



# Roadside Vegetation Management and Landscaping Plan

WHITEFIELDS ROAD



JULY 2019



## Document Verification



Project Title: Roadside Vegetation Management and Landscaping Plan

Project Number:		Coppabella WF Pre-construction requirements - 18-617 (16-316 versions 1-2)		
Project File Name:		Roadside Landscaping Plan V5		
Revision	Date	Prepared by (name)	Reviewed by (name)	Approved by (name)
Version 1	13/03/2017	Calia Jones	Brooke Marshall	Brooke Marshall
Version 2	24/03/2017	Brooke Marshall	Nick Graham-Higgs	Brooke Marshall
Version 3	03/02/2019	Brooke Marshall	Dave Maynard	Brooke Marshall
Version 4	16/4/2019	Beth Noel	Brooke Marshall	Brooke Marshall
Version 4.1	30/04/2019	Beth Noel (minor edits)	Brooke Marshall	Brooke Marshall
Version 4.2	12/06/19	Beth Noel (stakeholder feedback)	Brooke Marshall	Brooke Marshall
Version 4.3	15/07/2019	Beth Noel and Taylor Hume (DOEE feedback)	Brooke Marshall	Brooke Marshall
Version 5	30/07/19	Beth Noel (DoEE and DPIE approved version)	Brooke Marshall	Brooke Marshall

NGH Environmental prints all documents on environmentally sustainable paper including paper made from bagasse (a by-product of sugar production) or recycled paper.

NGH Environmental Pty Ltd (ACN: 124 444 622. ABN: 31 124 444 622) and NGH Environmental (Heritage) Pty Ltd (ACN: 603 938 549. ABN: 62 603 938 549) are part of the NGH Environmental Group of Companies.

[www.nghenvironmental.com.au](http://www.nghenvironmental.com.au) e [ngh@nghenvironmental.com.au](mailto:ngh@nghenvironmental.com.au)

**Sydney Region**  
18/21 mary st  
surry hills nsw 2010 (t 02 8202 8333)

**Newcastle - Hunter and North Coast**  
7/11 union st  
newcastle west nsw 2302 (t 02 4929 2301)

**Canberra - NSW SE & ACT**  
17/27 yallourn st (po box 62)  
fyshwick act 2609 (t 02 6280 5053)

**Bega - ACT and South East NSW**  
suite 1, 216 carp st (po box 470)  
bega nsw 2550 (t 02 6492 8333)

**Wagga Wagga - Riverina and Western NSW**  
suite 1, 39 fitzmaurice st (po box 5464)  
wagga wagga nsw 2650 (t 02 6971 9696)

**Bathurst - Central West and Orana**  
35 morrisset st (po box 434)  
bathurst nsw 2795 (t 02 6331 4541)

Declaration of Accuracy

I declare that to the best of my knowledge, all the information contained in, or accompanying this document is complete, current and correct. I am duly authorised to sign this declaration on behalf of the proponent/approval holder. I am aware that:

- section 490 of the Environment Protection and Biodiversity Conservation Act 1999 (Cwth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.
- section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cwth) where the person knows the information or document is false or misleading.
- the above offences are punishable on conviction by imprisonment, a fine or both.

Signed:



Full name (please print): Medard Boutry, Senior Environmental Advisor

Organisation (please print): Goldwind Australia Pty Ltd

EPBC Referral Number: 2017/8129

Name of Action Management Plan this document and declaration refers to: Roadside Vegetation Management and Landscaping Plan V.5

Date: 30 July 2019

1/216 carp st (po box 470) bega nsw 2550 australia t 61 2 6492 8333 f 61 2 6494 7773

[www.nghenvironmental.com.au](http://www.nghenvironmental.com.au) e [nghe@nghenvironmental.com.au](mailto:nghe@nghenvironmental.com.au)

unit 9/65 tennant st (po box 1037)  
fyshwick act 2609 australia  
t 61 2 6280 5053 f 61 2 6280 9387

18/21 mary st  
surry hills nsw 2010 australia  
t 61 2 8202 8333 f 61 2 6494 7773

po box 8323  
perth bc wa 6849 australia  
t 61 8 9759 1985 f 61 2 6494 7773

102/63-65 johnston st (po box 5464)  
wagga wagga nsw 2650 australia  
t 61 2 6971 9696 f 61 2 6971 9693

suite 6/234 naturaliste tce (po box 1037)  
dunsborough wa 6281 australia  
t 61 8 9759 1985 f 61 2 6494 7773

# CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>3</b>
1.1	THE PROJECT .....	3
1.2	CONSTRUCTION OVERVIEW.....	3
1.3	CONSTRUCTION SCHEDULE.....	5
1.4	LEGISLATIVE CONTEXT .....	5
1.4.1	New South Wales.....	5
1.4.2	Commonwealth .....	5
1.5	PURPOSE AND SCOPE OF THIS PLAN.....	5
1.6	CONSULTATION WITH REGULATORS .....	7
1.7	RELATIONSHIP TO OTHER PLANS .....	7
<b>2</b>	<b>IMPORTANT SITE VALUES .....</b>	<b>8</b>
2.1	PROTECTED MATTERS RELEVANT TO WHITEFIELDS ROAD .....	8
2.1.1	Box Gum Woodland.....	8
2.1.2	Superb Parrot.....	8
2.1.3	Other MNES species .....	9
2.2	SURVEY EFFORT TO REDUCE IMPACTS.....	9
2.2.1	2016 Constraints mapping.....	9
2.2.2	Additional surveys and inspections .....	10
2.3	SURVEY OUTCOMES.....	10
2.3.1	2009 biodiversity assessment surveys.....	11
2.3.2	2016 constraints mapping surveys .....	11
2.3.3	2018 - 2019 additional surveys and inspections.....	11
<b>3</b>	<b>AVOIDANCE AND MINIMISATION MEASURES.....</b>	<b>12</b>
3.1	ITERATIVE AND RESPONSIVE DESIGN TO AVOID IMPACTS.....	12
3.2	MINIMISATION OF RESIDUAL IMPACTS .....	13
<b>4</b>	<b>ROLES AND RESPONSIBILITIES.....</b>	<b>17</b>
4.1	MANAGEMENT STRUCTURE.....	17
4.2	ENVIRONMENTAL RESPONSIBILITIES .....	17
4.3	TRAINING REQUIREMENTS AND IMPLEMENTATION .....	18
<b>5</b>	<b>VEGETATION MANAGEMENT, LANDSCAPING PROTOCOLS AND TRIGGERS FOR ACTION.....</b>	<b>19</b>
5.1	WHITEFIELDS ROAD .....	19
<b>6</b>	<b>MONITORING AND REPORTING .....</b>	<b>23</b>

6.1	INSPECTIONS AND AUDITS.....	23
6.2	ENVIRONMENTAL REPORTING.....	23
<b>7</b>	<b>REFERENCES.....</b>	<b>24</b>
<b>APPENDIX A</b>	<b>FINAL CONSTRUCTION LAYOUT, WHITEFIELD’S ROAD .....</b>	<b>A-I</b>
<b>APPENDIX B</b>	<b>CONDITION CROSS REFERENCE .....</b>	<b>B-I</b>
<b>APPENDIX C</b>	<b>INFILL AND REPLACEMENT PLANTING AREAS.....</b>	<b>C-I</b>
<b>APPENDIX D</b>	<b>PHOTOGRAPHS, WHITEFIELDS ROAD.....</b>	<b>D-I</b>

# 1 INTRODUCTION

## 1.1 THE PROJECT

The Coppabella Wind Farm (CWF) project (the Project) is located on farmland north of the Hume Highway, approximately 35 kilometres west of Yass, New South Wales. The Project involves the construction, operation and eventual decommissioning of up to 75 wind turbines and associated infrastructure.

The area is characterised by undulating to hilly terrain with broken ridgelines, mostly on volcanic (Granite) geology.

The majority of the Development Corridor has been grazed for many decades and generally contains a mosaic of scattered remnant trees or small isolated woodland patches within the degraded grasslands.

The primary access route to the site is along Whitefields Road from the Hume Highway. The secondary access route is along Coppabella Road. Refer to Figure 1-1. Management of the vegetation along these access routes is a requirement of the approval conditions of the Project as described in Section 1.5 and addressed in this Roadside Vegetation Management and Landscaping Plan (RVMLP). This plan does not address the management of vegetation for on-site access roads for the wind farm as this is addressed in other management plans required under the project approvals.

## 1.2 CONSTRUCTION OVERVIEW

Sections of Whitefields Road and of Coppabella Road used for the project are proposed to be upgraded as stipulated in Schedule 3, Condition 28 of the NSW Conditions of Consent. Whitefields Road will need to be widened and sealed to a minimum width of 5m, with 0.5m wide gravel shoulders. The Hume Hwy / Whitefields Road intersection will also require upgrading. The Coppabella Road will not require upgrade as it is not required for the construction of the wind farm.

The upgrade of the offsite roads is conditioned to be undertaken prior to the commencement of the wind farm construction in those areas.

Construction activities that have the potential to generate impacts to vegetation along Whitefields Road includes:

- Vegetation clearing and grubbing.
- Grading/levelling.
- Asphaltting of Whitefields Road.
- Light vehicle traffic and construction traffic.
- Trimming of branches to facilitate the delivery of turbine components.
- Maintenance of the offsite roads.

Construction of the CWF will be undertaken on behalf of CWF Pty. Ltd. (CWFPL) by a range of contractors. At the time this Roadside Vegetation Management Plan (RVMLP) was prepared the Balance of Plant (BoP) Contractor responsible for the bulk of project earthworks, including the road upgrade has yet to be appointed. RMS will be responsible for the Hume Hwy / Whitefields Road intersection upgrade.

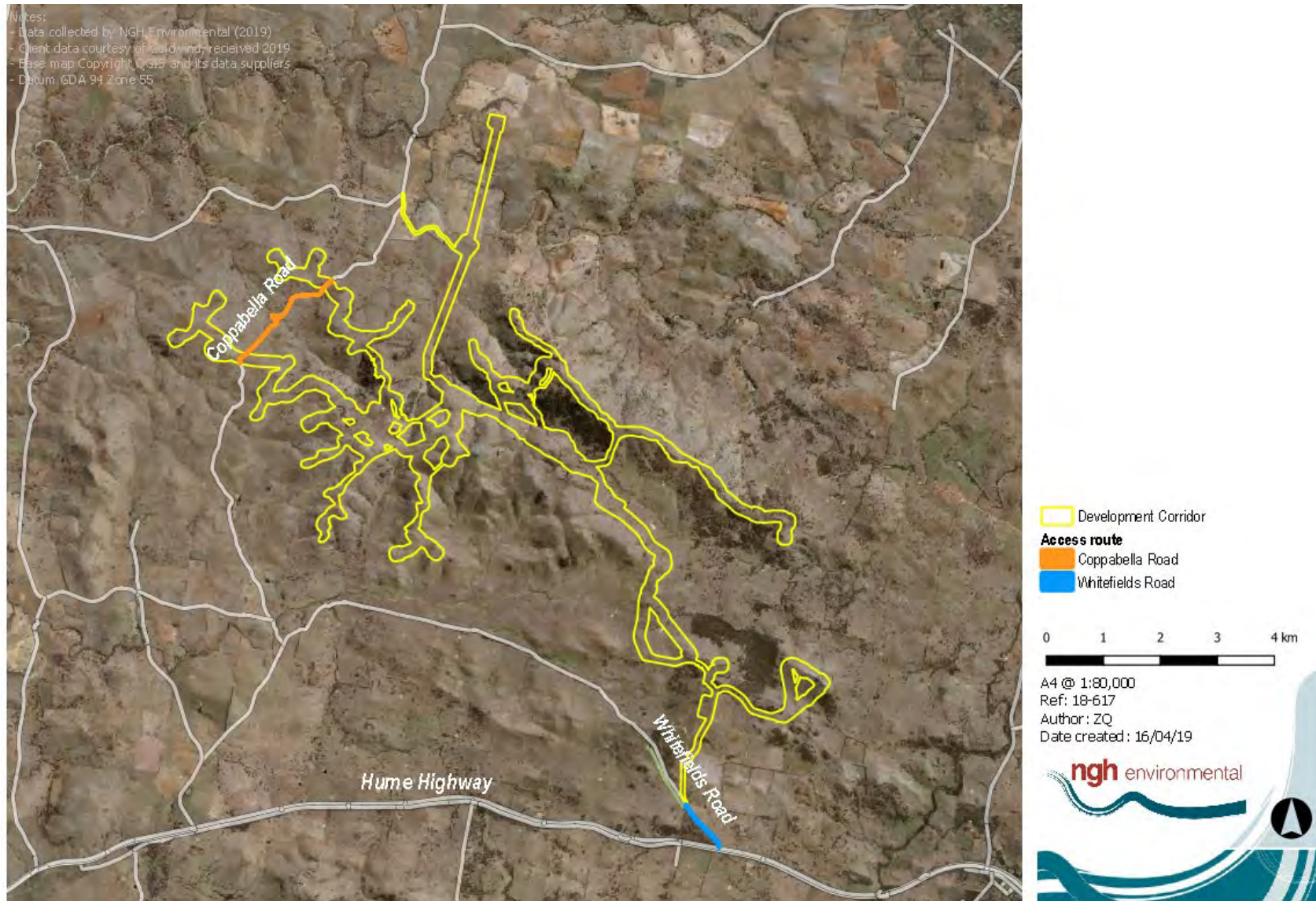


Figure 1-1 Location of works

### 1.3 CONSTRUCTION SCHEDULE

The overall CWF construction works will take approximately 2 years to complete, however the upgrade of the offsite roads would be much shorter duration:

- Hume Highway / Whitefields Road intersection – approximately 4-6 weeks.
- Whitefields Road upgrade – approximately 4 weeks.

### 1.4 LEGISLATIVE CONTEXT

State and Commonwealth approvals have been obtained for the project. The following details the status of NSW and Commonwealth approvals.

#### 1.4.1 New South Wales

The Yass Valley Wind Farm (Stage 1) was approved by the NSW Department of Planning and Environment on 30 March 2016, under Section 89E of the *Environment Planning and Assessment Act 1979* (EP&A Act). The approval allowed for up to 79 wind turbines, within the Coppabella Precinct. The project was subsequently renamed 'Coppabella Wind Farm'.

A Modification application was approved on 10 December 2018. Key modifications include an increase in the vegetation clearing limit and installation of a larger turbine model.

#### 1.4.2 Commonwealth

The project was referred as a controlled action to the Federal Department of Environment and Energy (DoEE). Approval was granted on 5 November 2014 under Section 130 and 133 *Environment Protection and Biodiversity Conservation Act 1999*. The approval related to the original Yass Valley Wind Farm application with 126 wind turbines, incorporating the Coppabella, Marilba and Conroys Gap Precincts.

In consultation with the DoEE, an updated assessment on referral documentation was undertaken (EPBC 2017/8129) for the modified project. The updated referral was approved on 12 November 2018. The updated consent conditions relevant to biodiversity are set out in Appendix B.

### 1.5 PURPOSE AND SCOPE OF THIS PLAN

Road upgrades are conditioned for Whitefields Road and Coppabella Road as part of the construction of the Coppabella Wind Farm. However, Coppabella Road is not required for the construction of the CWF.

The specific NSW and Commonwealth project approval conditions are relevant to the upgrades. These are provided in full in Appendix B and summarised below:

- Restrictions on the number of hollow bearing trees (HBTs) that may be removed on Whitefields Road. Maximum four HBTs to be removed.
- Minimisation of limb lopping on hollow bearing trees on Whitefields Road.
- Avoid or minimise the clearing of mature vegetation adjacent to the Whitefields Road.
- Provision of a plan for landscaping to replace and augment the existing vegetation adjacent along the upgraded road.
- Ensure protection of foraging and potential breeding habitat for the Superb Parrot is maximised, with regard to clearance and trimming of roadside vegetation.

- Consultation with relevant roads authorities regarding the road upgrades.

This Roadside Vegetation Management and Landscaping Plan documents the process undertaken to avoid or minimise impacts of road upgrades on native vegetation, in accordance with NSW and Commonwealth conditions of approval.

The plan follows this structure:

Section 1	Project introduction
Section 2	Important site values
Section 3	Avoidance and minimisation measures
Section 4	Roles and Responsibilities
Section 5	Vegetation Management and landscaping protocols
Section 6	Monitoring and reporting
Appendices	A Final construction maps
	B Consent condition cross reference (to demonstrate compliance)
	C Infill and replacement planting
	D Photographs

## 1.6 CONSULTATION WITH REGULATORS

To ensure that this plan satisfactorily meets the conditions of approval, consultation occurred as follows:

Figure 1-2: Status of consultation with regulators

Agency	Key matters for consultation	Status
<b>Yass Valley Council</b>	Final design of Whitefields Rd upgrade. Evidence of minimisation of impacts. Supplementary roadside planting measures.	Held telephone meeting with YVC 17 January 2019. YVC had no issues with design. A copy of the RVMLP was provided to YVC on 16 April 2019, an email was received from YVC on 6 May 2019 confirming agreement with the RVMLP.
<b>Commonwealth Department of Environment</b>	Acceptance of document layout. Objective and detail of management protocols.	A copy of the RVMLP was provided to DoEE on 16 April 2019. Feedback from the DoEE review has been incorporated into revision 4.2. Final feedback was incorporated into the RVMLP on 16 July 2019.
<b>NSW Department of Planning Industry and Environment</b>	Endorsement of final document.	The final plan was provided to DPIE on 8 July 2019.  Final feedback was incorporated into the RVMLP on 30 July 2019.

## 1.7 RELATIONSHIP TO OTHER PLANS

The key environmental management plan to which this strategy relates is the:

1. Environmental Management Strategy (EMS).

This Roadside Vegetation Management and Landscaping Plan will be referenced in the EMS with regards to measures designed to manage the biodiversity impacts during the offsite road upgrades.

Related management plans include:

- Biodiversity Management Plan (BMP), to manage impacts to flora and fauna during construction of the Coppabella Wind Farm. This plan includes detailed tree felling protocols and other protocols for reducing impacts to biodiversity.
- Bird and Bat Adaptive Management Plan, to provide base line data and monitor operational impacts on birds and bats.
- Offset provisions, to address clearing impacts of the Coppabella Wind Farm (CWF) project. While the offset plan addresses all native vegetation clearing of the CWF project in accordance with the NSW Framework for Biodiversity Assessment, for Major Projects, this RVML plan provides additional infill and replacement plantings as required by specific conditions related to Whitefields Road and is therefore supplementary.

## 2 IMPORTANT SITE VALUES

To understand the site's biodiversity values and thereby avoid and minimise impacts on them, the following steps were undertaken:

1. Constraints mapping of Whitefields Road:
  - Vegetation mapping was completed for the study area. This showed that the entire study area is Box Gum Woodland.
  - The significance of the vegetation was ranked, making clear the priority for avoidance / minimisation measures based on the habitat value of the vegetation (low, moderate and high).
2. Additional site surveys of Whitefields Road and the Hume Highway intersection to characterise key features: mature trees, hollow bearing trees with a focus on those with the potential for Superb Parrots to nest within.
3. Additional site inspections with construction engineers to investigate road design optimisation to minimise impacts to mature and hollow bearing trees.

The results were provided to the road design team to assist in developing a design that minimised impacts on native vegetation while meeting the technical project requirements. Several follow up assessments were undertaken during the detailed design process. The methods and results are summarised below.

### 2.1 PROTECTED MATTERS RELEVANT TO WHITEFIELDS ROAD

#### 2.1.1 Box Gum Woodland

Whitefields Road is mapped in its entirety as Box Gum Woodland. The majority of the Box Gum Woodland in the study area occurs as a woodland with little mid storey, consisting of mostly mature trees and an understorey of grasses with some forbs. See Appendix E for photographs of Whitefields Road. Box Gum Woodland is protected under the Biodiversity Conservation Act 2016 and the Environment Protection and Biodiversity Conservation Act 1999. This made it a priority for minimising impacts through the road widening process.

#### 2.1.2 Superb Parrot

Whitefields Road was deemed suitable for Superb Parrot breeding and foraging habitat due to the presence of Box Gum Woodland, the altitude and location. The numerous medium to large hollows present within Whitefields Road study area made Superb Parrot a focus for investigation. Each hollow bearing tree was assessed in regard to its suitability for Superb Parrot breeding. Superb Parrot favour nesting hollows which meet the following relevant criteria (Rayner *et al* 2016):

Figure 2-1 Superb Parrot preferred hollow parameters:

Tree/hollow	Size Range
Hollow entrance diameter	10-25cm
Hollow height above ground	4.5-8.6m

Trees with hollows meeting the criteria above were defined as Superb Parrot hollow bearing trees for the purpose of this project. Forty-five hollow bearing trees were observed within the study area, twenty-five of them were found to be suitable for Superb Parrot nesting. Of these HBTs only two are proposed to be removed (the other HBT is not suitable for Superb Parrot). All trees that require trimming within the study area would not remove any hollows.

In addition, the minimisation of removal and trimming of mature trees along Whitefields Road retains foraging habitat for the Superb Parrot, whilst replanting detailed in Appendix D proposes infill and replanting of understorey species consistent with Superb Parrot preferred species both within the road reserve and within the surrounding area.

### **2.1.3 Other MNES species**

While local records of Koala are known for the region and incidental sightings of Dusky Woodswallow and Eastern Bentwing bat have been made in the project area, no protected matters additional to the Box Gum Woodland and Superb Parrot are relevant to this Roadside Vegetation Management and Landscaping Plan. The Biodiversity Management Plan for the project assesses broader biodiversity management issues.

## **2.2 SURVEY EFFORT TO REDUCE IMPACTS**

### **2.2.1 2016 Constraints mapping**

With reference to existing 2009 biodiversity assessment data (the vegetation in the Project site was assessed previously as part of the biodiversity assessment of the wind farm BA, NGH Environmental 2009), an experienced ecologist inspected the roadside vegetation on Whitefields Road, on 27<sup>th</sup> September 2016. The site inspection took 3 hours. The ecologist marked the location of, and took notes on, vegetation and habitat features of the vegetation; particularly the composition, condition and age of vegetation including the presence of hollow-bearing trees. Features were recorded using handheld GPS Garmin Oregon 450t.

The study area was defined as all native vegetation occurring in the fenced Whitefields Road reserve (and, where the cadastre mapped road reserve differed from the physical fenced reserve, these additional areas; source SIX VIEWER Map layer 2017), from the Hume Highway intersection to the private access east turn off, approximately 500m north.

For this assessment, the significance of the vegetation was ranked as follows:

Figure 2-2 Constraints categories

Constraint category	Vegetation feature	Fauna habitat feature
<b>High (avoid impacts where practical)</b>	Box Gum Woodland in moderate to good condition – highest diversity.	Hollow bearing trees, including those suitable for Superb Parrot to nest.
<b>Moderate (minimise impacts, where practical)</b>	Box Gum Woodland in moderate to good condition – lesser diversity.	Mature trees, generally those greater than 30cm DBH.
<b>Low (most appropriate for development)</b>	No trees (or some isolated or immature trees occurring).	No trees (or some isolated juvenile trees occurring).

### 2.2.2 Additional surveys and inspections

Iteratively, as part of the development of the final road design, senior ecologists attended the site to discuss options for reducing impacts, with regard to the identified constraints along Whitefields Road and Coppabella Road as detailed below:

- May 2017 – Site meeting with Goldwind, contracted engineers (Cardno) and an NGH Environmental senior ecologist along Whitefields Road to discuss detailed design and minimisation strategies; included mapping of potential Superb Parrot hollows and detailed identification of potential hollow-bearing tree (HBT) removal and/or lopping.
- May 2017 – Inspection of proposed Coppabella Road access by a senior ecologist to evaluate the potential to minimise HBT impacts
- February 2018 – HBT verification by Goldwind Construction Manager and an NGH Senior Ecologist to determine the on-ground impact to HBTs based on updated design.
- November 2018 – Inspection of the Hume Highway intersection with Whitefields Road to identify any further biodiversity constraints within proposed upgrade areas.
- January 2019 – Inspection of Whitefields Road by heritage consultants that identified an Aboriginal Scar Tree, which is also a dead hollow bearing tree.
- April 2019 – Two NGH Environmental senior ecologists inspected HBTs (including those suitable for Superb Parrot) within 30m of the updated road alignment and to review the status of trees within the road corridor. Trees unable to be accessed (on private land) were assessed using a combination of aerial imagery and site observations conservatively.
- May 2019, two representatives from Goldwind and a senior ecologist met to confirm the level of impact from tree removal and trimming of trees required to widen Whitefields Road.

## 2.3 SURVEY OUTCOMES

The key results of 2009, 2016, 2018 and 2019 surveys are provided below. The final road construction design is provided in Appendix A.1 and the location of biodiversity values in relation to the road footprint and 30m buffer study area is provided in Appendix A.2.

### 2.3.1 2009 biodiversity assessment surveys

NGH Environmental (2009) identified road widening on Whitefields Road as a high constraint primarily due to *'Suitable Superb Parrot habitat (mature woodland remnants with hollow-bearing trees) including...roadside remnants adjacent to Whitefields Road'*.

### 2.3.2 2016 constraints mapping surveys

The vegetation throughout the road reserve conforms to the Box-Gum Woodland Endangered Ecological Community (EEC), listed under the NSW Biodiversity Conservation Act 2016.

The constraint categories developed in Section 2.1.1 reflect the fact that mature and hollow bearing trees are declining in this landscape and take a long time to replace.

Other features of significance noted during the field inspection included threatened birds:

- Brown Treecreeper (BC Act vulnerable)
- Superb Parrot (BC Act vulnerable)
- Dusky Woodswallow (BC Act vulnerable)

### 2.3.3 2018 - 2019 additional surveys and inspections

Comprehensive surveys conducted with both Goldwind staff, design engineers and NGH ecology staff along Whitefields Road facilitated dynamic redesign of the proposed access route to avoid and minimise impacts on biodiversity values, particularly with regard to HBTs and hollows suitable for use by the Superb Parrot for nesting. The final design and mapped impacts on biodiversity are presented in Appendix A.2, and represent the results of these consecutive surveys.

A total of three HBTs will be required to be removed along Whitefields Road which is a substantial reduction from the original eight that may have been potentially removed by the original road design. Refinement of the Whitefields Road design was shown to minimise impacts to HBTs, Superb Parrot HBTs, and Box Gum Woodland endangered ecological community (EEC).

Inspection of Coppabella Road identified a number of large and mature HBTs that would require removal if this was to become a primary access route for large and oversized construction vehicles. The conclusion was that Coppabella Road would not be used to transport turbine components to avoid the removal of additional HBTs, EEC or Superb Parrot habitat.

Forty-five HBTs including twenty-five trees suitable for Superb Parrot nesting were confirmed within 30m of the updated road alignment referred to as the study area. All trees within 30m of the road reserve were observed and identified as hollow bearing (or not) based on visual observations of the tree using binoculars and likelihood based on the size, habit and estimated age of the tree. Hollow bearing trees suitable for breeding by the Superb Parrot were determined using the parameters in Table 2-1.

Restrictions apply to clearing within 30m of forty-five HBTs suitable for Superb Parrot nesting, which were identified within the study area. Outside of 1<sup>st</sup> February to 31<sup>st</sup> August clearing within 30m of Superb Parrot HBTs is prohibited, in order to avoid impacts on breeding activity. A map showing HBTs (high constraints), buffer areas of those trees suitable for Superb Parrot, mature trees within the road construction footprint and mature trees within a 30m of the road construction footprint is presented in Appendix A.2.

## 3 AVOIDANCE AND MINIMISATION MEASURES

### 3.1 ITERATIVE AND RESPONSIVE DESIGN TO AVOID IMPACTS

The design of Whitefields Road has undergone three iterations to reduce biodiversity impacts, with input from ecologists, heritage consultants and engineers, as follows:

- Two layouts considered and evaluated in 2017 against Whitefields Road constraints mapping (documented in versions 1 and 2 of this document; March 2017).
- Two site inspections of Whitefields Road with Goldwind Australia engineers to survey and discuss hollow bearing and mature tree constraints.
- One site inspection of the Hume Highway November 2018 – Whitefields Road intersection to survey and discuss HBT and threatened ecological community constraints.
- Incidental identification of a Aboriginal scarred tree along Whitefields Road during site familiarisation visit by NGH heritage consultants (January 2019).
- Mapping of HBTs within 30m of the final construction footprint (April 2019).
- Identification of the exact trees requiring trimming to support road widening (May 2019).

It is noted that, in considering how to avoid and minimise impacts on biodiversity matters that:

- The road alignment is highly constrained by the narrowness of the existing road and the numerous HBTs and other trees that are present along the existing road.
- Options to extend the road alignment outside of the road reserve into adjacent private property with less biodiversity value have been explored by Goldwind Australia and are not considered to be feasible (pers. comm. T. Nielsen 14 March 2017).
- For constructability and safety, it was essential that the road upgrade be restricted to the gazetted road corridor and that the alignment prioritises motorist and worker safety, as well as the safe delivery of project materials and equipment.

A detailed road construction design, responding to the constraints identified above is included in Appendix A.1, the information is also summarised in Table 3-1 and Table 3-2. It can be seen that the final road footprint design:

- Reduces the number of hollow bearing trees that require removal from eight down to three. It also reduces the number of mature trees that require removal from 54 down to seven.
- Reduces the area of high constraints from 0.26 ha down to 0.18 ha and reduces the area of moderate constraints from 0.57 ha down to 0.39 ha.
- Reduces the impact upon Superb Parrot HBTs. This design avoids all but two Superb Parrot HBTs. Tree 110 and Tree 127 are identified for removal (reduced from four Superb Parrot habitat trees in the 2017 design). In addition, the trimming of trees for road widening only impacts upon two Superb Parrot habitat trees. These Superb Parrot habitat trees will be trimmed to retain the hollows suitable for breeding by the Superb Parrot.
- Reduces the total loss of Box Gum Woodland trees from 62 being removed (2017 road layout) down to ten being removed (current layout). This equates to an original loss of 1.27 ha of vegetation (2017 road layout) down to 1.15 ha of vegetation removed (current layout). A priority for retention of High constraint vegetation (trees containing hollows) was placed upon the design adjustment and this resulted in reducing the loss of high constraint vegetation from 0.26 ha down to 0.18 ha.

A comparison showing how much the revised design has been able to minimise is provided below in Table 3-1 showing reduction in high and moderate constraint vegetation loss and Table 3-2 showing reduction in high and moderate constraint trees. The current design showing current biodiversity impacts is presented in Appendix A.2. All trees to be removed are labelled with the Tree ID on map A.2.

Figure 3-1 Direct vegetation impact for each constraint category comparison between 2017 design and current design

Constraint Category	Vegetation within road and 30m buffer study area (ha)		Vegetation within the road footprint (ha)	
	2017	2019	2017	2019
<b>High - HBTs</b>	1.34	1.34	0.26	0.18
<b>Moderate – Mature Trees</b>	1.37	1.37	0.57	0.39
<b>Low – no trees, isolated or immature trees</b>	5.74	6.64	0.44	0.58
<b>Total</b>	8.45	9.35	1.27	1.15

Figure 3-2 Direct tree impacts: mature and hollow bearing trees removal and trimming

Constraint Category	Trees within study area (road footprint plus 30m road buffer)	Trees within the road footprint to be removed comparison		Trees within current study area that need trimming
		2017	2019	
<b>High -Hollow Bearing Trees (incl Superb Parrot and Scarred tree)</b>	45 (25 Superb Parrot)	8 (4 x Superb Parrot)	3 (2 x Superb Parrot)	5* (1 x Superb Parrot with hollow to be retained)
<b>Moderate – Mature Trees</b>	120	54	7	24
<b>Total</b>	165	62	10	29

\*For all trees that contain hollows that are being trimmed, the hollows are proposed to be retained.

## 3.2 MINIMISATION OF RESIDUAL IMPACTS

To further minimise the impact of the construction works on biodiversity values, Section 5 sets out management protocols specific to the project's conditions of consent. Residual impacts include trimming

of mature and hollow bearing trees to enable widening of Whitefields Road without removing trees unnecessarily. Detailed onsite data was collected on each tree, notes were taken on each branch requiring removal, to ensure the appropriate clearance for vehicles carrying equipment accessing the site through this road. A total of twenty-nine trees need trimming, of these only five are hollow bearing and only one is suitable for Superb Parrot. Tree 130 may result in damage to the hollow, which is located in the trunk, depending on the integrity of the tree which is a dead stag. In addition, Tree 141 (a Superb Parrot habitat tree) has some risk of damaging the hollow limb but with careful supervision by an ecologist risks may be mitigated. See Figure 3-1 and Figure 3-2 below showing photos of the two hollow bearing trees that require careful trimming.

In addition, in accordance with Commonwealth Condition 3a shown in Appendix B.2, no clearing works are to be conducted within 30m of Superb Parrot habitat trees between 1 September and 31 January. The 30m buffer areas are shown in Appendix A.2. They are also shown on a broad scale below in Figure 3-3



Figure 3-3 Tree 130, the limb above the hollow, over the road needs trimming, the hollow of this dead stag circled in red may be impacted depending on the integrity of the tree when the limb is removed. Efforts will be made to retain this hollow.



Figure 3-4 Tree 141 shows a Superb Parrot hollow within the red circle, a small branch behind this requires trimming. This hollow is proposed to be retained.

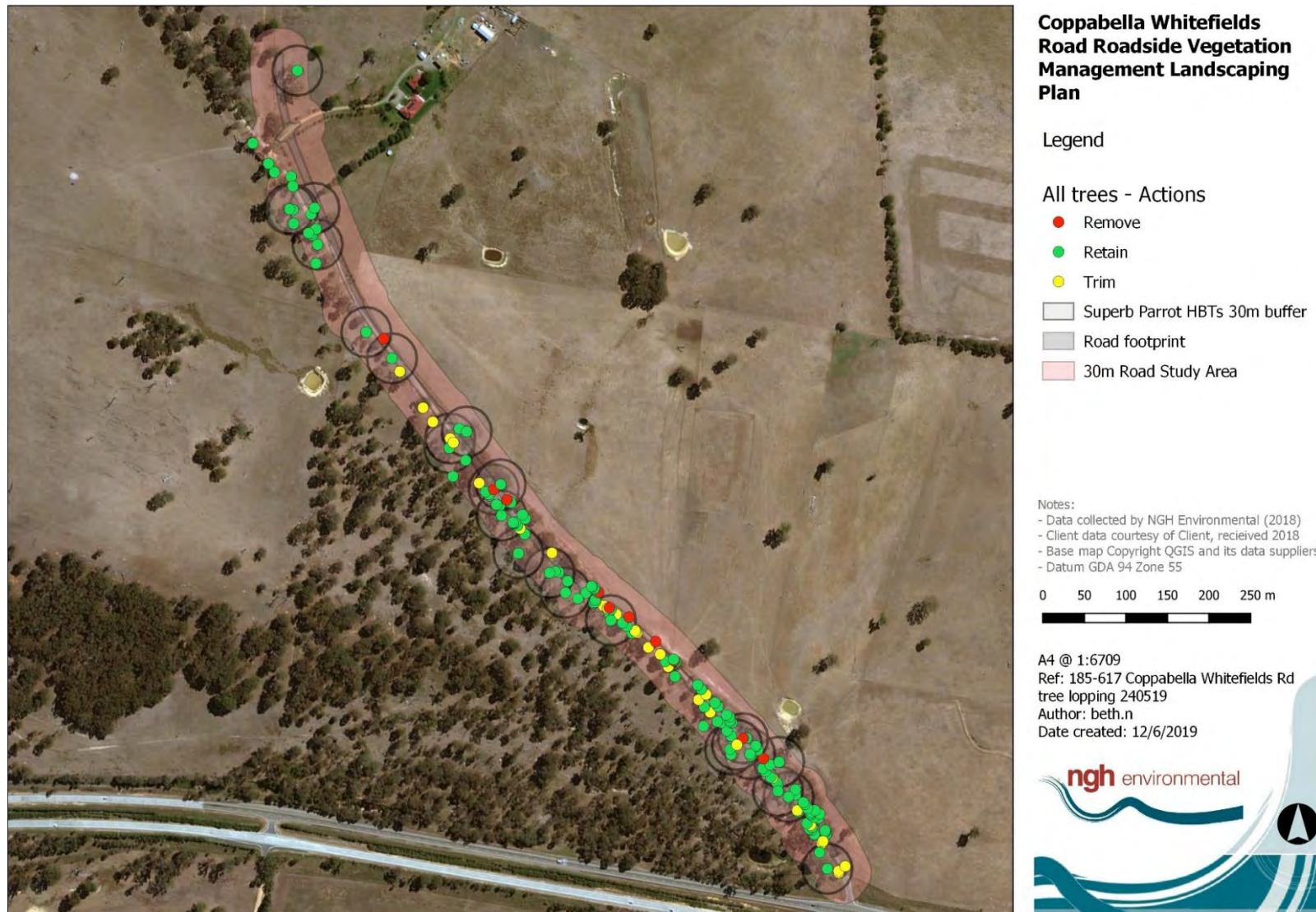
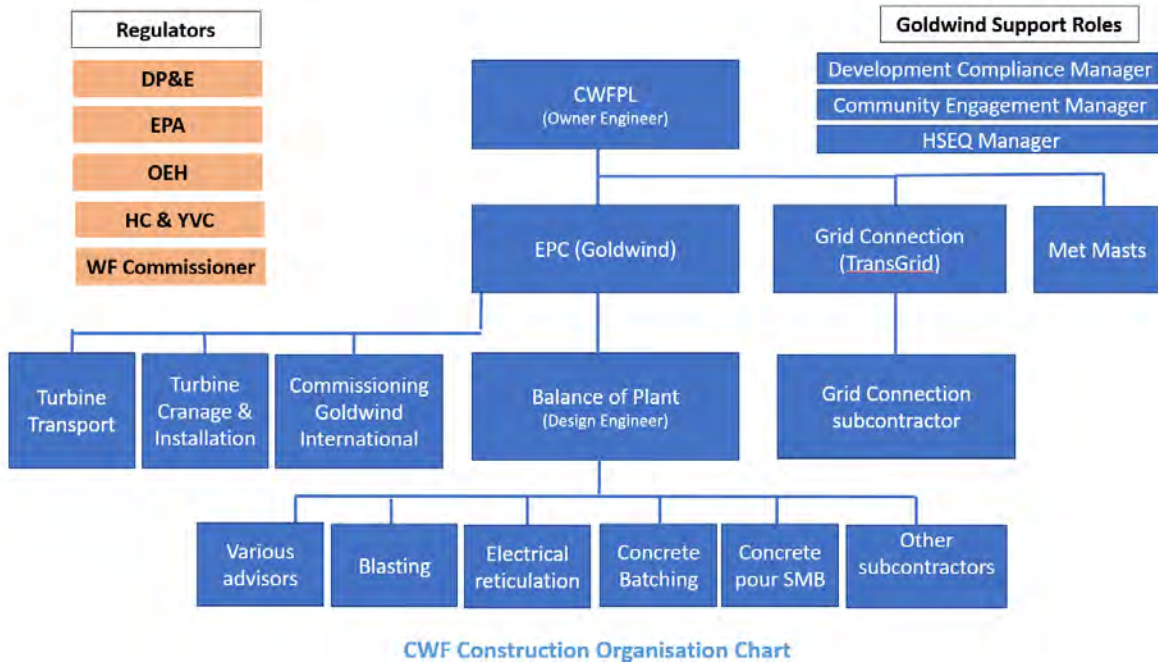


Figure 3-5 All 30m buffers for Superb Parrot habitat trees, each of the buffered trees has at least one suitable hollow for Superb Parrot nesting. No clearing works to be carried out within these buffer zones between 1 September and 31 January.

## 4 ROLES AND RESPONSIBILITIES

### 4.1 MANAGEMENT STRUCTURE



### 4.2 ENVIRONMENTAL RESPONSIBILITIES

Figure 4-1: Responsibilities and roles

Organisation	Role	Responsibility
Approval Holder (CWFPL)	Owners Representative	<p>Overall responsibility for implementation of RVMLP and EMS</p> <p>Provides project leadership and ensures project adequately resourced.</p> <p>Engages Owners Engineer for Quality inspections/reviews</p> <p>Contract review to ensure environmental responsibilities are adequately allocated in contracts.</p>
Approval Holder	Environmental Advisor	<p>Provides support to project team in meeting compliance and EMS/RVMLP requirements.</p> <p>Undertake environmental inspections and audits.</p> <p>Liaison with regulatory authorities.</p>
Principal Contractor	EPC Construction Manager	<p>Compliance with RVMLP and EMS.</p> <p>Coordinates various contractors and their activities.</p> <p>Ensures Contractors are aware of their environmental responsibilities and that these are implemented.</p> <p>Provide adequate resources and support to SECO.</p>
Principal Contractor	Site Environmental Compliance Officer (SECO)	<p>Engage with Balance of Plant (BoP) Contractor and other contractors regarding environmental matters.</p>

Organisation	Role	Responsibility
		Review and approval of Environmental Work Method Statement (EWMS). Environmental inspections and monitor/review corrective actions. Keep auditable records.
BoP Contractor	Construction Manager	Ensure compliance with environmental approvals and associated management plans (including this RVMLP). Ensure EWMSs are prepared and approved prior to commencement of construction. Provide adequate resources and support to SEO.
BoP Contractor	Site Environmental Officer (SEO)	Preparation of EWMSs and review EWMS implementation (i.e. ensure all necessary controls are in place prior to commencement). Assist/support BoP staff and subcontractors to undertake activities in manner compliant with approvals and management plans. Investigate any environmental incidents and identify corrective actions. Undertake daily/weekly site inspections and coordinate corrective actions and improvements. Engage qualified and experienced arborist to undertake the tree removal along Whitefields Rd. Keep auditable records.
All site personnel	Contractors and their staff	Responsible for complying with the requirements of the project approval, other laws and project management plans (incl. this RVMLP). Inducted to project and relevant EWMS prior to commencing project activity. Attend daily pre-starts and toolbox talks.
NGH Environmental	Independent and qualified ecologist	Complete pre-clearing surveys and supervise/support tree removal and limb trimming.

### 4.3 TRAINING REQUIREMENTS AND IMPLEMENTATION

Three main forms of environmental training will be provided onsite. The requirements of this RVMLP will be communicated through:

- Site induction.
- Environmental awareness training.
- “Toolbox” talks.
- Annotated site plans will be displayed in lunchroom / site offices.

## 5 VEGETATION MANAGEMENT, LANDSCAPING PROTOCOLS AND TRIGGERS FOR ACTION

### 5.1 WHITEFIELDS ROAD

Table 5-1 Management Objectives, Protocols and Triggers

Objective	Management Measures	Timing	Trigger/s and corrective actions
Minimise impacts to Box Gum Woodland, hollow bearing trees (including Superb Parrot HBTs) and mature trees	<ul style="list-style-type: none"> <li>An EWMS (Environmental Work Method Statement) shall be prepared and approved prior to respective activities occurring to govern work practices (refer to EMS for details on EWMS).</li> <li>Prior to site entry, all relevant site personnel including contractors shall be appropriately inducted and made aware of the requirements and constraints detailed in this RVMLP.</li> <li>Areas to be cleared will first be clearly demarcated on the ground, in a manner that minimises soil disturbance. (i.e. spray paint, survey pegs, flagging). Trees that require removal or trimming will be clearly marked. The entire area is Box Gum Woodland and thus areas not being removed will be treated as 'no-go areas' for plant and machinery.</li> <li>Trees removal will not cause damage to surrounding vegetation that is to be retained.</li> <li>An ecologist has reviewed all hollow bearing and mature trees directly adjacent to the road and established which ones require limbs to be lopped only. For trees that only require lopping, a registered consulting arborist will direct limb lopping so as to: <ul style="list-style-type: none"> <li>Minimise the amount of lopping required, based on safety and clearance requirements</li> <li>Ensure the limbs are removed in a manner that minimises impact on tree health.</li> </ul> </li> </ul>	Prior to and during road upgrade.	<p>Unplanned impacts to constraint areas will require review of works procedures and modification to prevent future impacts.</p> <p>Any unintended impacts will be offset and managed in consultation with the State and Commonwealth regulators. Including but not limited to additional offsetting, salvage of habitat and creation of alternative habitat.</p>

Objective	Management Measures	Timing	Trigger/s and corrective actions
	<ul style="list-style-type: none"> <li>Hollow bearing trees that require limbs to be lopped will have the limb to be removed clearly marked. No hollow limbs are proposed to be removed, thus any hollow bearing limb to be retained will be given appropriate clearance during limb removal activities.</li> <li>Limb trimming and tree removal will be directed by a registered consulting arborist and supervised by an ecologist to ensure compliance with design, to minimise impacts to resident fauna and ensure safety of retained trees.</li> <li>Only three HBTs will be removed.</li> <li>Only conduct clearing within 30 m of known and potential hollow bearing trees suitable for Superb Parrot nesting between 1 February to 31 August (outside the breeding season). If tree clearing or limb lopping is to be conducted outside of the 1 February to 31 August then it must be conducted at least 30m from Superb Parrot Hollow Bearing Trees (as shown on Map A.2 and in Figure 3-3)</li> </ul>		
Minimise impacts to fauna including retention of fauna habitat where possible	<ul style="list-style-type: none"> <li>Conduct Pre-Clearance Fauna Survey. An ecologist will inspect all hollows that require removal prior to works commencing. Pre-clearance surveys will be conducted within 2 weeks of works start to ensure hollows are clear, or if they are not clear that there is a protocol developed for managing the fauna present prior to works commencing.</li> <li>An ecologist will be present prior to and during removal of HBTs. Prior to clearing, the tree is to be knocked as high up the tree as possible several times, with 30 second intervals between knocks prior to removal. If fauna detected does not vacate a hollow bearing tree, following initial disturbance (knocking and plant activity adjacent), the situation should be assessed by the supervising ecologist for potential relocation or the ability to alter works schedule to allow the fauna time to move of its own accord (if practical).</li> </ul>	Prior to and during road upgrade	<p>Discovery of fauna will require assessment by the fauna ecologist, to see if the fauna is suitable for relocation and release and to establish actions relevant to the species, its habitat and lifecycle.</p> <p>If not suitable for release due to injury or dependency, then the fauna is to be referred to a wildlife rescue organisation.</p> <p>Records of fauna relocation including species and relocation procedure are to be maintained.</p>

Objective	Management Measures	Timing	Trigger/s and corrective actions
	<ul style="list-style-type: none"> <li>The ecologist will be able to clearly communicate with plant operators and will capture and assess fauna for relocation or referral to a wildlife carer if required.</li> <li>If possible, HBT limbs will be removed slowly. Non-hollow-bearing limbs will be removed first, followed by hollow-bearing limbs. When on the ground, hollows will be checked by the ecologist for signs of wildlife.</li> <li>Any orphaned or dependent young which are separated from their parent will need to be transferred to a wildlife rescue organisation.</li> <li>Habitat features from within the approved disturbance footprint will be salvaged. Habitat features including surface rock, large logs or hollow limbs suitable for salvage will be specified by the supervising ecologist and re-located to adjacent areas where feasible (not against trees). An ecologist shall be present during the salvage and relocation of habitat features.</li> <li>Felled trees will be mulched or managed in a manner to maximise beneficial reuse (e.g. rehabilitation, sediment control, etc).</li> </ul>		
Suppress and control weeds onsite	<ul style="list-style-type: none"> <li>Weeds and pathogens will be managed during construction works in accordance with the Biosecurity Act 2015.</li> <li>All vehicles, equipment and machinery involved in the upgrade works will be declared as clean prior to site entry. Where vehicles or machinery require cleaning, attention must be paid to radiator airways, the underbody of track propelled machinery and the underbody of vehicles and tyres.</li> <li>Priority weeds within areas that will form part of the Whitefields Road upgrade shall be treated prior to the upgrade works commencing.</li> </ul>	Prior to and during road upgrades	If weed outbreaks occur during works, they will be controlled in accordance with NSW DPI WeedWise profiles <a href="https://weeds.dpi.nsw.gov.au/">https://weeds.dpi.nsw.gov.au/</a>

Objective	Management Measures	Timing	Trigger/s and corrective actions
Increase the presence of Box Gum Woodland trees and shrubs within the Whitefields Rd corridor and adjacent approved areas	<ul style="list-style-type: none"> <li>Locations suitable for additional Box Gum Woodland tree/shrub planting are identified in Appendix C.</li> <li>A contractor experienced in native vegetation rehabilitation will be engaged to source and establish local species plantings as set out in Appendix C.</li> <li>Plantings will be monitored for an establishment period of 3 years to ensure: <ul style="list-style-type: none"> <li>Weeds are suppressed around the plantings twice per year.</li> <li>Dead or dying plants are replaced.</li> <li>Supplementary watering or mulch application is applied as required to enhance growth.</li> </ul> </li> </ul>	<p>Completion of planting within 3 months of road upgrade ending</p> <p>Ensuring establishment of plantings for 3 years following road upgrade completion</p>	<p>Replant trees/shrubs if die back occurs.</p> <p>Treat weed outbreaks following detection.</p> <p>Ensure planting density as described in Appendix C.3 is maintained.</p>

## 6 MONITORING AND REPORTING

The Roadside Vegetation Management and Landscaping Plan (RVMLP) will be adhered to on site prior to and during the entire construction period.

The implementation of the RVMLP will be monitored, reviewed and audited as described in project Environmental Management Strategy (EMS; specifically, Section 3.10, Table 8).

### 6.1 INSPECTIONS AND AUDITS

Environmental inspections of the road upgrade areas will occur daily during the road upgrade works. Monitoring of the off-site road areas would subsequently be covered by the regular wind farm construction inspections which are outlined in the project Environmental Management Strategy, which include:

- Weekly inspections, event-based inspections (high rainfall events, bushfire, pollution incident).
- Regular scheduled audits (a minimum of every 3 months during construction).
- Ongoing monitoring during works will be conducted to ensure adherence to protocols, triggers and corrective actions detailed in section 5.1.

### 6.2 ENVIRONMENTAL REPORTING

Records will be kept of environmental inspections and audits, and the outcomes of those audits' and inspections. Reporting on the implementation of this plan will be in accordance with the EPBC Act or NSW conditions of approval.

Environmental incidents will be reported in a number of ways:

1. Recorded on the Environmental Incidents Register.
2. Discussed during toolbox talks or routine observations.
3. Reported to the DoEE where those incidents represent potential or actual non-compliance with this plan or the conditions of approval.

## 7 REFERENCES

- DEC (2004) Draft Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities. Department of Environment and Conservation NSW.
- NGH Environmental (2009). Coppabella Biodiversity Assessment. Report prepared for Epuron.
- NGH Environmental (2017). Whitefields Road Landscape Advice v1. Report prepared for Goldwind Australia, March 2017.
- NGH Environmental (2017). Whitefields Road Landscape Advice v2. Report prepared for Goldwind Australia, March 2017.
- NGH Environmental (2017). Coppabella Wind Farm Modification Application. Report prepared for Goldwind Australia, September 2017.
- Rayner L, Stojanovic D, Heinsohn R, and Manning A (2016). *Breeding ecology of the superb parrot Polytelis swainsonii in northern Canberra*. Technical Report

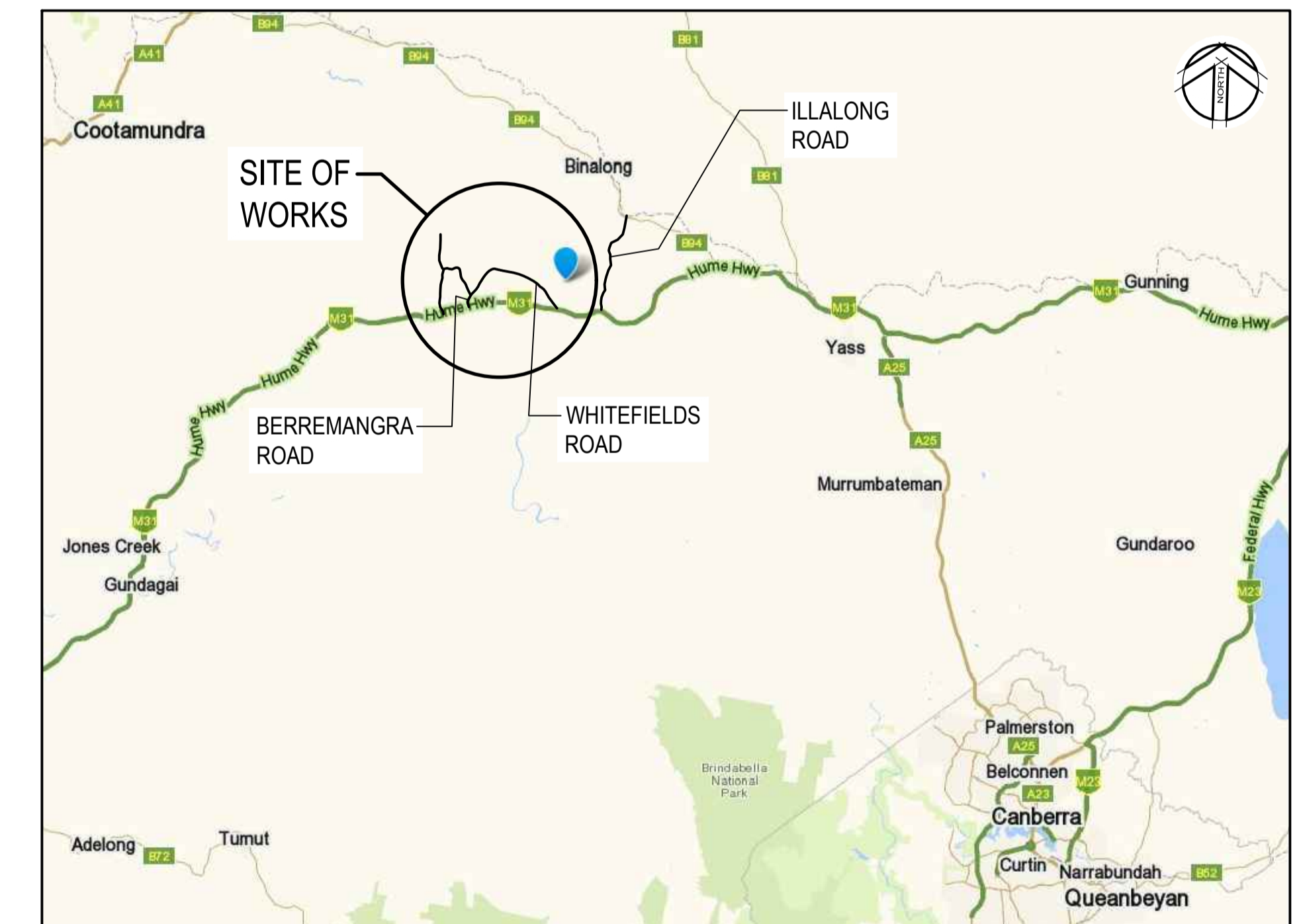
## **APPENDIX A FINAL CONSTRUCTION LAYOUT, WHITEFIELD'S ROAD**

### **A.1 FULL CONSTRUCTION DRAWINGS**

GOLDWIND AUSTRALIA

# YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS

## COVER SHEET AND LOCALITY PLAN DETAIL DESIGN

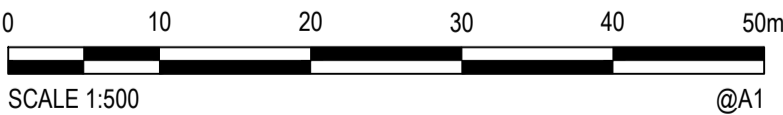


**LOCALITY PLAN**  
NTS

DATE PLOTTED: 25 June 2019 10:04 AM BY : MEHUL VAIDYA

SCHEDULE OF DRAWINGS		
DRAWING No.	DESCRIPTION	REV.
50517019 - C00	COVER SHEET AND LOCALITY PLAN DETAIL DESIGN	4
50517019 - C01	DRAWING LIST	5
50517019 - C02	NOTES AND LEGEND	4
50517019 - C03	SITE PLAN	4
50517019 - C04	TYPICAL SECTIONS AND PAVEMENT DETAILS	4
50517019 - C10	GENERAL ARRANGEMENT - SHEET 1 OF 7	4
50517019 - C11	GENERAL ARRANGEMENT - SHEET 2 OF 7	4
50517019 - C12	GENERAL ARRANGEMENT - SHEET 3 OF 7	4
50517019 - C13	GENERAL ARRANGEMENT - SHEET 4 OF 7	4
50517019 - C14	GENERAL ARRANGEMENT - SHEET 5 OF 7	4
50517019 - C15	GENERAL ARRANGEMENT - SHEET 6 OF 7	4
50517019 - C16	GENERAL ARRANGEMENT - SHEET 7 OF 7	4
50517019 - C20	PLAN AND LONG SECTION (MC10) - SHEET 1 OF 4	4
50517019 - C21	PLAN AND LONG SECTION (MC10) - SHEET 2 OF 4	4
50517019 - C22	PLAN AND LONG SECTION (MC10) - SHEET 3 OF 4	4
50517019 - C23	PLAN AND LONG SECTION (MC10) - SHEET 4 OF 4	4
50517019 - C24	INTERSECTION PLAN AND LONG SECTION (MC20) SHEET 1 OF 2	2
50517019 - C25	INTERSECTION PLAN AND LONG SECTION (MC30) SHEET 2 OF 2	2
50517019 - C30	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 1 OF 10	4
50517019 - C31	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 2 OF 10	4
50517019 - C32	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 3 OF 10	4
50517019 - C33	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 4 OF 10	4

SCHEDULE OF DRAWINGS		
DRAWING No.	DESCRIPTION	REV.
50517019 - C34	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 5 OF 10	4
50517019 - C35	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 6 OF 10	4
50517019 - C36	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 7 OF 10	3
50517019 - C37	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 8 OF 10	3
50517019 - C38	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 9 OF 10	2
50517019 - C39	CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 10 OF 10	2
50517019 - C45	PAVEMENT PLAN AND TRAFFIC CONTROL DEVICES SHEET 1 OF 4	1
50517019 - C46	PAVEMENT PLAN AND TRAFFIC CONTROL DEVICES SHEET 1 OF 4	1
50517019 - C47	PAVEMENT PLAN AND TRAFFIC CONTROL DEVICES SHEET 1 OF 4	1
50517019 - C48	PAVEMENT PLAN AND TRAFFIC CONTROL DEVICES SHEET 1 OF 4	1
50517019 - C50	SETOUT TABLES	4



XREFs: CAD File: N:\Projects\50517019 - YASS VALLEY WIND FARM\Drawings\Build\50517019-C01-DL.dwg

5	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
4	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	17/05/2017	DRAWING LIST AMENDED CROSS SECTION 8 OF 8	G.J.	RIC	J.H.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



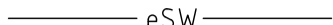


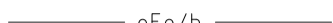
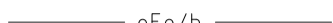








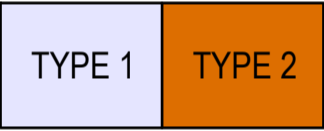


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn	Date
G.J.	23/12/2016
Checked	Date
J.H.	23/12/2016
Designed	Date
RIC	23/12/2016
Verified	Date
J.H.	23/12/2016
Approved	
M.P.	23/12/2016

Client	GOLDWIND AUSTRALIA		
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS		
Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES		
DATUM		Scale AS SHOWN	Size A1
Drawing Number	50517019 - C01		Revision 5
Title	DRAWING LIST		

XREFs: CAD File: N:\Projects\505\FY17019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C02-GNL.dwg DATE PLOTTED: 25 June 2019 10:04 AM BY: MEHUL VAIDYA

LEGEND

EXISTING	EXISTING TO BE REMOVED	NEW	DESCRIPTION
			STORMWATER
			SEWER
			TELECOMMUNICATIONS
			WATER
			ELECTRICITY OVERHEAD
			FENCES
			TREE
			DEAD TREE
			STUMP
			EDGE OF GROUP OF TREES / BUSHES
			INDICATES TREE THAT REQUIRES REMOVAL
			INDICATES TREE THAT REQUIRES TRIMMING
			ACCESS ROAD PAVEMENT
			CATTLE GRID RESTORATION
			VERGE RESTORATION

TRAFFIC AND PEDESTRIAN MANAGEMENT

1. THE CONTRACTOR SHALL PROVIDE SAFE AND UNRESTRICTED ACCESS THROUGHOUT THE CONSTRUCTION PERIOD FOR PEDESTRIANS, CYCLISTS AND VEHICLES ON HUME HIGHWAY.
2. CLOSURE OF WHITEFIELDS RD IS ALLOWED DURING CONSTRUCTION PROCEEDINGS WITH ACCESS TO LANDHOLDERS' ACCESS POINT BEING FACILITATED.
3. THE CONTRACTOR SHALL ENSURE TRAFFIC AND PEDESTRIANS ARE PROTECTED FROM CONSTRUCTION VEHICLES, DUST, WATER AND OTHER NUISANCE BY MEANS OF TEMPORARY SCREENS, BARRIERS, SIGNAGE AND FENCING.
4. THE CONTRACTOR SHALL PREPARE AND GAIN APPROVAL FOR A TEMPORARY TRAFFIC MANAGEMENT PLAN, FOLLOWING ENDORSEMENT FROM HILLTOPS COUNCIL AND THE RMS.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE SITE OF WORKS AND THE TRAFFIC MANAGEMENT WITHIN THE SITE AND SHALL KEEP ALL REQUIRED RECORDS AND UNDERTAKE ALL NECESSARY MAINTENANCE.
6. ALL TEMPORARY TRAFFIC MANAGEMENT (TTM) DEVICES SHALL BE IN ACCORDANCE WITH AS 1742.3 AND QA G10 TRAFFIC MANAGEMENT (ACT MODIFIED).
7. ALL EMPLOYEES ARE TO WEAR APPROPRIATE SAFETY PPE AS DETAILED IN AS1742.3 AND QA G10 TRAFFIC MANAGEMENT (ACT MODIFIED).
8. ALL EMPLOYEES INVOLVED IN TTM TRAFFIC CONTROL, SETUP, MINOR MODIFICATIONS AND INSPECTIONS SHALL HAVE THE RELEVANT QUALIFICATIONS IN ACCORDANCE WITH CLAUSE 1.5.3 OF QA G10 TRAFFIC MANAGEMENT(ACT MODIFIED)
9. ALL TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE ERECTED AS PER THIS TTM AND IN CLEAR LINE OF SIGHT TO ALL ROAD USERS AND PEDESTRIANS. THEY SHALL NOT BE OBSCURED BY ANY VEGETATION, WORK PLANT OR PARKED VEHICLES. THEY SHALL NOT BE PLACED IN A MANNER THAT THEY WILL BECOME A HAZARD TO VEHICULAR TRAFFIC OR PEDESTRIANS.
10. THE CONTRACTOR SHALL LIAISE WITH ADJACENT LANDOWNERS AND NOT PLACE ANY CONFLICTING TTM. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT OF ANY CONFLICTS.
11. SPOTTERS AND / OR TRAFFIC CONTROL PERSONNEL SHALL BE USED AT ALL TIMES WHEN CONSTRUCTION TRAFFIC CROSSING OCCURS ON WHITEFIELDS ROAD.
12. NO CONSTRUCTION OR CONTRACTOR / SUB-CONTRACTOR VEHICLES ARE PERMITTED TO PARK ON HUME HIGHWAY.
13. CONSTRUCTION ACCESS ONLY SIGNS SHALL BE PLACED ON THE ENTRY / EGRESS POINT.

STORMWATER STRUCTURE NOTATION

HW DENOTES STANDARD PRECAST CONCRETE HEADWALL

EROSION & SEDIMENT CONTROL NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN, INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH ALL ENVIRONMENTAL ACTS AND COUNCIL REQUIREMENTS.
2. ALL EROSION AND SEDIMENT MEASURES SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT.
3. THE CONTRACTOR SHALL PROVIDE DRAWING AND DETAILS OF PROPOSED EROSION AND SEDIMENT CONTROL MEASURES TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO COMMENCING WORKS.
4. PROVIDE FILTER ROLLS TO ALL NEW SUMPS AND CULVERTS WHEN COMPLETED DURING CONSTRUCTION.

PAVEMENT NOTES

1. ALL DESIGN SUBGRADE VALUES MUST BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
2. THE COMPACTION REQUIREMENTS FOR EARTHWORKS, SUBGRADES, AND PAVEMENT LAYERS ARE NOMINATED ON THE PAVEMENT DETAIL DRAWINGS.
3. SUBGRADES ARE INITIALLY TO BE PREPARED TO BOTTOM OF SUB-BASE LEVEL AND CBR TESTS TAKEN AT THIS LEVEL. FOLLOWING RECEIPT OF CBR RESULTS. THE SUPERINTENDENT WILL IDENTIFY IF ADDITIONAL SELECT FILL NEEDS TO BE PLACED IN SUBGRADE.
4. SUBGRADE PREPARATION :
  - a) REMOVE TOPSOIL, LARGE ROOTS AND UPPER LEACHED SOILS FROM ALL AREAS TO BE DISTURBED.
  - b) ANY HOLES CREATED BY REMOVAL OF ROOTS SHALL BE BACKFILLED.
  - c) PROOF ROLL ALL SUBGRADES IN THE PRESENCE OF THE SUPERINTENDENT AND THE CONTRACTOR'S GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER WILL ASSESS SUITABILITY OF SUBGRADE. ANY AREAS OF UNSUITABLE SUBGRADE SHALL BE REMEDIATED AS PER THE GEOTECHNICAL ENGINEER INSTRUCTIONS AND SUPERINTENDENT'S APPROVAL.
  - d)PROOF ROLL WEATHERED BEDROCK SUBGRADES.

TREE AND VEGETATION MANAGEMENT NOTES

1. THE CONTRACTOR SHALL RECOGNISE THE CLIENT'S INTENTION IS TO PRESERVE TREES, EXISTING VEGETATION / BRUSHES AND GROUND COVER IN ALL AREAS OF THE SITE WHERE POSSIBLE.
2. THE CONTRACTOR SHALL REFER TO THE NGH ENVIRONMENTAL LANDSCAPE MANAGEMENT PLANS FOR TREE PROTECTION REQUIREMENTS.

ORIGINAL SURVEY

1. SURVEY BY DPS (DIVERSE PROJECT SOLUTIONS, YASS NSW.  
JOB REFERENCE : 2604 (25 OCTOBER 2016)  
COMPUTER REFERENCE : 2604\_DT1.dwg
2. VERTICAL DATUM  
DATUM : AHD  
BM : PM54492 RL518.439 (LC)
2. ORIGIN OF LEVELS  
SSM5002 - RL499.220  
SSM30840 - RL498.289

GENERAL NOTES

1. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT HILLTOPS COUNCIL'S REQUIREMENTS, COUNCIL DESIGN AND CONSTRUCTION SPECIFICATION - AUSSPEC#1, AUSTRALIAN STANDARDS, AUSTRROADS.
2. ALL CONSTRUCTION WORK SHALL COMPLY WITH THE HARDEN LOCAL ENVIRONMENTAL PLANS.
3. ANY EXISTING SERVICES ARE SHOWN IN THEIR APPROXIMATE LOCATION ONLY. PRIOR TO ANY DEMOLITION, EXCAVATION, OR CONSTRUCTION ON SITE, THE CONTRACTOR SHALL CONTACT THE RELEVANT AUTHORITIES AND VERIFY THE LOCATION OF ALL UNDERGROUND SERVICES ON THE SITE AND OBTAIN NECESSARY CLEARANCES.
4. SURFACES WHICH LIE OUTSIDE THE GENERAL LIMITS OF LANDSCAPING AND RESTORATION WHICH ARE DISTURBED DURING THE CONSTRUCTION OF THE WORKS SHALL BE RESTORED BY THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, TO AT LEAST THEIR PRE-CONSTRUCTION CONDITION. THESE SURFACES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, PAVEMENTS, PAVING, GRASSING, LANDSCAPING ETC.
5. ANY WORKS THAT ALTER OR DISTURB GRASSED FLOODWAYS, ROAD RESERVE AREAS, MEDIANS OR OTHER OPEN AREAS MUST BE REINSTATED TO EXISTING CONDITION BY THE PERSON(S) RESPONSIBLE FOR THE DISTURBANCE IN ACCORDANCE WITH HILLTOPS COUNCIL AND RMS REQUIREMENTS.
6. ALL LEVELS SHOWN ARE FINISHED LEVELS PROVIDED IN THIS CONTRACT. THE CONTRACTOR SHALL ALLOW FOR THE THICKNESS OF ALL FINISHED SURFACES AND BULK EARTHWORKS REDUCTIONS AS DESCRIBED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 2000, WHICH REQUIRES EMPLOYERS TO ENSURE THE HEALTH, SAFETY AND WELFARE OF EMPLOYEES.
8. THE CONTRACTOR SHALL AT ALL TIMES EXERCISE ALL NECESSARY PRECAUTIONS APPROPRIATE TO ENSURE THE SAFETY OF ALL PERSONS ON THE WORK SITE OR IN THE VICINITY OF THE WORK SITE.
9. TO LIMIT THE IMPACT OF THE CONSTRUCTION ON ADJACENT LANDOWNERS, ALL WORKS SHALL BE RESTRICTED TO THE HOURS OF 7am-6pm MONDAY TO FRIDAY AND 8am-1pm SATURDAY. NO WORK SHALL TAKE PLACE ON SUNDAYS OR PUBLIC HOLIDAYS.
10. ALL WORK IS TO BE SET OUT BY A COMPETENT SURVEYOR APPROVED BY THE SUPERINTENDENT.
11. THE CONTRACTOR SHALL NOT DISTURB ANY SURVEY CONTROL MARKS. SHOULD ANY SURVEY CONTROL MARK BE DISTURBED OR OBLITERATED, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY. THE CONTRACTOR SHALL HAVE THE MARKS REPLACED AT THEIR EXPENSE.
12. ALL GREEN WASTE IS TO BE MULCHED, STOCKPILED AND USED (WHERE POSSIBLE) ON SITE. ALL EXCESS MULCH IS TO BE REMOVED OFF SITE.
13. ALL DISTURBED AREAS INCLUDING BATTERS, TABLE DRAINS AND FOOTPATH AREAS ARE TO BE TOP SOILED, FERTILIZED AND SEEDED TO THE SATISFACTION OF THE SUPERINTENDENT. THE TYPE OF SEED (NATIVE MIX) IS TO BE APPROVED BY THE SUPERINTENDENT.
14. IF ROCK IS ENCOUNTERED THE SUPERINTENDENT SHALL BE NOTIFIED IMMEDIATELY SO MEASUREMENTS OF VOLUMES CAN BE MADE. NO VARIATIONS FOR ROCK WILL BE CONSIDERED UNLESS THE SUPERINTENDENT HAS VERIFIED THE AMOUNTS PRIOR TO BACKFILLING.
15. THERE SHALL BE NO PARKING, SITE SHEDS, SITE AMENITIES, BILLBOARDS OR STORAGE OF MATERIALS ON THE ACTIVE ROAD RESERVE, OVERLAND FLOW PATHS OR OPEN SPACE UNDER ANY CIRCUMSTANCES. PROTECT ALL GRASSLAND, TREES AND SHRUBS OUTSIDE THE WORKS AREA FROM DAMAGE.

CAUTION:  
OVERHEAD POWERLINES  
THE CONTRACTOR SHALL UNDERTAKE ALL  
REQUIREMENTS OF WORKCOVER NSW FOR  
WORKING UNDER POWERLINES

5	25/06/2019	TREE AMENDED	P.D.J.	RIC	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

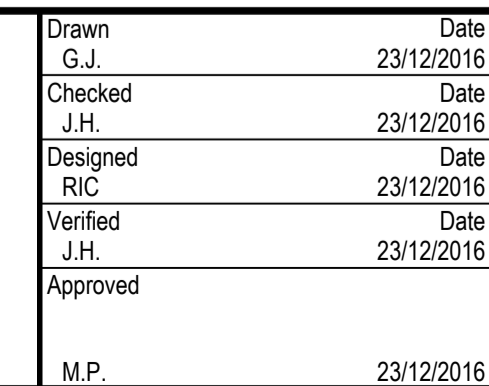
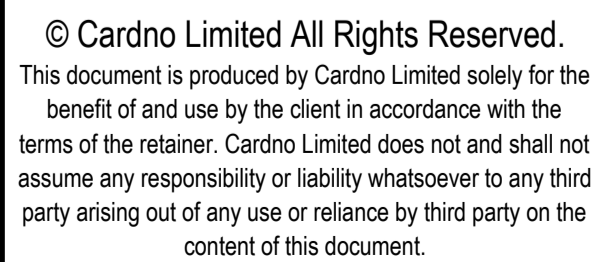
Drawn G.J.	Date 23/12/2016
Checked J.H.	Date 23/12/2016
Designed RIC	Date 23/12/2016
Verified J.H.	Date 23/12/2016
Approved	
M.P.	23/12/2016

Client GOLDWIND AUSTRALIA	Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS	Title NOTES AND LEGEND
------------------------------	--	---------------------------

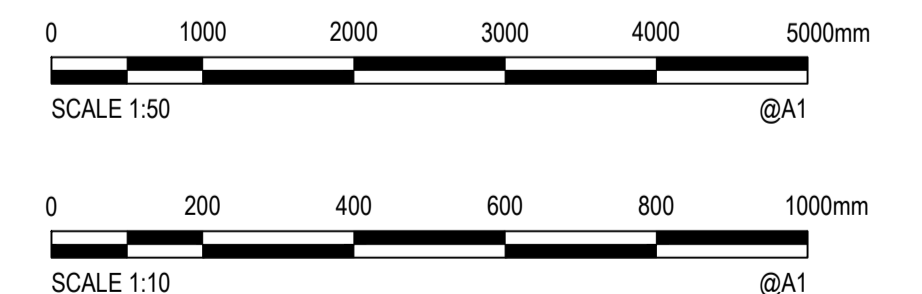
Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	DATUM AHD	Scale AS SHOWN	Size A1
Drawing Number 50517019 - C02	Revision 5		



6	21/05/2019	ROAD RE-ALIGNMENT					
4	6/11/2018	ROAD RE-ALIGNMENT					
3	25/10/2018	ROAD RE-ALIGNMENT					
2	17/03/2017	FINAL SUBMISSION					
1	23/12/2016	90% DOCUMENTATION					
Rev.	Date	Description					



Client					GOLDWIND AUSTRALIA							
Project			YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS			Status			FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Title			SITE PLAN			DATUM		Scale		Size		
						AHD		1:2000@A1		A1		
						Drawing Number					Revision	
						50517019 - C03					6	



4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.
Rev.	Date	Description	Des.	Verif.	Appd.

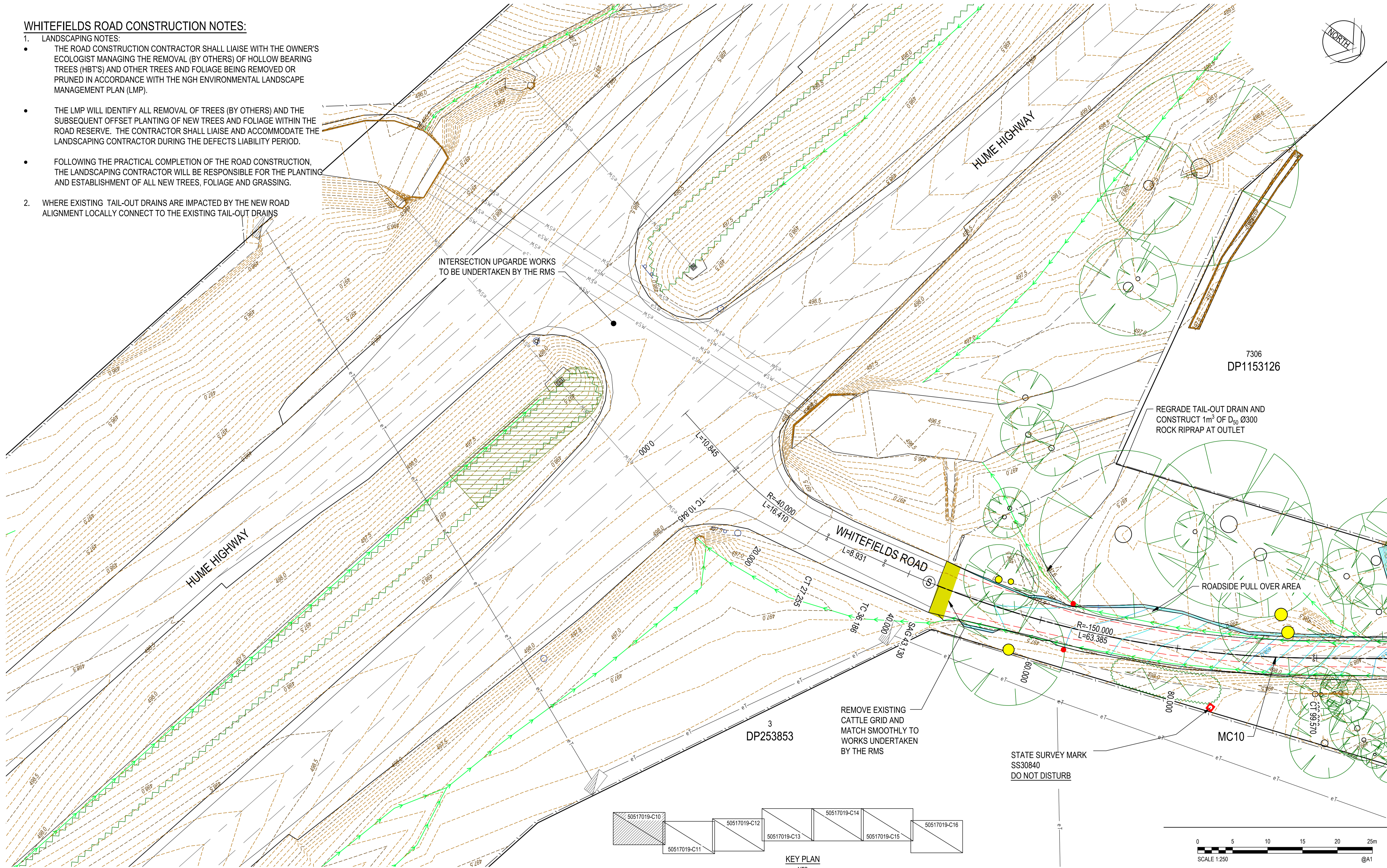
Drawn G.J.	Date 23/12/2016	Client <b>GOLDWIND AUSTRALIA</b>			
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS	Status <b>FOR APPROVAL</b> NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Designed R.C.	Date 23/12/2016	Title TYPICAL SECTIONS AND PAVEMENT DETAILS	DATUM AHD	Scale AS SHOWN	Size A1
Verified J.H.	Date 23/12/2016		Drawing Number 50517019 - C04	Revision 4	
Approved					
M.P.	23/12/2016				

DATE PLOTTED: 26 June 2019 4:05 PM BY: MEHUL VAIDYA

XREFs: X-DESIGN: 250; X-CONTROL: MAIN 250; X-CVT: 2604; DTI: X-SW-ROUGH AS GUTS; X-DESIGN: X-YASS-BASE; X-SURVCON: 250; X-S DESIGN: BDY; X-REF: trees; X-TREE: FOR GOLDWIND  
CAD File: N:\Projects\50517019 YASS VALLEY WIND FARM\Drawings\Build\50517019-C10-C16-GA.dwg

WHITEFIELDS ROAD CONSTRUCTION NOTES:

- LANDSCAPING NOTES:
  - THE ROAD CONSTRUCTION CONTRACTOR SHALL LIAISE WITH THE OWNER'S ECOLOGIST MANAGING THE REMOVAL (BY OTHERS) OF HOLLOW BEARING TREES (HBT'S) AND OTHER TREES AND FOLIAGE BEING REMOVED OR PRUNED IN ACCORDANCE WITH THE NGH ENVIRONMENTAL LANDSCAPE MANAGEMENT PLAN (LMP).
  - THE LMP WILL IDENTIFY ALL REMOVAL OF TREES (BY OTHERS) AND THE SUBSEQUENT OFFSET PLANTING OF NEW TREES AND FOLIAGE WITHIN THE ROAD RESERVE. THE CONTRACTOR SHALL LIAISE AND ACCOMMODATE THE LANDSCAPING CONTRACTOR DURING THE DEFECTS LIABILITY PERIOD.
  - FOLLOWING THE PRACTICAL COMPLETION OF THE ROAD CONSTRUCTION, THE LANDSCAPING CONTRACTOR WILL BE RESPONSIBLE FOR THE PLANTING AND ESTABLISHMENT OF ALL NEW TREES, FOLIAGE AND GRASSING.
- WHERE EXISTING TAIL-OUT DRAINS ARE IMPACTED BY THE NEW ROAD ALIGNMENT LOCALLY CONNECT TO THE EXISTING TAIL-OUT DRAINS



Rev.	Date	Description	Des.	Verif.	Appd.
6	25/06/2019	TREE AMENDED	P.D.J.	RIC	S.A.S.
5	20/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn	G.J.	Date	23/12/2016
Checked	J.H.	Date	23/12/2016
Designed	RIC	Date	23/12/2016
Verified	J.H.	Date	23/12/2016
Approved	M.P.	Date	23/12/2016

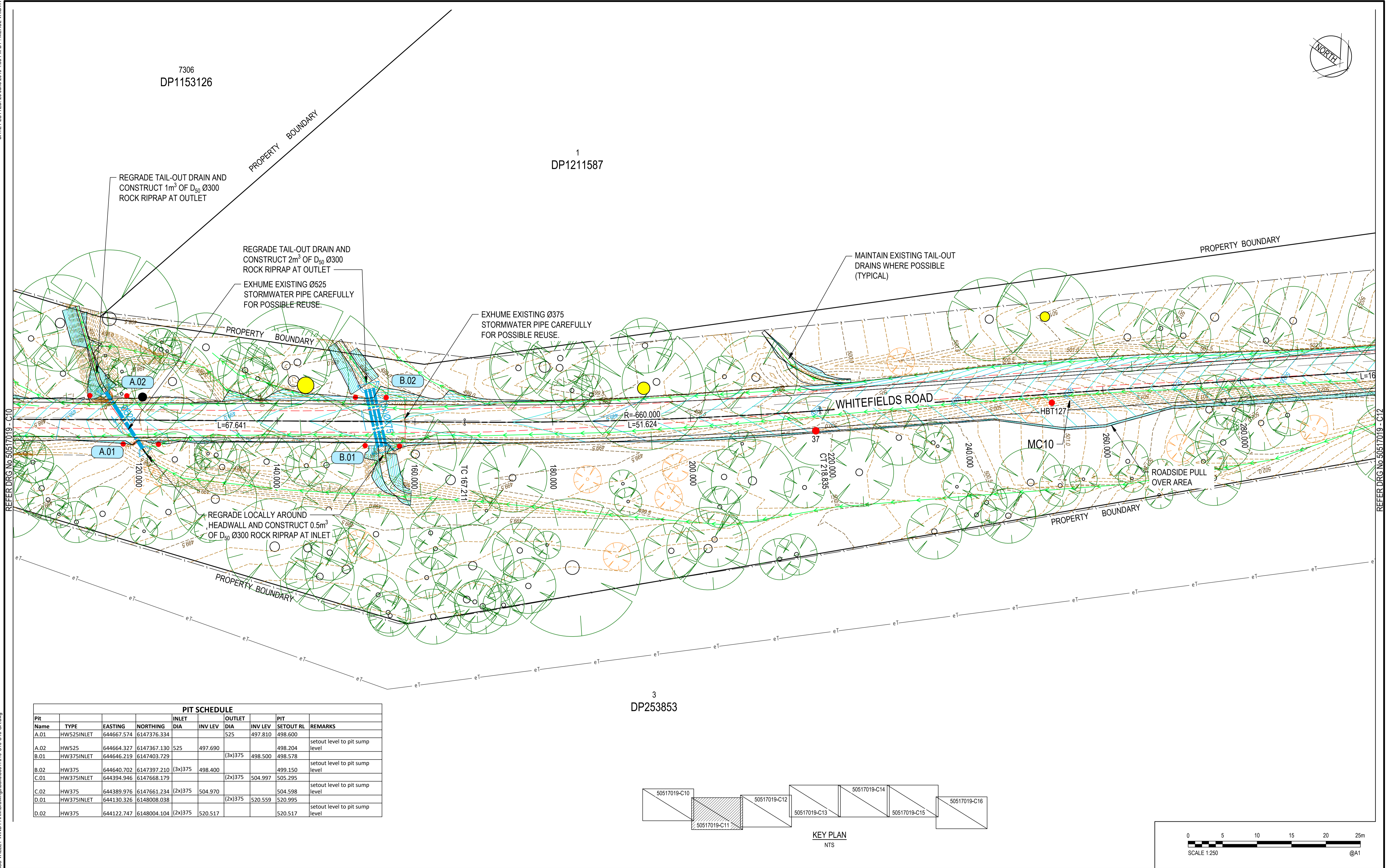
Client	GOLDWIND AUSTRALIA
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title	GENERAL ARRANGEMENT - SHEET 1 OF 7

Status	FOR APPROVAL
DATUM	AHD
Scale	1:250@A1
Size	A1
Drawing Number	50517019 - C10
Revision	6

REFER DRG NO 50517019 - C11

DATE PLOTTED: 26 June 2019 4:05 PM BY: MEHUL VAIDYA

XREFs: X-DESIGN:250; XRF CONTROL MAIN 250; X-CVT 2604; DTI: X-SW-ROUGH AS CUTS; X-DESIGN: X-YASS-BASE; X-SURVCONV250; X-S DESIGN BDY; Xref-frees; X-TREE FOR GOLDWIND  
CAD File: N:\Projects\50517019 YASS VALLEY WIND FARM\Drawings\Bldg\50517019-C10-C16-GA.dwg



PIT SCHEDULE								
Pit Name	TYPE	EASTING	NORTHING	INLET DIA	INV LEV	OUTLET DIA	INV LEV	PIT SETOUT RL
A.01	HW525INLET	644667.574	6147376.334			525	497.810	498.600
A.02	HW525	644664.327	6147367.130	525	497.690			498.204
B.01	HW375INLET	644646.219	6147403.729			(3x)375	498.500	498.578
B.02	HW375	644640.702	6147397.210	(3x)375	498.400			499.150
C.01	HW375INLET	644394.946	6147668.179			(2x)375	504.997	505.295
C.02	HW375	644389.976	6147661.234	(2x)375	504.970			504.598
D.01	HW375INLET	644130.326	6148008.038			(2x)375	520.559	520.995
D.02	HW375	644122.747	6148004.104	(2x)375	520.517			520.517

Rev.	Date	Description	Des.	Verif.	Appd.
6	25/06/2019	TREE AMENDED	P.D.J.	RIC	S.A.S.
5	20/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

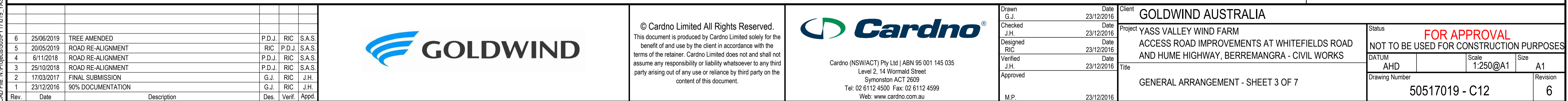


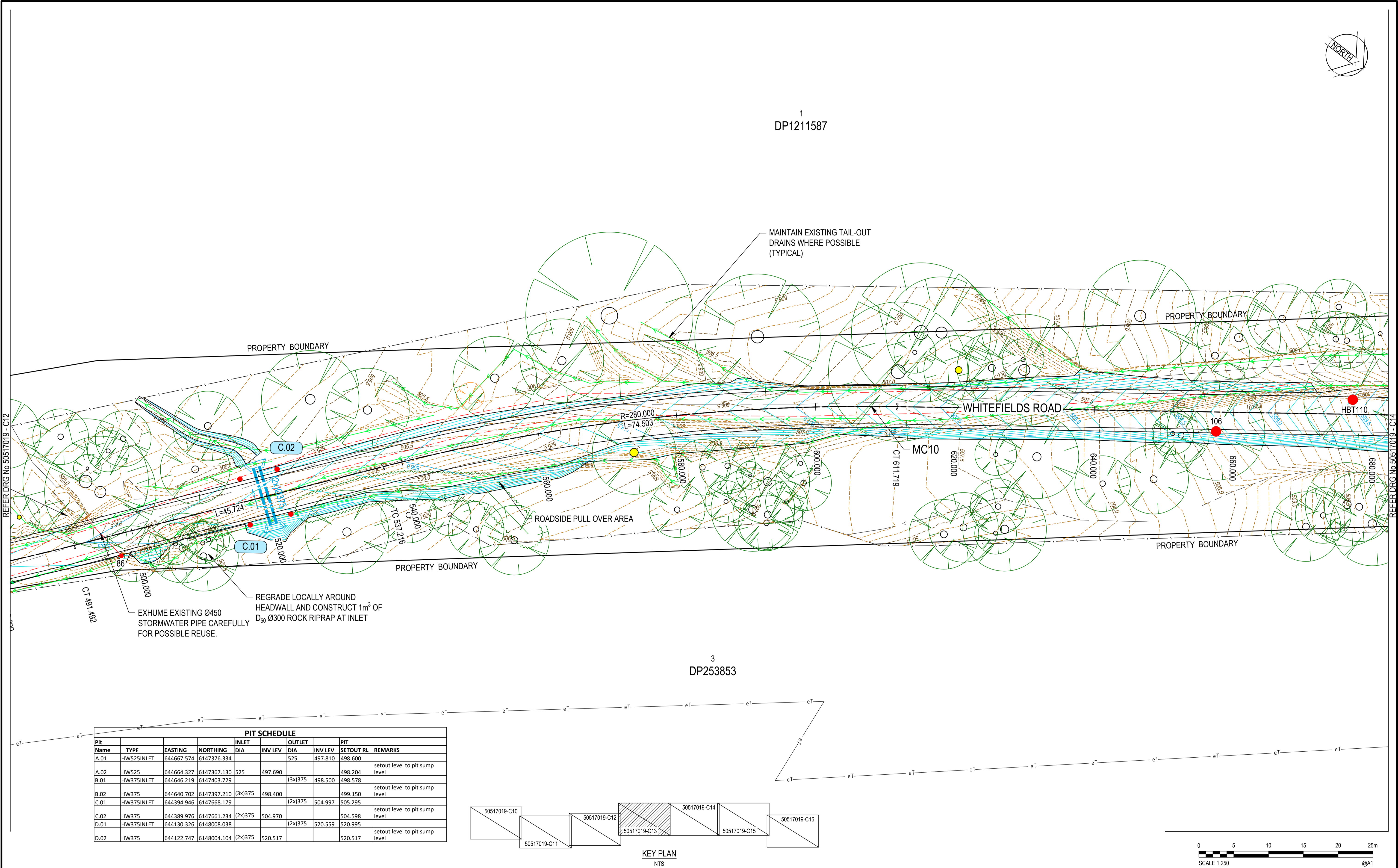
Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn	G.J.	Date	23/12/2016
Checked	J.H.	Date	23/12/2016
Designed	RIC	Date	23/12/2016
Verified	J.H.	Date	23/12/2016
Approved	M.P.	Date	23/12/2016

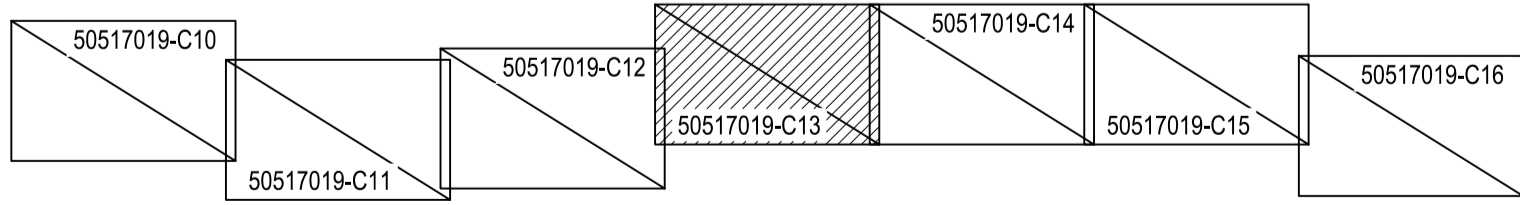
Client	GOLDWIND AUSTRALIA		
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS		
Title	GENERAL ARRANGEMENT - SHEET 2 OF 7		

Status	FOR APPROVAL		
DATUM	AHD	Scale	1:250@A1
Drawing Number	50517019 - C11		Revision
			6





PIT SCHEDULE									
Pit Name	TYPE	EASTING	NORTHING	INLET DIA	INV LEV	OUTLET DIA	INV LEV	PIT SETOUT RL	REMARKS
A.01	HW525INLET	644667.574	6147376.334			525	497.810	498.600	setout level to pit sump level
A.02	HW525	644664.327	6147367.130	525	497.690	(3x)375	498.500	498.204	setout level to pit sump level
B.01	HW375INLET	644646.219	6147403.729			(2x)375	504.997	505.295	setout level to pit sump level
B.02	HW375	644640.702	6147397.210	(3x)375	498.400			499.150	setout level to pit sump level
C.01	HW375INLET	644394.946	6147668.179			(2x)375	520.559	520.995	setout level to pit sump level
C.02	HW375	644389.976	6147661.234	(2x)375	504.970			504.598	setout level to pit sump level
D.01	HW375INLET	644130.326	6148008.038			(2x)375	520.517	520.995	setout level to pit sump level
D.02	HW375	644122.747	6148004.104	(2x)375	520.517			520.517	setout level to pit sump level



Rev.	Date	Description	Des.	Verif.	Appd.
6	25/06/2019	TREE AMENDED	P.D.J.	RIC	S.A.S.
5	20/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

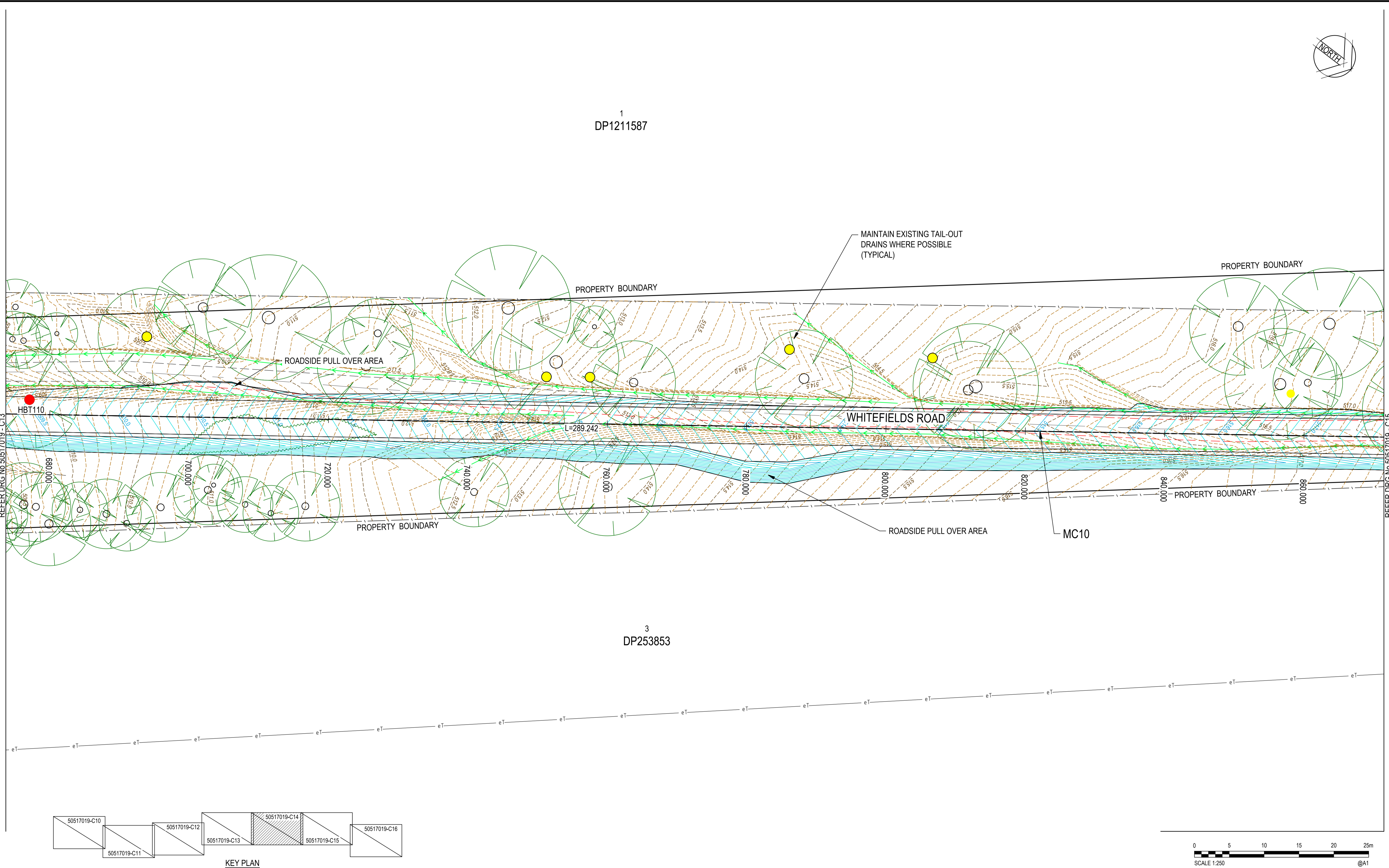
Drawn	G.J.	Date	23/12/2016
Checked	J.H.	Date	23/12/2016
Designed	RIC	Date	23/12/2016
Verified	J.H.	Date	23/12/2016
Approved		Date	23/12/2016
M.P.		Date	23/12/2016

Client	GOLDWIND AUSTRALIA		
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS		
Title	GENERAL ARRANGEMENT - SHEET 4 OF 7		

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
DATUM		Scale	Size
AHD		1:250@A1	A1
Drawing Number			Revision
50517019 - C13			6

DATE PLOTTED: 06 June 2019 4:05 PM BY: MEHUL VAIDYA

XREFs: X-DESIGN:250; X-CONTROL:MAIN 250; X-CVT:2604; DT: X-SW-ROUGH AS GUTS; X-DESIGN: X-SURVCON:250; X-S DESIGN BDY: Xref-frees; X-TREE FOR GOLDWIND  
CAD File: N:\Proj\50517019\YASS VALLEY WIND FARM\Drawings\Build\50517019-C10-C16-GA.dwg



Rev.	Date	Description	Des.	Verif.	Appd.
6	25/06/2019	TREE AMENDED	P.D.J.	RIC	S.A.S.
5	20/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

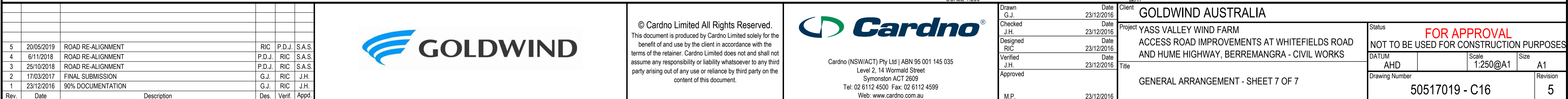
Drawn	G.J.	Date	23/12/2016
Checked	J.H.	Date	23/12/2016
Designed	RIC	Date	23/12/2016
Verified	J.H.	Date	23/12/2016
Approved		Date	23/12/2016
M.P.		Date	23/12/2016

Client	GOLDWIND AUSTRALIA
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title	GENERAL ARRANGEMENT - SHEET 5 OF 7

Status	FOR APPROVAL
DATUM	AHD
Scale	1:250@A1
Size	A1
Drawing Number	50517019 - C14
Revision	6

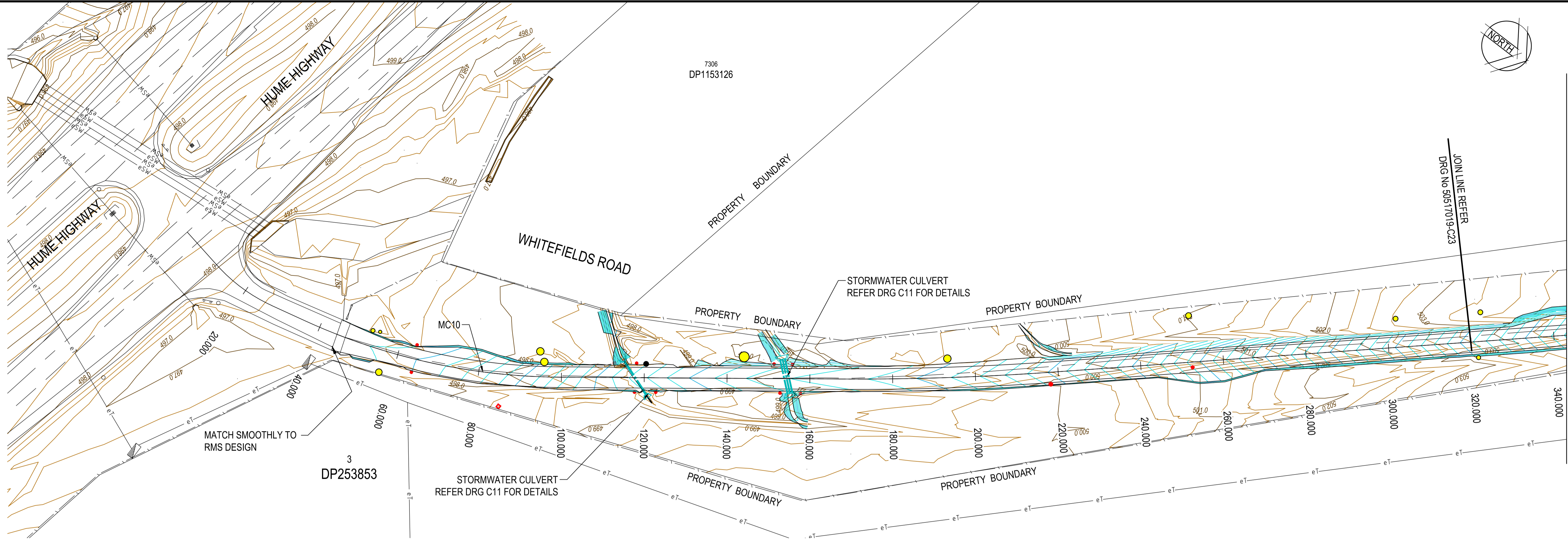


Drawn G.J.	Date 23/12/2016	Client <b>GOLDWIND AUSTRALIA</b>  Project YASS VALLEY WIND FARM  ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS  Title  GENERAL ARRANGEMENT - SHEET 6 OF 7	Status <b>FOR APPROVAL</b> NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Checked J.H.	Date 23/12/2016		DATUM		Scale 1:250@A1	Size A1
Designed RIC	Date 23/12/2016		Drawing Number			
Verified J.H.	Date 23/12/2016		Revision			
Approved			50517019 - C15			
M.P.	23/12/2016		6			



DATE PLOTTED: 25 June 2019 10:05 AM BY: MEHUL VAIDYA

XREFs: X-YASS-BASE, X-CHAIN500, X-DESIGN, X-DESIGN250, X-SW-ROUGH AS CUTS, X-MC10-01, X-CVT-2601, DT1, X-SURVCONT500, X-S DESIGN BDY  
CAD File: N:\Projects\505\FY17019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C20-C23-SOL.Swg



PLAN  
SCALE 1:500

DATUM R.L. 494.000

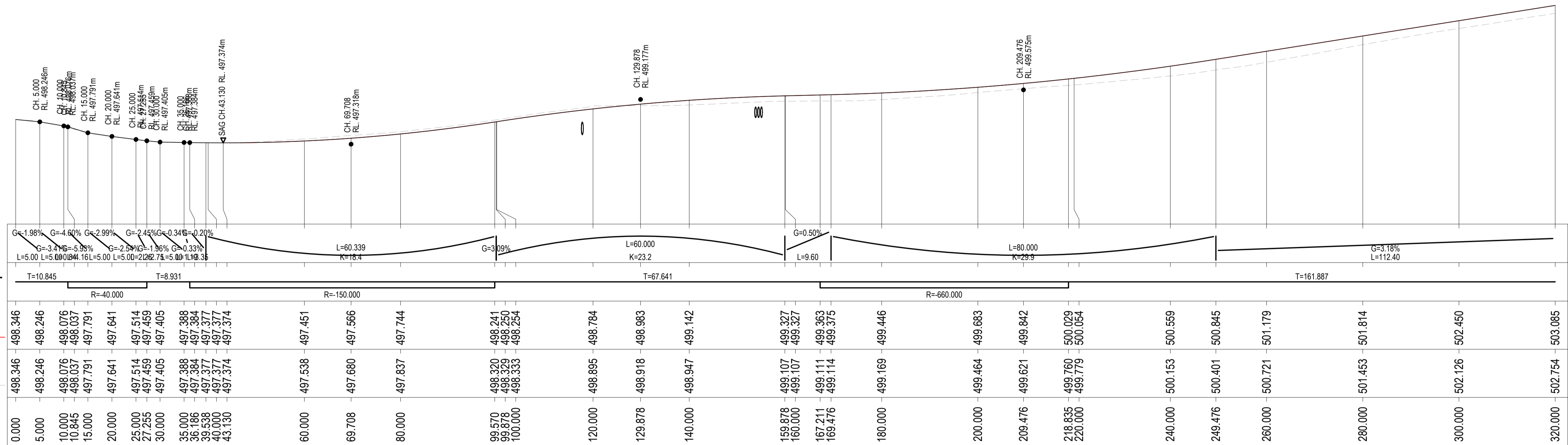
VERT. ALIGNMENT

HORIZ. ALIGNMENT

DESIGN LEVELS

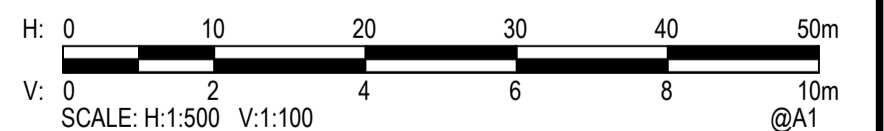
EXISTING LEVELS

CHAINAGE



LONGITUDINAL SECTION CONTROL MC10

H 1:500  
V 1:100



Rev.	Date	Description	Des.	Verif.	Appd.
5	21/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

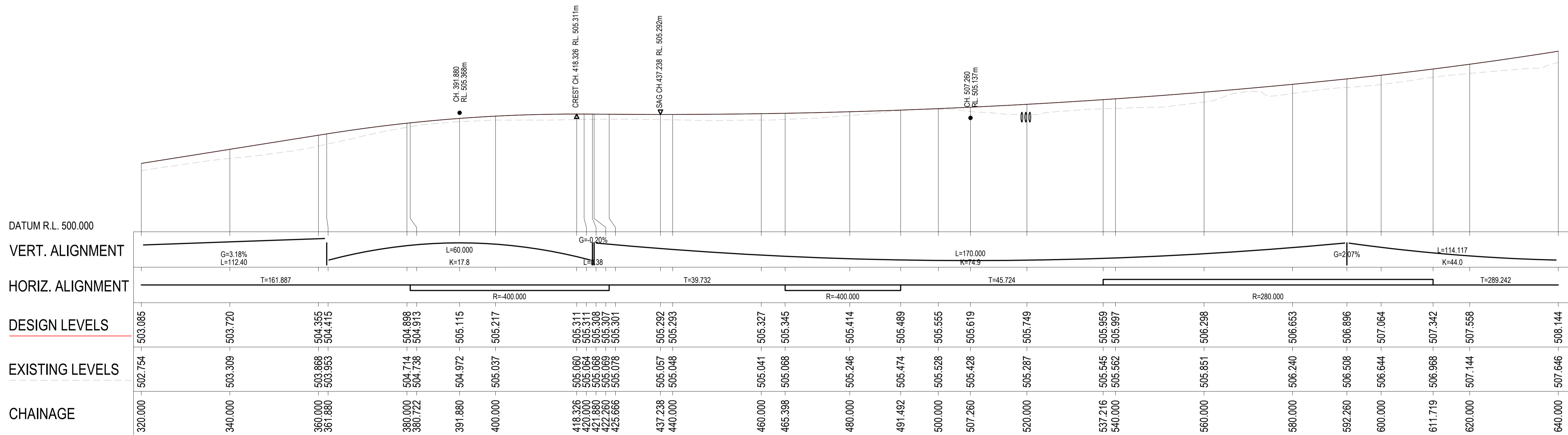
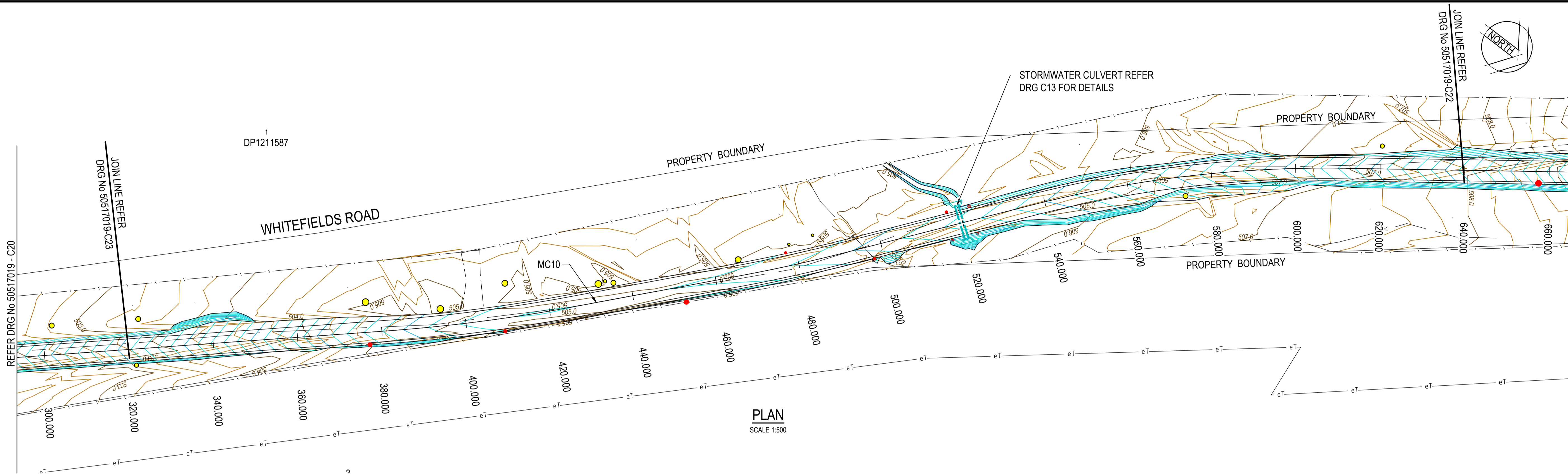


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Sydney NSW 2009  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn G.J.	Date 23/12/2016
Checked J.H.	Date 23/12/2016
Designed RIC	Date 23/12/2016
Verified J.H.	Date 23/12/2016
Approved	
M.P.	23/12/2016

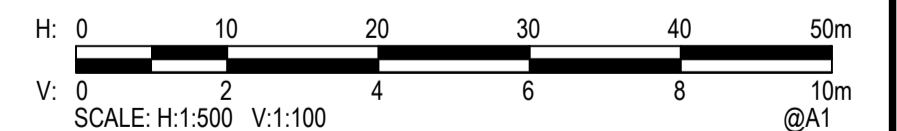
Client GOLDWIND AUSTRALIA
Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title PLAN AND LONG SECTION (MC10) - SHEET 1 OF 4

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
DATUM		Scale	Size
AHD		AS SHOWN	A1
Drawing Number			Revision
50517019 - C20			5



LONGITUDINAL SECTION CONTROL MC10

H: 1:500  
V: 1:100



Rev.	Date	Description	Des.	Verif.	Appd.
5	21/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

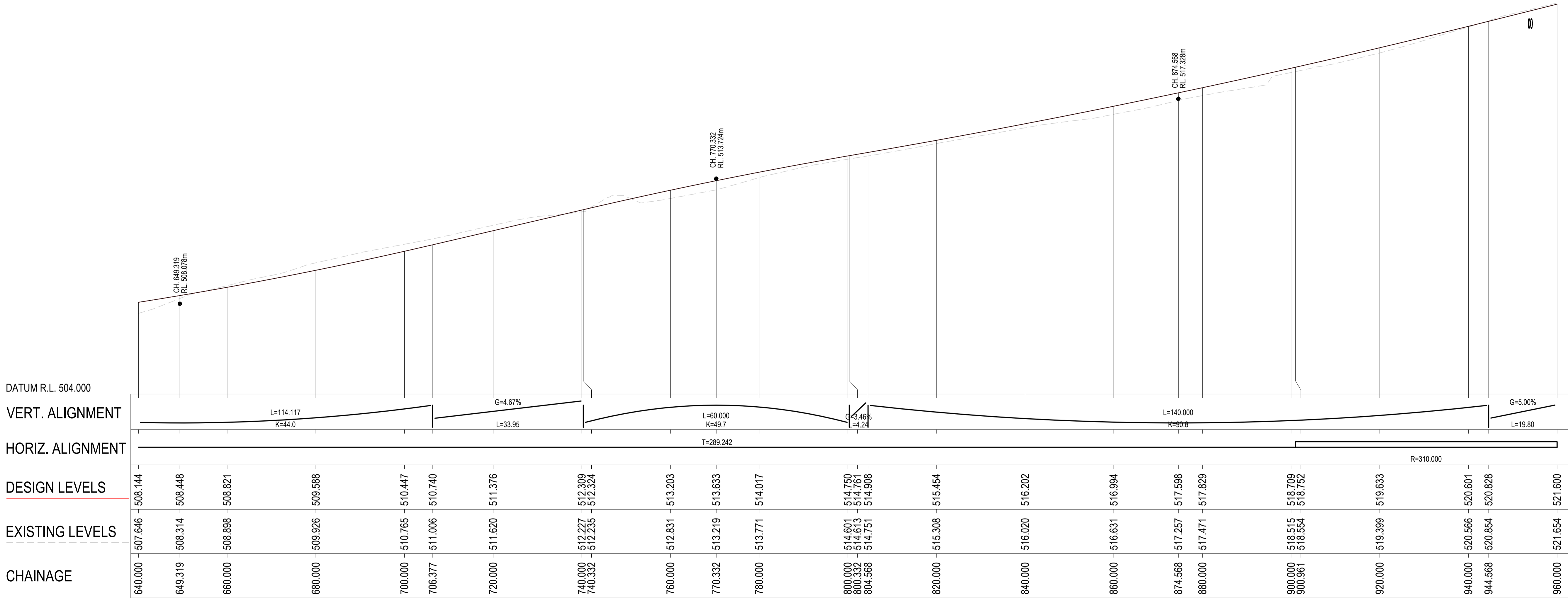
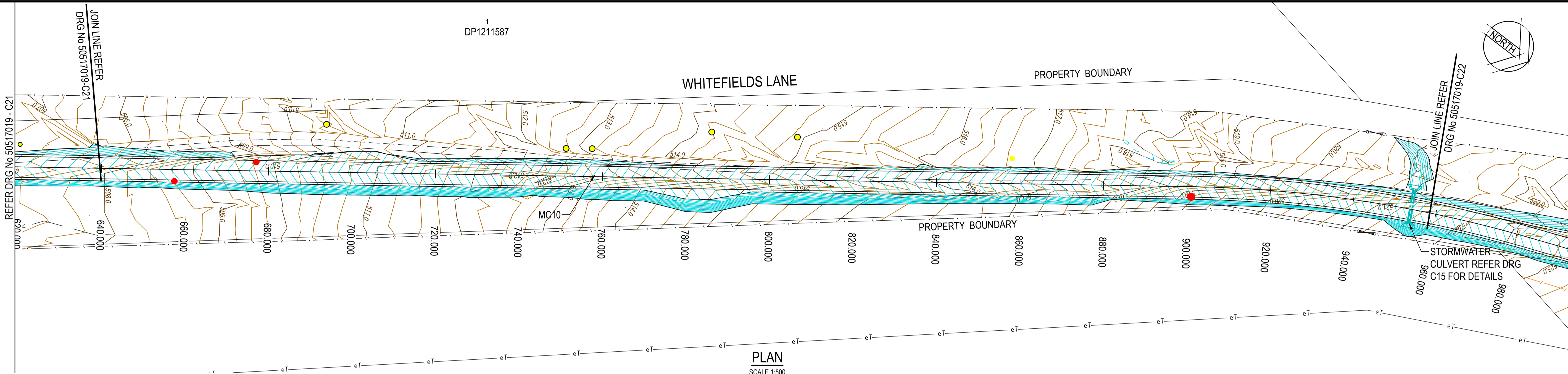


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn G.J.	Date 23/12/2016
Checked J.H.	Date 23/12/2016
Designed RIC	Date 23/12/2016
Verified J.H.	Date 23/12/2016
Approved	
M.P.	23/12/2016

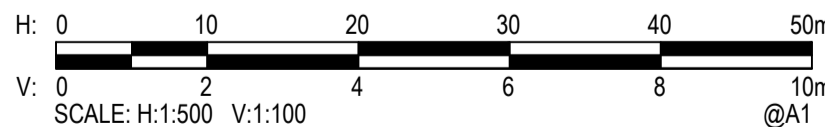
Client GOLDWIND AUSTRALIA
Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title PLAN AND LONG SECTION (MC10) - SHEET 2 OF 4

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
DATUM		Scale	Size
AHD		AS SHOWN	A1
Drawing Number			Revision
50517019 - C21			5



LONGITUDINAL SECTION CONTROL MC10

H:1:500  
V:1:100



Rev.	Date	Description	Des.	Verif.	Appd.
5	21/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



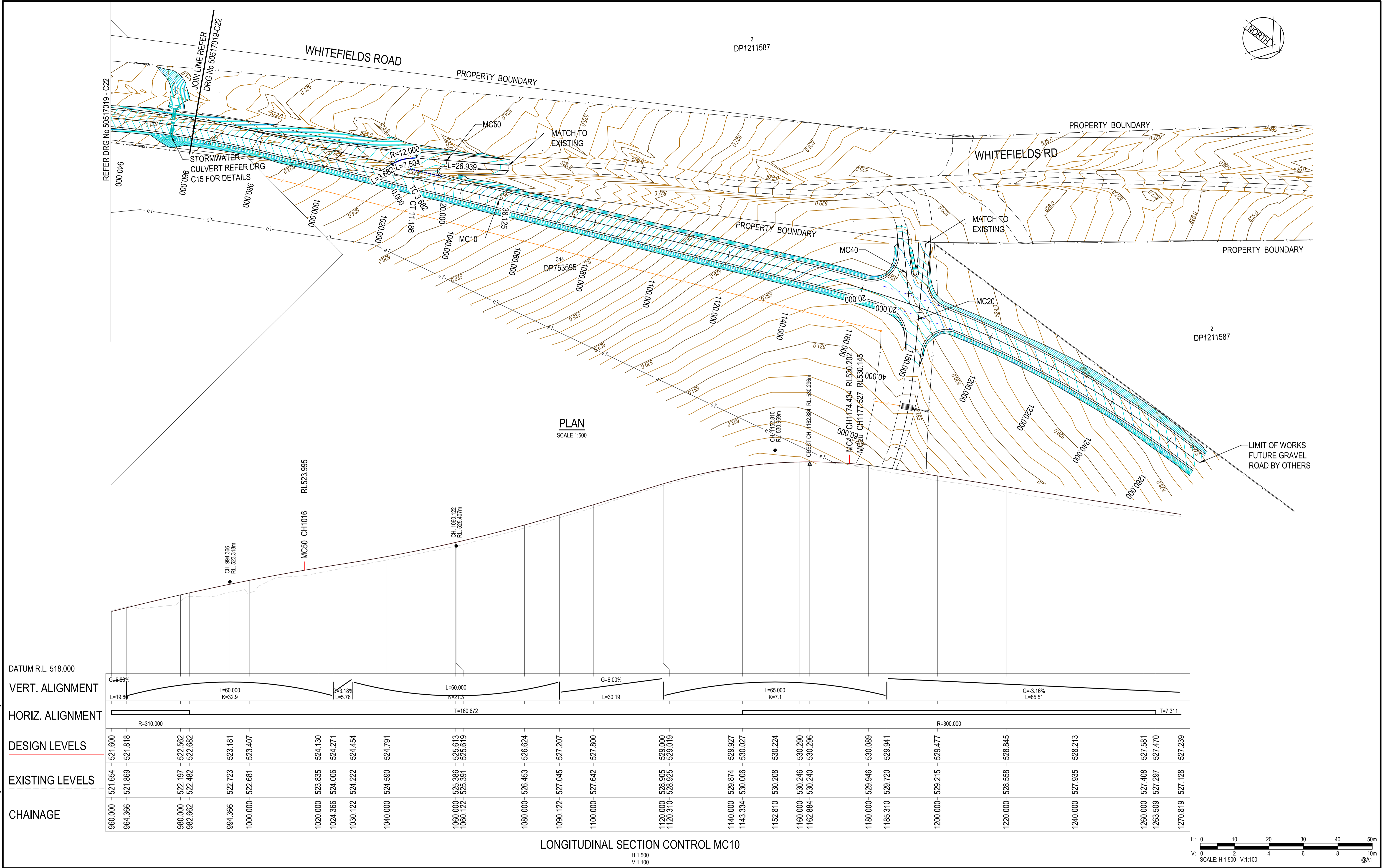
Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Sydney NSW 2009  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn G.J.	Date 23/12/2016
Checked J.H.	Date 23/12/2016
Designed RIC	Date 23/12/2016
Verified J.H.	Date 23/12/2016
Approved	
M.P.	23/12/2016

Client GOLDWIND AUSTRALIA
Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title PLAN AND LONG SECTION (MC10) - SHEET 3 OF 4

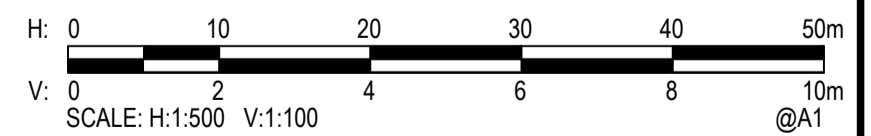
Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
DATUM		Scale	Size
AHD		AS SHOWN	A1
Drawing Number			Revision
50517019 - C22			5

DATE PLOTTED: 25 June 2019 10:07 AM BY: MEHUL VAIDYA  
XREFs: X-YASS-BASE, X-CHAIN500, X-DESIGN, X-DESIGN250, X-SW-ROUGH AS CUTS, LS-MC10-01, X-CVT-2604, DT1, X-SURVCONT500, X-S DESIGN BDY  
CAD File: N:\Projects\505\CY17019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C23-C23-SOL.swg



LONGITUDINAL SECTION CONTROL MC10

H 1:500  
V 1:100



Rev.	Date	Description	Des.	Verif.	Appd.
5	21/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

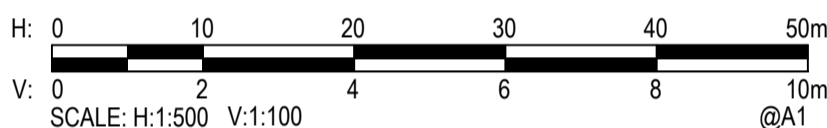
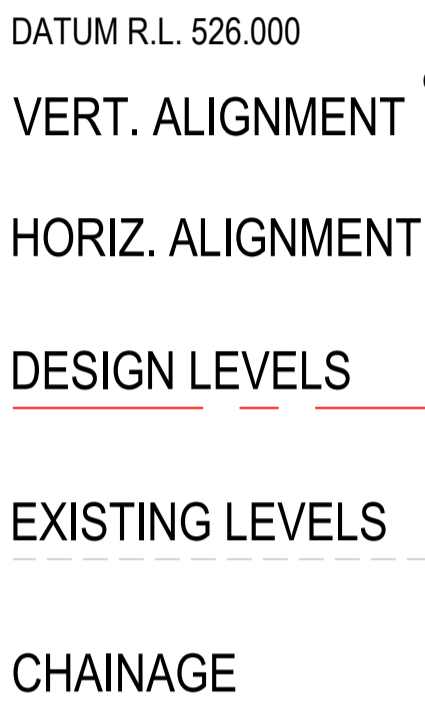


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2608  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

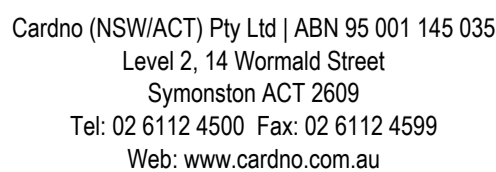
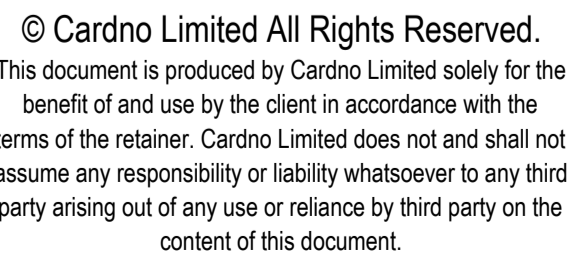
Drawn	G.J.	Date	23/12/2016
Checked	J.H.	Date	23/12/2016
Designed	RIC	Date	23/12/2016
Verified	J.H.	Date	23/12/2016
Approved	M.P.	Date	23/12/2016

Client	GOLDWIND AUSTRALIA
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title	PLAN AND LONG SECTION (MC10) - SHEET 4 OF 4

Status	FOR APPROVAL
DATUM	AHD
Scale	AS SHOWN
Size	A1
Drawing Number	50517019 - C23
Revision	5



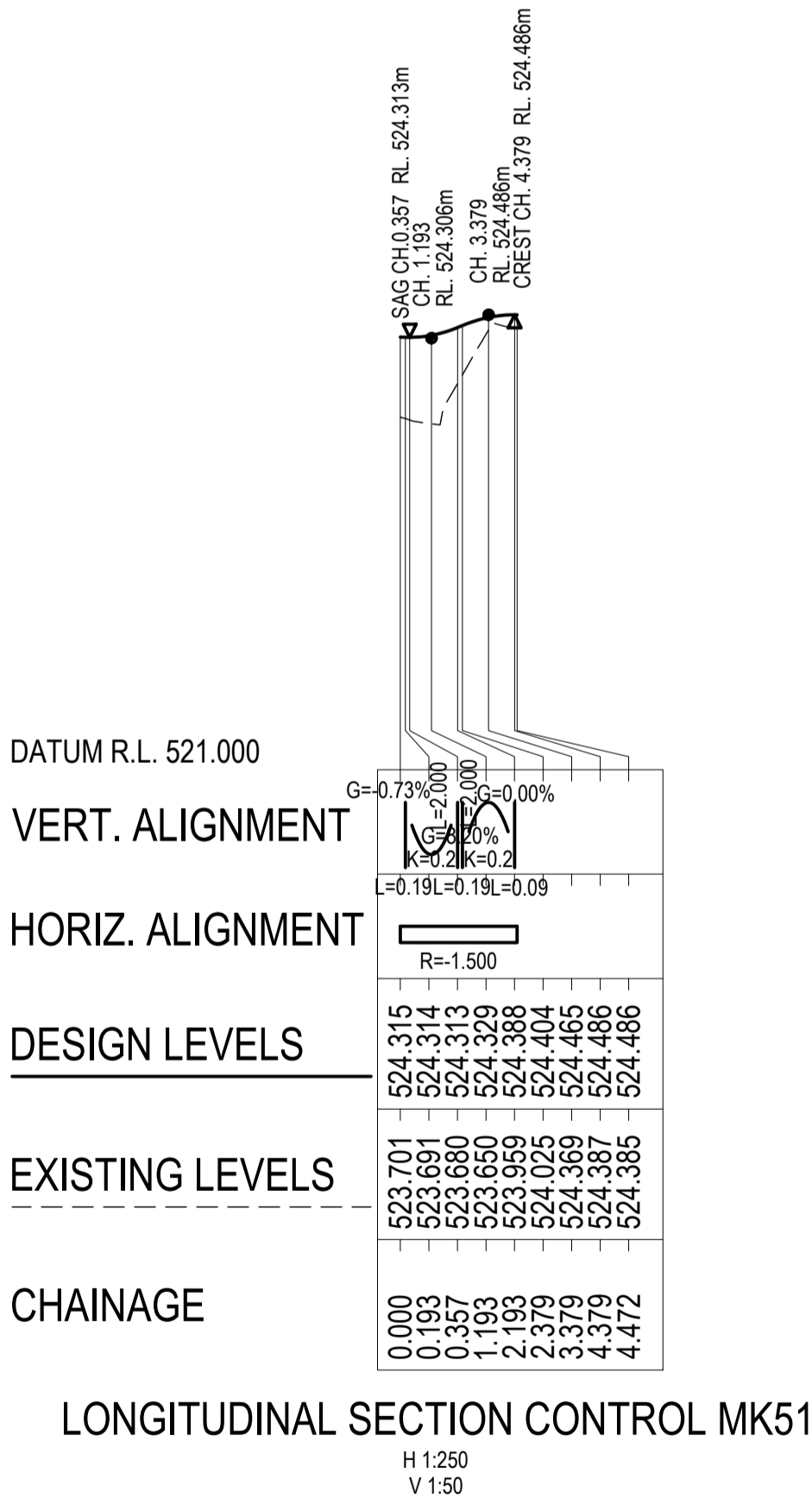
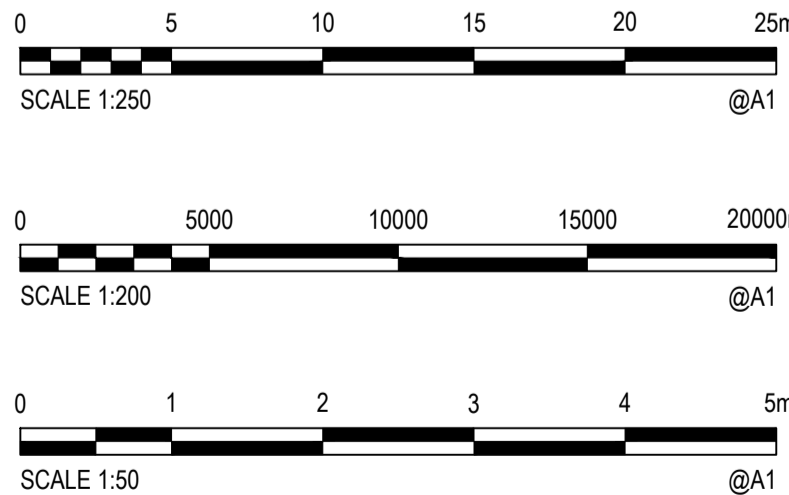
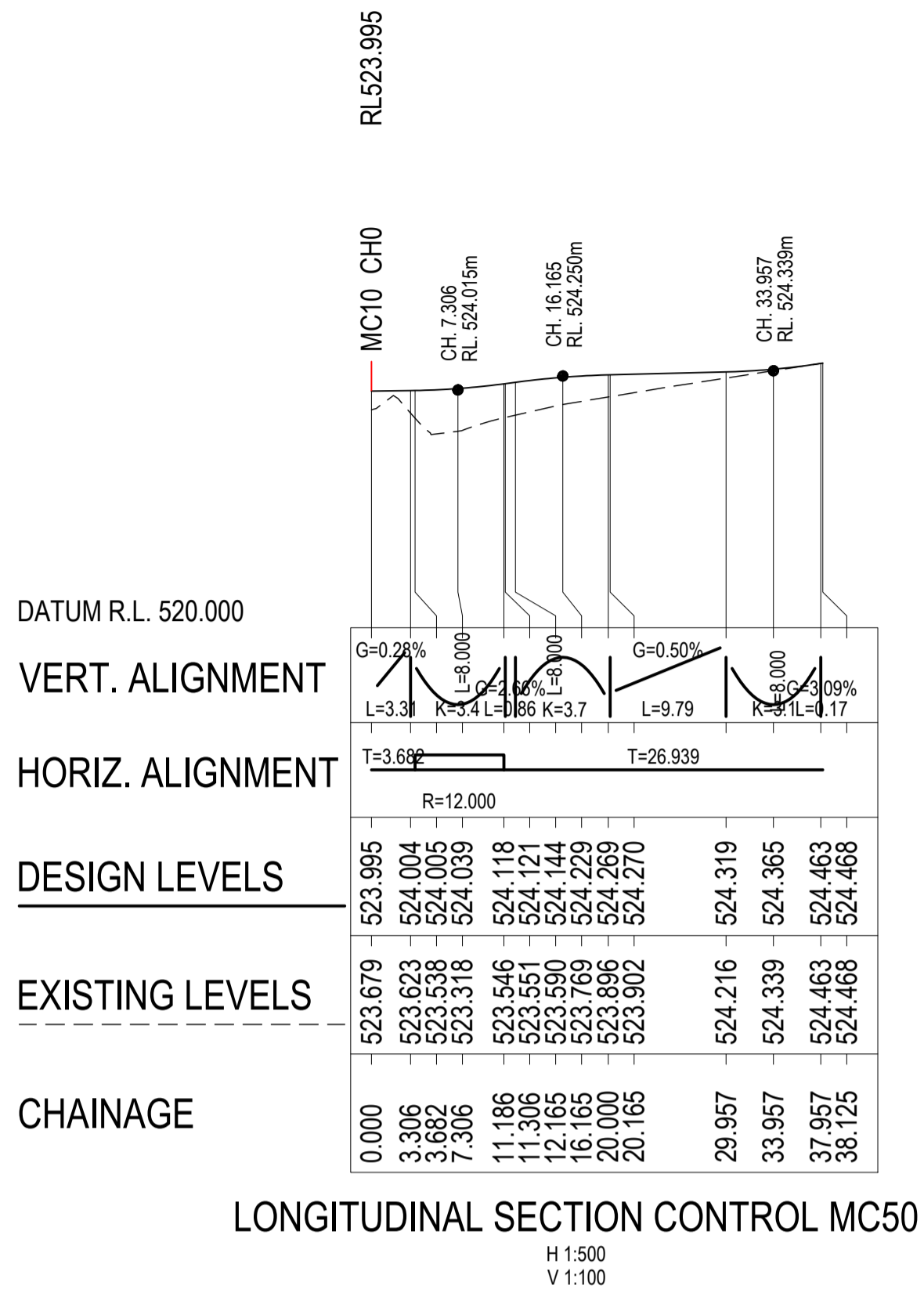
3	21/05/2019	ROAD RE-ALIGNMENT		RIC	P.D.J.	S.A.S.
2	6/11/2018	ROAD RE-ALIGNMENT		P.D.J.	RIC	S.A.S.
1	25/10/2018	ROAD RE-ALIGNMENT		P.D.J.	RIC	S.A.S.
Rev.	Date	Description		Des.	Verif.	Appd.



Drawn	Date
G.J.	23/12/2016
Checked	Date
J.H.	23/12/2016
Designed	Date
RIC	23/12/2016
Verified	Date
J.H.	23/12/2016
Approved	
M.P.	23/12/2016

Client	GOLDWIND AUSTRALIA
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title	INTERSECTION PLAN AND LONG SECTION (MC20) SHEET 1 OF 2

Status			
<b>FOR APPROVAL</b>			
<b>NOT TO BE USED FOR CONSTRUCTION PURPOSES</b>			
DATUM		Scale	Size
AHD		AS SHOWN	A1
Drawing Number			Revision
50517019 - C24			3



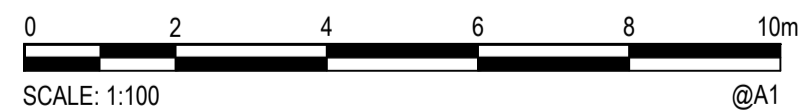
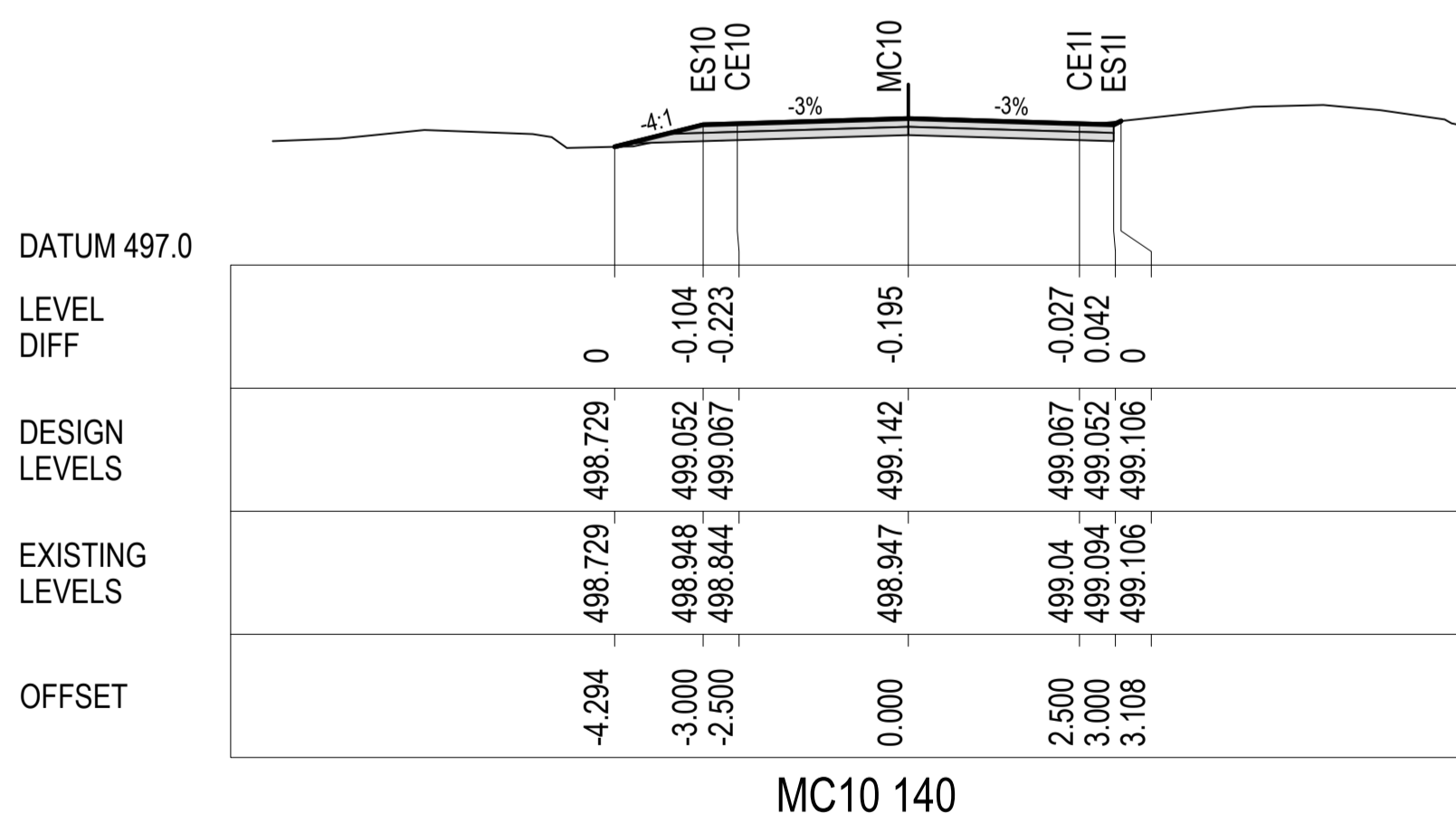
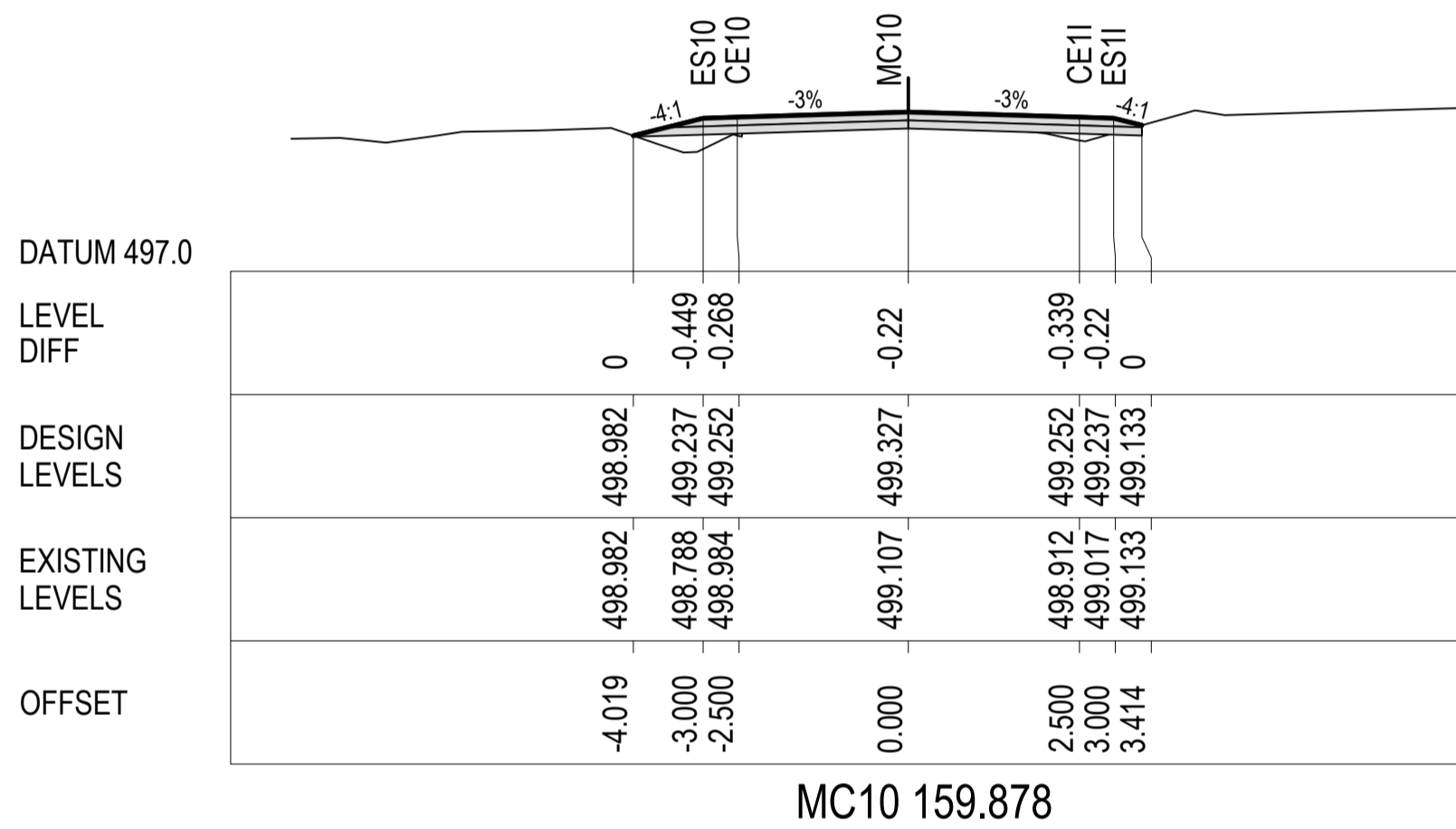
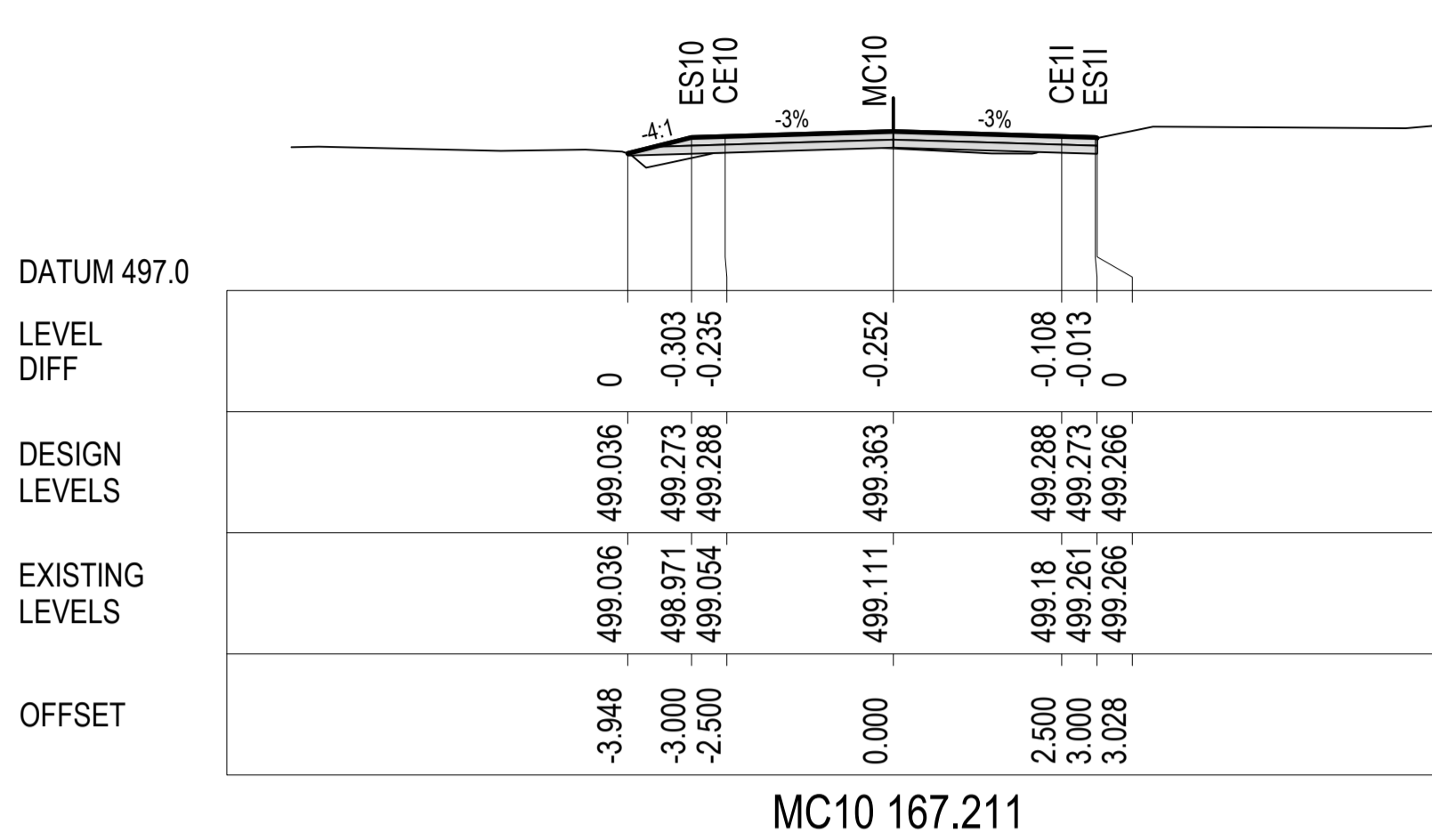
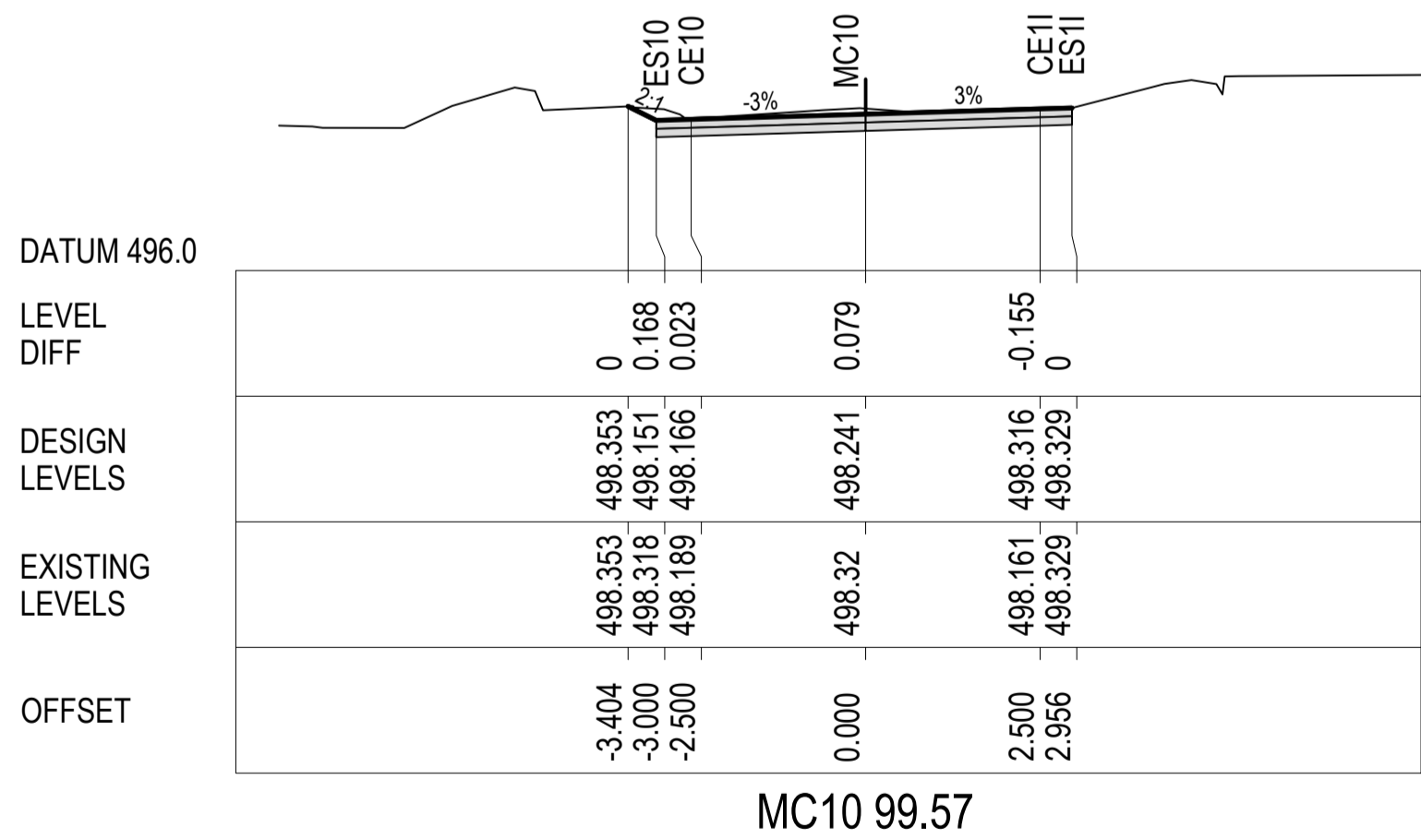
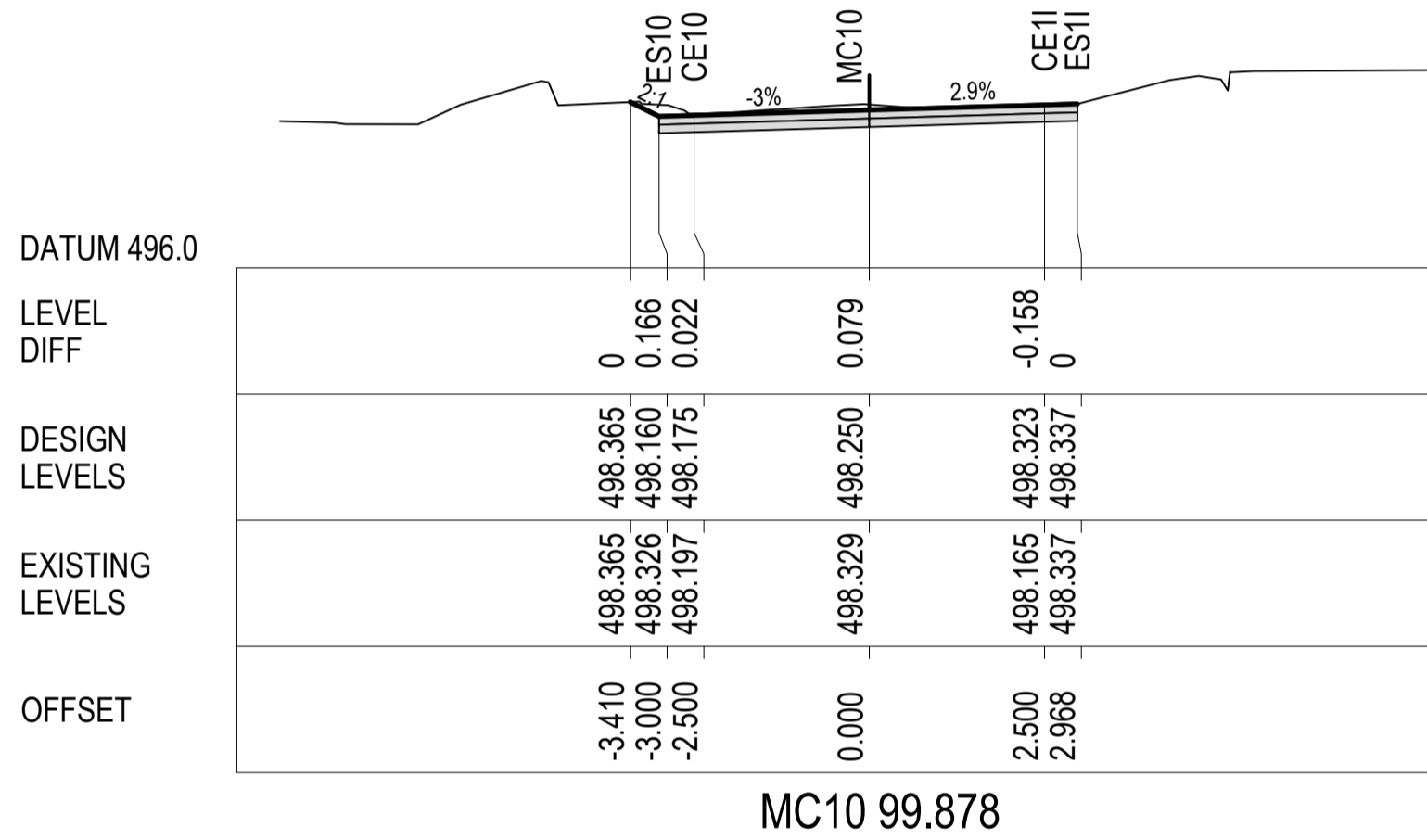
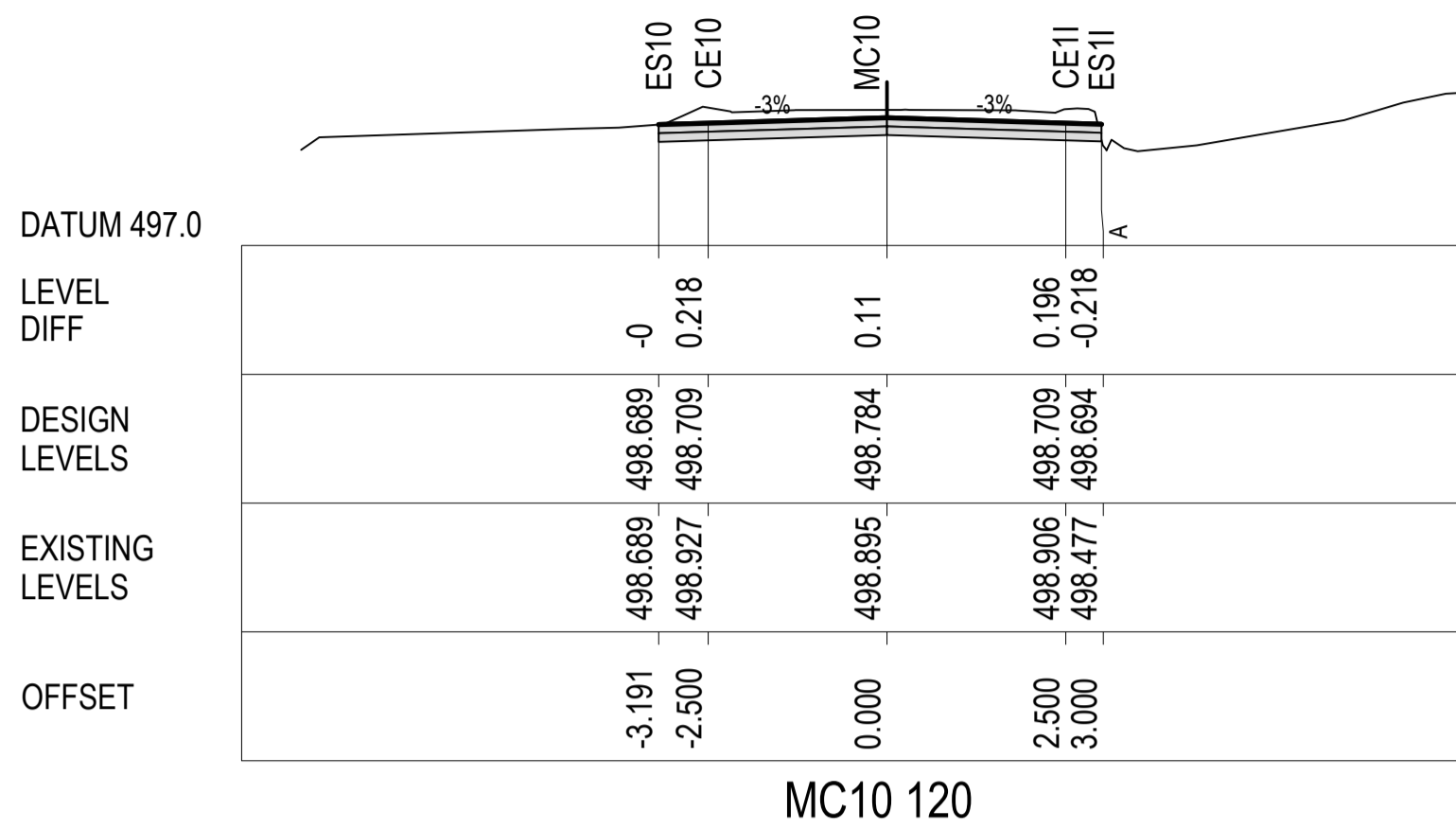
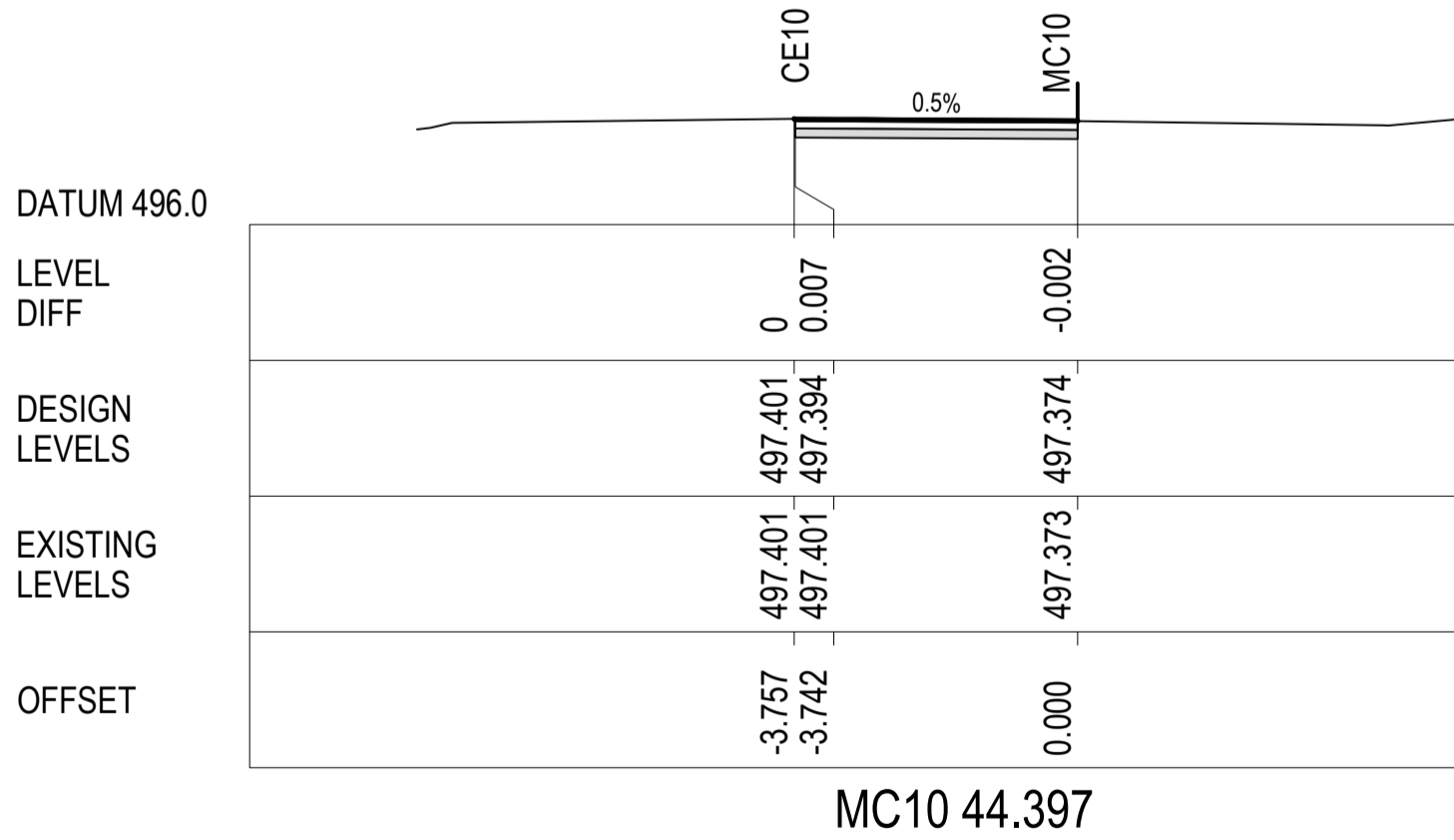
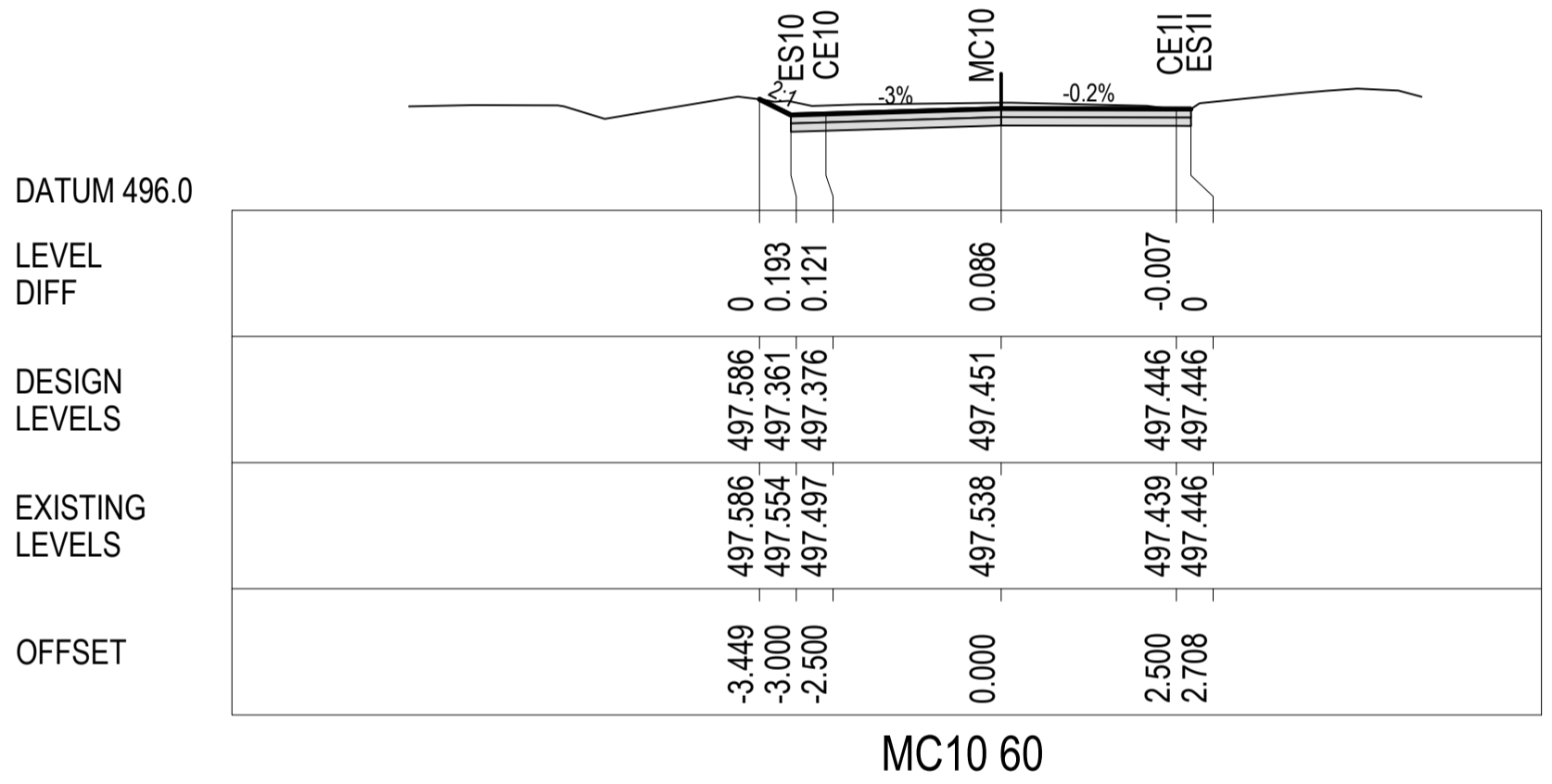
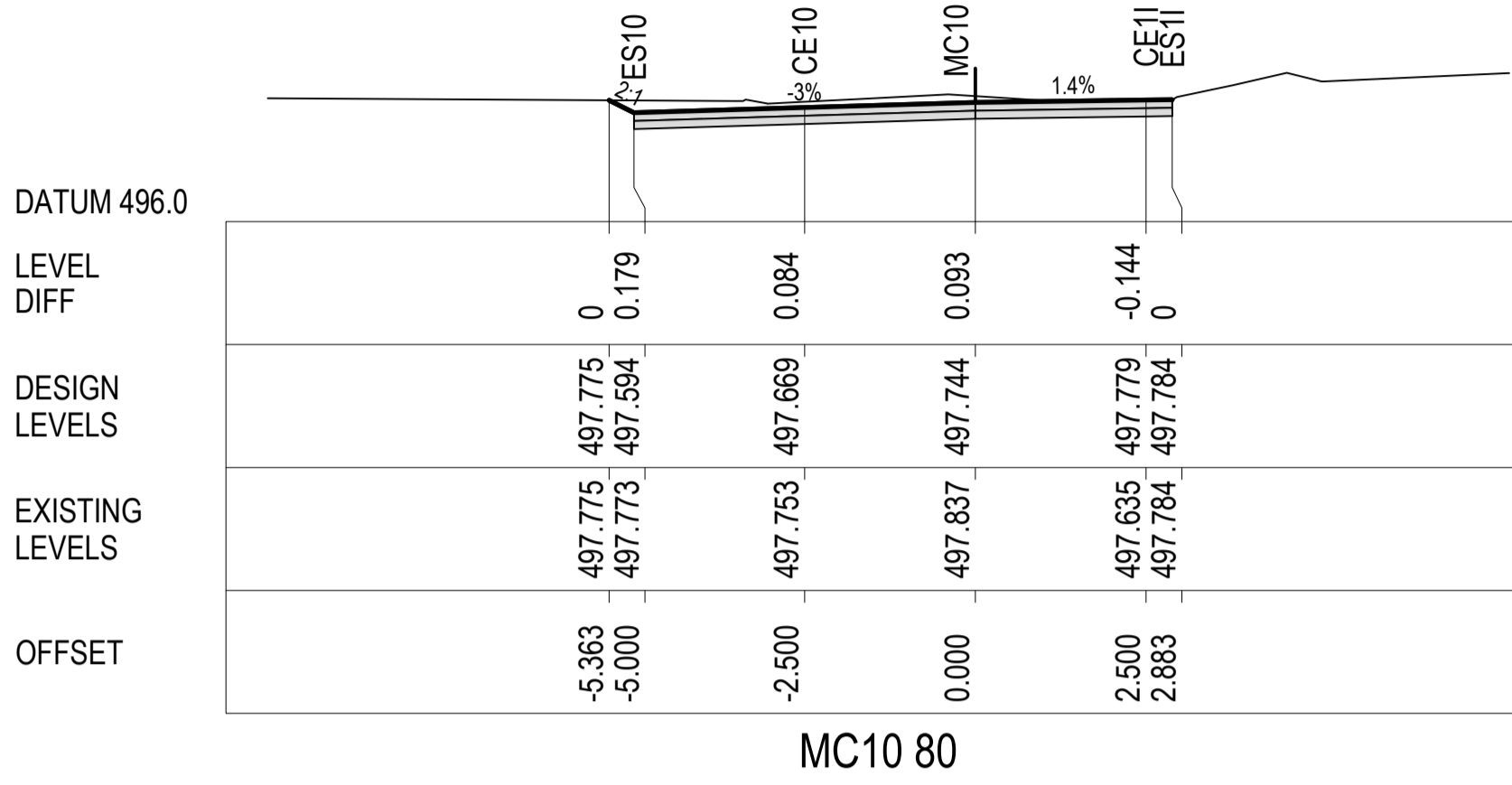
**GOLDWIND**

© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn G.J.	Date 23/12/2016	Client GOLDWIND AUSTRALIA			
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS	Status FOR APPROVAL		
Designed R.C.	Date 23/12/2016		NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Verified J.H.	Date 23/12/2016		DATUM AHD		
Approved			Scale AS SHOWN		
		Title INTERSECTION PLAN AND LONG SECTION (MC30) SHEET 2 OF 2	Size A1		
			Drawing Number 50517019 - C25		
			Revision 3		
M.P.	23/12/2016				

XREFs: XS-MC10  
CAD File: N:\Projects\505177019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C30-C37-XS.dwg  
DATE PLOTTED: 25 June 2019 10:10 AM BY: MEHUL VAIDYA



Rev.	Date	Description	Des.	Verif.	Appd.
5	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	
4	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	17/05/2017	AMENDED DRAWING CROSS-SECTION 1 OF 8	G.J.	RIC	J.H.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



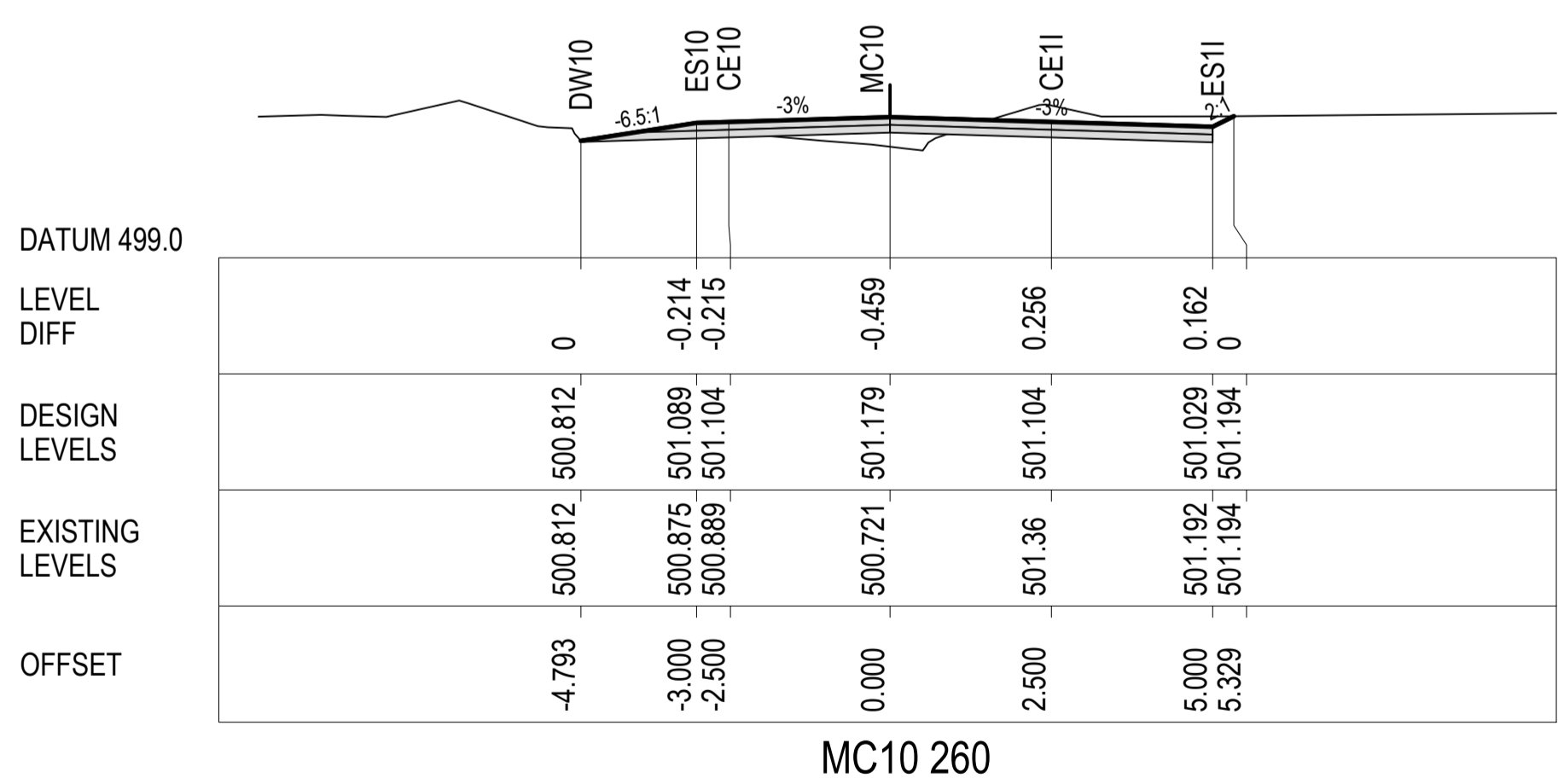
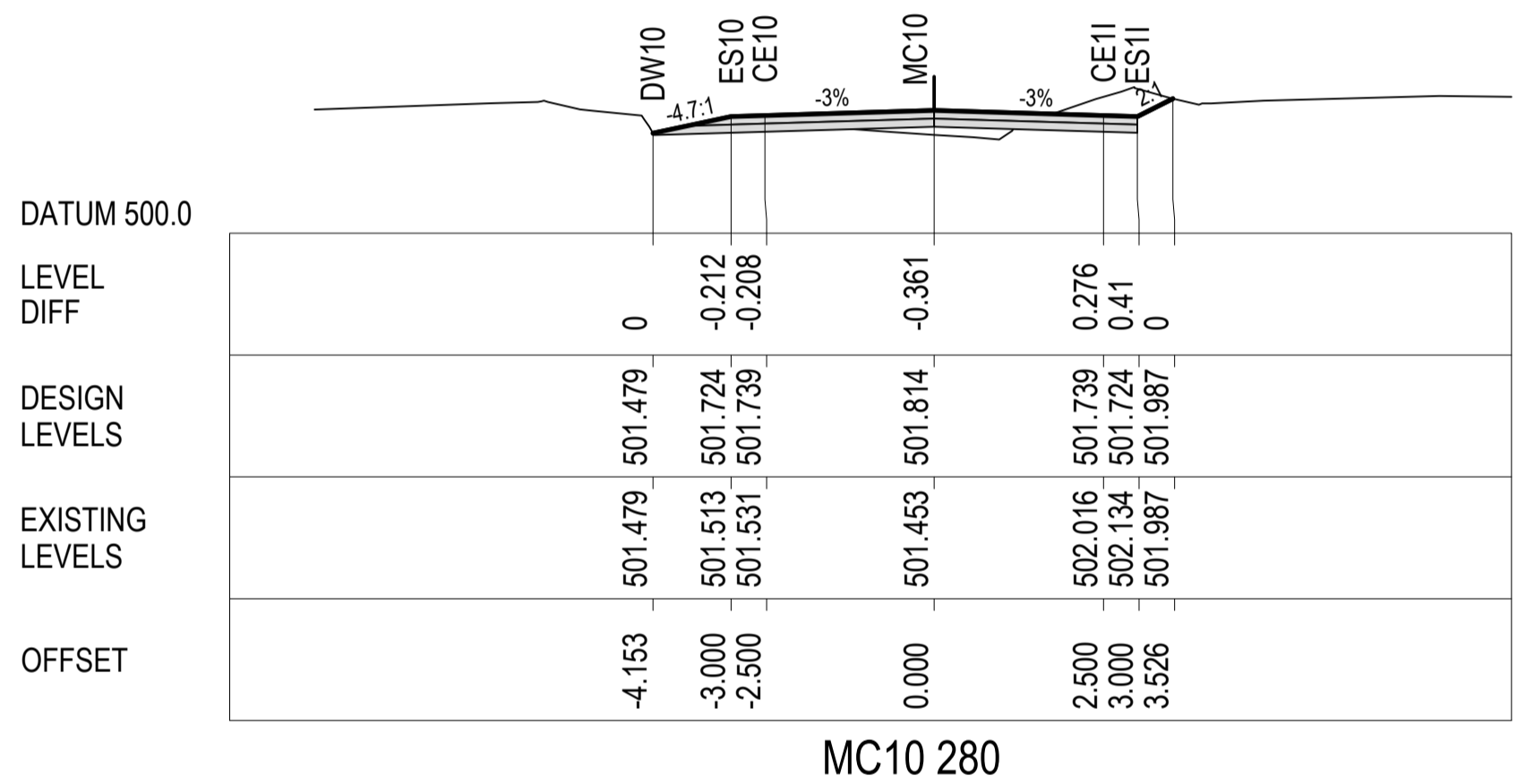
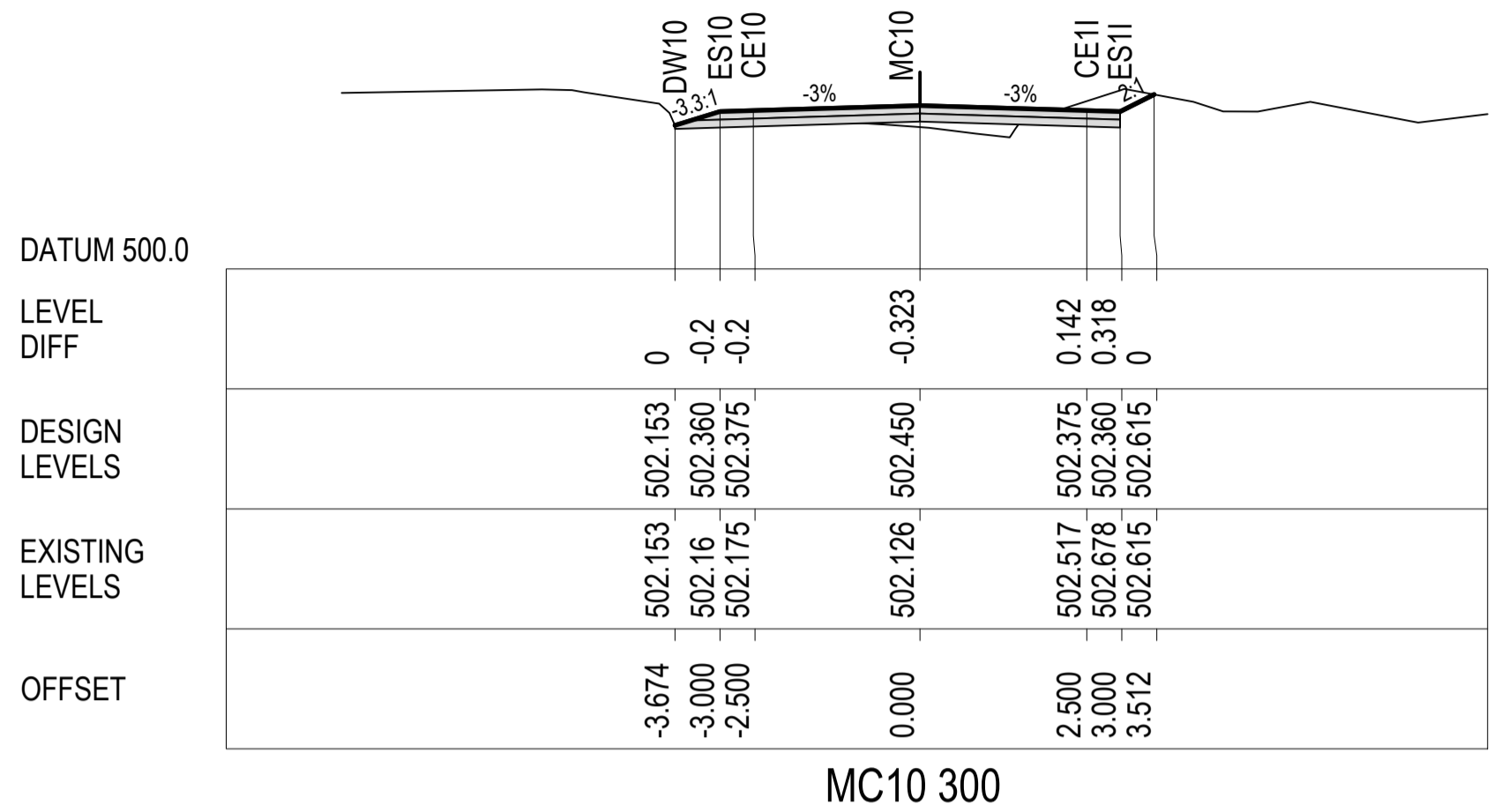
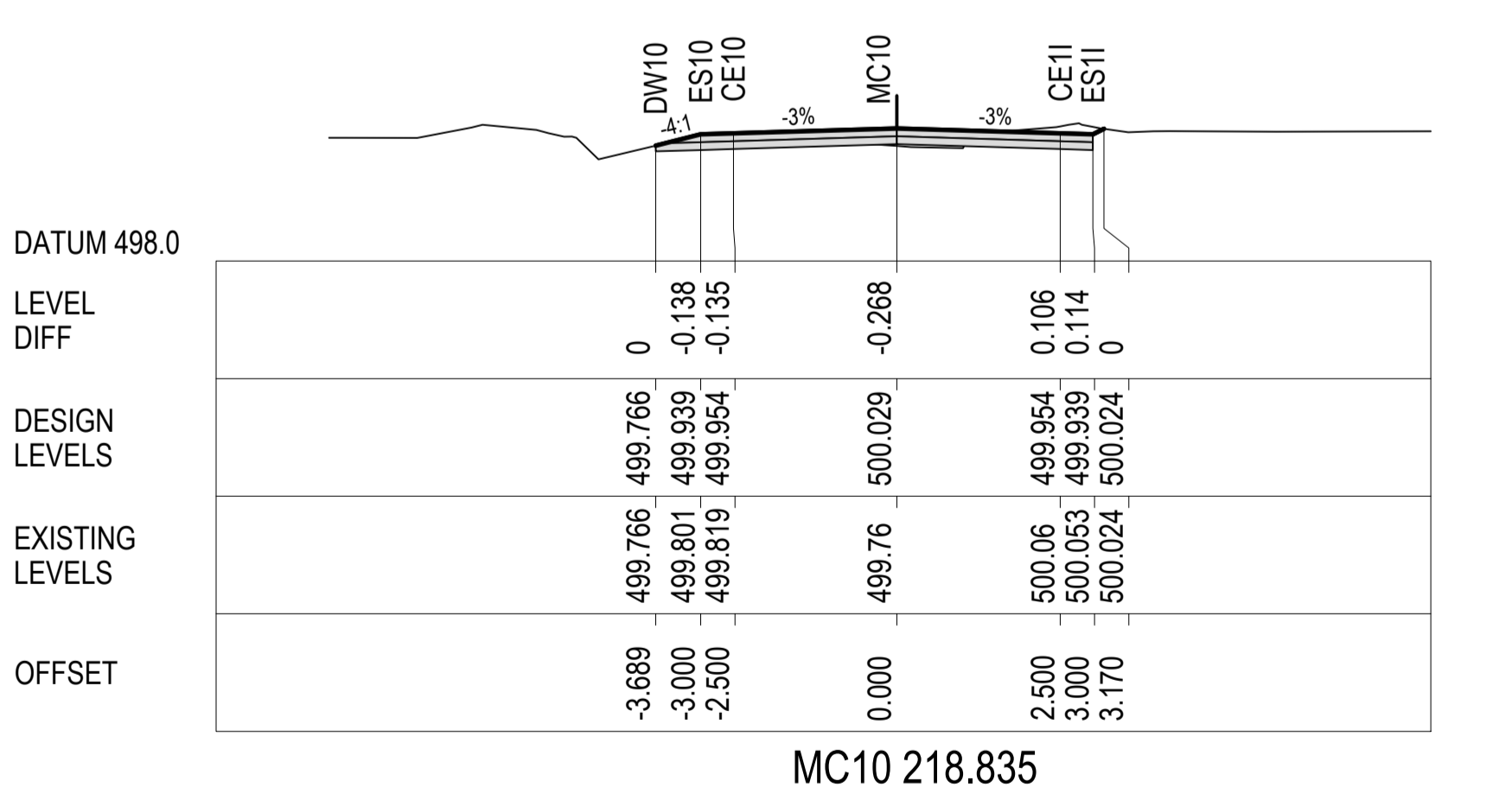
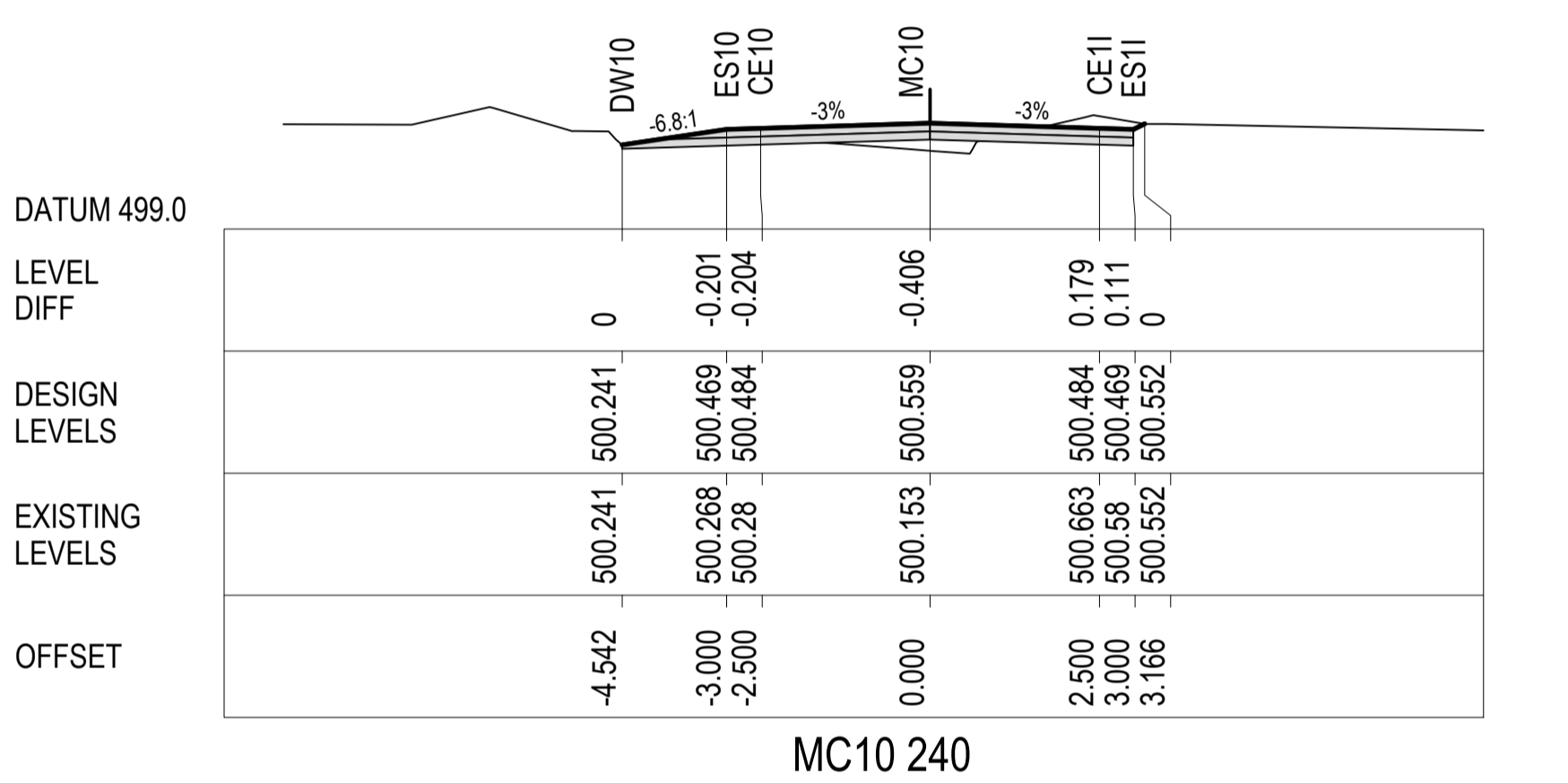
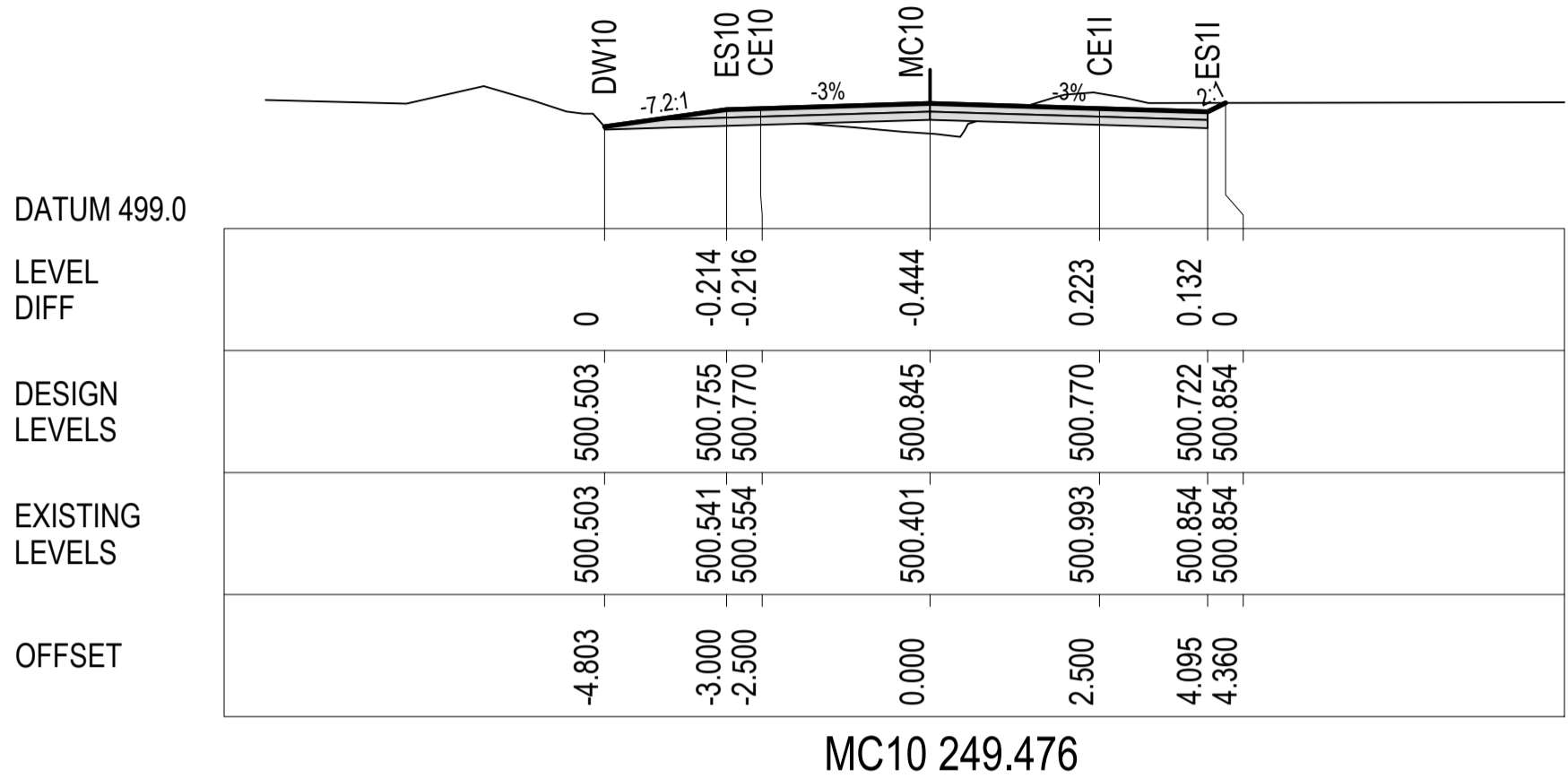
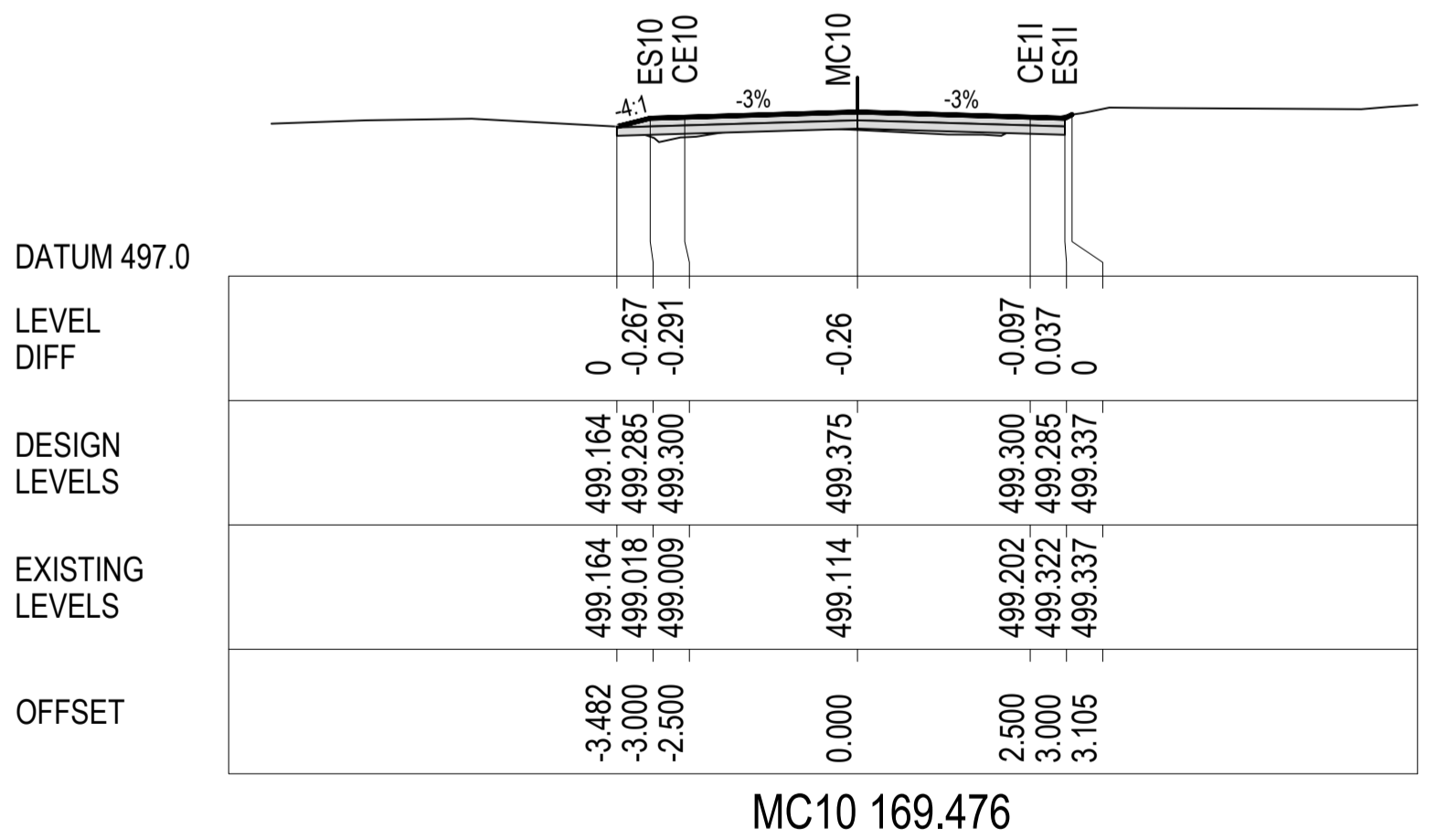
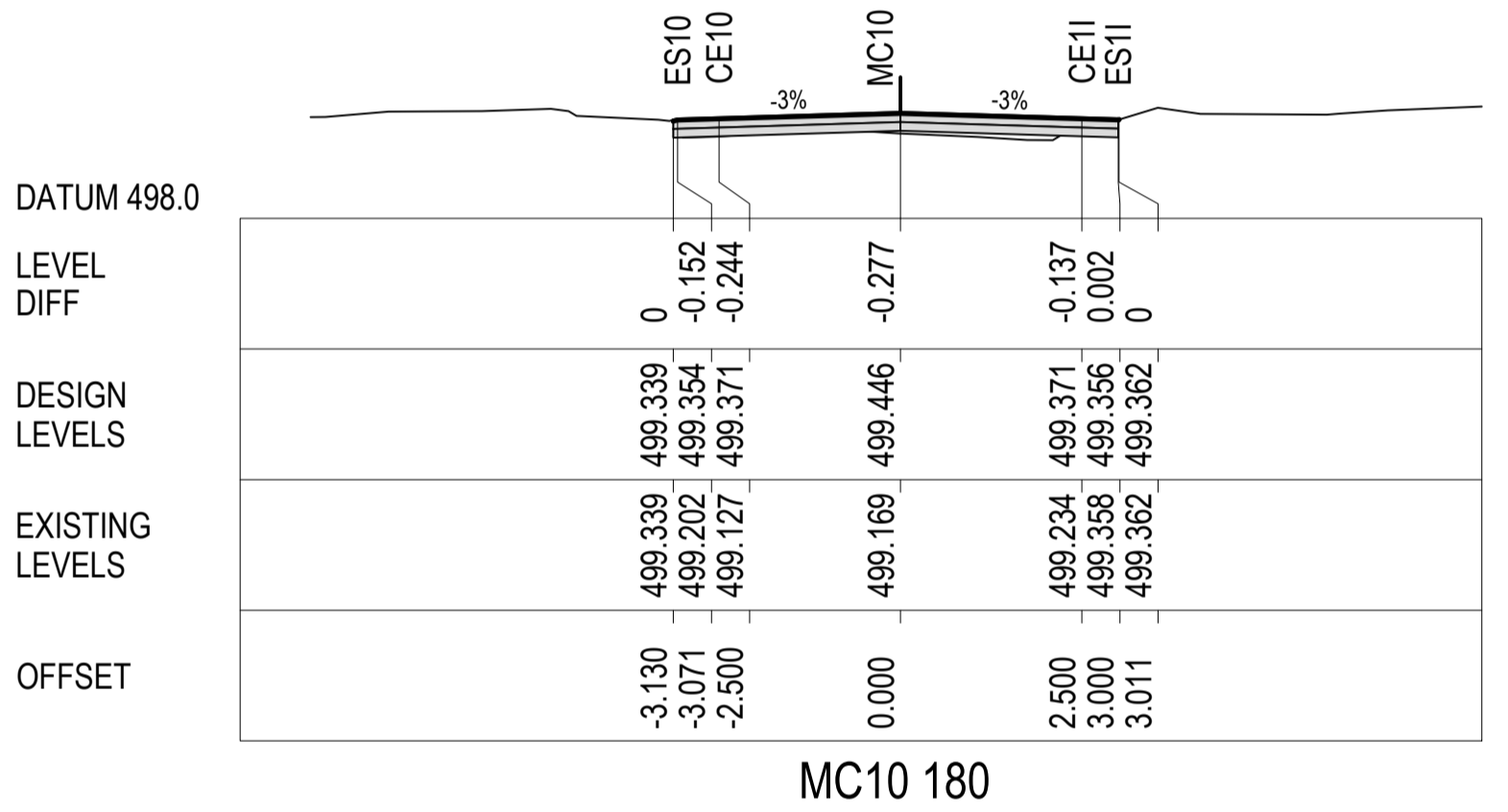
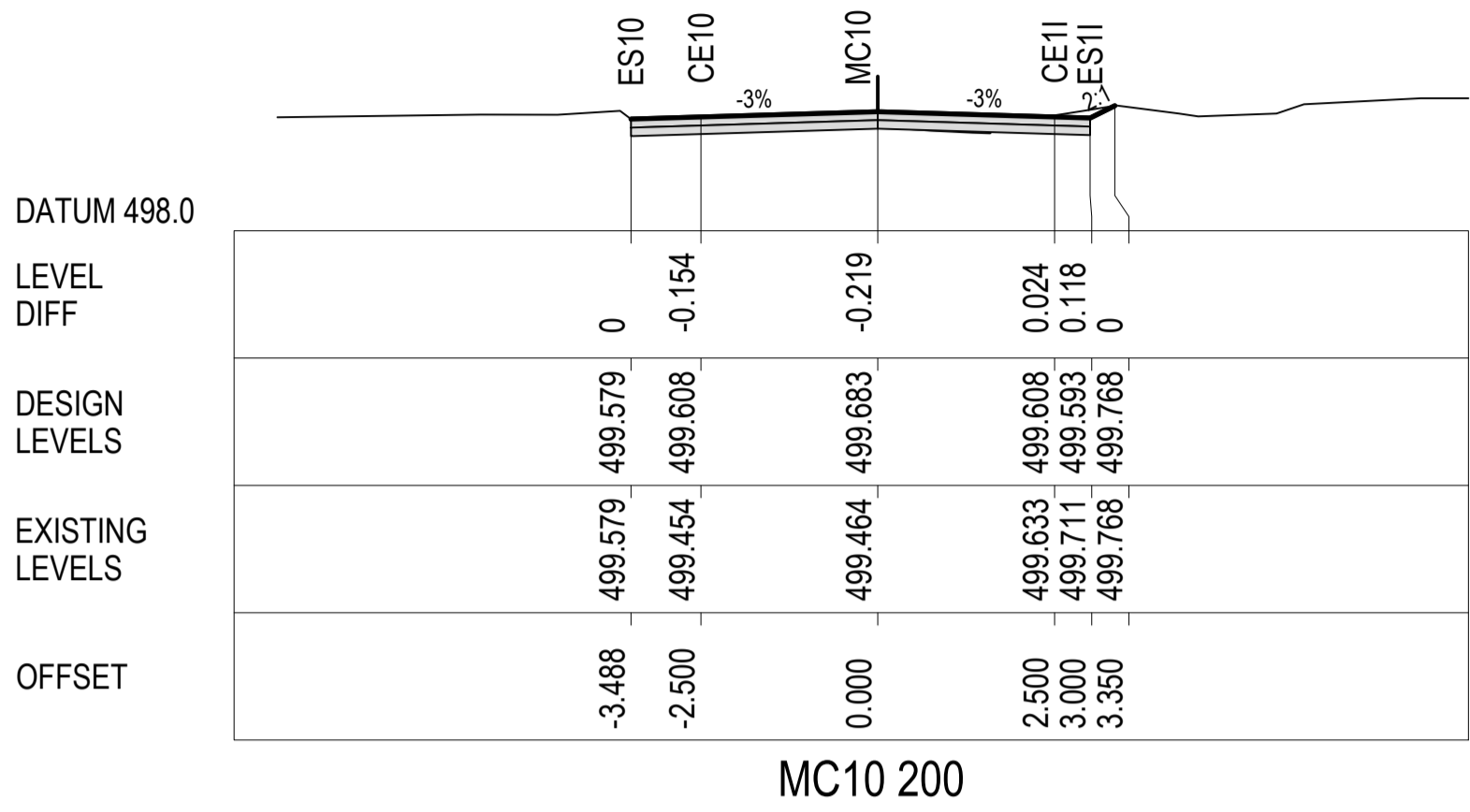
© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn G.J.	Date 23/12/2016	Client GOLDWIND AUSTRALIA
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM
Designed RIC	Date 23/12/2016	ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Verified J.H.	Date 23/12/2016	Title CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 1 OF 10
Approved M.P.	Date 23/12/2016	Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES
Drawing Number 50517019 - C30		Revision A1

DATE PLOTTED: 25 June 2019 10:10 AM BY: MEHUL VAIDYA

XREFs: XS-MC10  
CAD File: N:\Projects\505\FY17019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C30-C37-XS.dwg



Rev.	Date	Description	Des.	Verif.	Appd.
5	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	
4	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	17/05/2017	AMENDED DRAWING CROSS-SECTION 2 OF 8	G.J.	RIC	J.H.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

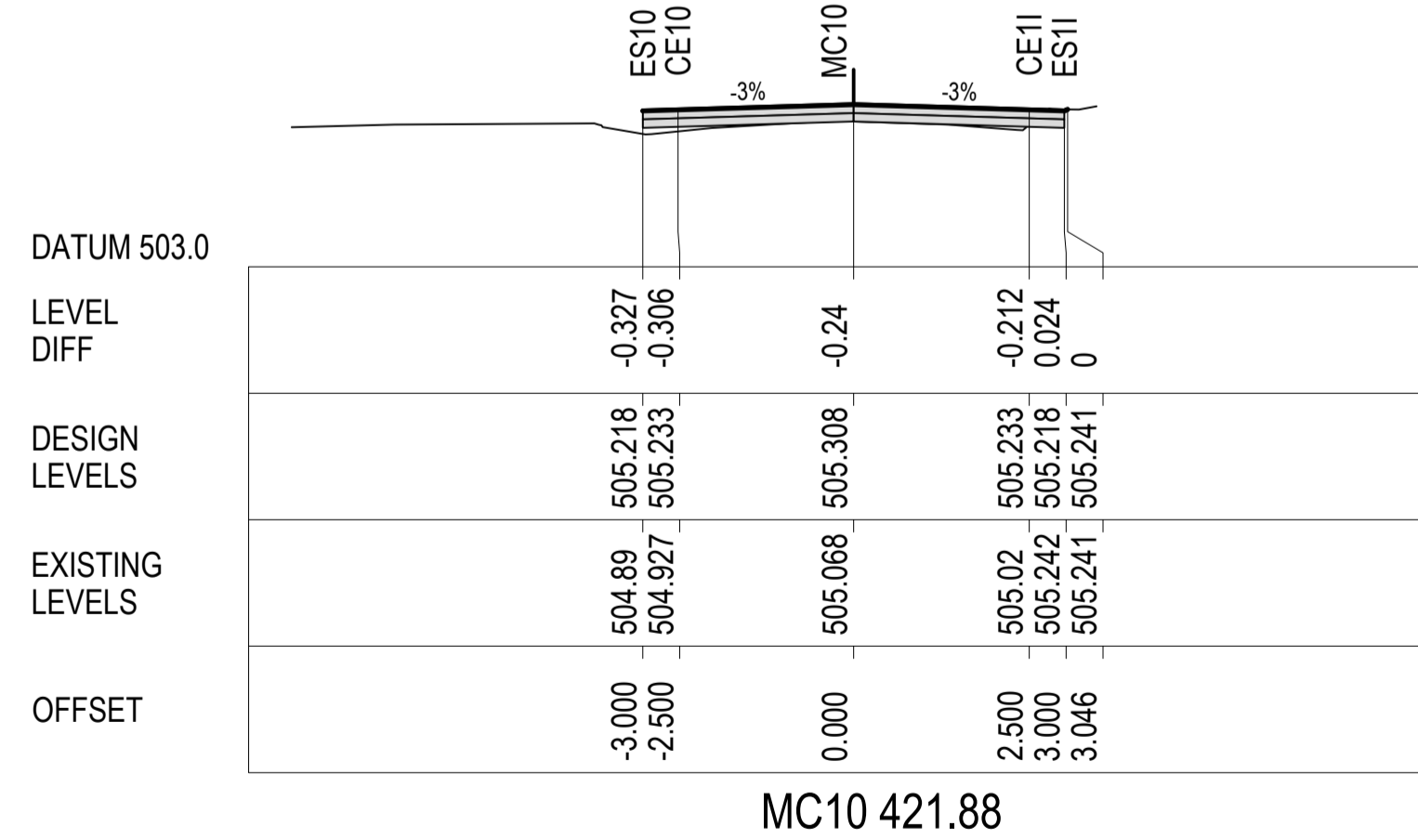
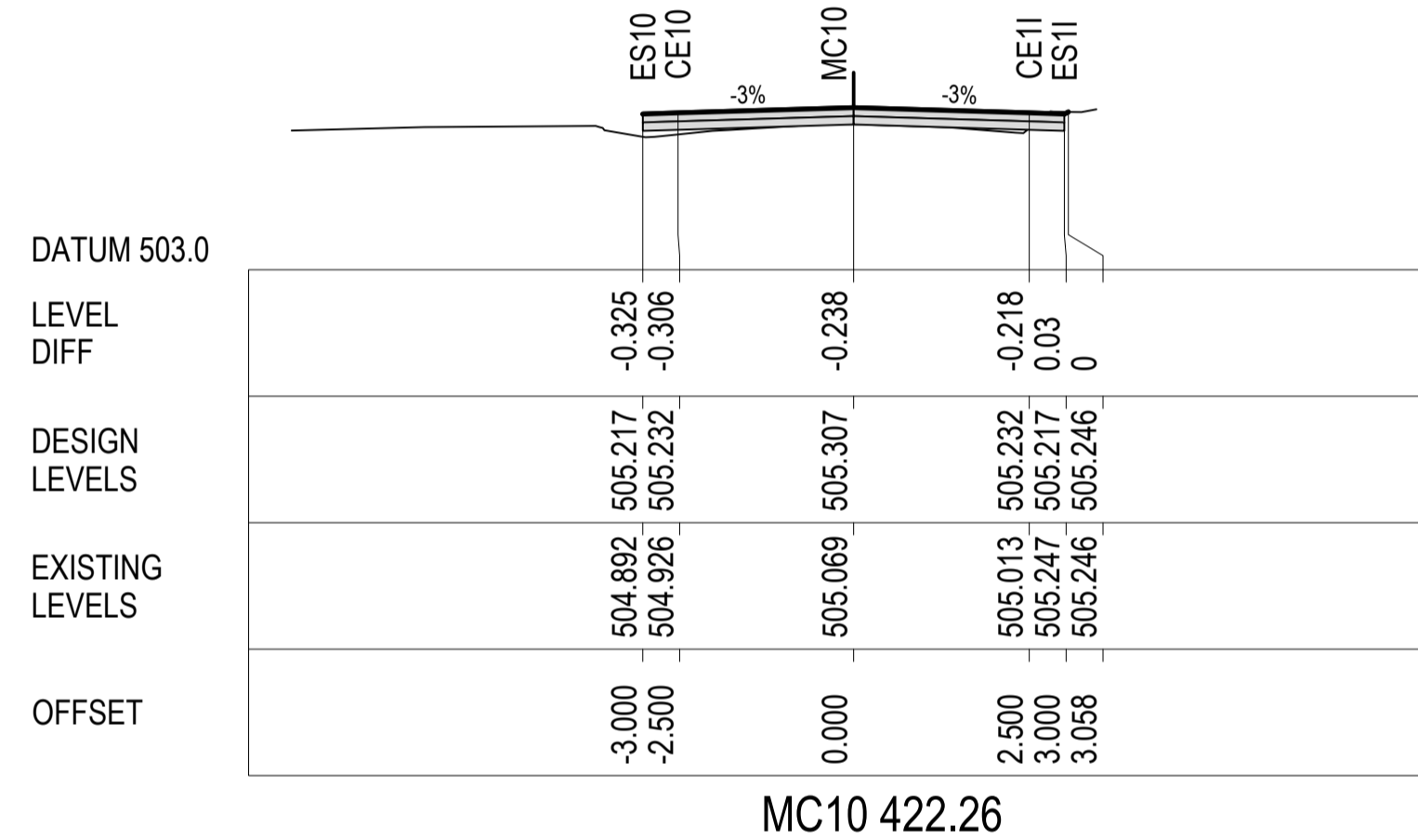
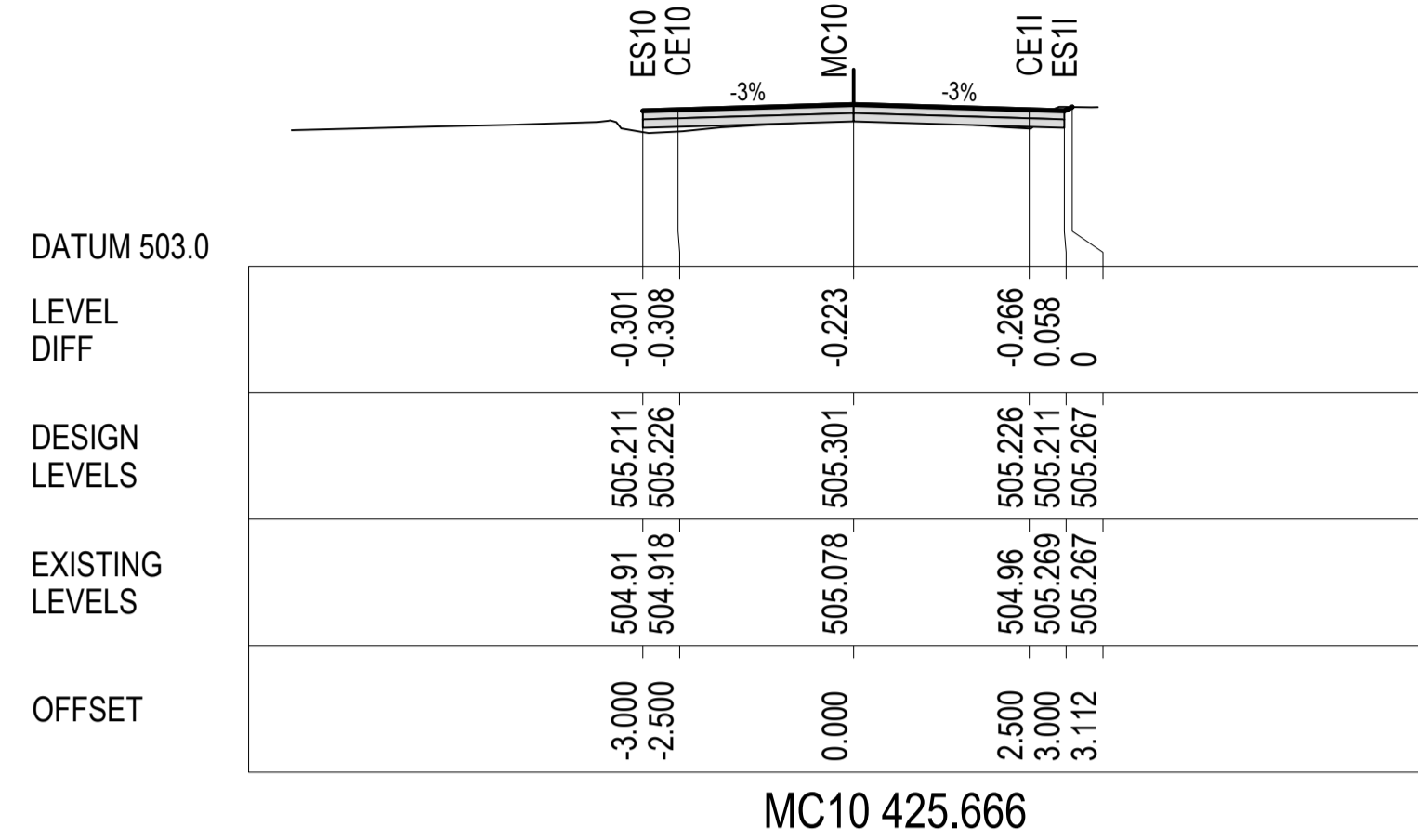
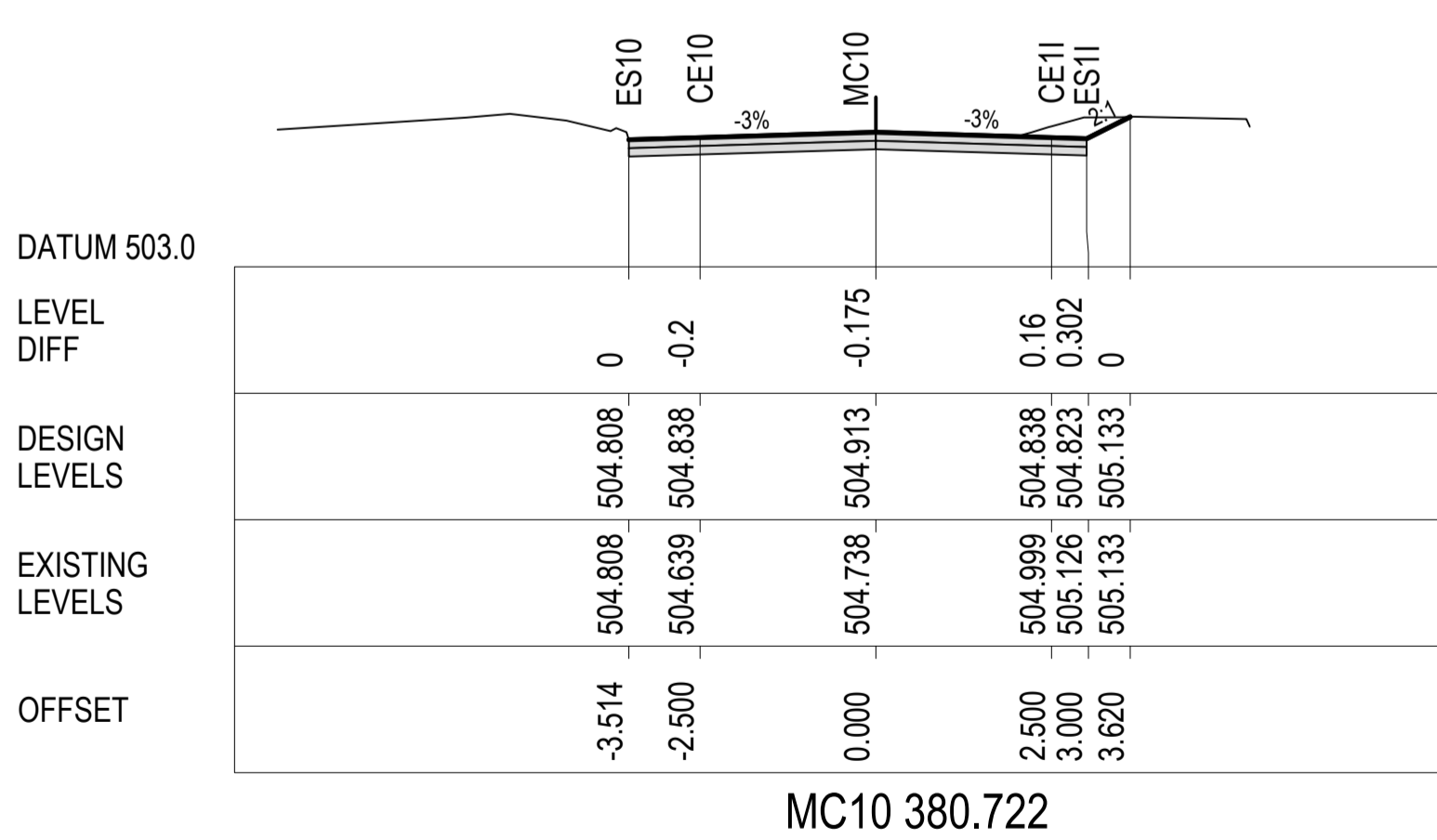
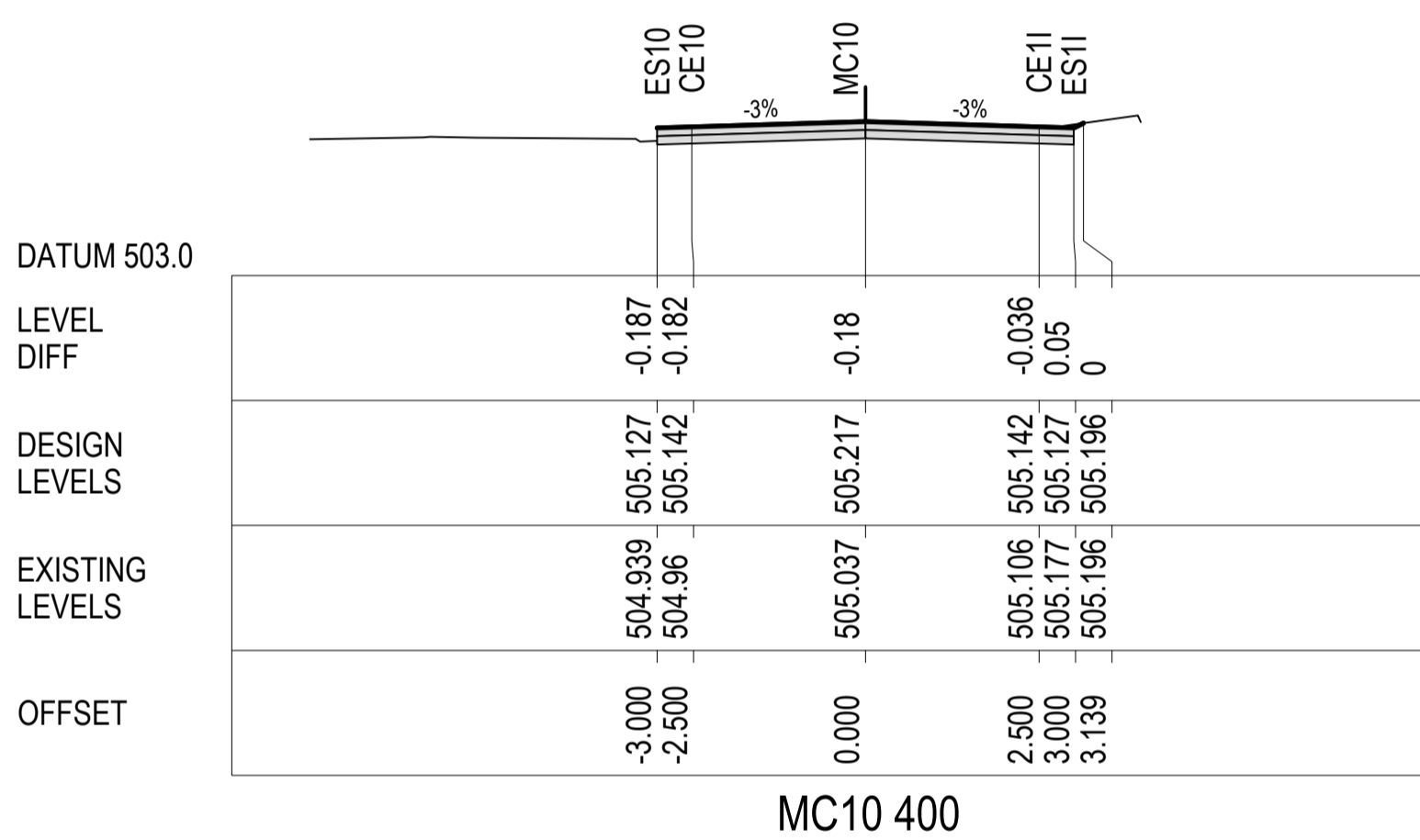
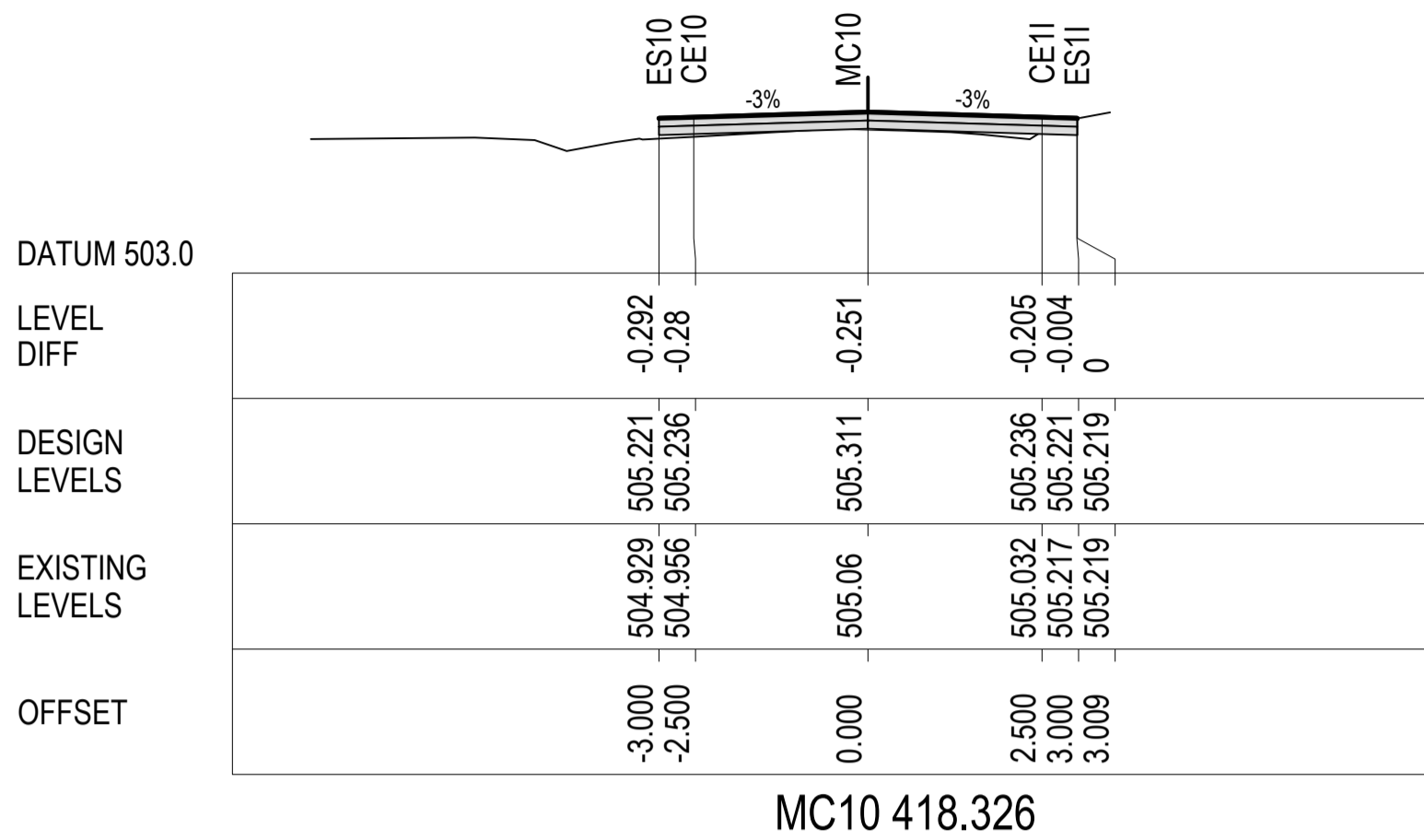
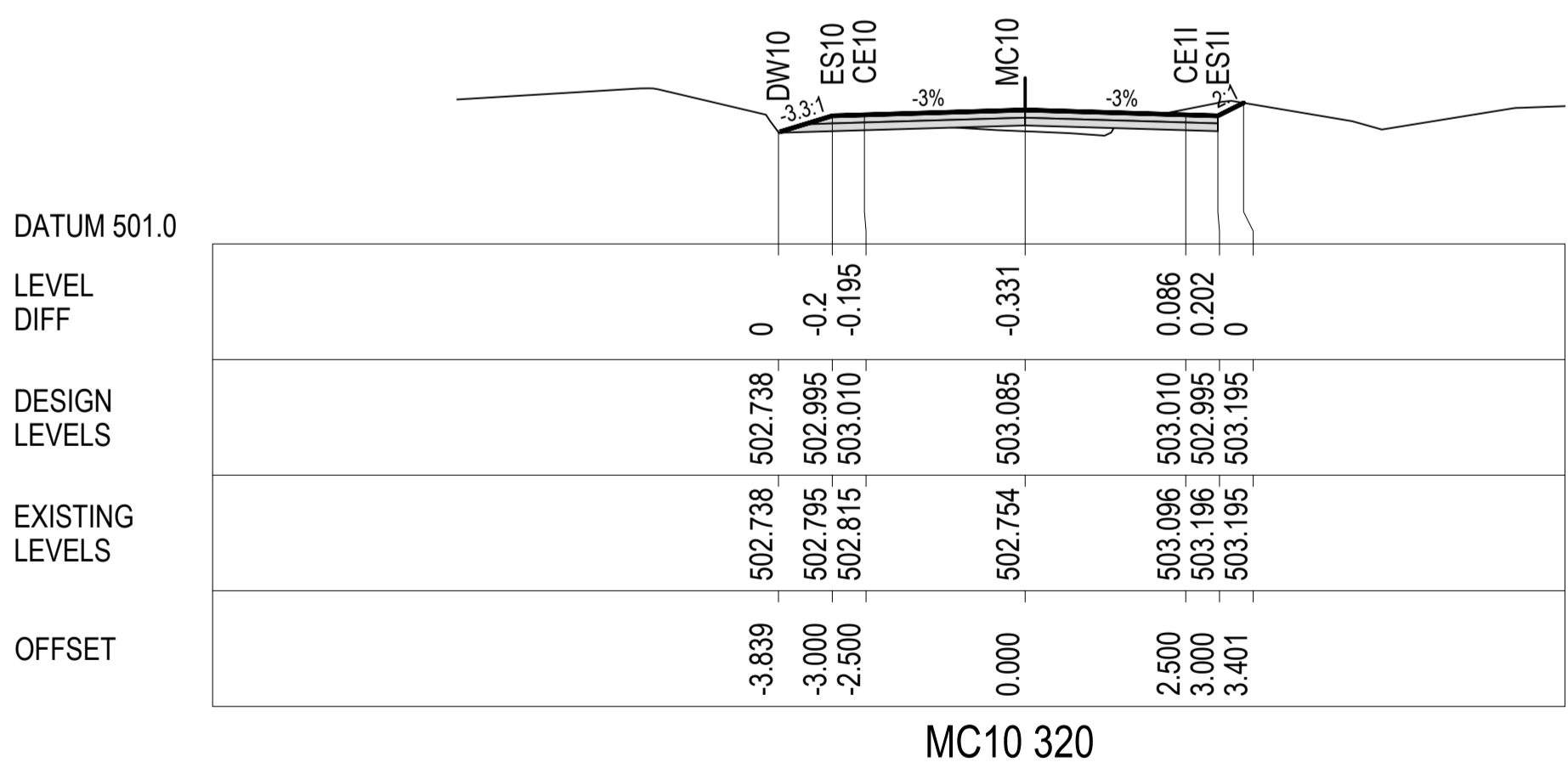
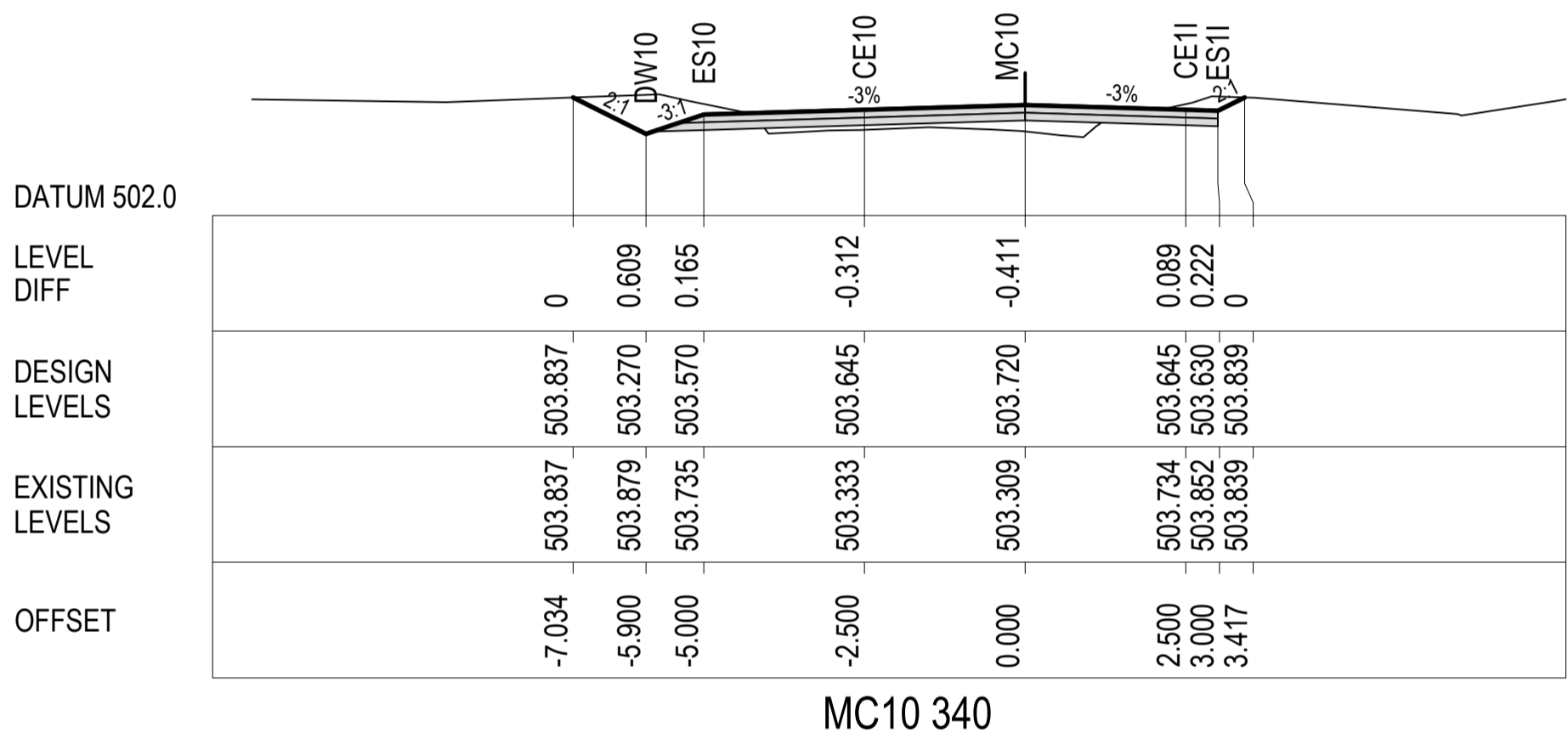
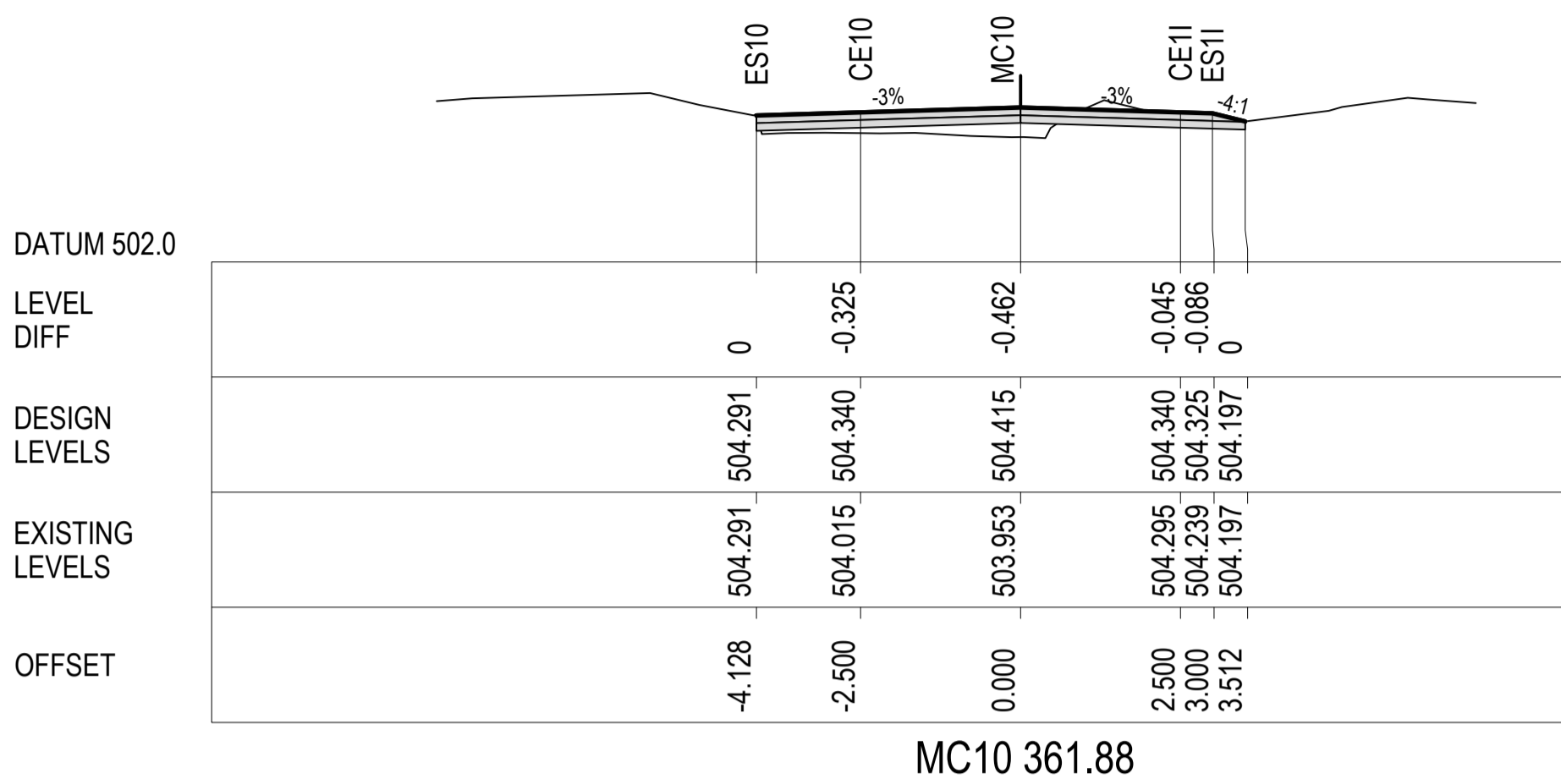


Drawn G.J.	Date 23/12/2016	Client GOLDWIND AUSTRALIA
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM
Designed RIC	Date 23/12/2016	ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Verified J.H.	Date 23/12/2016	Title CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 2 OF 10
Approved M.P.	Date 23/12/2016	Status FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES		DATUM AHD
Scale 1:100@A1		Size A1
Drawing Number 50517019 - C31		Revision 5

DATE PLOTTED: 25 June 2019 10:10 AM BY: MEHUL VAIDYA

XREFs: XS-MC10

CAD File: N:\Projects\505177019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C32-C37-XS.dwg



Rev.	Date	Description	Des.	Verif.	Appd.
5	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	
4	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	17/05/2017	AMENDED DRAWING CROSS-SECTION 3 OF 8	G.J.	RIC	J.H.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

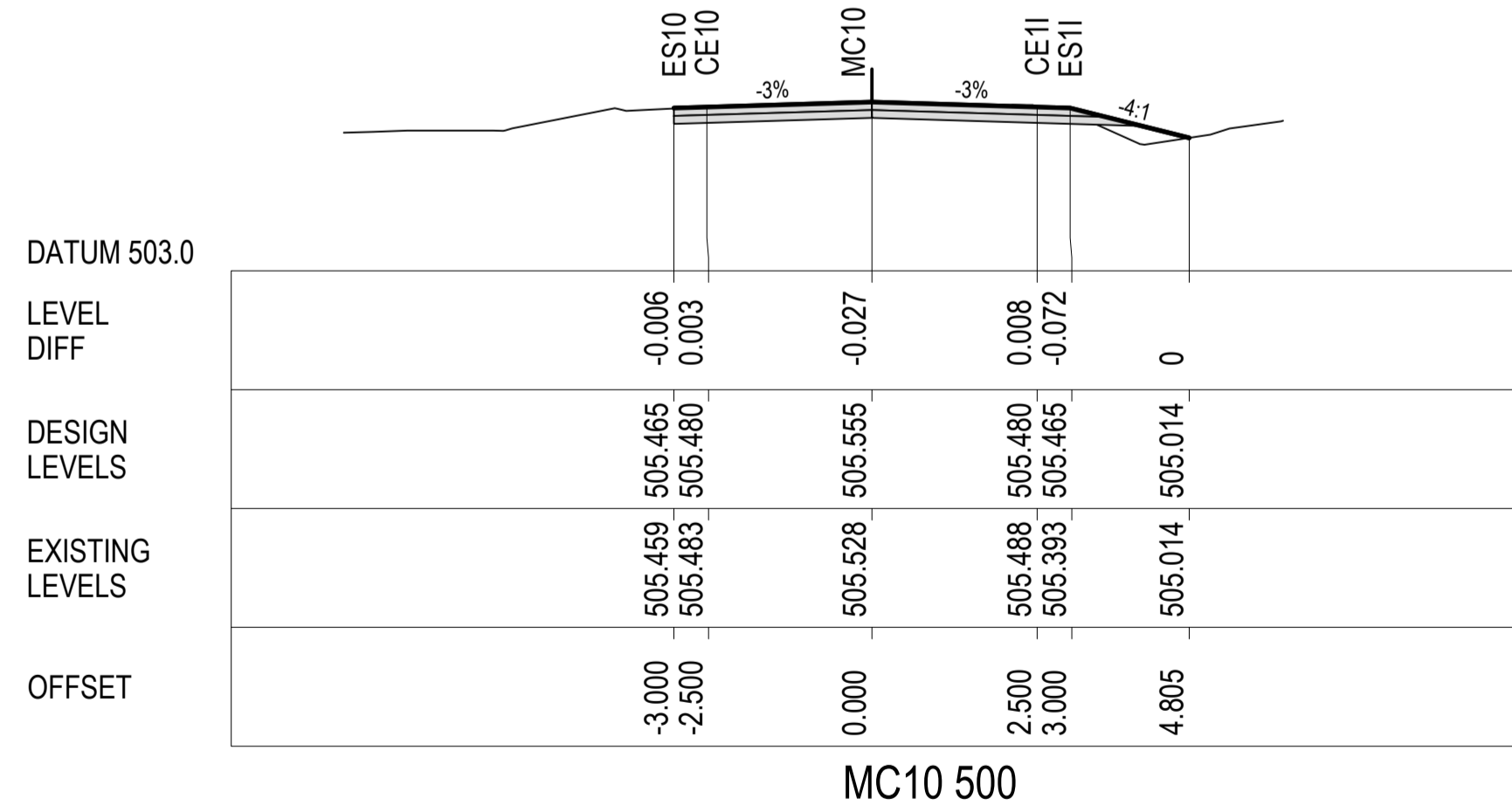
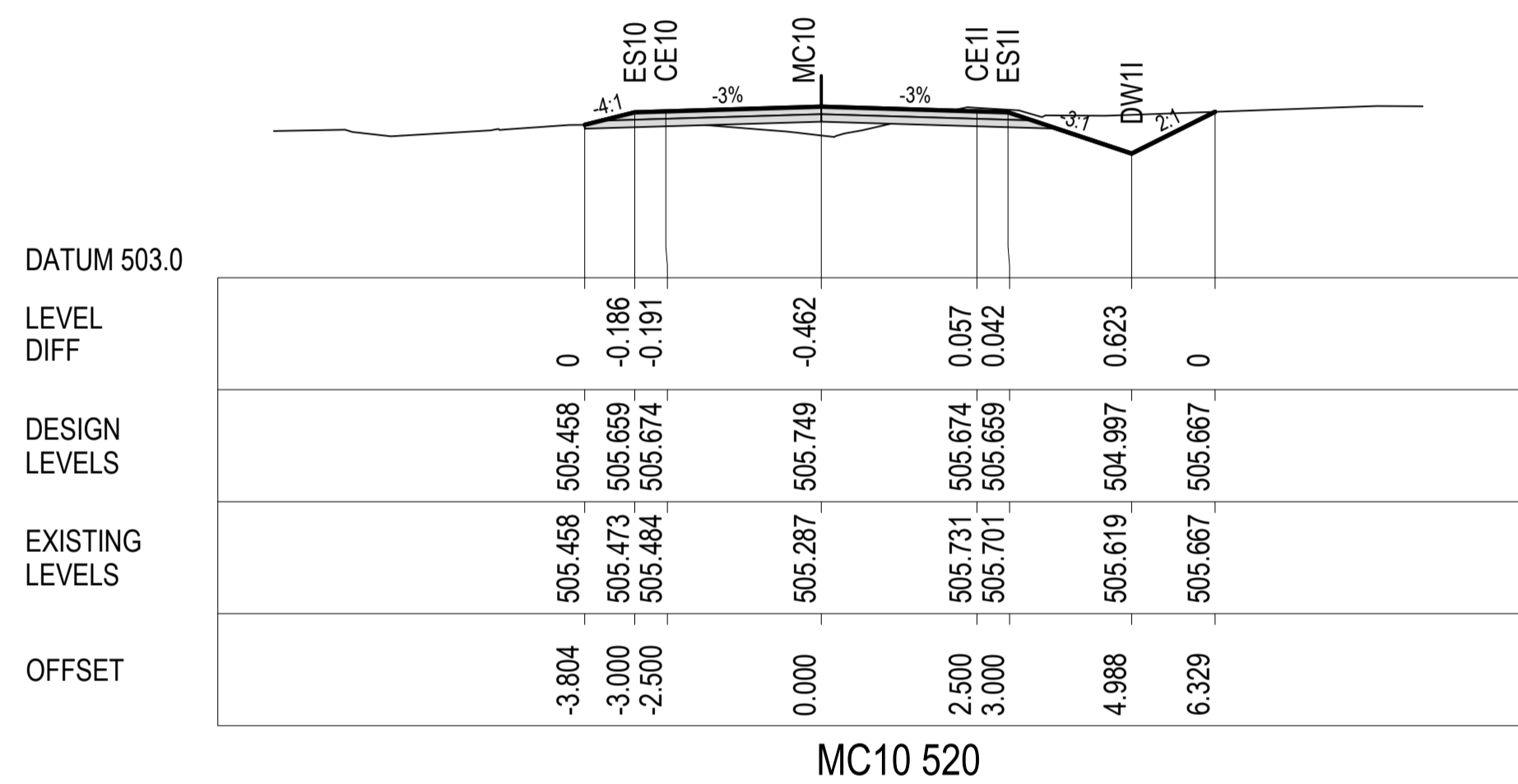
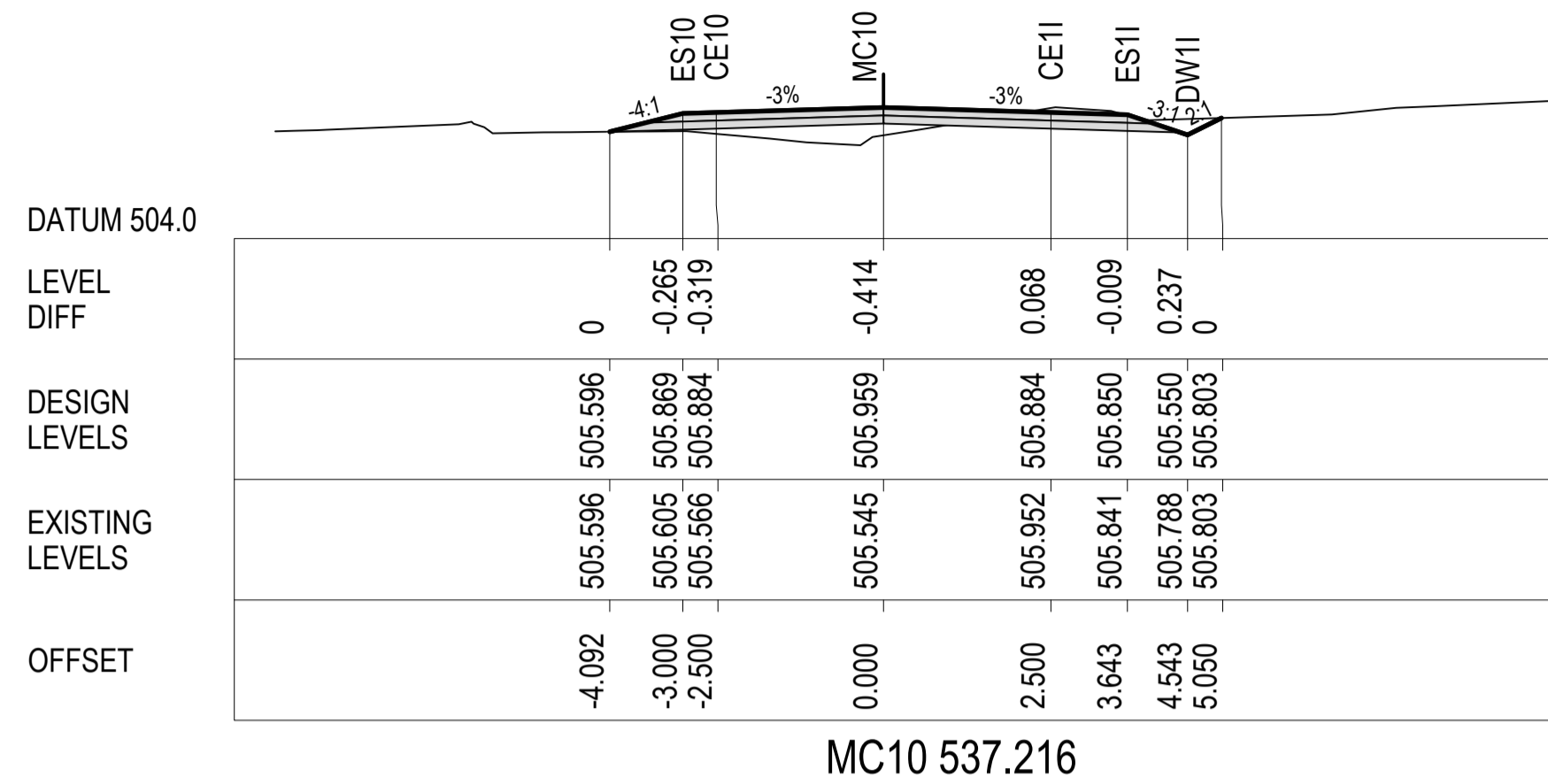
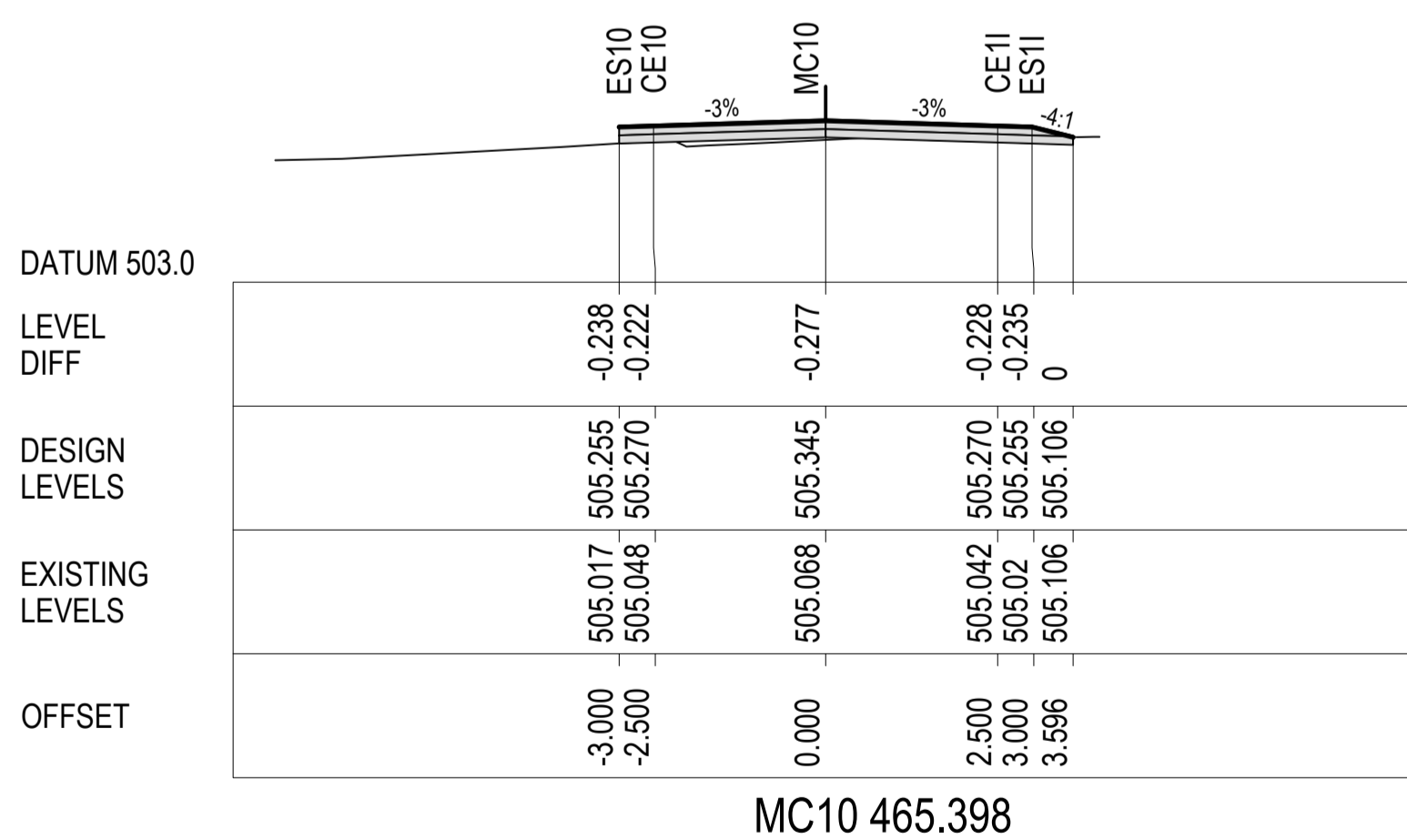
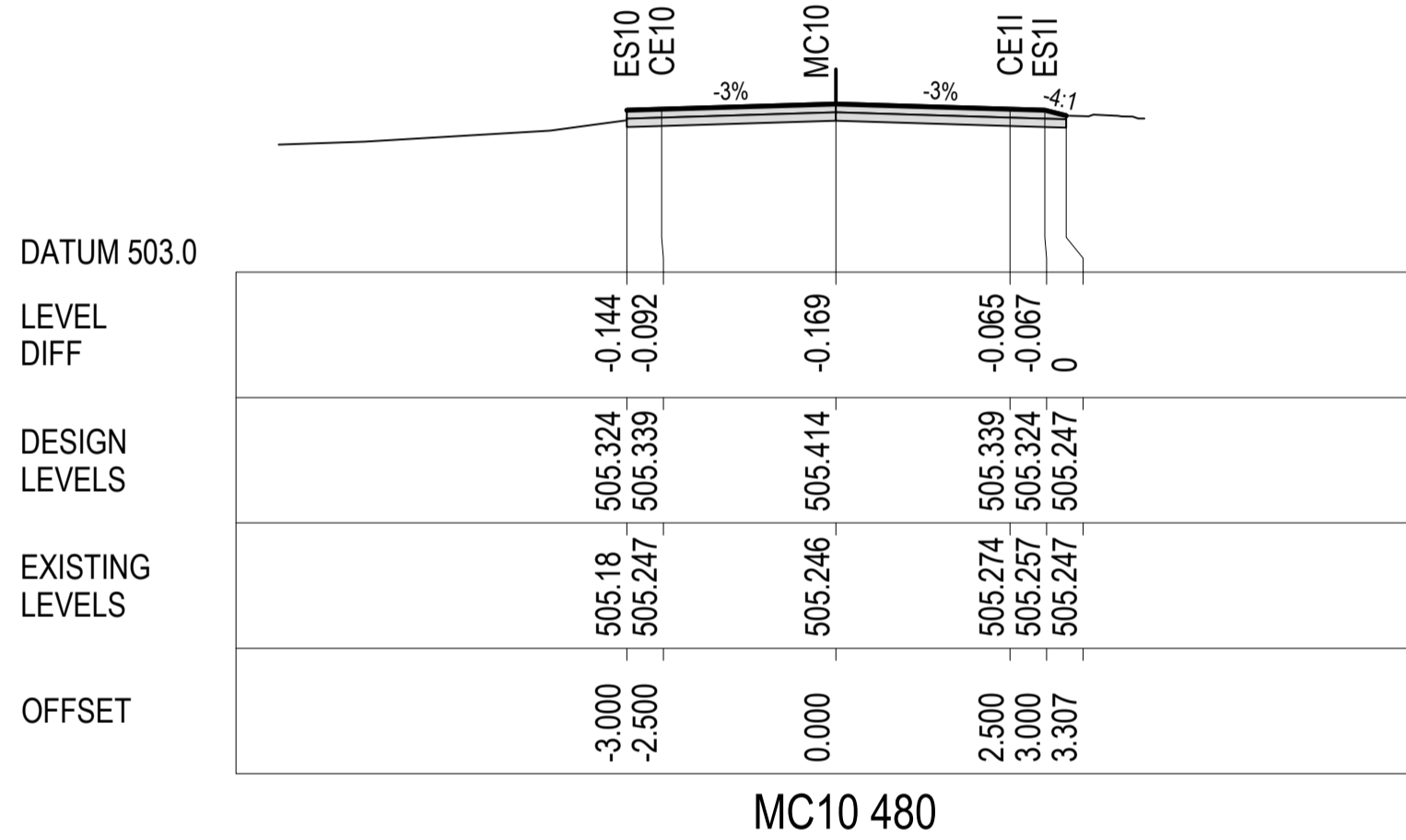
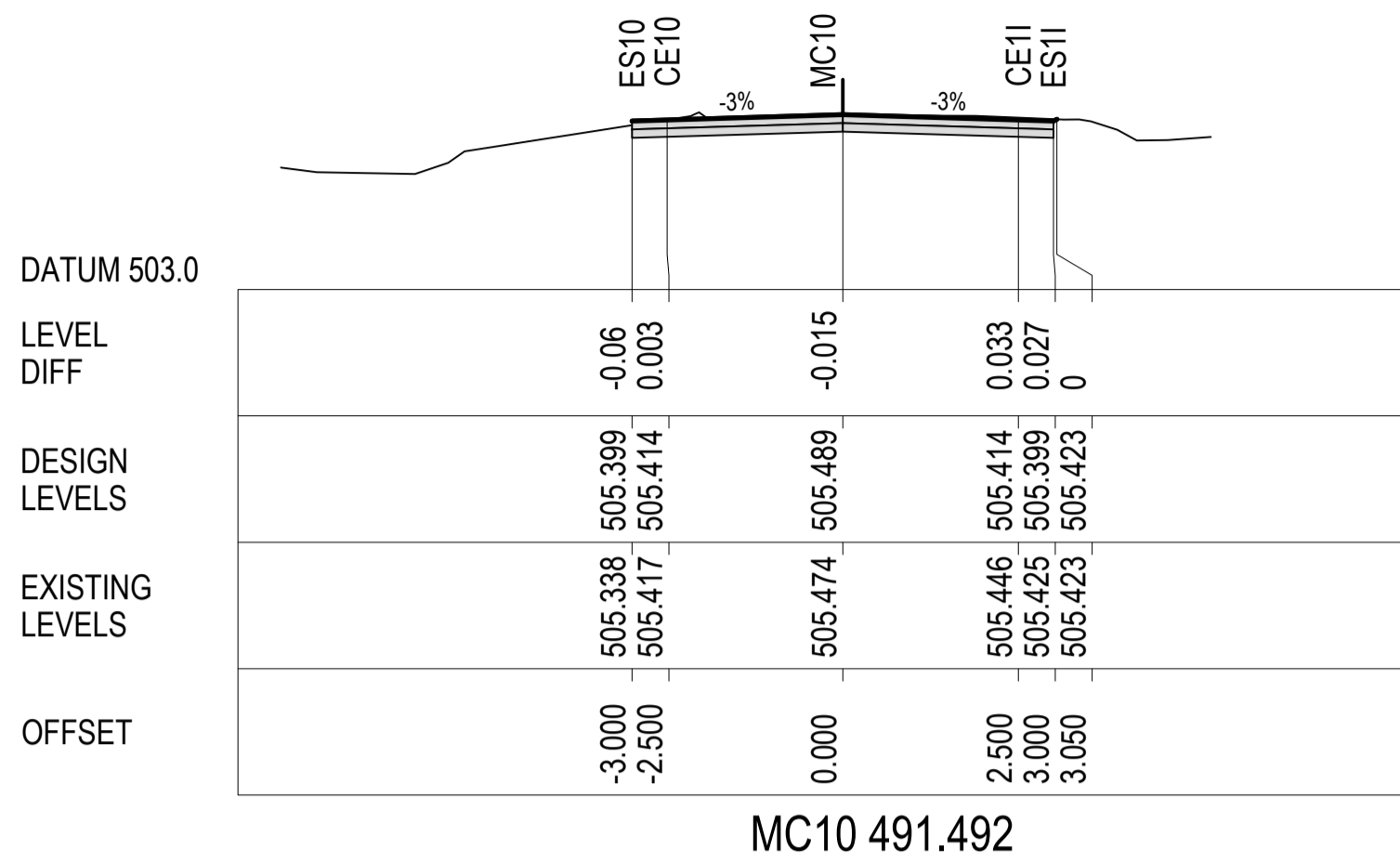
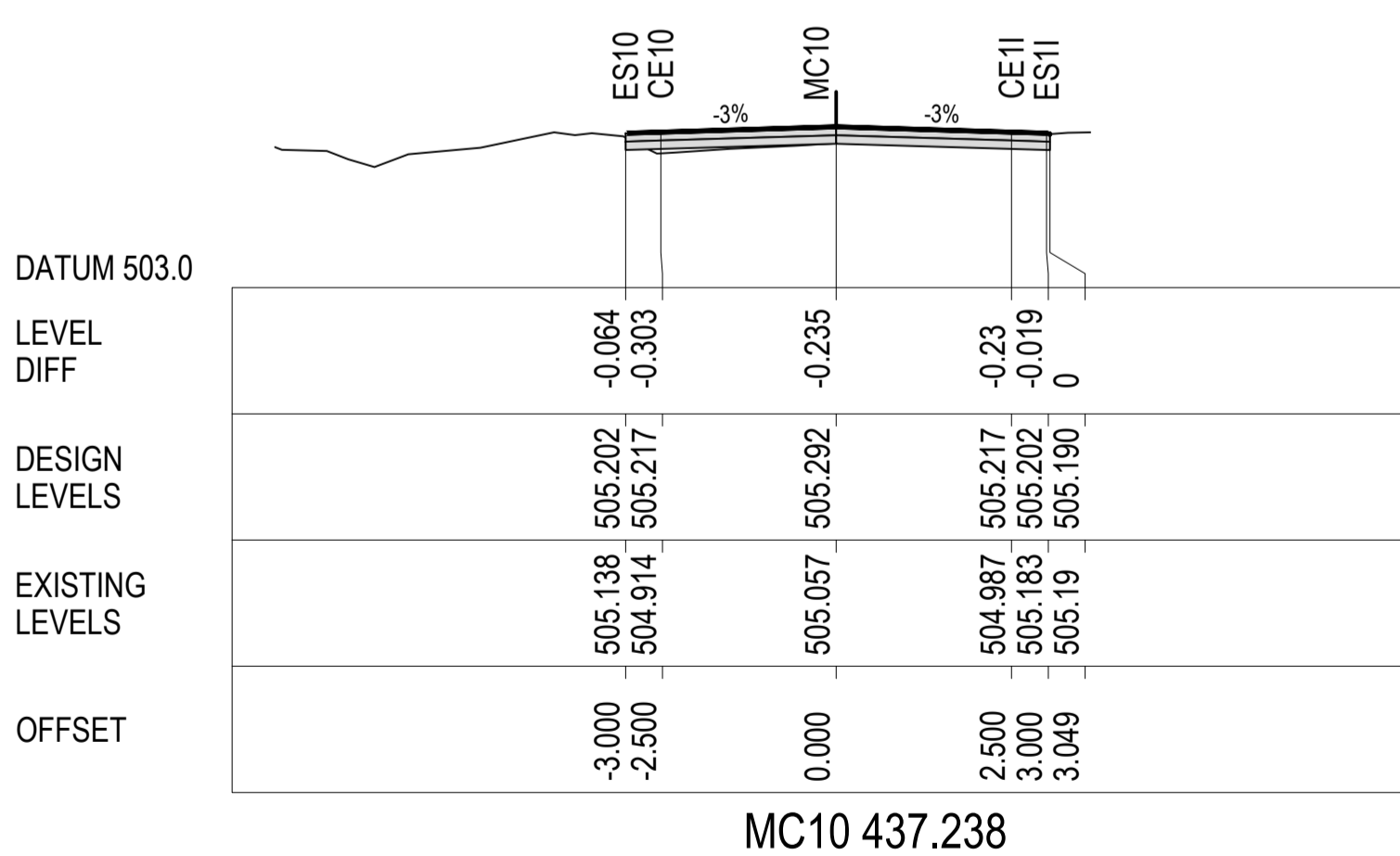
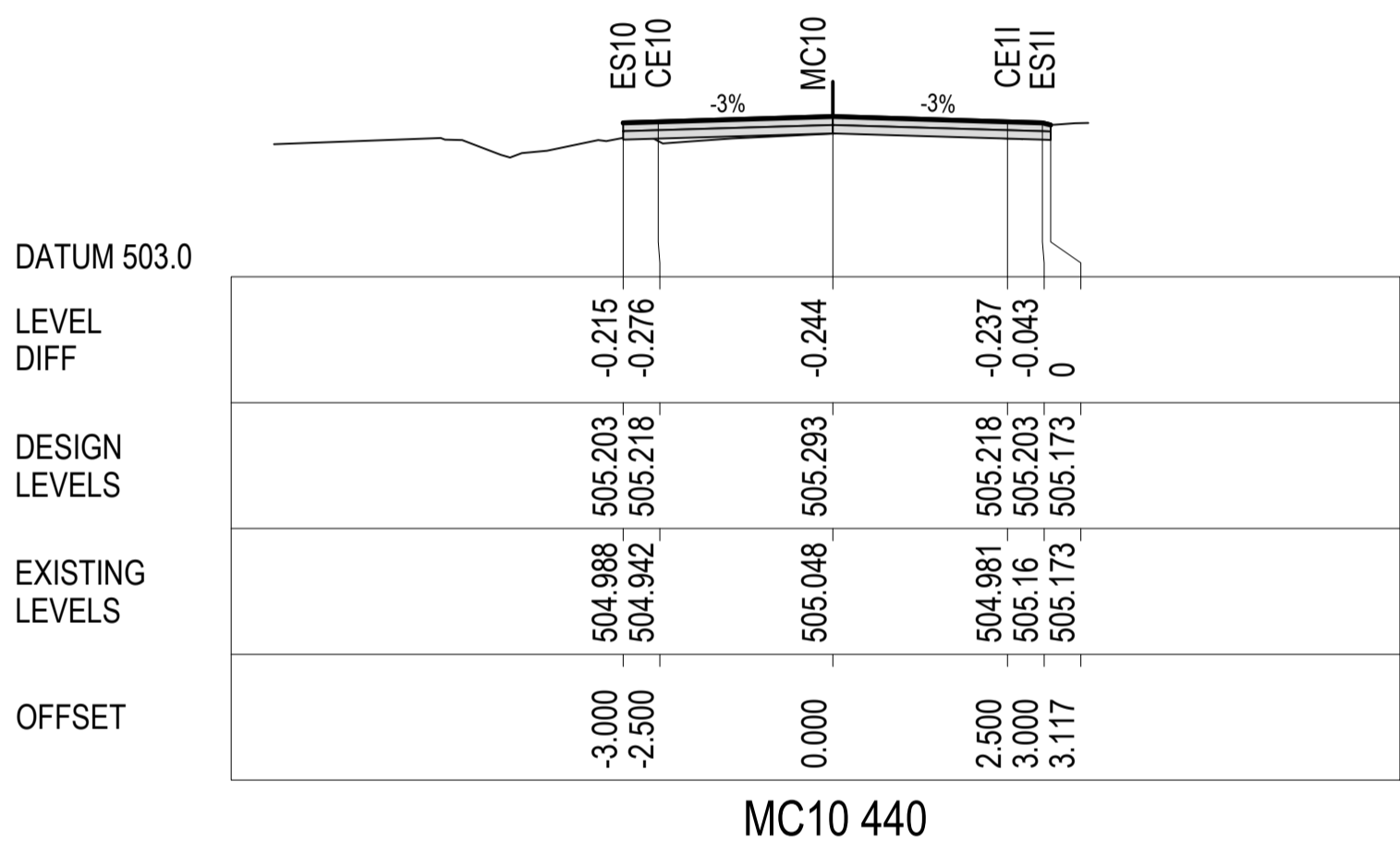
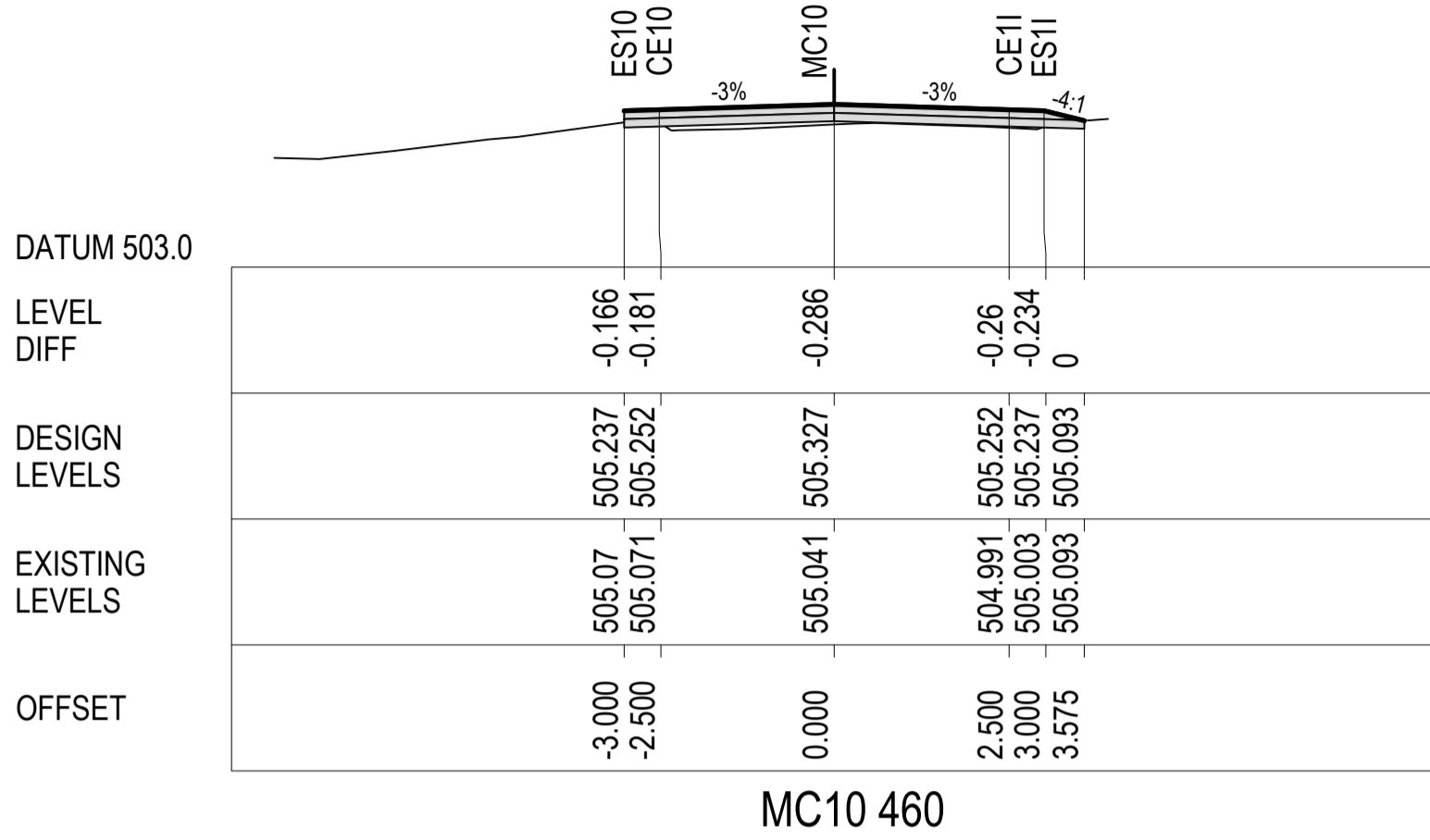


Drawn G.J.	Date 23/12/2016	Client GOLDWIND AUSTRALIA
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM
Designed RIC	Date 23/12/2016	ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Verified J.H.	Date 23/12/2016	Title CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 3 OF 10
Approved M.P.	Date 23/12/2016	Status FOR APPROVAL
		DATUM AHD
		Scale 1:100@A1
		Size A1
		Drawing Number 50517019 - C32
		Revision 5

DATE PLOTTED: 25 June 2019 10:10 AM BY: MEHUL VAIDYA

XREFs: XS-MC10

CAD File: N:\Projects\50517019 YASS VALLEY WIND FARM\Drawings\Build\50517019-C33-C37-XS.dwg



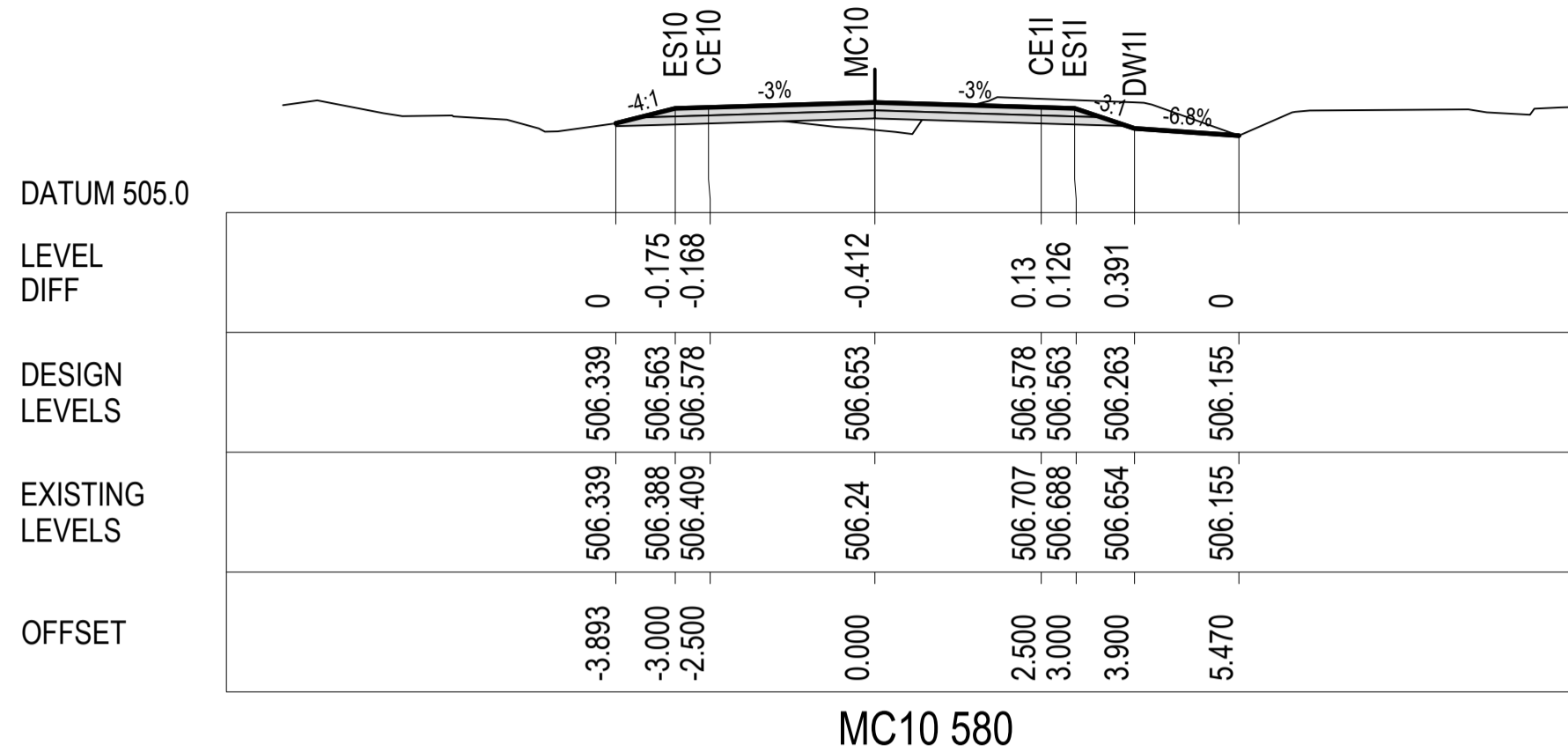
© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



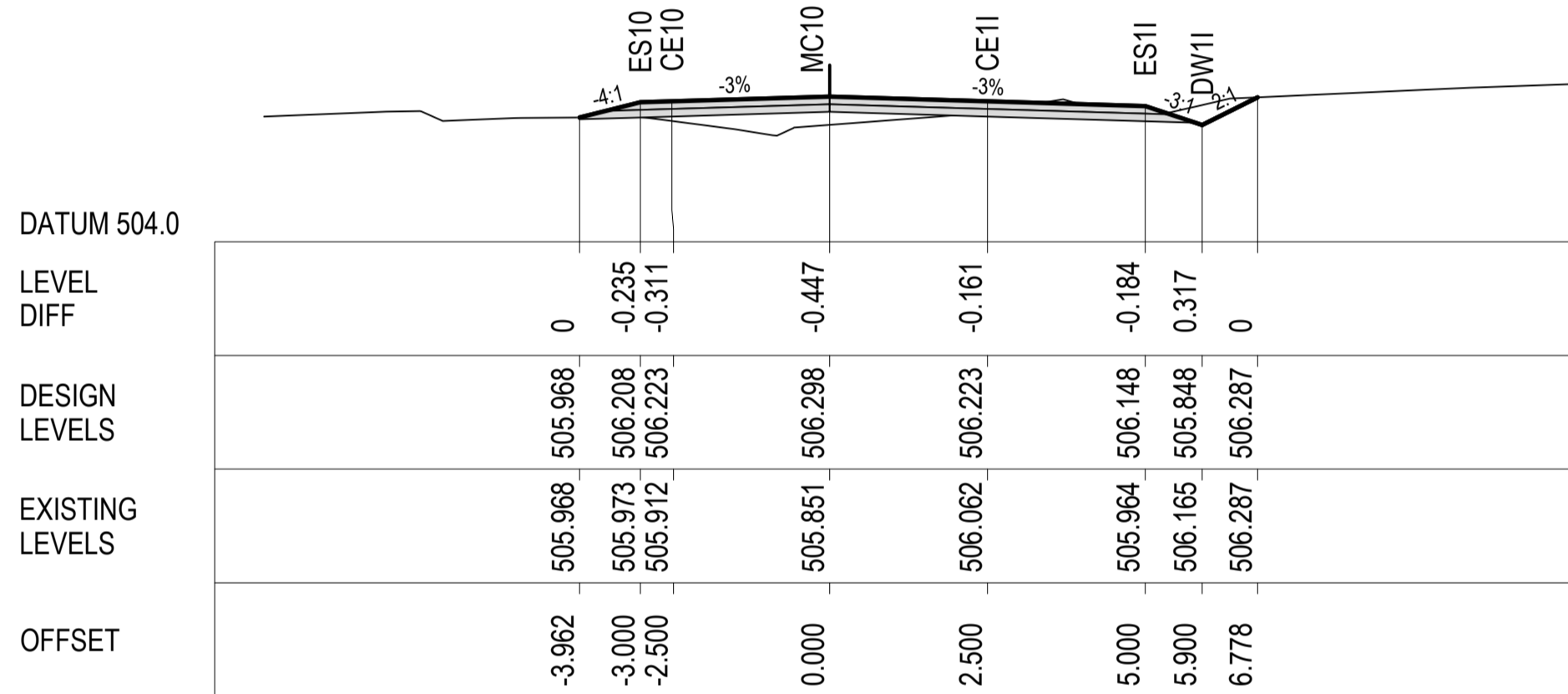
Drawn G.J.	Date 23/12/2016	Client GOLDWIND AUSTRALIA
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM
Designed RIC	Date 23/12/2016	ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Verified J.H.	Date 23/12/2016	Title CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 4 OF 10
Approved M.P.	Date 23/12/2016	Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES
		DATUM AHD
		Scale 1:100@A1
		Size A1
		Drawing Number 50517019 - C33
		Revision 5

DATE PLOTTED: 25 June 2019 10:10 AM BY: MEHUL VAIDYA

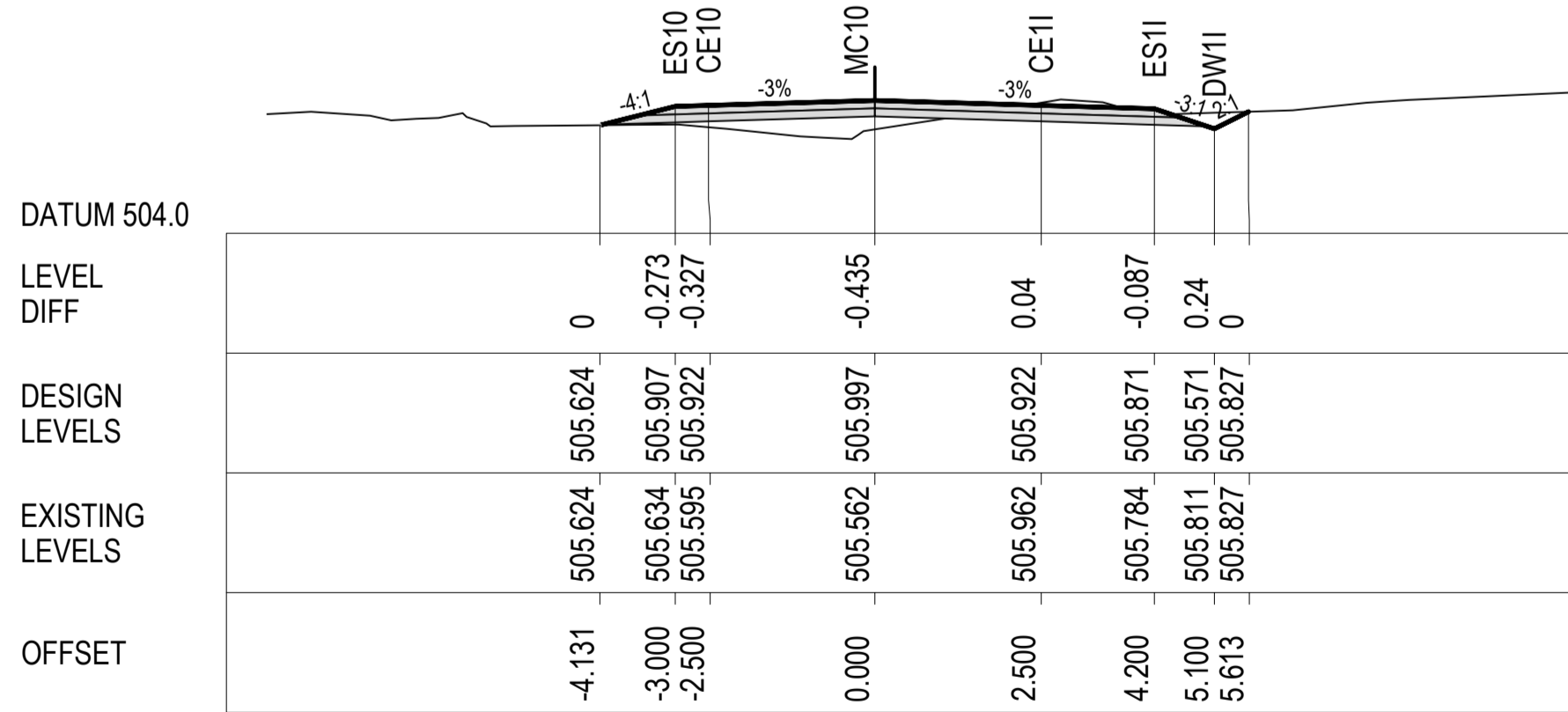
XREFs: XS-MC10  
CAD File: N:\Projects\505177019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C30-C37-XS.dwg



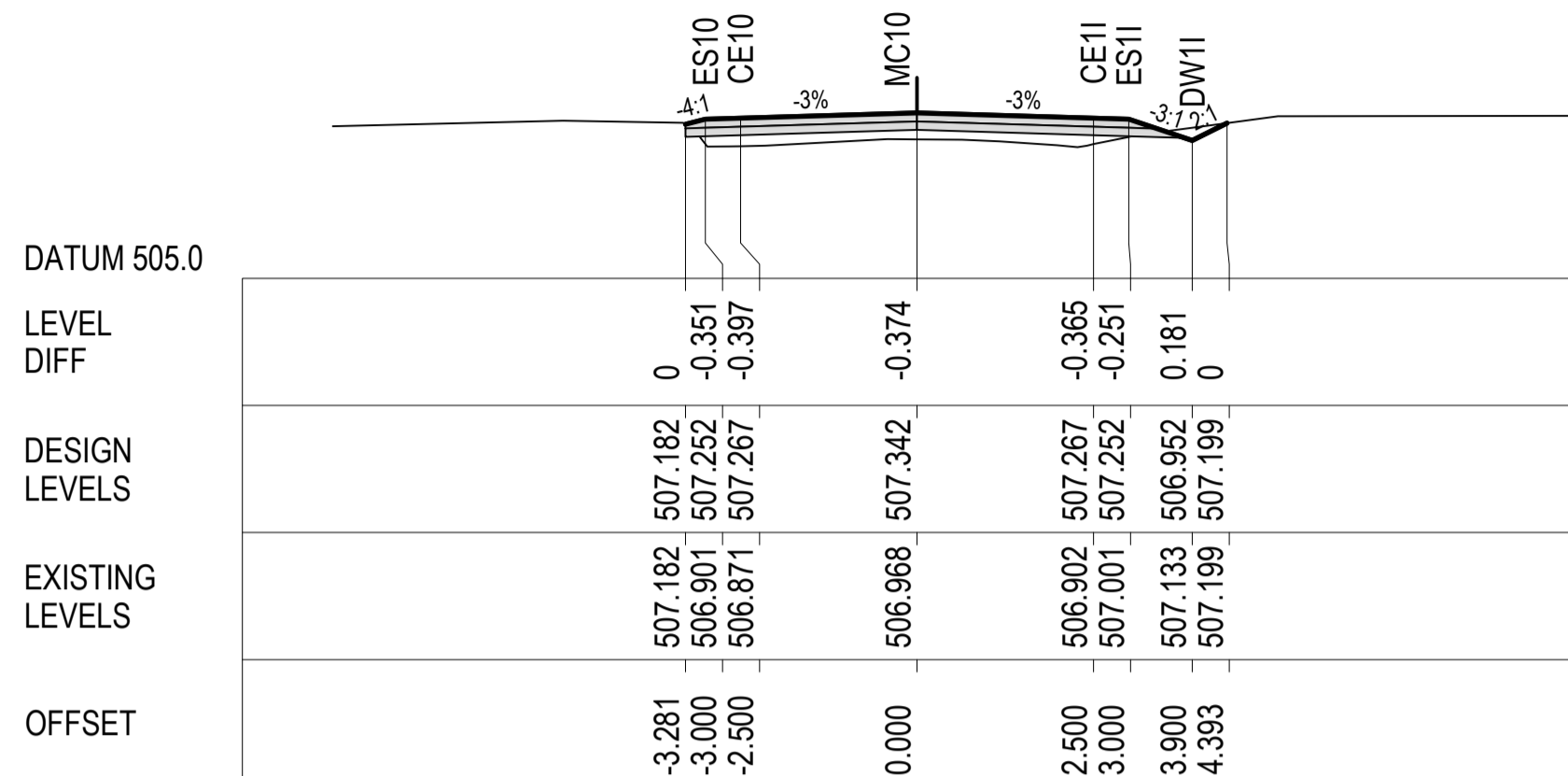
MC10 580



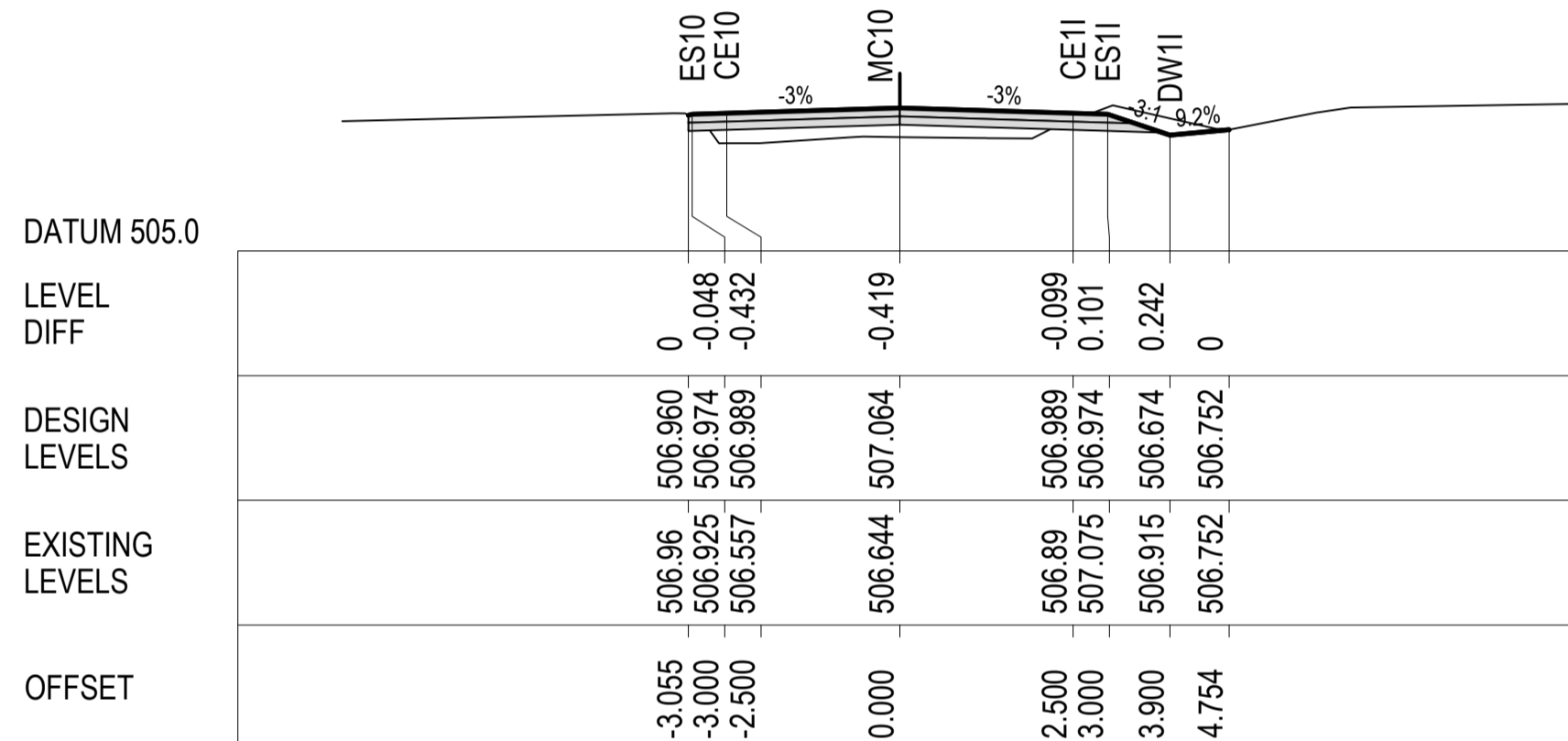
MC10 560



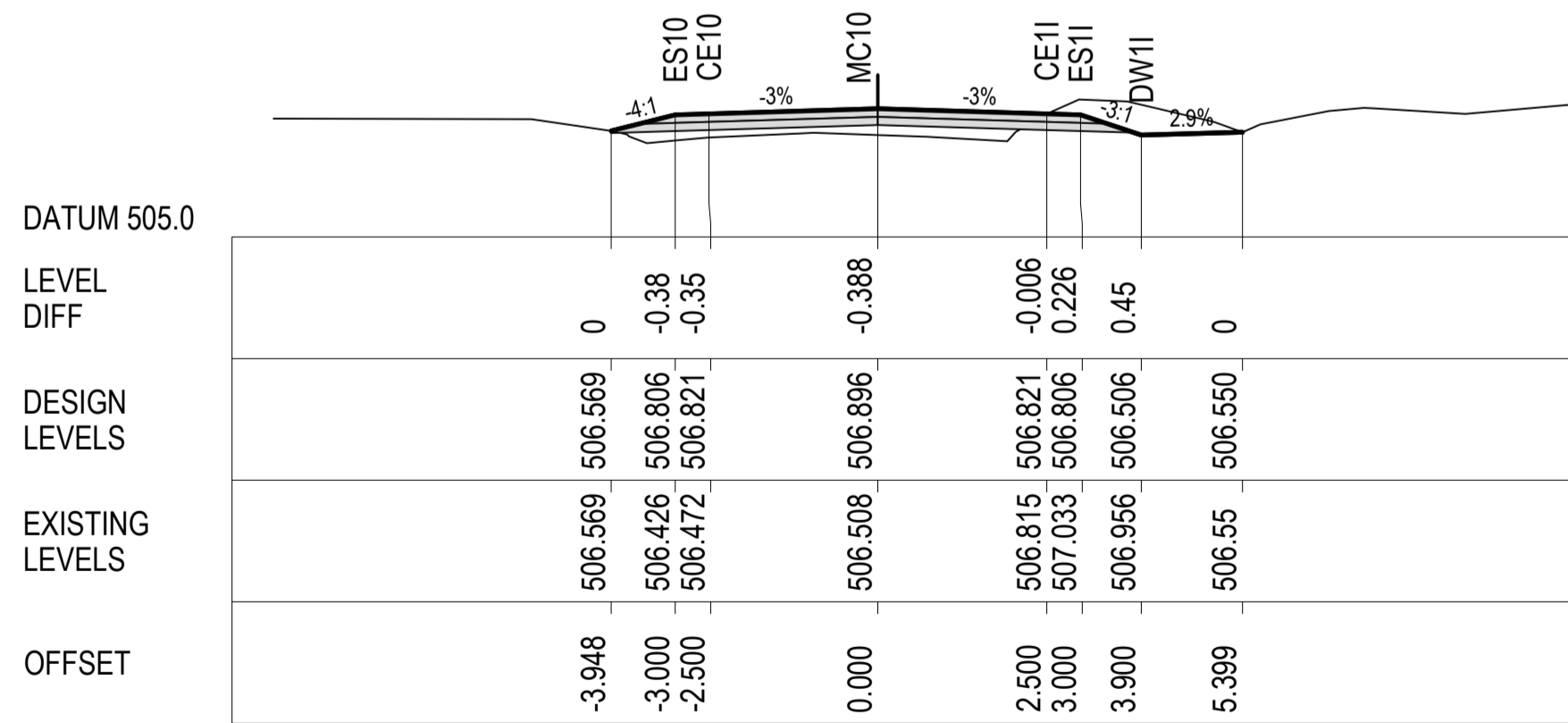
MC10 540



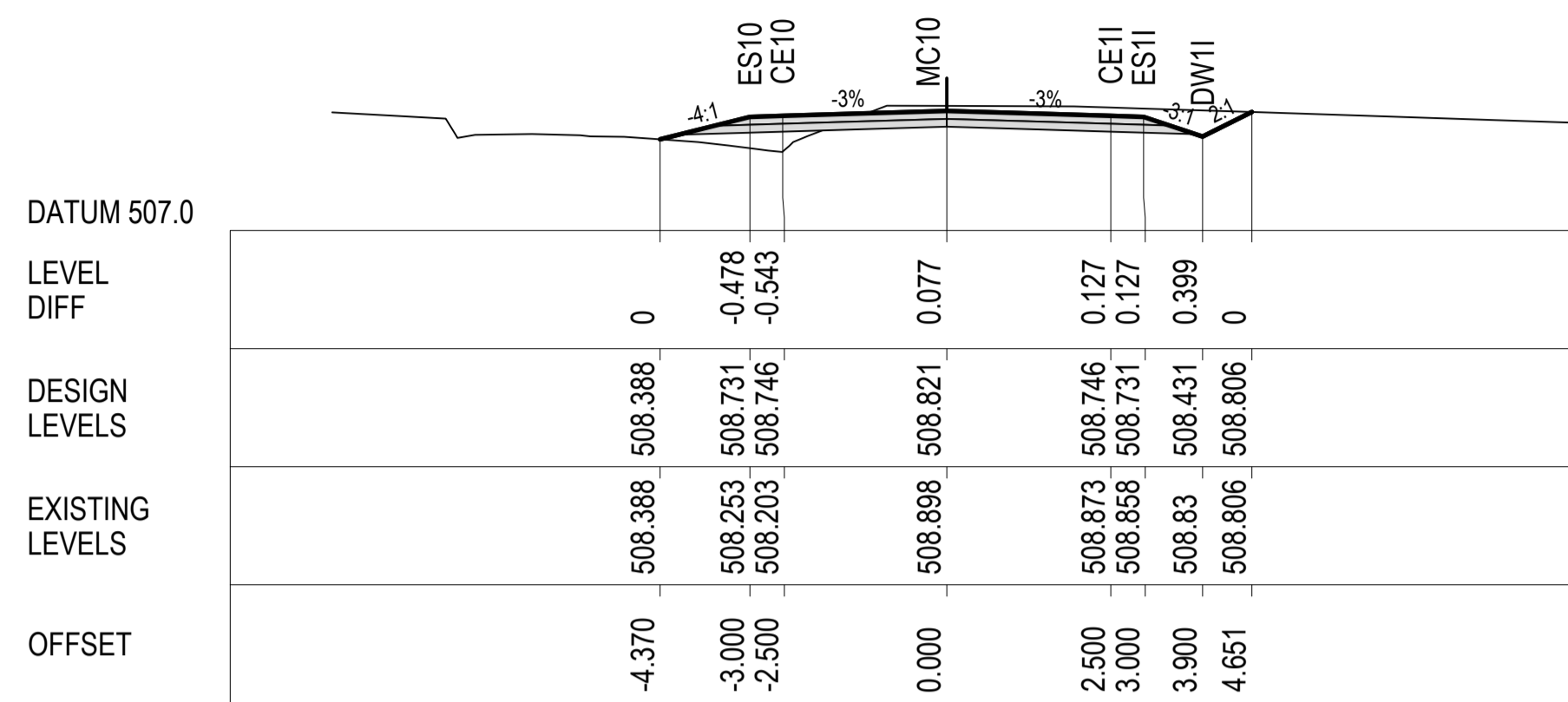
MC10 611.719



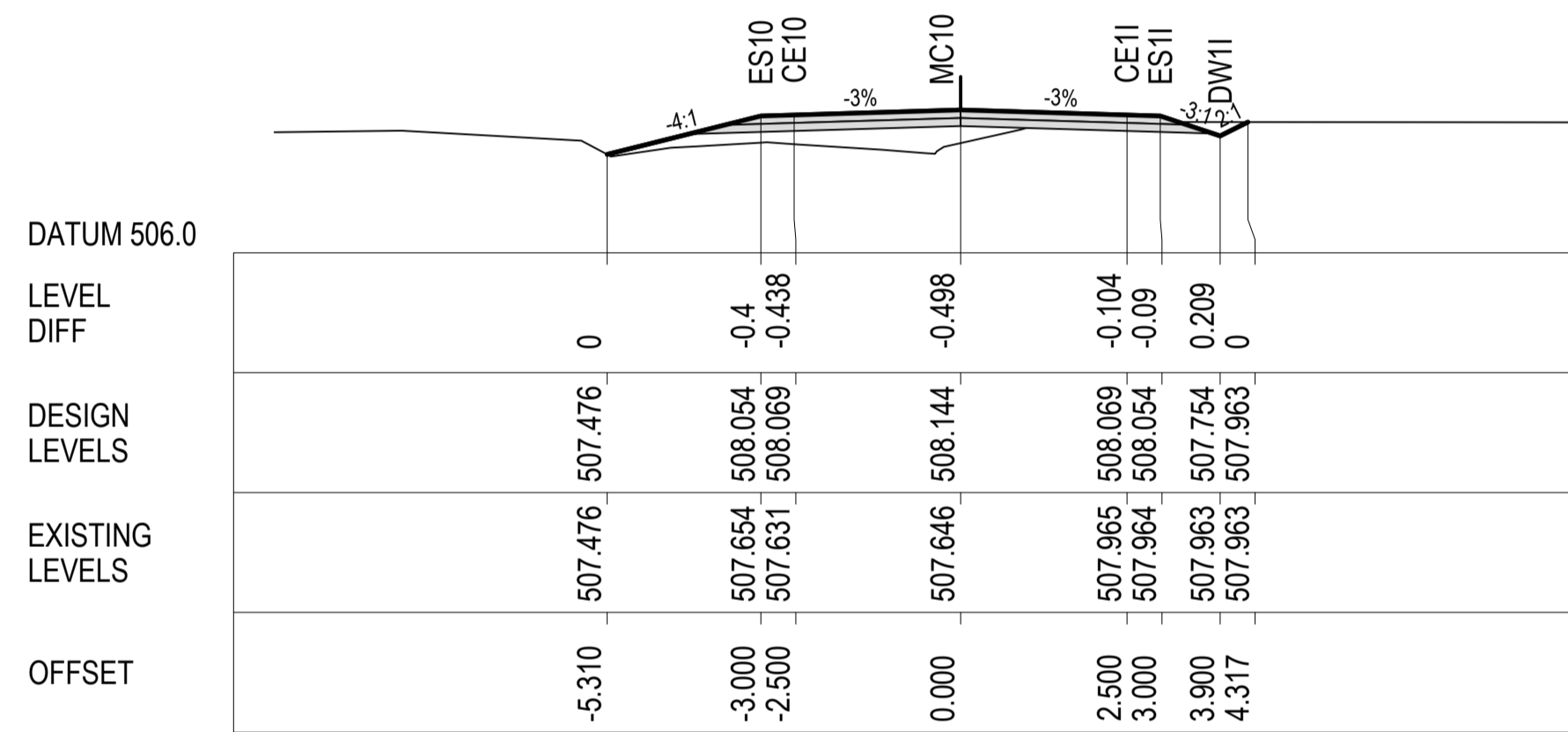
MC10 600



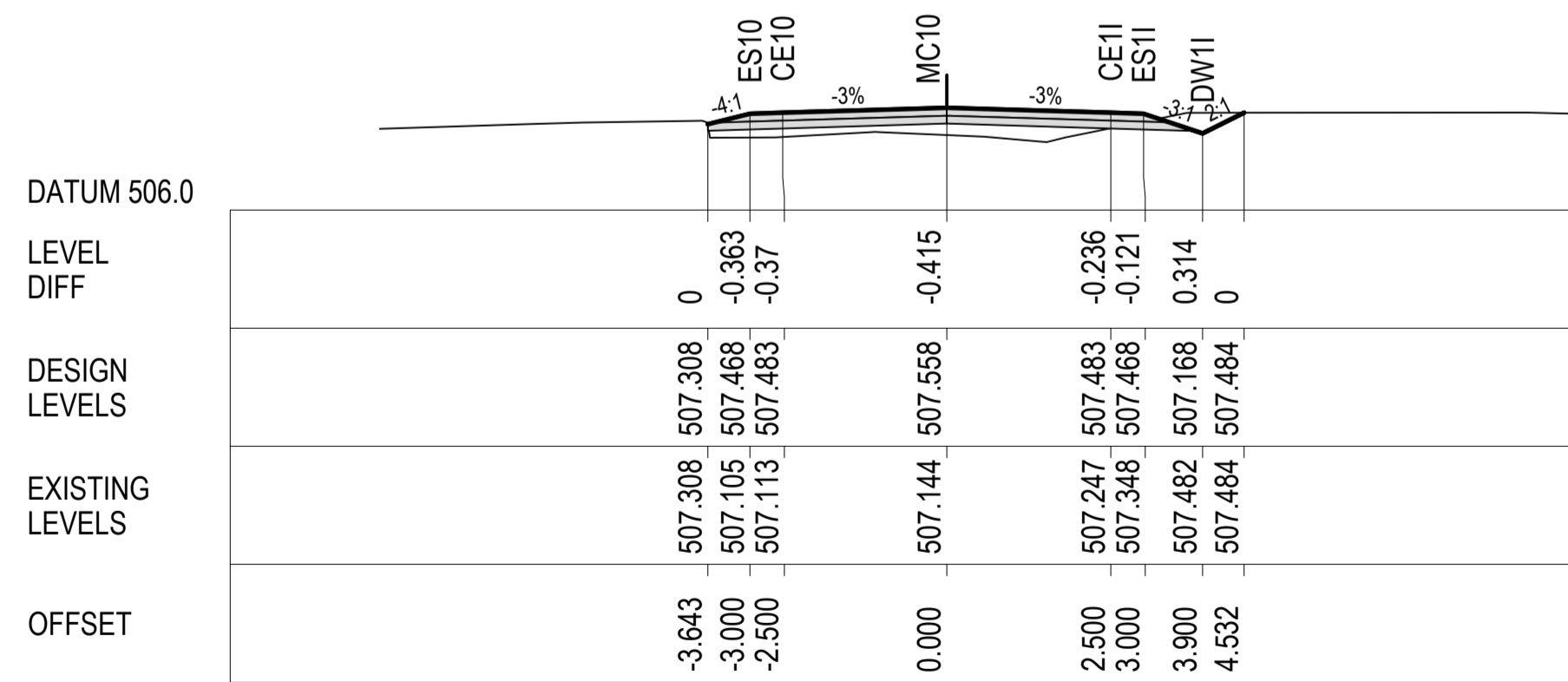
MC10 592.26



MC10 660



MC10 640



MC10 620



Rev.	Date	Description	Des.	Verif.	Appd.
5	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	
4	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	17/05/2017	AMENDED DRAWING CROSS-SECTION 5 OF 8	G.J.	RIC	J.H.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn G.J.	Date 23/12/2016	Client GOLDWIND AUSTRALIA
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM
Designed RIC	Date 23/12/2016	ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Verified J.H.	Date 23/12/2016	Status NOT TO BE USED FOR CONSTRUCTION PURPOSES
Approved		DATUM AHD
M.P.	23/12/2016	Scale 1:100@A1
		Size A1
		Drawing Number 50517019 - C34
		Revision 5

DATE PLOTTED: 25 June 2019 10:11 AM BY: MEHUL VAIDYA

XREFs: XS-MC10

CAD File: N:\Projects\50517019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C30-C37-XS.dwg

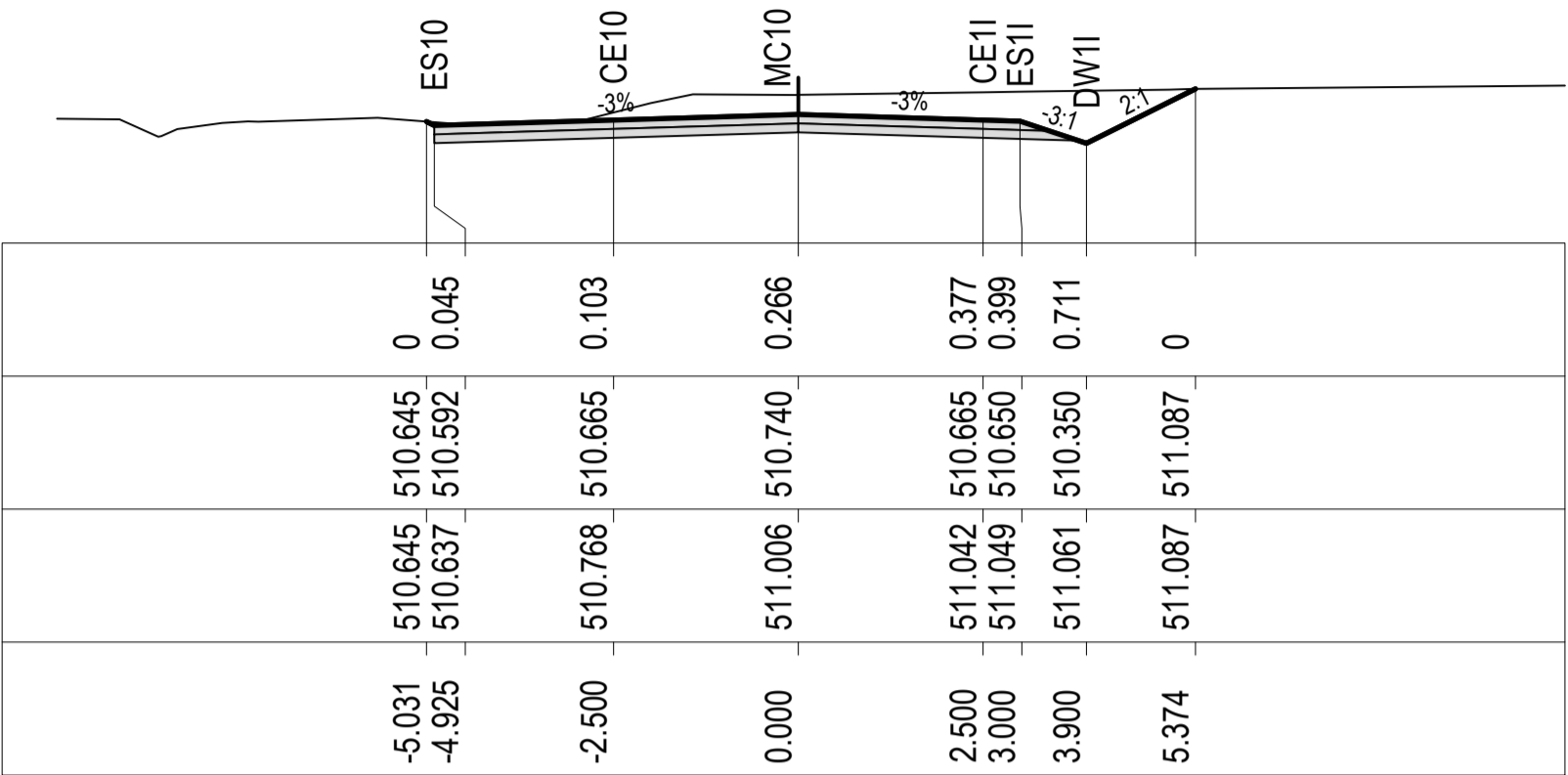
DATUM 509.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 706.377

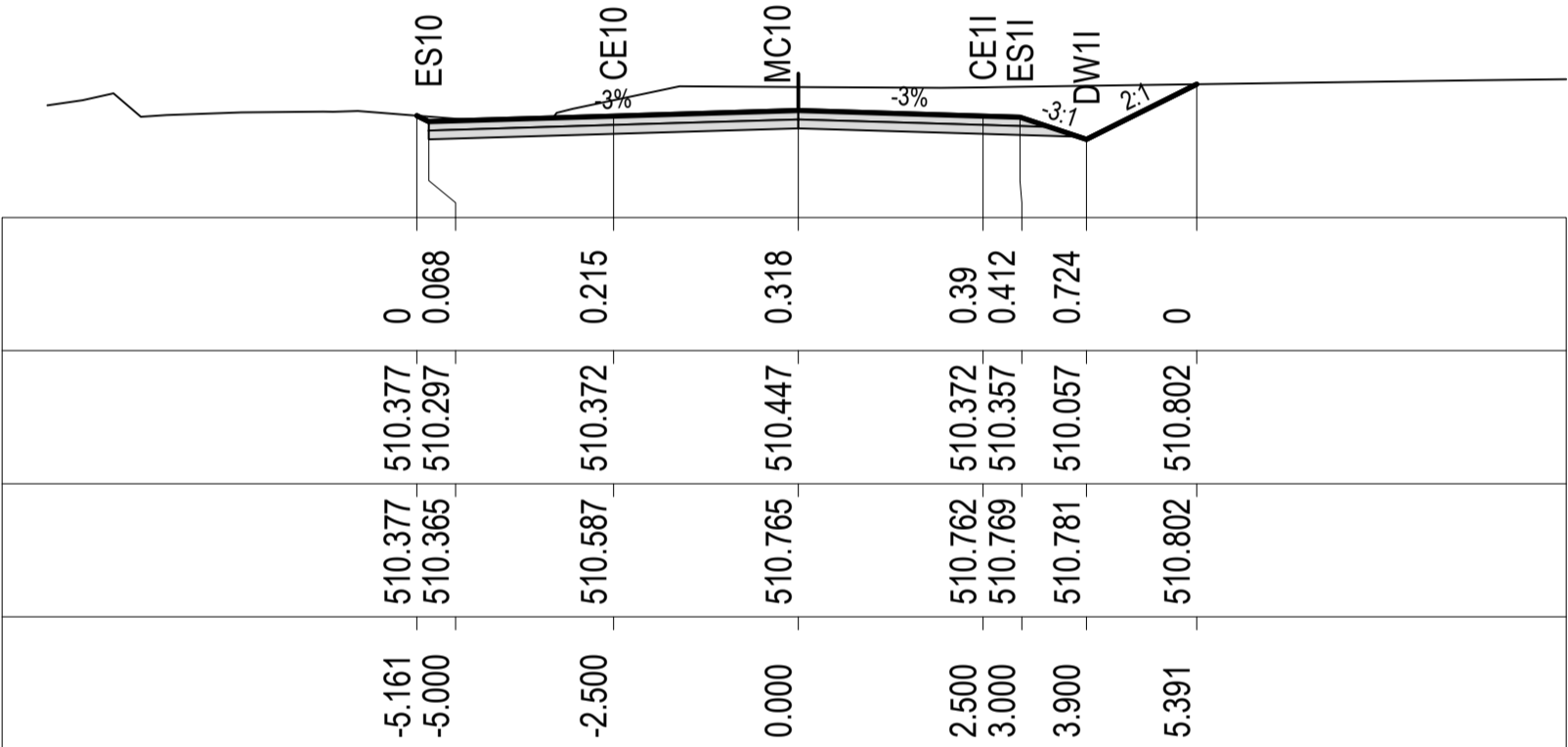
DATUM 509.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 700

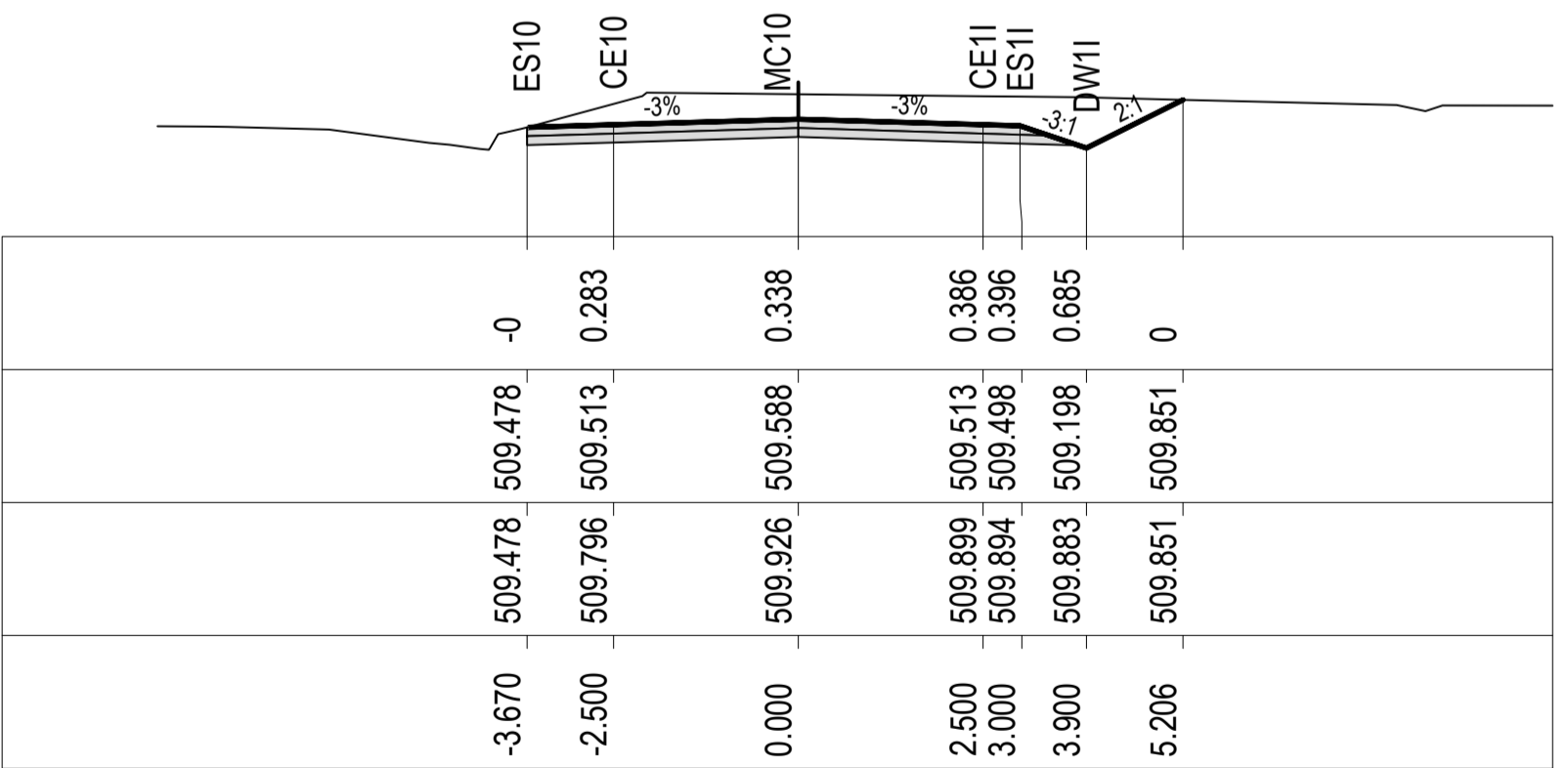
DATUM 508.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 680

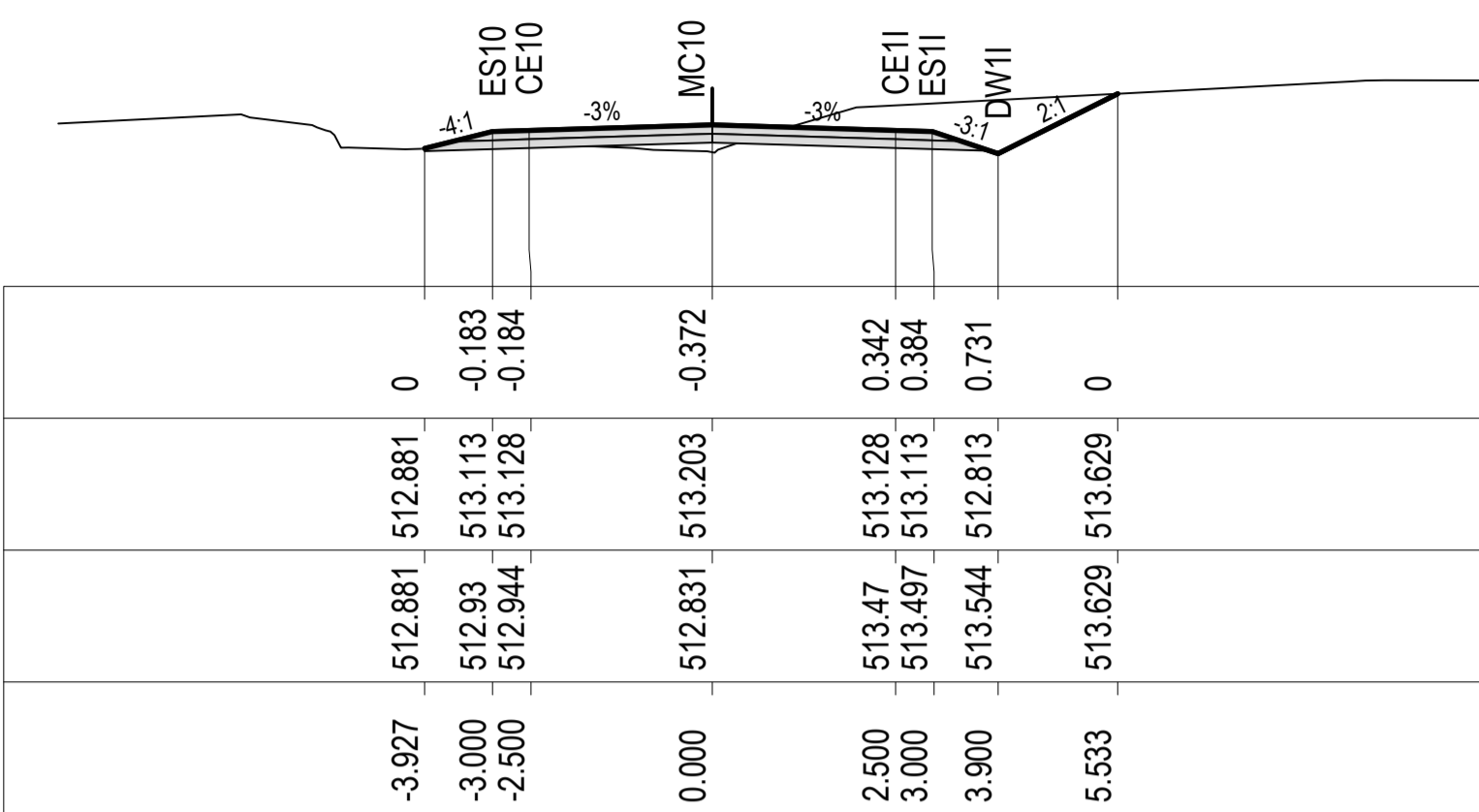
DATUM 511.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 760

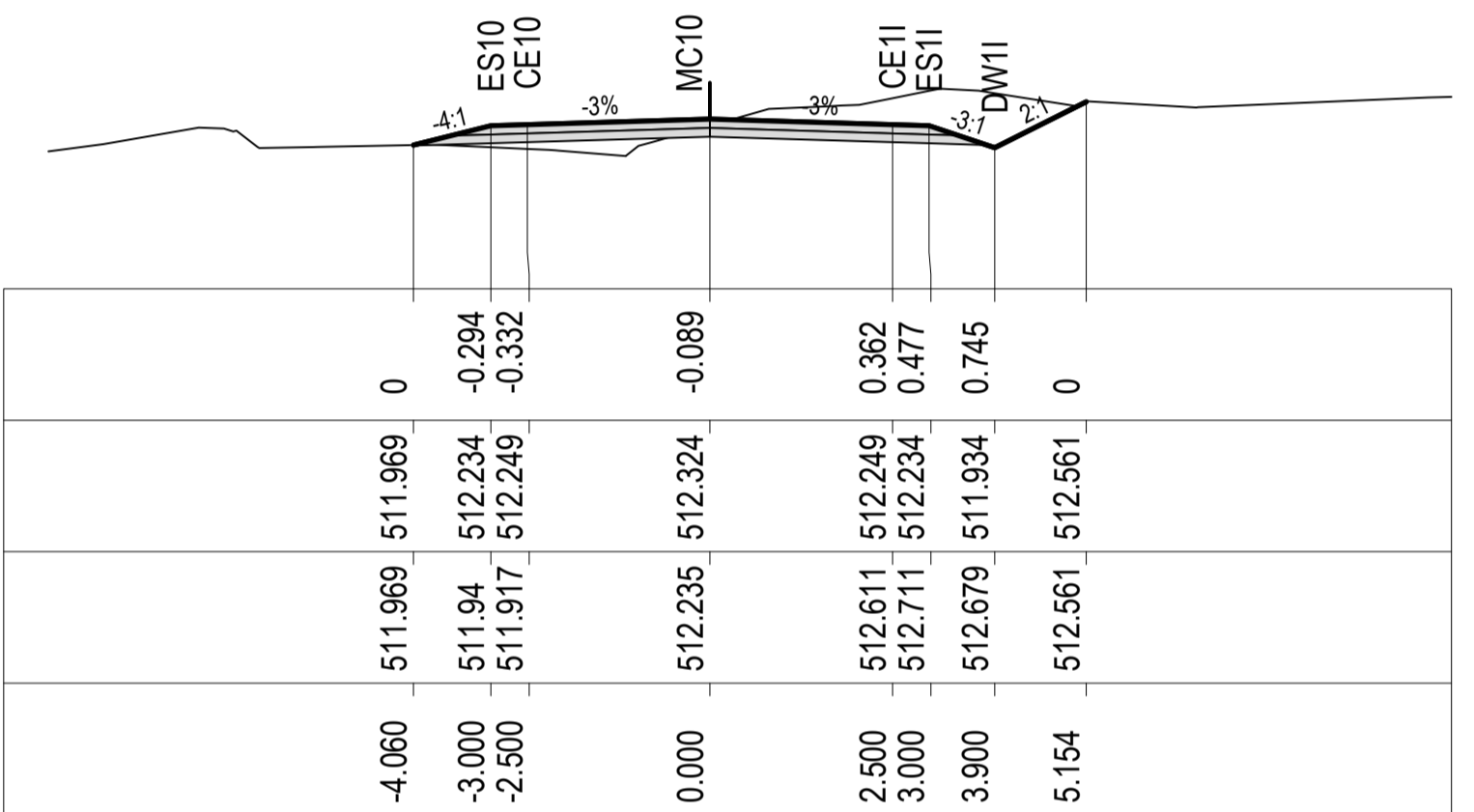
DATUM 510.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 740.332

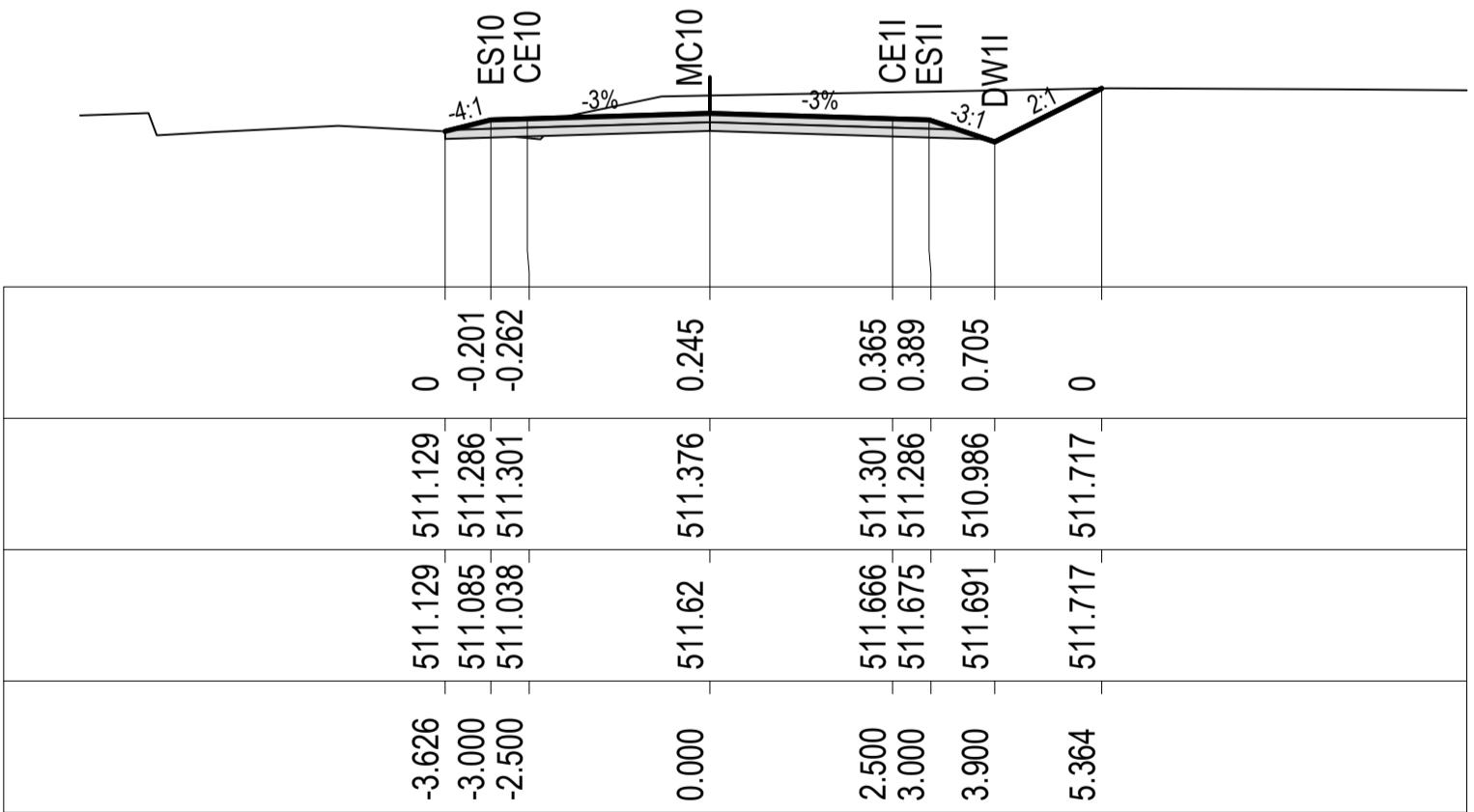
DATUM 509.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 720

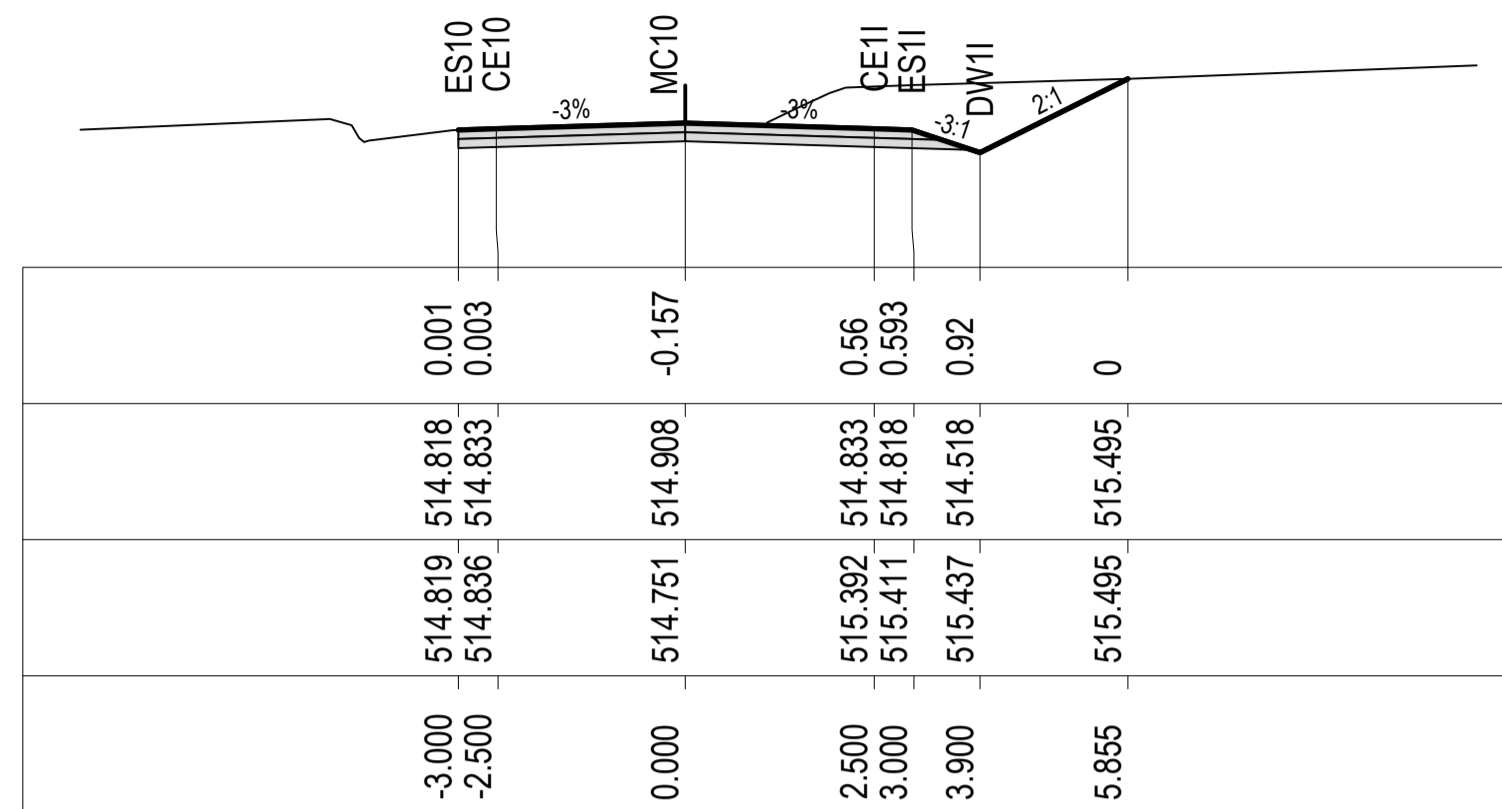
DATUM 513.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 804.568

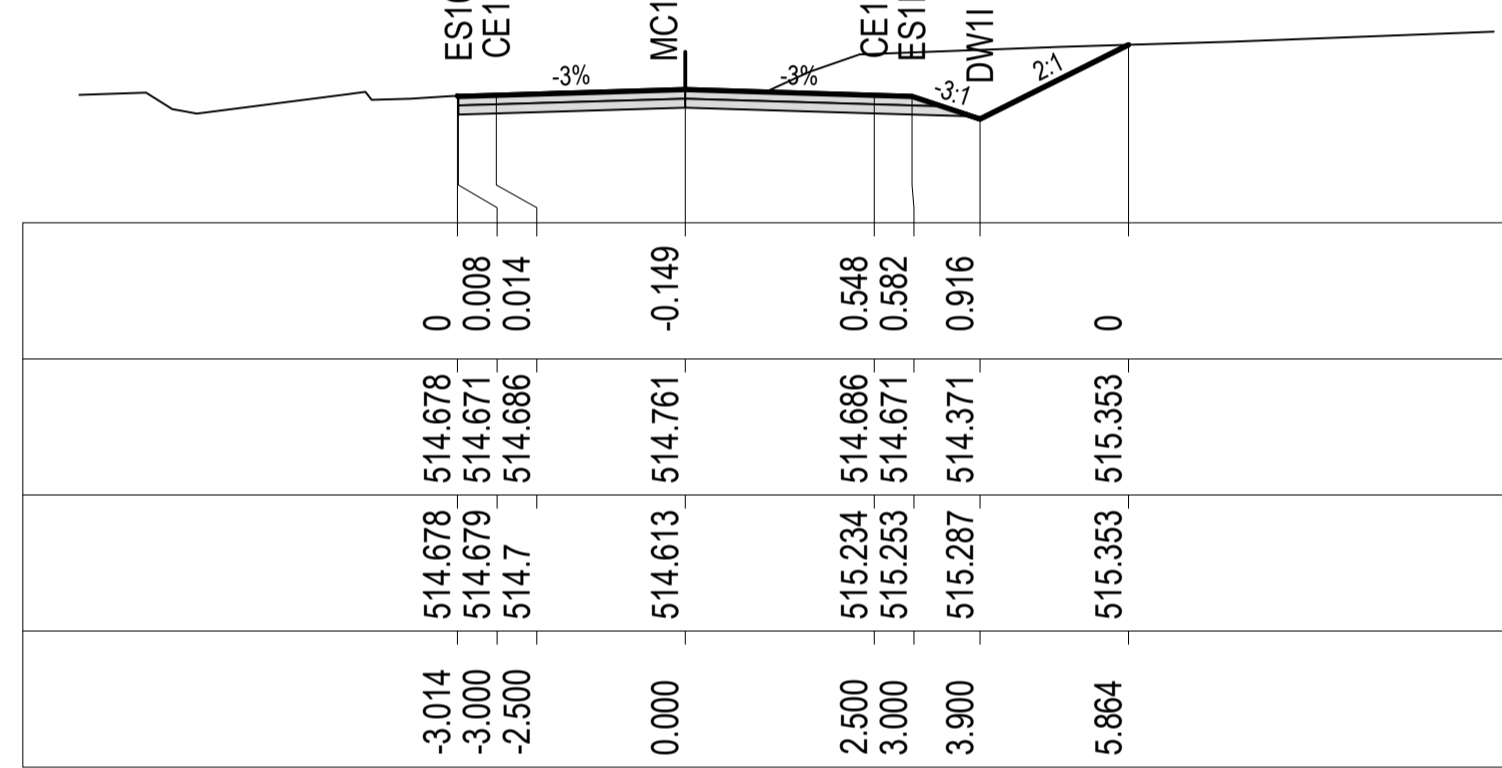
DATUM 513.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 800.332

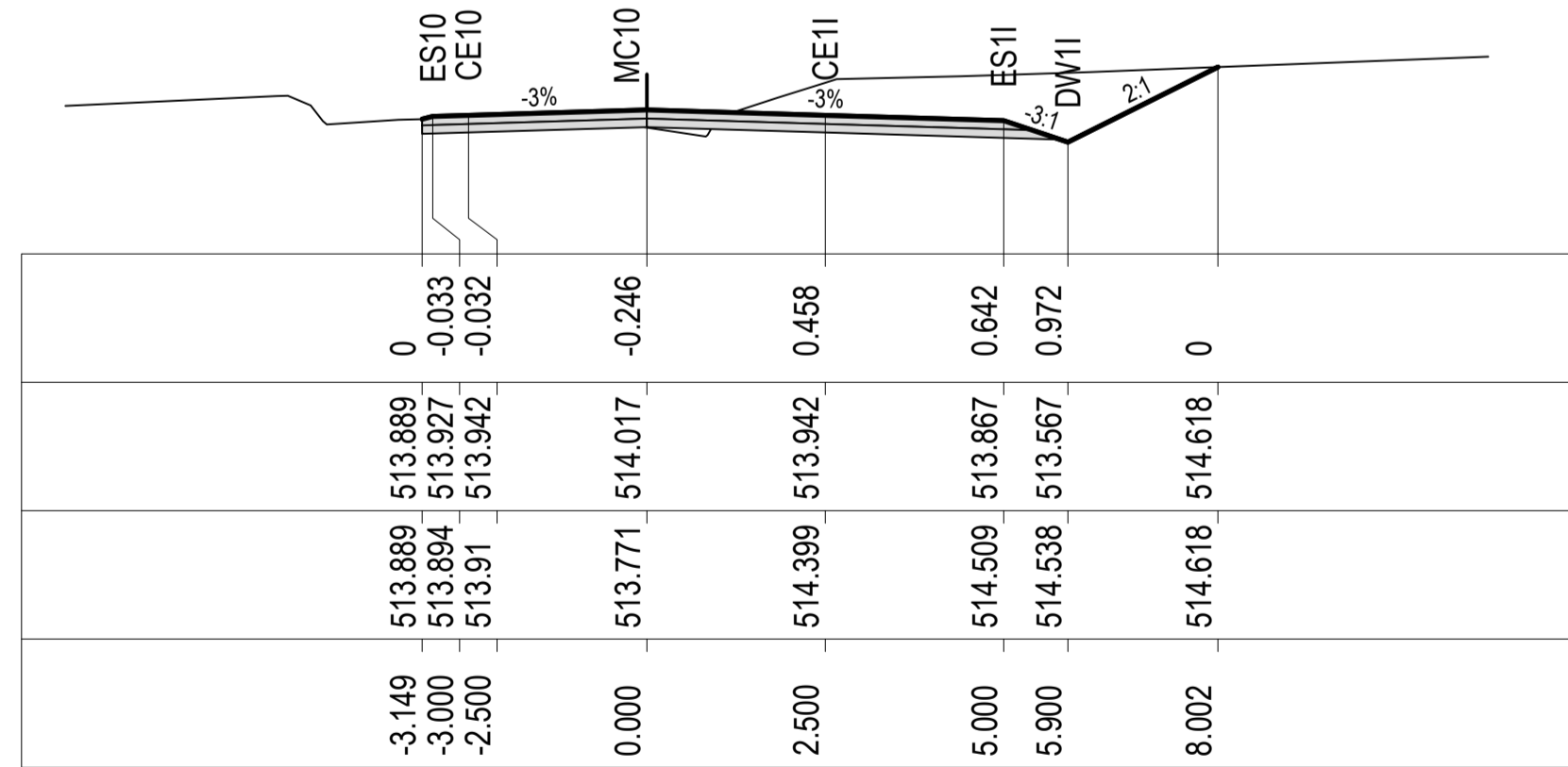
DATUM 512.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 780



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn G.J. Date 23/12/2016  
Checked J.H. Date 23/12/2016  
Designed RIC Date 23/12/2016  
Verified J.H. Date 23/12/2016  
Approved M.P. Date 23/12/2016

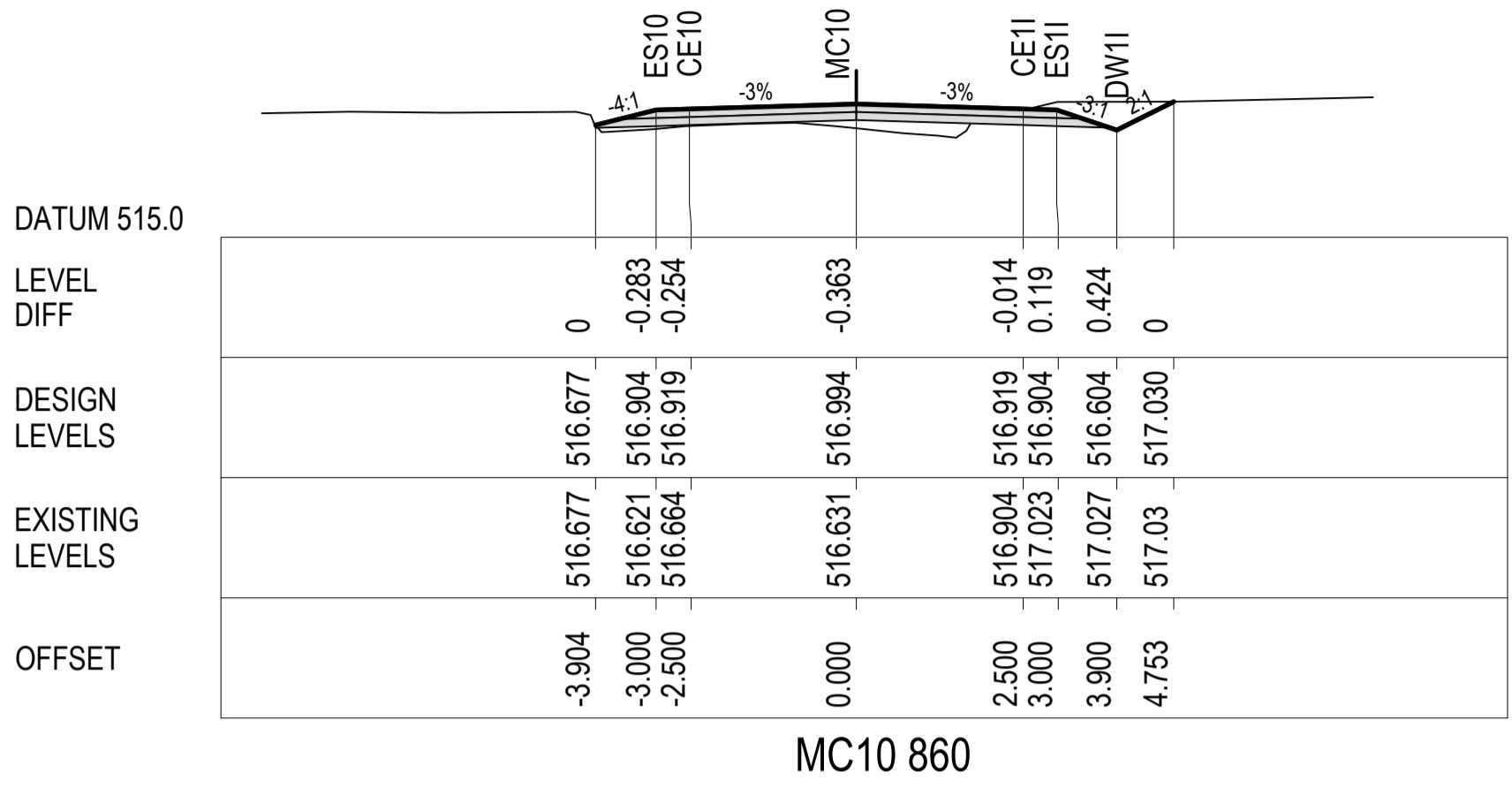
Client GOLDWIND AUSTRALIA  
Project YASS VALLEY WIND FARM  
ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS  
Title CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 6 OF 10

Status FOR APPROVAL  
NOT TO BE USED FOR CONSTRUCTION PURPOSES  
DATING AHD  
Scale 1:100@A1  
Size A1  
Drawing Number 50517019 - C35  
Revision 5

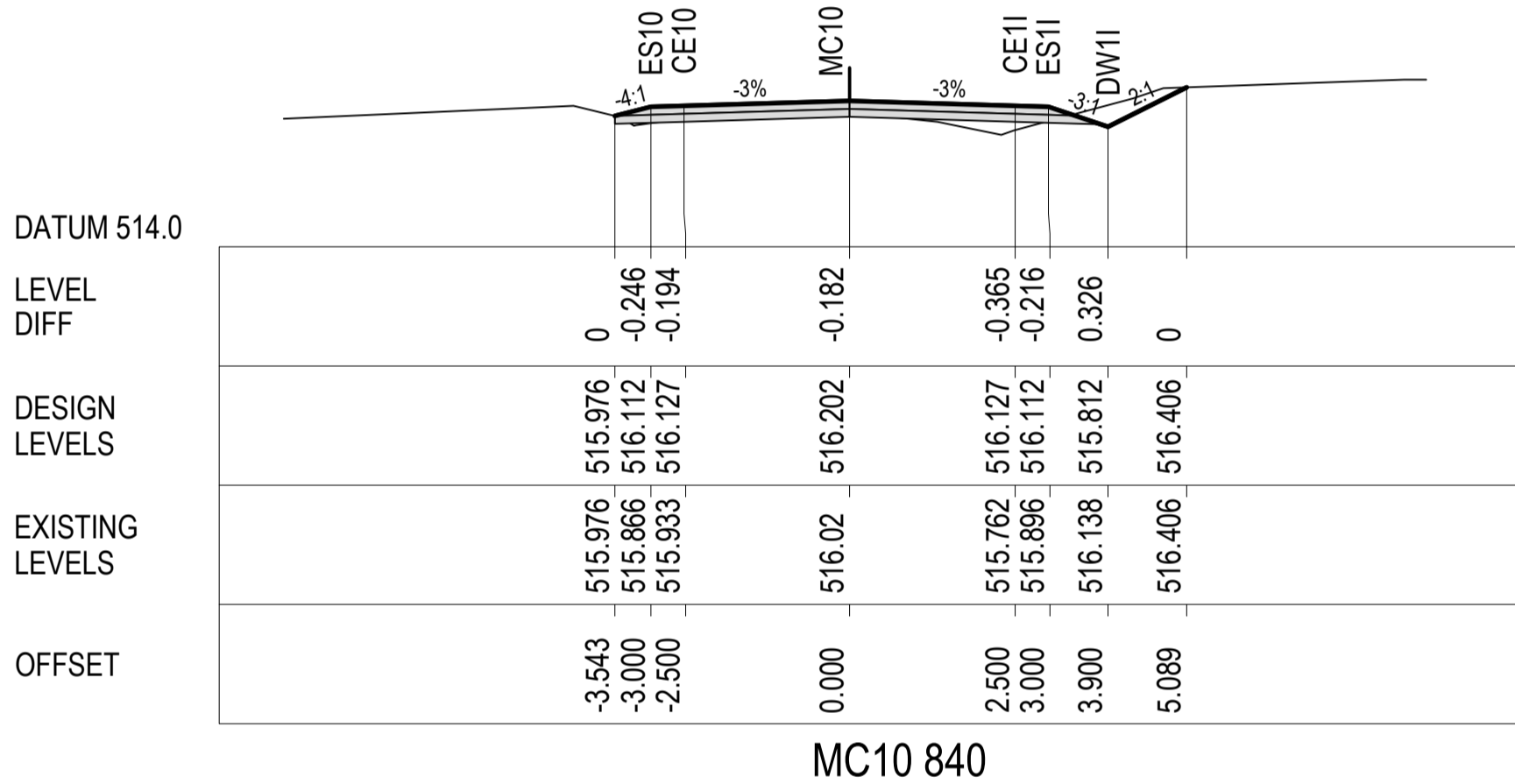
Rev.	Date	Description	Des.	Verif.	Appd.
5	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
4	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	
4	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
3	17/05/2017	AMENDED DRAWING CROSS-SECTION 6 OF 8	G.J.	RIC	J.H.
2	17/03/2017	FINAL SUBMISSION	G.J.	RIC	J.H.
1	23/12/2016	90% DOCUMENTATION	G.J.	RIC	J.H.

DATE PLOTTED: 25 June 2019 10:11 AM BY: MEHUL VAIDYA

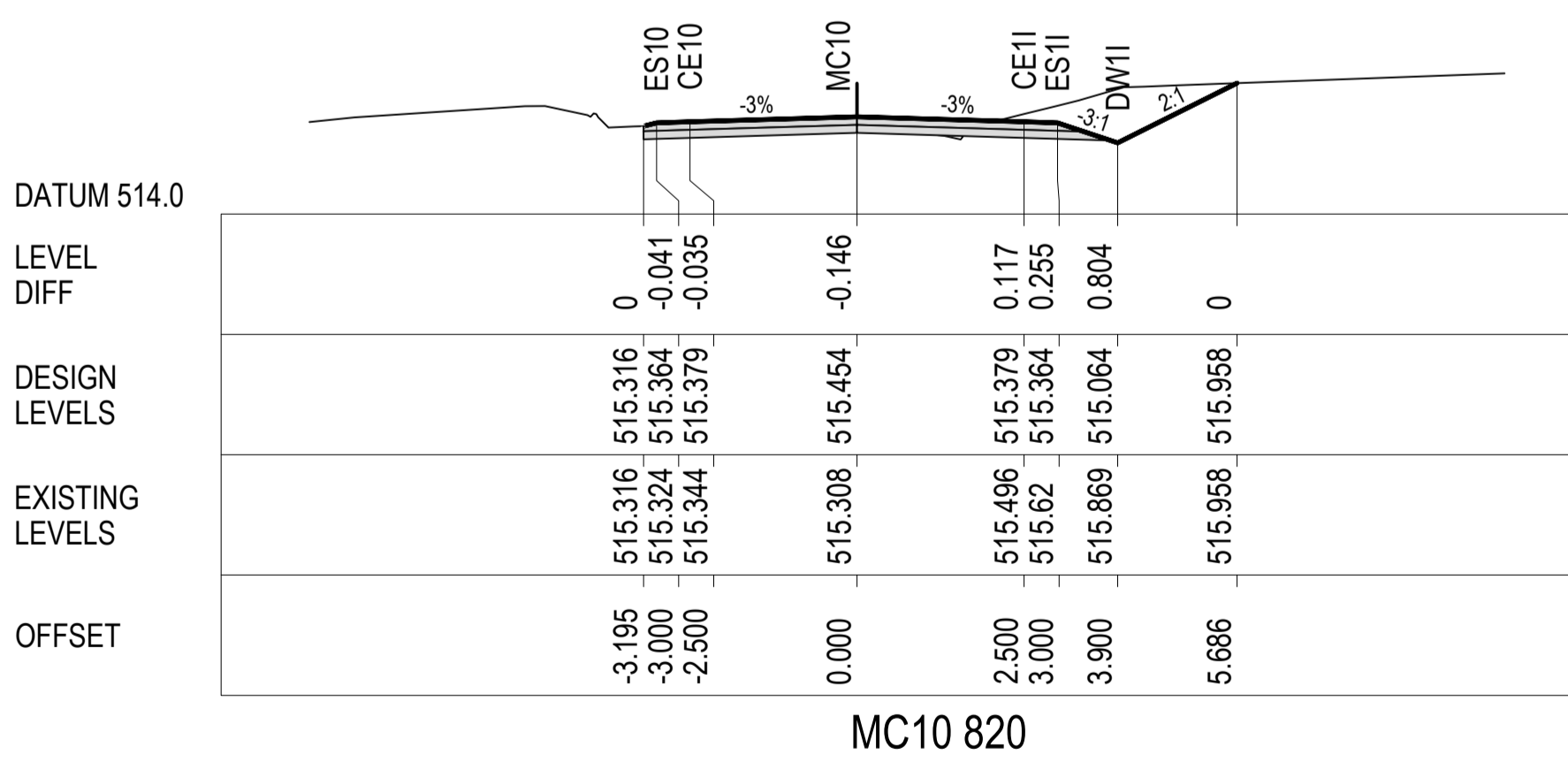
XREFs: XS-MC10  
CAD File: N:\Projects\50517019\_YASS VALLEY WIND FARM\Drawings\Build\50517019-C30-C37-XS.dwg



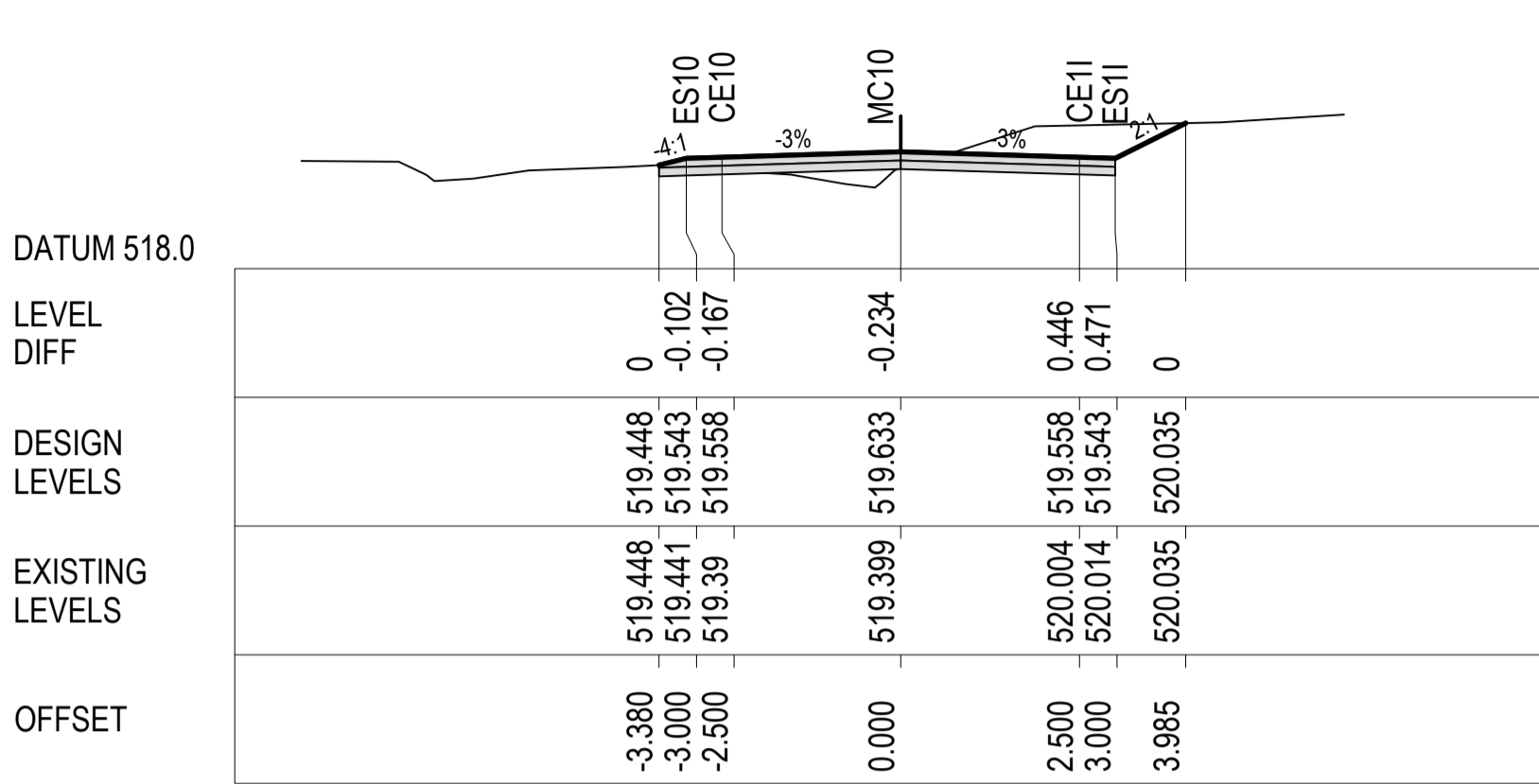
MC10 860



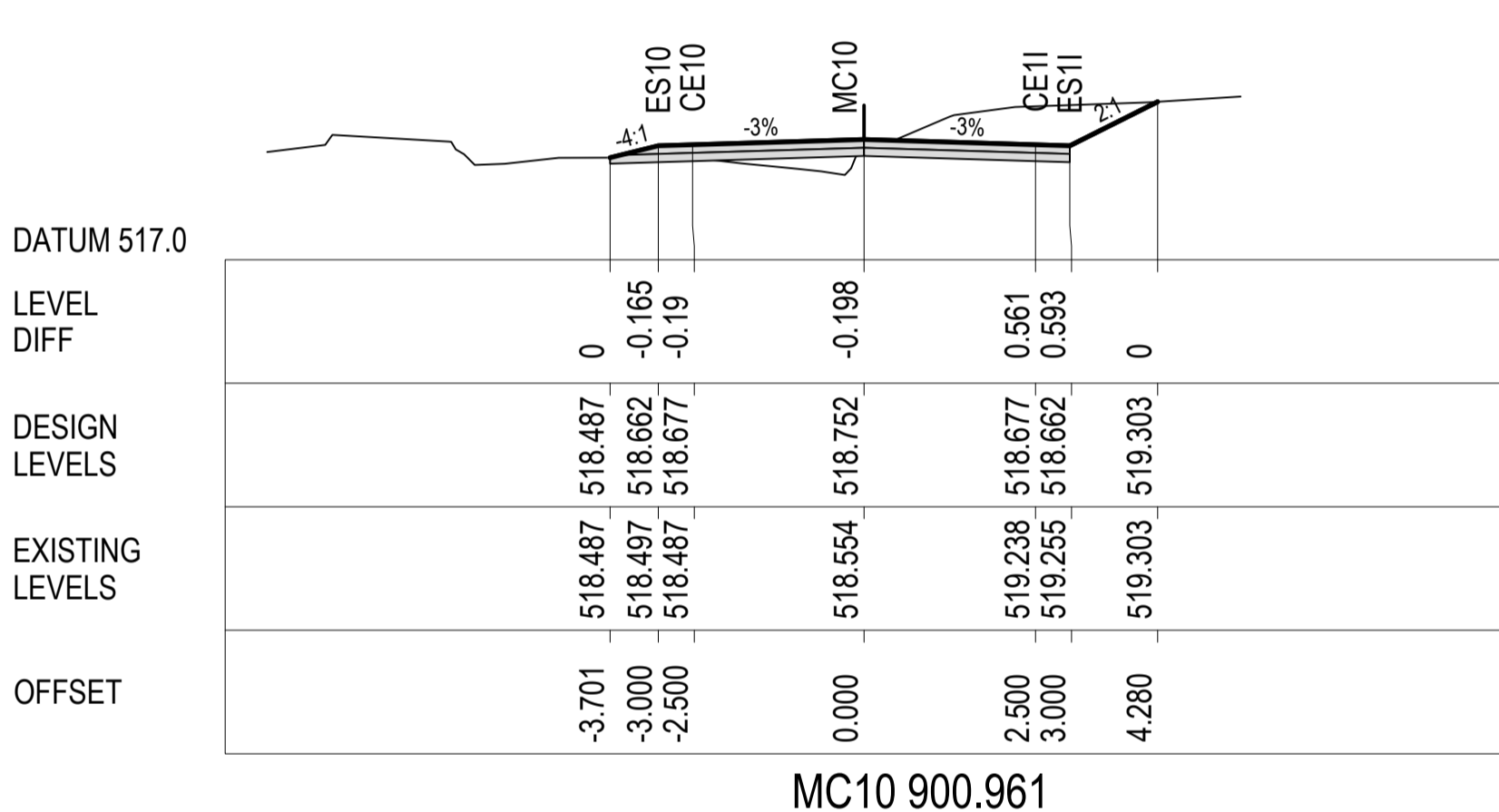
MC10 840



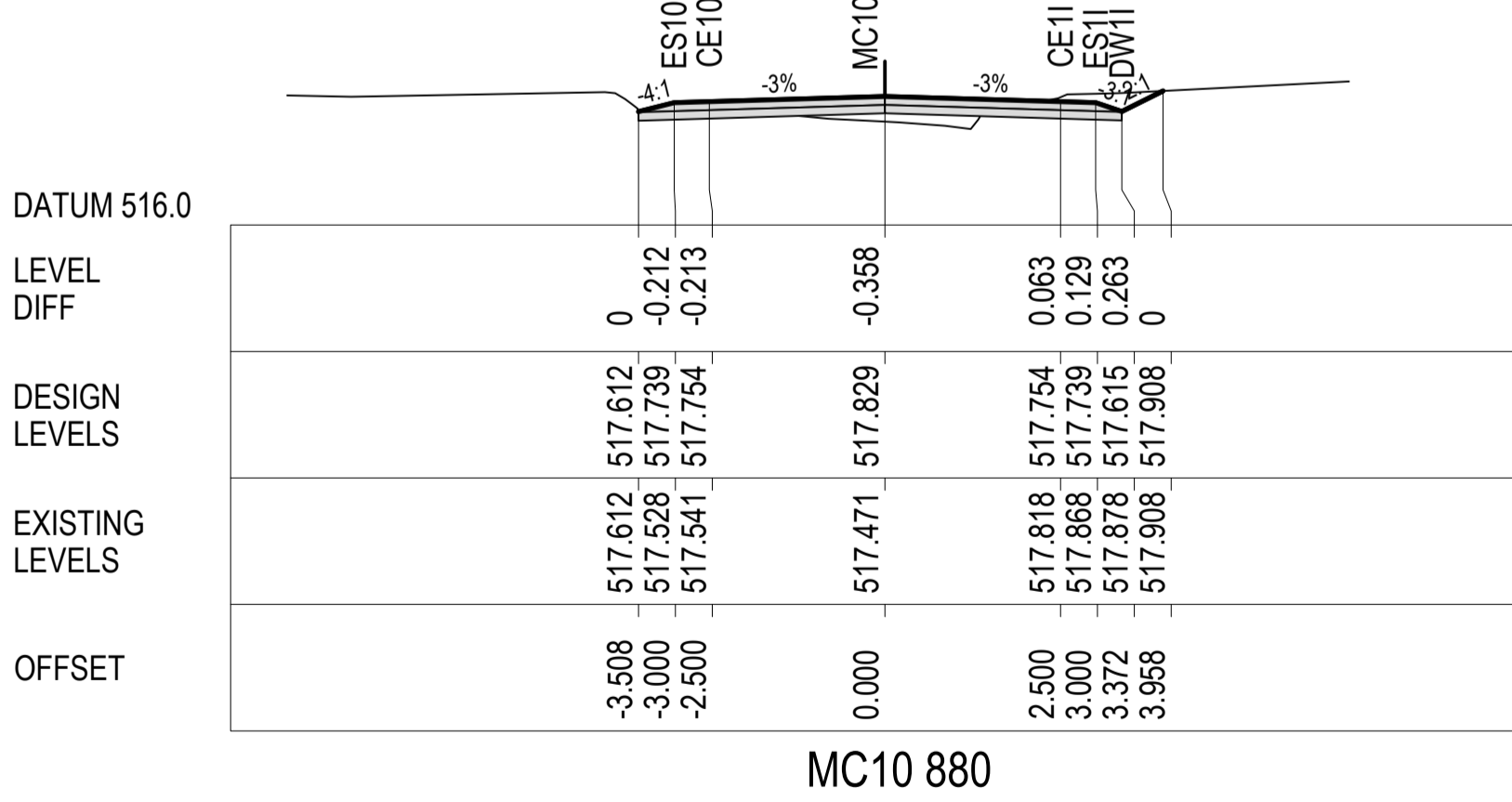
MC10 820



MC10 920



MC10 900.961



DATE PLOTTED: 25 June 2019 10:11 AM BY: MEHUL VAIDYA

XREFs: XS-MC10

CAD File: N:\Projects\50517019 YASS VALLEY WIND FARM\Drawings\Build\50517019-C30-C37-XS.dwg

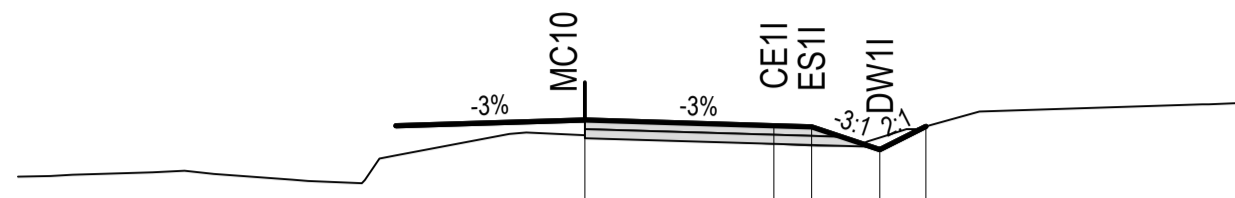
DATUM 520.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 982.662

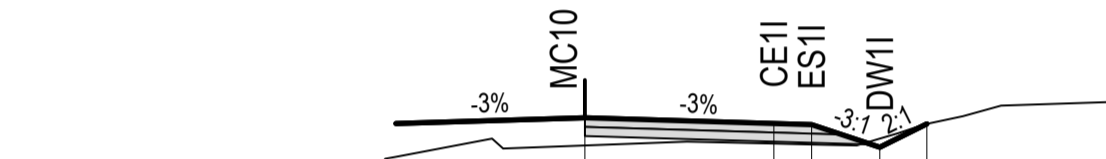
DATUM 520.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 980

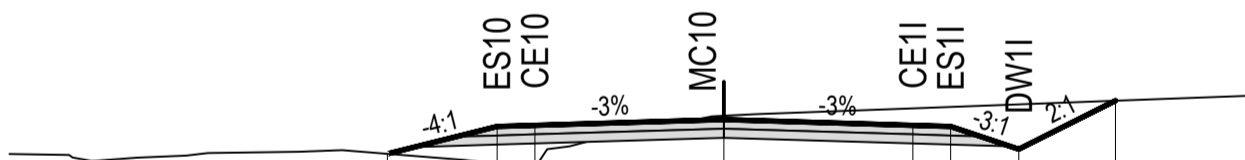
DATUM 520.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 964.366

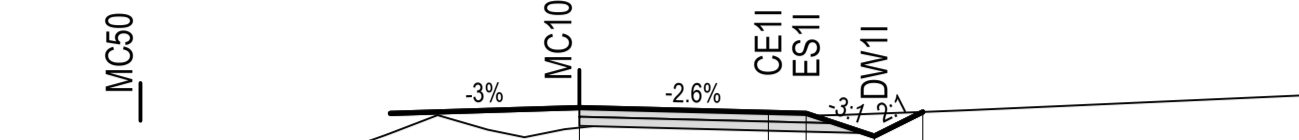
DATUM 522.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 1024.366

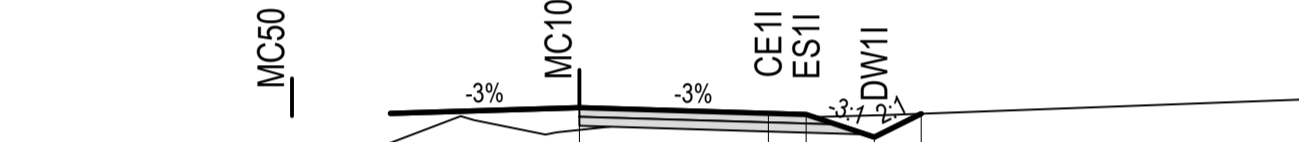
DATUM 522.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 1020

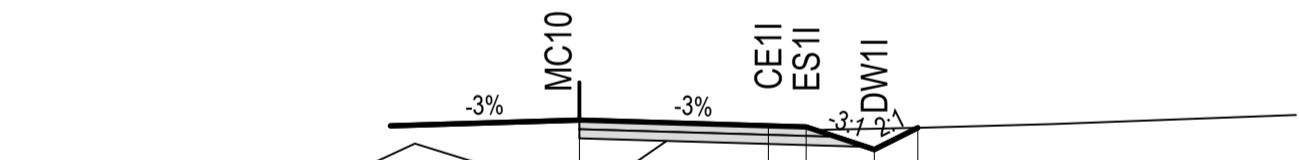
DATUM 521.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 1000

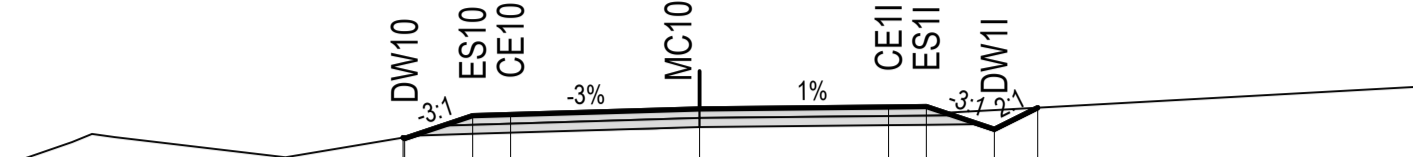
DATUM 523.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 1060

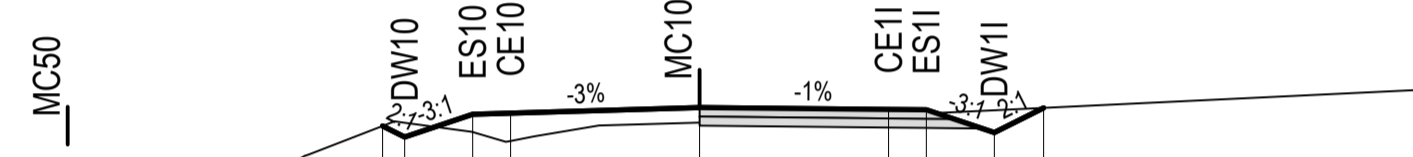
DATUM 522.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 1040

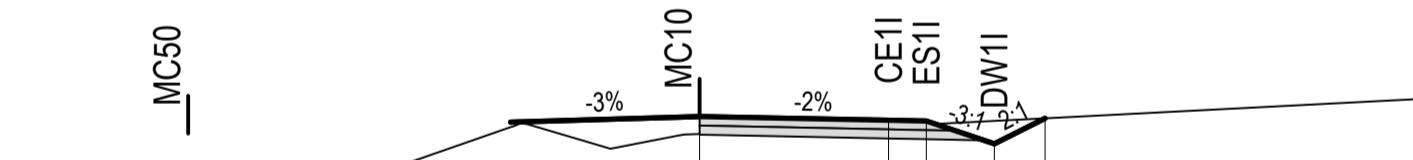
DATUM 522.0

LEVEL  
DIFF

DESIGN  
LEVELS

EXISTING  
LEVELS

OFFSET



MC10 1030.122



5



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

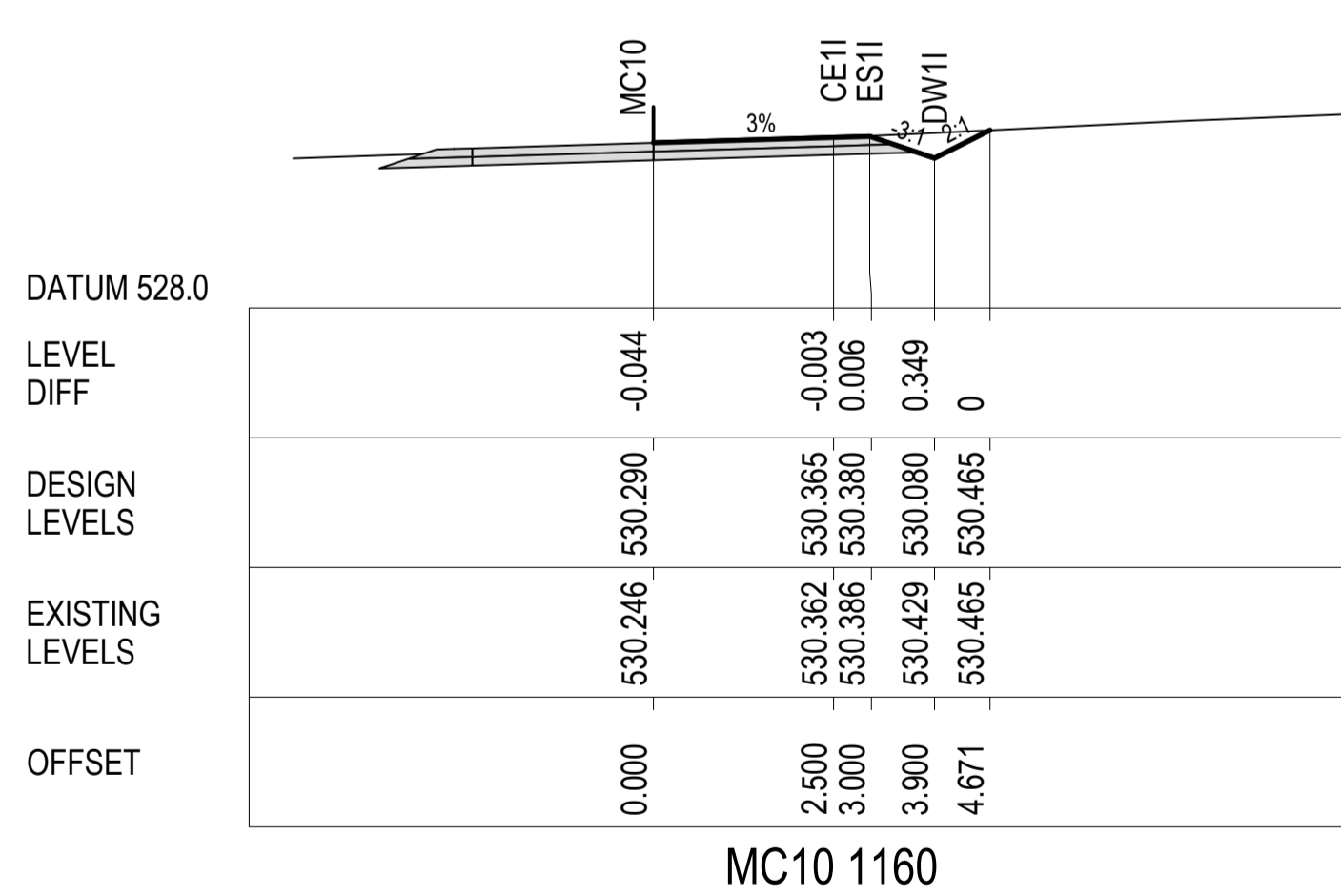
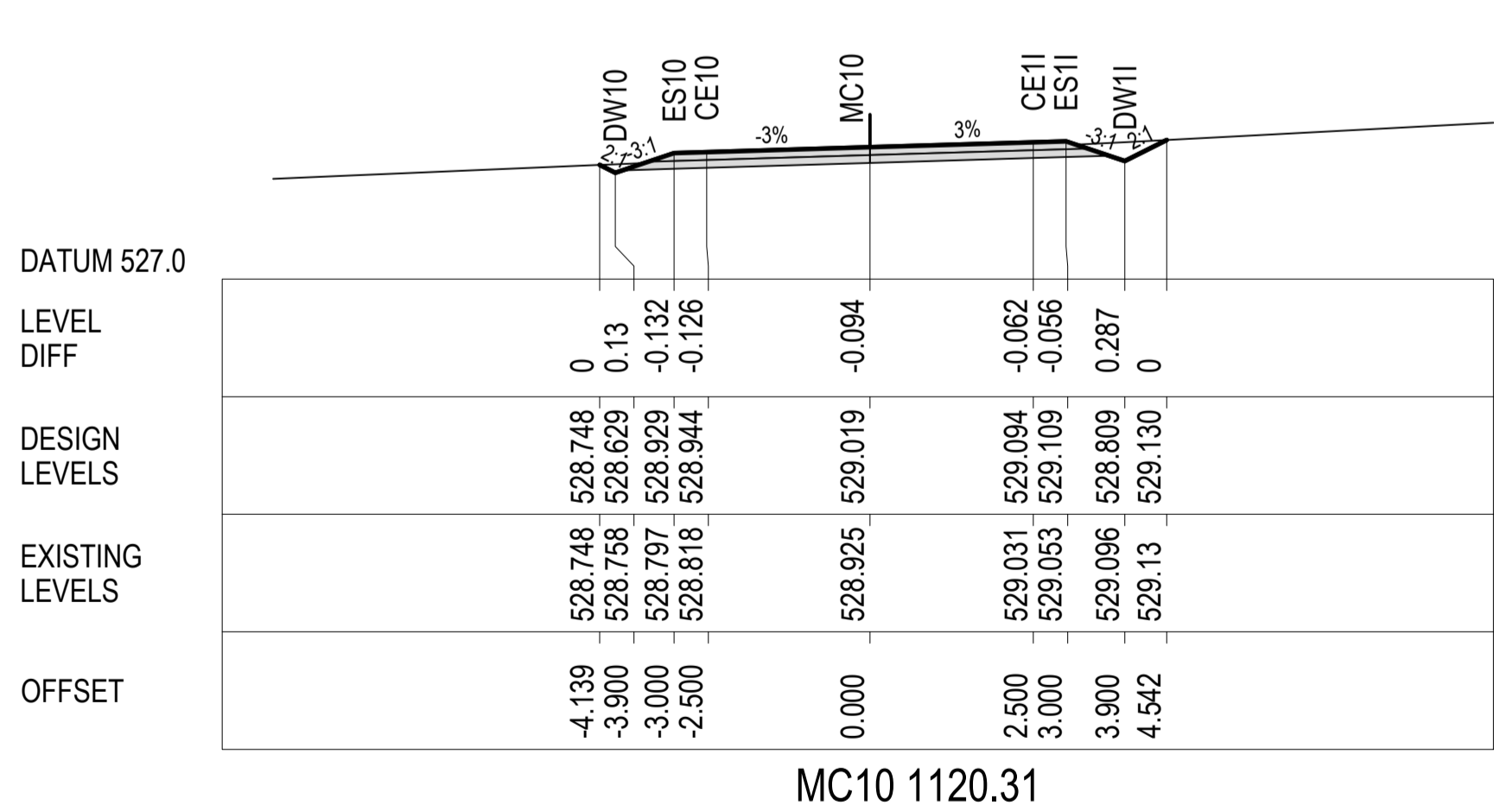
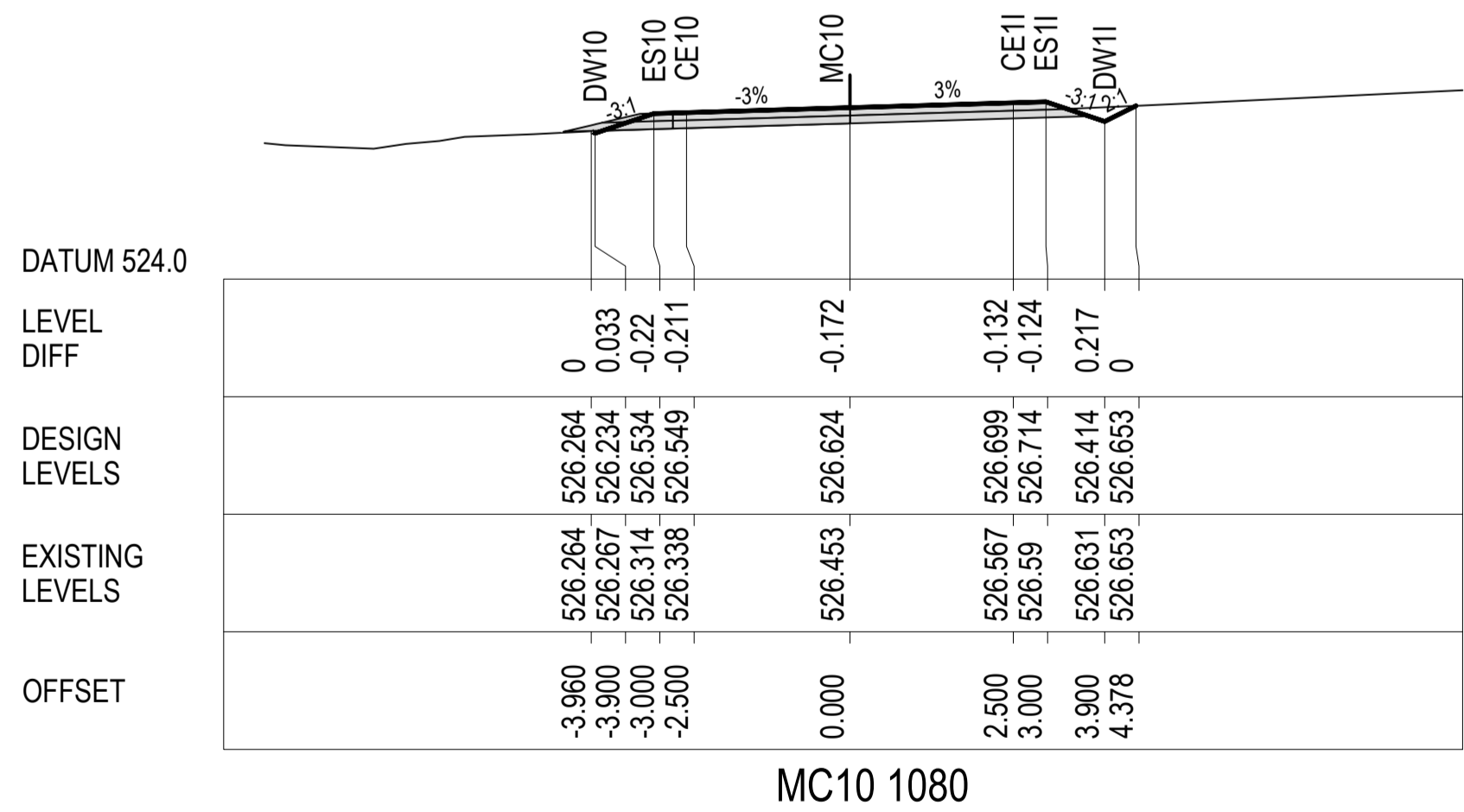


Drawn G.J. 17/05/2017  
Checked J.H. 17/05/2017  
Designed RIC 17/05/2017  
Verified J.H. 17/05/2017  
Approved M.P. 17/05/2017

Client GOLDWIND AUSTRALIA  
Project YASS VALLEY WIND FARM  
ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS  
Title CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 8 OF 10

Status FOR APPROVAL  
NOT TO BE USED FOR CONSTRUCTION PURPOSES  
DATING AHD  
Scale 1:100@A1  
Size A1  
Drawing Number 50517019 - C37  
Revision 4

Rev.	Date	Description	Des.	Verif.	Appd.
4	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
3	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
2	25/10/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.
1	17/05/2017	NEW DRAWING CROSS-SECTION 8 OF 8	G.J.	RIC	J.H.



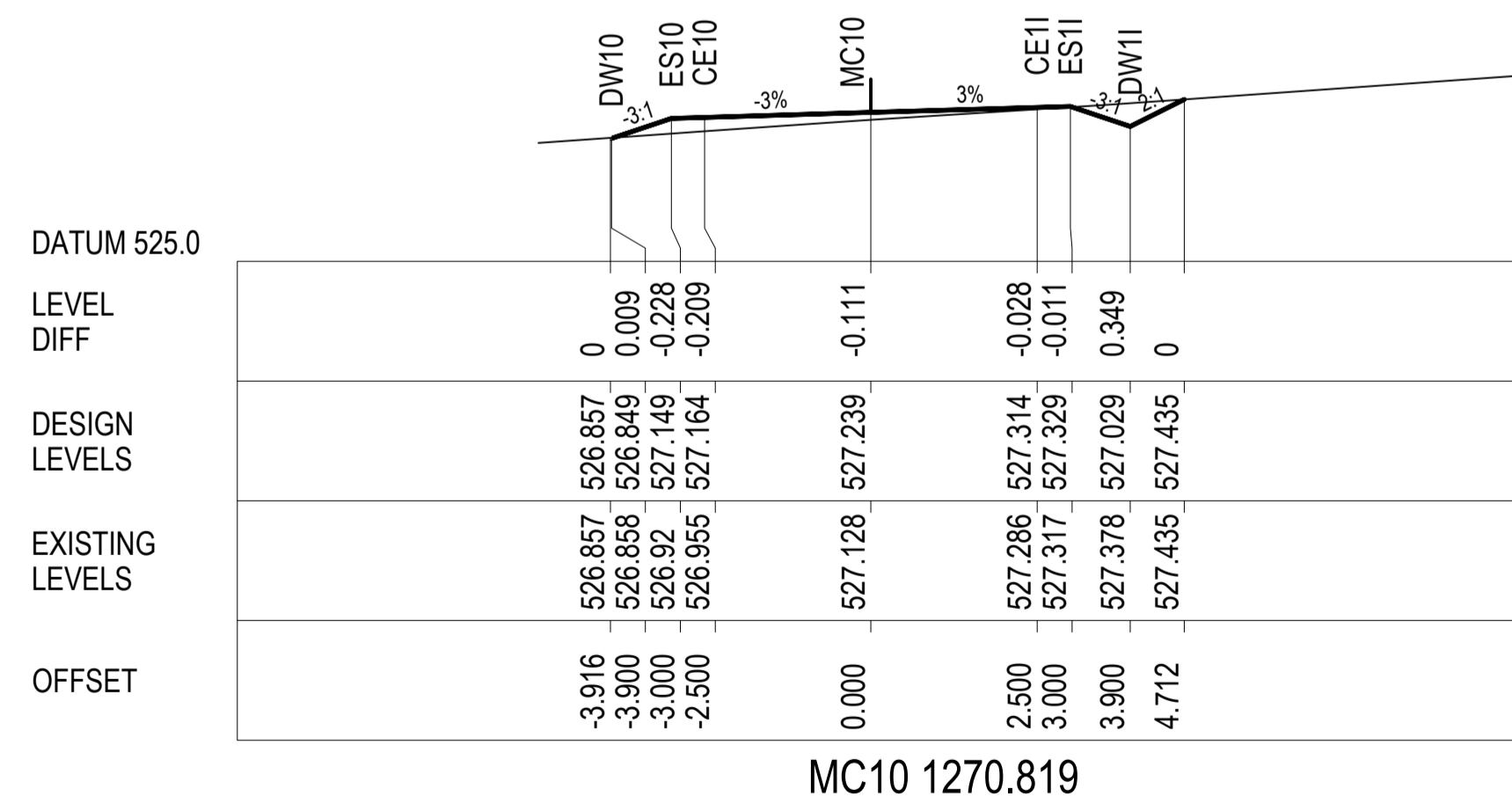
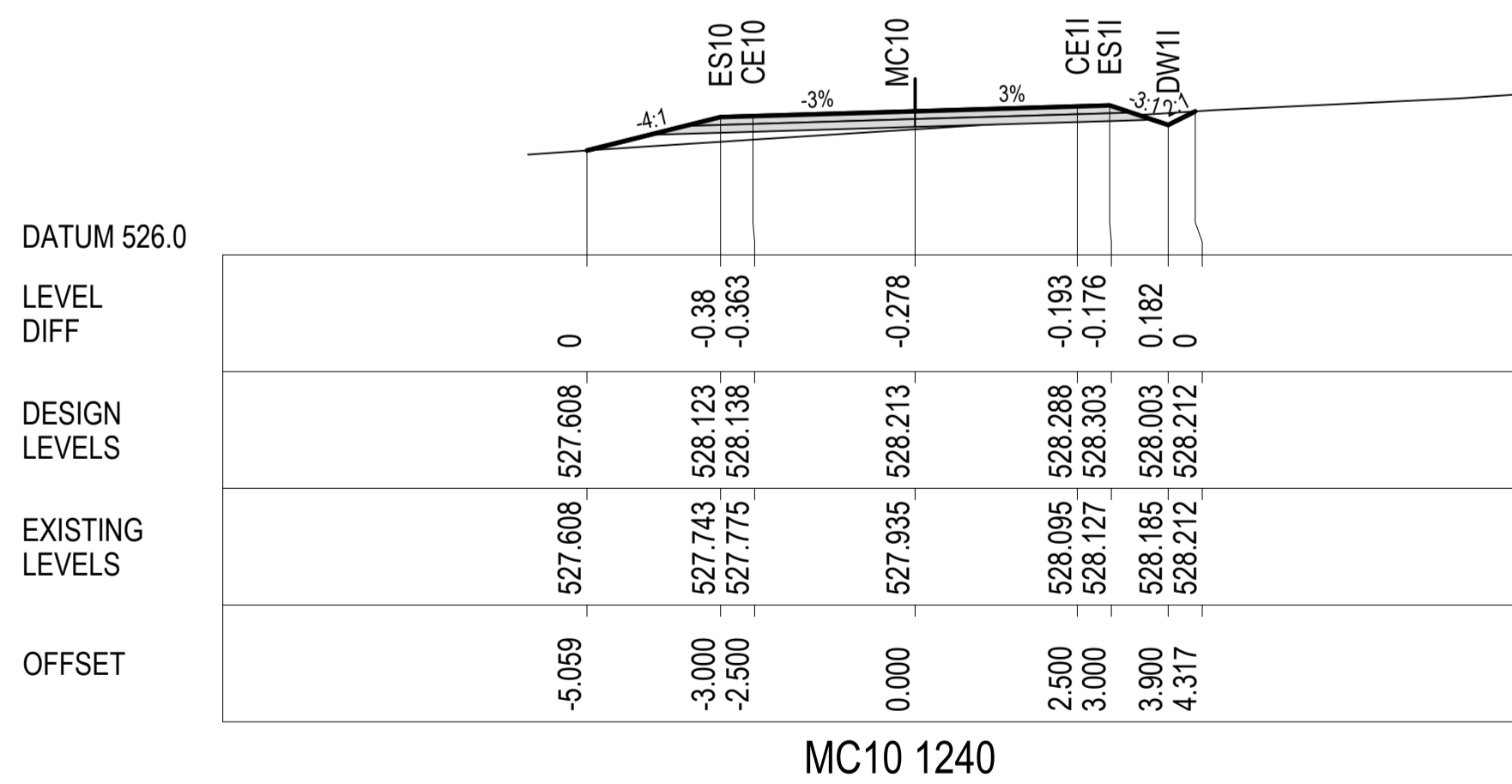
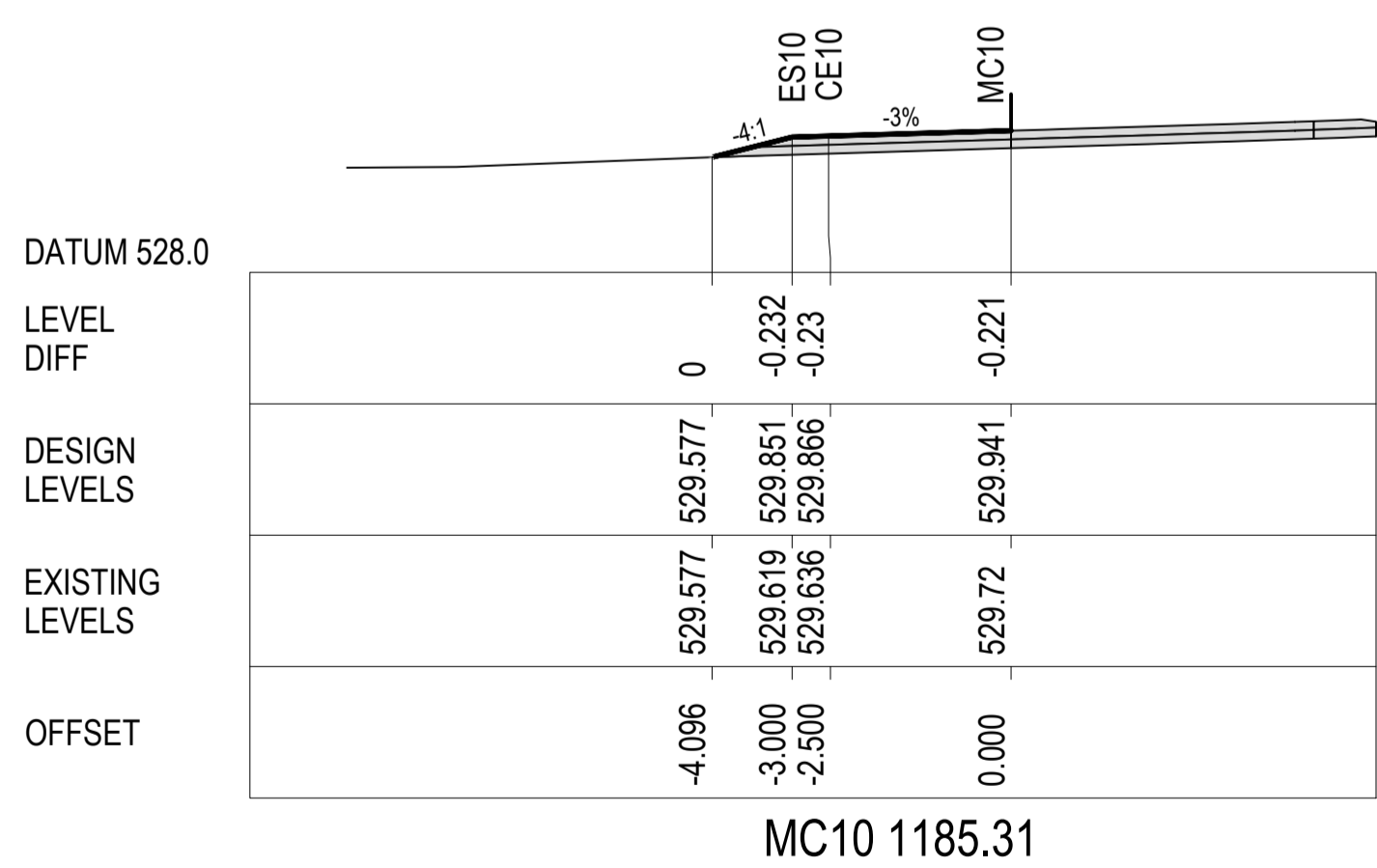
3	22/05/2019	ROAD RE-ALIGNMENT		R/C	P.D.J.	S.A.S.
2	6/11/2018	ROAD RE-ALIGNMENT		P.D.J.	RIC	S.A.S.
1	25/10/2018	ROAD RE-ALIGNMENT		P.D.J.	RIC	S.A.S.
Rev.	Date	Description		Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn G.J.	Date 17/05/2017	Client <b>GOLDWIND AUSTRALIA</b>			
Checked J.H.	Date 17/05/2017	Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS		Status <b>FOR APPROVAL</b>	
Designed R.I.C.	Date 17/05/2017			NOT TO BE USED FOR CONSTRUCTION PURPOSES	
Verified J.H.	Date 17/05/2017			Title	
Approved		CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 9 OF 10		<div> <div>AHD</div> <div>DATUM</div> </div> <div> <div>Scale</div> <div>1:100@A1</div> </div> <div> <div>A1</div> <div>Revision</div> </div>	
M.P.	17/05/2017			<div>Drawing Number</div> <div>50517019 - C38</div> <div>3</div>	

[illegible]

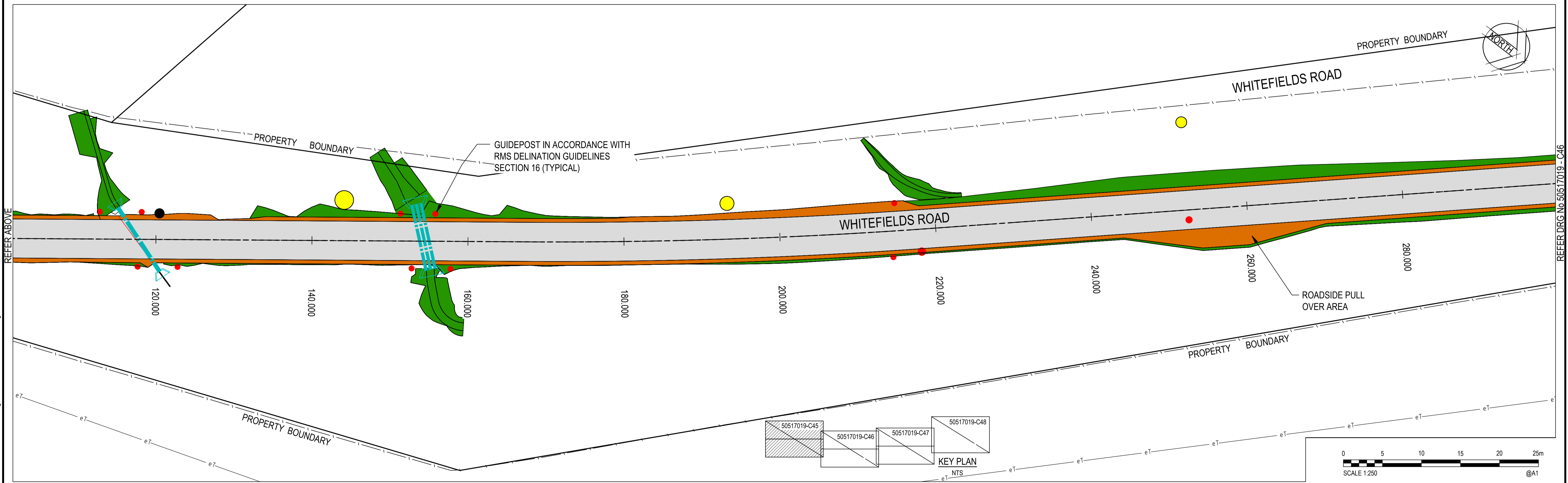
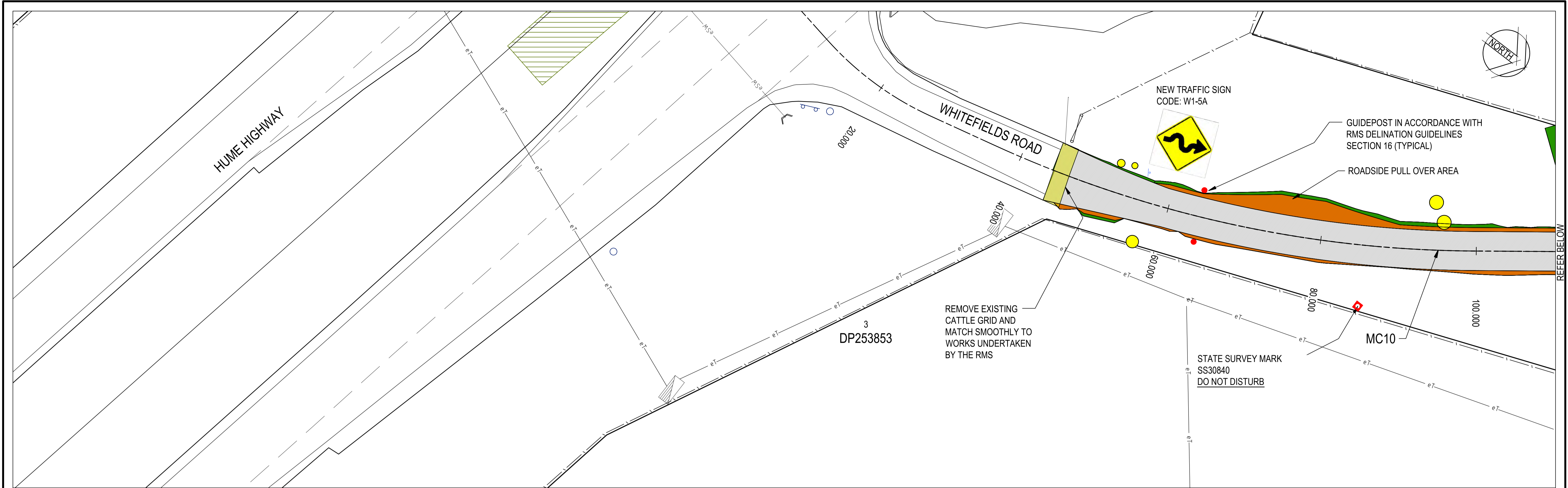
© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn G.J.	Date 17/05/2017	Client GOLDWIND AUSTRALIA			
Checked J.H.	Date 17/05/2017	Project YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS	Status <div>FOR APPROVAL</div> NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Designed R.C.	Date 17/05/2017		DATUM AHD		
Verified J.H.	Date 17/05/2017		Scale 1:100@A1		
Approved		Title CROSS SECTIONS WHITEFIELDS RD (MC10) - SHEET 10 OF 10	Size A1		
			Drawing Number 50517019 - C39		Revision 3
M.P.	17/05/2017				

DATE PLOTTED: 25 June 2019 10:12 AM BY: MEHUL VAIDYA

XREFs: XRF CONTROL MAIN 200, X-CVT-2604, DT1, X-SW-ROUGH AS CUTS, X-DESIGN, X-YASS-BASE, X-S DESIGN BDY, X-PAVE HATCH  
CAD File: N:\Projects\50517019 YASS VALLEY WIND FARM\Drawings\Build\50517019-C45-PPTCD.dwg



Rev.	Date	Description	Des.	Verif.	Appd.
3	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
2	20/03/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
1	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn	P.D.J.	Date	25/10/2018
Checked	S.A.S.	Date	25/10/2018
Designed	RIC	Date	25/10/2018
Verified	S.A.S.	Date	25/10/2018
Approved	M.P.	Date	25/10/2018

Client	GOLDWIND AUSTRALIA
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title	PAVEMENT PLAN AND TRAFFIC CONTROL DEVICES SHEET 1 OF 4

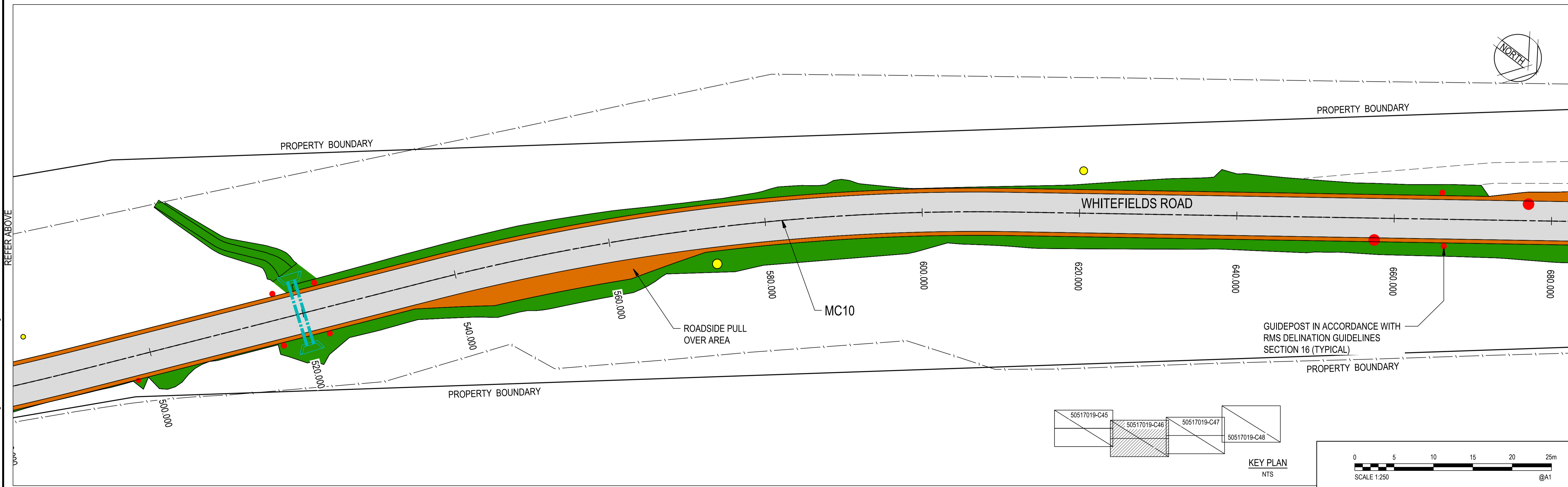
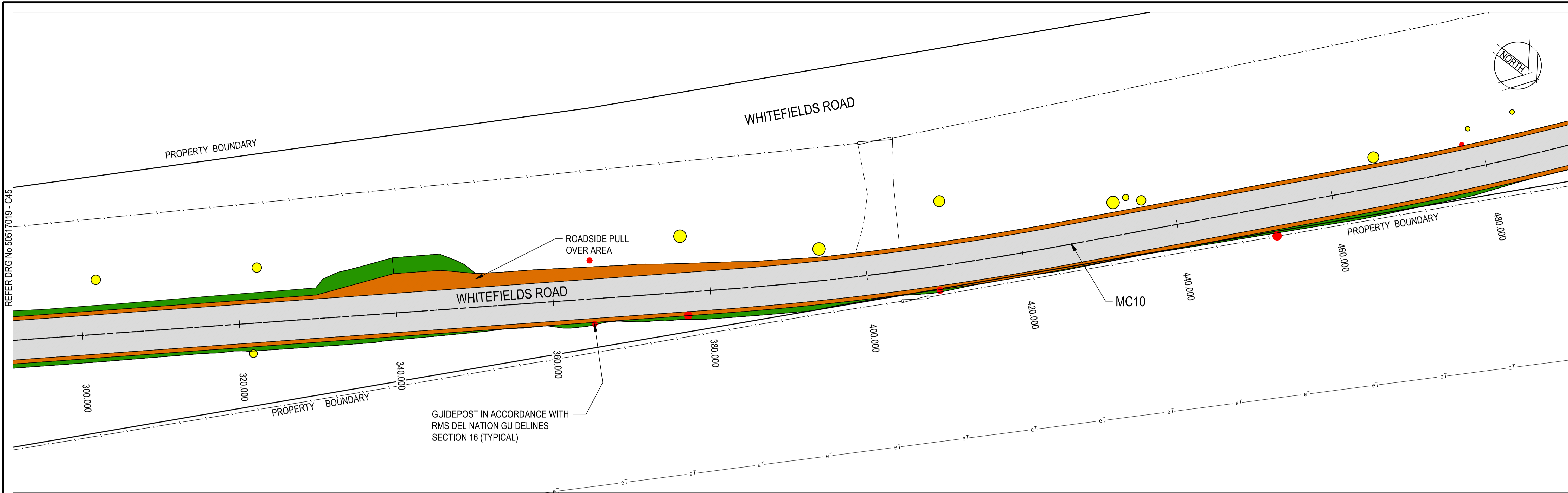
Status	FOR APPROVAL
DATUM	AHD
Scale	1:100@A1
Size	A1
Drawing Number	50517019 - C45
Revision	3

DATE PLOTTED: 25 June 2019 10:12 AM BY: MEHUL VAIDYA

REFER DRG NO 50517019 - C45

REFER ABOVE

XREFs: XRF CONTROL MAIN 200; X-CVT-2004; DTI; X-SW/ROUGH AS CUTS; X-DESIGN; X-YASS-BASE; X-S DESIGN BDY; X-PAVE HATCH  
CAD File: N:\Projects\50517019 YASS VALLEY WIND FARM\Drawings\Build\50517019-C45-PPTCD.dwg



Rev.	Date	Description	Des.	Verif.	Appd.
3	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
2	20/03/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
1	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



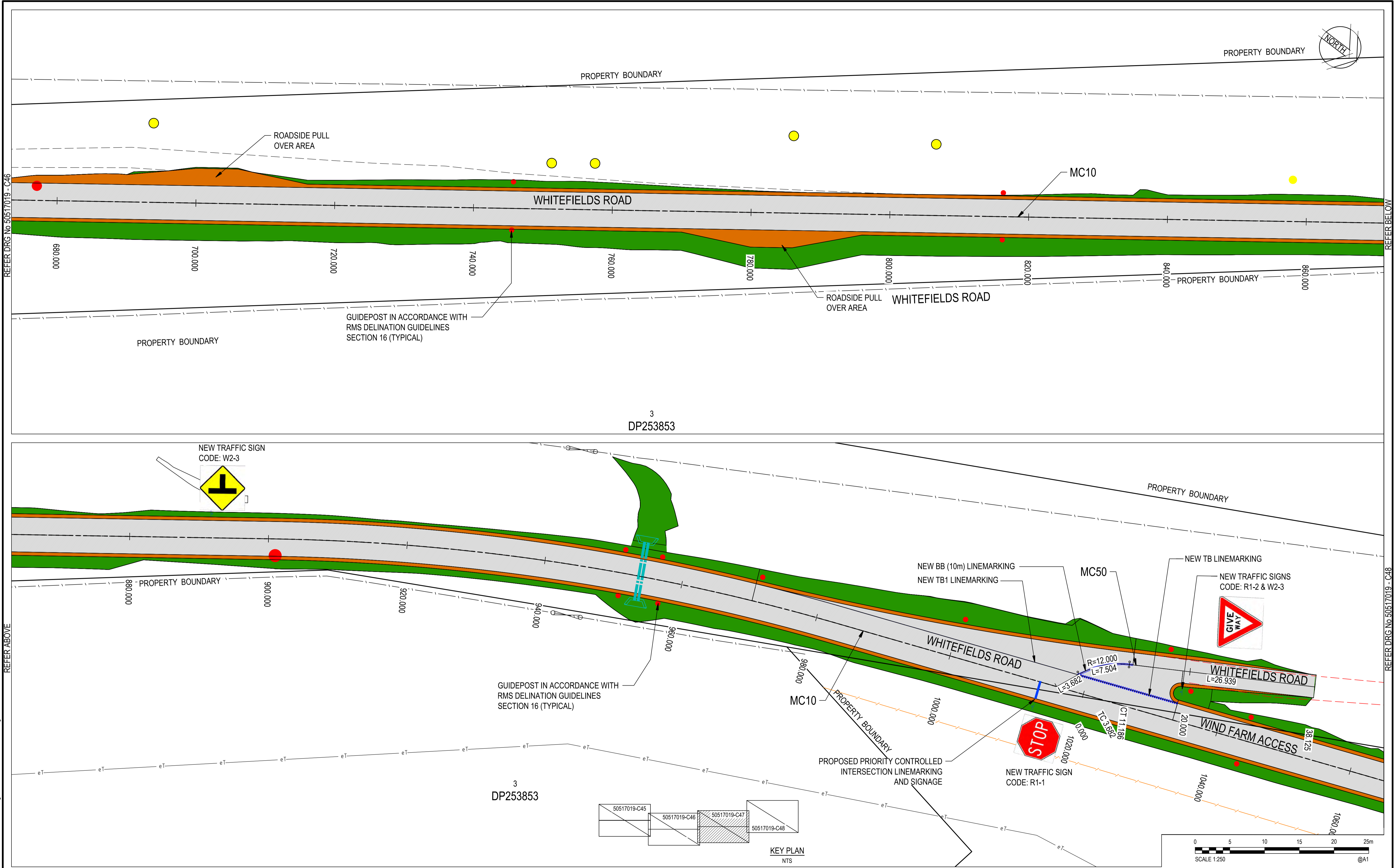
Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn	P.D.J.	Date	25/10/2018
Checked	S.A.S.	Date	25/10/2018
Designed	RIC	Date	25/10/2018
Verified	S.A.S.	Date	25/10/2018
Approved		Date	25/10/2018
M.P.		Date	25/10/2018

Client	GOLDWIND AUSTRALIA
Project	YASS VALLEY WIND FARM
Access Road Improvements at Whitefields Road and Hume Highway, Berremangra - Civil Works	
Title	PAVEMENT PLAN AND TRAFFIC CONTROL DEVICES
	SHEET 1 OF 4

Status	FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES	
DATUM	AHD
Scale	1:100@A1
Size	A1
Drawing Number	50517019 - C46
Revision	3

DATE PLOTTED: 25 June 2019 10:12 AM BY: MEHUL VAIDYA  
XREFs: XRF CONTROL MAIN 200, X-CVT-2004, DT1, X-SW-ROUGH AS CUTS, X-DESIGN, X-YASS-BASE, X-S DESIGN BDY, X-PAVE HATCH  
CAD File: N:\Programs\50517019 YASS VALLEY WIND FARM\Drawings\Build\50517019-C45-PPC0.dwg



Rev.	Date	Description	Des.	Verif.	Appd.
3	22/05/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
2	20/03/2019	ROAD RE-ALIGNMENT	RIC	P.D.J.	S.A.S.
1	6/11/2018	ROAD RE-ALIGNMENT	P.D.J.	RIC	S.A.S.



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

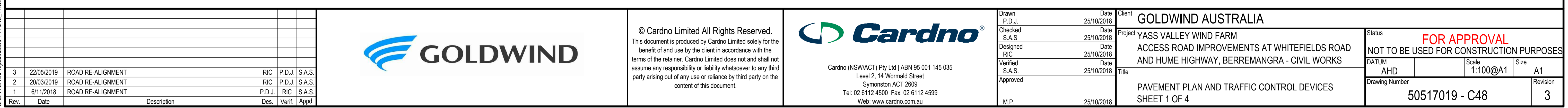


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn	P.D.J.	Date	25/10/2018
Checked	S.A.S.	Date	25/10/2018
Designed	RIC	Date	25/10/2018
Verified	S.A.S.	Date	25/10/2018
Approved		Date	25/10/2018

Client	GOLDWIND AUSTRALIA
Project	YASS VALLEY WIND FARM ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Title	PAVEMENT PLAN AND TRAFFIC CONTROL DEVICES SHEET 1 OF 4

Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES
DATUM	AHD
Scale	1:100@A1
Size	A1
Drawing Number	50517019 - C47
Revision	3



DATE PLOTTED: 25 June 2019 10:12 AM BY: MEHUL VAIDYA

ALIGNMENT->MC10 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644703.848	6147264.490	498.346	10°36'03.77"	LINE		10.845
TC	10.845	644705.843	6147275.150	498.037	10°36'03.77"	ARC	-40.000	16.410
CT	27.255	644705.515	6147291.441	497.459	347°05'44.85"	LINE		8.931
TC	36.186	644703.521	6147300.147	497.384	347°05'44.85"	ARC	-150.000	63.385
CT	99.570	644676.922	6147357.162	498.241	322°53'04.86"	LINE		67.641
TC	167.211	644636.106	6147411.100	499.363	322°53'04.86"	ARC	-660.000	51.624
CT	218.835	644603.378	6147451.007	500.029	318°24'11.31"	LINE		161.887
TC	380.722	644495.904	6147572.071	504.913	318°24'11.31"	ARC	-400.000	44.944
CT	425.666	644464.243	6147603.937	505.301	311°57'55.52"	LINE		39.732
TC	465.398	644434.700	6147630.504	505.345	311°57'55.52"	ARC	-400.000	26.094
CT	491.492	644414.743	6147647.308	505.489	308°13'39.60"	LINE		45.724
TC	537.216	644378.824	6147675.602	505.959	308°13'39.60"	ARC	280.000	74.503
CT	611.719	644327.082	6147728.902	507.342	323°28'23.11"	LINE		289.242
TC	900.961	644154.926	6147961.330	518.752	323°28'23.11"	ARC	310.000	81.701
CT	982.682	644115.460	6148032.597	522.682	338°34'24.60"	LINE		160.672
TC	1143.334	644056.765	6148182.164	530.027	338°34'24.60"	ARC	300.000	120.174
CT	1263.509	644036.137	6148299.741	527.470	1°31'30.45"	LINE		7.311
E	1270.819	644036.332	6148307.049	527.239	1°31'30.45"			

ALIGNMENT->MC20 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644029.934	6148205.474	529.453	60°28'34.07"	LINE		37.752
TC	37.752	644062.784	6148224.077	530.719	60°28'34.07"	ARC	119.675	48.126
CT	85.878	644108.246	6148238.852	533.679	83°31'01.82"	LINE		3.775
E	89.653	644111.997	6148239.278	533.981	83°31'01.82"			

ALIGNMENT->MC30 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644077.302	6148129.831	527.029	269°18'55.59"	LINE		9.466
TC	9.466	644067.837	6148129.718	526.953	269°18'55.59"	ARC	15.000	16.739
CT	26.205	644054.263	6148137.966	526.798	333°15'13.27"	LINE		12.776
E	38.981	644048.513	6148149.375		333°15'13.27"			

ALIGNMENT->MC40 HORIZONTAL SEGMENTS							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.LEN
S	0.000	644029.465	6148196.652	529.675	49°19'57.02"	LINE	9.904
TT	9.904	644036.977	6148203.106	530.011	49°19'57.02"	LINE	13.113
E	23.017	644046.924	6148211.652	530.202	49°19'57.02"		

ALIGNMENT->MC50 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644103.281	6148063.631	523.995	293°34'24.60"	LINE		3.682
TC	3.682	644099.907	6148065.103	524.005	293°34'24.60"	ARC	12.000	7.504
CT	11.186	644094.377	6148069.993	524.118	329°24'03.45"	LINE		26.939
E	38.125	644080.664	6148093.181	524.468	329°24'03.45"			

ALIGNMENT KERB RETURN->MK01 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644048.836	6148196.757	530.214	229°19'57.02"	ARC	-8.000	15.689
E	15.689	644036.027	6148200.312	530.022	229°19'57.02"			

ALIGNMENT KERB RETURN->MK02 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644054.504	6148215.837	530.424	163°06'05.81"	ARC	-10.000	11.659
E	11.659	644051.377	6148205.281	530.359	163°06'05.81"			

ALIGNMENT KERB RETURN->MK03 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644045.576	6148227.398	529.865	60°28'34.07"	ARC	-7.500	14.010
E	14.010	644056.594	6148222.494	530.472	60°28'34.07"			

ALIGNMENT KERB RETURN->MK04 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644038.181	6148211.776	529.829	346°23'54.68"	ARC	-8.000	10.343
E	10.343	644042.015	6148220.619	529.897	346°23'54.68"			

ALIGNMENT KERB RETURN->MK05 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644078.397	6148120.197	526.426	271°45'57.04"	ARC	-12.500	14.575
E	14.575	644067.147	6148128.124	526.897	271°45'57.04"			

ALIGNMENT KERB RETURN->MK06 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644053.243	6148143.322	526.934	338°34'24.60"	ARC	-7.500	22.866
E	22.866	644066.923	6148149.437	528.274	338°34'24.60"			

ALIGNMENT KERB RETURN->MK07 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644039.405	6148207.170	530.018	240°28'34.07"	ARC	-1.000	2.947
E	2.947	644038.261	6148208.798	529.831	240°28'34.07"			

ALIGNMENT KERB RETURN->MK50 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644117.878	6148020.262	522.039	329°24'03.45"	ARC	-460.000	55.434
E	55.434	644092.600	6148069.560	524.080	329°24'03.45"			

ALIGNMENT KERB RETURN->MK51 HORIZONTAL SEGMENTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	644091.912	6148077.600	524.315	338°34'24.60"	ARC	-1.500	4.472
E	4.472	644094.599	6148078.911	524.486	338°34'24.60"			

5	21/05/2019	ROAD RE-ALIGNMENT		RIC	P.D.J.	S.A.S.		
4	6/11/2018	ROAD RE-ALIGNMENT		P.D.J.	RIC	S.A.S.		
3	25/10/2018	ROAD RE-ALIGNMENT		P.D.J.	RIC	S.A.S.		
2	17/03/2017	FINAL SUBMISSION		G.J.	RIC	J.H.		
1	23/12/2016	90% DOCUMENTATION		G.J.	RIC	J.H.		
Rev.	Date	Description		Des.	Verif.	Appd.		

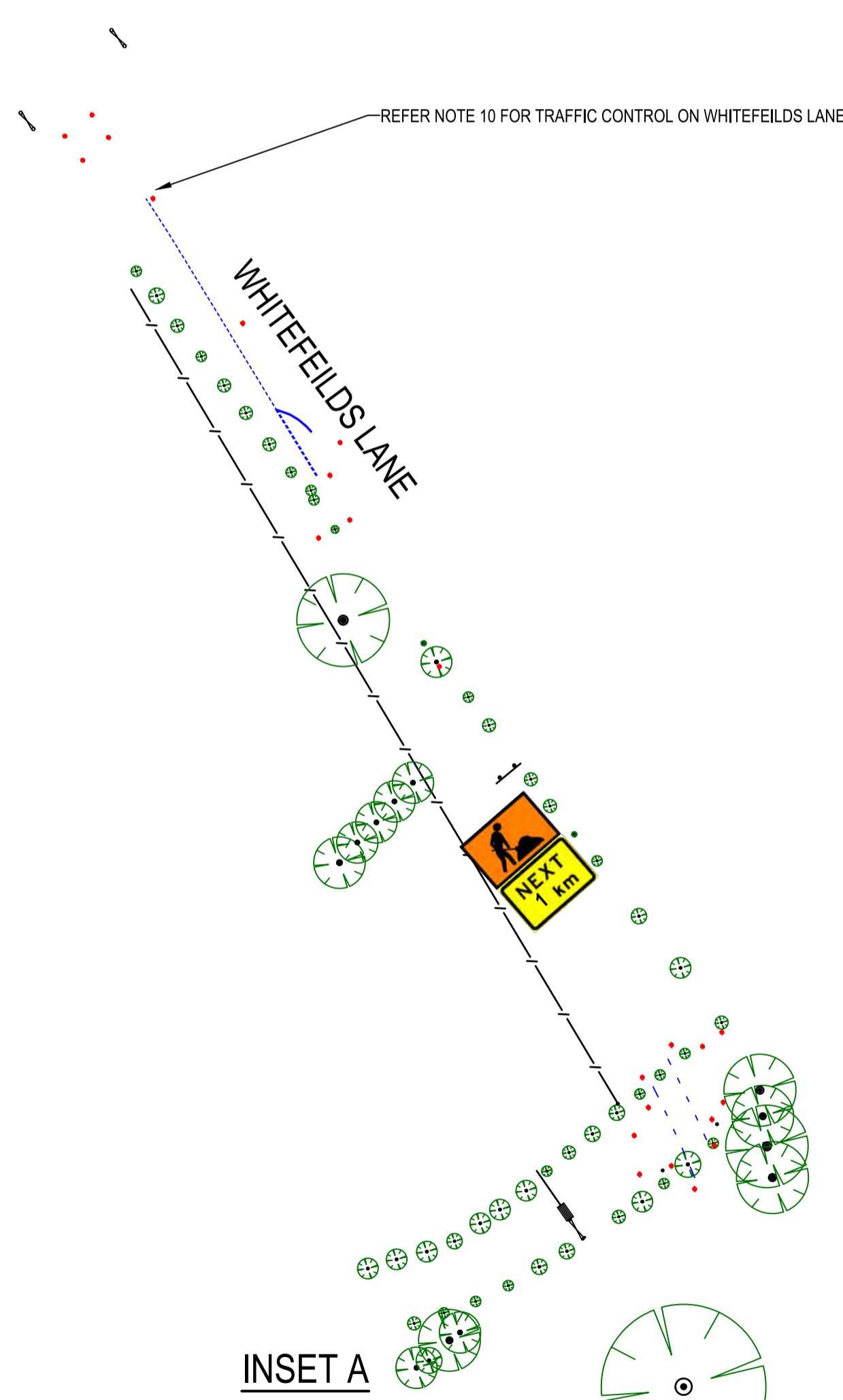
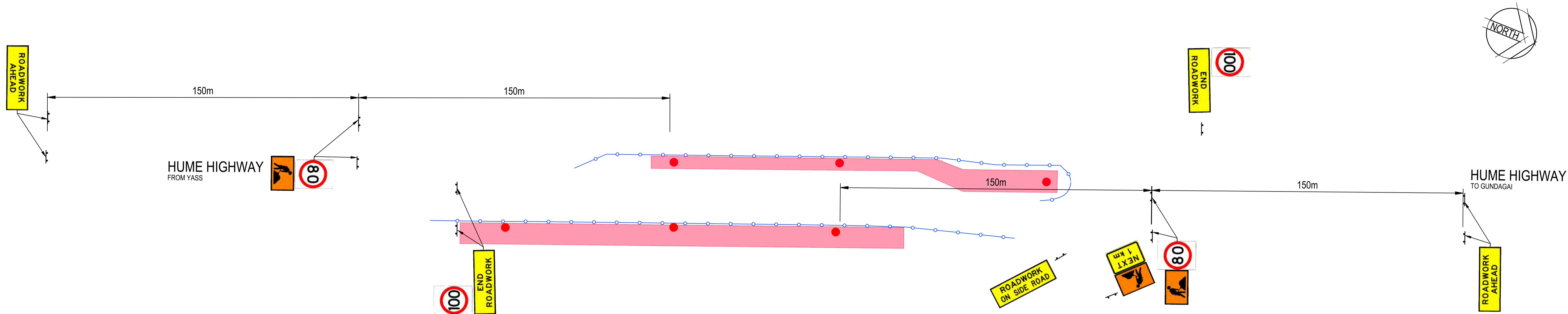


© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035  
Level 2, 14 Wormald Street  
Symonston ACT 2609  
Tel: 02 6112 4500 Fax: 02 6112 4599  
Web: www.cardno.com.au

Drawn G.J.	Date 23/12/2016	Client GOLDWIND AUSTRALIA
Checked J.H.	Date 23/12/2016	Project YASS VALLEY WIND FARM
Designed RIC	Date 23/12/2016	ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
Verified J.H.	Date 23/12/2016	Title
Approved		SETOUT TABLES
M.P.	23/12/2016	
		Status <b>FOR APPROVAL</b>
		NOT TO BE USED FOR CONSTRUCTION PURPOSES
		DATUM AHD
		Scale NTS
		Size A1
		Drawing Number 50517019 - C50
		Revision 5

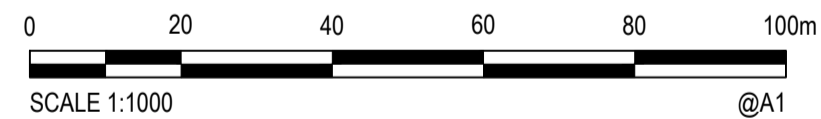


### LEGEND

- WORK ZONE
- BOLLARDS
- TEST PIT LOCATIONS

### SIGN SCHEDULE

SIGNS TO BE ERCTED					
T1-5	WORKMAN AHEAD	-	-	-	3
T1-1	ROADWORK AHEAD	-	-	-	2
T1-25	ROADWORK ON SIDE ROAD	-	-	-	3
T2-16	END OF ROADWORK	-	-	-	2
R4-1	SPEED (80)	-	-	-	2
R4-1	SPEED (100)	-	-	-	2
SIGN NUMBER	DESCRIPTION	NUMBER & HAND			
		L	R	D	N



### NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR THE SITE OF WORKS AND THE TRAFFIC MANAGEMENT WITHIN THE SITE AND SHALL KEEP ALL REQUIRED RECORDS AND UNDERTAKE ALL NECESSARY MAINTENANCE.
- ALL TEMPORARY TRAFFIC MANAGEMENT SHALL BE IN ACCORDANCE WITH AS 1743 AND QA G10 TRAFFIC MANAGEMENT
- ALL EMPLOYEES ARE TO WEAR APPROPRIATE SAFETY EQUIPMENT AS DETAILED IN THE RELEVANT AUSTRALIAN STANDARD AND QA G10 TRAFFIC MANAGEMENT.
- ALL SIGNS CONFLICTING WITH THIS THE TTM PLAN SHALL BE COVERED OR REMOVED DURING THE HOURS OF OPERATION.
- ALL SIGNS ERCTED IN RELATION TO THIS TTM THAT ARE NOT REQUIRED OUTSIDE THE HOURS OF OPERATION SHALL BE COVERED.
- ALL EMPLOYEES INVOLVED IN TTM TRAFFIC CONTROL, SETUP, MINOR MODIFICATIONS AND INSPECTIONS SHALL HAVE THE RELEVANT QUALIFICATIONS IN ACCORDANCE WITH CLAUSE 1.5.3 OF QA G10 TRAFFIC MANAGEMENT.
- ALL TRAFFIC CONTROL, SIGNS AND DEVICES SHALL BE ERCTED AS PER THIS TOP AND IN CLEAR LINE OF SIGHT TO ALL ROAD USERS AND PEDESTRIANS. THEY SHALL NOT BE OBSCURED BY ANY VEGETATION, WORK PLANT OR PARKED VEHICLES. THEY SHALL NOT BE PLACED IN A MANOR THAT THEY WILL BECOME A HAZARD TO VEHICULAR TRAFFIC OR PEDESTRIANS.
- ALL TRAFFIC LANES SHALL BE 3.0m MINIMUM.
- ALL BOLLARDS SHALL BE PLACED AT 1.8m MINIMUM SPACING AND PLACED ALONG THE EDGE OF BITUMENT TO FORM THE WORK SAFETY ZONE.
- BOREHOLES ALONG WHITEFIELDS LANE WILL UNDERTAKEN WITHIN THE SHOULDER AREA OF THE LANE. A T1-5 SHALL BE ALSO PLACED BEHIND AND IN FRONT OF THE TEST LOCATION MIN 50m EITHER SIDE. WORK VEHICLE SHALL BE PLACE BEHIND THE TEST LOCATION WITH FLASHING WARNING LIGHTS

### RMS LICENSE

DESIGNER  
LICENCE NUMBER: 39624635  
LICENCE EXPIRY: 12/07/2021  
NAME: PHILLIP JEWELL

APPROVED  
LICENCE NUMBER: 39279354  
LICENCE EXPIRY: 10/03/2020  
NAME: PANKAJ PATOLE



© Cardno Limited All Rights Reserved.  
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn	Date	Client
P.D.J.	10/09/2018	GOLDWIND AUSTRALIA
Checked	Date	Project
P.D.J.	10/09/2018	YASS VALLEY WIND FARM
Designed	Date	ACCESS ROAD IMPROVEMENTS AT WHITEFIELDS ROAD AND HUME HIGHWAY, BERREMANGRA - CIVIL WORKS
RIC	10/09/2018	
Verified	Date	TEMPORARY TRAFFIC MANAGEMENT PLAN BARTON HIGHWAY
S.A.S.	10/09/2018	
Approved		
M.P.	10/09/2018	

Title	
TEMPORARY TRAFFIC MANAGEMENT PLAN BARTON HIGHWAY	

Status <b>FOR APPROVAL</b> NOT TO BE USED FOR CONSTRUCTION PURPOSES			
DATUM AHD	Scale NTS	Size A1	
Drawing Number 50517019 - C100			Revision 1



## **A.2 FOOTPRINT OVERLAID ON BIODIVERSITY CONSTRAINTS**

This map demonstrates the ability of the final construction footprint to avoid and minimise impacts on biodiversity values on Whitefields Road. Please note that tree IDs are present for all trees that require removal. T110 (superb parrot HBT), 127 (superb parrot HBT), 131 (HBT) and, T37, 65, 69, 86, 106, 115, 164 (mature trees).




# Whitefields Rd Roadside Vegetation Management and Landscaping Plan

## Map A2 Layout

### Legend




-  Road footprint
-  30m buffer study area

### All trees - Actions [165]

-  Remove [10]
-  Retain [126]
-  Trim [29]

-  Superb Parrot HBT 30m buffer

### Constraints

-  High - HBTs incl Superb Parrot
-  Moderate - mature trees
-  Low - grasses, juv trees

### Notes:

- Data collected by NGH Environmental (2018)
- Client data courtesy of Client, received 2018
- Base map Copyright QGIS and its data suppliers
- Datum GDA 94 Zone 55

0 60 120 180 240 300 m

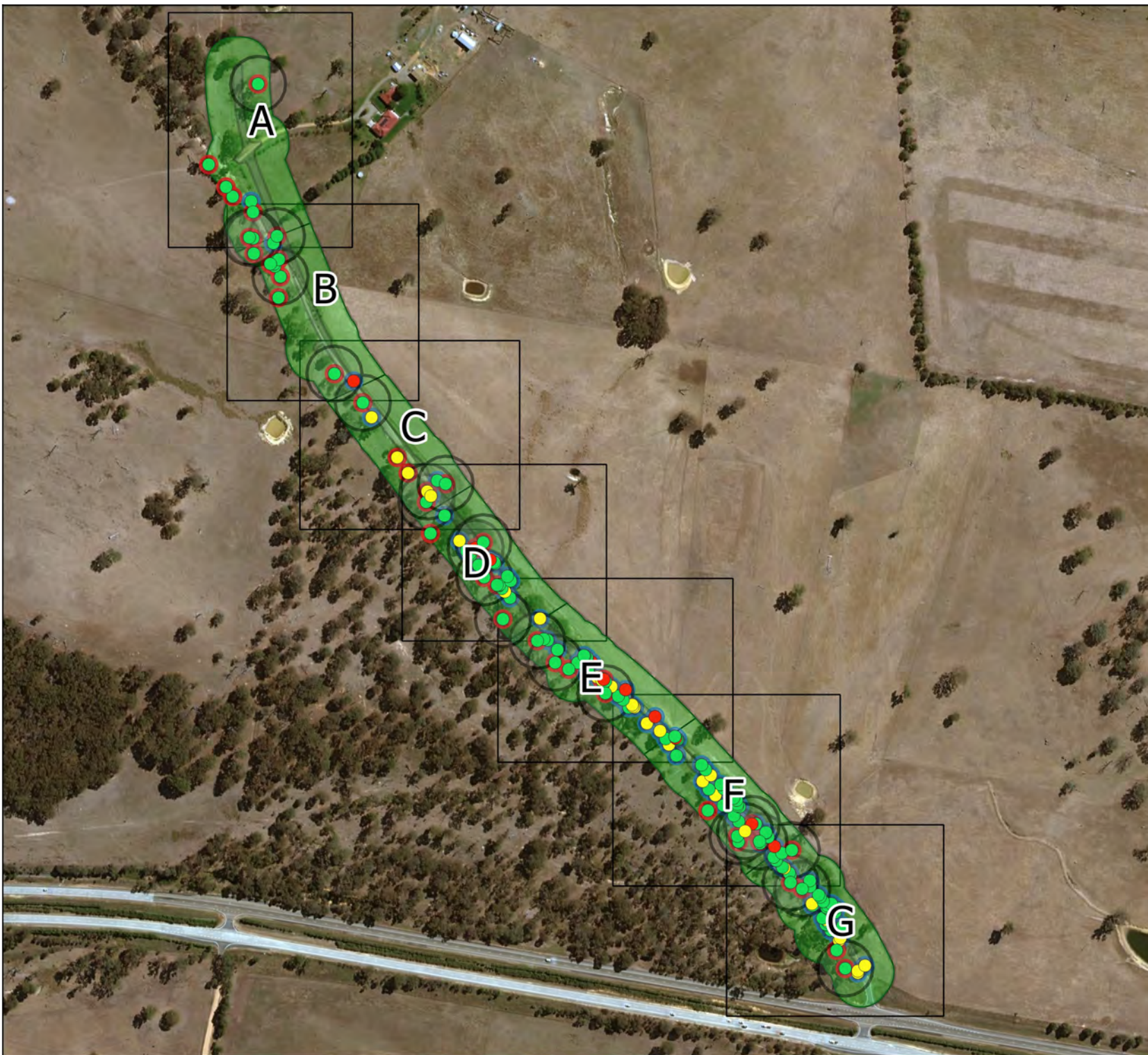
A4 @ 1:6950

Ref: 185-617 Coppabella Whitefields Rd  
tree lopping 240519

Author: beth.n

Date created: 13/6/2019



**ngh** environmental









# Whitefields Rd Roadside Vegetation Management and Landscaping Plan - Map A2




## Legend

-  Road footprint
-  Road 30m buffer study area

## All trees - actions [165]

-  Remove [10]
-  Retain [126]
-  Trim [29]
-  Superb Parrot HBT 30m buffer

## Constraints

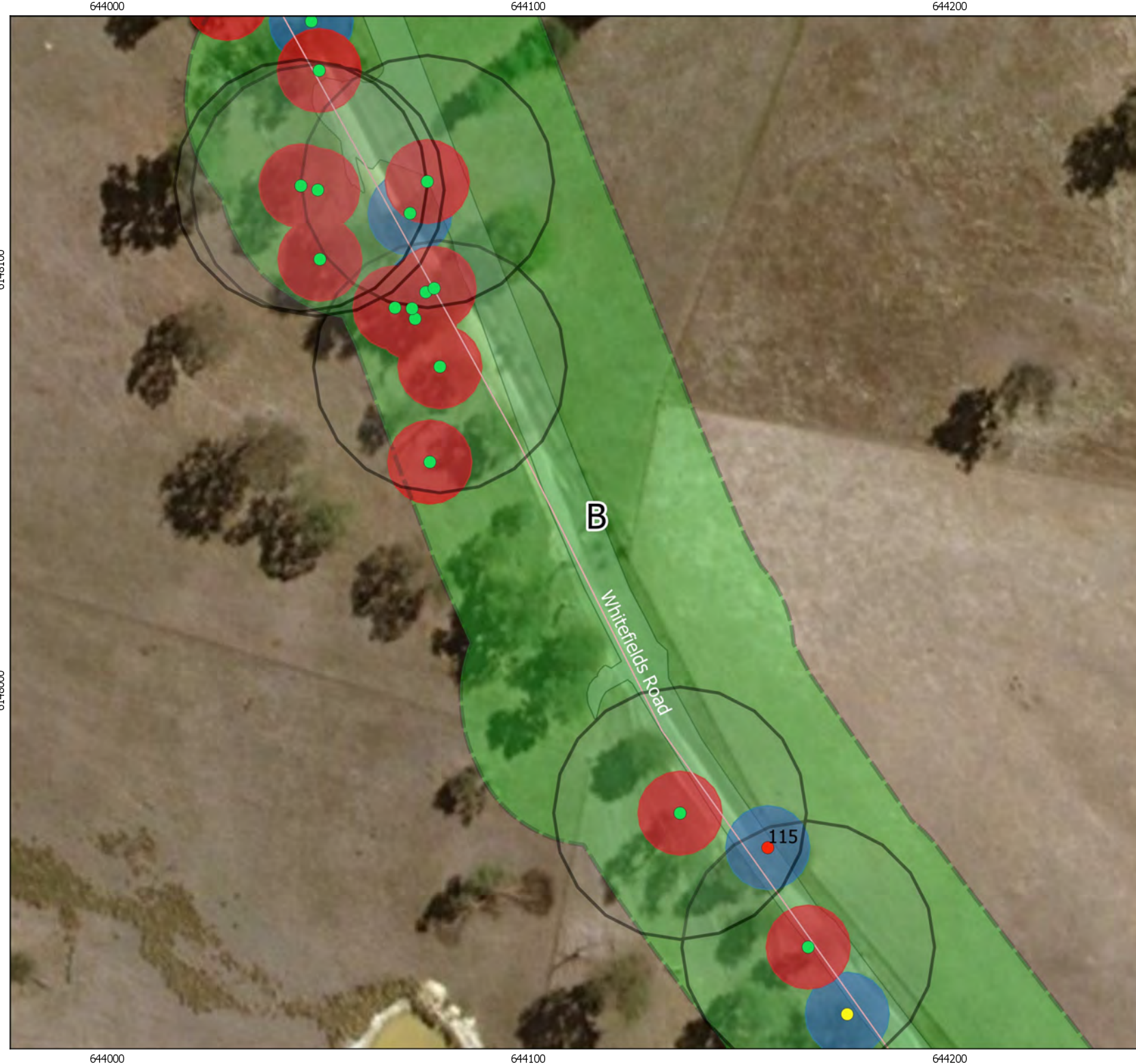
-  High - HBTs incl Superb Parrot
-  Moderate - mature trees
-  Low - grasses, juv trees

Notes:  
- Data collected by NGH Environmental (2019)  
- Client data courtesy of Client, received 2019  
- Base map Copyright QGIS and its data suppliers  
- Datum GDA 94 Zone 55



A4 @ 1:1227  
Ref: 185-617 Coppabella Whitefields Rd  
tree lopping 240519  
Author: beth.n  
Date created: 27/6/2019





# Whitefields Rd Roadside Vegetation Management and Landscaping Plan - Map A2

## Legend

- Road footprint
- Road 30m buffer study area

## All trees - actions [165]

- Remove [10]
- Retain [126]
- Trim [29]

- Superb Parrot HBT 30m buffer

## Constraints

- High - HBTs incl Superb Parrot
- Moderate - mature trees
- Low - grasses, juv trees

## Notes:

- Data collected by NGH Environmental (2019)
- Client data courtesy of Client, received 2019
- Base map Copyright QGIS and its data suppliers
- Datum GDA 94 Zone 55



A4 @ 1:1227

Ref: 185-617 Coppabella Whitefields Rd tree lopping 240519

Author: beth.n

Date created: 27/6/2019





# Whitefields Rd Roadside Vegetation Management and Landscaping Plan - Map A2

## Legend

- Road footprint
- Road 30m buffer study area
- All trees - actions [165]**
  - Remove [10]
  - Retain [126]
  - Trim [29]
- Superb Parrot HBT 30m buffer

## Constraints

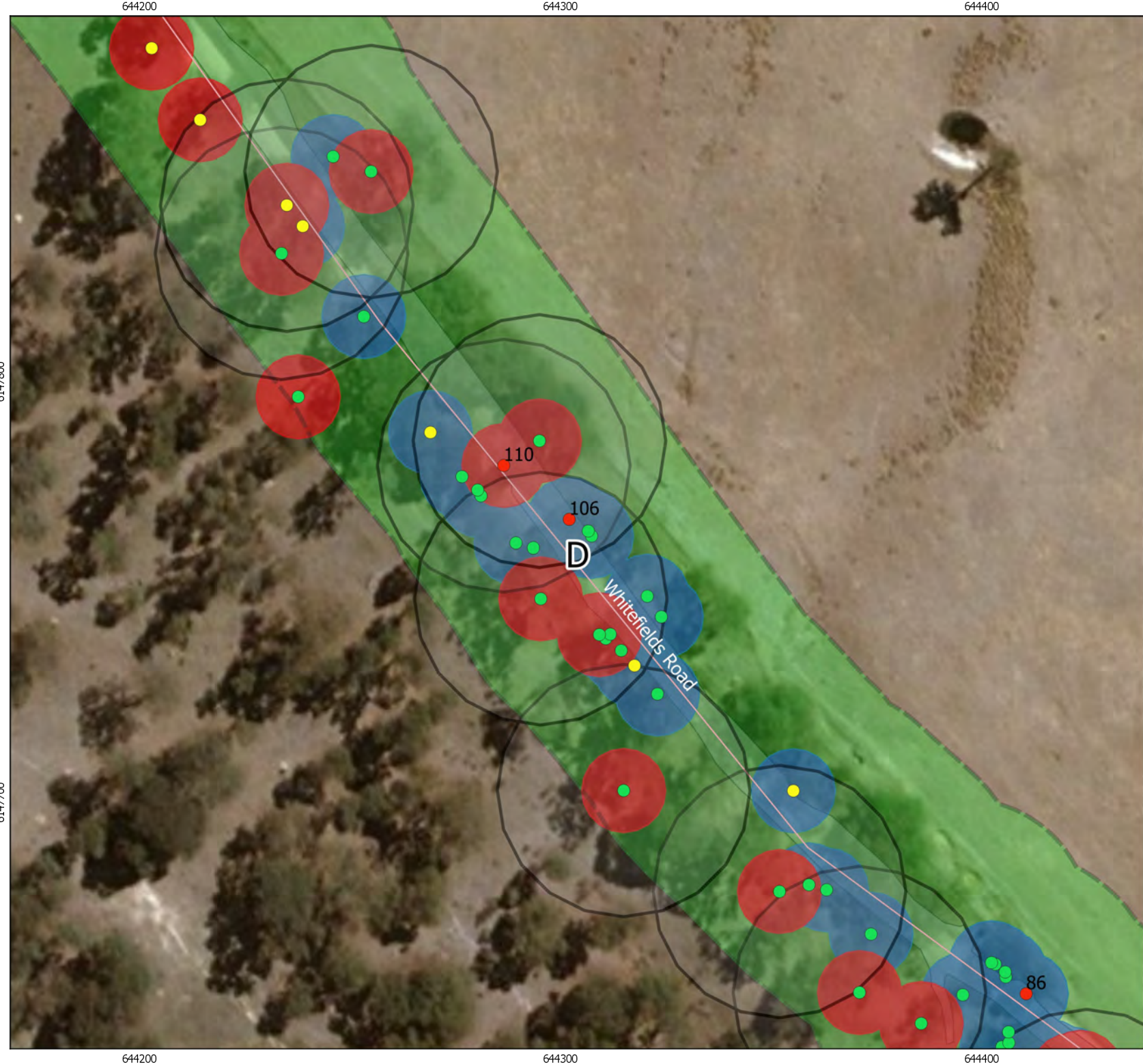
- High - HBTs incl Superb Parrot
- Moderate - mature trees
- Low - grasses, juv trees

Notes:  
- Data collected by NGH Environmental (2019)  
- Client data courtesy of Client, received 2019  
- Base map Copyright QGIS and its data suppliers  
- Datum GDA 94 Zone 55





A4 @ 1:1227  
Ref: 185-617 Coppabella Whitefields Rd tree lopping 240519  
Author: beth.n  
Date created: 27/6/2019






# Whitefields Rd Roadside Vegetation Management and Landscaping Plan - Map A2

## Legend




-  Road footprint
-  Road 30m buffer study area

## All trees - actions [165]

-  Remove [10]
-  Retain [126]
-  Trim [29]

-  Superb Parrot HBT 30m buffer

## Constraints

-  High - HBTs incl Superb Parrot
-  Moderate - mature trees
-  Low - grasses, juv trees

## Notes:

- Data collected by NGH Environmental (2019)
- Client data courtesy of Client, received 2019
- Base map Copyright QGIS and its data suppliers
- Datum GDA 94 Zone 55



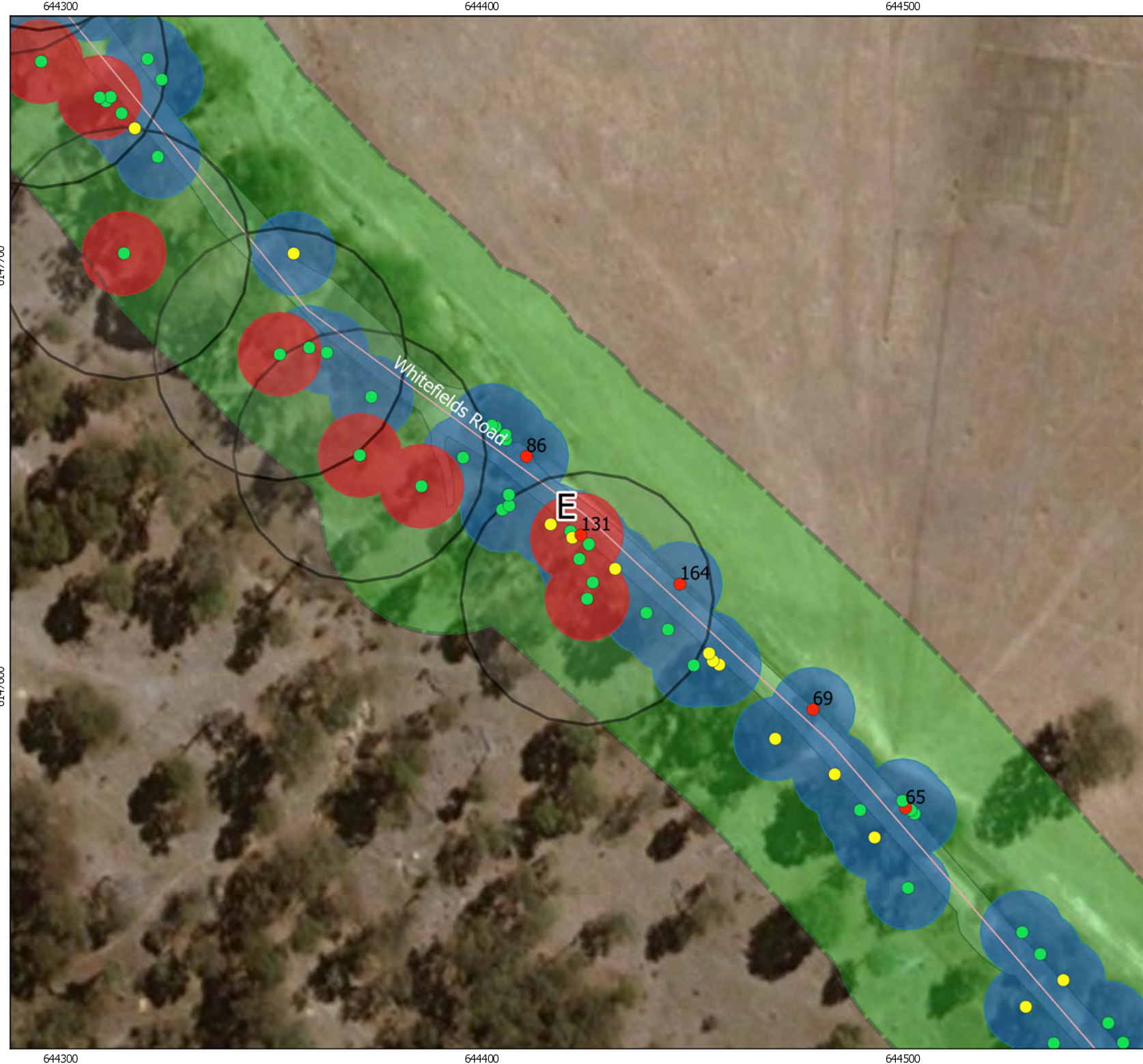
A4 @ 1:1227

Ref: 185-617 Coppabella Whitefields Rd tree lopping 240519

Author: beth.n

Date created: 27/6/2019





**Whitefields Rd Roadside  
Vegetation Management  
and Landscaping Plan -  
Map A2**

**Legend**

- Road footprint
- Road 30m buffer study area

**All trees - actions [165]**

- Remove [10]
- Retain [126]
- Trim [29]

- Superb Parrot HBT 30m buffer

**Constraints**

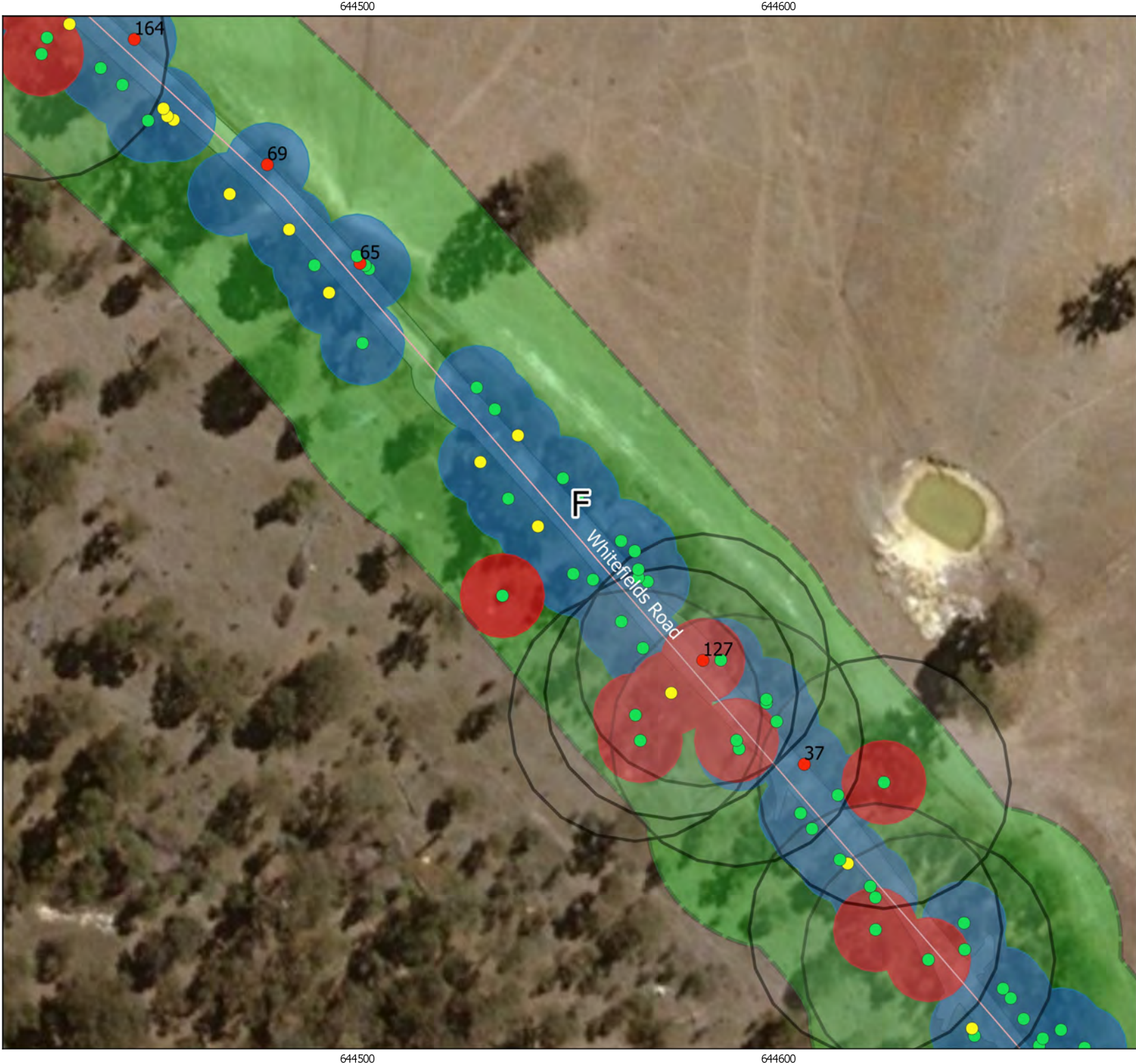
- High - HBTs incl Superb Parrot
- Moderate - mature trees
- Low - grasses, juv trees

Notes:  
- Data collected by NGH Environmental (2019)  
- Client data courtesy of Client, received 2019  
- Base map Copyright QGIS and its data suppliers  
- Datum GDA 94 Zone 55



A4 @ 1:1227  
Ref: 185-617 Coppabella Whitefields Rd  
tree lopping 240519  
Author: beth.n  
Date created: 27/6/2019





# Whitefields Rd Roadside Vegetation Management and Landscaping Plan - Map A2

## Legend

Road footprint

Road 30m buffer study area

All trees - actions [165]

Remove [10]

Retain [126]

Trim [29]

Superb Parrot HBT 30m buffer

Constraints

High - HBTs incl Superb Parrot

Moderate - mature trees

Low - grasses, juv trees

Notes:

- Data collected by NGH Environmental (2019)

- Client data courtesy of Client, received 2019

- Base map Copyright QGIS and its data suppliers

- Datum GDA 94 Zone 55

01530456075 m

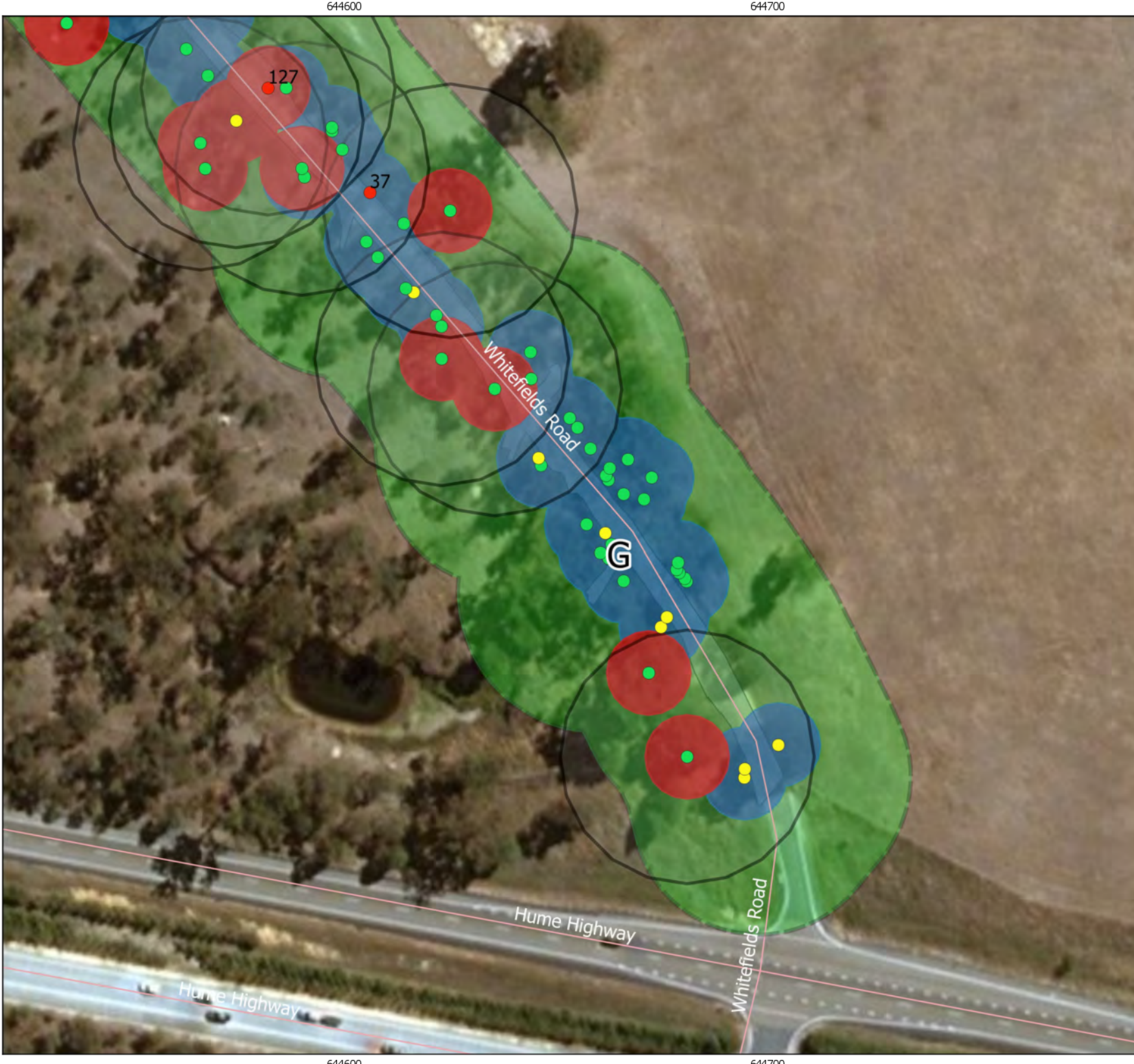
A4 @ 1:1227

Ref: 185-617 Coppabella Whitefields Rd tree lopping 240519

Author: beth.n

Date created: 27/6/2019

ngh environmental



## Whitefields Rd Roadside Vegetation Management and Landscaping Plan - Map A2

### Legend

- Road footprint
- Road 30m buffer study area

### All trees - actions [165]

- Remove [10]
- Retain [126]
- Trim [29]

- Superb Parrot HBT 30m buffer

### Constraints

- High - HBTs incl Superb Parrot
- Moderate - mature trees
- Low - grasses, juv trees

### Notes:

- Data collected by NGH Environmental (2019)
- Client data courtesy of Client, received 2019
- Base map Copyright QGIS and its data suppliers
- Datum GDA 94 Zone 55

0 15 30 45 60 75 m



A4 @ 1:1227

Ref: 185-617 Coppabella Whitefields Rd tree lopping 240519

Author: beth.n

Date created: 27/6/2019



## APPENDIX B CONDITION CROSS REFERENCE

### B.1 NSW CONDITIONS

Project conditions of relevance to the management of biodiversity impacts are included below, noting which are addressed in this BMP.

Condition	Requirement relevant to biodiversity	Addressed:
<b>Department of Planning and Environment Consent Schedule 3</b>		
<b>Condition 19</b>	<b>Restrictions on clearing and habitat</b> The Applicant must: (b) remove no more than 4 hollow-bearing trees along Whitefields Road, unless the Secretary agrees otherwise	<b>Refer to Section 5</b>
	(c) implement all reasonable and feasible measures to: <ul style="list-style-type: none"> <li>minimise the limb lopping on hollow-bearing trees and mature trees along Whitefields Road;</li> </ul>	<b>Refer to Section 3 and Section 5</b>
<b>Condition 27</b>	<b>White fields Road Upgrade</b> Prior to the construction of the proposed upgrade to Whitefields Road, the Applicant shall prepare detailed plans for the upgrade in consultation with the relevant Council, and to the satisfaction of the Secretary. In preparing these plans, the Applicant must seek to avoid and/or minimise the clearing of mature vegetation adjacent to the road. Further, the detailed plans must include a landscaping plan for replacing the removal of any existing vegetation and/or augmenting the existing vegetation adjacent to the upgraded road, with species that are endemic to the locality.	<b>Refer to Map A.2 showing avoiding and minimising vegetation loss and Appendix C for replacement and infill planting</b>
<b>Response to Submissions 1 February 2018</b>		
<b>Item 11</b>	A minor upgrade to Coppabella Road (approximately 2km, identified on Figure 3-3) is to be designed in consultation with Hilltops Council to facilitate movements between parts of the layout during construction and operation. No over size or over mass vehicles are proposed for this section of Coppabella Road. No tree removal is allowed for the upgrade works, other than may be consented by Hilltops Council.	<b>Coppabella Road is not required to be used for construction and therefore does not require upgrade</b>

## B.2 EPBC ACT CONDITIONS OF APPROVAL

Project conditions of relevance to the management of biodiversity impacts are included below, noting which are addressed in this BMP.

DoEE Consent		Addressed:
<b>Condition 1</b>	<p>The approval holder must:</p> <p>a) Implement conditions 8, 9 and 10 of Schedule 2 and conditions 18(a),(b),(c), 19, 19A, 20(a) and (c), 21, 22, and 27 of Schedule 3 of the NSW development consent as it relates to impacts to protected matters.</p> <p>[relevant conditions restated below for auditability]</p>	
	<i>(b) remove no more than 4 hollow-bearing trees along Whitefields Road, unless the Secretary agrees otherwise</i>	<b>Refer to Section 3</b>
	<i>(c) implement all reasonable and feasible measures to:</i> <i>minimise the limb lopping on hollow-bearing trees and mature trees along Whitefields Road;</i>	<b>Refer to Section 3</b>
	<i>Condition 27. Prior to the construction of the proposed upgrade to Whitefields Road, the Applicant shall prepare detailed plans for the upgrade in consultation with the relevant Council, and to the satisfaction of the Secretary. In preparing these plans, the Applicant must seek to avoid and/or minimise the clearing of mature vegetation adjacent to the road. Further, the detailed plans must include a landscaping plan for replacing the removal of any existing vegetation and/or augmenting the existing vegetation adjacent to the upgraded road, with species that are endemic to the locality.</i>	<b>Refer to Section 3, Appendix A and Appendix C.</b>
<b>Condition 3</b>	<p>The approval holder must protect known and potential Superb Parrot nest trees by:</p> <p>a) only conducting blasting 50 m and clearing within 30 m of known and potential nest trees (as determined through EPBC condition 5) between 1 February to 31 August (outside the breeding season).</p> <p>b) minimising locating onsite infrastructure within 50 m from known and potential nest trees.</p>	<b>Refer to Section 3</b> Figure 3-3

DoEE Consent		Addressed:
<b>Condition 8</b>	<p>In order to protect foraging and potential breeding habitat for the Superb Parrot, prior to the clearance and trimming of roadside vegetation for the transport of the turbine components and associated infrastructure, the approval holder must submit a Roadside Vegetation Management Plan (RVMP) to the Minister for approval. Clearing and trimming of roadside vegetation must not commence unless the Minister has approved the RVMP. The approved RVMP must be implemented. The plan must include the following requirements:</p> <ul style="list-style-type: none"> <li>a. Final clearance footprint along roadsides outlining vegetation to be cleared and lopped and evidence that impacts to protected matters will be minimised.</li> <li>b. Evidence that clearing will be within the limits allowable for this approval specified in EPBC condition 2.</li> <li>c. Identification of responsible parties who will manage the native vegetation clearance and trimming process.</li> <li>d. Evidence that clearing and trimming of hollow bearing trees in the roadside vegetation has been minimised.</li> </ul>	<b>This plan and refer to Section 3</b>

## **APPENDIX C INFILL AND REPLACEMENT PLANTING AREAS**

This Appendix sets out:

- Areas proposed for infill planting are shown in C.1. Several areas are shown as landowner consultation and consent is still required and thus the locations need to be flexible.
- Proposed replacement planting rationale and ratios, shown in C.2.
- Planting methods and resources including species, densities and methodology, shown in C.3.

## C.1 AREAS PROPOSED FOR INFILL AND REPLACEMENT PLANTING

The following map identifies areas suitable to augment the existing native tree cover remnants along Whitefields Road and in adjacent areas.

The locations proposed target specific moderate/low areas constraint areas as these areas would benefit most from enhancement (constraint areas shown in detail on Map set A.2). Additionally, given the limited available room for additional planting in the road reserve, Goldwind have investigated the potential to include plantings on adjacent private property. These areas are shown below. They take into account existing connectivity and areas where connectivity may be improved. The existing connectivity of overstorey vegetation near to the wind farm entry narrows and planting additional trees in this area, if protected from stock and other impacts, will provide better long-term benefits than supplementary planting in the constrained existing road reserve. A third area is identified running further north on private property.

Some flexibility is required regarding the final areas selected, in consultation with landowners and Council.



# Coppabella Whitefields Rd Roadside Vegetation Management and Landscaping Plan - Infill & Replacement Planting Map

## Legend

- Road footprint
- Infill & Replacement Planting

## Notes:

- Data collected by NGH Environmental (2018)
- Client data courtesy of Client, received 2018
- Base map Copyright QGIS and its data suppliers
- Datum GDA 94 Zone 55

0 60 120 180 240 300 m



A4 @ 1:12248

Ref: 185-617 Coppabella Whitefields Rd  
tree lopping 240519

Author: beth.n

Date created: 27/6/2019



## C.2 PROPOSED INFILL AND REPLACEMENT PLANTING

Supplementary planting is proposed at a 1:10 (impacted to replacement) ratio for hollow and mature trees to be removed from Whitefields Road.

Figure 7-1 Supplementary Planting Rates

Constraint category	Impacted trees (Section 3)	Proposed replacement planting
<b>High (avoid impacts where practical)</b>	Up to 4 Hollow bearing trees	<p>A minimum of 40 overstorey trees of species from Table 7-2 are to be planted in areas shown in Appendix C.1. These areas are infill revegetation areas and will benefit from ecological enhancement through supplementary planting.</p> <p>Additionally, mid storey shrub species consistent with Superb Parrot food sources and woodland bird habitat will be planted.</p> <p>Planting rates and location will take into account the presence of existing understorey and trees present ensuring enough space for existing plants whilst allowing new plantings to grow without impediment. See proposed planting schedule in Figure 7-2.</p>
<b>Moderate (minimise impacts, where practical)</b>	Mature trees	

## C.3 PLANTING METHODS AND RESOURCES

### *Species for infill and replacement planting*

The species for use as vegetation enhancement plantings would be representative of the EEC Blakely's Red Gum Yellow Box Grassy Woodland, in order to enhance the existing native vegetation. Overstorey species should be selected from the following list:

Figure 7-2 Planting schedule

Scientific Name	Common Name	Planting Rate
<b>TREES</b>		
<i>Eucalyptus bridgesiana</i>	Apple Box	Replacement 1:10
<i>Eucalyptus macrorhyncha</i>	Red Stringybark	Replacement 1:10
<i>Eucalyptus melliodora</i>	Yellow Box	Replacement 1:10
<i>Eucalyptus blakelyi</i>	Blakely's Red Gum	Replacement 1:10
<i>Eucalyptus polyanthemus</i>	Red Box	Replacement 1:10
<b>SHRUBS</b>		
<i>Acacia decora</i>	Western Silver Wattle	1 plant / 4 m <sup>2</sup>
<i>Acacia implexa</i>	Hickory Wattle	1 plant / 4 m <sup>2</sup>
<i>Acacia deanei</i> subsp. <i>paucijuga</i>	Green Wattle	1 plant / 4 m <sup>2</sup>
<i>Acacia gentisifolia</i>	Early Wattle	1 plant / 4 m <sup>2</sup>

Scientific Name	Common Name	Planting Rate
<i>Acacia buxifolia</i>	Box-leaf Wattle	1 plant / 4 m <sup>2</sup>
<i>Bursaria spinosa</i>	Sweet Bursaria	1 plant / 4 m <sup>2</sup>
<i>Cassinia aculeata</i>	Dolly Bush	1 plant / 4 m <sup>2</sup>
<i>Dodonaea viscosa</i>	Sticky Hop-bush	1 plant / 4 m <sup>2</sup>
<i>Hibbertia riparia</i>	Erect Guinea-flower	1 plant / 4 m <sup>2</sup>

### ***Sourcing of plant material***

Plants would be sourced from local provenance. Only hardened tube stock will be planted out. Tubestock should be hardened off at the nursery for two weeks prior to planting out. The tubestock to be used in vegetation enhancement of the site would be grown from plant material that has been sourced from the local area preferably. Tubestock would be grown or supplied by a reputable local nursery or supplier and would be of a sufficient size and quantity to establish successfully at the site.

When sourcing material, priority will be given to plants grown in at least 7.5 cm pots with sufficient root and shoot growth. Plants in this size pot are recommended as they are physiologically dynamic, small enough to plant, but large enough to cope with transplant shock. Tubestock would be of a good size with sufficient, healthy, root and shoot growth. Ideally a root:shoot ratio between 1 and 3 is ideal.

### ***Density and planting methods***

Trees are recommended to be planted about 25 metres from other live, established trees and tree seedlings. However, stags could have seedlings planted with 10 metres of the base to compensate for potential deterioration of the stag over time. Planting densities for the infill will generally be in accordance with:

- Trees planted at a rate of 1 plant/8m<sup>2</sup>.
- Shrubs planted at a rate of 1 plant/4m<sup>2</sup>.

### ***Establishment and monitoring requirements***

Ideally, tube stock will be planted in autumn with:

- Water crystals, or regularly watered until established
- Tree guards, to provide some protection from wind and wildlife
- Stock proof tree guards, if managed grazing is to occur
- Photographic records of the planting and establishment progress

Plants will be monitored and dead plants replaced until all plants are deemed to be established (suggested timeframe of 5 years) weed management will be conducted throughout this timeframe.

## APPENDIX D PHOTOGRAPHS, WHITEFIELDS ROAD

High constraint



Large hollow bearing trees



Large hollow bearing trees



**Aboriginal Scarred Tree (also hollow bearing tree, being retained)**

Moderate constraint



Stand of mature trees



Individual mature trees

Low constraint



Treeless areas



Immature trees (to the right of the road in foreground)