

27 May 2020

Our ref: 1415

Senior Planner
Mareeba Shire Council
PO Box 154
MAREEBA QLD 4880

Attention: Brian Millard

Dear Brian,

**APPLICATION FOR DEVELOPMENT PERMIT FOR OPERATIONAL WORKS
LOT 1 ON RP743970, BLACK MOUNTAIN ROAD SUBDIVISION**

On behalf of our client, Navid Derakhshan, we submit this application for a Development Permit for Operational Works on Lot 1 on RP743970, Black Mountain Road, Kuranda.

The Operational Works proposed for the civil works and services associated with the planning approval RAL/18/0025, in particular this application seeks to address Conditions 4.1 to 4.4 inclusive.

This application is comprised of the following documents:

1. FNQROC Statement of Compliance;
2. DA Form 1;
3. Stormwater Management Report; and
4. Engineering Design Drawings.

In addition to the Operational Works Application, the Client requests Council consider the external roadworks as creditable works for the following reasons.

Black Mountain Road is rural in nature and currently serves existing rural allotments. That is, it is served by roadside tabledrains and does not have kerb and channel. It is acknowledged that beyond the rural developments, the road is used to serve existing forestry roads. However, future development within the catchment will generally consist of infill development similar to this one.

We understand that the road fronting the site (Black Mountain Road) is shown as trunk infrastructure identified as requiring upgrades consistent with Council's Local Government Infrastructure Plan (LGIP).

The proposed external upgrades (widening, kerb and channel and verge) to Black Mountain Road do not appear to be required as a result of the development, but rather to reflect Council's requirements for the longer-term network upgrades. Similarly, the proposed upgrades do not appear to be infill upgrades to provide consistency with the adjacent properties, but rather upgrades to the network.

On this basis we consider that these upgrades are considered creditable. Therefore, we request Council consider these external works as being trunk infrastructure and therefore creditable.

We trust the attached application and supporting information is sufficient to allow Council to complete its assessment.

Should you have any queries, do not hesitate to contact this office.

Yours sincerely

TRINITY ENGINEERING AND CONSULTING



Scott Christensen
Project Manager

Encl Operational Works Application

Item 1

FNQROC Statement of Compliance

FNQROC DEVELOPMENT MANUAL

Council **MAREEBA SHIRE COUNCIL**
(INSERT COUNCIL NAME)

STATEMENT OF COMPLIANCE OPERATIONAL WORKS DESIGN

This form duly completed and signed by an authorised agent of the Designer shall be submitted with the Operational Works Application for Council Approval.

Name of Development **Black Mountain Road Subdivision**

Location of Development **2-6 Black Mountain Road, Kuranda**

Applicant **Navid Derakhshan**

Designer **Trinity Engineering and Consulting**

It is hereby certified that the Calculations, Drawings, Specifications and related documents submitted herewith have been prepared, checked and amended in accordance with the requirements of the FNQROC Development Manual and that the completed works comply with the requirements therein, **except** as noted below.

Compliance with the requirements of the Operational Works Design Guidelines	Non-Compliance refer to non-compliance report / drawing number
Plan Presentation	
Geotechnical requirements	N.A.
Geometric Road Design	
Pavements	
Structures / Bridges	N.A.
Subsurface Drainage	
Stormwater Drainage	Refer stormwater report
Site Re-grading	N.A. Not proposing to regrade site
Erosion Control and Stormwater Management	
Pest Plant Management	
Cycleway / Pathways	Refer design file note re verge

Landscaping	N.A.
Water Source and Disinfection/Treatment Infrastructure (if applicable)	N.A.
Water Reticulation, Pump Stations and water storages	
Sewer Reticulation and Pump Stations	N.A.
Electrical Reticulation and Street Lighting	N.A.
Public Transport	N.A.
Associated Documentation/ Specification	
Priced Schedule of Quantities	To be provide prior to construction
Referral Agency Conditions	
Supporting Information (AP1.08)	
Other	

Conscientiously believing the above statements to be true and correct, signed on behalf of:

Designer TRINITY ENGINEERING + CONSULTING RPEQ No 8462

Name in Full Paul Steele

Signature Date 26-May-2020



BLACK MOUNTAIN ROAD SUBDIVISION DESIGN ASSUMPTIONS AND CLARIFICATIONS

BACKGROUND

The proposed development is for the creation of 4 rural lots located on Black Mountain Road, Kuranda. The site currently serves as a rural residential property with existing access from Black Mountain Road.

This application is for the civil works associated with the creation of the 4 lots as per the Council Decision Notice, which includes:

- Road widening to Black Mountain Road;
- Access driveways;
- Provision of water reticulation.

Details below discuss any design assumptions and/or clarifications associated with the development.

ROADWORKS

In accordance with the Decision Notice Conditions, Black Mountain Road has been widened along the site frontage to 4.5m from the existing centreline and the construction of barrier kerb and channel to the frontage of the lots. Sealing is proposed to be 2 coat bitumen seal or 30mm asphalt, depending on sealing availability.

During an inspection with Council Officers 24 March 2020, Council requested the provision of a verge behind the proposed kerb and channel. Austroads requires 1.5m behind kerb and channel. Where possible a 1.5m wide verge has been proposed except for approximate chainage 40 to 100 where the verge is narrowed to minimise disturbance of the existing earth batter. At these locations the verge can narrow to 0.9m locally.

DRIVEWAYS

To mitigate access point conflicts on Black Mountain Road, the combination of access points has been proposed. Lots 1 and 2 can be accessed via a shared crossover at the northern end of the site frontage. Driveway grades are up to 12% max.

Lots 3 and 4 can be accessed via a shared crossover at the existing driveway location. Driveway grades are up to 25% max and are consistent with the existing driveway grades.

All lots have individual driveways within their respective lots and will be constructed of either concrete, bitumen or asphalt depending on contractor availability.

EARTHWORKS

It is the Client's desire to retain the existing earth batters in order to mitigate potential erosion issues if the batters are disturbed. Therefore, earthworks are generally limited the road construction and creation of the driveways. Earthworks will be undertaken at Lot 3 and 4 access crossover to provide sight distance for vehicles leaving their lots.

WATER RETICULATION

The site is currently serviced via a water reticulation crossing Black Mountain Road in the vicinity of the existing driveway. It is intended to utilise this crossing to service lots 3 and 4.

A new road crossing of Black Mountain Road is proposed in order to service Lots 1 and 2.

STORMWATER

Details of the stormwater are contained in the attached stormwater report.

Item 2
DA Form 1

DA Form 1 – Development application details

Approved form (version 1.2 effective 7 February 2020) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving only building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development (i.e. material change of use, operational work or reconfiguring a lot)**, use this form (*DA Form 1*) and parts 4 to 6 of *DA Form 2 – Building work details*.

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*. For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (individual or company full name)	Navid Derakhshan
Contact name (only applicable for companies)	
Postal address (P.O. Box or street address)	c/- Trinity Engineering and Consulting Pty Ltd PO Box 7963
Suburb	Cairns
State	QLD
Postcode	4870
Country	Australia
Contact number	07 4040 7111
Email address (non-mandatory)	admin@trinityengineering.com.au
Mobile number (non-mandatory)	
Fax number (non-mandatory)	
Applicant's reference number(s) (if applicable)	

2) Owner's consent	
2.1) Is written consent of the owner required for this development application?	
<input type="checkbox"/> Yes – the written consent of the owner(s) is attached to this development application	
<input type="checkbox"/> No – proceed to 3)	

PART 2 – LOCATION DETAILS

3) Location of the premises (complete 3.1) or 3.2), and 3.3) as applicable)

Note: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see [DA Forms Guide: Relevant plans](#).

3.1) Street address and lot on plan

- ☒ Street address **AND** lot on plan (all lots must be listed), **or**
☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises (appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).

a)	Unit No.	Street No.	Street Name and Type	Suburb
		2-6	Black Mountain Road	Kuranda
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
	4881	1	RP743970	Mareeba Shire
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)

3.2) Coordinates of premises (appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)

Note: Place each set of coordinates in a separate row.

- ☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) (if applicable)
		<input type="checkbox"/> WGS84 <input type="checkbox"/> GDA94 <input type="checkbox"/> Other:	

- ☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) (if applicable)
		<input type="checkbox"/> 54 <input type="checkbox"/> 55 <input type="checkbox"/> 56	<input type="checkbox"/> WGS84 <input type="checkbox"/> GDA94 <input type="checkbox"/> Other:	

3.3) Additional premises

- ☐ Additional premises are relevant to this development application and the details of these premises have been attached in a schedule to this development application
☐ Not required

4) Identify any of the following that apply to the premises and provide any relevant details

- ☐ In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

- ☐ On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:

Name of port authority for the lot:

- ☐ In a tidal area

Name of local government for the tidal area (if applicable):

Name of port authority for tidal area (if applicable):

- ☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*

Name of airport:

<input type="checkbox"/> Listed on the Environmental Management Register (EMR) under the <i>Environmental Protection Act 1994</i>
EMR site identification: <input type="text"/>
<input type="checkbox"/> Listed on the Contaminated Land Register (CLR) under the <i>Environmental Protection Act 1994</i>
CLR site identification: <input type="text"/>

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see [DA Forms Guide](#).

- ☐ Yes – All easement locations, types and dimensions are included in plans submitted with this development application
- ☒ No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

- ☐ Material change of use ☐ Reconfiguring a lot ☒ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

- ☒ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

- ☒ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots): 1 lot into 4 lots*

e) Relevant plans

Note: *Relevant plans are required to be submitted for all aspects of this development application. For further information, see [DA Forms guide: Relevant plans](#).*

- ☒ Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

- ☐ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

- ☐ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

- ☐ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):*

e) Relevant plans

Note: *Relevant plans are required to be submitted for all aspects of this development application. For further information, see [DA Forms Guide: Relevant plans](#).*

- ☐ Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development

☐ Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application

- ☒ Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	<input type="checkbox"/> Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	<input type="checkbox"/> Yes – complete division 2
Operational work	<input checked="" type="checkbox"/> Yes – complete division 3
Building work	<input type="checkbox"/> Yes – complete <i>DA Form 2 – Building work details</i>

Division 1 – Material change of use

Note: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition (include each definition in a new row)	Number of dwelling units (if applicable)	Gross floor area (m ²) (if applicable)
8.2) Does the proposed use involve the use of existing buildings on the premises?			
<input type="checkbox"/> Yes			
<input type="checkbox"/> No			

Division 2 – Reconfiguring a lot

Note: This division is only required to be completed if any part of the development application involves reconfiguring a lot.

9.1) What is the total number of existing lots making up the premises?	
9.2) What is the nature of the lot reconfiguration? (tick all applicable boxes)	
<input type="checkbox"/> Subdivision (complete 10))	<input type="checkbox"/> Dividing land into parts by agreement (complete 11))
<input type="checkbox"/> Boundary realignment (complete 12))	<input type="checkbox"/> Creating or changing an easement giving access to a lot from a constructed road (complete 13))

10) Subdivision				
10.1) For this development, how many lots are being created and what is the intended use of those lots:				
Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				
10.2) Will the subdivision be staged?				
<input type="checkbox"/> Yes – provide additional details below				
<input type="checkbox"/> No				
How many stages will the works include?				
What stage(s) will this development application apply to?				

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?				
Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment			
12.1) What are the current and proposed areas for each lot comprising the premises?			
Current lot		Proposed lot	
Lot on plan description	Area (m ²)	Lot on plan description	Area (m ²)
12.2) What is the reason for the boundary realignment?			

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? (attach schedule if there are more than two easements)				
Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? (e.g. pedestrian access)	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

Note: This division is only required to be completed if any part of the development application involves operational work.

14.1) What is the nature of the operational work?	
<input checked="" type="checkbox"/> Road work <input type="checkbox"/> Drainage work <input type="checkbox"/> Landscaping <input type="checkbox"/> Other – please specify:	<input checked="" type="checkbox"/> Stormwater <input checked="" type="checkbox"/> Earthworks <input type="checkbox"/> Signage <input checked="" type="checkbox"/> Water infrastructure <input type="checkbox"/> Sewage infrastructure <input type="checkbox"/> Clearing vegetation
14.2) Is the operational work necessary to facilitate the creation of new lots? (e.g. subdivision)	
<input checked="" type="checkbox"/> Yes – specify number of new lots:	4
<input type="checkbox"/> No	
14.3) What is the monetary value of the proposed operational work? (include GST, materials and labour)	
\$To be confirmed	

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application
Mareeba Shire Council
16) Has the local government agreed to apply a superseded planning scheme for this development application?
<input type="checkbox"/> Yes – a copy of the decision notice is attached to this development application <input type="checkbox"/> The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached <input checked="" type="checkbox"/> No

PART 5 – REFERRAL DETAILS

17) Does this development application include any aspects that have any referral requirements?

Note: A development application will require referral if prescribed by the Planning Regulation 2017.

- ☐ No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the **Chief Executive of the Planning Act 2016:**

- ☐ Clearing native vegetation
- ☐ Contaminated land (*unexploded ordnance*)
- ☐ Environmentally relevant activities (ERA) (*only if the ERA has not been devolved to a local government*)
- ☐ Fisheries – aquaculture
- ☐ Fisheries – declared fish habitat area
- ☐ Fisheries – marine plants
- ☐ Fisheries – waterway barrier works
- ☐ Hazardous chemical facilities
- ☐ Heritage places – Queensland heritage place (*on or near a Queensland heritage place*)
- ☐ Infrastructure-related referrals – designated premises
- ☐ Infrastructure-related referrals – state transport infrastructure
- ☒ Infrastructure-related referrals – State transport corridor and future State transport corridor
- ☐ Infrastructure-related referrals – State-controlled transport tunnels and future state-controlled transport tunnels
- ☒ Infrastructure-related referrals – near a state-controlled road intersection
- ☐ Koala habitat in SEQ region – interfering with koala habitat in koala habitat areas outside koala priority areas
- ☐ Koala habitat in SEQ region – key resource areas
- ☐ Ports – Brisbane core port land – near a State transport corridor or future State transport corridor
- ☐ Ports – Brisbane core port land – environmentally relevant activity (ERA)
- ☐ Ports – Brisbane core port land – tidal works or work in a coastal management district
- ☐ Ports – Brisbane core port land – hazardous chemical facility
- ☐ Ports – Brisbane core port land – taking or interfering with water
- ☐ Ports – Brisbane core port land – referable dams
- ☐ Ports – Brisbane core port land – fisheries
- ☐ Ports – Land within Port of Brisbane's port limits (*below high-water mark*)
- ☐ SEQ development area
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – community activity
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – urban activity
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – combined use
- ☐ Tidal works or works in a coastal management district
- ☐ Reconfiguring a lot in a coastal management district or for a canal
- ☐ Erosion prone area in a coastal management district
- ☐ Urban design
- ☐ Water-related development – taking or interfering with water
- ☐ Water-related development – removing quarry material (*from a watercourse or lake*)
- ☐ Water-related development – referable dams
- ☐ Water-related development – levees (*category 3 levees only*)
- ☐ Wetland protection area

Matters requiring referral to the **local government:**

- ☐ Airport land
- ☐ Environmentally relevant activities (ERA) (*only if the ERA has been devolved to local government*)

<input type="checkbox"/> Heritage places – Local heritage places
Matters requiring referral to the Chief Executive of the distribution entity or transmission entity:
<input type="checkbox"/> Infrastructure-related referrals – Electricity infrastructure
Matters requiring referral to:
<ul style="list-style-type: none"> • The Chief Executive of the holder of the licence, if not an individual • The holder of the licence, if the holder of the licence is an individual
<input type="checkbox"/> Infrastructure-related referrals – Oil and gas infrastructure
Matters requiring referral to the Brisbane City Council:
<input type="checkbox"/> Ports – Brisbane core port land
Matters requiring referral to the Minister responsible for administering the Transport Infrastructure Act 1994:
<input type="checkbox"/> Ports – Brisbane core port land <i>(where inconsistent with the Brisbane port LUP for transport reasons)</i>
<input type="checkbox"/> Ports – Strategic port land
Matters requiring referral to the relevant port operator , if applicant is not port operator:
<input type="checkbox"/> Ports – Land within Port of Brisbane's port limits <i>(below high-water mark)</i>
Matters requiring referral to the Chief Executive of the relevant port authority:
<input type="checkbox"/> Ports – Land within limits of another port <i>(below high-water mark)</i>
Matters requiring referral to the Gold Coast Waterways Authority:
<input type="checkbox"/> Tidal works or work in a coastal management district <i>(in Gold Coast waters)</i>
Matters requiring referral to the Queensland Fire and Emergency Service:
<input type="checkbox"/> Tidal works or work in a coastal management district <i>(involving a marina (more than six vessel berths))</i>

18) Has any referral agency provided a referral response for this development application?		
<input checked="" type="checkbox"/> Yes – referral response(s) received and listed below are attached to this development application		
<input type="checkbox"/> No		
Referral requirement	Referral agency	Date of referral response
State transport corridor and future State transport corridor	Dept of Transport and Main Roads	28 Aug 2018
Identify and describe any changes made to the proposed development application that was the subject of the referral response and this development application, or include details in a schedule to this development application <i>(if applicable)</i> .		

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules
<input checked="" type="checkbox"/> I agree to receive an information request if determined necessary for this development application
<input type="checkbox"/> I do not agree to accept an information request for this development application
<p>Note: By not agreeing to accept an information request I, the applicant, acknowledge:</p> <ul style="list-style-type: none"> • that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties • Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules. <p>Further advice about information requests is contained in the DA Forms Guide.</p>

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? (e.g. a preliminary approval)

- ☐ Yes – provide details below or include details in a schedule to this development application
☒ No

List of approval/development application references	Reference number	Date	Assessment manager
<input type="checkbox"/> Approval <input type="checkbox"/> Development application			
<input type="checkbox"/> Approval <input type="checkbox"/> Development application			

21) Has the portable long service leave levy been paid? (only applicable to development applications involving building work or operational work)

- ☐ Yes – a copy of the receipted QLeave form is attached to this development application
☒ No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid
☐ Not applicable (e.g. building and construction work is less than \$150,000 excluding GST)

Amount paid	Date paid (dd/mm/yy)	QLeave levy number (A, B or E)
\$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

- ☐ Yes – show cause or enforcement notice is attached
☒ No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

- ☐ Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below
☒ No

Note: Application for an environmental authority can be found by searching “ESR/2015/1791” as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.

Proposed ERA number:		Proposed ERA threshold:	
Proposed ERA name:			

- ☐ Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

- ☐ Yes – Form 69: Notification of a facility exceeding 10% of schedule 15 threshold is attached to this development application
☒ No

Note: See www.business.qld.gov.au for further information about hazardous chemical notifications.

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation that the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

☐ Yes – this development application includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

☒ No

Note: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.
2. See <https://www.qld.gov.au/environment/land/vegetation/applying> for further information on how to obtain a s22A determination.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

☐ Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

☒ No

Note: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.

Koala habitat in SEQ Region

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work which is assessable development under Schedule 10, Part 10 of the Planning Regulation 2017?

☐ Yes – the development application involves premises in the koala habitat area in the koala priority area

☐ Yes – the development application involves premises in the koala habitat area outside the koala priority area

☒ No

Note: If a koala habitat area determination has been obtained for this premises and is current over the land, it should be provided as part of this development application. See koala habitat area guidance materials at www.des.qld.gov.au for further information.

Water resources

23.6) Does this development application involve **taking or interfering with underground water through an artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water under the *Water Act 2000***?

☐ Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development

☒ No

Note: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au for further information.

DA templates are available from <https://planning.dsdmip.qld.gov.au/>. If the development application involves:

- Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1
- Taking or interfering with water in a watercourse, lake or spring: complete DA Form 1 Template 2
- Taking overland flow water: complete DA Form 1 Template 3.

Waterway barrier works

23.7) Does this application involve **waterway barrier works**?

☐ Yes – the relevant template is completed and attached to this development application

☒ No

DA templates are available from <https://planning.dsdmip.qld.gov.au/>. For a development application involving waterway barrier works, complete DA Form 1 Template 4.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants**?

☐ Yes – an associated resource allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

☒ No

Note: See guidance materials at www.daf.qld.gov.au for further information.

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000*?

- ☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

Note: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au and www.business.qld.gov.au for further information.

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995*?

- ☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

Note: Contact the Department of Environment and Science at www.des.qld.gov.au for further information.

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act)?

- ☐ Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application
☒ No

Note: See guidance materials at www.dnrme.qld.gov.au for further information.

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district**?

- ☐ Yes – the following is included with this development application:
- ☐ Evidence the proposal meets the code for assessable development that is prescribed tidal work (*only required if application involves prescribed tidal work*)
 - ☐ A certificate of title
- ☒ No

Note: See guidance materials at www.des.qld.gov.au for further information.

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

- ☐ Yes – details of the heritage place are provided in the table below
☒ No

Note: See guidance materials at www.des.qld.gov.au for information requirements regarding development of Queensland heritage places.

Name of the heritage place:		Place ID:	
-----------------------------	--	-----------	--

Brothels

23.14) Does this development application involve a **material change of use for a brothel**?

- ☐ Yes – this development application demonstrates how the proposal meets the code for a development application for a brothel under Schedule 3 of the *Prostitution Regulation 2014*
☒ No

Decision under section 62 of the Transport Infrastructure Act 1994

23.15) Does this development application involve new or changed access to a state-controlled road?

- ☐ Yes - this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)
☒ No

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist	
I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 <i>Note: See the Planning Regulation 2017 for referral requirements</i>	<input checked="" type="checkbox"/> Yes
If building work is associated with the proposed development, Parts 4 to 6 of DA Form 2 – Building work details have been completed and attached to this development application	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
Supporting information addressing any applicable assessment benchmarks is with the development application <i>Note: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.</i>	<input checked="" type="checkbox"/> Yes
Relevant plans of the development are attached to this development application <i>Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.</i>	<input checked="" type="checkbox"/> Yes
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (see 21)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable

25) Applicant declaration	
<input checked="" type="checkbox"/> By making this development application, I declare that all information in this development application is true and correct <input checked="" type="checkbox"/> Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the <i>Electronic Transactions Act 2001</i> <i>Note: It is unlawful to intentionally provide false or misleading information.</i>	
<p>Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application. All information relating to this development application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website.</p> <p>Personal information will not be disclosed for a purpose unrelated to the <i>Planning Act 2016</i>, Planning Regulation 2017 and the DA Rules except where:</p> <ul style="list-style-type: none"> • such disclosure is in accordance with the provisions about public access to documents contained in the <i>Planning Act 2016</i> and the Planning Regulation 2017, and the access rules made under the <i>Planning Act 2016</i> and Planning Regulation 2017; or • required by other legislation (including the <i>Right to Information Act 2009</i>); or • otherwise required by law. <p>This information may be stored in relevant databases. The information collected will be retained as required by the <i>Public Records Act 2002</i>.</p>	

PART 9 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE USE ONLY

Date received: Reference number(s):

Notification of engagement of alternative assessment manager

Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	
Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment

Note: For completion by assessment manager if applicable

Description of the work	
QLeave project number	
Amount paid (\$)	Date paid (dd/mm/yy)
Date receipted form sighted by assessment manager	
Name of officer who sighted the form	

Item 3
Stormwater Management Report

27 May 2020

Mareeba Shire Council
65 Rankin Street
Mareeba QLD 4880

Attention: Brian Millard

Dear Brian,

BLACK MOUNTAIN ROAD SUBDIVISION STORMWATER MASTER PLANNING

This advice has been prepared by Trinity Engineering and Consulting on behalf of Navid Derakhshan, in relation to the proposed development at Lot 1 on RP743970, Black Mountain Road, Kuranda. In particular, this advice aims to address Decision Notice (RAL/18/0025) Conditions 4.3, being *Stormwater Drainage*.

This advice seeks to assist Council to determine that the development will not have a worsening effect to drainage on the surrounding land and also aims to address the other relevant conditions.

GENERAL OVERVIEW

The site, referred to as Lot 1 on RP743970, is located on Black Mountain Road, at the Kennedy Highway intersection. The site is approximately 3.04 ha and is currently a rural residential allotment.

The proposed development is to subdivide the lot into 4 rural residential allotments, which are proposed to be accessed via two (2) dual driveways off Black Mountain Road. The proposed lot layout is documented on the General Arrangement Plan (Drawing 1415-006) **attached**.

STORMWATER DRAINAGE

External Drainage Conditions

An inspection of the site was undertaken on 24 March 2020 and 21 April 2020. Based on these inspections and assessment of existing survey, the site does not convey external stormwater through the site. That is, the site is located on a ridge. The site is adjacent to a tributary of the Barron River, located along the north-eastern boundary of the site as depicted in *Figure 1* below.



Figure 1: Locality Plan of Lot 1 RP743970

Current Drainage Conditions

The site currently falls from the ridge line with an average slope of about 10%. Flows are discharged as sheet flow into the Barron river tributary along north-east boundary as well as to the property frontages on Black Mountain Road and the Kennedy Highway. Some of the flow discharged to the Black Mountain Road lot frontage is captured in a culvert at the north western verge adjacent the property boundary, whilst some stormwater flows are discharged across Black Mountain road at the one way fall section of road way. The remainder of the flows are captured by a culvert at the intersection of Black Mountain Road and the Kennedy Highway. Flows discharged towards the Kennedy Highway are directed east into a culvert conveying flows under the Kennedy Highway to the Barron River.

The internal drainage conditions are not intended to be significantly altered as to limit the concentration of flows. Figure 2 and 3 depict existing drainage infrastructure on/ adjacent to the site which convey stormwater runoff away from the site.



**Figure 2: a) Existing Inlet pit to Black Mountain Road cross culvert to be upgraded due to nonstandard arrangements.
b) Existing table drain directing water into inlet pit.**



**Figure 3: a) culvert allowing access to bus stop with Kennedy Highway in background.
b) Culvert directing water from site under black mountain road into tributary of Barron River and culvert conveying water captured in table drain along south western road frontage of proposed development site.**



Figure 4: Photograph of one-way crossfall with limited table drain capacity (approximately CH90)

The predevelopment catchment plan is **attached** (Sketch 1415-001). A snippet of this sketch is included as **Figure 5** for convenience.

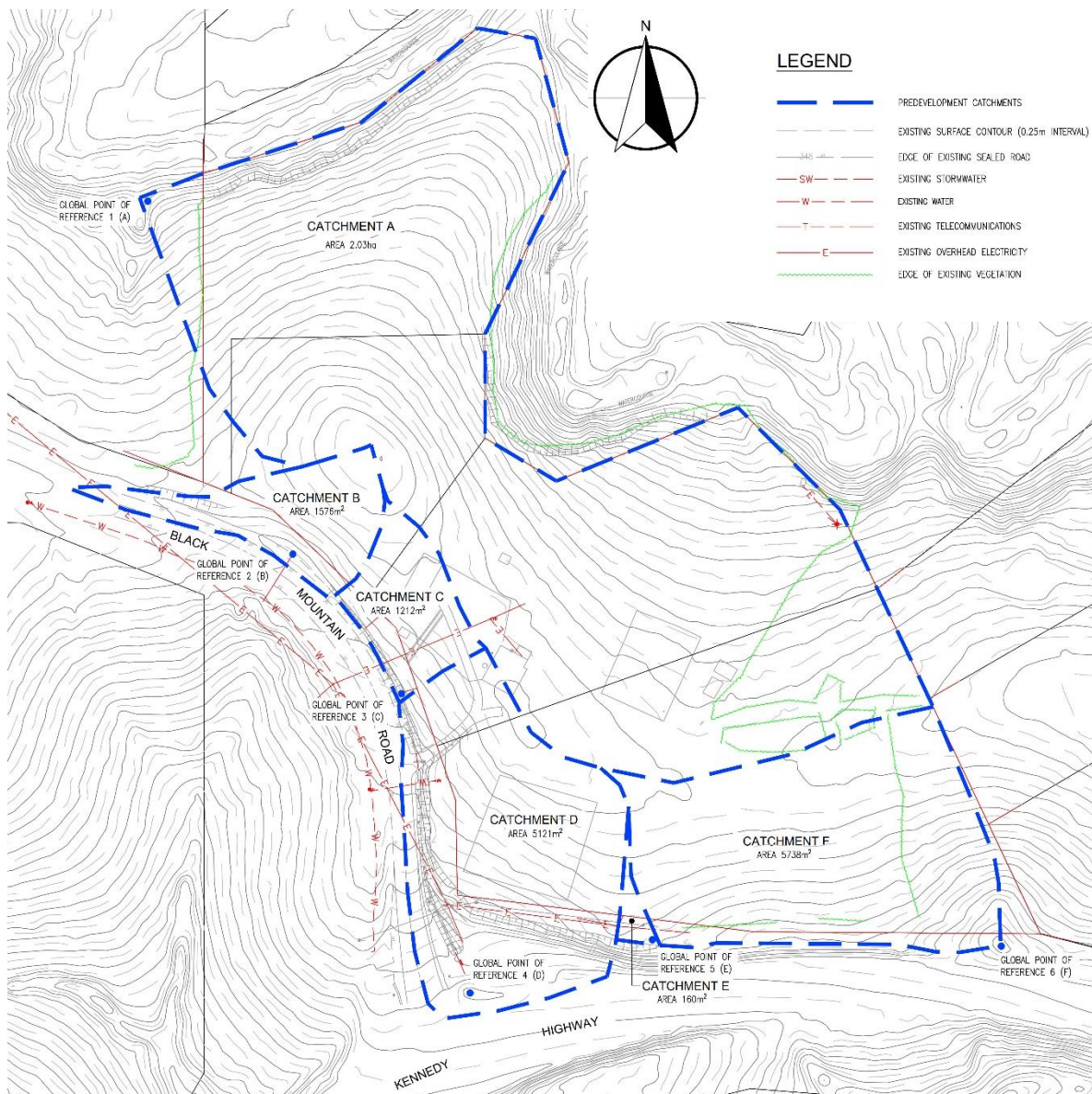


Figure 5: Predevelopment catchment plan for development site

Proposed Drainage Works

The existing culvert crossing starting in the verge near the north western boundary (at Control line Ch135m approximately) is to be maintained and lengthened. This will enable the upgraded inlet pit to be moved closer to the property boundary to cater for the widening of the pavement and verge (Refer 1415-008 and *Figure 6*). It is understood that the catchments remain relatively unchanged.

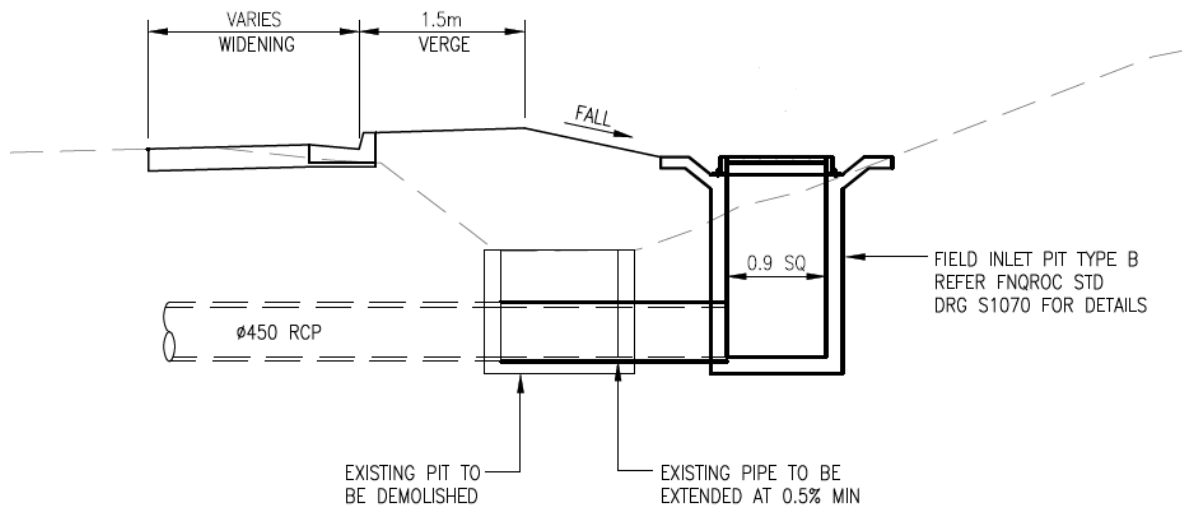


Figure 6: Inlet pit upgraded and moved closer to property boundary to account for verge and road widening

Currently, a small catchment from the existing site overtops the road over a 30m section between Chainage 90m to 120m. This is evident by the lack of table drain capacity shown in Figure 4 and the detailed survey.

The Council Condition for the widening of the road and introduction of the kerb and channel, as well as accommodating a pedestrian friendly verge, increases the length of the road that will experience sheet flow across the road. This is due to the lack of capacity of the kerb tray when the road is superelevated away from the development site. The superelevation accommodates the bend in Black Mountain Road and extends from approximate Chainage 65m to 150m.

The Council Condition, in addition to the superelevation of the road, limits the opportunity to contain the flows on the development side. Note; the sheet flow over the road in higher rainfall events would have occurred between Ch 90m and 120m in the pre-development scenario due to limited table drain profile/capacity and the impacts at the existing driveway crossing.

Therefore, the post development road flow across Black Mountain Road is unlikely to be significantly different to the current scenario particularly in higher rainfall events and is unavoidable due to the road widening and pedestrian works required by the condition. In addition, it is noted that the unit volume of sheet flow across Black Mountain Road in this 20m section (Ch 70m to 90m) will be of similar magnitude to the upslope 30m section that currently sheet flows over the road in the sites' existing condition.

Figure 4 depicts the location of the point of tip out over the one-way crossfall section of road in both the existing scenario and post development scenario.

It is considered that the some of the storm water (minor event flows) can be prevented from sheet flowing across the road if the area behind the kerb is not filled and the pedestrian zone is used to convey stormwater flows utilising the back of kerb. This has not been proposed, as it is not considered a desirable outcome in terms of Council's aspirations for a pedestrian friendly verge.

The post-development catchment plan is **attached** (Sketch 1415-002). A snippet of this sketch is included as *Figure 7* for convenience

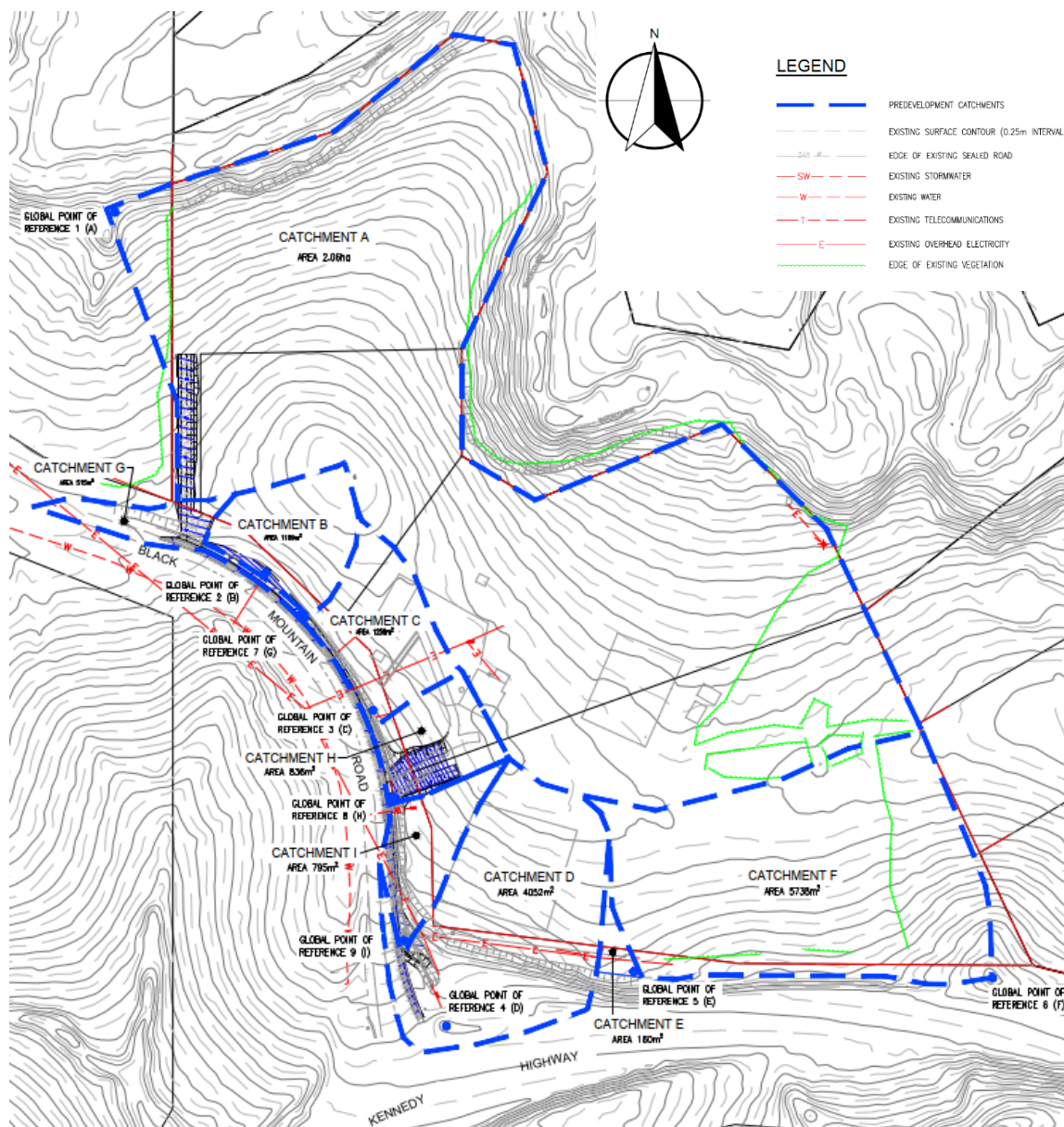


Figure 7: Predevelopment catchment plan for development site

Table 1 and 2 detail the storm water runoff calculations for the pre and post development scenarios respectively

Table 1: Predevelopment storm water runoff calculations

Point of Reference ID	Peak Flow Rate (m³/s)			
	39% AEP (~2 yr)	18% AEP (~5 yr)	10% AEP (~10 yr)	1% AEP (100 yr)
POR 1 (A) Back of Lot	0.283	0.397	0.467	0.831
POR 2 (B) North western culvert	0.031	0.044	0.052	0.094
POR 3 (C) Sheet Flow over Black Mtn Rd	0.027	0.039	0.046	0.083
POR 4 (D) South western culvert	0.105	0.148	0.175	0.314
POR 5 (E) Sheet Flow over Highway	0.003	0.005	0.006	0.010
POR 6 (F) Culvert under highway	0.098	0.138	0.162	0.290

Table 2: Predevelopment storm water runoff calculations

Point of Reference ID	Peak Flow Rate (m ³ /s)			
	39% AEP (~2 yr)	18% AEP (~5 yr)	10% AEP (~10 yr)	1% AEP (100 yr)
POR 1 (A) Back of Lot	0.283	0.397	0.467	0.831
POR 2 (B) North western culvert	0.022	0.031	0.036	0.065
POR 3 (C) Sheet Flow over Black Mtn rd	0.029	0.040	0.048	0.086
POR 4 (D) South western culvert	0.099	0.140	0.165	0.297
POR 5 (E) Sheet Flow over Highway	0.003	0.005	0.006	0.010
POR 6 (F) Culvert under highway	0.098	0.138	0.162	0.290
POR 7 (G) Sheet Flow over Black Mtn rd	0.015	0.021	0.025	0.045
POR 8 (H) Sheet Flow over Black Mtn rd	0.024	0.034	0.040	0.072
POR 9 (I) Kerb and channel flow	0.021	0.030	0.035	0.064

Stormwater Quality

With respect to Council's requirement for maintaining water quality, the opportunities to introduce quality devices are limited within the type and size of this development. However, erosion and sediment control measures will be used during construction as shown on the **attached** Erosion and Sediment Control Plan (1415-014).

The plan will include hydromulching of tables drains and/or drill seeding to provide future sediment control measures after construction has been completed.

Summary

In summary, the proposed works aims to ensure the drainage regime for the site is generally maintained.

Response to Conditions

- 4.3 a) *The applicant/developer must take all necessary steps to ensure a non-worsening effect on surrounding land as a consequence of the development.*

Response: The stormwater design pertaining to this application seeks to generally maintain the existing flow regime and discharge flows to their lawful point of discharge. Details of site related stormwater are contained in the attached calculations. The proposed infrastructure does not introduce new discharge points, and results in minor changes in the concentration of flows at the points of reference, with a generally positive outcome.

Points of discharge have been maintained as much as possible by limited earthworks and other forms of diversion to maintain the existing flow regime. The proposed development will not create ponding nuisances or other worsening effects to the adjoining properties.

- 4.3 b) *Prior to works commencing the applicant must submit a Stormwater Management Plan and Report prepared and certified by a suitably qualified design engineer (RPEQ) that meets or exceeds the standards of design and construction set out in the Queensland Urban Drainage Manual (QUDM) and the FNQROC Development Manual to the satisfaction of Council's delegated officer.*

Response: This document in conjunction with the drawing set is considered the Stormwater Management Plan. It is considered that the report meets the standards set out in QUDM and the FNQROC Development Manual.

- 4.3 c) *Prior to works commencing the applicant must submit a Stormwater Quality Management Plan and Report prepared and certified by a suitably qualified design engineer (RPEQ) that meets or exceeds the standards of design and construction set out in the Urban Stormwater Quality Planning Guideline and the Queensland Water Quality Guideline to the satisfaction of Council's delegated officer.*

Response: This document in conjunction with the drawing set is considered the Stormwater Management Plan. It is considered that the report meets the standards set out in the Urban Stormwater Quality Planning Guideline and the Queensland Water Quality Guidelines.

- 4.3 d) *The Stormwater Quality Management Plan must include an Erosion and Sediment Control Plan that meets or exceeds the Soil Erosion and Sedimentation Control Guidelines (Institute of Engineers Australia) to the satisfaction of Council's delegated officer.*

Response: The Erosion and Sediment Control Plan (1415-014) is attached.

- 4.3 e) *The applicant/developer must construct the stormwater drainage infrastructure in accordance with the approved Stormwater Management Plan and/or Stormwater Quality Management Plan and Report.*

Response: Noted

- 4.3 f) *Temporary drainage is to be provided and maintained during the construction phase of the development, discharged to a lawful point and not onto the construction site.*

Response: Noted

- 4.3 g) *All stormwater channels through private property must be registered, with the easement for drainage purposes in favour of Council. All documentation leading to the registration of the easement must be completed at no cost to Council.*

Response: No easements for drainage are proposed.

- 4.3 h) *All stormwater drainage collected from the site must be discharged to an approved legal point of discharge.*

Response: Noted.

- 4.3 i) *The applicant (at their cost) must video all stormwater lines and submit the video for inspection by Council's delegated officer prior to the development being taken "off maintenance" to ensure that no defects have occurred during the 12 month maintenance period.*

Response: Noted.

Yours sincerely

TRINITY ENGINEERING AND CONSULTING



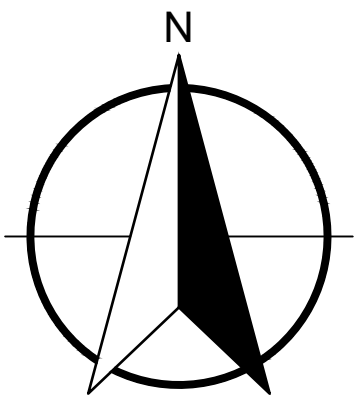
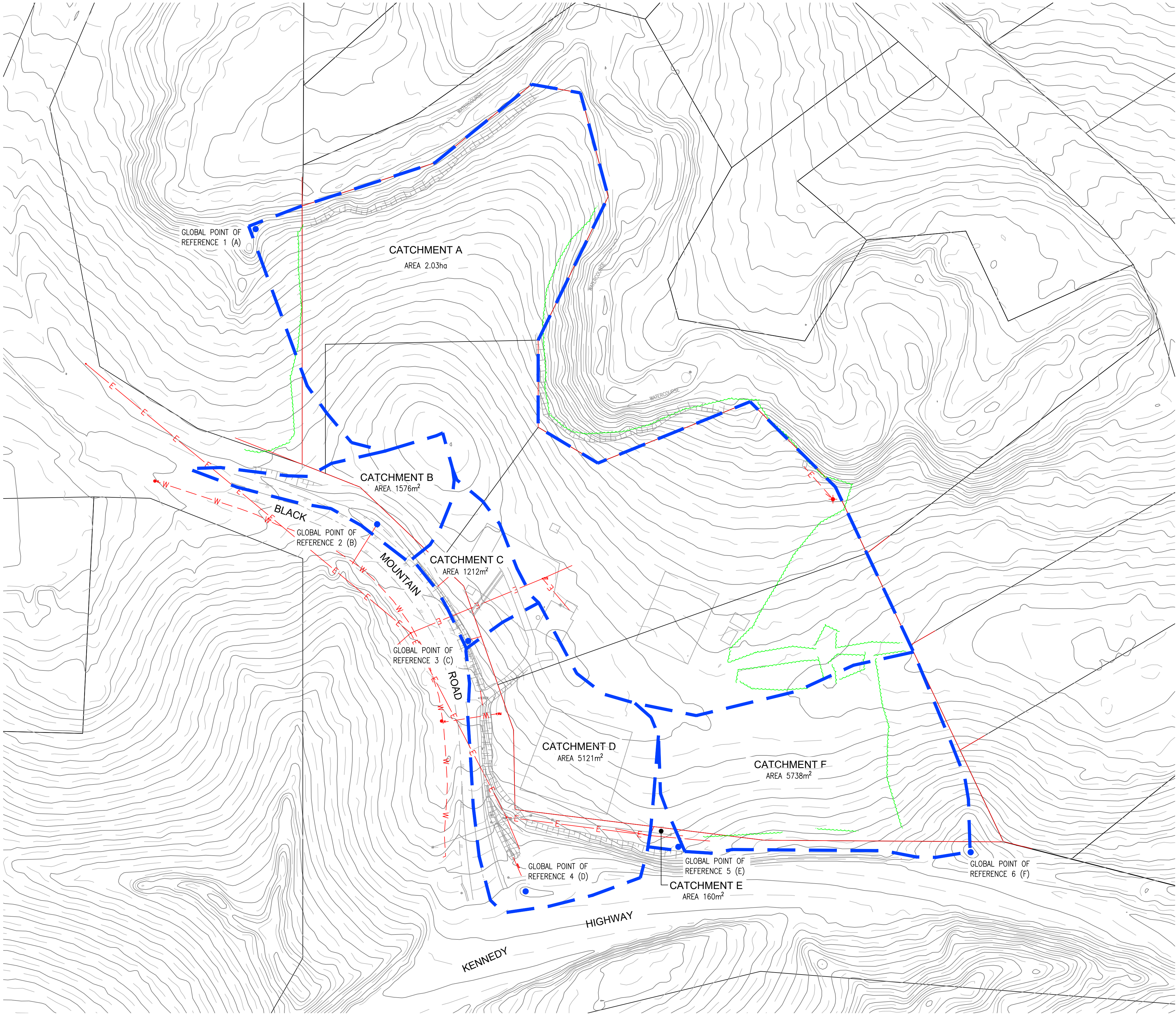
Scott Christensen
Project Manager



Paul Steele
RPEQ

Encl Drawing 1415-006 (Rev A)
Stormwater Catchment Plans - Sketch 1415-1 and 1415-2 (Rev A)
Stormwater Calculations
1415-014 Erosion and Sediment Control Plan

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LEGEND

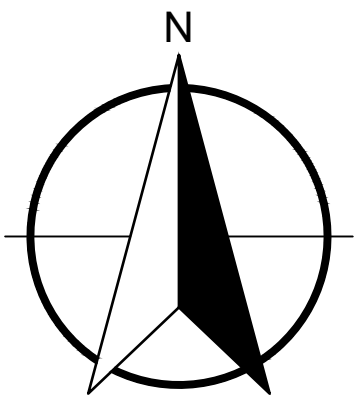
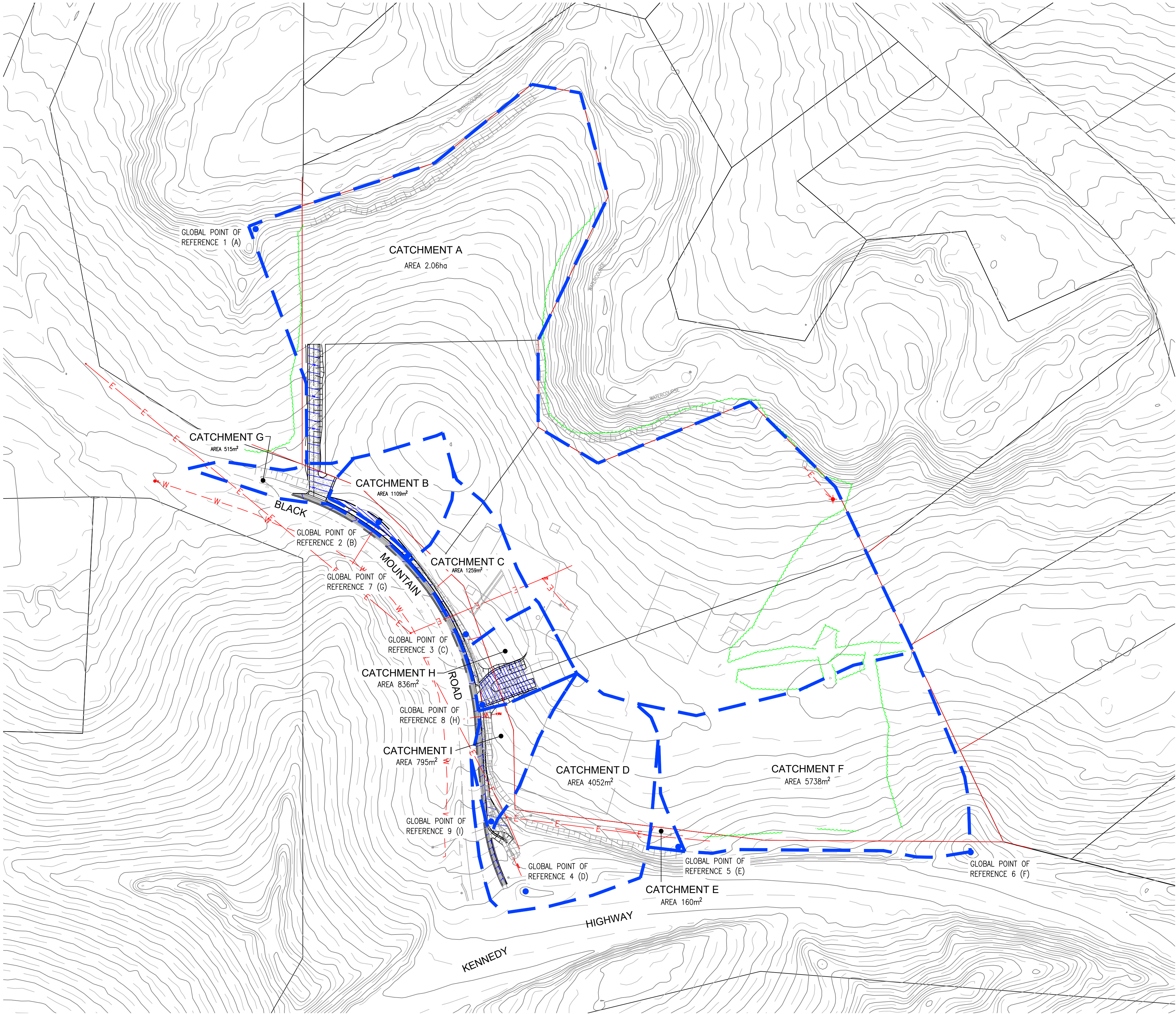
- PREDEVELOPMENT CATCHMENTS
- EXISTING SURFACE CONTOUR (0.25m INTERVAL)
- EDGE OF EXISTING SEALED ROAD
- EXISTING STORMWATER
- EXISTING WATER
- EXISTING TELECOMMUNICATIONS
- EXISTING OVERHEAD ELECTRICITY
- EDGE OF EXISTING VEGETATION

PRELIMINARY ONLY

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				Project 2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)		Title PRE-DEVELOPMENT STORMWATER CATCHMENT	
JOB No.	1415	Scale (A1 size)	1:750	Date	11 MAY 2020	Drawing No.	SKETCH 1415-001
						Revision	A

External References: TEC-TITLE-SKETCH-A1_b.dwg ; 1415-X-SURVEY.dwg ;

File: C:\Work\1415 Black Mountain Drawings\Current Drawings\1415-SKETCH-002(A).dwg
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LEGEND

- PREDEVELOPMENT CATCHMENTS
- EXISTING SURFACE CONTOUR (0.25m INTERVAL)
- EDGE OF EXISTING SEALED ROAD
- EXISTING STORMWATER
- EXISTING WATER
- EXISTING TELECOMMUNICATIONS
- EXISTING OVERHEAD ELECTRICITY
- EDGE OF EXISTING VEGETATION

PRELIMINARY ONLY

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				Project 2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)		Title POST-DEVELOPMENT STORMWATER CATCHMENT	
JOB No. 1415	Scale (A1 size) 1:750	Date 11 MAY 2020	Drawing No. SKETCH 1415-002	Revision A			

External References: TEC-TITLE-SKETCH-A1_b.dwg ; 1415-X-DESIGN.dwg ; 1415-X-SURVEY.dwg ;

Client:	Navid Derakhshan
Project Name:	2-6 Black Mountian Road
Project Number:	1416
Calculations By:	SB
Calculation Date:	31-Mar-20

Notes:

1. Items in red must be entered manually.

Catchments A.1 to E.2

	Catchment Properties						Time of Concentration (min)									Catchment Properties			
Point of Reference ID	Area (ha)	Min Elevation (m)	Max Elevation (m)	Length (m)	Equal Area Slope (%)	Mannings (s/m ^{1/3})	Condition	Overland Sheet Flow (Friend)	Concentrated Overland Flow (Bransby-Williams)	Creek Flow	Standard Inlet	Kerb Flow	Pipe Flow	Stream Flow	TOTAL	BOM Weather Station ID	¹ I ₁₀ (mm/hr)	Land Description	Fraction Impervious
POR 1	2.030	331.2	348.2	442.6	1.5	0.035		26.27	22.01						25.00	FNQROC Chart 2	76.43		0.05
POR 2	0.160	345.3	347.9	68.7	4.4	0.035		11.41	3.56						12.00	FNQROC Chart 2	76.43		0.20
POR 3	0.121	345.1	349.4	56.4	11.4	0.035		8.82	2.48						8.00	FNQROC Chart 2	76.43		0.20
POR 4	0.512	336.6	349.1	115.2	12.7	0.035		10.96	4.29						10.00	FNQROC Chart 2	76.43		0.10
POR 5	0.016	344.3	348.1	40.0	10.5	0.035		8.00	2.19						8.00	FNQROC Chart 2	76.43		0.00
POR 6	0.574	336.4	348.4	151.7	9.2	0.035		12.83	5.97						15.00	FNQROC Chart 2	76.43		0.00

Point of Reference ID	Runoff Coefficient							Rainfall Intensity (mm/hr)							Peak Flow Rate (m ³ /s)						
	63% AEP	39% AEP	18% AEP	10% AEP	5% AEP	2% AEP	1% AEP	63% AEP	39% AEP	18% AEP	10% AEP	5% AEP	2% AEP	1% AEP	63% AEP	39% AEP	18% AEP	10% AEP	5% AEP	2% AEP	1% AEP
POR 1	0.57	0.60	0.67	0.71	0.75	0.82	0.85	65	83	104	117	134	156	173	0.208	0.283	0.397	0.467	0.561	0.717	0.831
POR 2	0.59	0.63	0.70	0.74	0.78	0.85	0.89	88	112	142	159	183	214	238	0.023	0.031	0.044	0.052	0.063	0.081	0.094
POR 3	0.59	0.63	0.70	0.74	0.78	0.85	0.89	101	130	164	185	212	249	277	0.020	0.027	0.039	0.046	0.056	0.071	0.083
POR 4	0.58	0.61	0.68	0.72	0.76	0.83	0.86	94	120	152	171	196	229	255	0.077	0.105	0.148	0.175	0.211	0.270	0.314
POR 5	0.56	0.60	0.67	0.70	0.74	0.81	0.84	101	130	164	185	212	249	277	0.003	0.003	0.005	0.006	0.007	0.009	0.010
POR 6	0.56	0.60	0.67	0.70	0.74	0.81	0.84	80	103	130	146	167	195	217	0.072	0.098	0.138	0.162	0.196	0.250	0.290

Client:	Navid Derakhshan
Project Name:	2-6 Black Mountain Road
Project Number:	1416
Calculations By:	SB
Calculation Date:	31-Mar-20

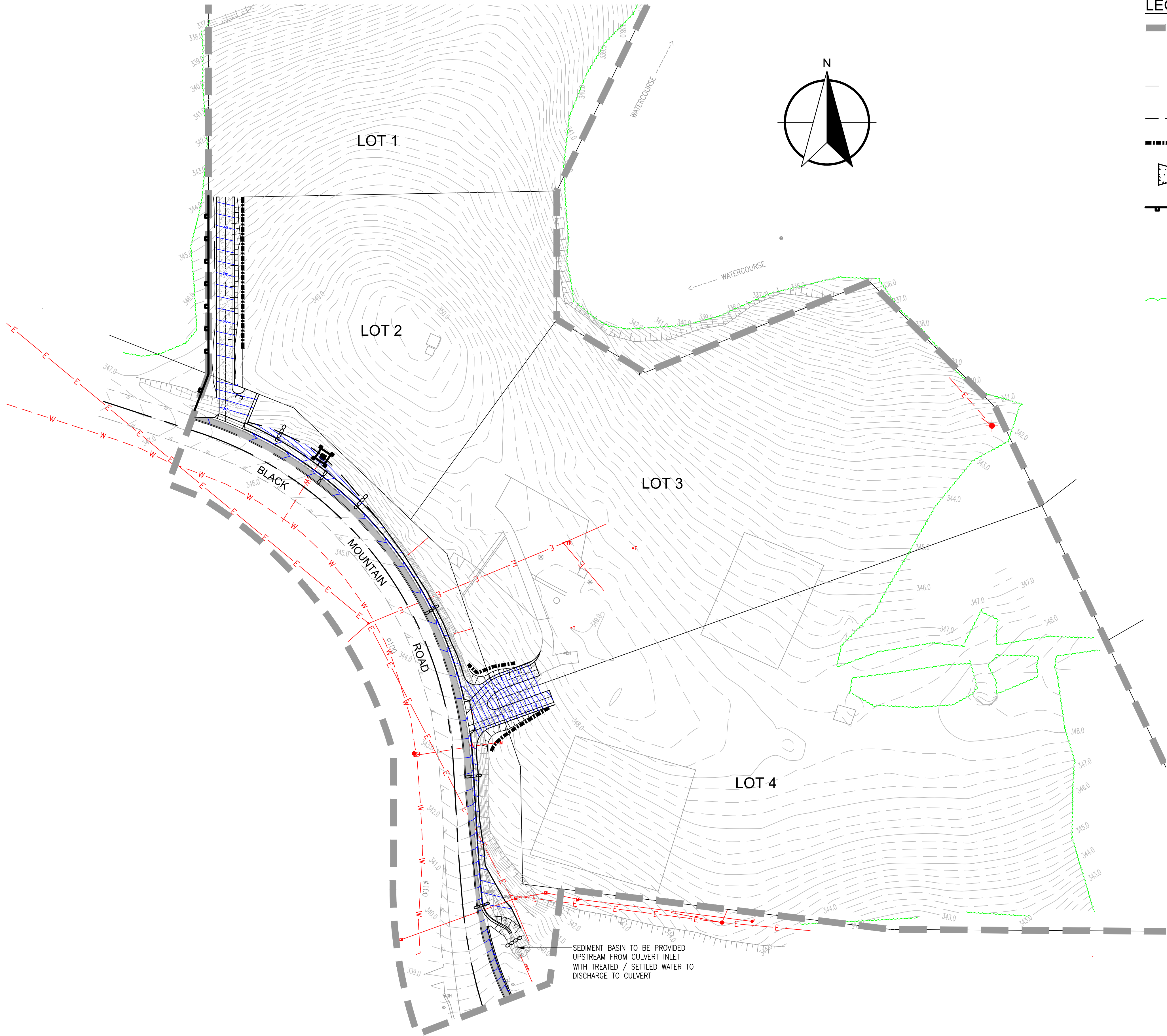
Notes:

1. Items in red must be entered manually.

Catchments A.1 to E.2

	Catchment Properties						Time of Concentration (min)									Catchment Properties			
Point of Reference ID	Area (ha)	Min Elevation (m)	Max Elevation (m)	Length (m)	Equal Area Slope (%)	Mannings (s/m ^{1/3})	Condition	Overland Sheet Flow (Friend)	Concentrated Overland Flow (Bransby-Williams)	Creek Flow	Standard Inlet	Kerb Flow	Pipe Flow	Stream Flow	TOTAL	BOM Weather Station ID	¹ I ₁₀ (mm/hr)	Land Description	Fraction Impervious
POR 1 (A)	2.030	331.2	348.2	442.6	1.5	0.035		26.27	22.01						25.00	FNQROC Chart 2	76.43		0.05
POR 2 (B)	0.111	345.3	350.9	52.3	12.6	0.035		8.44	2.28						12.00	FNQROC Chart 2	76.43		0.20
POR 3 (C)	0.126	345.1	349.4	56.4	11.4	0.035		8.82	2.47						8.00	FNQROC Chart 2	76.43		0.20
POR 4 (D)	0.485	336.6	349.1	115.2	12.7	0.035		10.96	4.32						10.00	FNQROC Chart 2	76.43		0.10
POR 5 (E)	0.016	344.3	348.1	40.0	10.5	0.035		8.00	2.19						8.00	FNQROC Chart 2	76.43		0.00
POR 6 (F)	0.574	336.4	348.4	151.7	9.2	0.035		12.83	5.97						15.00	FNQROC Chart 2	76.43		0.00
POR 7 (G)	0.052	345.5	347.9	82.9	2.7	0.013		4.96	5.29						5.00	FNQROC Chart 2	76.43		0.50
POR 8 (H)	0.084	343.8	349.1	33.8	19.8	0.020		3.81	1.38						5.00	FNQROC Chart 2	76.43		0.50
POR 9 (I)	0.080	340.5	348.9	84.0	9.1	0.035		10.55	4.04						5.00	FNQROC Chart 2	76.43		0.20

Point of Reference ID	Runoff Coefficient							Rainfall Intensity (mm/hr)							Peak Flow Rate (m ³ /s)						
	63% AEP	39% AEP	18% AEP	10% AEP	5% AEP	2% AEP	1% AEP	63% AEP	39% AEP	18% AEP	10% AEP	5% AEP	2% AEP	1% AEP	63% AEP	39% AEP	18% AEP	10% AEP	5% AEP	2% AEP	1% AEP
POR 1 (A)	0.57	0.60	0.67	0.71	0.75	0.82	0.85	65	83	104	117	134	156	173	0.208	0.283	0.397	0.467	0.561	0.717	0.831
POR 2 (B)	0.59	0.63	0.70	0.74	0.78	0.85	0.89	88	112	142	159	183	214	238	0.016	0.022	0.031	0.036	0.044	0.056	0.065
POR 3 (C)	0.59	0.63	0.70	0.74	0.78	0.85	0.89	101	130	164	185	212	249	277	0.021	0.029	0.040	0.048	0.058	0.074	0.086
POR 4 (D)	0.58	0.61	0.68	0.72	0.76	0.83	0.86	94	120	152	171	196	229	255	0.073	0.099	0.140	0.165	0.199	0.256	0.297
POR 5 (E)	0.56	0.60	0.67	0.70	0.74	0.81	0.84	101	130	164	185	212	249	277	0.003	0.003	0.005	0.006	0.007	0.009	0.010
POR 6 (F)	0.56	0.60	0.67	0.70	0.74	0.81	0.84	80	103	130	146	167	195	217	0.072	0.098	0.138	0.162	0.196	0.250	0.290
POR 7 (G)	0.64	0.68	0.76	0.80	0.84	0.92	0.96	117	151	191	216	248	291	325	0.011	0.015	0.021	0.025	0.030	0.038	0.045
POR 8 (H)	0.64	0.68	0.76	0.80	0.84	0.92	0.96	117	151	191	216	248	291	325	0.017	0.024	0.034	0.040	0.048	0.062	0.072
POR 9 (I)	0.59	0.63	0.70	0.74	0.78	0.85	0.89	117	151	191	216	248	291	325	0.015	0.021	0.030	0.035	0.043	0.055	0.064



LEGEND

- STAGE BOUNDARY
- CHECK DAMS, 0.3m HIGH PLACED ROCK
- EXISTING SURFACE CONTOUR (0.5m INTERVAL)
- BATTER TOE/TOP
- MULCH BANK
- STABILISED ENTRY
- SEDIMENT FENCE
- FIELD INLET TRAP
- SAND BAGS
- EDGE OF EXISTING VEGETATION

NOTES

- NO WORKS TO COMMENCE ON SITE UNTIL CONTRACTORS EROSION AND SEDIMENT CONTROL PLAN IS APPROVED BY MAREEBA SHIRE COUNCIL.
- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- CONTRACTOR TO NOTE REQUIREMENTS AND RESPONSIBILITIES FOR SEDIMENT AND EROSION CONTROL AS PER FNQROC & CONTRACT SPECIFICATION.
- TOPSOIL STOCKPILES TO BE LOCATED AT SITE ACCEPTABLE TO SUPERINTENDENT AND SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE APPROVED ACCORDINGLY.
- MOVEMENT OF CONSTRUCTION EQUIPMENT SHALL BE LIMITED TO THE AREA OF WORK AND EXISTING ROADS.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED AND MAINTAINED AFTER EACH STORM EVENT AND AT REGULAR INTERVALS.
- EACH LOT TO HAVE SINGLE ACCESS POINT ONLY UNLESS DIRECTED OTHERWISE BY SUPERINTENDENT.
- CONTOURS SHOWN ARE NATURAL SURFACE CONTOURS PRIOR TO ANY BULK EARTHWORKS TAKING PLACE.
- PROVIDE MULCH TO TOP OF BATTERS.
- CATCH DRAINS AND SEDIMENT TRAPS TO BE CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.
- ALL VEHICLES LEAVING THE SITE MUST EXIT VIA WASHDOWN FACILITY.
- DEPTHS FOR CLEARING, GRUBBING AND STRIPPING TO BE CONFIRMED DURING THE EARLY STAGES OF SITE CLEARING. ANY VARIATIONS TO THE DEPTHS NOMINATED ON THE ENGINEERING DRAWINGS TO BE APPROVED BY THE SUPERINTENDENT.

SCHEDULE OF MEASURES

DRAINAGE CONTROL

- CATCH DIRTY WATER RUNOFF AND DIVERT TO SEDIMENT CONTROL DEVICES: - CONSTRUCT CATCH DRAIN AS SHOWN.
- PROVIDE MULCH BANKS UP SLOPE FROM BATTERS TO PREVENT STORMWATER RUNOFF DOWN BATTER FACE.

EROSION CONTROL

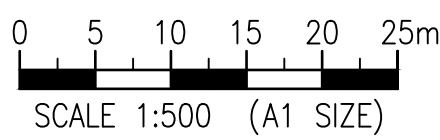
- BATTERS >0.5m HIGH ARE TO BE REVEGETATED AT COMPLETION OF EARTHWORKS (BONDED FIBRE MATRIX HYDROMULCH TO BE USED).
- PROVIDE MULCH BANKS UPSTREAM FROM BATTERS.
- SAND BAGS TO BE PLACED ALONG COMPLETED ROAD VERGES WHILE AWAITING RE-VEGETATION OF SITE.
- SANDBAGS TO BE PLACED ALONG COMPLETED CATCH DRAINS WHILE AWAITING RE-VEGETATION OF SITE.

SEDIMENT CONTROL

- CONSTRUCT STABILISED ENTRY POINTS.
- CONSTRUCT SEDIMENT FENCE DOWNSTREAM OF STOCKPILES AND BLACK MOUNTAIN ROAD.
- CONSTRUCT SANDBAG CHECK DAMS AT 40m CENTRES ALONG KERB AND AT KERB INVERTS.
- PROVIDE KERB LINE TURF STRIPS WITH RETURNS AT 10m INTERVALS.

Revisions

A	OPERATIONAL WORKS APPLICATION	SC	PCS	27/05/20
No.	Description	Reviewed	Approved	Date



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Scale (A1 size)

1:500

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Drawn
MS

Designed
MS

Client

NAVID DERAKSHAN

Project
2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)

Title
EROSION AND SEDIMENT CONTROL STRATEGY

Drawing Check
ARH

Design Check
ARH

Approved
P.STEELE

RPEQ
8462

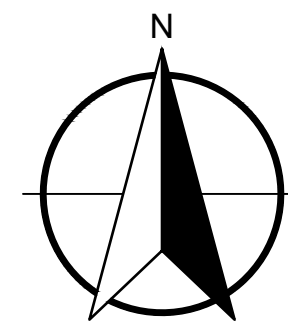
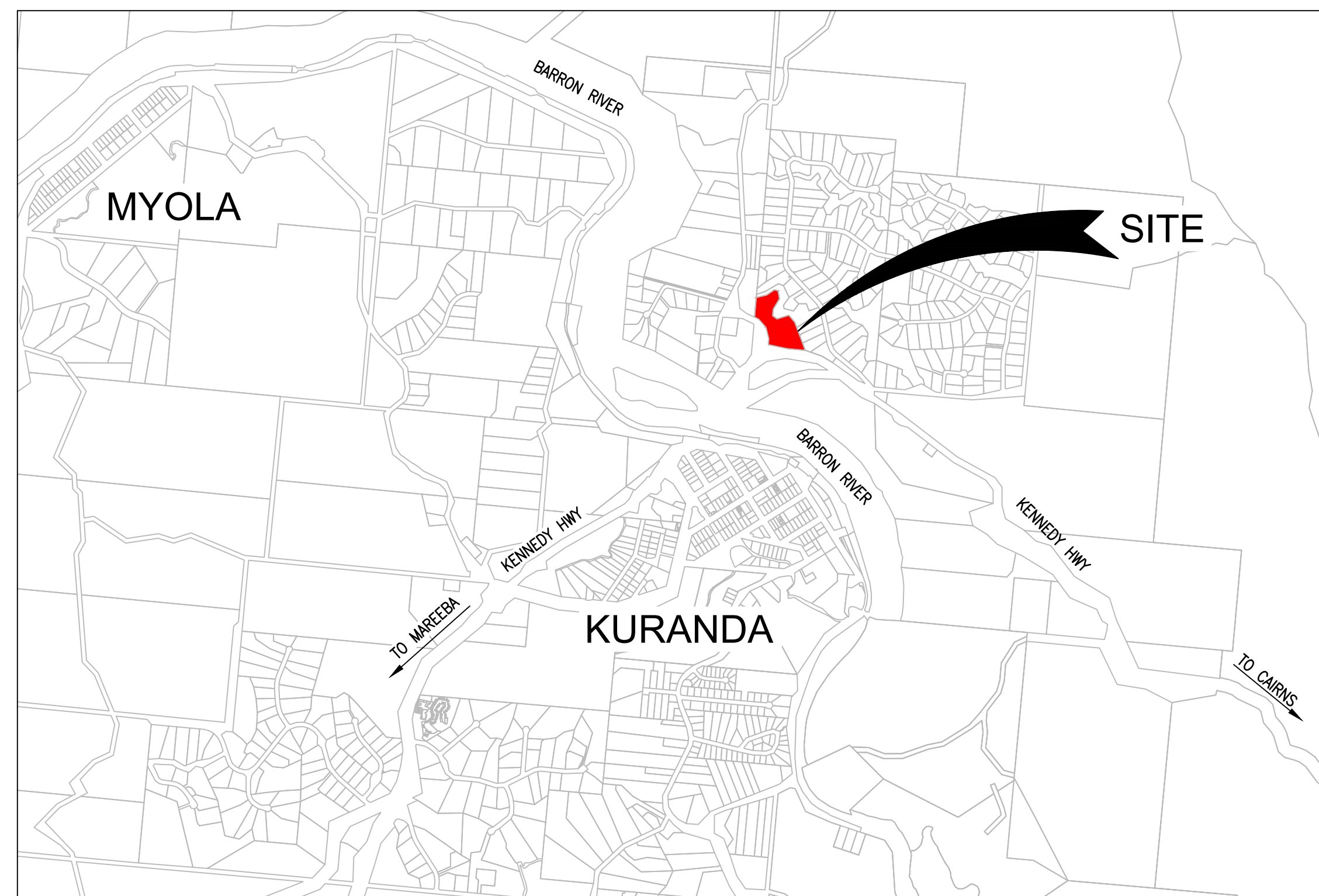
Date
27/05/2020

Drawing No.
1415-014

Revision
A

Item 4
Engineering Drawings

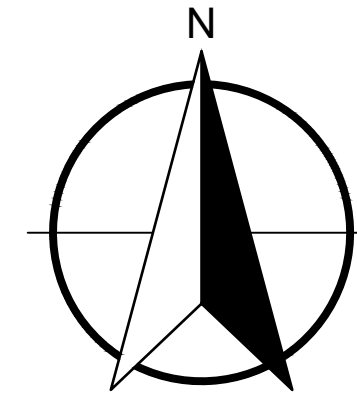
2 - 6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970) *for* NAVID DERAKSHAN

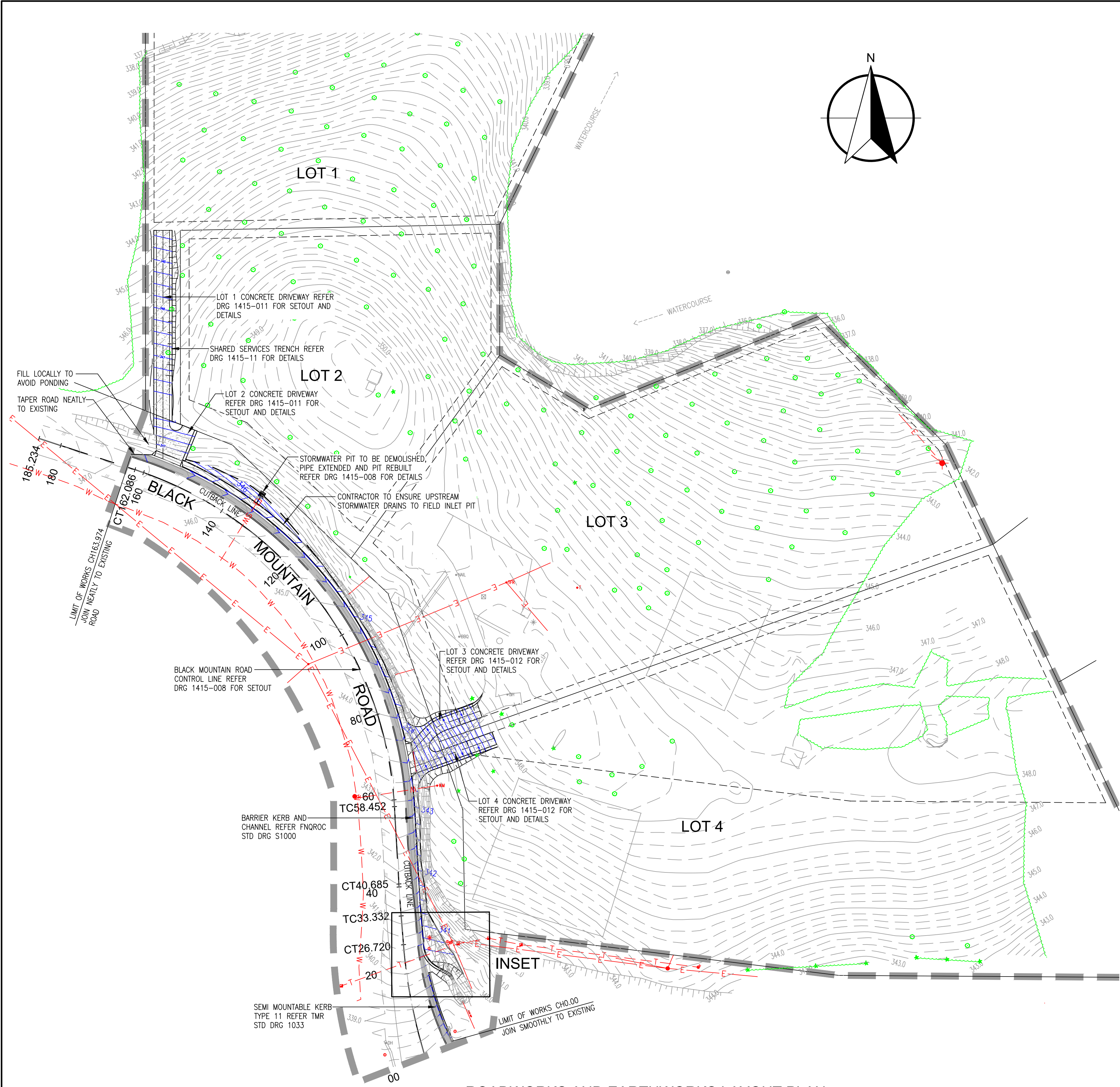


SCHEDULE OF PROJECT DRAWINGS

1415-005	LOCALITY PLAN AND DRAWING INDEX
1415-006	GENERAL ARRANGEMENT PLAN
1415-007	ROADWORKS AND EARTHWORKS PLAN
1415-008	TYPICAL CROSS SECTIONS AND MISCELLANEOUS DETAILS
1415-009	BLACK MOUNTAIN ROAD LONGITUDINAL SECTION AND ANNOTATED CROSS SECTIONS
1415-010	BLACK MOUNTAIN ROAD ANNOTATED CROSS SECTIONS SHEET 2 OF 2
1415-011	LOTS 1 AND 2 CONCRETE DRIVEWAY SETOUT AND DETAILS
1415-012	LOTS 3 AND 4 CONCRETE DRIVEWAY SETOUT AND DETAILS
1415-013	WATER RETICULATION PLAN
1415-014	EROSION AND SEDIMENT CONTROL STRATEGY

LOCALITY PLAN
NOT TO SCALE





ROADWORKS AND EARTHWORKS LAYOUT PLAN
SCALE 1:500

LEGEND

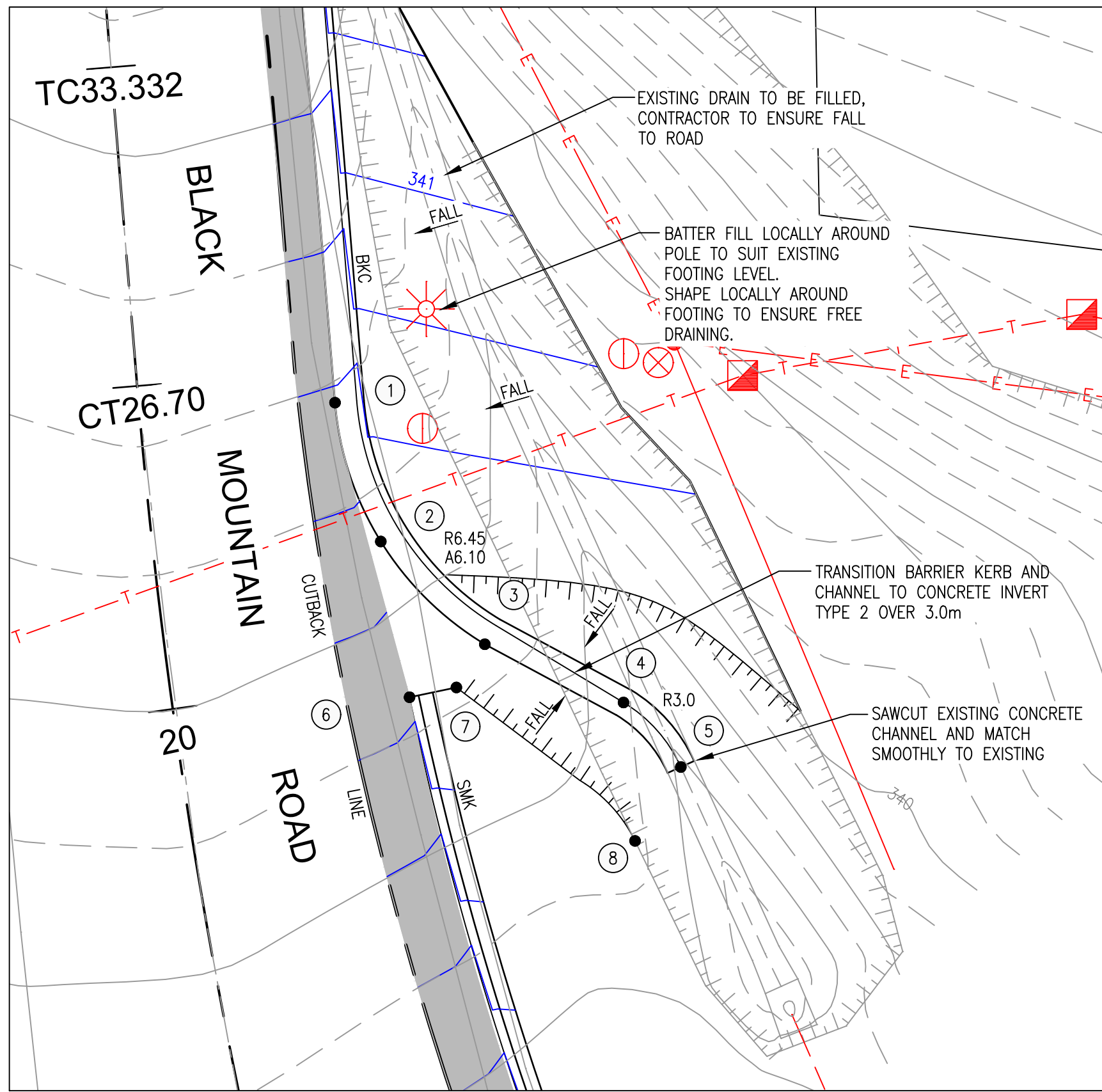
	4.0	DESIGN SURFACE CONTOUR (0.25m INTERVAL)
	348	EXISTING SURFACE CONTOUR (0.25m INTERVAL)
		STAGE BOUNDARY
		TOP OF BATTER
		TOE OF BATTER
		ACCESS CROSSOVER
		EDGE OF EXISTING SEALED ROAD
	SW	EXISTING STORMWATER
	W	EXISTING WATER
	T	EXISTING TELECOMMUNICATIONS
	E	EXISTING OVERHEAD ELECTRICITY
		EDGE OF EXISTING VEGETATION
	BKC	BARRIER KERB AND CHANNEL
	SMK	SEMI MOUNTABLE KERB TYPE 11

NOTES

- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- FOR BLACK MOUNTAIN ROAD CONTROL LINE SETOUT REFER DRG 1415-008.
- REFER ANNOTATED CROSS SECTIONS FOR VERGE, BATTER PROFILES, SETOUT AND DETAILS.
- REFER TO FNQROC STANDARD DRAWINGS:
S1000 : CONCRETE KERB & CHANNEL
S1015 : ACCESS CROSSOVERS
- REFER TMR STANDARD DRAWINGS:
SD1033 : KERB AND CHANNEL PROFILES
- LOCATION OF ALL EXISTING SERVICES TO BE CONFIRMED PRIOR TO CONSTRUCTION BY CONTRACTOR THROUGH LIAISON WITH RELEVANT AUTHORITIES.
- NEW ROADWORKS AND KERBING TO JOIN SMOOTHLY TO EXISTING WORKS. PROVIDE CUT BACK TO EXISTING SEALED ROADS WHERE NECESSARY.
- TRIM AND DRILL SEED ALL FOOTPATHS/ROAD VERGES. BATTERS >0.5m TO BE HYDROMULCHED AFTER FINAL EARTHWORKS AND TOPSOILING IS COMPLETED.
- TOPSOIL STOCKPILE TO BE LOCATED AT SITE ACCEPTABLE TO SUPERINTENDENT.

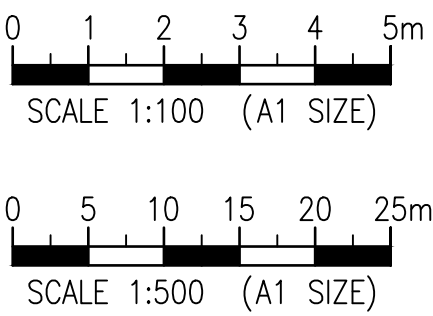
KERB SETOUT TABLE

POINT No.	EASTING	NORTHING	LEVEL
1	981.841	4.827	340.467
2	982.788	1.956	340.147
3	984.938	-0.168	339.827
4	987.807	-1.373	339.235
5	988.992	-2.707	338.949
6	983.382	-1.264	339.832
7	984.351	-1.062	339.799
8	988.045	-4.235	339.329



INSET
SCALE 1:100

Revisions			
No.	Description	Reviewed	Approved
A	OPERATIONAL WORKS APPLICATION	SC	PCS
		27/05/20	



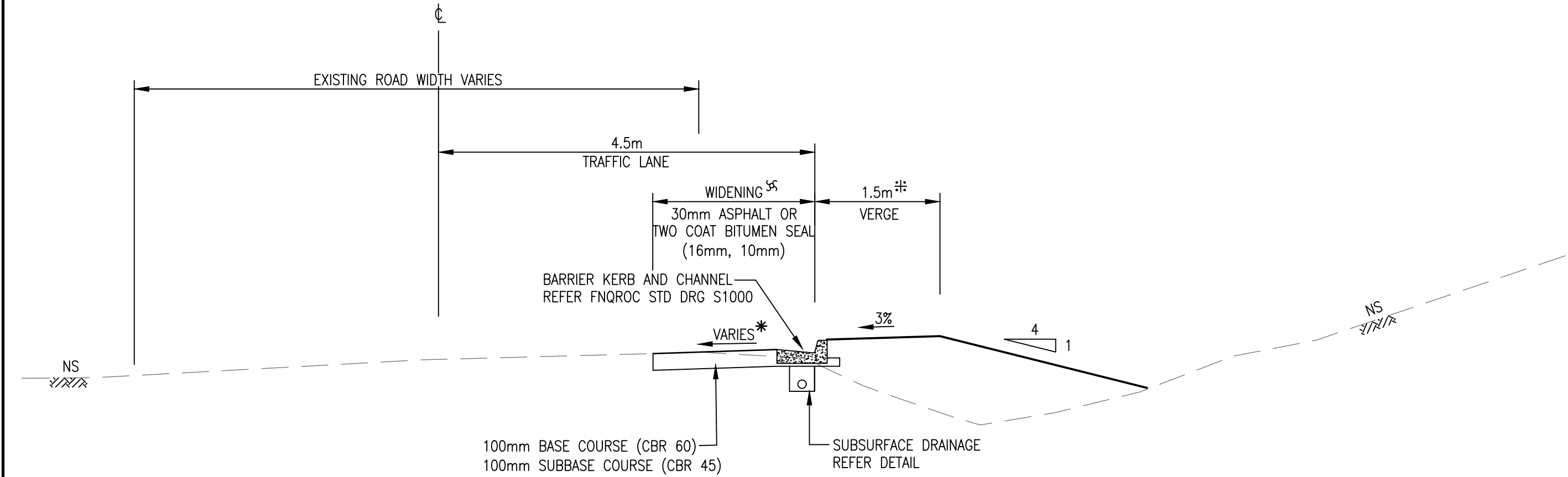
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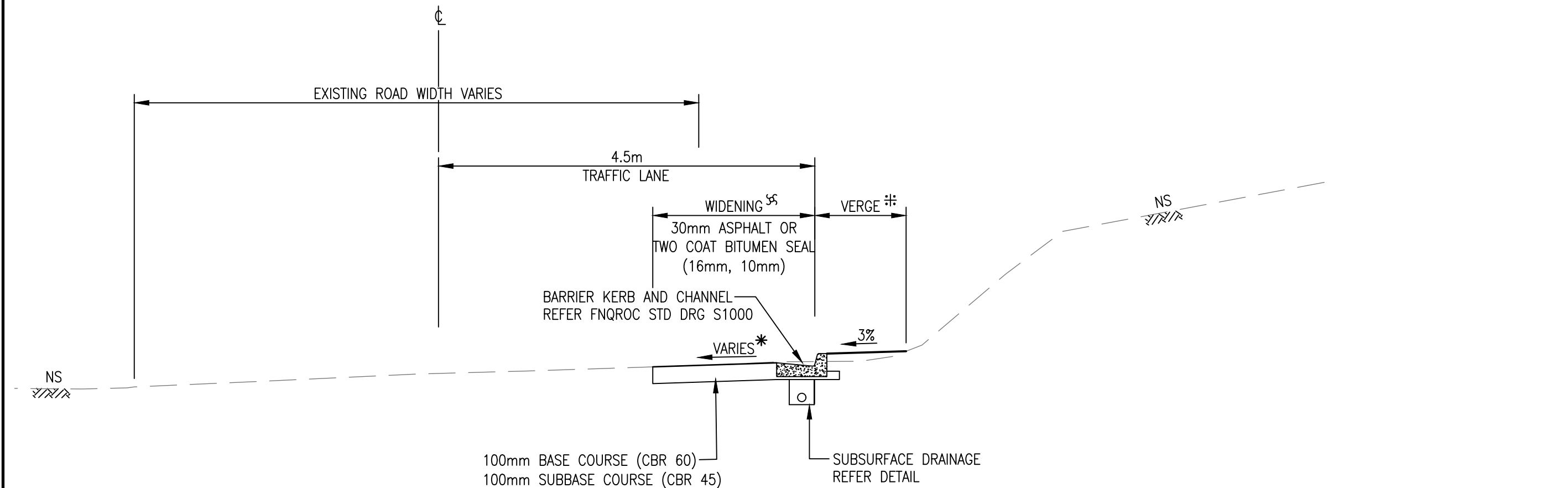
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Email: admin@trinityengineering.com.au

Scale (A1 size)				Client			
AS SHOWN				NAVID DERAKSHAN			
Drawing is not to be used for construction unless approved.				Project 2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)			
				Title ROADWORKS AND EARTHWORKS PLAN			
Drawn	Designed	Drawing Check	Design Check	Approved	RPEQ	Date	Drawing No.
MS	MS	ARH	ARH	P. STEELE	8462	27/05/2020	1415-007
				Revision			
				A			

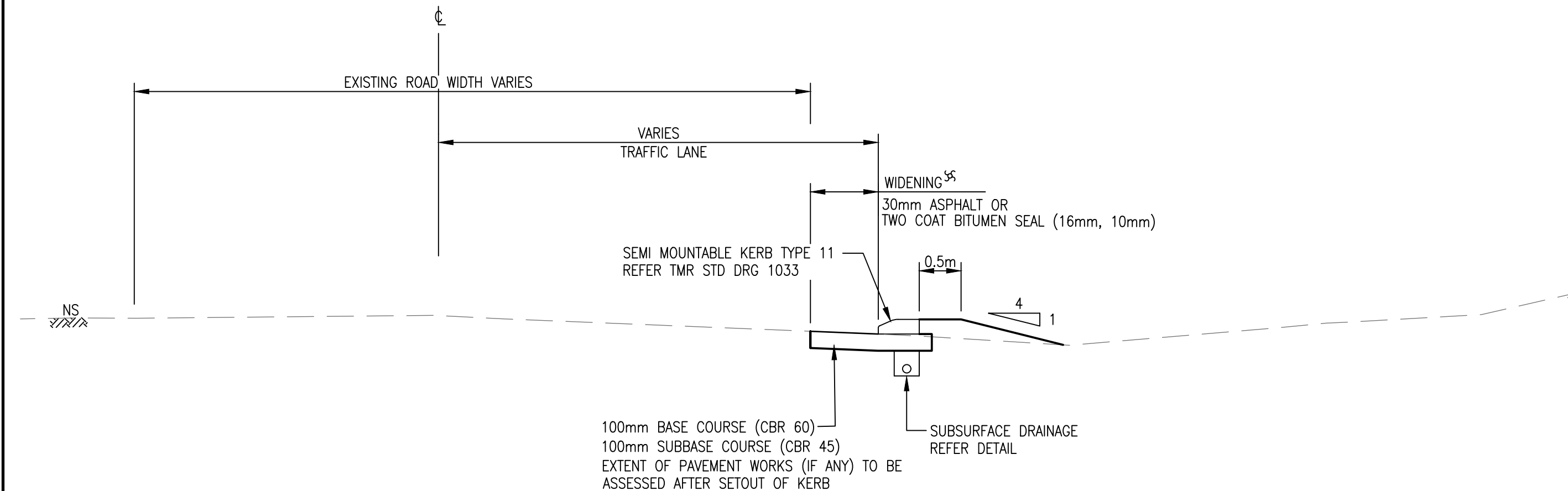
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CH117.525 TO CH152.387



CH19.551 TO CH117.525



CH00 TO CH19.551

TYPE CROSS SECTIONS
SCALE 1:50

NOTES

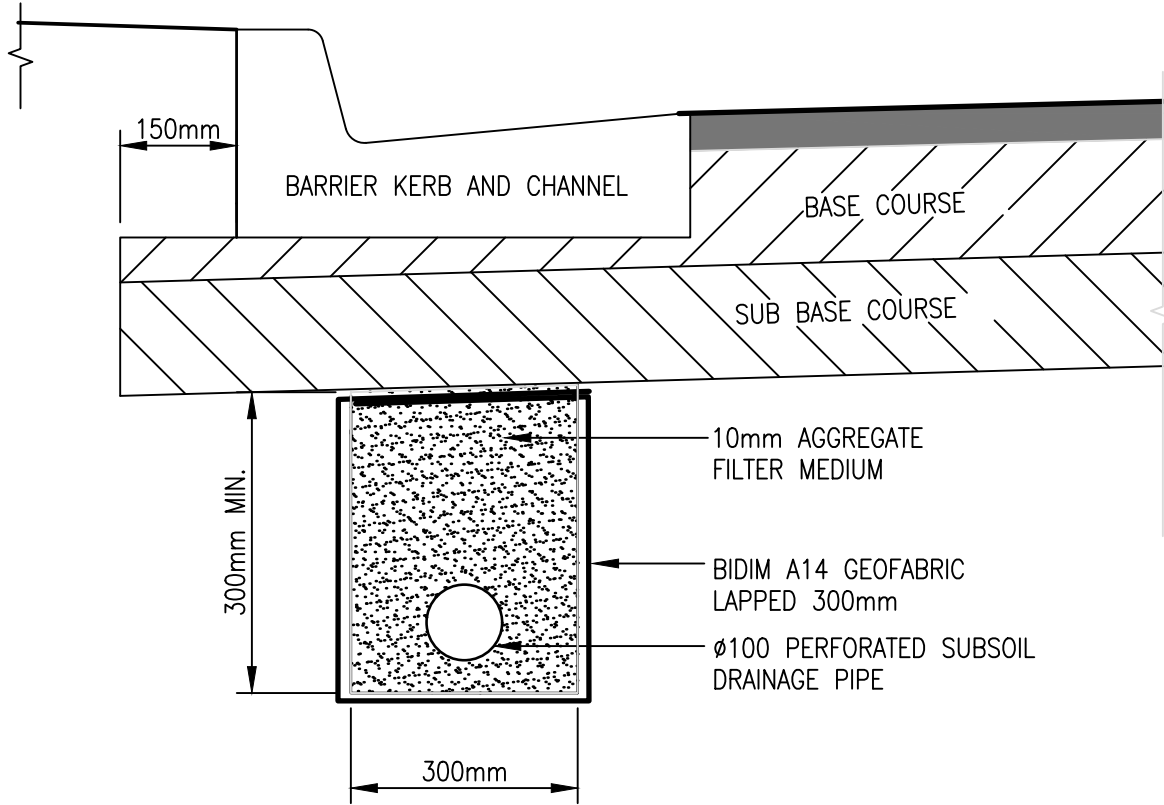
- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- PAVEMENT DESIGN IS BASED ON AN ASSUMED SUBGRADE CBR OF 10.
- THE CONTRACTOR IS TO CONFIRM SUBGRADE CBR DURING CONSTRUCTION AND PAVEMENT DESIGN IS TO BE CONFIRMED WITH SUPERINTENDENT.
- SUPERINTENDENT TO CONFIRM FINAL PAVEMENT DETAILS PRIOR TO CONSTRUCTION.
- EXISTING DRAINS UNDER NEW ROADWORKS TO HAVE CLEAN SELECT FILL PLACED AFTER STRIPPING AND REMOVAL OF ALL UNSUITABLE MATERIAL IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL AND SPECIFICATION.

DESIGN
SUBGRADE
CBR 10
(REFER NOTES 2 & 3)

- * PAVEMENT CROSSFALL VARIES:
BLACK MOUNTAIN ROAD WIDENING
PAVEMENT CROSSFALL VARIES, REFER ANNOTATED CROSS SECTIONS DETAILS FOR LEVELS.
- ✂ PAVEMENT WIDTH VARIES
REFER ANNOTATED CROSS SECTIONS FOR OFFSET DIMENSIONS.
- ≠ VERGE WIDTH VARIES
REFER ANNOTATED CROSS SECTIONS FOR OFFSET DIMENSIONS.

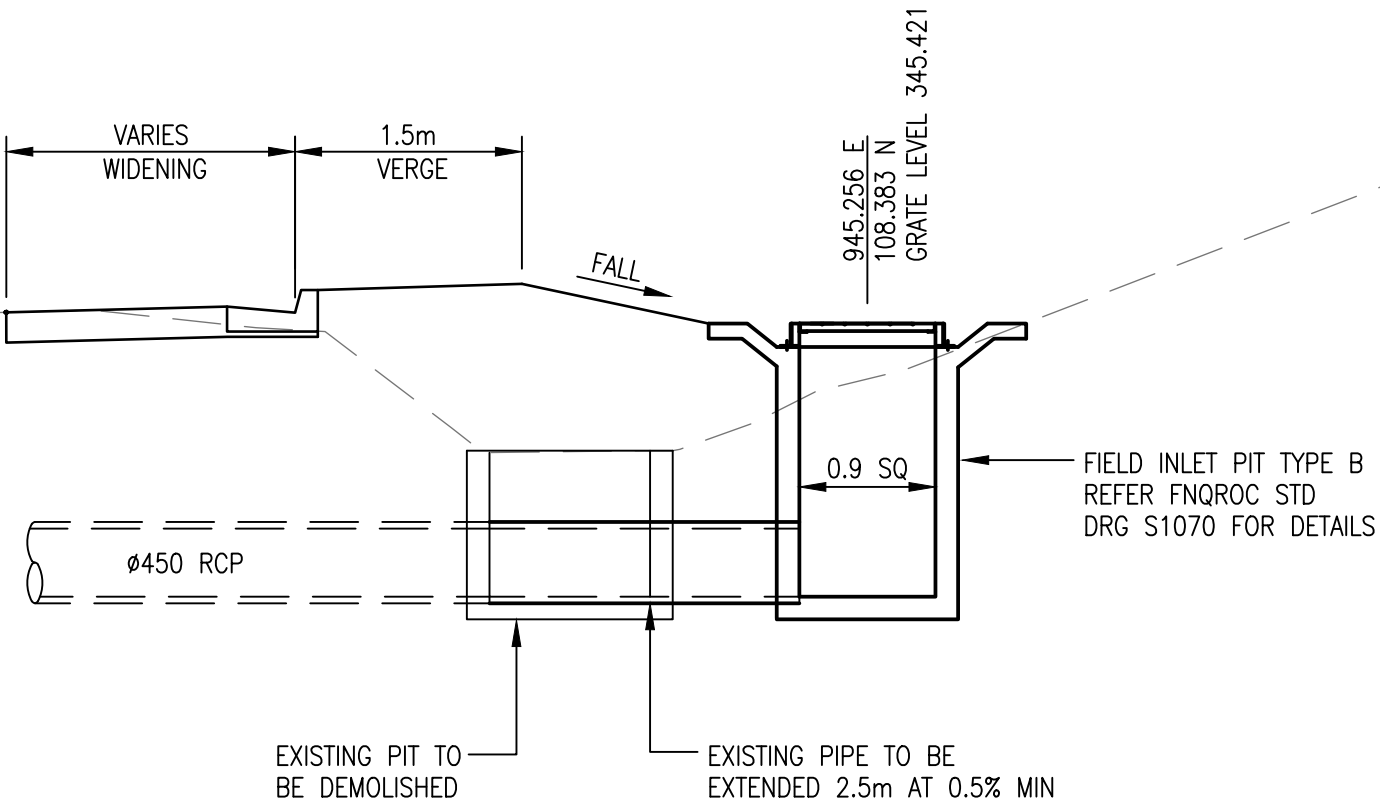
BLACK MOUNTAIN ROAD SETOUT TABLE

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
TC 0.000	982.848	-21.002	342°38'58.96"	R = 121.000	26.720	12°39'08.23"
CT 26.720	977.749	5.172	355°18'07.20"	R = 300.000	7.353	1°24'15.49"
TC 33.332	977.207	11.762	355°18'07.20"			
CT 40.685	976.695	19.097	356°42'22.68"	R = -86.500	103.634	68°38'42.91"
TC 58.452	975.674	36.834	356°42'22.68"			
CT 162.086	916.135	114.103	288°03'39.77"	R = -86.500	103.634	68°38'42.91"
TC 185.234	894.128	121.279	288°03'39.77"			

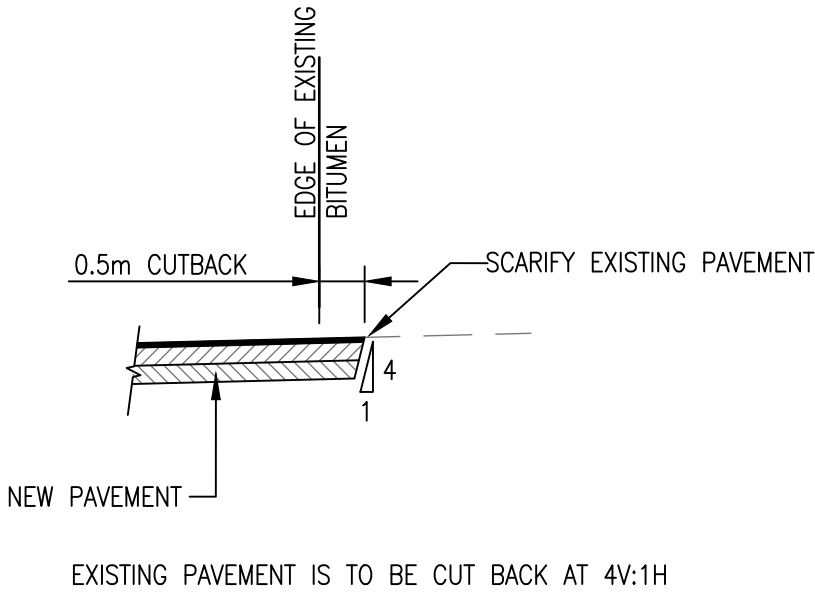


NOTE: SUBSOIL DRAINAGE FLUSHING POINTS TO BE PROVIDED AT HEAD OF LINES, HIGHPOINTS BUT NOT LESS THAN 50m SPACING

SUBSOIL DRAIN
SCALE 1:10

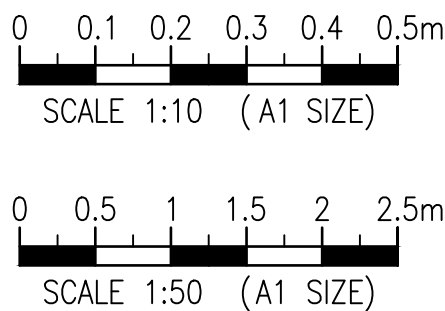


FIELD INLET PIT DETAIL
SCALE 1:50



PAVEMENT CUTBACK DETAIL
NOT TO SCALE

Revisions			
No.	Description	Reviewed	Approved
A	OPERATIONAL WORKS APPLICATION	SC	PCS
			27/05/20



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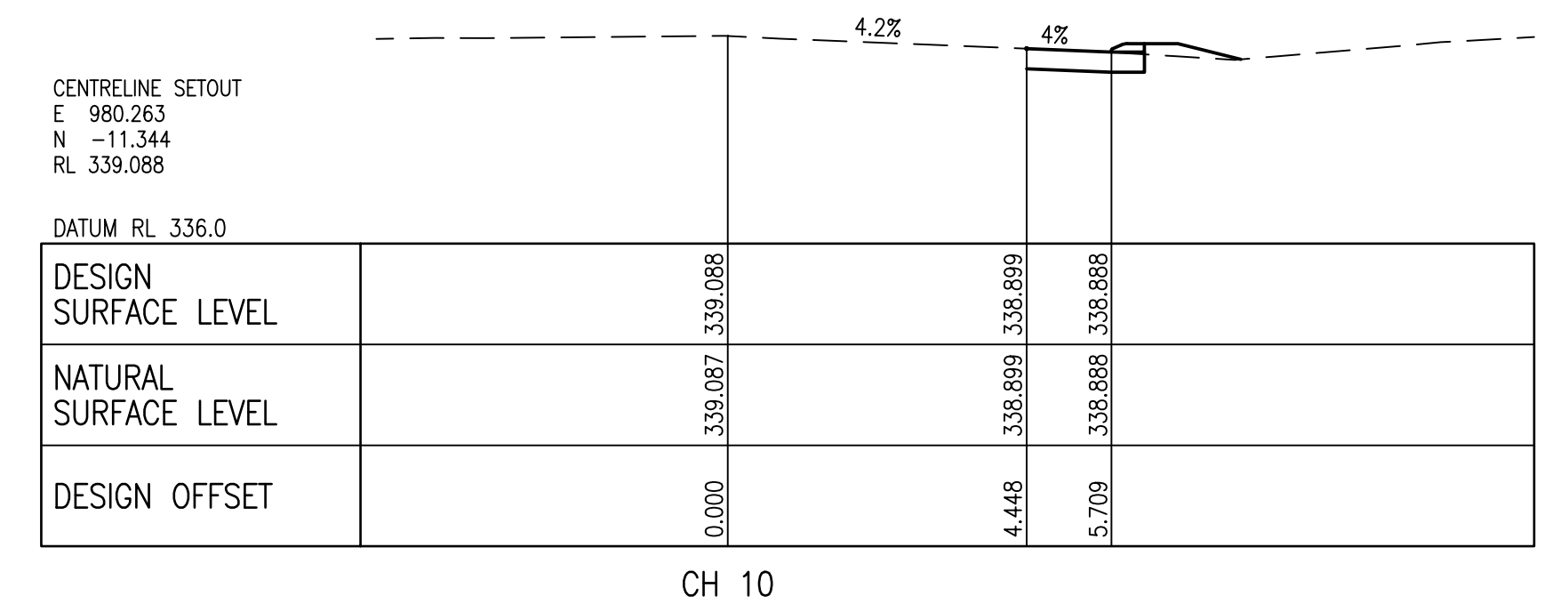
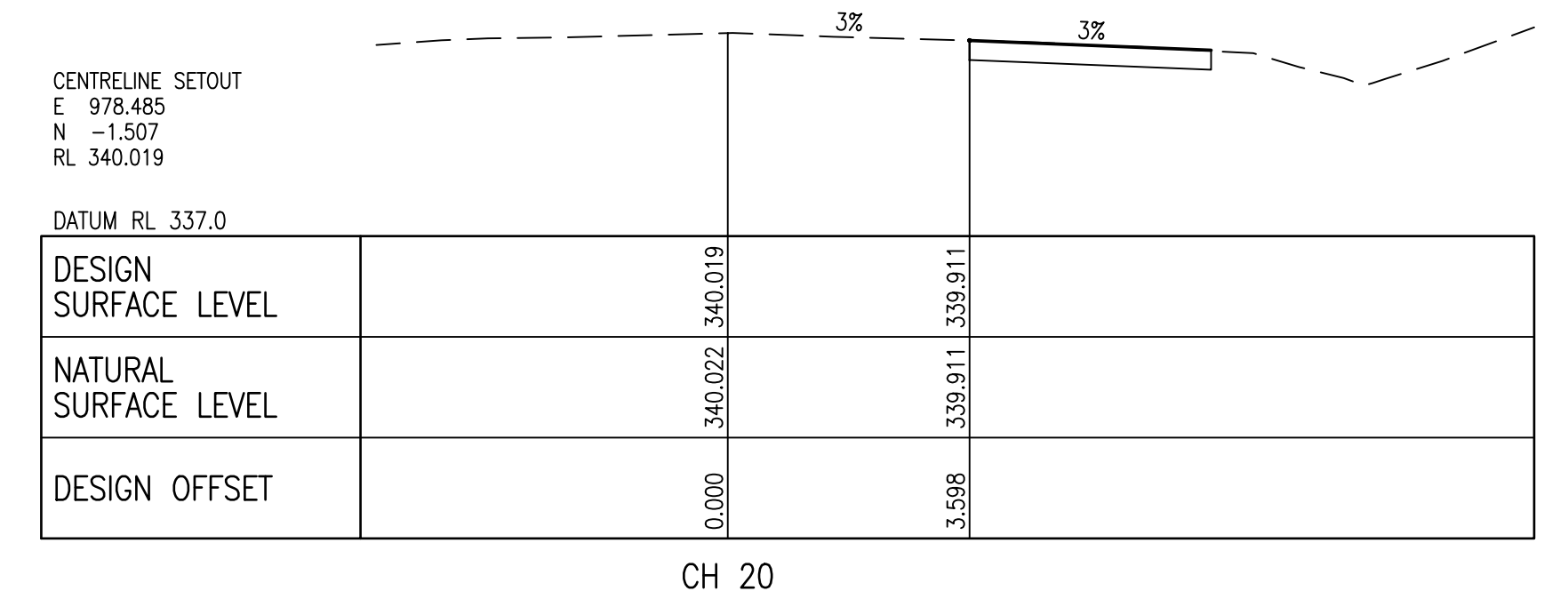
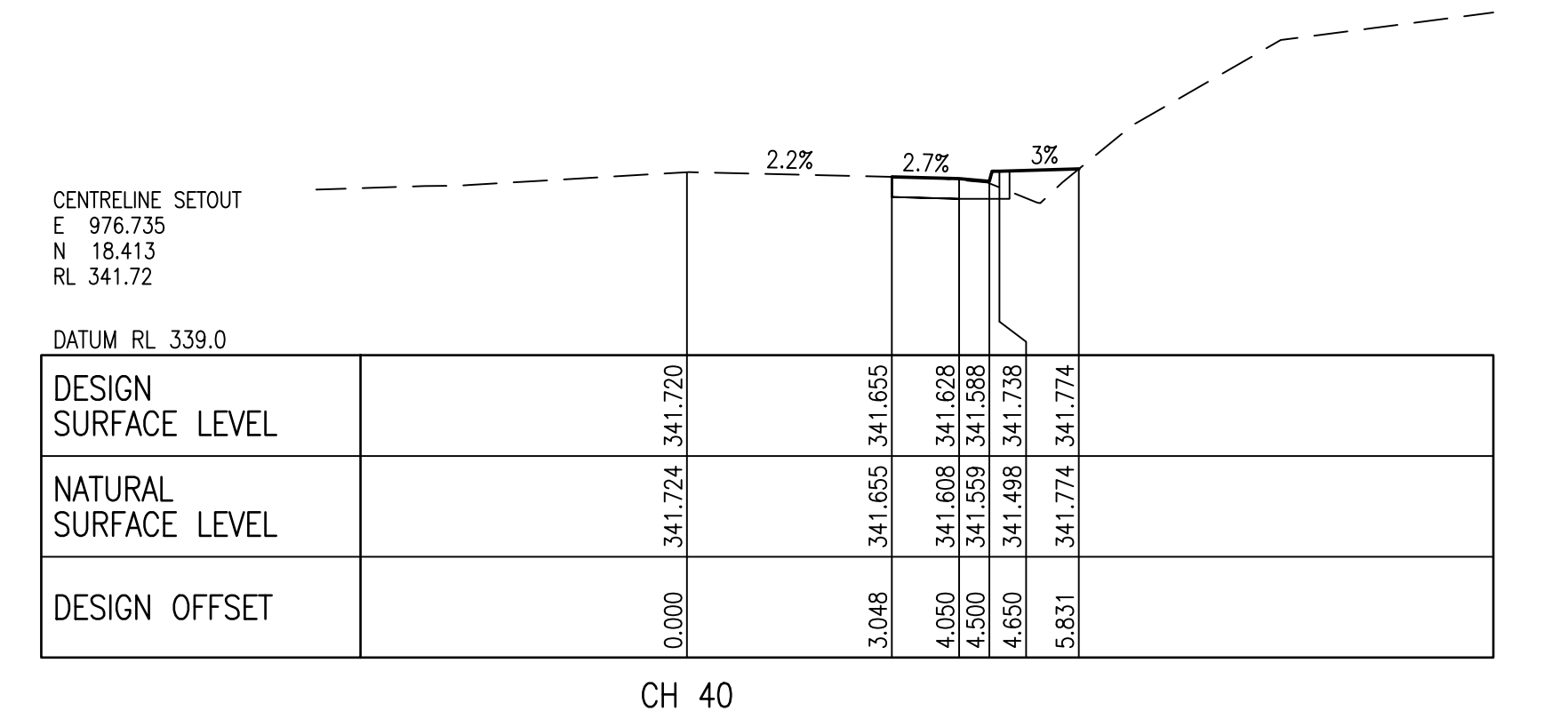
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AS SHOWN				NAVID DERAKSHAN			
Drawing is not to be used for construction unless approved.				Project 2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)			
				Title TYPICAL CROSS SECTIONS AND MISCELLANEOUS DETAILS			
Drawn MS	Designed MS	Drawing Check ARH	Design Check ARH	Approved P. STEELE	RPEQ 8462	Date 27/05/2020	Drawing No. 1415-008
						Revision A	

External References: tec-title-a1_c.dwg ;



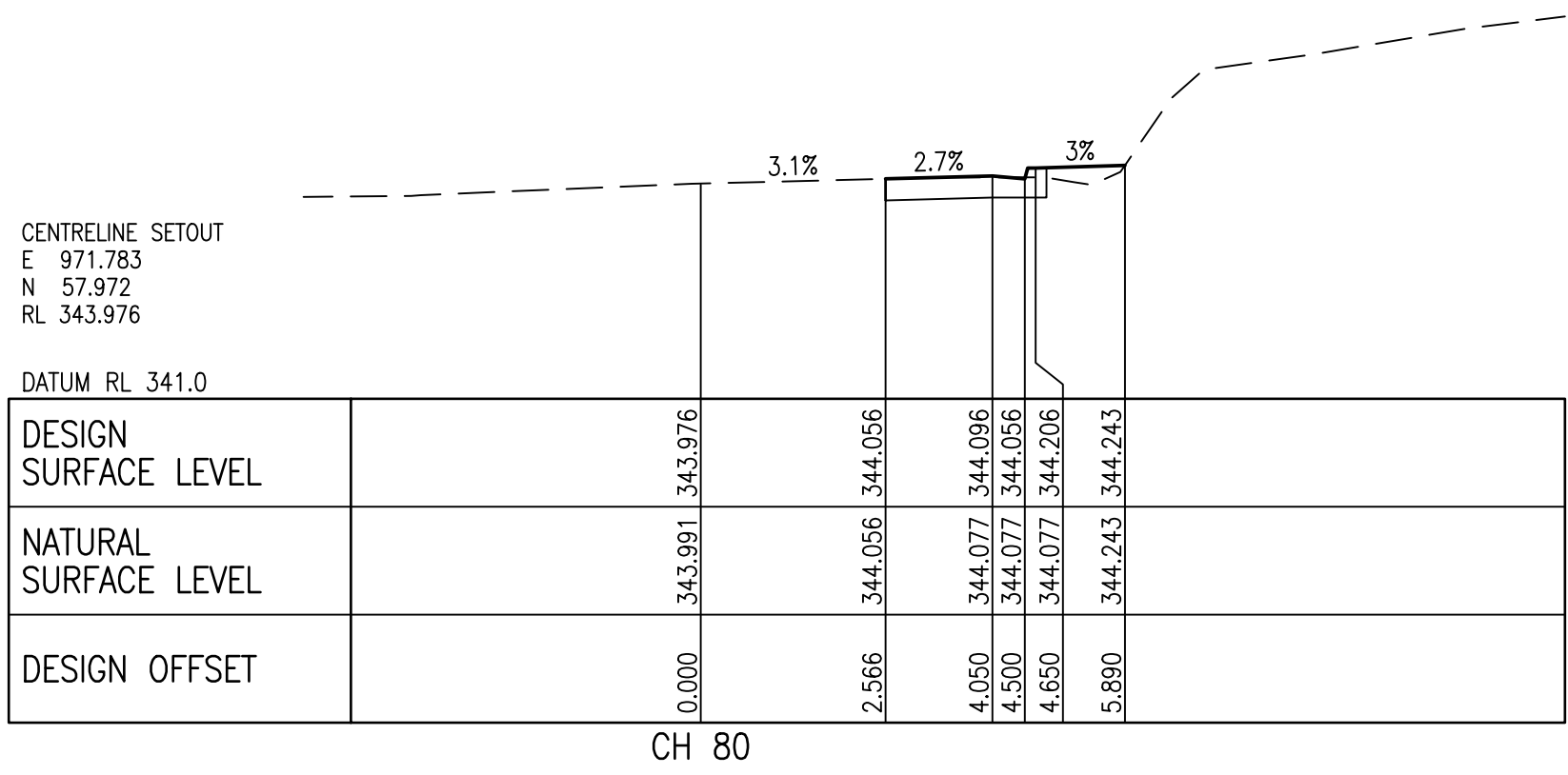
BLACK MOUNTAIN ROAD ANNOTATED CROSS SECTIONS

SCALE 1:100

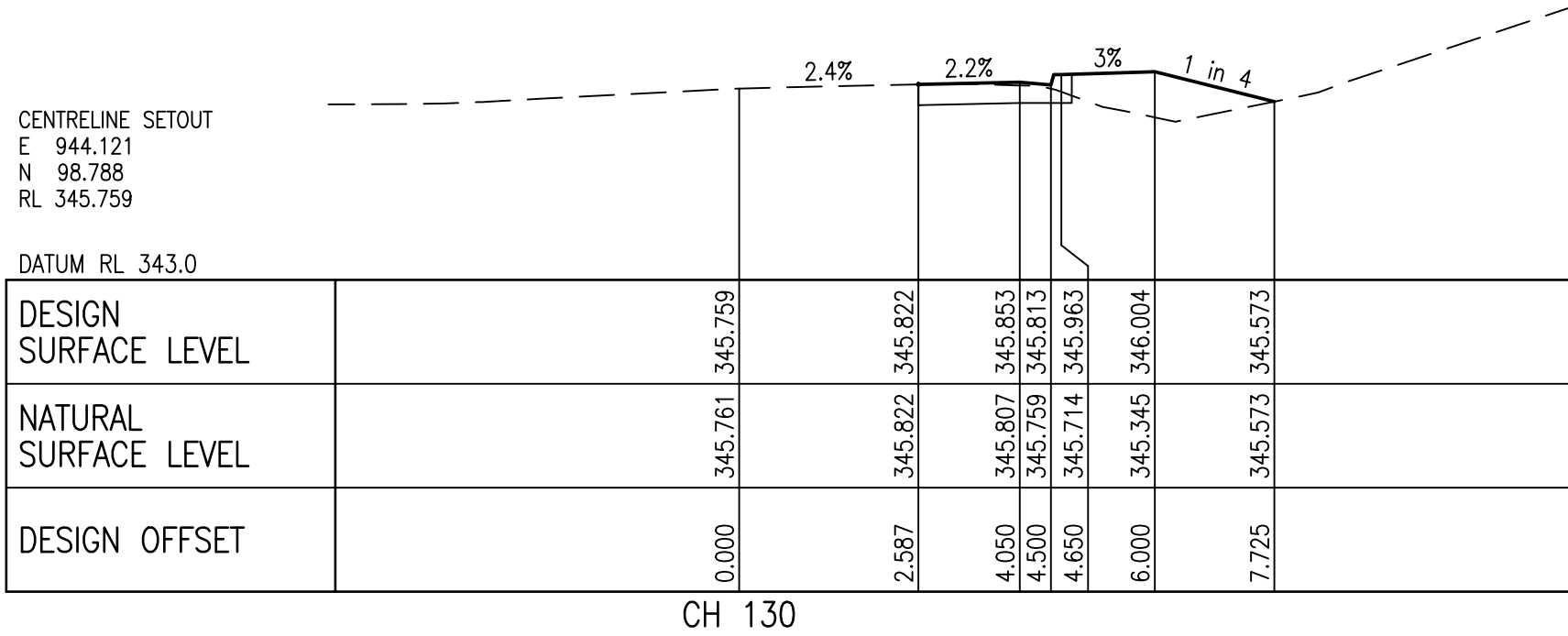
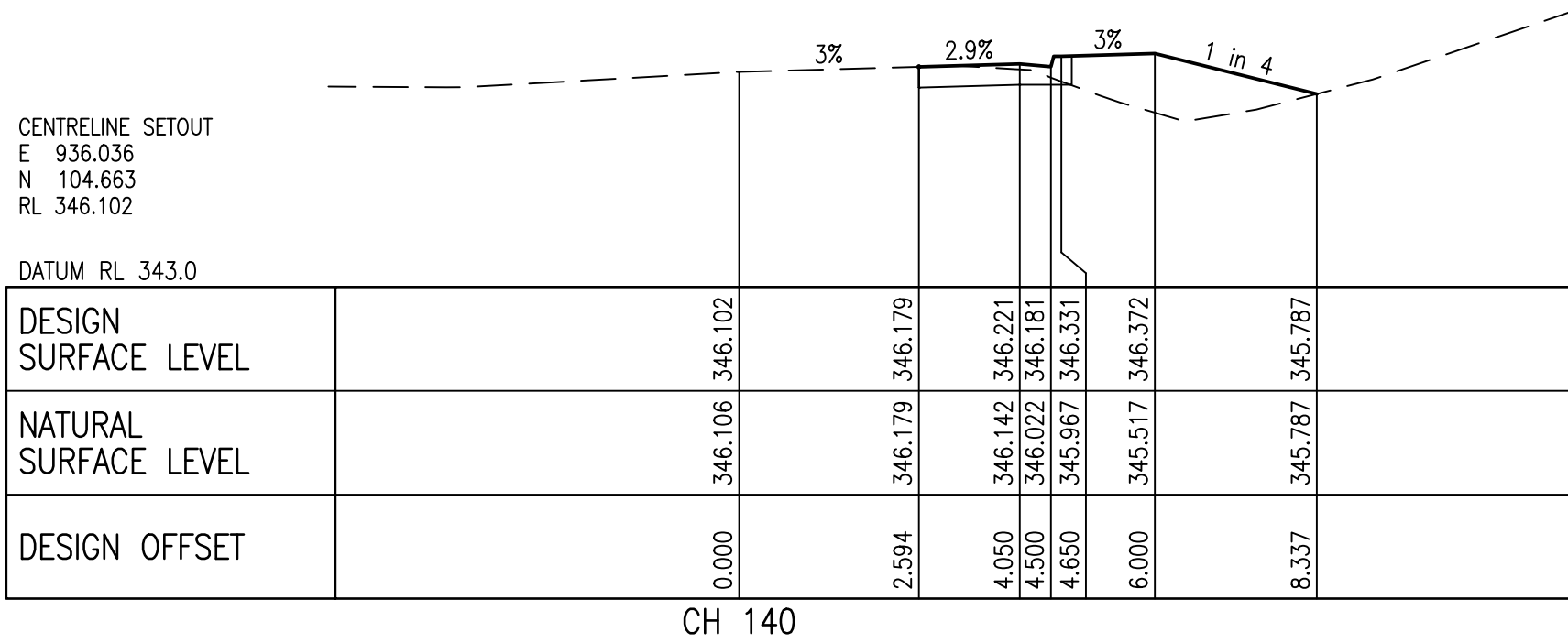
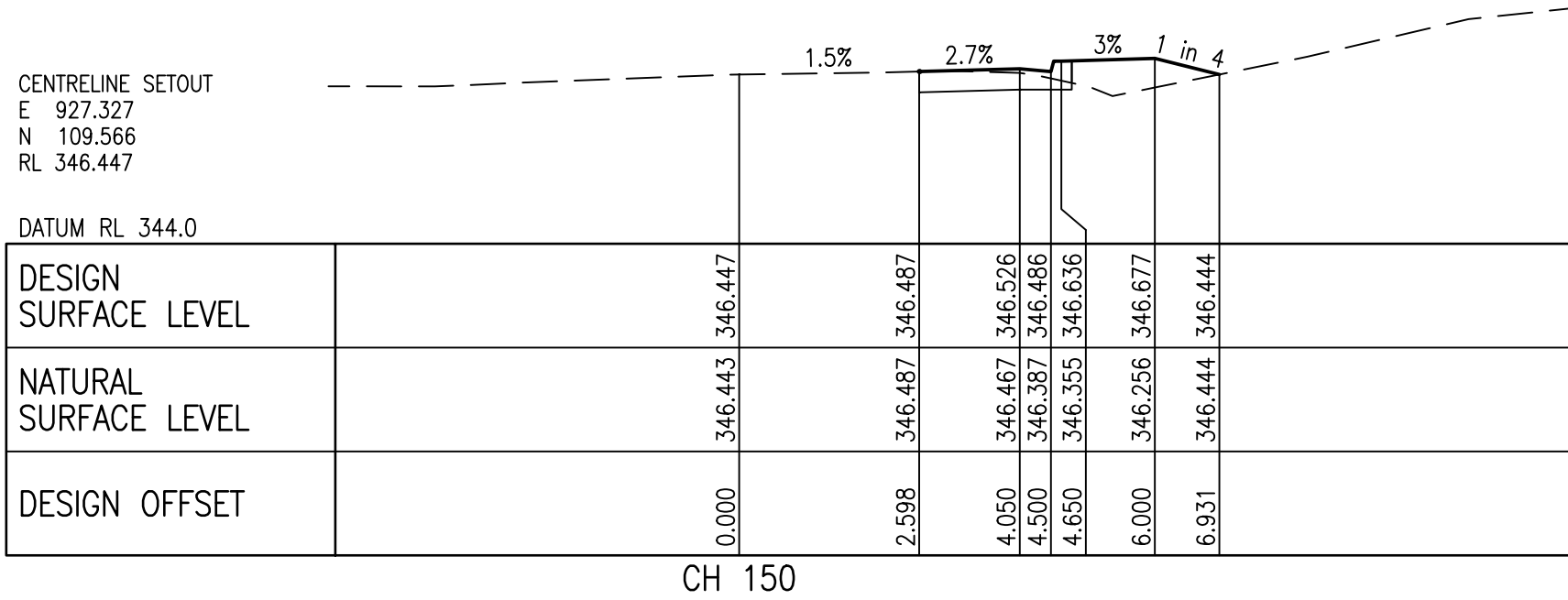
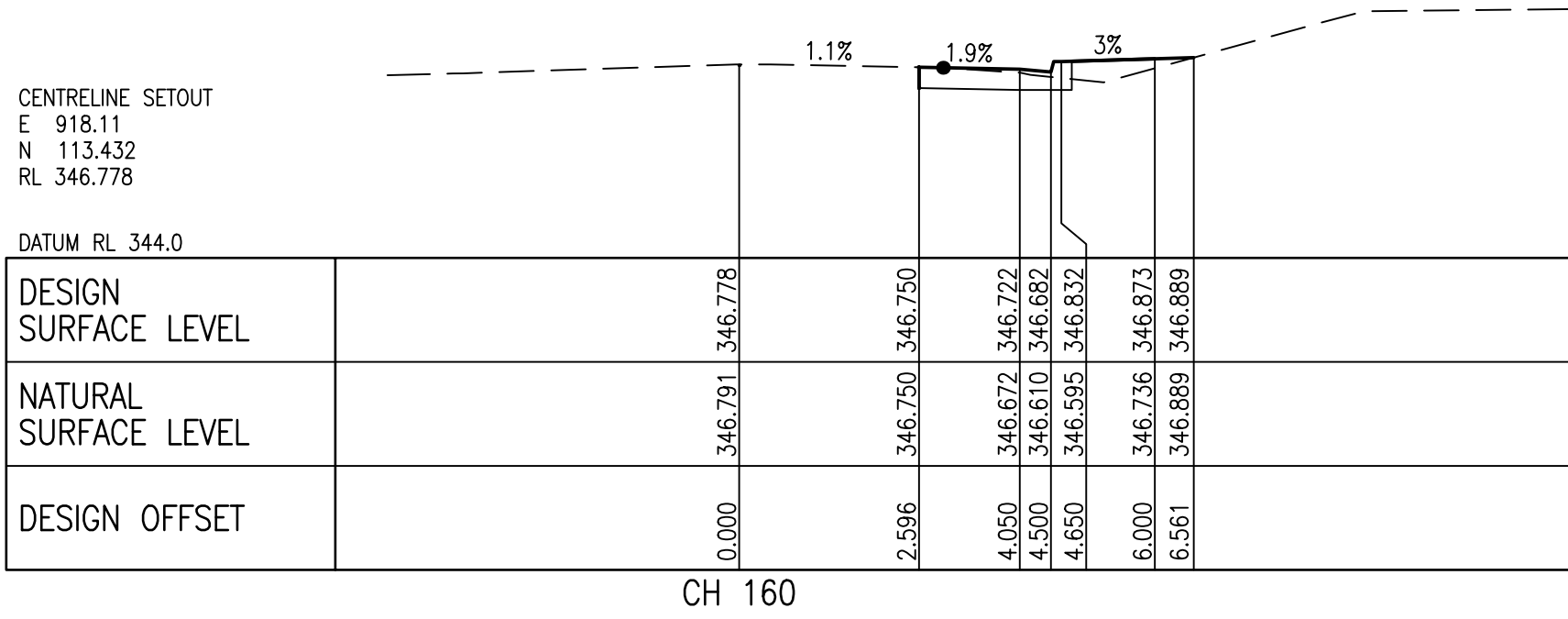
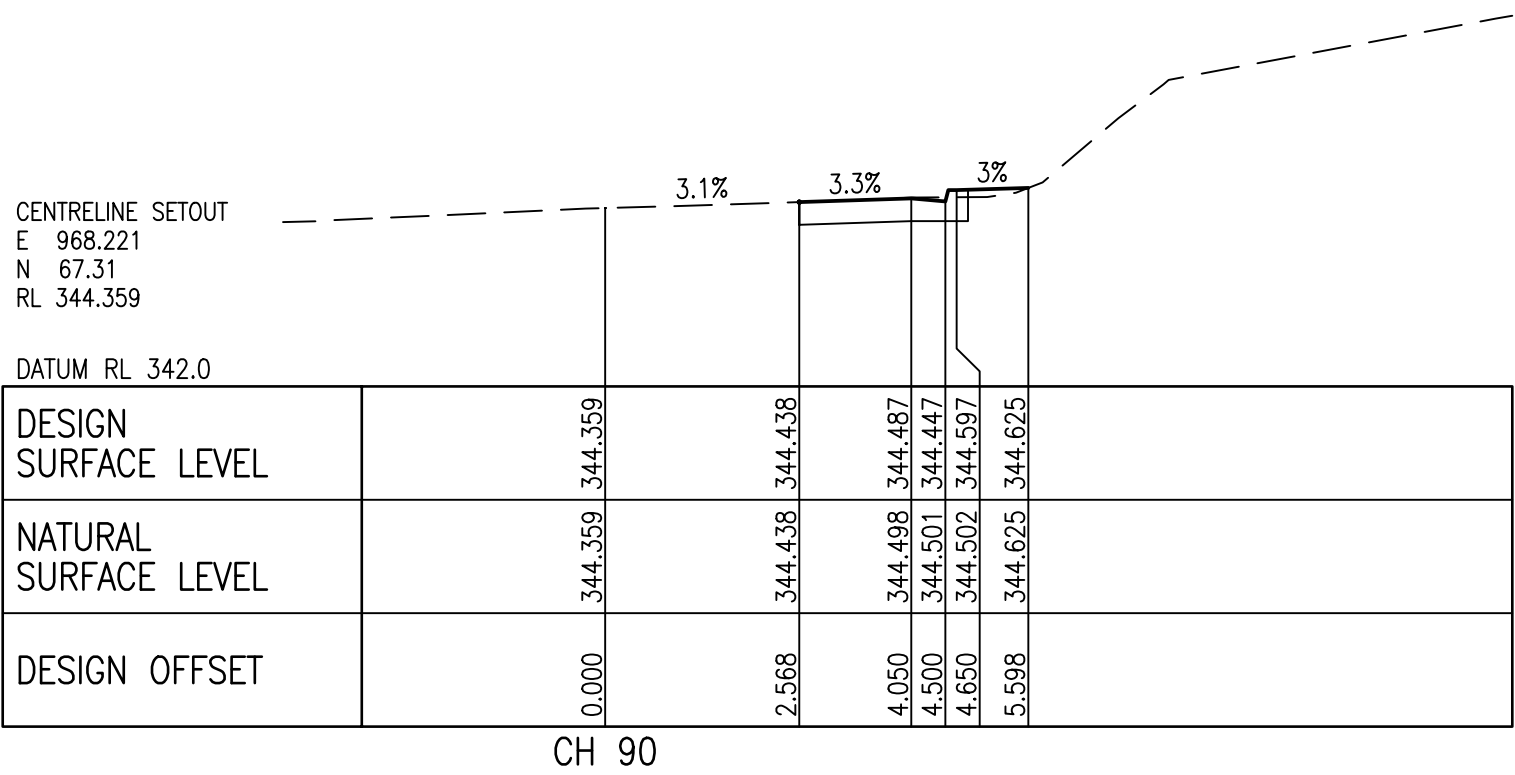
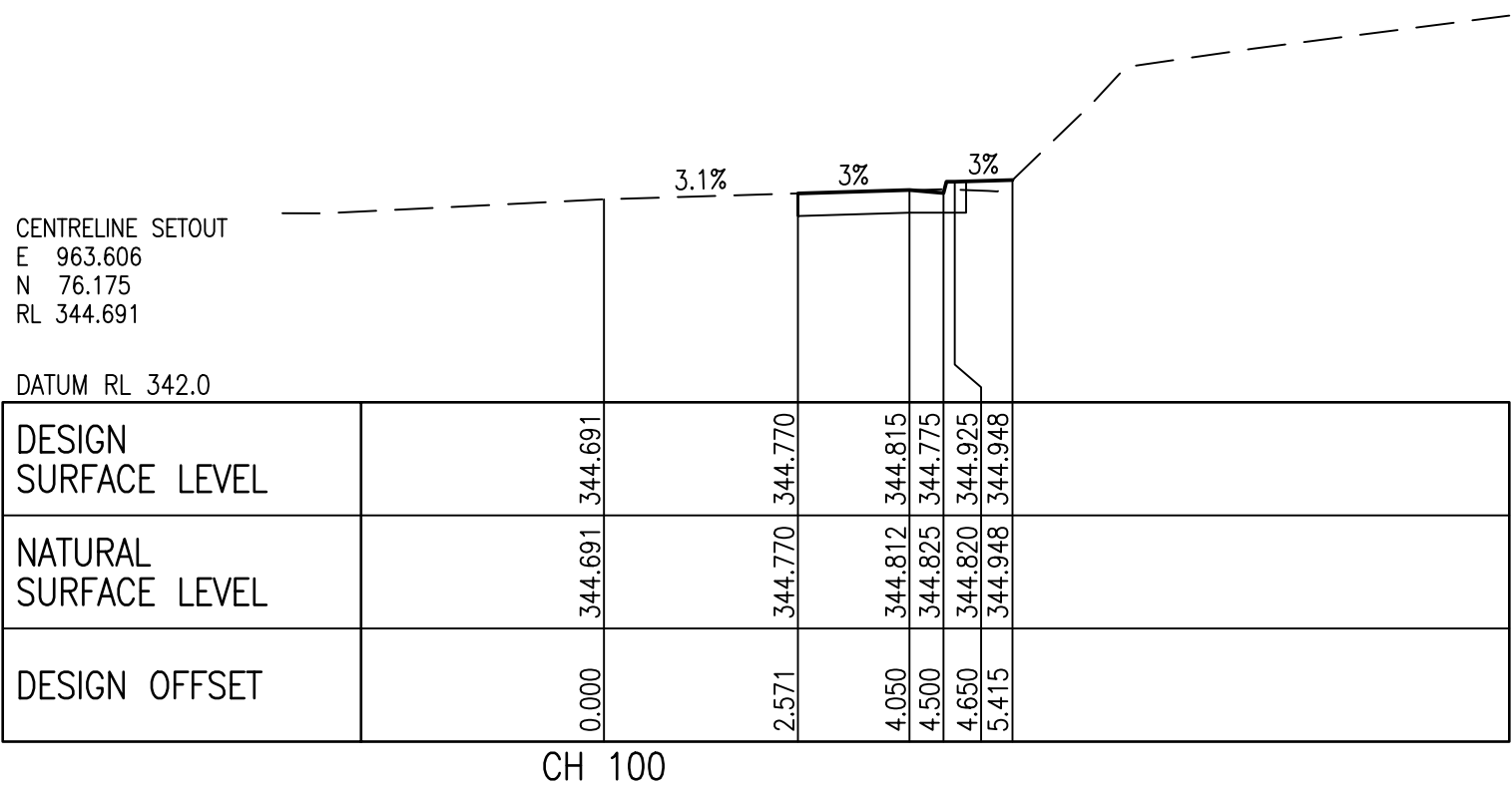
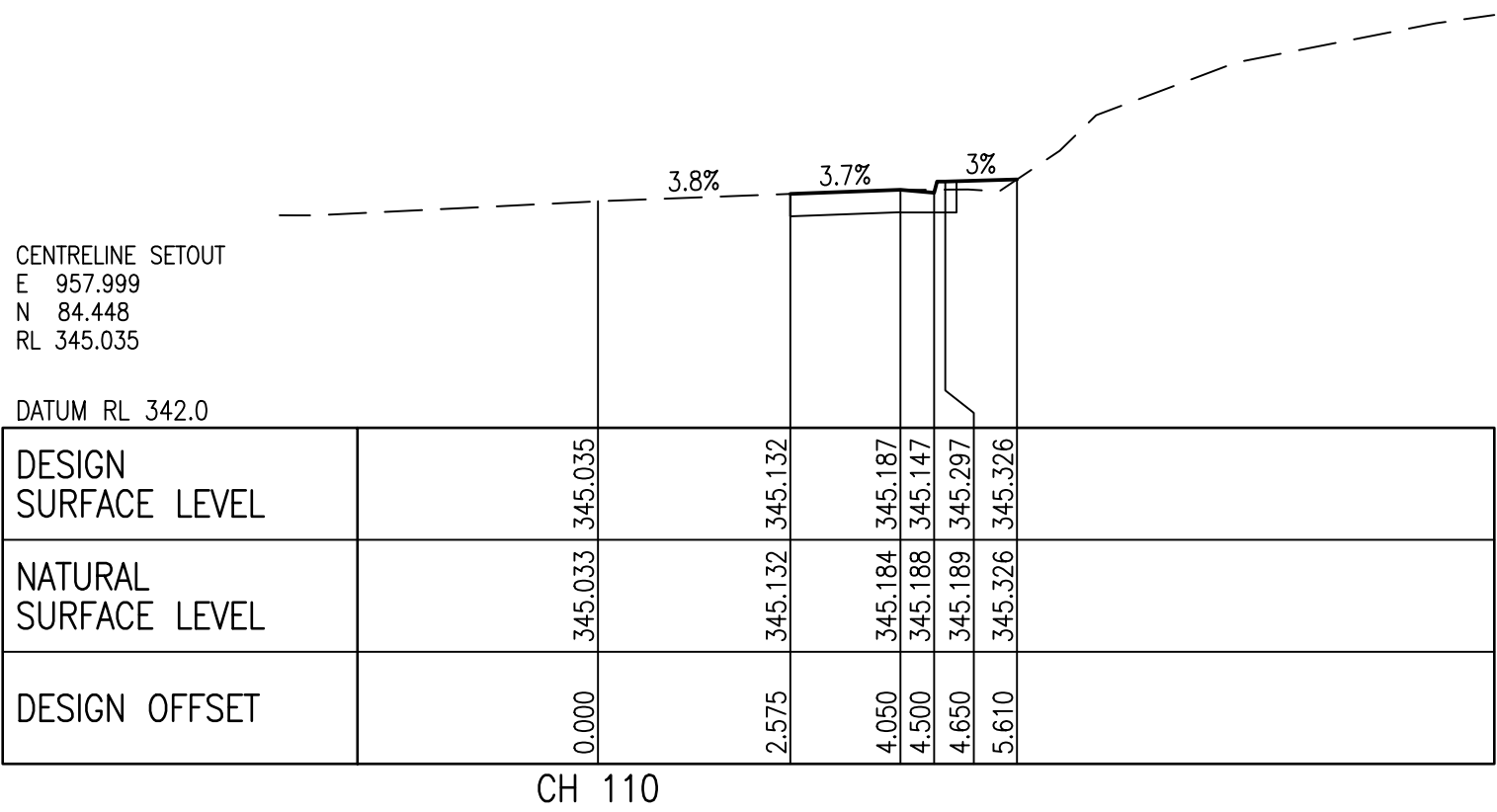
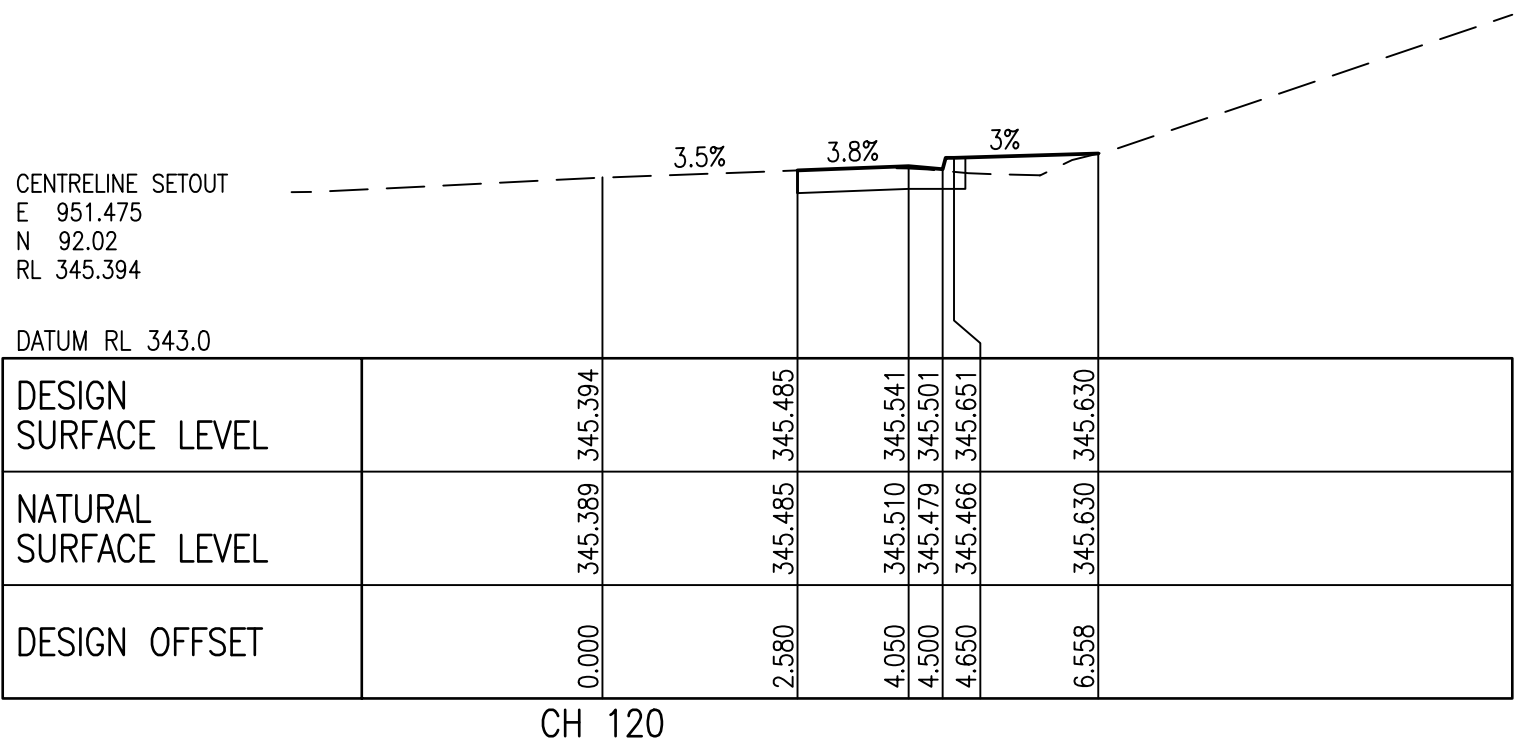
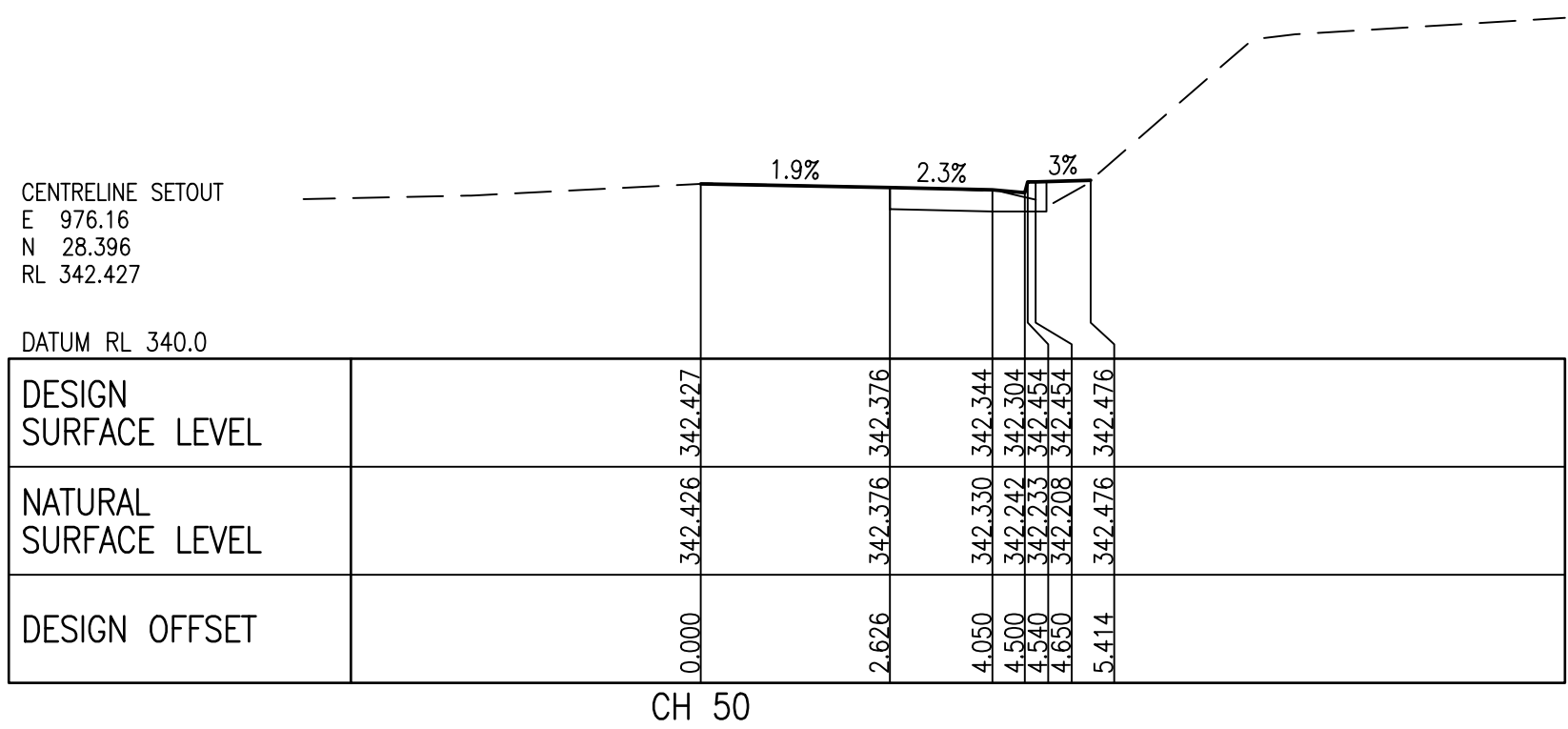
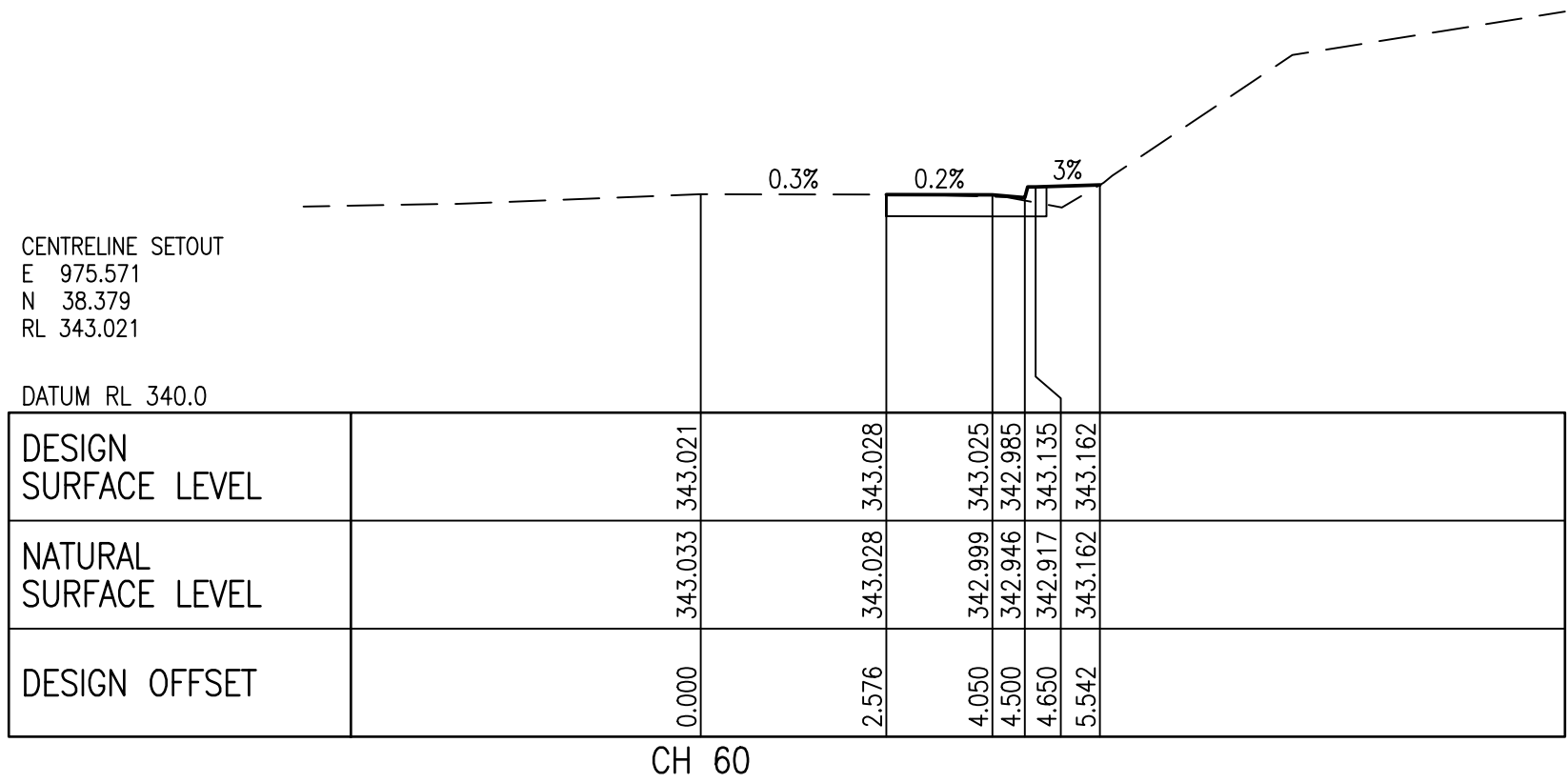
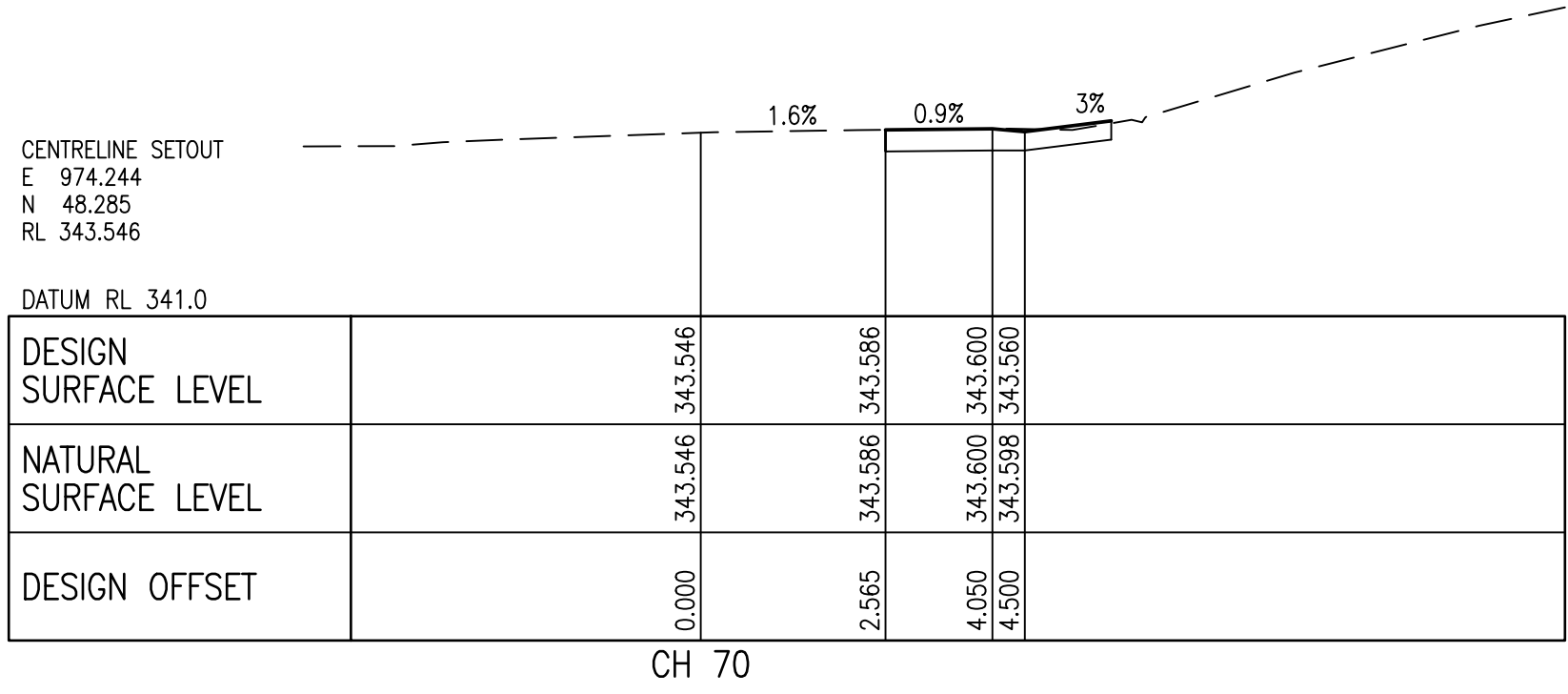
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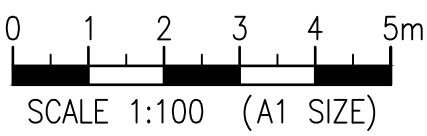


REFER TO DRAWING 1415-012
FOR LOTS 3 AND 4 DRIVEWAY
SETOUT AND DETAILS



Revisions

A	OPERATIONAL WORKS APPLICATION	SC	PCS	27/05/20
No.	Description	Reviewed	Approved	Date



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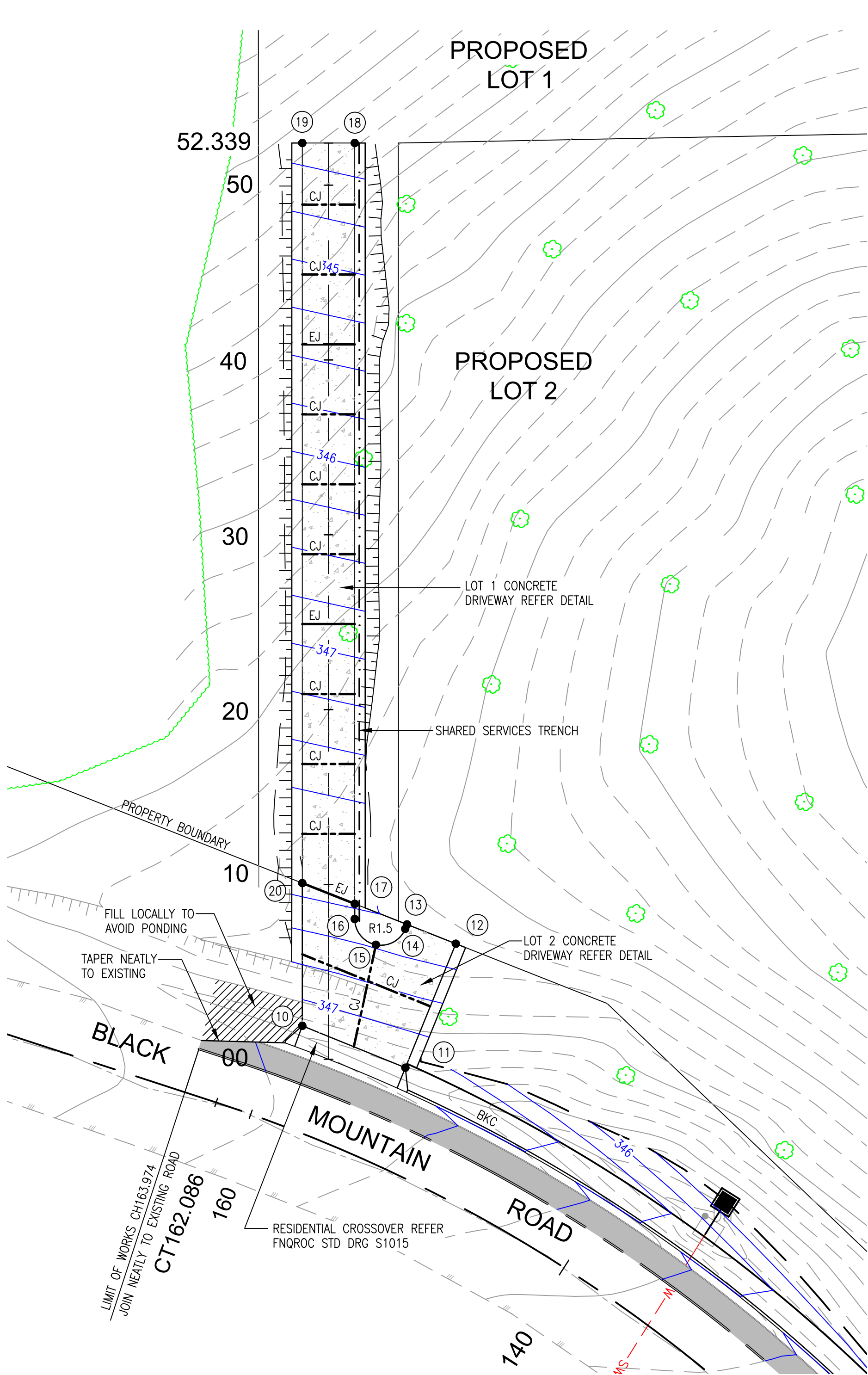
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Scale (A1 size)		Client						
1:100		NAVID DERAKSHAN						
Drawing is not to be used for construction unless approved.		Project						
		2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)						
		Title						
		BLACK MOUNTAIN ROAD ANNOTATED CROSS SECTIONS - SHEET 2 OF 2						
Drawn	Designed	Drawing Check	Design Check	Approved	RPEQ	Date	Drawing No.	Revision
MS	MS	ARH	ARH	P.STEELE	8462	27/05/2020	1415-010	A

External References: tec-title-a1_c.dwg ;

Printed: 27 May 2020, 9:04 AM (tony) File: T:\1415 2-6 Black Mountain Road Development\Drawings\1415-011(A) 1415-012(A).dwg



LOTS 1 AND 2 CONCRETE DRIVEWAY
SCALE 1:200

LOT 1 DRIVEWAY
CONTROL LINE SETOUT

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
0.000	922.560	116.569	0°00'00.00"			
52.339	922.560	168.987	0°00'00.00"			

LEGEND

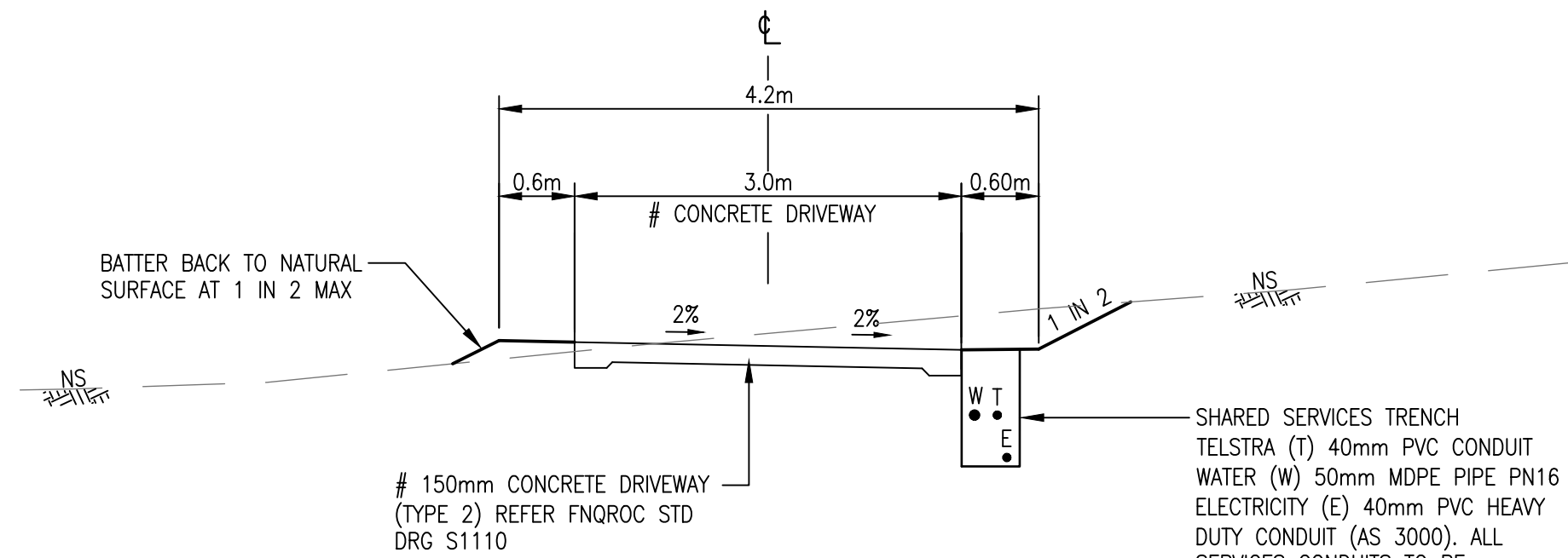
	BARRIER KERB AND CHANNEL
	DESIGN SURFACE CONTOUR (0.25m INTERVAL)
	CONTRACTION JOINT (REFER NOTE 6)
	EXPANSION JOINT (REFER NOTE 6)
	RADIUS
	ROAD CHAINAGE
	SETOUT POINT
	ACCESS CROSSOVER

NOTES

- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- LEVELS SHOWN ARE TO FINISHED SURFACE LEVELS OF CONCRETE DRIVEWAY.
- DIMENSIONS AND RADI SHOWN ARE TO THE EDGE OF CONCRETE SLAB UNLESS NOTED OTHERWISE.
- KERB LEVELS ARE SHOWN EQUALLY DIVIDED BETWEEN KERB TANGENT POINTS.
- REFER ALSO TO ROAD SETOUT DETAILS FOR COORDINATES OF ROAD CHAINAGES AND TANGENT POINTS.
- CONCRETE JOINTS ARE TO BE PROVIDED IN ACCORDANCE WITH FNQROC STD DRG S1110.
- REFER TO THE FOLLOWING FNQROC STANDARD DRAWINGS:
S1000 - CONCRETE KERB AND CHANNEL
S1015 - ACCESS CROSSOVERS
S1110 - CONCRETE DRIVEWAY FOR ALLOTMENT ACCESS

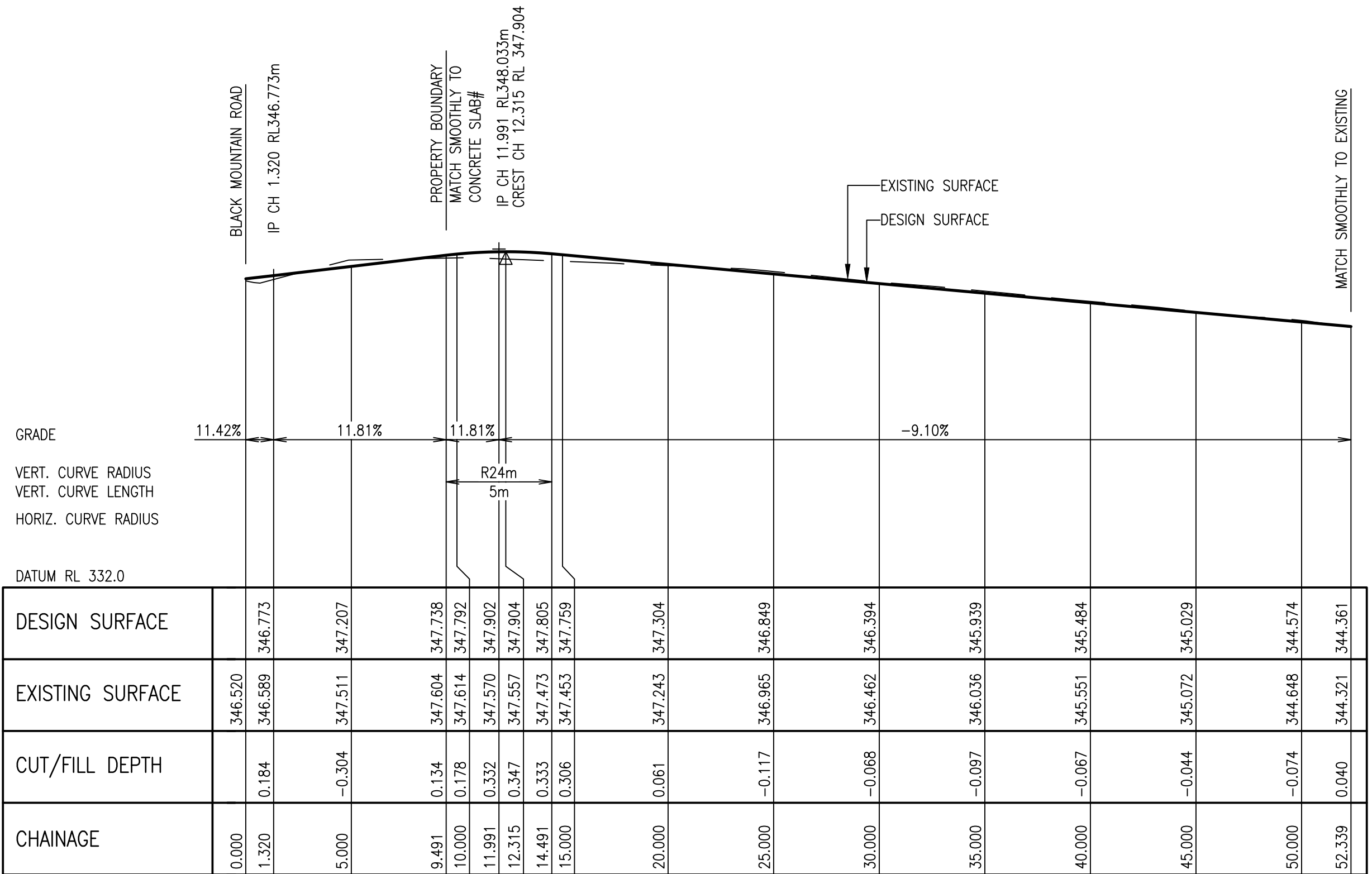
DRIVEWAY'S 1 AND 2
SETOUT TABLE

POINT No.	EASTING	NORTHING	LEVEL
10	921.060	118.487	346.818
11	926.958	116.091	346.752
12	929.843	123.184	347.672
13	927.053	124.286	347.722
14	926.949	124.031	347.69
15	925.272	123.124	347.525
16	924.060	124.596	347.671
17	924.060	125.466	347.776
18	924.060	168.987	344.331
19	921.060	168.987	344.391
20	921.060	126.653	347.829



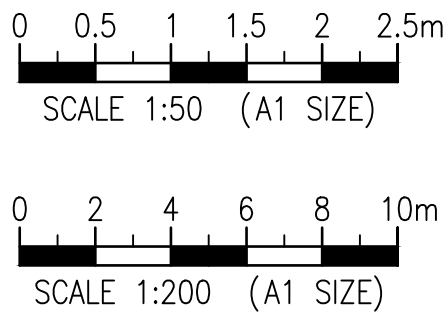
BITUMEN OR ASPHALT MAY BE CONSTRUCTED AS AN ALTERNATIVE WITHIN THE ALLOTMENT. DETAILS OF ALTERNATIVE TREATMENT TO BE APPROVED BY COUNCIL PRIOR TO CONSTRUCTION

TYPICAL CONCRETE DRIVEWAY
SCALE 1:50



LOT 1 DRIVEWAY CONTROL LINE
SCALE 1:200

No.	Description	Reviewed	Approved	Date
A	OPERATIONAL WORKS APPLICATION	SC	PCS	27/05/20



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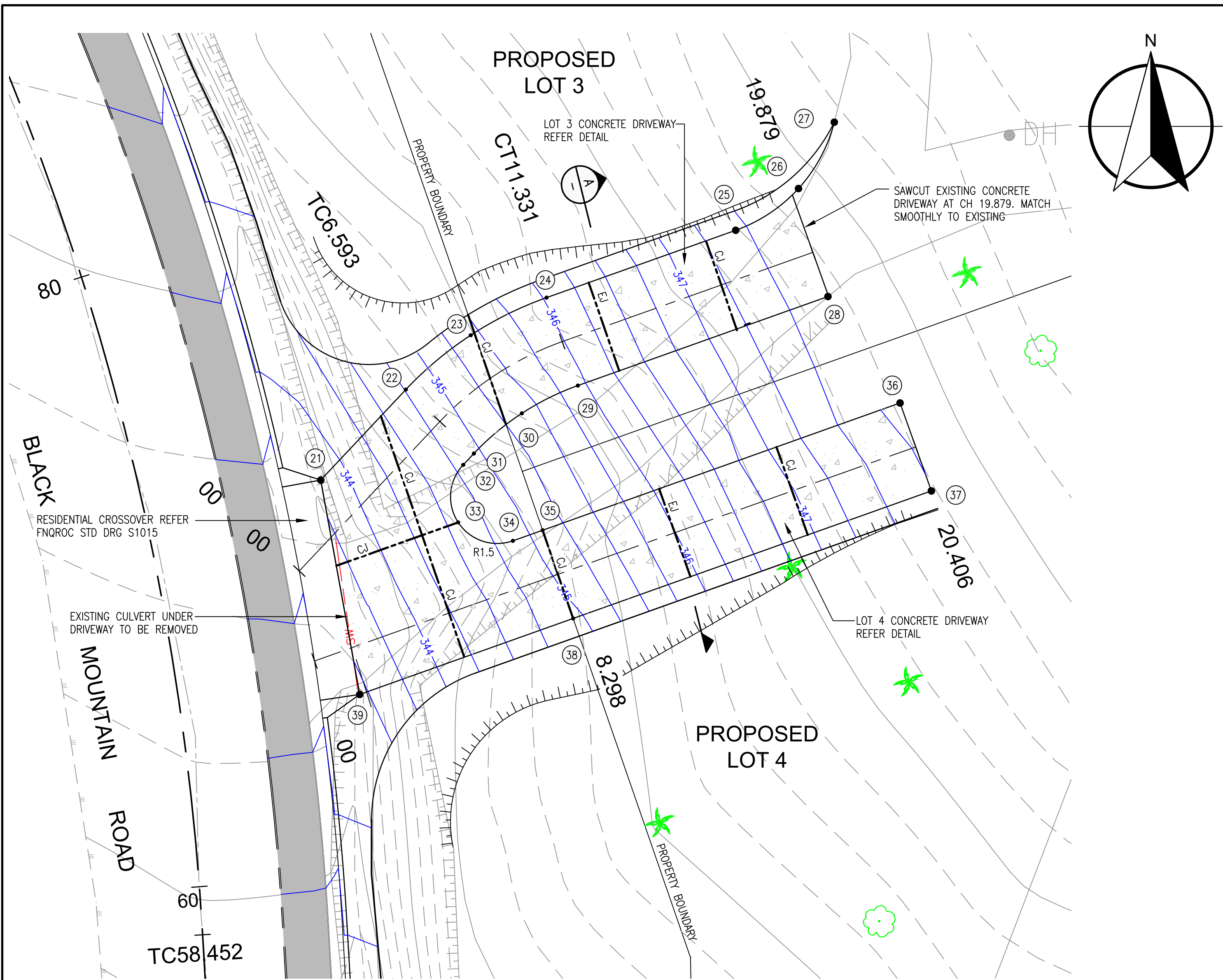
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AS SHOWN		NAVID DERAKSHAN	
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		2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)	
		Title	
		LOTS 1 AND 2 CONCRETE DRIVEWAY SETOUT AND DETAILS	
Drawn	Designed	Drawing Check	Design Check
MS	MS	ARH	ARH
Approved		RPEQ	Date
P.STEELE		8462	27/05/2020
Drawing No.		Revision	
1415-011		A	

External References: tec-title-a1_c.dwg ; 1415-X-SURVEY.dwg ; 1415-X-DESIGN.dwg ;

File: T:\1415 2-6 Black Mountain Road Development\Drawings\1415-011(A) 1415-012(A).dwg

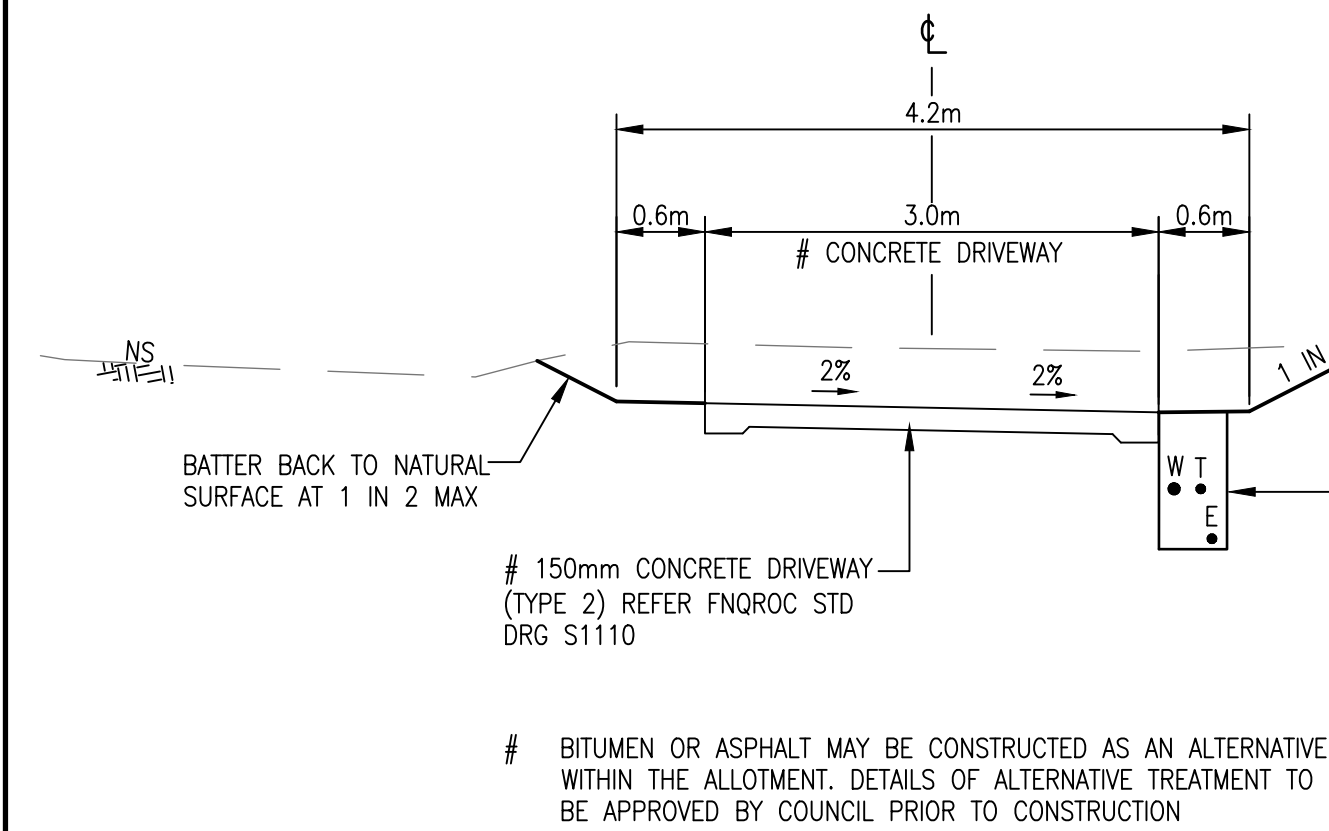
Printed: 27 May 2020, 9:06 AM (tony)



LOTS 3 AND 4 CONCRETE DRIVEWAY
SCALE 1:100

DRIVEWAYS 3 AND 4
SETOUT TABLE

POINT No.	EASTING	NORTHING	LEVEL
21	979.468	51.449	343.816
22	982.203	54.357	344.764
23	984.287	56.103	345.439
24	986.722	57.312	346.044
25	992.798	59.476	347.439
26	994.815	60.818	347.878
27	995.965	62.950	348.203
28	995.762	57.347	347.697
29	987.728	54.486	345.947
30	985.928	53.593	345.375
31	984.389	52.302	345.011
32	984.045	51.937	344.897
33	983.882	50.088	344.681
34	985.641	49.496	344.965
35	986.596	49.836	345.216
36	998.077	53.926	347.849
37	999.084	51.100	347.739
38	987.576	47.001	345.079
39	980.721	44.559	343.442



TYPICAL DRIVEWAY CROSS SECTION
SCALE 1:50

LEGEND

	BARRIER KERB AND CHANNEL
	DESIGN SURFACE CONTOUR (0.25m INTERVAL)
	CONTRACTION JOINT (REFER NOTE 6)
	EXPANSION JOINT (REFER NOTE 6)
	R10.00 RADIUS
	ROAD CHAINAGE
	SETOUT POINT
	ACCESS CROSSOVER

NOTES

- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- LEVELS SHOWN ARE TO FINISHED SURFACE LEVELS OF CONCRETE DRIVEWAY.
- DIMENSIONS AND RADII SHOWN ARE TO THE EDGE OF CONCRETE SLAB UNLESS NOTED OTHERWISE.
- KERB LEVELS ARE SHOWN EQUALLY DIVIDED BETWEEN KERB TANGENT POINTS.
- REFER ALSO TO ROAD SETOUT DETAILS FOR COORDINATES OF ROAD CHAINAGES AND TANGENT POINTS.
- CONCRETE JOINTS ARE TO BE PROVIDED IN ACCORDANCE WITH FNQROC STD DRG S1110.
- REFER TO THE FOLLOWING FNQROC STANDARD DRAWINGS:
S1000 - CONCRETE KERB AND CHANNEL
S1015 - ACCESS CROSSOVERS
S1110 - CONCRETE DRIVEWAY FOR ALLOTMENT ACCESS

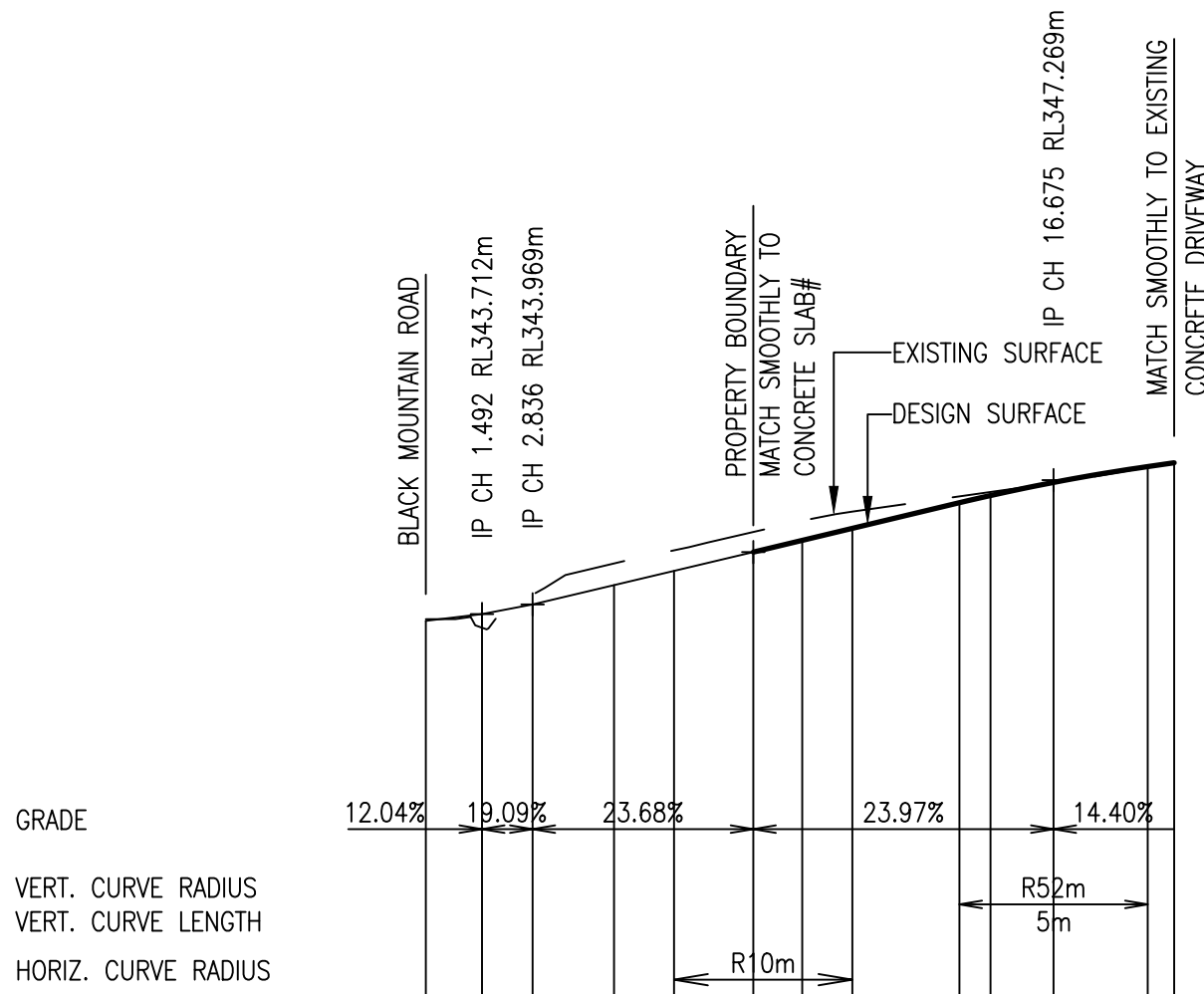
LOT 3 DRIVEWAY
CONTROL LINE SETOUT

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
0.000	978.779	48.527	43°14'38.12"	R = 10.000	4.739	27°09'01.71"
TC 6.593	983.296	53.330	43°14'38.12"			
CT 11.331	987.225	55.899	70°23'39.82"	R = 10.000	4.739	27°09'01.71"
19.879	995.277	58.767	70°23'39.82"			

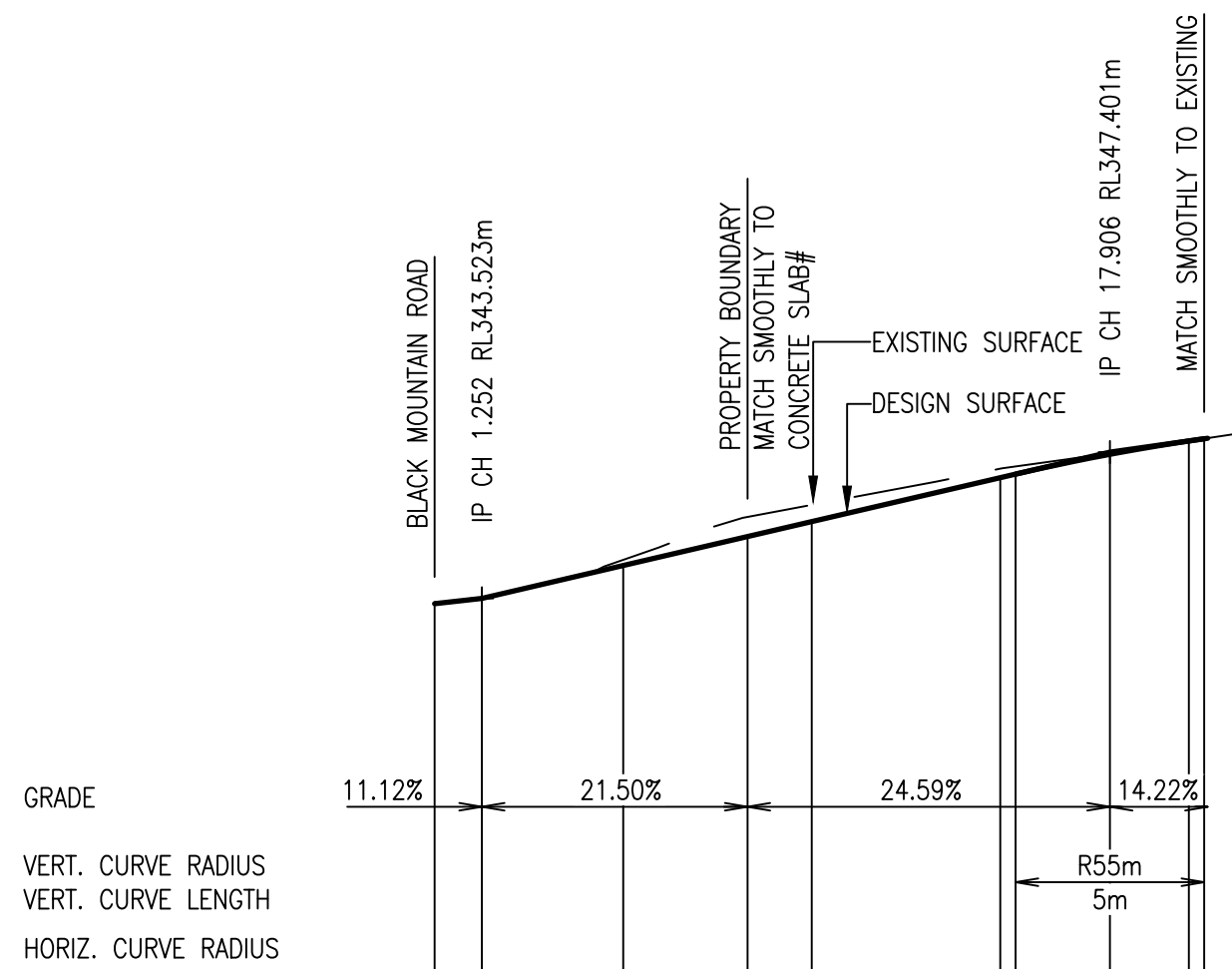
LOT 4 DRIVEWAY
CONTROL LINE SETOUT

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
0.000	979.272	45.635	70°23'39.82"			
20.406	998.581	52.513	70°23'39.82"			

SECTION A
SCALE 1:50

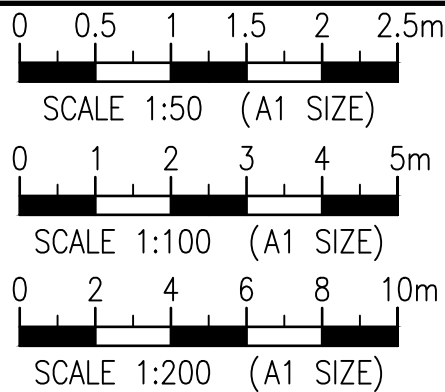


LOT 3 DRIVEWAY CONTROL LINE
SCALE 1:200



LOT 4 DRIVEWAY CONTROL LINE
SCALE 1:200

Revisions	No.	Description	Reviewed	Approved	Date
A	OPERATIONAL WORKS APPLICATION	SC	PCS	27/05/20	

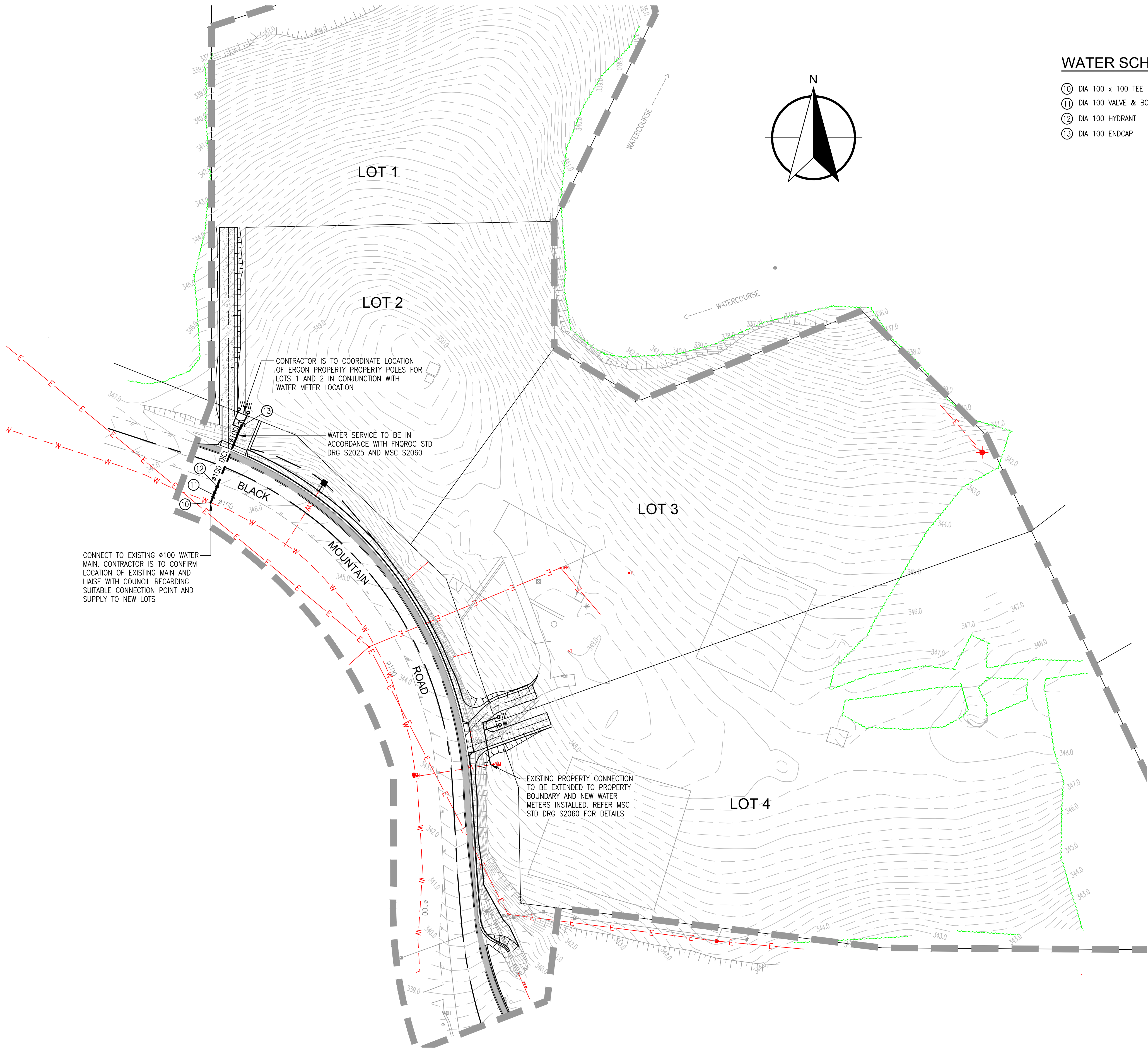


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AS SHOWN		NAVID DERAKSHAN	
Drawing is not to be used for construction unless approved.		Project 2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)	
Drawn MS		Title LOTS 3 AND 4 CONCRETE DRIVEWAY SETOUT AND DETAILS	
Designed MS	Drawing Check ARH	Design Check ARH	Approved P. STEELE
RPEQ 8462	Date 27/05/2020	Drawing No. 1415-012	Revision A

External References: tec-title-a1_c.dwg ; 1415-X-SURVEY.dwg ; 1415-X-DESIGN.dwg ;



WATER SCHEDULE

- ⑩ DIA 100 x 100 TEE
- ⑪ DIA 100 VALVE & BOX
- ⑫ DIA 100 HYDRANT
- ⑬ DIA 100 ENDCAP

LEGEND

- Ø100 — Ø100 WATER MAIN (UPVC PIPE CLASS 16 RUBBER RING JOINT)
- Ø100 DICL — Ø100 DICL WATER MAIN CLASS PN35
- • — HYDRANT, VALVE AND ENDCAP
- ○ W — WATER SERVICE CONNECTION (INSTALLATION BY COUNCIL)
- — STAGE BOUNDARY
- W — Ø100 — EXISTING WATER MAIN, DIAMETER, HYDRANT, STOP VALVE AND ENDCAP
- SW — SW — EXISTING STORMWATER DRAINAGE
- T — T — EXISTING TELECOMMUNICATIONS
- E — E — EXISTING OVERHEAD ELECTRICITY
- — EDGE OF EXISTING SEALED ROAD
- — EDGE OF EXISTING VEGETATION

NOTES

- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- REFER TO FNQROC STANDARD DRAWINGS:
S2000 : VALVE BOX INSTALLATION
S2005 : HYDRANT BOX INSTALLATION
S2010 : KERB AND ROAD MARKERS
S2016 : WATER RETICULATION BEDDING DETAILS
S2020 : MAIN CONNECTION DETAILS
S2025 : WATER SERVICE ROAD CROSSINGS, LOW DENSITY RESIDENTIAL
- REFER TO SEQ WATER SERVICE PROVIDERS STANDARD DRAWINGS:
SEQ-WAT-1205 : THRUST BLOCK DETAILS CONCRETE BLOCKS
SEQ-WAT-1207 : THRUST AND ANCHOR BLOCKS GATE VALVES AND VERTICAL BENDS
- HYDRANTS AND SLUICE VALVES TO BE NOMINALLY LOCATED OPPOSITE PROPERTY BOUNDARY TRUNCATIONS AND CORNERS UNLESS SHOWN OTHERWISE ON PLAN.
- LOCATION OF HOUSE CONNECTIONS TO BE AS PER FNQROC DESIGN GUIDELINES. LOCATIONS SHOWN ON PLAN ARE INDICATIVE AND TO BE USED AS A GENERAL GUIDE ONLY.
- LOCATION OF ALL EXISTING SERVICES TO BE CONFIRMED ON SITE BY CONTRACTOR AND SUPERINTENDENT PRIOR TO CONSTRUCTION. THIS IS INCLUSIVE OF EXISTING SERVICES SHOWN ON PLAN.
- VALVES ON LINES Ø100 OR GREATER TO BE ANCHORED AS PER WSA STD DRG WAT-1207.
- CONDUITS FOR WATER SERVICE CONNECTION TO BE PROVIDED UNDER DRIVEWAYS WHERE SHOWN. CONDUITS TO BE Ø80mm (MIN.), WITH MINIMUM 300mm COVER, AND ARE TO EXTEND 300mm PAST EDGE OF DRIVEWAY. LOCATION OF CONDUITS TO BE CLEARLY MARKED BY CASTING NON-FERROUS CUP HEAD BOLT INTO STILL WET CONCRETE, AS PER FNQROC DESIGN GUIDELINES.

Revisions

No.	Description	Reviewed	Approved	Date
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0 5 10 15 20 25m
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Designed MS

Client

Project **NAVID DERAKSHAN**
2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)

Title

WATER RETICULATION PLAN

Drawing Check ARH

Design Check ARH

Approved

P. STEELE

RPEQ **8462**

Date

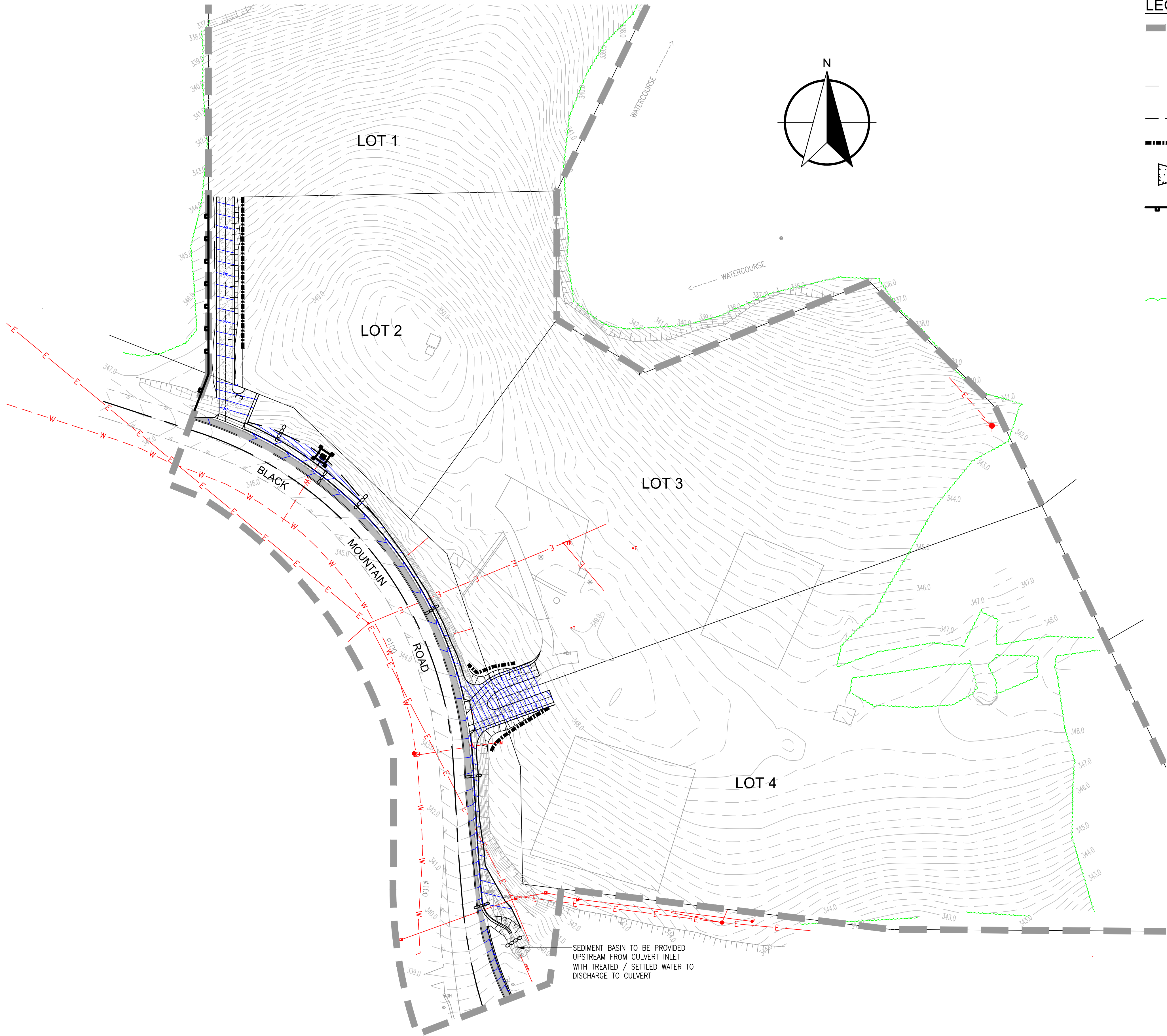
27/05/2020

Drawing No.

1415-013

Revision

A



LEGEND

- STAGE BOUNDARY
- CHECK DAMS, 0.3m HIGH PLACED ROCK
- EXISTING SURFACE CONTOUR (0.5m INTERVAL)
- BATTER TOE/TOP
- MULCH BANK
- STABILISED ENTRY
- SEDIMENT FENCE
- FIELD INLET TRAP
- SAND BAGS
- EDGE OF EXISTING VEGETATION

NOTES

- NO WORKS TO COMMENCE ON SITE UNTIL CONTRACTORS EROSION AND SEDIMENT CONTROL PLAN IS APPROVED BY MAREEBA SHIRE COUNCIL.
- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- CONTRACTOR TO NOTE REQUIREMENTS AND RESPONSIBILITIES FOR SEDIMENT AND EROSION CONTROL AS PER FNQROC & CONTRACT SPECIFICATION.
- TOPSOIL STOCKPILES TO BE LOCATED AT SITE ACCEPTABLE TO SUPERINTENDENT AND SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE APPROVED ACCORDINGLY.
- MOVEMENT OF CONSTRUCTION EQUIPMENT SHALL BE LIMITED TO THE AREA OF WORK AND EXISTING ROADS.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED AND MAINTAINED AFTER EACH STORM EVENT AND AT REGULAR INTERVALS.
- EACH LOT TO HAVE SINGLE ACCESS POINT ONLY UNLESS DIRECTED OTHERWISE BY SUPERINTENDENT.
- CONTOURS SHOWN ARE NATURAL SURFACE CONTOURS PRIOR TO ANY BULK EARTHWORKS TAKING PLACE.
- PROVIDE MULCH TO TOP OF BATTERS.
- CATCH DRAINS AND SEDIMENT TRAPS TO BE CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.
- ALL VEHICLES LEAVING THE SITE MUST EXIT VIA WASHDOWN FACILITY.
- DEPTHS FOR CLEARING, GRUBBING AND STRIPPING TO BE CONFIRMED DURING THE EARLY STAGES OF SITE CLEARING. ANY VARIATIONS TO THE DEPTHS NOMINATED ON THE ENGINEERING DRAWINGS TO BE APPROVED BY THE SUPERINTENDENT.

SCHEDULE OF MEASURES

DRAINAGE CONTROL

- CATCH DIRTY WATER RUNOFF AND DIVERT TO SEDIMENT CONTROL DEVICES: - CONSTRUCT CATCH DRAIN AS SHOWN.
- PROVIDE MULCH BANKS UP SLOPE FROM BATTERS TO PREVENT STORMWATER RUNOFF DOWN BATTER FACE.

EROSION CONTROL

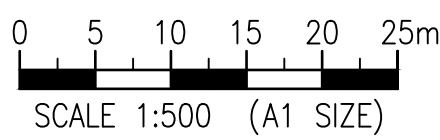
- BATTERS >0.5m HIGH ARE TO BE REVEGETATED AT COMPLETION OF EARTHWORKS (BONDED FIBRE MATRIX HYDROMULCH TO BE USED).
- PROVIDE MULCH BANKS UPSTREAM FROM BATTERS.
- SAND BAGS TO BE PLACED ALONG COMPLETED ROAD VERGES WHILE AWAITING RE-VEGETATION OF SITE.
- SANDBAGS TO BE PLACED ALONG COMPLETED CATCH DRAINS WHILE AWAITING RE-VEGETATION OF SITE.

SEDIMENT CONTROL

- CONSTRUCT STABILISED ENTRY POINTS.
- CONSTRUCT SEDIMENT FENCE DOWNSTREAM OF STOCKPILES AND BLACK MOUNTAIN ROAD.
- CONSTRUCT SANDBAG CHECK DAMS AT 40m CENTRES ALONG KERB AND AT KERB INVERTS.
- PROVIDE KERB LINE TURF STRIPS WITH RETURNS AT 10m INTERVALS.

Revisions

No.	Description	Reviewed	Approved	Date
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Drawing Check

ARH

Design Check

ARH

Approved

P. STEELE

RPEQ

8462

Date

27/05/2020

Drawing No.

1415-014

Revision

A

NAVID DERAKSHAN

Project 2-6 BLACK MOUNTAIN ROAD DEVELOPMENT (LOT 1 RP743970)

Title EROSION AND SEDIMENT CONTROL STRATEGY