ROAD 03 CROSS SECTIONS**  
**SHEET 2 OF 2**

**mpn consulting**

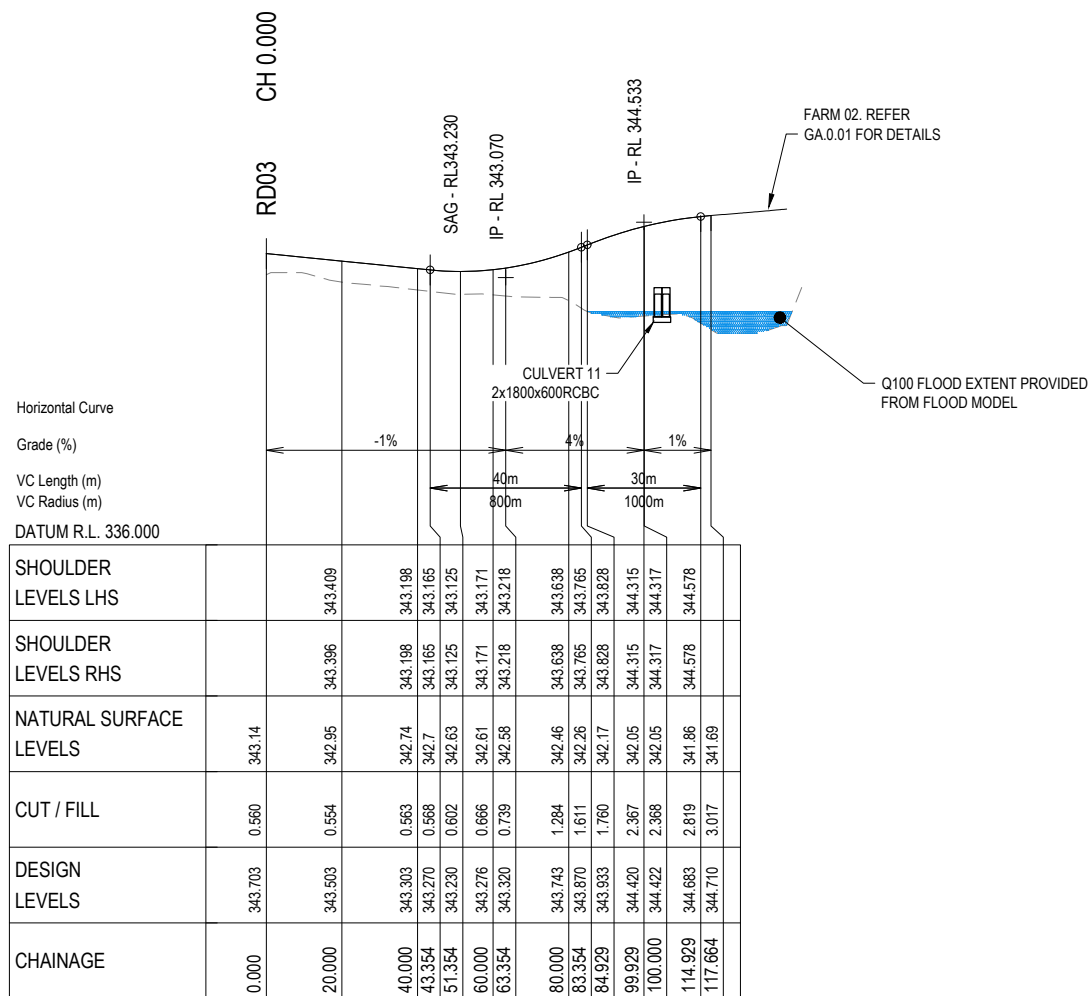
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

DRAWING No.		REV
<b>RD.3.05</b>		<b>B</b>

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**

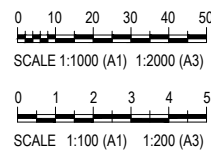


LONGITUDINAL SECTION - RD04

SCALE 1 : 1000 Horiz.  
1 : 100 Vert.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
B	25.08.21	AMENDED TO INCLUDE STORMWATER CULVERTS	BCM	-
A	14.08.21	ISSUE FOR COORDINATION	BCM	-

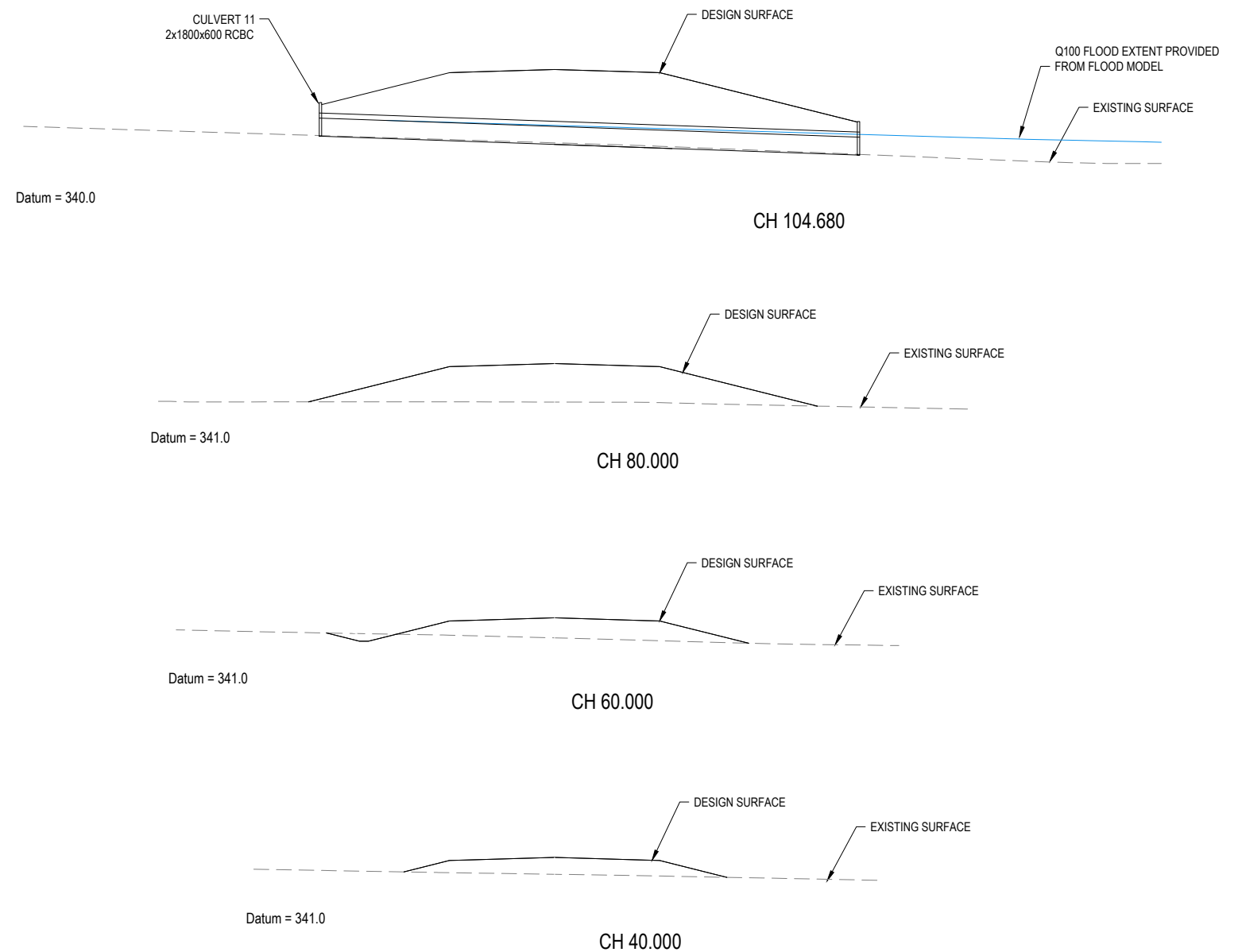
GRENFELL FARMS  
1130 GOOLOGONG ROAD  
GRENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

BAIADA  
ROAD 04 LONGITUDINAL  
AND CROSS SECTIONS

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
8719	
DRAWING No.	REV
RD.4.01	B



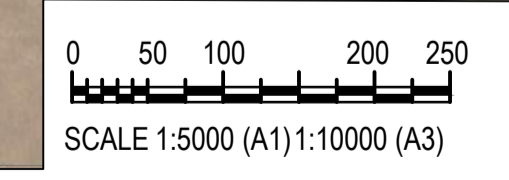
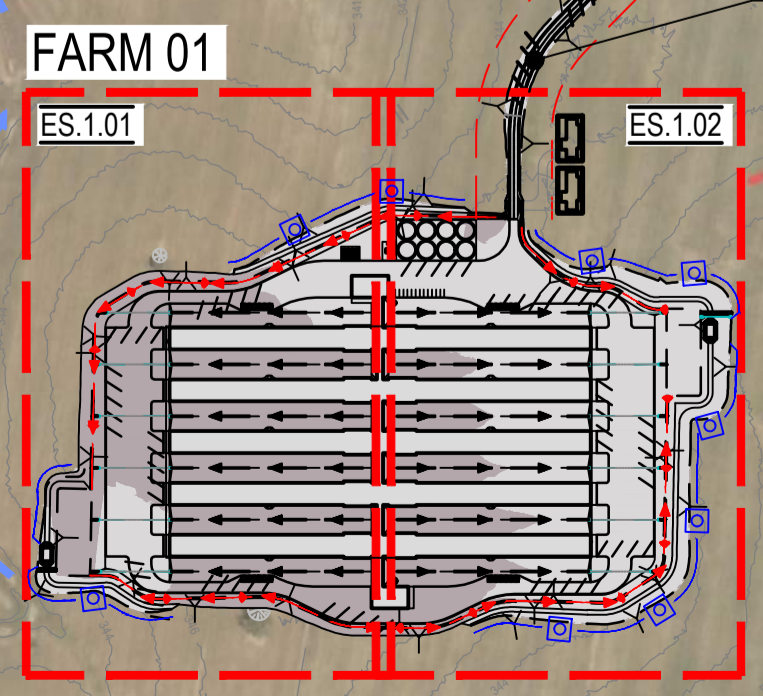
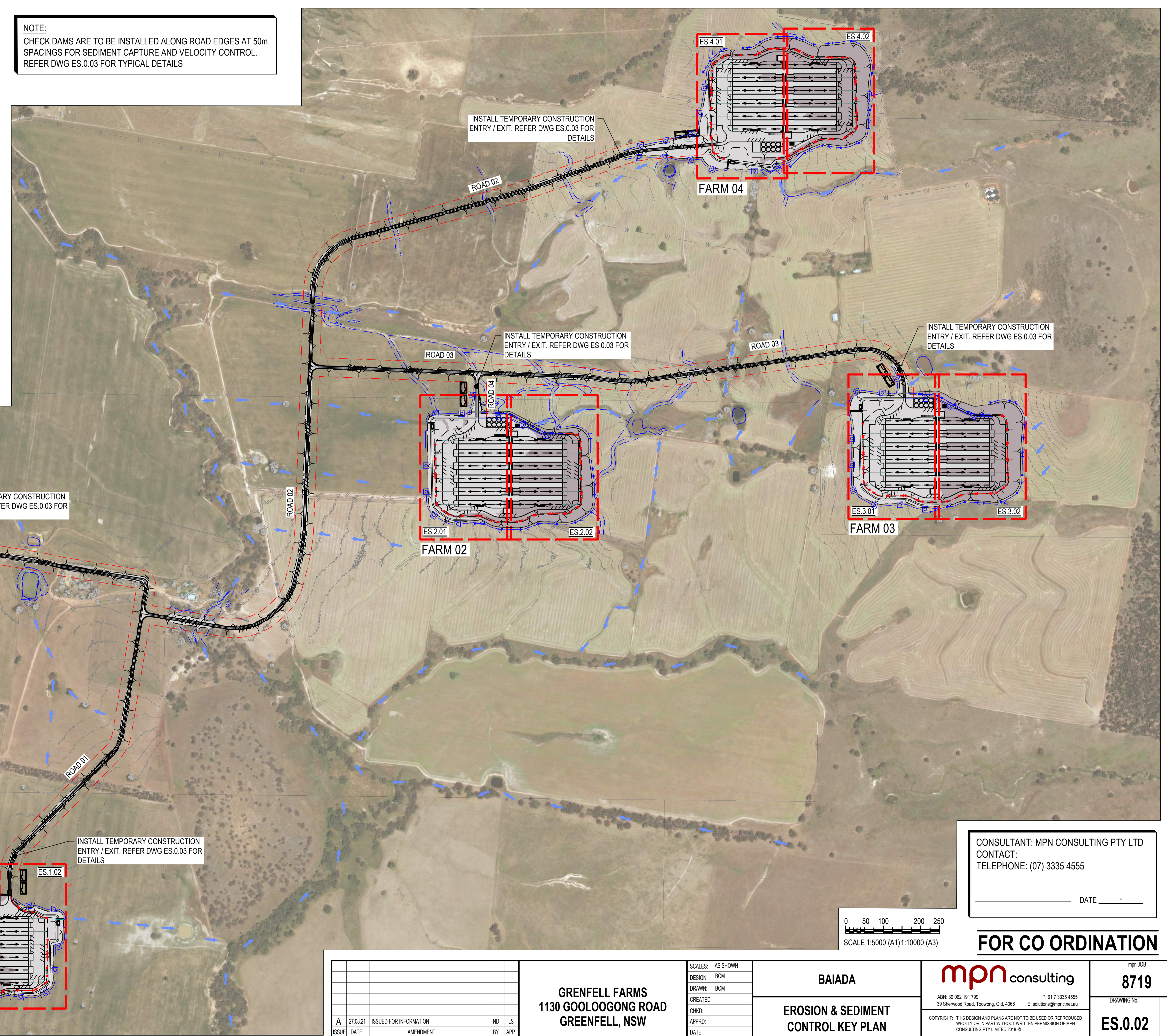
FOR CO ORDINATION

NOT FOR CONSTRUCTION



EXISTING	LEGEND	PROPOSED
---	PROPERTY BOUNDARY	---
5.00	MAJOR CONTOUR	5.00
-----	MINOR CONTOUR	-----
	BUILDING	
	CONCRETE	
-----	EDGE OF BITUMEN	-----
SW SW	STORM WATER MAIN	-----
---	TOP OF BATTER	---
---	TOE OF BATTER	---
---	SWALE DRAIN	---
	CUT AREA	█
	FILL AREA	█
	PROPOSED SHEDS (BY OTHERS)	█
	CLEAN WATER CUT OFF BUND	→→→
	CLEAN WATER CUT OFF DRAIN	→→→
	DIRTY WATER CUT OFF DRAIN	→→→
	CONSTRUCTION ENTRY / EXIT	
	SEDIMENT FENCE	□
	CHECK DAM	▾
	INLET SEDIMENT TRAP	○
	25m ROAD BUFFER	---
	OVERLAND FLOW DIRECTION	---
	PLAN REFERENCE	---

**NOTE:**  
CHECK DAMS ARE TO BE INSTALLED ALONG ROAD EDGES AT 50m SPACINGS FOR SEDIMENT CAPTURE AND VELOCITY CONTROL. REFER DWG ES.0.03 FOR TYPICAL DETAILS



CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
DATE: \_\_\_\_\_

**FOR CO ORDINATION**

ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GRENFELL FARMS**  
1130 GOOLOOGONG ROAD  
GREENFELL, NSW

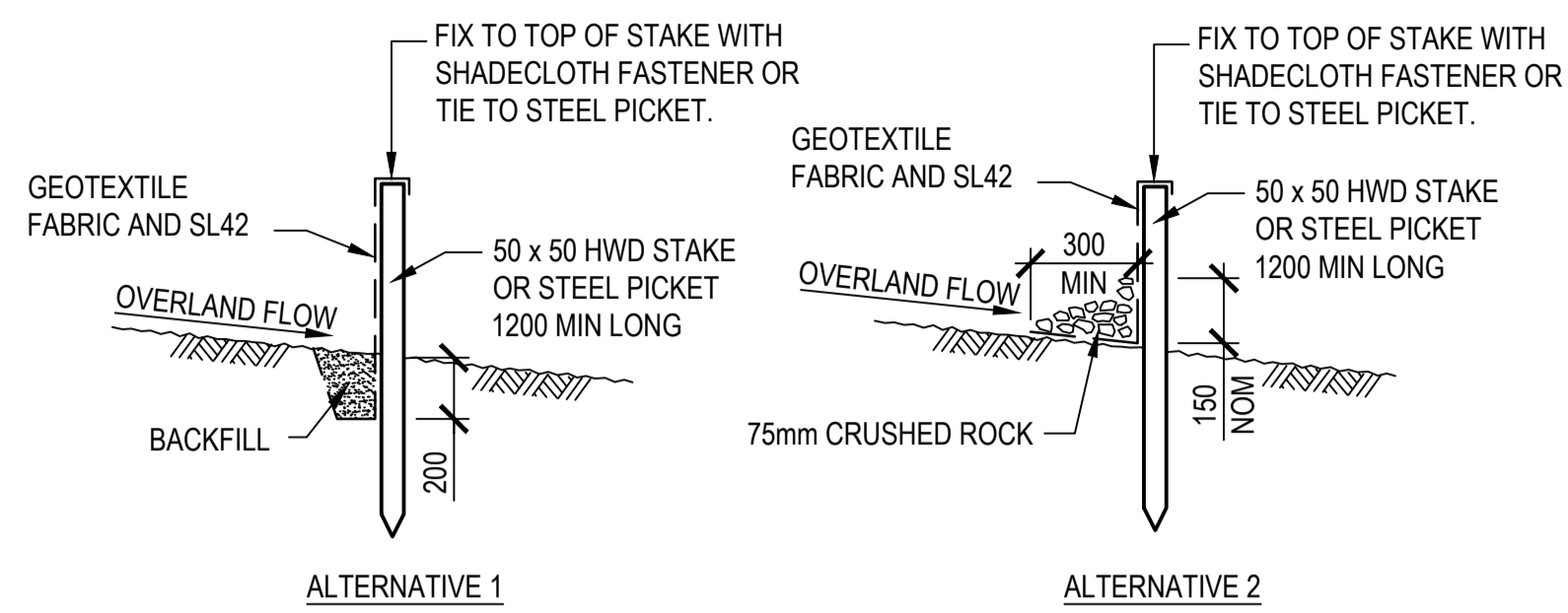
SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**EROSION & SEDIMENT CONTROL KEY PLAN**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

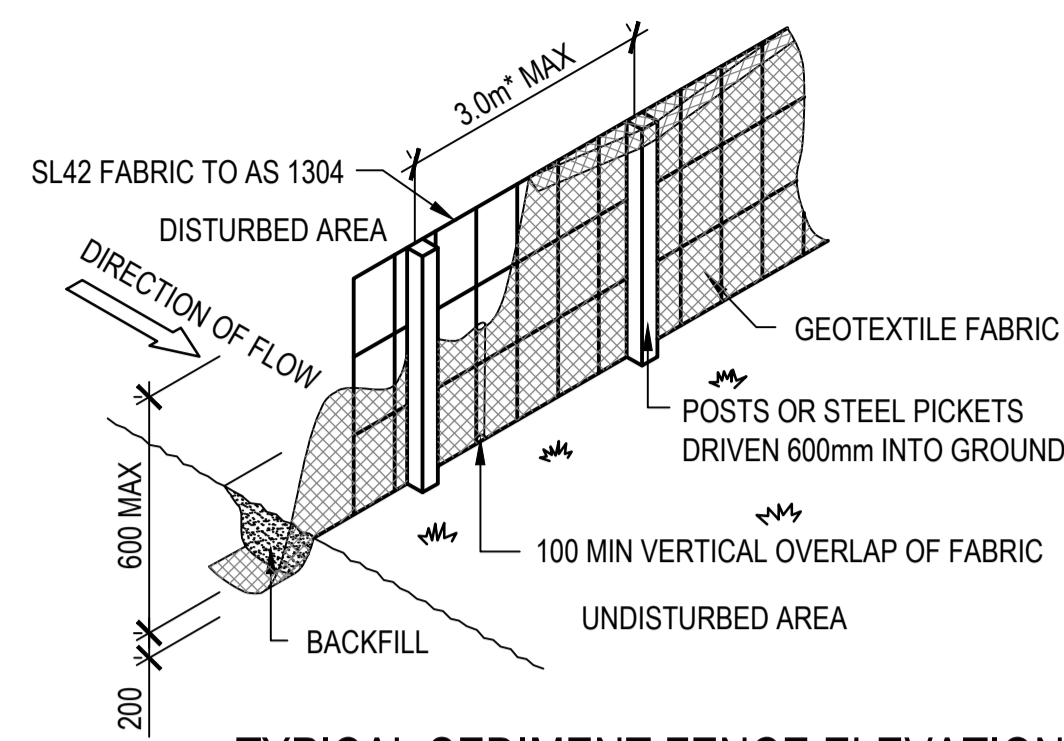
mpn JOB	
<b>8719</b>	REV
DRAWING No.	
<b>ES.0.02</b>	<b>A</b>

**NOT FOR CONSTRUCTION**



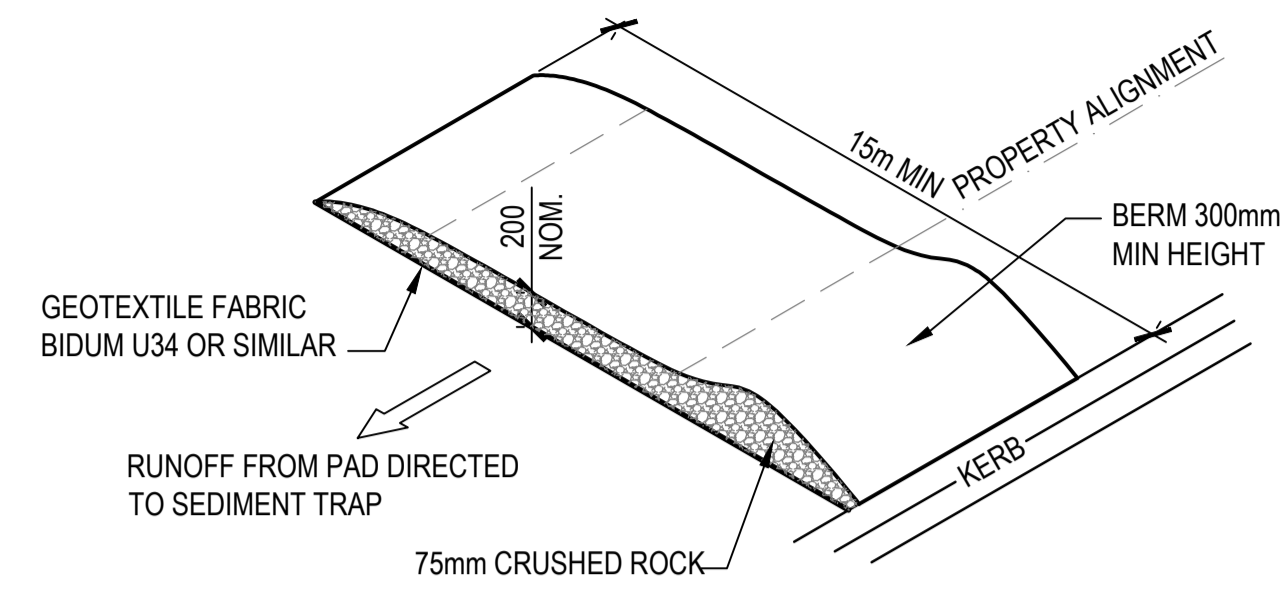
**TYPICAL SEDIMENT FENCE SECTIONS**

N.T.S.



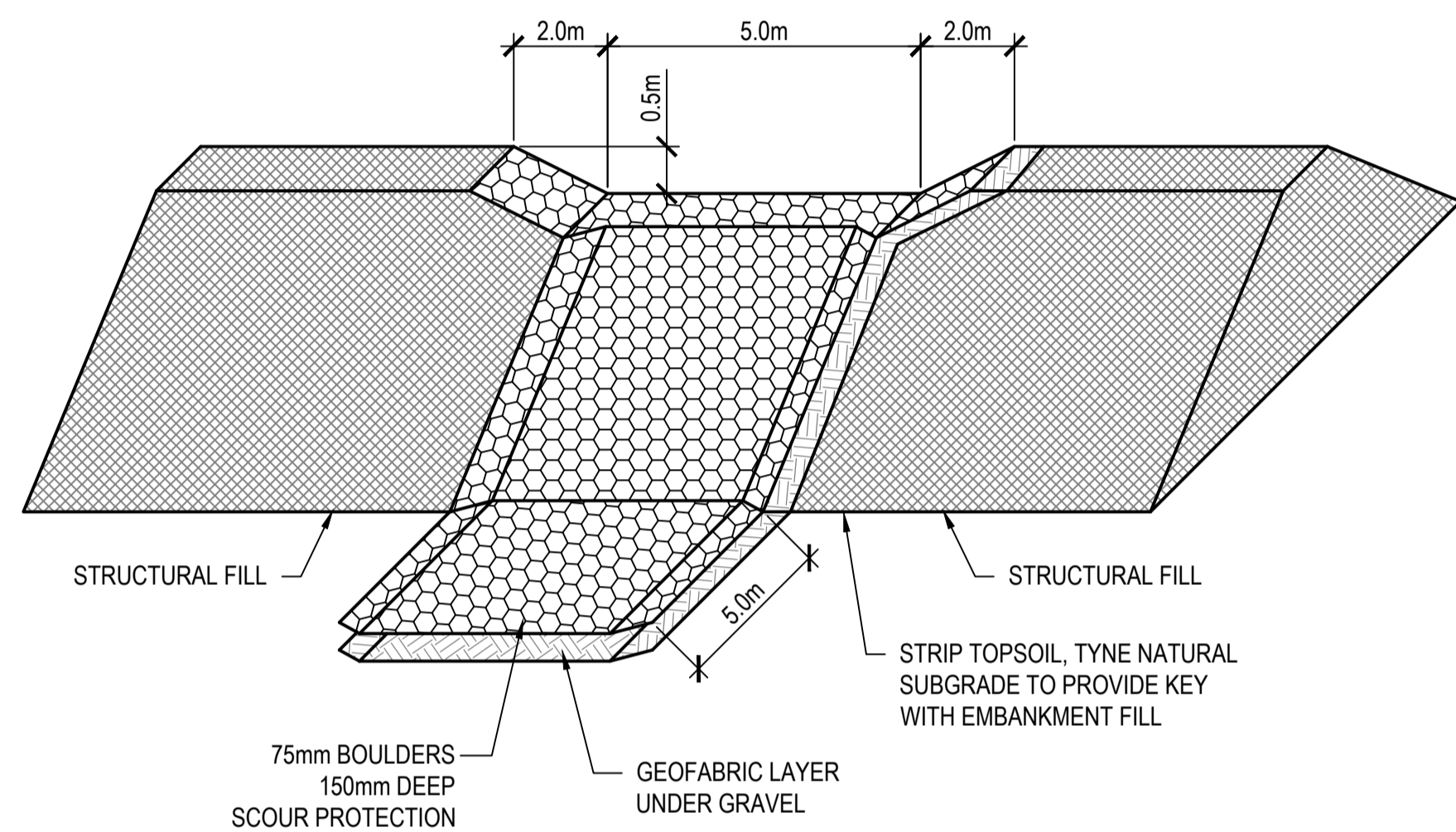
**TYPICAL SEDIMENT FENCE ELEVATION**

\* 2000 MAX WITH OUT SL42 MESH  
N.T.S.



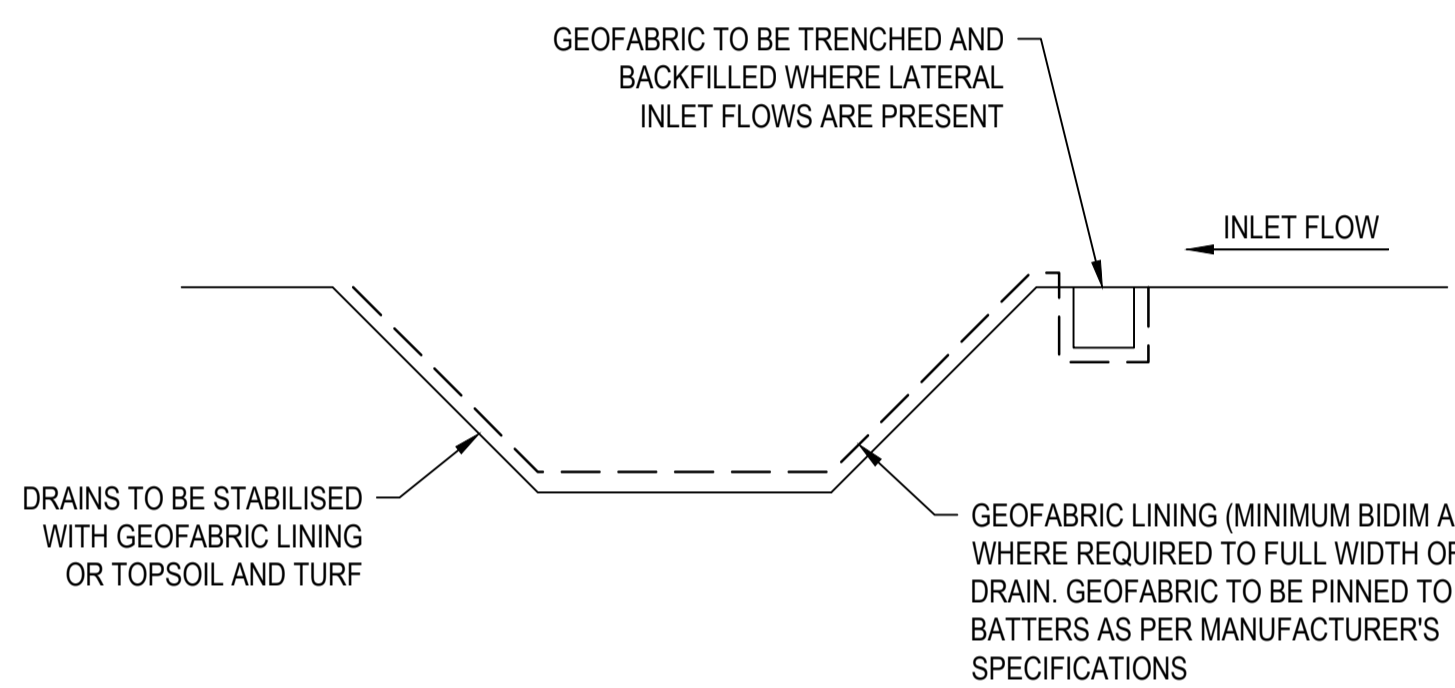
**TYPICAL TEMPORARY CONSTRUCTION ENTRY / EXIT DETAIL**

N.T.S.



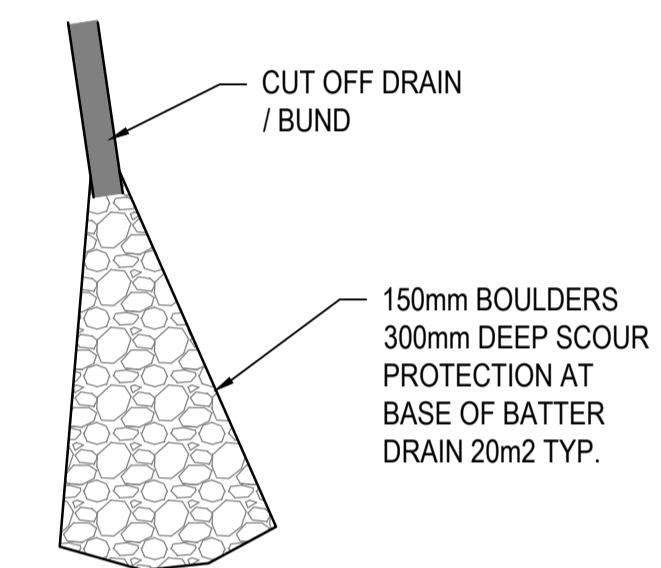
**TYPICAL SEDIMENT BASIN EMERGENCY OVERFLOW WEIR DETAIL**

N.T.S.



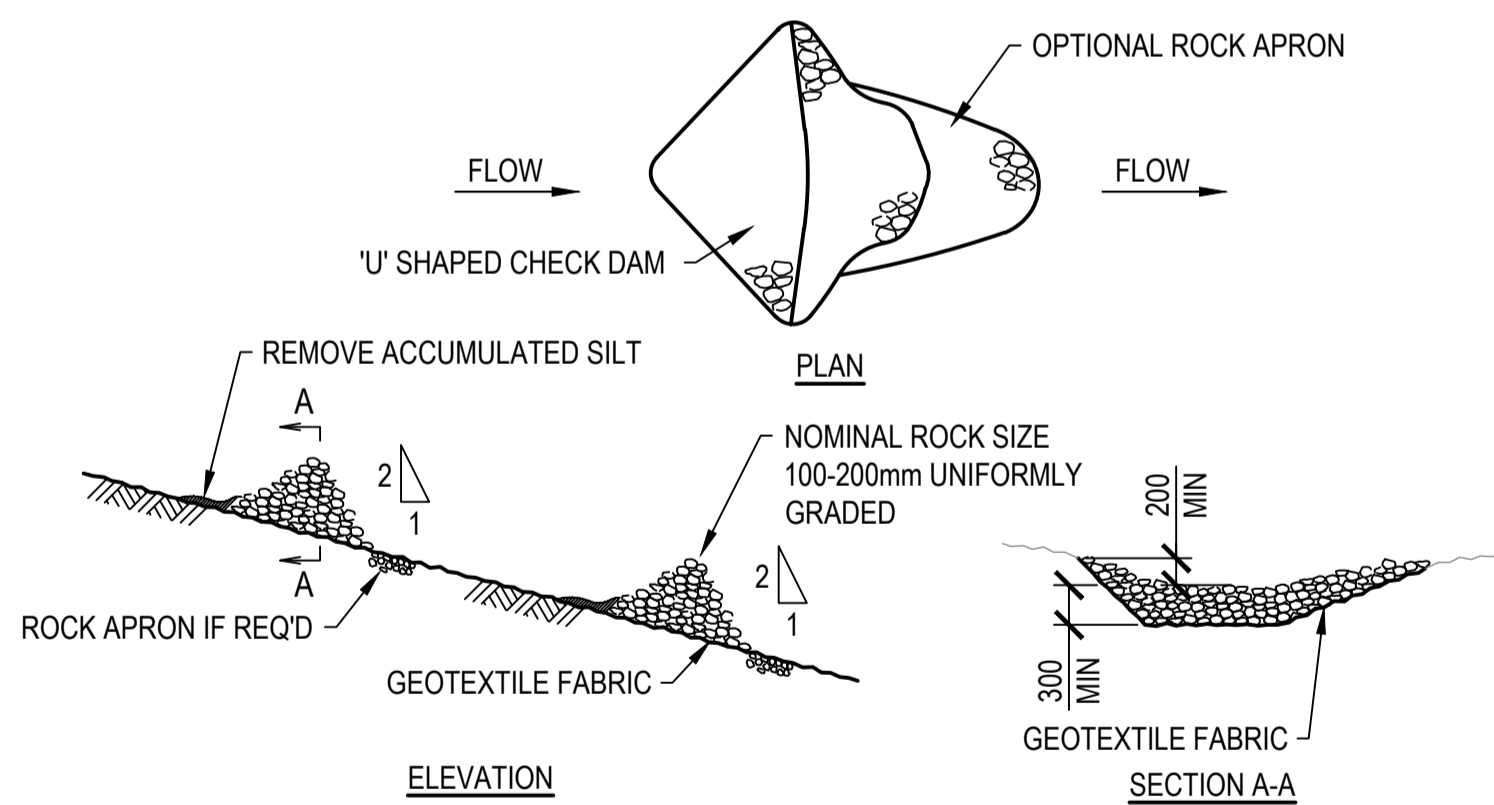
**TYPICAL CLEAN / DIRTY WATER CUT OFF DRAIN**

N.T.S.



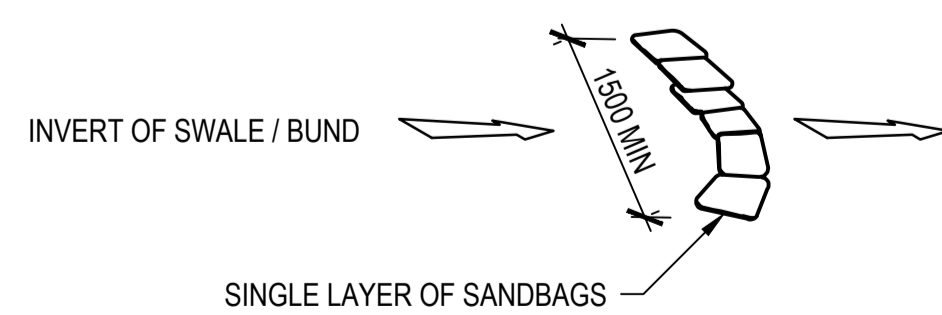
**TYPICAL SCOUR PROTECTION  
END OF CUT OFF DRAINS**

N.T.S.



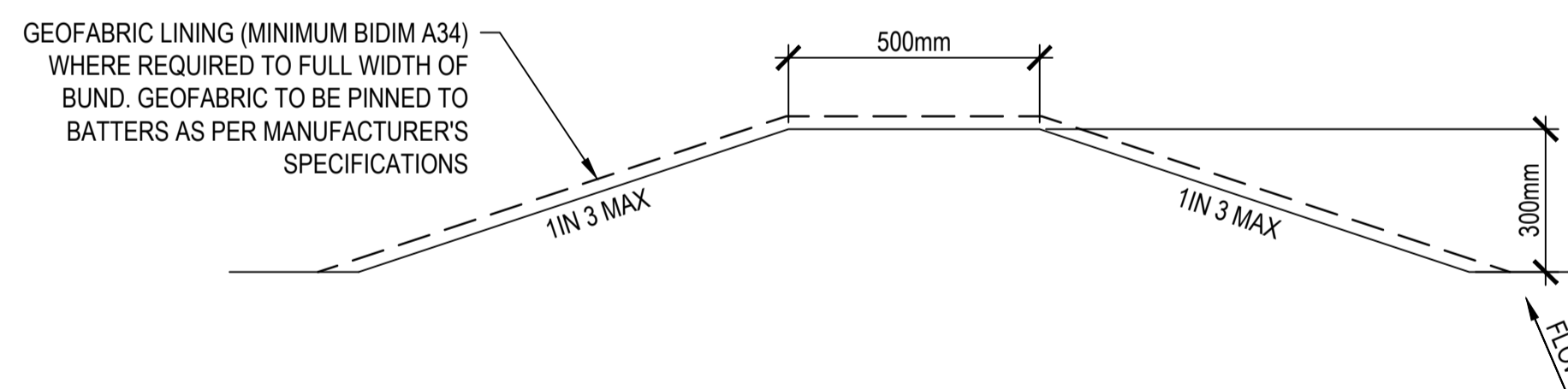
**TYPICAL CHECK DAM FLOW CONTROL**

N.T.S.



**TYPICAL SAND BAG CHECK DAM**

N.T.S.



**TYPICAL CLEAN / DIRTY WATER CUT OFF BUND**

N.T.S.

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
DATE \_\_\_\_\_

**FOR CO ORDINATION**

ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GREENFELL FARMS  
1130 GOOLOONG ROAD  
GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

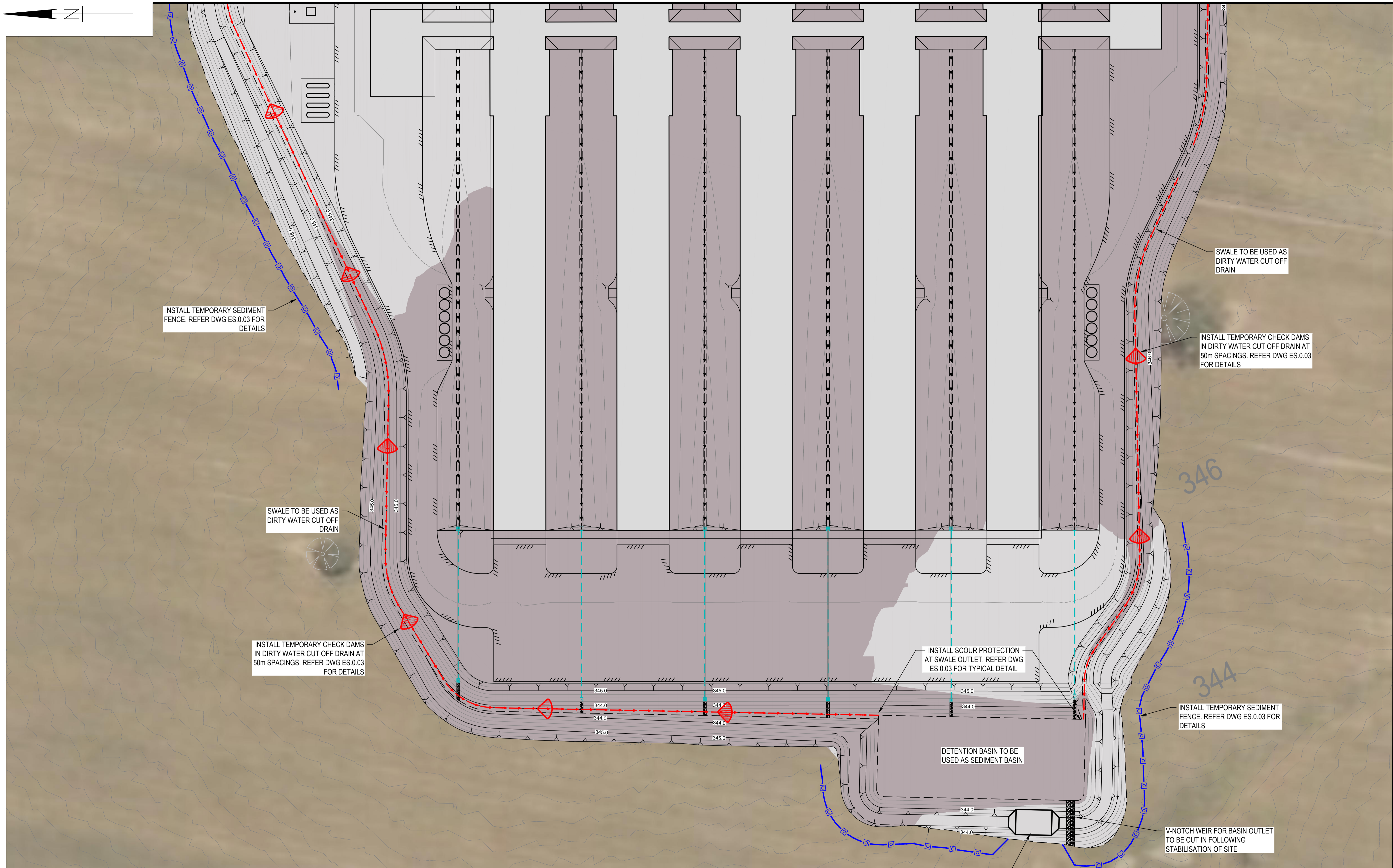
**BAIADA**  
**EROSION & SEDIMENT CONTROL  
TYPICAL DETAILS**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>ES.0.03</b>	<b>A</b>

**NOT FOR CONSTRUCTION**

FOR CONTINUATION REFER DWG No. GA.1.02



INSTALL TEMPORARY SEDIMENT FENCE. REFER DWG ES.0.03 FOR DETAILS

SWALE TO BE USED AS DIRTY WATER CUT OFF DRAIN

INSTALL TEMPORARY CHECK DAMS IN DIRTY WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

INSTALL SCOUR PROTECTION AT SWALE OUTLET. REFER DWG ES.0.03 FOR TYPICAL DETAIL

CONSTRUCT TEMPORARY EMERGENCY OVERFLOW WEIR TO SEDIMENT BASIN. REFER DWG ES.0.03 FOR DETAILS

SWALE TO BE USED AS DIRTY WATER CUT OFF DRAIN

INSTALL TEMPORARY CHECK DAMS IN DIRTY WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

INSTALL TEMPORARY SEDIMENT FENCE. REFER DWG ES.0.03 FOR DETAILS

V-NOTCH WEIR FOR BASIN OUTLET TO BE CUT IN FOLLOWING STABILISATION OF SITE

SCALES: AS SHOWN  
DESIGN: BCM  
DRAWN: BCM  
CREATED:  
CHKD:  
APPRD:  
DATE:

**BAIADA**  
**FARM 1 EROSION & SEDIMENT CONTROL PLAN - SHEET 1 OF 2**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
DRAWING No. REV  
**ES.1.01** A

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -

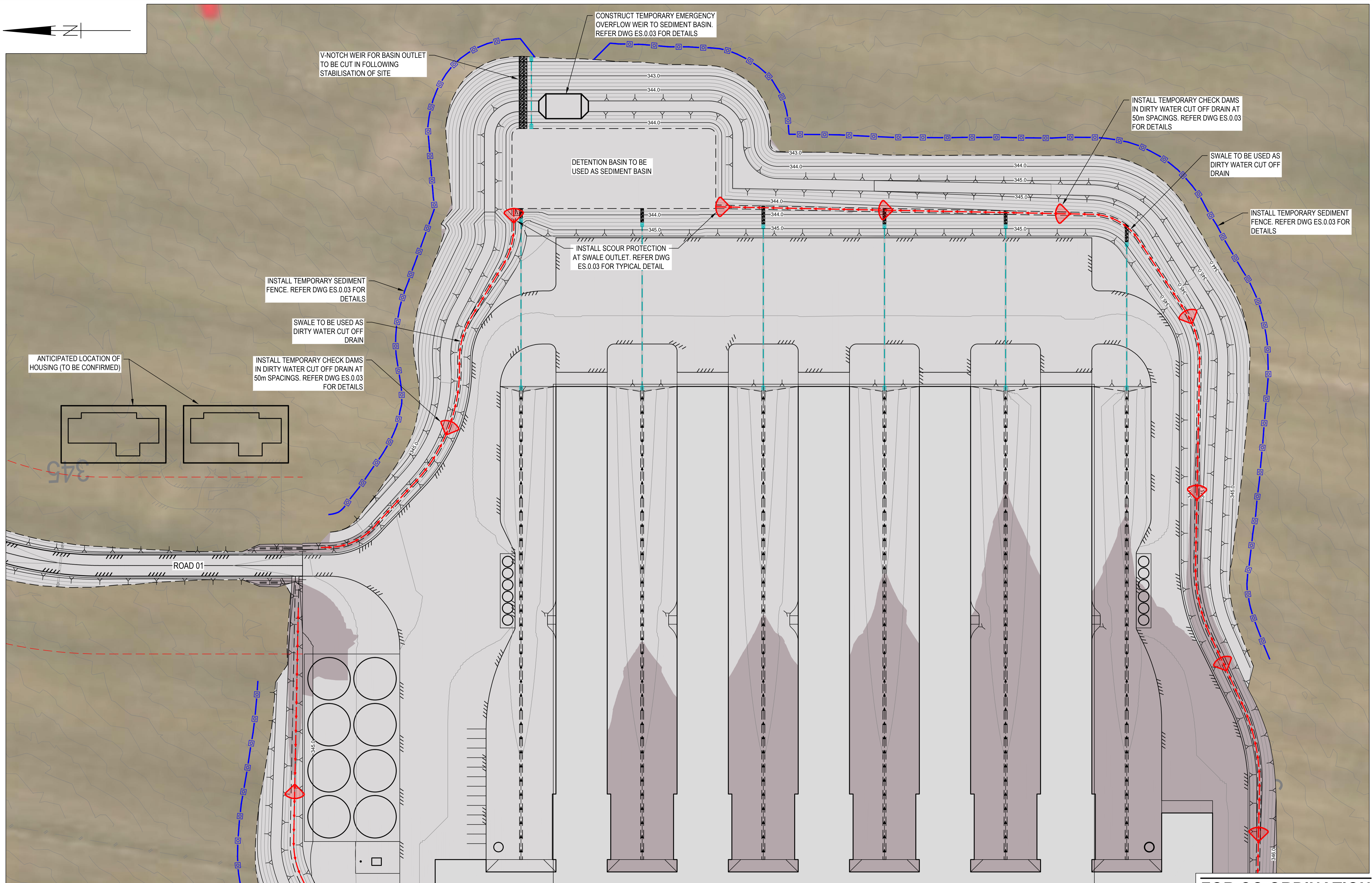
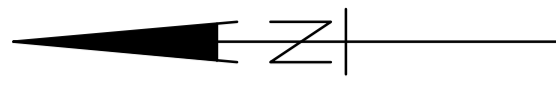
0 5 10 20 25  
SCALE 1:500 (A1) 1:1000 (A3)

ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GRENFELL FARMS**  
**1130 GOOLOONG ROAD**  
**GREENFELL, NSW**

**FOR CO ORDINATION**

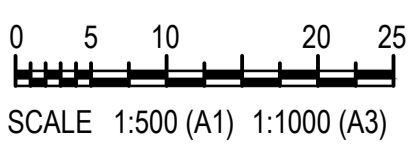
**NOT FOR CONSTRUCTION**



FOR CONTINUATION REFER DWG No. GA.1.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 \_\_\_\_\_ DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GRENFELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

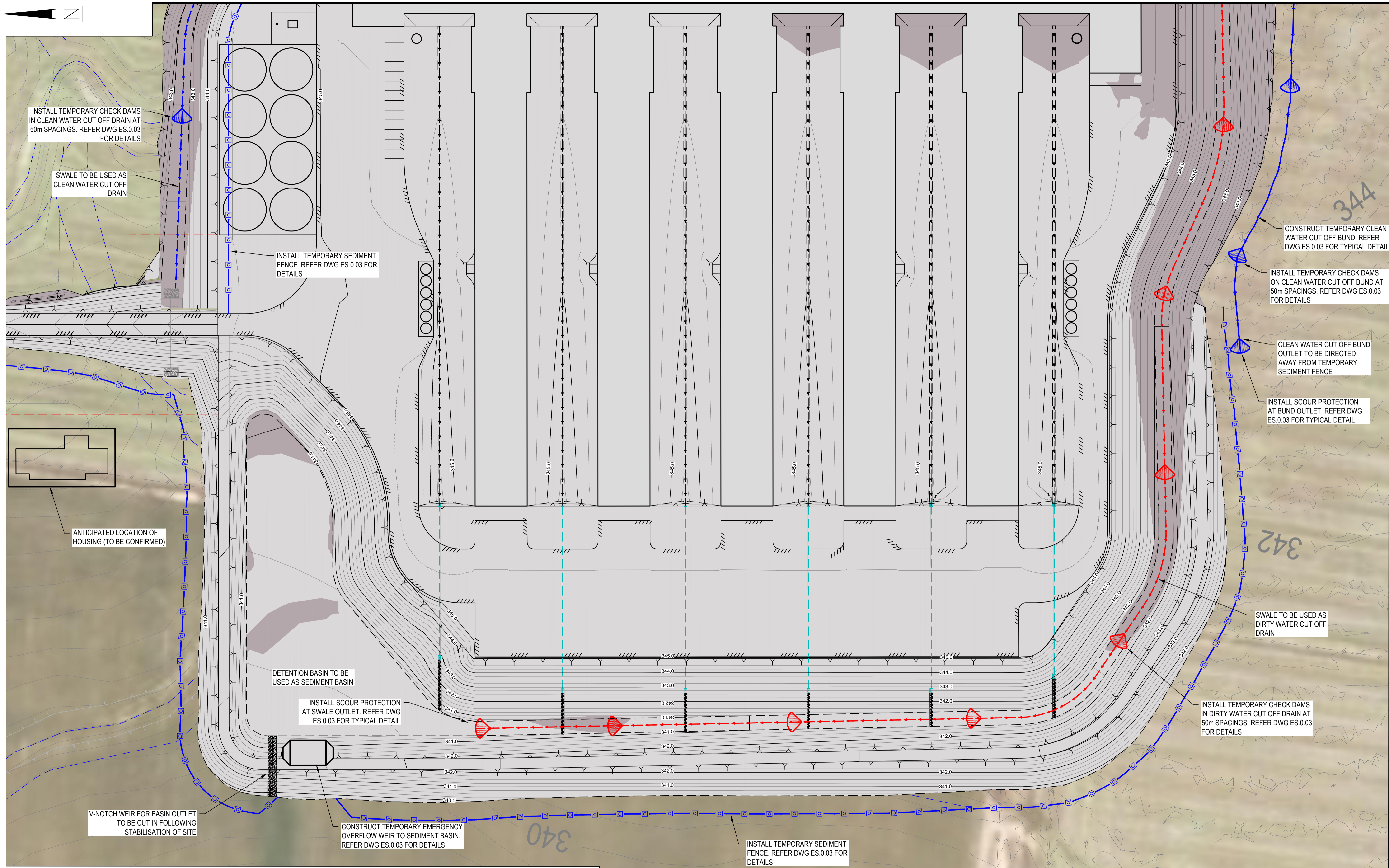
SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**FARM 1 EROSION & SEDIMENT CONTROL PLAN - SHEET 2 OF 2**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

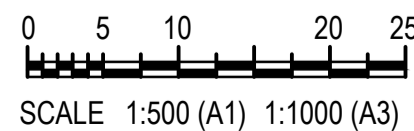
mpn JOB  
**8719**  
 DRAWING No. REV  
**ES.1.02** A

NOT FOR CONSTRUCTION



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE - -



ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GRENFELL FARMS**  
 1130 GOOLOONG ROAD  
 GREENFELL, NSW

SCALES: AS SHOWN  
 DESIGN: BCM  
 DRAWN: BCM  
 CREATED:  
 CHKD:  
 APPRD:  
 DATE:

**BAIADA**  
**FARM 2 EROSION & SEDIMENT CONTROL PLAN - SHEET 1 OF 2**

**mpn consulting**

ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB

**8719**

DRAWING No.

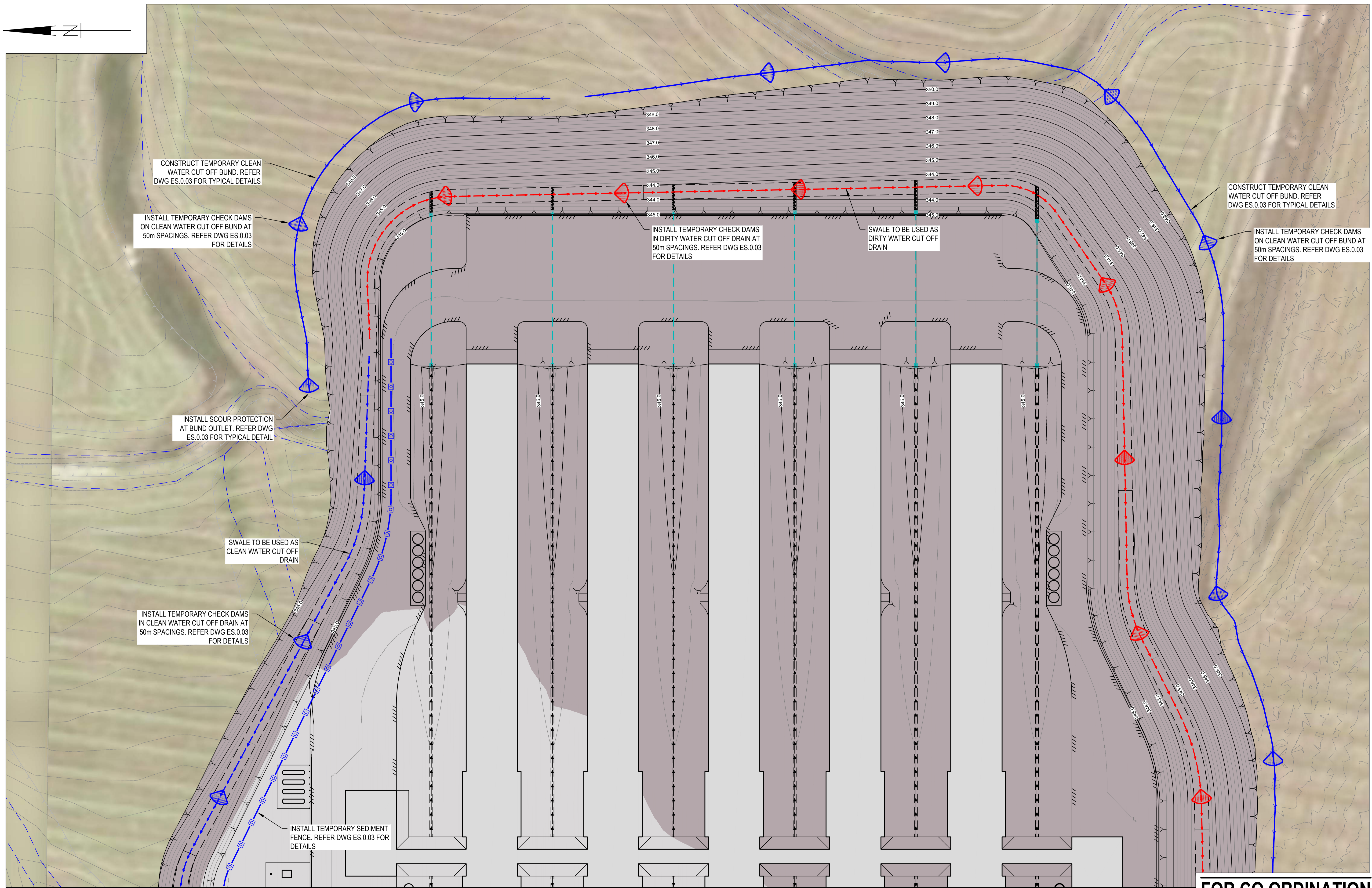
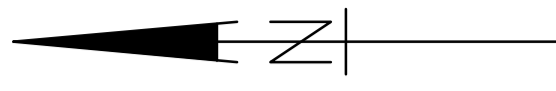
**ES.2.01**

REV

**A**

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**



CONSTRUCT TEMPORARY CLEAN WATER CUT OFF BUND. REFER DWG ES.0.03 FOR TYPICAL DETAILS

INSTALL TEMPORARY CHECK DAMS ON CLEAN WATER CUT OFF BUND AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

INSTALL SCOUR PROTECTION AT BUND OUTLET. REFER DWG ES.0.03 FOR TYPICAL DETAIL

SWALE TO BE USED AS CLEAN WATER CUT OFF DRAIN

INSTALL TEMPORARY CHECK DAMS IN CLEAN WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

INSTALL TEMPORARY SEDIMENT FENCE. REFER DWG ES.0.03 FOR DETAILS

INSTALL TEMPORARY CHECK DAMS IN DIRTY WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

SWALE TO BE USED AS DIRTY WATER CUT OFF DRAIN

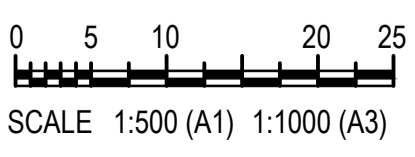
CONSTRUCT TEMPORARY CLEAN WATER CUT OFF BUND. REFER DWG ES.0.03 FOR TYPICAL DETAILS

INSTALL TEMPORARY CHECK DAMS ON CLEAN WATER CUT OFF BUND AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

FOR CONTINUATION REFER DWG No. GA.2.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 \_\_\_\_\_ DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GRENELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

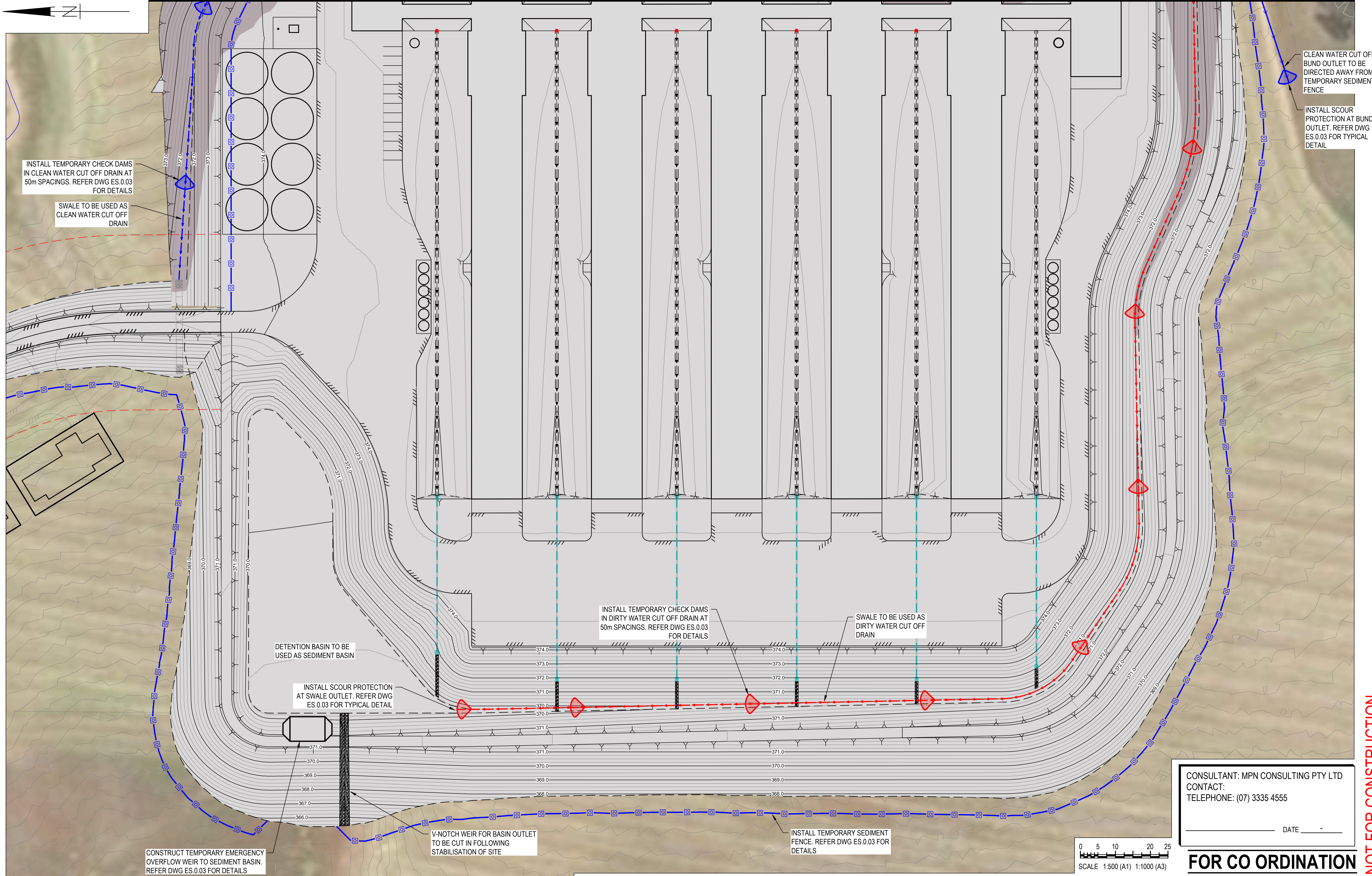
**BAIADA**  
**FARM 2 EROSION & SEDIMENT CONTROL PLAN - SHEET 2 OF 2**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. REV  
**ES.2.02** A

NOT FOR CONSTRUCTION

FOR CONTINUATION REFER DWG No. GA.3.02



INSTALL TEMPORARY CHECK DAMS IN CLEAN WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

SWALE TO BE USED AS CLEAN WATER CUT OFF DRAIN

CLEAN WATER CUT OFF BUND OUTLET TO BE DIRECTED AWAY FROM TEMPORARY SEDIMENT FENCE

INSTALL SCOUR PROTECTION AT BUND OUTLET. REFER DWG ES.0.03 FOR TYPICAL DETAIL

DETENTION BASIN TO BE USED AS SEDIMENT BASIN

INSTALL SCOUR PROTECTION AT SWALE OUTLET. REFER DWG ES.0.03 FOR TYPICAL DETAIL

INSTALL TEMPORARY CHECK DAMS IN DIRTY WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

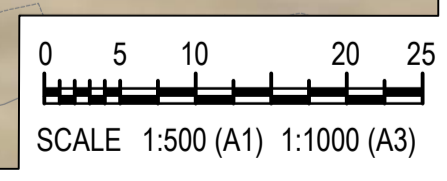
SWALE TO BE USED AS DIRTY WATER CUT OFF DRAIN

V-NOTCH WEIR FOR BASIN OUTLET TO BE CUT IN FOLLOWING STABILISATION OF SITE

INSTALL TEMPORARY SEDIMENT FENCE. REFER DWG ES.0.03 FOR DETAILS

CONSTRUCT TEMPORARY EMERGENCY OVERFLOW WEIR TO SEDIMENT BASIN. REFER DWG ES.0.03 FOR DETAILS

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 DATE: \_\_\_\_\_



**FOR CO ORDINATION**

NOT FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

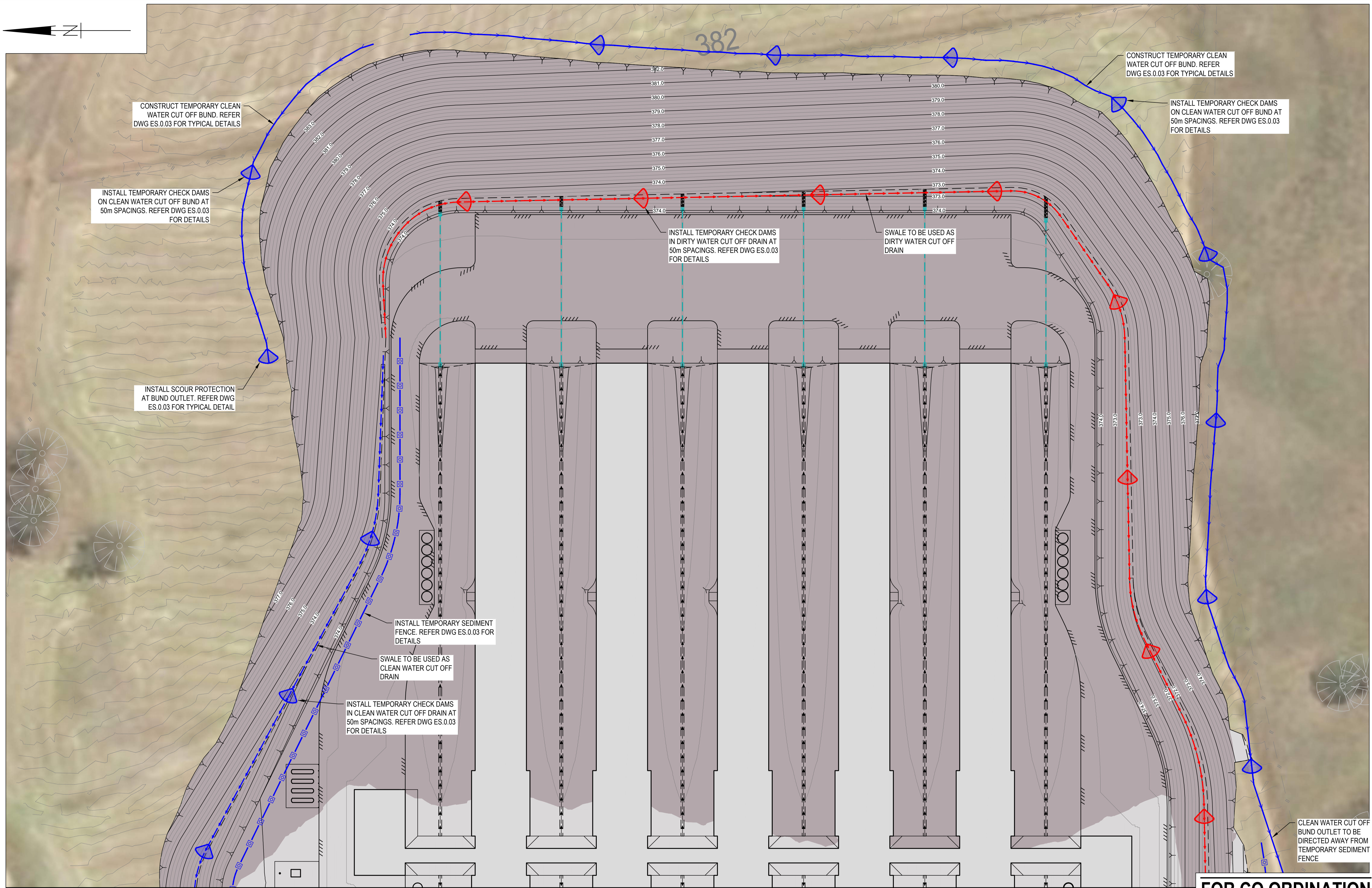
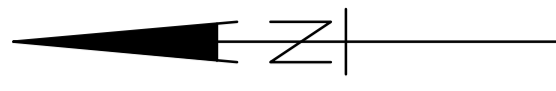
**GRENFELL FARMS**  
 1130 GOOLOONG ROAD  
 GREENFELL, NSW

SCALES: AS SHOWN  
 DESIGN: BCM  
 DRAWN: BCM  
 CREATED:  
 CHKD:  
 APPRD:  
 DATE:

**BAIADA**  
**FARM 3 EROSION & SEDIMENT CONTROL PLAN - SHEET 1 OF 2**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. REV  
**ES.3.01** A



CONSTRUCT TEMPORARY CLEAN WATER CUT OFF BUND. REFER DWG ES.0.03 FOR TYPICAL DETAILS

INSTALL TEMPORARY CHECK DAMS ON CLEAN WATER CUT OFF BUND AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

INSTALL SCOUR PROTECTION AT BUND OUTLET. REFER DWG ES.0.03 FOR TYPICAL DETAIL

INSTALL TEMPORARY CHECK DAMS IN DIRTY WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

SWALE TO BE USED AS DIRTY WATER CUT OFF DRAIN

CONSTRUCT TEMPORARY CLEAN WATER CUT OFF BUND. REFER DWG ES.0.03 FOR TYPICAL DETAILS

INSTALL TEMPORARY CHECK DAMS ON CLEAN WATER CUT OFF BUND AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

INSTALL TEMPORARY SEDIMENT FENCE. REFER DWG ES.0.03 FOR DETAILS

SWALE TO BE USED AS CLEAN WATER CUT OFF DRAIN

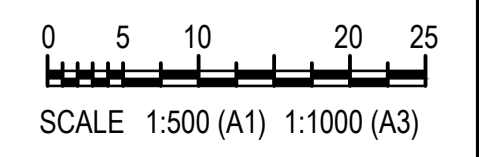
INSTALL TEMPORARY CHECK DAMS IN CLEAN WATER CUT OFF DRAIN AT 50m SPACINGS. REFER DWG ES.0.03 FOR DETAILS

CLEAN WATER CUT OFF BUND OUTLET TO BE DIRECTED AWAY FROM TEMPORARY SEDIMENT FENCE

FOR CONTINUATION REFER DWG No. GA.3.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 \_\_\_\_\_ DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GRENFELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

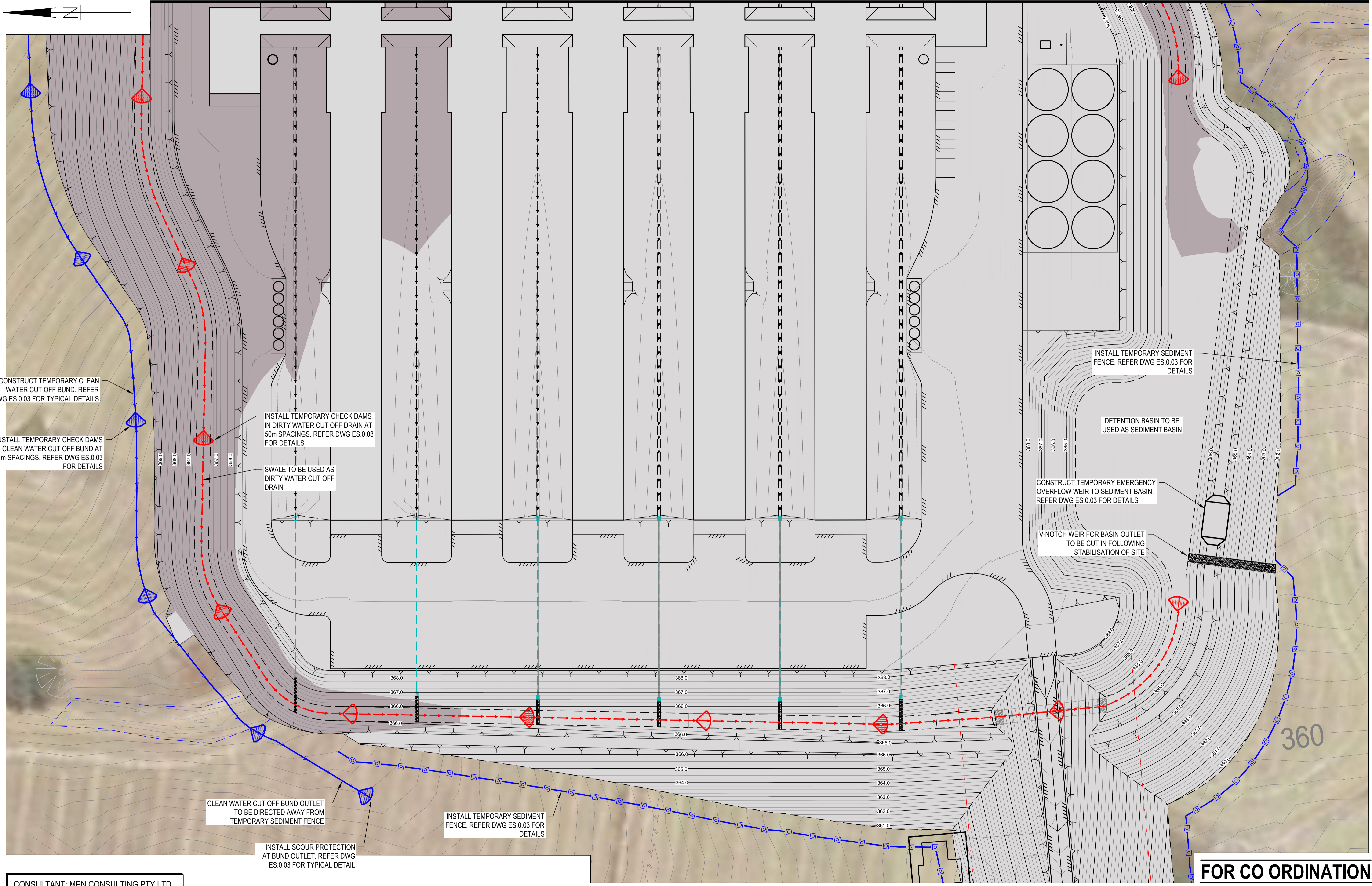
SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**FARM 3 EROSION & SEDIMENT CONTROL PLAN - SHEET 2 OF 2**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

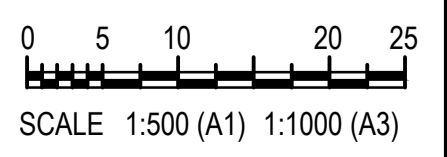
mpn JOB	
<b>8719</b>	REV
DRAWING No.	REV
<b>ES.3.02</b>	<b>A</b>

NOT FOR CONSTRUCTION



CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555

DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GREENFELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

SCALES: AS SHOWN  
 DESIGN: BCM  
 DRAWN: BCM  
 CREATED:  
 CHKD:  
 APPRD:  
 DATE:

**BAIADA**

**FARM 4 EROSION & SEDIMENT CONTROL PLAN - SHEET 1 OF 2**

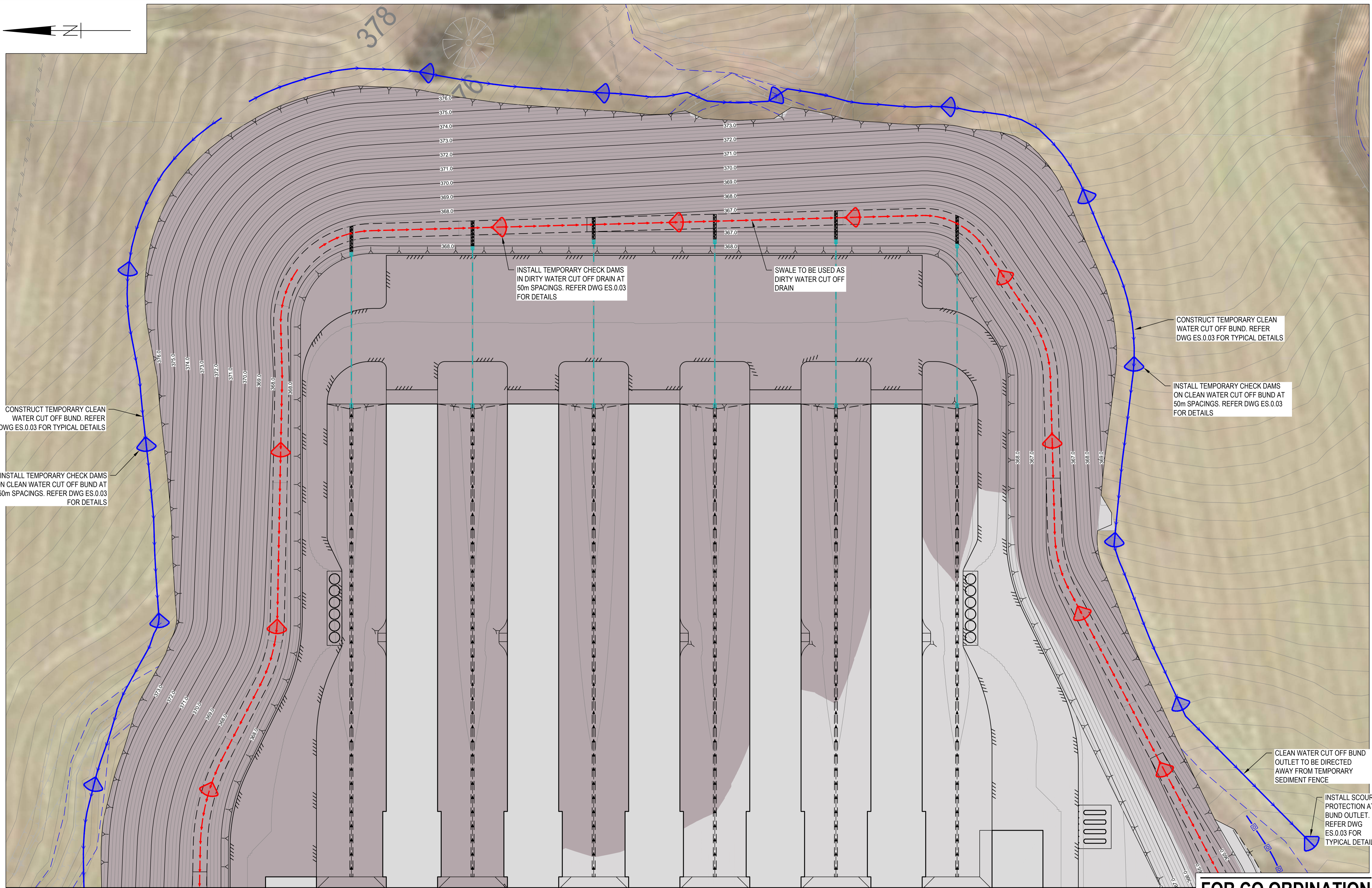
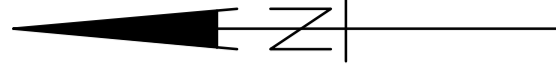
**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB  
**8719**  
 DRAWING No. REV  
**ES.4.01** A

**FOR CO ORDINATION**

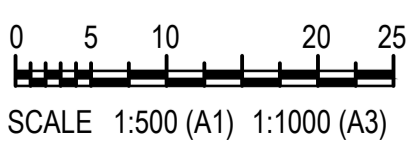
**NOT FOR CONSTRUCTION**



FOR CONTINUATION REFER DWG No. GA.4.01

FOR CO ORDINATION

CONSULTANT: MPN CONSULTING PTY LTD  
 CONTACT:  
 TELEPHONE: (07) 3335 4555  
 \_\_\_\_\_ DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	27.08.21	ISSUED FOR INFORMATION	ND	LS

**GRENFELL FARMS**  
 1130 GOOLOONGONG ROAD  
 GREENFELL, NSW

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

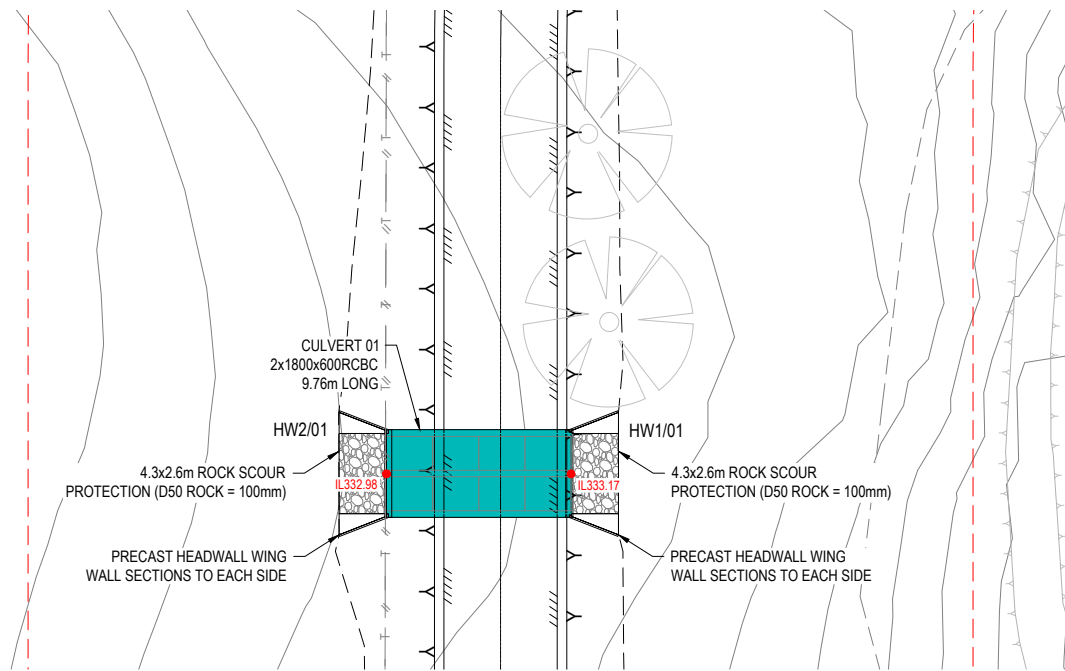
**BAIADA**  
**FARM 4 EROSION & SEDIMENT CONTROL PLAN - SHEET 2 OF 2**

**mpn consulting**  
 ABN: 39 062 191 799 P: 61 7 3335 4555  
 39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
 COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

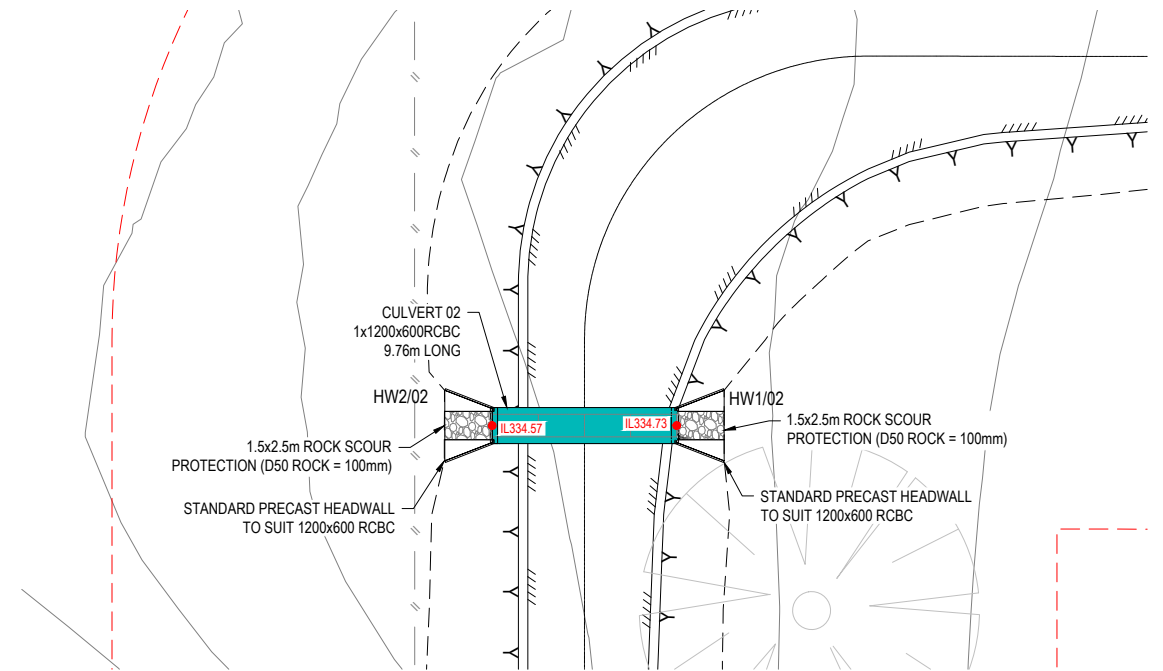
mpn JOB  
**8719**  
 DRAWING No. REV  
**ES.4.02** A

NOT FOR CONSTRUCTION





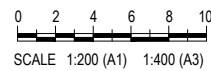
**STORMWATER CULVERT 01 - LAYOUT**  
SCALE 1 : 200



**STORMWATER CULVERT 02 - LAYOUT**  
SCALE 1 : 200

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
A	25.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

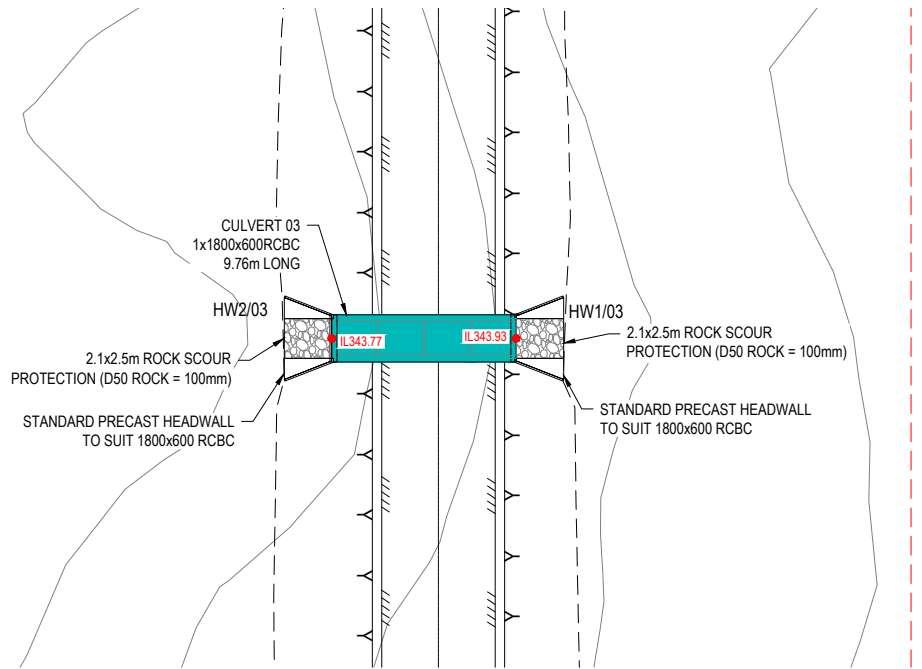
**BAIADA**  
**STORMWATER DRAINAGE**  
**CULVERTS 01 AND 02**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

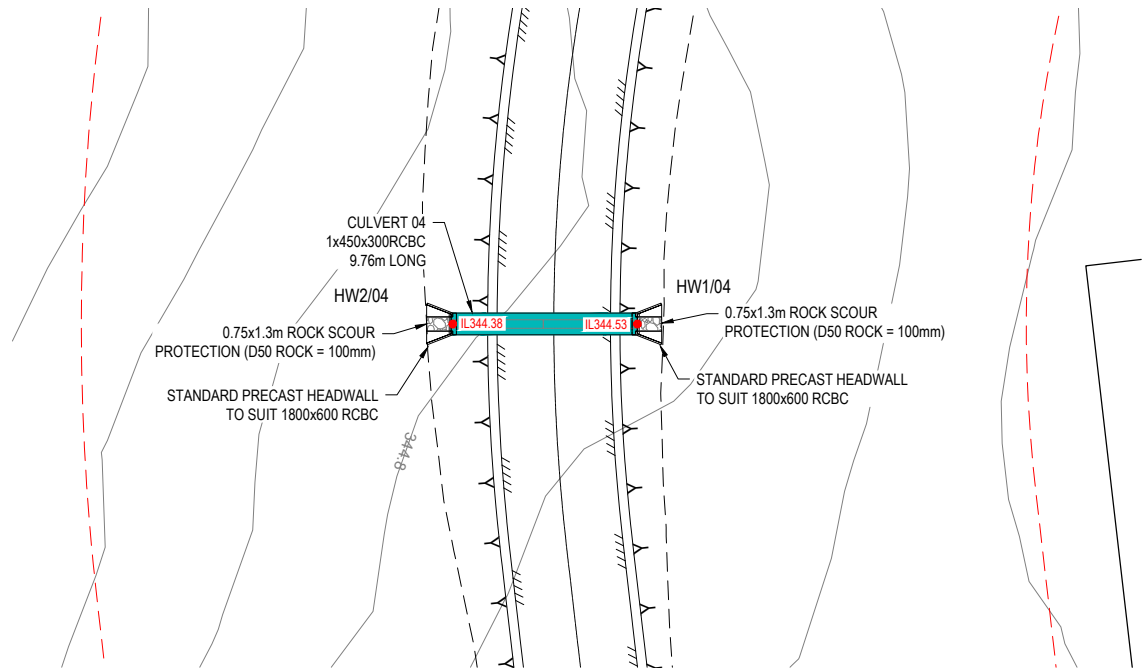
mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>SW.1.01</b>	<b>A</b>

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**

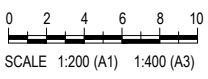


**STORMWATER CULVERT 03 - LAYOUT**  
SCALE 1 : 200



**STORMWATER CULVERT 04 - LAYOUT**  
SCALE 1 : 200

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555  
  
DATE \_\_\_\_\_



ISSUE	DATE	AMENDMENT	BY	APP
A	25.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

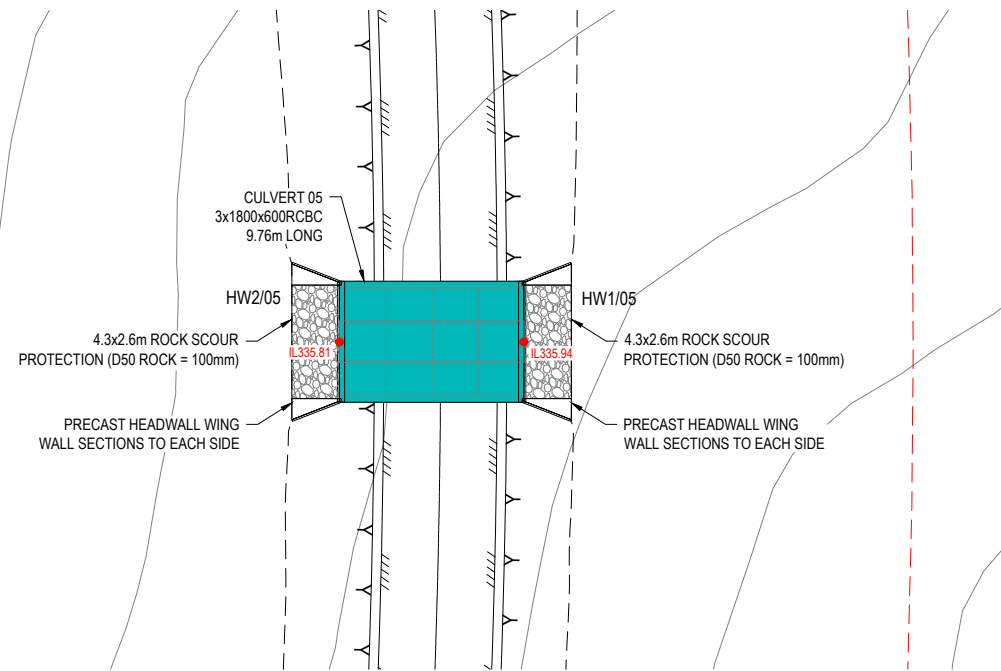
**BAIADA**  
  
**STORMWATER DRAINAGE**  
**CULVERTS 03 AND 04**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

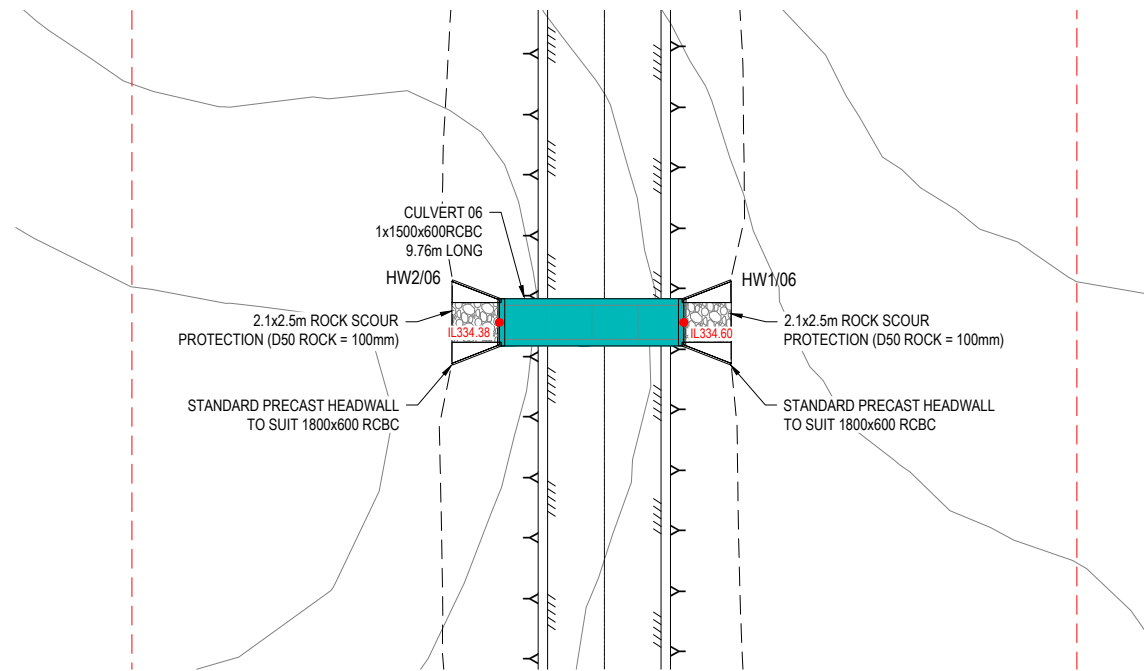
**FOR CO ORDINATION**

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>SW.1.02</b>	<b>A</b>

**NOT FOR CONSTRUCTION**



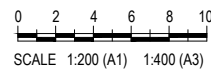
**STORMWATER CULVERT 05 - LAYOUT**  
SCALE 1 : 200



**STORMWATER CULVERT 06 - LAYOUT**  
SCALE 1 : 200

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
A	25.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**STORMWATER DRAINAGE**  
**CULVERTS 05 AND 06**

**FOR CO ORDINATION**

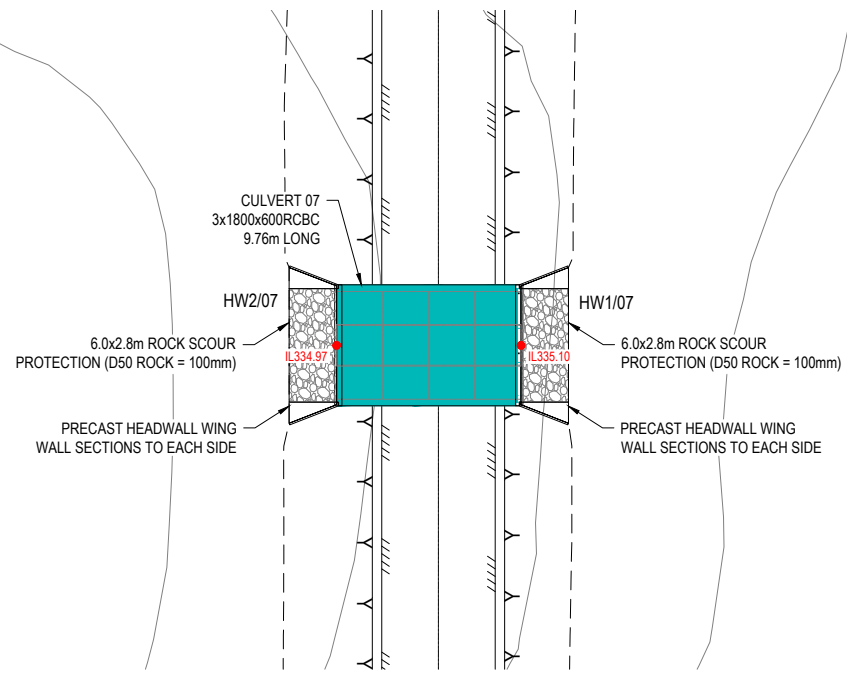
**mpn consulting**

ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

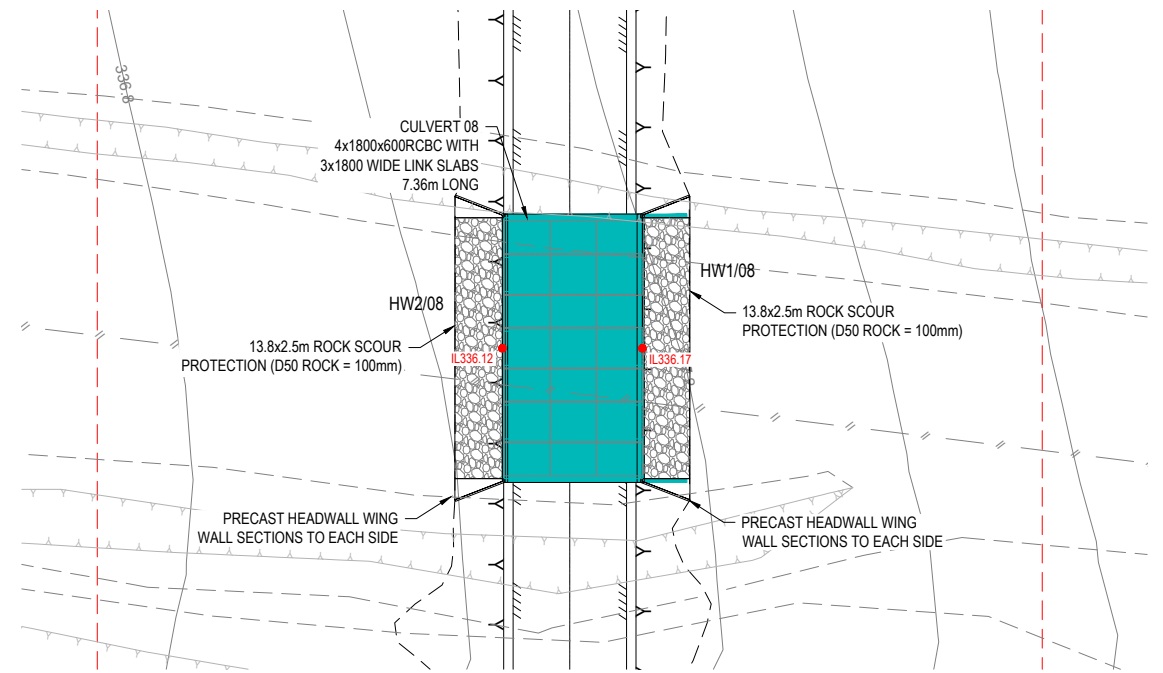
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>SW.1.03</b>	<b>A</b>

**NOT FOR CONSTRUCTION**



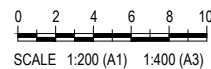
**STORMWATER CULVERT 07 - LAYOUT**  
SCALE 1 : 200



**STORMWATER CULVERT 08 - LAYOUT**  
SCALE 1 : 200

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
A	25.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GRENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**STORMWATER DRAINAGE**  
**CULVERTS 07 AND 08**

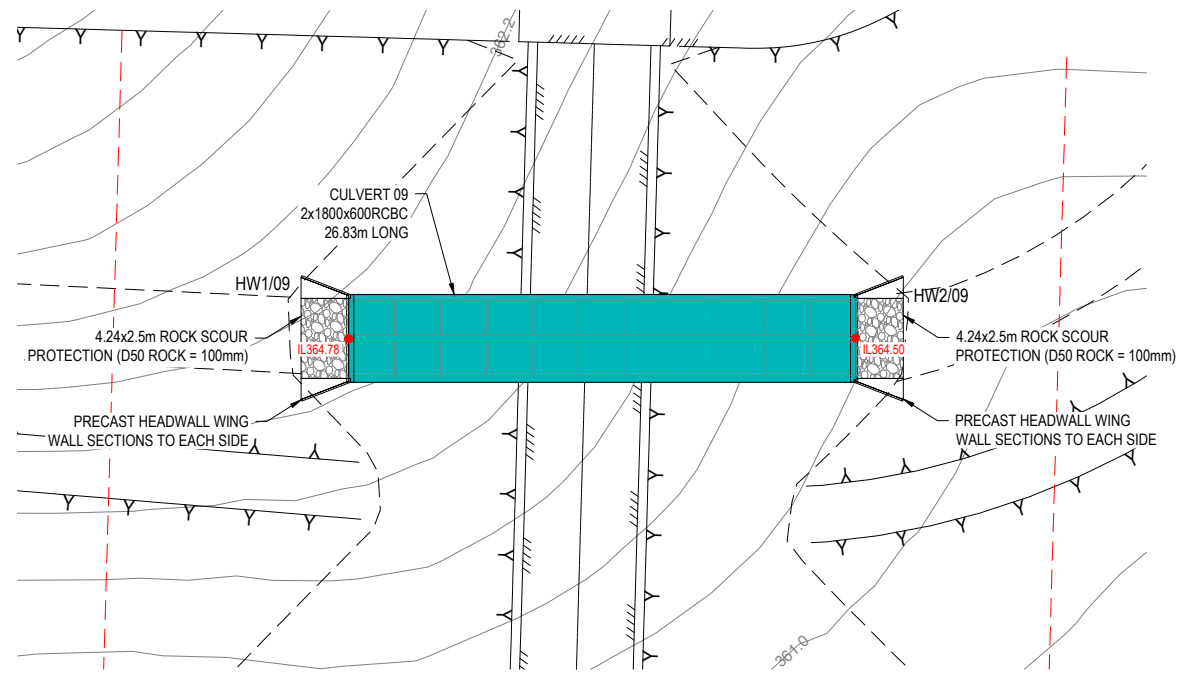
**FOR CO ORDINATION**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au

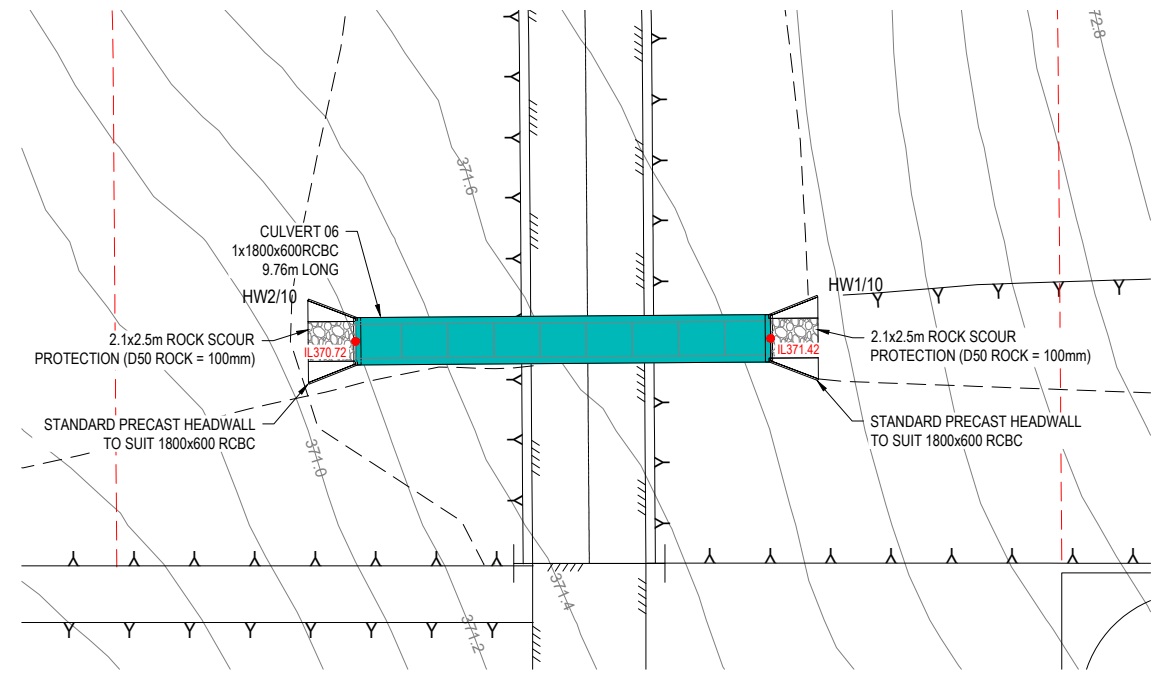
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>SW.1.04</b>	<b>A</b>

NOT FOR CONSTRUCTION



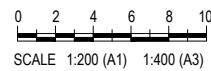
**STORMWATER CULVERT 09 - LAYOUT**  
SCALE 1 : 200



**STORMWATER CULVERT 10 - LAYOUT**  
SCALE 1 : 200

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
A	25.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENFELL FARMS**  
**1130 GOOLOONGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

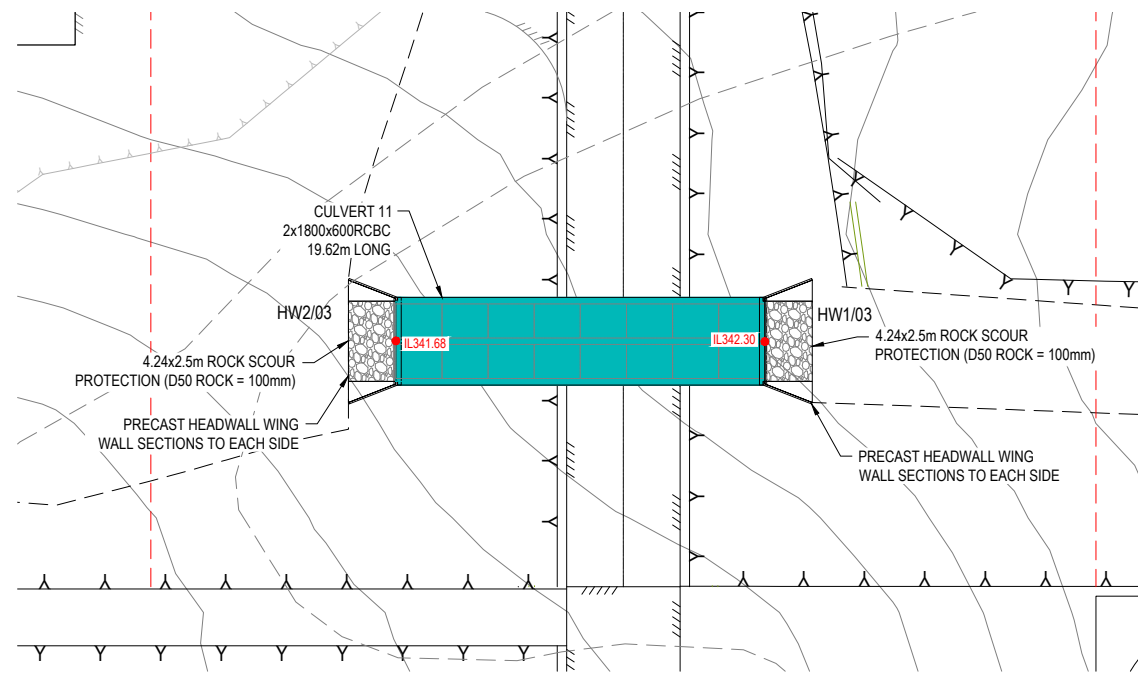
**BAIADA**  
**STORMWATER DRAINAGE**  
**CULVERTS 12**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	
DRAWING No.	REV
<b>SW.1.06</b>	<b>A</b>

**FOR CO ORDINATION**

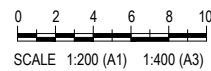
**NOT FOR CONSTRUCTION**



**STORMWATER CULVERT 11 - LAYOUT**  
SCALE 1 : 200

CONSULTANT: MPN CONSULTING PTY LTD  
CONTACT:  
TELEPHONE: (07) 3335 4555

DATE -



ISSUE	DATE	AMENDMENT	BY	APP
A	25.08.21	ISSUE FOR COORDINATION	BCM	-

**GRENELL FARMS**  
**1130 GOOLOGONG ROAD**  
**GREENFELL, NSW**

SCALES:	AS SHOWN
DESIGN:	BCM
DRAWN:	BCM
CREATED:	
CHKD:	
APPRD:	
DATE:	

**BAIADA**  
**STORMWATER DRAINAGE**  
**CULVERTS 12**

**mpn consulting**  
ABN: 39 062 191 799 P: 61 7 3335 4555  
39 Sherwood Road, Toowoong, Qld, 4066 E: solutions@mpnc.net.au  
COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2018 ©

mpn JOB	
<b>8719</b>	REV
DRAWING No.	
<b>SW.1.06</b>	<b>A</b>

**FOR CO ORDINATION**

**NOT FOR CONSTRUCTION**