

DA Form 1 – Development application details

Approved form (version 1.6 effective 2 August 2024) 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)	The DM Group, C/-STP Consultants Pty Ltd
Contact name (only applicable for companies)	Mr Harrison Dove
Postal address (P.O. Box or street address)	Level 3/ 382 Sturt Street
Suburb	Townsville
State	QLD
Postcode	4810
Country	Australia
Contact number	0467 376 512
Email address (non-mandatory)	civil@stpconsultants.com.au
Mobile number (non-mandatory)	
Fax number (non-mandatory)	
Applicant's reference number(s) (if applicable)	STP25-2146
1.1) Home-based business	
☐ Personal details to remain private in accordance with section 264(6) of <i>Planning Act 2016</i>	

2) Owner's consent	
2.1) Is written consent of the owner required for this development application?	
☐ Yes – the written consent of the owner(s) is attached to this development application	
☒ 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
			Sandy Creek Road	Southern Cross
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
		39	SP192387	Charters Towers Regional Council
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)
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) (if applicable)
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ 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 <i>Airport Assets (Restructuring and Disposal) Act 2008</i>
Name of airport:
☐ Listed on the Environmental Management Register (EMR) under the <i>Environmental Protection Act 1994</i>
EMR site identification:
☐ Listed on the Contaminated Land Register (CLR) under the <i>Environmental Protection Act 1994</i>
CLR site identification:

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):

Civil works associated with residential development

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

6.4) Is the application for State facilitated development?

- ☐ Yes - Has a notice of declaration been given by the Minister?
- ☒ No

Section 2 – Further development details**7) Does the proposed development application involve any of the following?**

Material change of use	☐ Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	☐ Yes – complete division 2
Operational work	☒ Yes – complete division 3
Building work	☐ 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?

- ☐ Yes
- ☐ No

8.3) Does the proposed development relate to temporary accepted development under the Planning Regulation?

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

Provide a general description of the temporary accepted development	Specify the stated period dates under the Planning Regulation

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?

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9.2) What is the nature of the lot reconfiguration? (tick all applicable boxes)

☐ Subdivision (complete 10)	☐ Dividing land into parts by agreement (complete 11)
☐ Boundary realignment (complete 12)	☐ 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?	
☐ Yes – provide additional details below ☐ 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?		
☒ Road work ☒ Drainage work ☐ Landscaping ☐ Other – please specify:	☒ Stormwater ☒ Earthworks ☐ Signage	☒ Water infrastructure ☐ Sewage infrastructure ☐ Clearing vegetation
14.2) Is the operational work necessary to facilitate the creation of new lots? (e.g. subdivision)		
☒ Yes – specify number of new lots:	1 Lot into 15 Lots	
☐ No		

14.3) What is the monetary value of the proposed operational work? (include GST, materials and labour)

\$749,403

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application

Charters Towers Regional Council

16) Has the local government agreed to apply a superseded planning scheme for this development application?

- ☐ Yes – a copy of the decision notice is attached to this development application
- ☐ The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
- ☒ 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
- ☐ SEQ northern inter-urban break – tourist activity or sport and recreation activity



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- ☐ SEQ northern inter-urban break – community activity
- ☐ SEQ northern inter-urban break – indoor recreation
- ☐ SEQ northern inter-urban break – urban activity
- ☐ SEQ northern inter-urban break – 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)*
- ☐ Heritage places – Local heritage places

Matters requiring referral to the **Chief Executive of the distribution entity or transmission entity**:

- ☐ Infrastructure-related referrals – Electricity infrastructure

Matters requiring referral to:

- 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
- ☐ Infrastructure-related referrals – Oil and gas infrastructure

Matters requiring referral to the **Brisbane City Council**:

- ☐ Ports – Brisbane core port land

Matters requiring referral to the **Minister responsible for administering the Transport Infrastructure Act 1994**:

- ☐ Ports – Brisbane core port land *(where inconsistent with the Brisbane port LUP for transport reasons)*
- ☐ Ports – Strategic port land

Matters requiring referral to the **relevant port operator**, if applicant is not port operator:

- ☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*

Matters requiring referral to the **Chief Executive of the relevant port authority**:

- ☐ Ports – Land within limits of another port *(below high-water mark)*

Matters requiring referral to the **Gold Coast Waterways Authority**:

- ☐ Tidal works or work in a coastal management district *(in Gold Coast waters)*

Matters requiring referral to the **Queensland Fire and Emergency Service**:

- ☐ Tidal works or work in a coastal management district *(involving a marina (more than six vessel berths))*

18) Has any referral agency provided a referral response for this development application?

- ☐ Yes – referral response(s) received and listed below are attached to this development application
- ☒ No

Referral requirement	Referral agency	Date of referral response

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 *(if applicable)*.

PART 6 – INFORMATION REQUEST

19) Information request under the DA Rules

☒ I agree to receive an information request if determined necessary for this development application

☐ I do not agree to accept an information request for this development application

Note: By not agreeing to accept an information request I, the applicant, acknowledge:

- 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 under Chapter 1 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules or
- Part 2 under Chapter 2 of the DA Rules will still apply if the application is for state facilitated development

Further advice about information requests is contained in the [DA Forms Guide](#).

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
☒ Approval ☐ Development application	RAL2025/0004	27 th November 2025	Charters Towers Regional Council
☐ Approval ☐ 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 536: 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.desi.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 Resources at www.resources.qld.gov.au for further information.

DA templates are available from planning.statedevelopment.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 planning.statedevelopment.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 Resources at www.resources.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, Science and Innovation at www.desi.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.resources.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.desi.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.desi.qld.gov.au for information requirements regarding development of Queensland heritage places.

For a heritage place that has cultural heritage significance as a local heritage place and a Queensland heritage place, provisions are in place under the Planning Act 2016 that limit a local categorising instrument from including an assessment benchmark about the effect or impact of, development on the stated cultural heritage significance of that place. See guidance materials at www.planning.statedevelopment.qld.gov.au for information regarding assessment of Queensland heritage places.

Name of the heritage place:		Place ID:	
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Decision under section 62 of the Transport Infrastructure Act 1994

23.14) 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

Walkable neighbourhoods assessment benchmarks under Schedule 12A of the Planning Regulation

23.15) Does this development application involve reconfiguring a lot into 2 or more lots in certain residential zones (except rural residential zones), where at least one road is created or extended?

☐ Yes – Schedule 12A is applicable to the development application and the assessment benchmarks contained in schedule 12A have been considered

☒ No

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

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

☒ Yes

Note: See the *Planning Regulation 2017* for referral requirements

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

☐ Yes

☒ Not applicable

Supporting information addressing any applicable assessment benchmarks is with the development application

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](#).

☒ Yes

Relevant plans of the development are attached to this development application

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

☒ Yes

The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (see 21)

☒ Yes

☐ Not applicable



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25) Applicant declaration

- ☒ By making this development application, I declare that all information in this development application is true and correct
- ☒ 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 *Electronic Transactions Act 2001*

Note: It is unlawful to intentionally provide false or misleading information.

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.

Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or
- required by other legislation (including the *Right to Information Act 2009*); or
- otherwise required by law.

This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

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	

BILL OF QUANTITIES

Project	Sandy Creek Road, Southern Cross
Job No.	STP25-2146
Date	08-May-26
BOQ Rev.	A
Drawings Rev.	OPERATIONAL WORKS ISSUE Paul Petersen (RPEQ 13231)

CONSTRUCTION COST SUMMARY

SECTION	ITEM	AMOUNT
1	PRELIMINARIES	\$14,500
2	CLEARING & EARTHWORKS (INCL. RETAINING WALLS)	\$137,850
3	ROADWORKS	\$192,490
4	STORMWATER RETICULATION	\$74,110
5	WATER RETICULATION	\$181,125
6	EROSION & SEDIMENT CONTROL WORKS	\$81,200
SUB TOTAL (EXCLUSIVE OF GST)		\$681,275
GST		\$68,128
TOTAL		\$749,403

QUANTITIES ILLUSTRATED HEREIN ARE ESTIMATES FOR TENDERERS INFORMATION ONLY. TENDERERS ARE REMINDED THAT THIS IS A LUMP SUM CONTRACT AND ALL QUANTITIES MUST BE CONFIRMED BY THE TENDERER IN THEIR TENDER SUBMISSION.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
SECTION 1 : PRELIMINARIES					
1.1	Site establishment & disestablishment	Item	1	5000.00	\$ 5,000.00
1.2	Prepare, submit and undertake traffic management plan in accordance with project authority	Item	1	1000.00	\$ 1,000.00
1.3	Prepare, submit and undertake soil erosion and sediment control management plan in accordance with project authority	Item	1	1000.00	\$ 1,000.00
1.4	Prepare, submit and undertake Workplace Health and Safety Management plan in accordance with project authority	Item	1	2500.00	\$ 2,500.00
1.5	Insurance	Item	1	5000.00	\$ 5,000.00
TOTAL SECTION 1 PRELIMINARIES					\$ 14,500.00

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ITEM NO.	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
SECTION 2 : CLEARING & EARTHWORKS					
2.1	(a) Strip topsoil 100mm thick, stockpile as required. (Net solid volume of cut).(Prov Qty).	m ³	450	15.00	\$ 6,750.00
	(b) Respread topsoil 100mm thick to verges and disturbed areas as required. (Net solid volume of cut).(Prov Qty).	m ³	450	10.00	\$ 4,500.00
2.2	Earthworks, No Bulking Factor (Net Solid Volume of Cut) - Including Level 1 Certification by GITA				
	(a) Cut to fill	m ³	3630	20.00	\$ 72,600.00
	(b) Cut from borrow pit - within 1km of site (superintendent to confirm)	m ³	2700	20.00	\$ 54,000.00
TOTAL SECTION 2 EARTHWORKS					\$ 137,850.00

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ITEM NO.	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
SECTION 3 : ROADWORKS					
3.1	Provision for Traffic	Item	1	1,000.00	\$ 1,000.00
3.2	Supply and Erect street name sign posts with name plates & road edge guide posts				
	(a) Posts and Signs	No.	2	800.00	\$ 1,600.00
	(b) Road edge guide posts	No.	24	60.00	\$ 1,440.00
3.3	Roll, grade and trim subgrade	m ²	2200	10.00	\$ 22,000.00
3.4	Paving material complete including compaction (Compacted Volume)				
	(a) Sub-base Course - Class 2.3	m ³	370	130.00	\$ 48,100.00
	(b) Base Course - Class 2.1	m ³	330	145.00	\$ 47,850.00
3.5	Prime Coat & 2 Coat Bitumen Seal - Refer Project Notes for pavement details				
	(a) Prime Coat, Seal 1 & 2	m ²	2200	25.00	\$ 55,000.00
3.6	Supply and lay concrete kerb and kerb and channel including compaction of foundation, trim bedding gravel, complete .				
	(a) Barrier kerb & channel B1 in accordance with CTCR STD DWG CTCR-012	m	100	140.00	\$ 14,000.00
	(b) Concrete invert, 900 wide in accordance with CTCR STD DWG CTCR-012	m	10	150.00	\$ 1,500.00
TOTAL SECTION 3 ROADWORKS					\$ 192,490.00

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ITEM NO.	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
SECTION 4 : STORMWATER DRAINAGE					
4.1	Crusher dust backfill to stormwater pipes under road pavements as specified.	m	26	55.00	\$ 1,430.00
4.2	Supply and install Precast Box Culvert complete including concrete base & backfilling 1200x450 RCBC	m	23	2,500.00	\$ 57,000.00
4.3	Supply and install Precast Outlet Headwall/Endwall complete 1200x450 Precast Headwall	No	4	3,500.00	\$ 14,000.00
4.4	Outlet Scour Protection in accordance with design Drawings complete 250mm Thick dump rock on A34 bidim underlay scour protection	m ²	12	140.00	\$ 1,680.00
TOTAL SECTION 4 STORMWATER DRAINAGE					\$ 74,110.00

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ITEM NO.	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
SECTION 5 : WATER RETICULATION					
5.1	Supply and install, PE, uPVC, PN16 water mains complete, in accordance with the design drawings including bedding, testing and trenchfill for:- (a) 150mm dia	m	425	250.00	\$ 106,250.00
5.2	Crusher dust backfill to water pipes	m	425	55.00	\$ 23,375.00
5.3	Supply and install Valves and Hydrants complete, including chamber, surface box, margin block and markers in accordance with TCC Std dwg SD-345 and SD-350 (a) 150mm dia sluice valve (b) 150mm dia hydrant	No. No.	1 5	4,500.00 3,300.00	\$ 4,500.00 \$ 16,500.00
5.4	Supply and install domestic connections complete, including excavation, enveloper, tapping band, ferrule and backfill in accordance with design drawings and SEQ-WAT-1107-1 (a) Single Connection - long (b) Dual Connection - short (c) Dual Connection - long	No. No. No.	1 3 4	2,800.00 3,500.00 3,800.00	\$ 2,800.00 \$ 10,500.00 \$ 15,200.00
5.5	Connection of new Water Mains to existing water mains complete, by council at contractors cost.	Item	1	2,000.00	\$ 2,000.00
TOTAL SECTION 5 WATER RETICULATION					\$ 181,125.00

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ITEM NO.	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
SECTION 6 : EROSION AND SEDIMENT CONTROL WORKS					
6.1	Hydromulching to areas as indicated on design drawings inc establishment until on-maintenance	m ²	18700	3.00	\$ 56,100.00
6.2	Sediment fencing complete (As Required)	m	410	10.00	\$ 4,100.00
6.3	Supply and install Sand Bag/Rock Check Dams complete, in accordance with design drawings	No.	24	500.00	\$ 12,000.00
6.4	Supply and place construction entry/exit grate complete, in accordance with design drawings.	No	2	4,500.00	\$ 9,000.00
TOTAL SECTION 6 EROSION AND SEDIMENT CONTROL WORKS					\$ 81,200.00

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15 LOT SUBDIVISION

SANDY CREEK ROAD, SOUTHERN CROSS

REFERENCED DRAWINGS

AUTHORITY	DRAWING NUMBER	DESCRIPTION
CTRC	001	ROADS RURAL TURNOUTS INVERTS & CULVERT DRIVEWAYS
CTRC	009	TYPICAL RURAL ROADS CROSS SECTION
CTRC	012	KERB AND CHANNEL PROFILES & DIMENSIONS
DTMR	S1243	PRECAST CULVERT HEADWALLS
DTMR	S1260	R C BOX CULVERTS AND SLAB LINK BOX CULVERTS



SITE LAYOUT PLAN
SCALE 1:2000 @ A1

DRAWING SHEET LIST

Sheet Number	Drawing Title
GENERAL ARRANGEMENT	
C100	COVER SHEET
C101	PROJECT NOTES - SHEET 1
C102	PROJECT NOTES - SHEET 2
C103	GENERAL ARRANGEMENT LAYOUT PLAN
SOIL EROSION SEDIMENT CONTROL	
C201	SESC CONSTRUCTION PHASE - SHEET 1
C202	SESC CONSTRUCTION PHASE - SHEET 2
C203	SESC PROCEDURES & NOTES
C204	SESC ON MAINTENANCE - SHEET 1
C205	SESC ON MAINTENANCE - SHEET 2
EARTHWORKS PLANS	
C301	EARTHWORKS MANAGEMENT LAYOUT PLAN
ROADWORKS PLAN	
C401	SOUTHWALK ROAD CENTRELINE SETOUT
C402	SOUTHWALK ROAD LONGSECTION - SHEET 1
C403	SOUTHWALK ROAD LONGSECTION - SHEET 2
C404	SOUTHWALK ROAD CROSS SECTIONS - SHEET 1
C405	SOUTHWALK ROAD CROSS SECTIONS - SHEET 2
C406	SOUTHWALK ROAD CROSS SECTIONS - SHEET 3
C407	ROAD 1 CENTRELINE SETOUT
C408	ROAD 1 LONGSECTION - SHEET 1
C409	ROAD 1 LONGSECTION - SHEET 2
C410	ROAD 1 CROSS SECTIONS - SHEET 1
C411	ROAD 1 CROSS SECTIONS - SHEET 2
C412	ROAD 1 CROSS SECTIONS - SHEET 3
C413	INTERSECTION DETAILS - SHEET 1
C414	INTERSECTION DETAILS - SHEET 2
C415	INTERSECTION DETAILS - SHEET 3
STORMWATER PLANS	
C501	STORMWATER MANAGEMENT PLAN
C502	SOUTHWALK ROAD CULVERT PLAN
C503	ROAD 1 CULVERT PLAN
SERVICES	
C601	WATER RETICULATION PLAN - SHEET 1
C602	WATER RETICULATION PLAN - SHEET 2

SURVEY INFORMATION

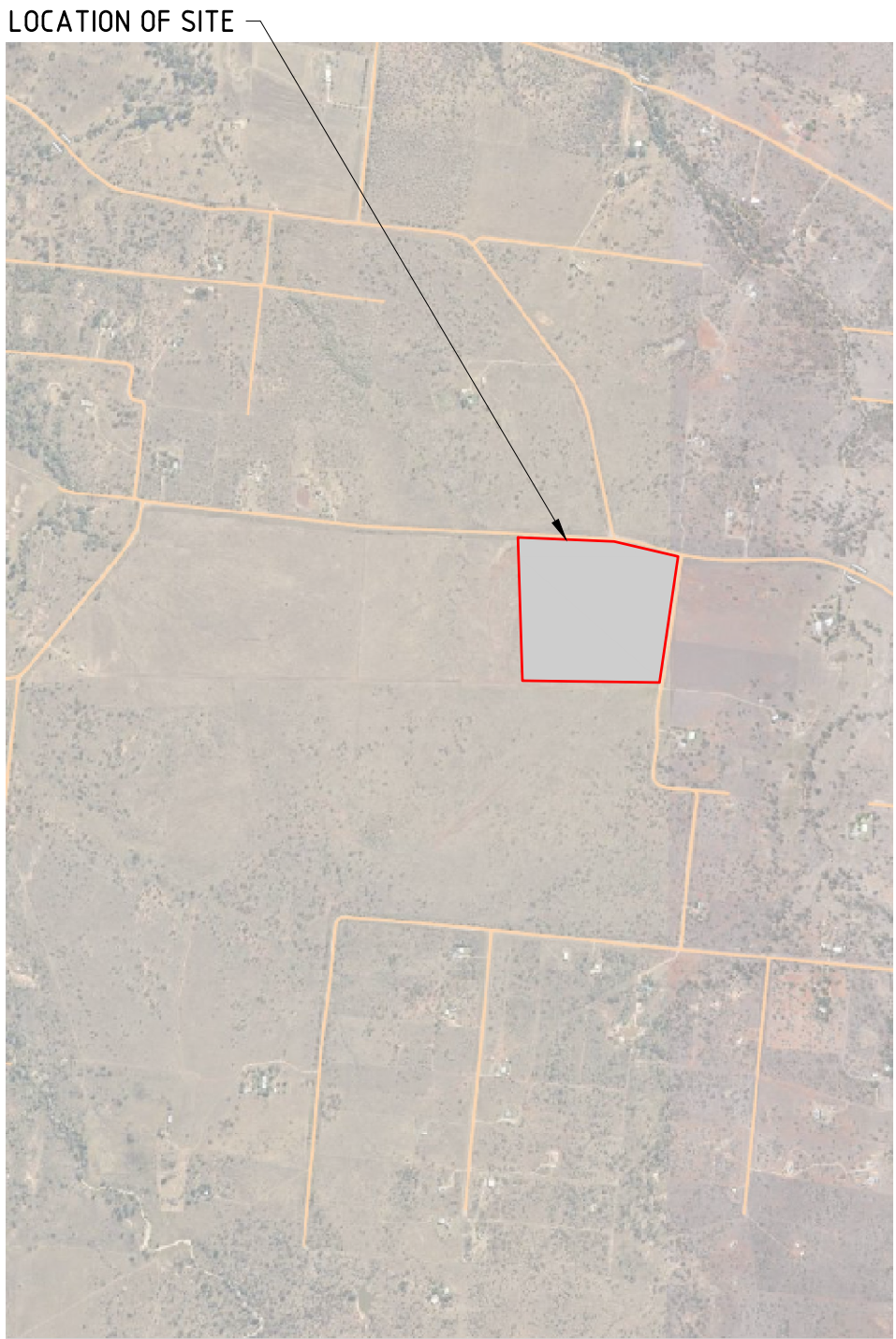
SURVEYOR: ROWLANDS SURVEYS
LOCAL AUTHORITY: CHARTERS TOWERS REGIONAL COUNCIL

PM79954
LEVEL DATUM RL314.342 AHD DERIVED
E418023.020 N77804.26.220

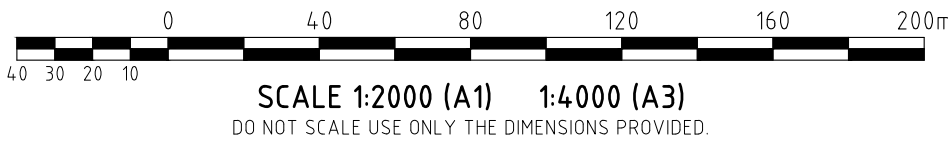
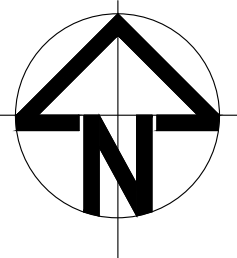
REFERENCE PLANS No. 44652/01 Rev A



WORKS BOUNDARY



LOCALITY MAP
NTS



SCALE 1:2000 (A1) 1:4000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED



Rev:	Date:	Description:	By:	Appd:
A	27.01.26	PRELIMINARY	LJM	MCW
B	27.03.26	PRELIMINARY ISSUE	JT	PP
C	22.04.26	FOR APPROVAL	HD	PP
D	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

THE DM GROUP

15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

COVER SHEET



BRISBANE
CAIRNS
ROCKHAMPTON

TOWNSVILLE
MACKAY
WHITSUNDAYS

www.stpconsultants.com.au 07 3539 8300

Design:	NP
Drawn:	LJM
Approved:	PP
RPEQ No:	13231

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CIVIL

Job No: STP25-2146
Drawing No: C100
Rev: D

FOR APPROVAL

NOT FOR CONSTRUCTION

GENERAL NOTES:

- CONTRACTORS TENDERING ON THIS PROJECT ARE TO MAKE THEMSELVES FULLY AWARE OF ALL REQUIREMENTS TO COMPLETE THE WORKS, IF IN DOUBT OR FURTHER CLARIFICATION IS REQUIRED, THE CONTRACTOR IS TO OBTAIN CLARIFICATION FROM THE SUPERINTENDENT PRIOR TO SUBMITTING THEIR TENDER PRICE. SHOULD THE CONTRACTOR FAIL TO OBTAIN CLARIFICATION FROM THE SUPERINTENDENT IT IS DEEMED THAT THE CONTRACTOR HAS BEEN PROVIDED SUFFICIENT INFORMATION TO ADEQUATELY PRICE THE ENTIRE WORKS AND THAT THE CONTRACTOR HAS ALLOWED FOR ALL WORKS REQUIRED IN PROVIDING CLARIFICATION, THE SUPERINTENDENT HAS NOT ASSUMED A DUTY OF CARE TO THE CONTRACTOR. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER WORKING DRAWINGS, SPECIFICATIONS AND WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE CONTRACT. ALL DISCREPANCIES AND VARIATIONS SHALL BE REFERRED TO THE SUPERINTENDENT FOR APPROVAL BEFORE PROCEEDING WITH THE WORK.
- CONTRACTOR TO OBTAIN ALL APPROVALS AND PERMITS FOR WORKING WITHIN LOCAL GOVERNMENT AUTHORITY ROADS AND STATE GOVERNMENT ROADS.
- WORKS SHALL NOT COMMENCE UNTIL A 'FOR CONSTRUCTION' SET OF DRAWINGS HAS BEEN APPROVED BY THE RELEVANT AUTHORITY.
- CONTRACTOR TO ENSURE THAT ALL THE REQUIRED CONDITIONS OF THE DEVELOPMENT APPROVAL HAVE BEEN SATISFIED PRIOR TO STARTING ON SITE.
- ALL WORK TO CONFORM TO THE LOCAL GOVERNMENT AUTHORITY STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE SHOWN ON PLANS OR DIRECTED BY THE SUPERINTENDENT.
- CONTRACTOR TO ENSURE THAT ALL WORK, SERVICES AND PRODUCTS ARE FIT FOR PURPOSE.
- ALL SETOUT TO ARCHITECTS DETAILS UNLESS NOTED OTHERWISE (U.N.O.).
- DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS, ALL DIMENSIONS ARE IN METRES U.N.O.
- STP CONSULTANTS PTY LTD MAY PROVIDE, BY AGREEMENT WITH CERTAIN PARTIES, MATERIALS STORED ELECTRONICALLY. THE PARTIES RECOGNIZE THAT DATA, PLANS, SPECIFICATIONS, REPORTS, DOCUMENTS, OR OTHER INFORMATION RECORDED ON OR TRANSMITTED AS ELECTRONIC MEDIA INCLUDING BUT NOT NECESSARILY LIMITED TO 'CAD AND 12D DOCUMENTS') ARE SUBJECT TO UNDETECTABLE ALTERATION, EITHER INTENTIONAL OR UNINTENTIONAL, DUE TO, AMONG OTHER CAUSES, TRANSMISSION, CONVERSION, MEDIA DEGRADATION, SOFTWARE ERROR, OR HUMAN ALTERATION. ACCORDINGLY, ALL SUCH DOCUMENTS ARE PROVIDED TO THE PARTIES FOR INFORMATIONAL PURPOSES ONLY AND NOT AS AN END PRODUCT OR AS A RECORD DOCUMENT. ANY RELIANCE THEREON IS DEEMED TO BE UNREASONABLE AND UNENFORCEABLE. THE SIGNED AND/OR STAMPED HARD COPIES OF THE ENGINEERING DRAWINGS ARE THE ONLY TRUE CONTRACT DOCUMENTS OF RECORD.
- IN CASE OF DOUBT, ASK!

SURVEY AND SETOUT:

- ALL LEVELS ARE TO BE TO A HD LEVEL DATUM. REFER TO SURVEY DRAWING NO. **44652/01**
- ALL SETOUT TO ARCHITECTS DETAILS UNLESS NOTED OTHERWISE (U.N.O.).
- SETOUT SHALL BE MADE BY DIGITAL ENGINEERING DATA AND CONFIRMED ONSITE PRIOR TO CONSTRUCTION BY A REGISTERED SURVEYOR

EXISTING SERVICES NOTES:

- THE CONTRACTOR IS TO MAKE THEMSELVES FULLY AWARE OF ALL EXISTING SERVICES, FOR EXAMPLE DIAL BEFORE YOU DIG TO BE CONTACTED FOR THE LOCATION OF EXISTING PUBLIC UTILITIES PRIOR TO EXCAVATION.
- THE ALIGNMENT & LEVEL OF EXISTING SERVICES SHOWN ON THIS DRAWING HAS BEEN COMPILED FROM SURVEY DATA & NATIONAL RECORDS. IT IS INDICATIVE ONLY. PRIOR TO COMMENCING CONSTRUCTION OR ORDERING ANY MATERIALS THE CONTRACTOR IS TO CONFIRM THE ALIGNMENT & LEVEL OF ALL SERVICES AFFECTED BY THE PROPOSED WORKS.
- WHILE DUE CARE IS TAKEN BY STP CONSULTANTS IN CONFIRMING THE LOCATION OF EXISTING SERVICES IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THESE SERVICE LOCATIONS. IN SOME INSTANCES, SERVICES MAY BE OMITTED FROM THE DRAWINGS.
- A REPRESENTATIVE FOR EACH SERVICE PROVIDER TO BE PRESENT ON SITE WHEN WORKING WITHIN 3.0m OF EACH SERVICE IF THE SERVICES ARE PUBLIC.
- SHOULD INVERT LEVELS OR LOCATION OF ANY SERVICE CONNECTION POINTS DIFFER TO THAT INDICATED ON THE DRAWINGS THEN THE SUPERINTENDENT SHALL BE NOTIFIED IMMEDIATELY.
- ANY WORK ON EXISTING SERVICES THAT REQUIRE RELOCATION SHALL BE CARRIED OUT BY THE RELEVANT AUTHORITY AND SHALL BE CO-ORDINATED BY THE CONTRACTOR. CONTRACTOR TO OBTAIN REQUIRED APPROVALS FROM THE RELEVANT AUTHORITY.
- IF THE CONTRACTOR CAUSES ANY DAMAGE TO EXISTING SERVICES, THEN RECTIFICATION WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
- ALL EXISTING SERVICES AND STRUCTURES ARE TO BE MAINTAINED IN GOOD ORDER FOR THE DURATION OF THE CONTRACT.
- DISCLAIMER - WHILEST EVERY EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION PROVIDED IN THIS DRAWING/DESIGN WAS ACCURATE AT THE TIME IT WAS COMPILED, AS PART OF THE LOCAL COUNCILS "AS CONSTRUCTED" RECORDS, IT REMAINS THE RESPONSIBILITY OF PROPERTY OWNERS AND THEIR CONTRACTORS, SUB-CONTRACTORS, EMPLOYEES, SERVANTS AND AGENTS AS APPROPRIATE IN THE CIRCUMSTANCES TO MAKE ALL REASONABLE EFFORTS TO ASCERTAIN THE PRECISE LOCATION OF EXISTING INFRASTRUCTURE INCLUDING WATER MAINS, SEWERS AND DRAINS BEFORE UNDERTAKING EXCAVATION OR CONSTRUCTION WORK. USERS OF THE INFORMATION SHOULD BE AWARE THAT SINCE THE ORIGINAL RECORDING OF THE DEPTHS IN RELATION TO GROUND LEVELS, CHANGES MAY HAVE OCCURRED AS A RESULT OF SUBSEQUENT WORK OR ACTIVITIES INVOLVING FILLING OR EXCAVATION. CONSEQUENTLY, THE LOCAL GOVERNMENT AUTHORITY AND STP CONSULTANTS TAKES NO RESPONSIBILITY FOR ANY APPARENT ERROR OR INACCURACIES THAT ARE SHOWN TO EXIST' AS AT THE DATE INFORMATION WAS PROVIDED OR AT A LATER DATE. THE ABOVE ALSO APPLIES TO LOCATION AND DEPTH OF ALL OTHER PUBLIC UTILITIES.

DILAPIDATION SURVEY:

- CONTRACTOR SHALL PROVIDE A FULL DILAPIDATION CONDITION REPORT (AT THEIR COST) FOR THE FOLLOWING EXISTING BUILDINGS AND UTILITY SERVICES PRIOR TO UNDERTAKING ANY DEMOLITION OR CIVIL EARTHWORKS, ROADWORKS, STORMWATER, WATER AND SEWERAGE RETICULATION - ALL EXISTING STRUCTURES AND UTILITY SERVICES WITHIN 5m OF PROPOSED WORKS.
- UPON COMPLETION OF THE WORKS, THE CONTRACTOR SHALL PREPARE A FINAL DILAPIDATION SURVEY AND PROVIDE A COPY TO THE SUPERINTENDENT. IF ANY DAMAGE IS CAUSED TO THE EXISTING BUILDINGS OR SERVICES INFRASTRUCTURE, THE CONTRACTOR SHALL ARRANGE FOR APPROPRIATE REPAIR AT THEIR COST.

SAFETY NOTES:

- THESE PROJECT NOTES SHOULD BE READ IN CONJUNCTION WITH THE SAFETY IN DESIGN REPORT DRAWING WHICH NOTES DESIGN HAZARDS AND THE ASSOCIATED MITIGATION, WHILE ALSO NOTING POTENTIAL CONSTRUCTIONS HAZARDS FOR THE CONTRACTOR TO CONSIDER DURING TENDERING AND CONSTRUCTION
- STP CONSULTANTS RECOGNIZES THE IMPORTANCE OF OCCUPATIONAL HEALTH AND SAFETY. HOWEVER, STP CONSULTANTS HAS NOT BEEN ENGAGED TO DEVELOP, CHECK, SUPERVISE OR CONTROL WORKERS OR METHODS OF WORK. STP CONSULTANTS DOES NOT HAVE THE CAPACITY OR AUTHORITY TO CONTROL WORKERS OR METHODS OF WORK. NOTHING IN THESE DESIGNS SHOULD BE INTERPRETTED AS GOING BEYOND THE STRUCTURAL INTEGRITY OF THE SUBJECT MATTER OF THE DESIGNS AND THEY SHOULD NOT BE USED AS AN INDICATOR OF THE APPROPRIATE METHODS OF WORK ON, IN OR AROUND THE SUBJECT MATTER. CONCERNS ABOUT THE CONDUCT OF WORKERS OR METHODS OF WORK SHOULD BE RAISED WITH THE APPROPRIATE SAFETY OFFICIAL ON SITE.

EROSION AND SEDIMENT CONTROL NOTES:

- THE CONTRACTOR SHALL PROVIDE AN EROSION AND SEDIMENT CONTROL MANAGEMENT PLAN (ESCP), PREPARED BY A SUITABLY QUALIFIED PERSON, TO THE SUPERINTENDENT FOR REVIEW PRIOR TO UNDERTAKING ANY WORKS ON SITE. THE CONTRACTOR MAY ALSO HAVE TO SUBMIT THE ESCP TO THE LOCAL AUTHORITY FOR APPROVAL, IN ACCORDANCE WITH THE DEVELOPMENT CONDITIONS. THE ESCP SHALL AT A MINIMUM TAKE INTO ACCOUNT, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - THE TIME OF YEAR FOR CONSTRUCTION (WET OR DRY SEASON)
 - THE EXTENT (AREA) AND TIME OF THE SITE EXPOSED TO EROSION
 - THE SOIL TYPE (EROIDILITY/MOISTURE SENSITIVE)
 - THE TIME THE SITE WILL BE EXPOSED TO EROSION AND NOT STABILISEDTHE CONTRACTOR IS REQUIRED TO MAINTAIN AN UPDATED ESCP, INCLUDING DRAWINGS, IN ACCORDANCE WITH THEIR CONSTRUCTION PROGRAM, THE IECA MANUAL AND THE EROSION HAZARD RISK APPROPRIATE AT THE TIME OF CONSTRUCTION. THE ESCP DOCUMENTS ARE TO BE AVAILABLE ONSITE AT ALL TIMES FOR REVIEW.
- THE EROSION SEDIMENT DEVICES TO BE INSTALLED BY THE CONTRACTOR ARE TO BE APPROPRIATE FOR THE STAGE OF WORKS AND IN COMPLIANCE WITH THE BEST PRACTICE EROSION AND SEDIMENT GUIDELINES - IECA
- CONSTRUCTION OF SEDIMENT MANAGEMENT DEVICES SHALL BE COMPLETED AND EFFECTIVE PRIOR TO STRIPPING OF TOPSOIL AND BULK EARTHWORKS TO THE SITE.
- SEDIMENT CONTROL MANAGEMENT DEVICES ARE TO REMAIN IN PLACE UNTIL THE EXPOSED SOIL IS EFFECTIVELY STABILISED IN ACCORDANCE WITH THE STATE PLANNING POLICY (SPP).
- BOTH TEMPORARY AND PERMANENT SEDIMENT CONTROL MANAGEMENT DEVICES SHALL BE MAINTAINED DURING CONSTRUCTION TO ENSURE SEDIMENT IS CONTAINED ON SITE. SEDIMENT FENCES ARE TO BE CLEANED WHEN CAPACITY IS REDUCED BY 30%.
- IF EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN FOUND TO BE INEFFECTIVE OR FAILED IN SERVICE, DUE TO UNFORESEEN CIRCUMSTANCES, CORRECTIVE ACTION IS TO BE UNDERTAKEN IMMEDIATELY BY THE CONTRACTOR AND WRITTEN ADVICE OF THE CORRECTIVE ACTION PROVIDED TO THE SUPERINTENDENT.
- ALL DISTURBED GROUND IS TO BE GRASS SEEDD AND HYDROMULCHED TO ENSURE THAT ALL EXPOSED AREAS ARE STABILISED WITHIN ONE MONTH OF BEING DISTURBED. ALL BATTERS STEEPER THAN 1V:6H ARE TO BE TOPSOILED AND TURRED U.N.O.
- THE STAGED ESC WORKS AND ASSOCIATED ESC DEVICES ARE DESIGNED TO RETAIN STORMWATER RUNOFF TO ALLOW SEDIMENT TO BE REMOVED PRIOR TO DISCHARGE FROM SITE. SITE EARTHWORKS WHICH BECOME EXCESSIVELY WET DUE TO STANDING WATER FROM THE ESC DEVICES OR THE CONTRACTORS CONSTRUCTION TECHNIQUES, WILL REQUIRE WORK TO DRY OUT AND RE-COMPACT THE MATERIAL IN ACCORDANCE WITH THE EARTHWORKS SPECIFICATION. THE COST TO RECTIFY AND RE-COMPACT THE SATURATED MATERIAL SHALL BE AT THE CONTRACTORS EXPENSE AS THE WHOLE OF WORKS UNDER CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE DATE OF PRACTICAL COMPLETION.

PROVISION FOR TRAFFIC & EXTERNAL WORKS

- THE CONTRACTOR SHALL INDEMNIFY AND KEEP INDEMNIFIED, THE PRINCIPAL FROM AND AGAINST ALL ACTIONS, CLAIMS, DEMANDS, LOSSES, DAMAGES, COSTS, CHARGES AND EXPENSES, OR OTHER LIABILITIES WHATSOEVER, IN RESPECT OF, OR ARISING FROM, ANY DAMAGES TO THE ROAD FRONTING THE SITE DURING THE CONSTRUCTION OF THE WORKS.
- THE CONTRACTOR SHALL:
 - OBTAIN PERMISSION FROM THE LOCAL COUNCIL AND THE QUEENSLAND DEPARTMENT TRANSPORT AND MAIN ROADS FOR ACCESS TRACKS BEFORE OR DOING ANY WORK EXTERNAL TO THE SITE.
 - INDEMNIFY LOCAL COUNCIL, THE PRINCIPAL, SUPERINTENDENT, AND THE QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS AGAINST CLAIMS RESULTING FROM THE CONTRACTOR'S OPERATIONS OF PLANT INTERNAL AND EXTERNAL TO THE SITE.
 - COMPLY WITH THE DIRECTIONS AND REQUIREMENTS OF LOCAL COUNCIL AND THE DEPARTMENT OF TRANSPORT AND MAIN ROADS 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES' WITH RELATION TO WARNING SIGNS AND TRAFFIC CONTROL.
 - REPAIR, MAINTAIN AND MAKE GOOD TO THE SUPERINTENDENT'S SATISFACTION, ANY DAMAGE.
- THE CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT PLAN TO THE LOCAL COUNCIL FOR APPROVAL. PRIOR TO IMPLEMENTATION OF THE TRAFFIC MANAGEMENT PLAN THE CONTRACTOR WITH A FULL COPY TO THE SUPERINTENDENT
- THE TRAFFIC MANAGEMENT PLAN SHALL CONFORM TO THE REQUIREMENTS OF THE DEPARTMENT OF MAIN ROADS PUBLICATION 'MANUAL IF UNIFORM TRAFFIC CONTROL DEVICES'.
- THE CONTRACTOR SHALL NOT COMMENCE WORK ON THE SITE UNTIL THE APPROPRIATE PERMITS HAVE BEEN OBTAINED FROM LOCAL COUNCIL AND THE DEPARTMENT OF TRANSPORT AND MAIN ROADS (DTMR). COPIES OF THE PERMITS SHALL BE FORWARDED TO THE SUPERINTENDENT AND AN ADDITIONAL COPY SHALL BE MAINTAINED ON-SITE. PERMITS SHALL BE OBTAINED FROM THE COUNCIL AND DTMR PRIOR TO:
 - CROSSING THE KERB WITH HEAVY VEHICLES.
 - WORKING IN THE ROAD RESERVE.
 - CONNECTION TO A COUNCIL ROAD.
 - STORM PROTECTIVE FILLING OF ADJACENT OR FOOTPATH BY THE CONTRACTOR.
 - THE PROVISION OF HOARDING AND GANTRIES
- IF DAMAGE IS CAUSED TO EXISTING ROADWAYS OR FOOTPATHS BY THE CONTRACTOR, THE DAMAGED SECTIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S COST TO THE ENTIRE SATISFACTION OF THE SUPERINTENDENT. IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE ANY NECESSARY REPAIRS, OR THE COUNCIL MOVES TO RECOVER THE COST OF ANY REPAIRS FROM THE PRINCIPAL, THE PRINCIPAL SHALL, ON THE CERTIFICATION OF THE SUPERINTENDENT, DEDUCT FROM MONIES WHICH MAY BECOME DUE TO THE CONTRACTOR.
- ALL OTHER PERMITS REQUIRED TO COMPLETE THE WORKS FROM BUT NOT LIMITED TO THE QUEENSLAND POLICE SERVICE, QUEENSLAND FIRE AND RESCUE AUTHORITY AND QUEENSLAND AMBULANCE SERVICE SHOULD BE OBTAINED BY THE CONTRACTOR.
- ANY ASSOCIATED FEES WITH OBTAINING THE REQUIRED PERMITS SHALL BE PAID BY THE CONTRACTOR AND INCLUDED IN THE LUMP SUM GENERALLY.

EARTHWORKS NOTES:

- SOILS REPORT: NO GEOTECHNICAL REPORT HAS BEEN PROVIDED PRIOR TO ISSUE OF DRAWINGS.
- SITE PREPARATION: ALL SITE EXISTING TOPSOIL IS TO BE STRIPPED WITHIN THE DEVELOPMENT FOOTPRINT AND STOCKPILED ON SITE FOR REUSE. THE LOCATION OF THE STOCKPILE IS TO BE NOMINATED BY THE CONTRACTOR AND AGREED WITH THE SUPERINTENDENT. EXCAVATE AND REMOVE ALL VEGETATION, ORGANIC TOPSOIL AND OTHER DELETERIOUS MATERIAL FROM SITE. ALL MATERIAL THAT IS DEEMED NOT SUITABLE FOR REUSE WITHIN THE PROJECT OR IS NOTED AS UNCONTROLLED FILL IN THE GEOTECHNICAL REPORT IS TO BE DISPOSED OFF SITE. THE CONTRACTOR IS TO INCLUDE DUE ALLOWANCE FOR DISPOSAL OFF SITE WITHIN THEIR TENDER SUBMISSION. EXCAVATE AND TRIM THE BUILDING OR PAVEMENT PLATFORMS AS REQUIRED. SITE PREPARATION TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT. PROTECTIVE FILLING OF ADJACENT OR FOOTPATH BY THE CONTRACTOR. THE EXPOSED SUBGRADE USING SIX PASSES OF A 10 TONNE MINIMUM STATIC WEIGHT VIBRATORY PAD TYPE ROLLER TO IDENTIFY ANY SOFT SPOTS. THESE ZONES MUST BE INSPECTED BY AN APPROVED GEOTECHNICAL ENGINEER OR GITA TO ASSESS THE EXTENT TO BE RECTIFIED. SOFT SPOTS SHALL BE EXCAVATED A MINIMUM 300mm AND REPLACED WITH SELECT BACKFILL COMPACTED IN LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS TO COMPACTION LISTED UNDER "FILL MATERIAL". THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CERTIFICATION OF A SUITABLE WORKING PLATFORM FOR THE FILLING, INCLUDING BUT NOT LIMITED TO CRANES AND MACHINERY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFE BATTERS AND EXCAVATIONS. THE BUILDING PAD AND SUBGRADE PREPARATION ARE TO EXTEND 1m PAST STRUCTURAL SLAB EXTENTS.
- FILL MATERIAL: BUILDING PAD FILL SHALL BE COMPACTED IN MAXIMUM 150mm THICK LAYERS (COMPACTED THICKNESS) TO 98% STANDARD DRY DENSITY RATIO. FILL UNDER ROADS TO BE IN ACCORDANCE WITH ROADWORKS NOTES. ALL BUILDING PADS AND STRUCTURE FILLING SHALL BE UNDER LEVEL 1 GEOTECHNICAL SUPERVISION OF AN RPED GEOTECHNICAL ENGINEER OR GITA AND SHALL BE IN THE BULK EARTHWORKS TENDER ALLOWANCE. THE FREQUENCY OF TESTING FILL COMPACTED SHALL BE AS SPECIFIED IN SECTION 8 OF AS 3798 "GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS". FILL SHALL BE COMPACTED AND MAINTAINED AT MOISTURE CONTENTS AT PLACEMENT WITHIN THE RANGE PLUS 2% TO MINUS 2% OF STANDARD OPTIMUM MOISTURE CONTENT U.N.O. FILL MATERIAL SHALL BE OF UNIFORM QUALITY AND FREE FROM VEGETABLE MATTER. IMPORTED STRUCTURAL FILL TO BUILDING PADS OF STRUCTURES IS TO CONFORM TO THE FOLLOWING:

	15% MIN
• CBR	8% MAX
• LINEAR SHRINKAGE	35% MAX
• LIQUID LIMIT	15% MAX
• PLASTICITY INDEX	10% MAX
• SHRINK / SWELL INDEX	10% MAX
• BEARING CAPACITY:	TO STRUCTURAL ENGINEERING DESIGN REQUIREMENTS NOT LESS THAN 100kPa. ALLOWABLE. FILL SHALL ALLOW REACTIVITY TO BE RECLASSIFIED AS 'CLASS 5' TO AS2870-2011.
- SUB-GRADE REPLACEMENT (SUB-BASE 2): SUB-BASE 2 MATERIAL SHALL BE ROADBASE MATERIAL OF:

AS SIEVE	% PASSING
75mm	100%
4.75mm	30 - 100%
0.075mm	3 - 30%

- MINIMUM CBR:
 - SUB-BASE 2 MINIMUM THICKNESS: 150mm
 - MAXIMUM PARTICLE SIZE: 4.0mm
 - MAXIMUM LIQUID LIMIT: 35%
 - MAXIMUM PLASTICITY INDEX: 12%
- UNLESS OTHERWISE APPROVED BY GEOTECHNICAL ENGINEER, PLACE CBR 15 MATERIAL TO FINAL COMPACTED THICKNESS OF 150mm COMPACTED TO 98% STANDARD DRY DENSITY IN ACCORDANCE WITH AS 1742.
- EXTERNAL FOOTPATHS & SLABS: PROVIDE WATERPROOF DAMP COURSE 0.2u vapour BARRIER ON 50MM SAND BED OR 150MM SUB-BASE GRAVEL TYPE 2.3 IF SUBJECT TO LIGHT VEHICLE TRAFFIC.
- CUT MATERIAL: ALL CUT AREAS ARE TO BE COMPACTED TO 100% COMPACTION. ALL EXCESS CUT MATERIAL, TOPSOIL, DEBRIS AND WASTE TO BE REMOVED FROM SITE AND SHALL BE INCLUDED IN THE WITHIN THE CONTRACTOR TENDER.
- CUT AND FILL: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENGAGE A NATA CERTIFIED GEOTECHNICAL INSPECTION AND TESTING AUTHORITY (GITA) TO PROVIDE LEVEL 1 INSPECTIONS AND TESTING OF THE EARTHWORKS IN ACCORDANCE WITH AS3798 - GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS. THE COST OF THE LEVEL 1 INSPECTIONS AND TESTING IS TO BE INCLUDED IN THE CONTRACTOR'S COSTS. EARTHWORKS UNDER PROPOSED STRUCTURES TO BE TO THE STRUCTURAL ENGINEERS SPECIFICATIONS. REFER TO STRUCTURAL ENGINEERS DETAILS FOR SAFE BEARING CAPACITY REQUIREMENTS.
- GEOTECHNICAL INSPECTIONS AND TEST CERTIFICATES: THE CONTRACTOR'S NATA CERTIFIED GEOTECHNICAL INSPECTION AND TESTING AUTHORITY (GITA) IS TO PROVIDE A DETAILED REPORT SETTING OUT THE INSPECTIONS, SAMPLING AND TESTING THAT HAS BEEN CARRIED OUT, AND THE LOCATIONS AND RESULTS THEREOF. THE GITA'S REPORT MUST CONTAIN A STATEMENT OF COMPLIANCE THAT THE WORKS COMPLY WITH THE SPECIFICATION AND DRAWINGS AS SPECIFIED IN SECTION 8 OF AS 3798. WHERE THE GITA IS APPOINTED BY THE PRINCIPAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORKS WITH THE GITA TEST CERTIFICATES ON THE FILL MATERIAL SHALL BE SUPPLIED TO THE SUPERINTENDENT FOR REVIEW PRIOR TO THE USE OF THE FILL MATERIAL.
- EARTHWORKS VOLUMES: ALL VOLUMES PROVIDED EXCLUDE ANY COMPACTION OR BULKING FACTORS. ALL VOLUMES PROVIDED EXCLUDE LANDSCAPE TOPSOIL REQUIREMENTS. DETAILED EXCAVATION, FOOTING, AND TRENCH THICK LAYER BELOW THE CURBET BASE OR PIPE. THE CRUSHED ROCK SHOULD BE SEPARATED FROM THE BEDDING MATERIAL BY A LAYER OF GEOTABRIC (A3, BIDIM OR SIMILAR). THESE AREAS ARE TO BE INSPECTED TO ASSES WHETHER FURTHER EXCAVATION IS REQUIRED OR OTHER MEASURES CAN BE ADOPTED.

ROADWORKS NOTES

- LEVELS AND GRADIENTS AT JUNCTIONS WITH EXISTING ROADWORKS MAY BE VARIED AS REQUIRED TO THE SUPERINTENDENT'S SATISFACTION AND THE COSTS DEEMED INCLUDED IN THE RELEVANT SCHEDULE ITEMS.
- SUBSOIL DRAINS TO BE PROVIDED UNDER ALL KERB AND CHANNEL AND KERB.
- ROADS AND STRUCTURAL FORMATIONS INCLUDING EMBANKMENTS, FOOTPATHS, PAVED AREAS, AND SHOULDERS ARE TO BE COMPACTED TO 100% STANDARD DRY DENSITY LESS THAN 0.3m BELOW SUBGRADE AND 98% STANDARD DRY DENSITY MORE THAN 0.3m BELOW SUBGRADE TO AS1289 5.11.1 AND LOCAL GOVERNMENT AUTHORITY SPECIFICATIONS.
- ELECTRICAL AND COMMUNICATIONS CONDUIT LOCATIONS ARE SHOWN FOR INFORMATION ONLY. FOR EXACT LOCATIONS REFER TO ELECTRICAL CONSULTANT'S LAYOUT PLANS. FOR IRRIGATION WATER CONDUIT LOCATIONS REFER WATER RETICULATION DRAWINGS.
- MINIMUM COVER TO ROOFWATER PIPES TO BE 100mm EXCEPT WHERE LESS COVER IS NECESSARY TO DISCHARGE TO STREET KERB AND CHANNEL.
- CONTRACTOR SHALL APPLY FOR AND RECEIVE APPROVAL FROM THE LOCAL GOVERNMENT AUTHORITY FOR THE PROPOSED FOOTPATH AND CROSSOVER WORKS PRIOR TO CONSTRUCTION.
- CONTRACTOR TO ARRANGE INSPECTION OF PROPOSED CROSSOVERS AND FOOTPATHS WITH COUNCIL IN ACCORDANCE WITH DEVELOPMENT APPROVAL AND OPERATIONAL WORKS APPROVAL.
- CONTRACTOR TO CONFIRM CROSSOVER AND ADJACENT PAVEMENT LEVELS AND GRADES PRIOR TO THE START OF CONSTRUCTION. IF IN DOUBT OR FURTHER CLARIFICATION IS REQUIRED, THE CONTRACTOR IS TO OBTAIN CLARIFICATION FROM THE SUPERINTENDENT PRIOR TO CONSTRUCTION.

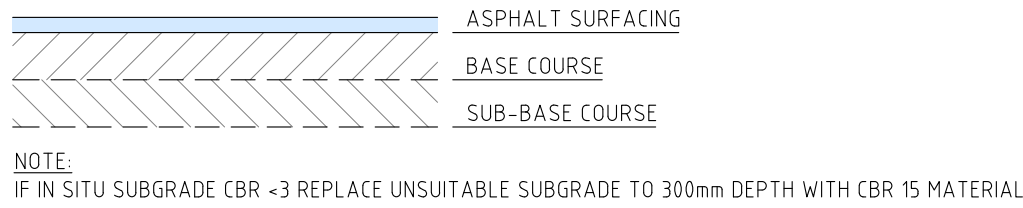
ROADWORKS NOTES (CONT)

- THE CONTRACTOR IS TO ENGAGE A NATA CERTIFIED GEOTECHNICAL TESTING AUTHORITY TO PERFORM SOIL SAMPLING UP TO A DEPTH OF 500mm BELOW THE PROPOSED SUBGRADE LEVELS IN ACCORDANCE WITH THE LOCAL GOVERNMENT REQUIREMENTS, AT THE LOCATIONS SHOWN AND PROVIDE A WRITTEN REPORT WHICH INCLUDES:
 - A DESCRIPTIVE LOG OF THE SOIL TYPES
 - LABORATORY TEST RESULTS FOR EACH SOIL SAMPLE - ATTERBERG LIMITS, LINEAR SHRINKAGE, PARTICLE ANALYSIS AND SOAKED CBR AND CBR SWELL
 - GITA TO ENSURE THE SOIL SAMPLE IS SUFFICIENT FOR LIME DEMAND TESTING AND SOLUBLE SULPHATE TESTING (PROVISIONAL IF REQUIRED). THE CONTRACTOR WILL BE ADVISED IF THE TESTING FOR LIME STABILISATION OF THE SUBGRADE IS REQUIRED ONCE THE INITIAL TESTING ABOVE IS COMPLETED AND SUPPLIED TO THE SUPERINTENDENT.
 - THE CONTRACTOR IS TO PROVIDE CBR TEST RESULTS A MINIMUM OF TWO WEEKS PRIOR TO ROAD CONSTRUCTION TO CONFIRM ROAD SUBGRADE LEVELS AND PAVEMENT DESIGN. TESTS TO BE TAKEN AT A MINIMUM OF 50m CENTRES OR TO MINIMUM LOCAL AUTHORITY STANDARDS.
- PROVIDE KERB RAMP AT ALL PEDESTRIAN CROSSINGS AND WALKWAYS TO LOCAL GOVERNMENT AUTHORITY STANDARDS.
- ALL ROAD WORKS KERB TRANSITIONING BETWEEN KERB TYPES TO BE CARRIED OUT OVER 15m MINIMUM.

PROVISIONAL PAVEMENT SPECIFICATION

FLEXIBLE PAVEMENT
2 COAT BITUMEN SEAL(14mm/7mm)
SEAL 1 (14mm) - CL170 15L/M2 (255M2/M3)
SEAL 2 (7mm) - CL170 9.5L/M2 (255M2/M3)
PRIME COAT 1 (2mm) - CL170 9.5L/M2 (255M2/M3)
150mm BASE COURSE (DMR TYPE 2.1)
150mm SUB-BASE COURSE (DMR TYPE 2.3)

- PROVIDE WATERPROOF DAMP COURSE 0.2u VAPOUR BARRIER FOR ALL CONCRETE PAVEMENTS.
- ALL GRAVEL TO BE COMPACTED TO A MINIMUM 98% STANDARD COMPACTION U.N.O.



FLEXIBLE PAVEMENT DESIGN NTS

STORMWATER DRAINAGE NOTES:

- ALL STORMWATER DRAINAGE PIPES 225R OR SMALLER SHALL BE CLASS HD UPVC (SN8) UNLESS NOTED OTHERWISE.
- ALL STORMWATER PIPES 300R OR GREATER SHALL BE CLASS '3' RCP OR POLYPROPYLENE (SN8) UNLESS NOTED OTHERWISE. ALL STORMWATER PIPES BELOW RL2.50 (AHD) TO BE SUITABLE FOR SALT WATER. THIS MAY REQUIRE ADDITIONAL COVER AND/OR A HIGHER CLASS OF PIPE U.N.O.
- ALL STORMWATER PIPES 675R OR GREATER SHALL BE FLUSH JOINED U.N.O.
- ALL STORMWATER PIPES 600R OR SMALLER SHALL BE RUBBER RING JOINTED U.N.O.
- FRC PIPES SHALL NOT BE USED.
- ALL STORMWATER BEDDING SHALL BE TYPE 'H2' U.N.O.
- THE CONTRACTOR IS TO ENSURE THE METHOD OF COMPACTION OF THE BACKFILL IS SUITABLE FOR THE CLASS OF PIPE INDICATED ON THE DRAWINGS. IF NECESSARY, THE CONTRACTOR IS TO ADJUST THEIR COMPACTION METHODS TO SUIT THE PIPE CLASS.
- THE CONTRACTOR IS TO PROVIDE SUITABLE TEMPORARY PROTECTION OVER THE STORMWATER PIPEWORK FOR ALL CONSTRUCTION LOADS.
 - PIPES IN ROADWAYS - 600mm COVER U.N.O.
 - PIPES IN LANDSCAPE AREAS - 450mm COVER U.N.O.
 - CONTRACTOR TO MAINTAIN MINIMUM COVER ON SITE DURING TO CONSTRUCTION
- ALL STORMWATER MANHOLES SHALL IN ACCORDANCE WITH LOCAL GOVERNMENT AUTHORITY STANDARD DRAWINGS
- ALL STORMWATER STRUCTURES SUBJECT TO VEHICLE LOADS ARE TO HAVE A HEAVY DUTY TRAFFICABLE (CLASS D) LID U.N.O.
- ALL STORMWATER GULLY PITS SHALL BE IN ACCORDANCE WITH LOCAL GOVERNMENT AUTHORITY STANDARD DRAWINGS.
- KERB ADAPTERS SHALL BE PROVIDED IN KERB AND CHANNEL IN ACCORDANCE WITH LOCAL GOVERNMENT AUTHORITY STANDARD DRAWINGS AND REQUIREMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING GULLY PITS IN RELATION TO THE NOMINAL FACE OF KERB AND KERB AND CHANNEL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING STRUCTURES ENTIRELY WITHIN THE PROPERTY BOUNDARIES.
- THE CONTRACTOR SHALL VERIFY THE INVERT LEVEL AT THE CONNECTION WITH EXISTING STORMWATER PIPES PRIOR TO LAYING PIPES AND ADVISE THE SUPERINTENDENT OF ANY DISCREPANCY.
- ALL TRENCHES SHALL BE BACK FILLED UNDER THE ROAD AS DETAILLED IN THE BACKFILLING OF TRENCHES NOTES.
- TRENCH BACKFILL TESTING SHALL BE CARRIED OUT ON EACH ALTERNATE COMPACTED LAYER AT A MAXIMUM 50m CENTRES AND NO MORE THAN 3m FROM MANHOLE STRUCTURE.
- WHERE THE TRENCH FOUNDATION IS CONSIDERED UNSUITABLE IN THE OPINION OF THE SUPERINTENDENT, A LAYER OF CRUSHED ROCK, 40mm to 20mm SIZE OR OTHER MATERIALS APPROVED BY THE SUPERINTENDENT SHALL BE LAID IN A 500mm THICK LAYER BELOW THE CURVET BASE OR PIPE. THE CRUSHED ROCK SHOULD BE SEPARATED FROM THE BEDDING MATERIAL BY A LAYER OF GEOTABRIC (A3, BIDIM OR SIMILAR). THESE AREAS ARE TO BE INSPECTED TO ASSES WHETHER FURTHER EXCAVATION IS REQUIRED OR OTHER MEASURES CAN BE ADOPTED.
- CONTRACTOR TO PROVIDE CONCRETE BALLAST TO ALL STORMWATER STRUCTURES (TANKS, PUMP WELLS, MANHOLES ETC.) TO SUIT BUOYANCY OF SITE GROUND CONDITIONS.
- PRIOR TO WORKS BEING ACCEPTED ON MAINTENANCE THE CONTRACTOR SHALL PROVIDE A CCTV INSPECTION AND DETAILED REPORT TO THE SUPERINTENDENT CONFIRMING THE STORMWATER HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATION. ANY DEFECTS IDENTIFIED IN THE CCTV INSPECTION SHALL BE RECTIFIED BY THE CONTRACTOR AT THEIR COST, PRIOR TO ACCEPTANCE OF THE WORKS ON MAINTENANCE.
- CONTRACTOR TO PROVIDE 100% SLOTTED SUB SOIL DRAINAGE c/w GEOTABRIC SOCK AND GRANULAR BACKFILL ADJACENT TO ALL KERBS AND BUILDING EDGES TO AS2439 AND CONNECT TO STORMWATER STRUCTURE. PROVIDE 1000 HD UPVC UNDER PAVEMENT TO CONNECT SUBSOIL TO STORMWATER STRUCTURE. MINIMUM GRADE TO BE 1200.
- CONTRACTOR TO PROVIDE SERVICES AND CONDUITS BEHIND RETAINING WALLS PRIOR TO BACKFILLING.
- ALL STRUCTURES WITHIN OR ADJACENT TO FOOTPATHS, PEDESTRIAN AREAS, BUILDINGS, PLAY AREAS OR ASSEMBLY AREAS ARE TO BE HEEL PROOF, NON-SLIP AND BOLT DOWN.
- REFER TO IPWEAQ STANDARD DRAWING DS-07R FOR BORETENTION NOTES AND SPECIFICATION.
- STORMWATER TREATMENT AND DETENTION TANKS TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS. IF NO SPECIFICATIONS ARE PROVIDED THEN INSTALL DETENTION AND TREATMENT TANKS TO THE BELOW SPECIFICATIONS:
 - FOUNDED IN STABLE NATURAL GROUND WITH A SAFE BEARING CAPACITY OF AT LEAST 150kPa (MINIMUM).
 - PROVIDE A MINIMUM OF 150mm THICK SUBBASE LAYER OF CBR15 ROADBASE (MINIMUM).
 - THE BASE OF TANKS IS TO BE WHOLLY FOUNDED ON EITHER CUT OR FILL (NOT A CUT/FILL PLATFORM).
 - BASE OF DETENTION TANKS TO HAVE A MINIMUM 1200 FILL (1100 PREFERRED). BASE OF TREATMENT TANKS TO BE LEVEL.
 - BACKFILLING AROUND AND ADJACENT TO THE WALLS SHALL BE WITH APPROVED SELECTED MATERIAL. THE MATERIAL SHALL BE COMPACTED IN LAYERS AS PER THE EARTHWORKS NOTES.

PEDESTRIAN SURFACES NOTES

- ALL SURFACES SUBJECT TO PEDESTRIAN TRAFFIC SHALL MEET THE MINIMUM PENDULUM OR RAMP RECOMMENDATIONS CONTAINED IN TABLE 3 OF AUSTRALIAN STANDARD HANDBOOK HB197-1999 - AN INTRODUCTORY GUIDE TO THE SLIP RESISTANCE OF PEDESTRIAN SURFACE MATERIALS. COMPLIANCE WITH THE RECOMMENDATIONS SHALL BE VERIFIED BY TESTING TO EITHER - AS/NZS 4586:2004 - SLIP RESISTANCE CLASSIFICATIONS OF NEW PEDESTRIAN SURFACE MATERIALS, OR AS/NZS 4663:2004 - SLIP RESISTANCE MEASUREMENT OF EXISTING PEDESTRIAN SURFACES AS APPROPRIATE. IN BOTH INSTANCES COMPLIANCE SHALL BE DEMONSTRATED BY APPLYING CLAUSE 5.3 - MEANS OF DEMONSTRATING COMPLIANCE OF AS/NZS 4586:2004 - SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS.
- IN GENERAL, THE CLASSIFICATION OF A SURFACING MATERIAL OR FINISH SHALL BE MADE ON A WORST-CASE BASIS AS DETERMINED BY PENDULUM TESTING USING BOTH THE 4S AND TRL RUBBER SLIDER. WHERE ADDITIONAL TEST RESULTS ARE AVAILABLE (OIL - WET RAMP, WET/ BAREFOOT RAMP) THESE MAY BE TAKEN INTO CONSIDERATION.
- ALL PITS, STRUCTURES AND INLETS WITHIN A PEDESTRIAN TRAFFIC AREA ARE TO HAVE HEEL PROOF, NON-SLIP, BOLT DOWN LIDS.

PAVEMENT MARKING AND SIGNAGE NOTES

- ALL PAVEMENT MARKING, SIGNAGE, GUIDEPOSTS AND RETROREFLECTIVE RAISED PAVEMENT MARKERS (RRPM) TO BE IN ACCORDANCE WITH THE TMR AND AS 1742 MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES.
- FOR SIGNAGE AND ASSEMBLY DETAILS REFER TMR STANDARD DWG.
- STREET NAME SIGNS SHALL BE TO LOCAL GOVERNMENT STANDARDS.
- FOR ROADWORK DELINEATOR DETAILS REFER TMR STANDARD DWG.
- EXISTING PAVEMENT MARKINGS ARE TO BE REMOVED BY GRINDING.
- LONGITUDINAL LINE MARKING SHALL BE DILUX AT SOLVENT BASED PAVEMENT MARKING OR APPROVED EQUIVALENT. TRANSVERSE LINE MARKING SHALL BE THERMOPLASTIC OR APPROVED EQUIVALENT.
- PEOPLE WITH DISABILITY PARKING SPACE, SYMBOLS, BOLLARDS, AND SHARED SPACE TO BE IN ACCORDANCE WITH AS2890.
- ALL LINE MARKING SUBJECT TO PEDESTRIAN TRAFFIC SHALL MEET THE MINIMUM PENDULUM OR RAMP RECOMMENDATIONS IN THE PEDESTRIAN SURFACES NOTES.

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- PEOPLE WITH DISABILITY PARKING SPACE, SYMBOLS, BOLLARDS, AND SHARED SPACE TO BE IN ACCORDANCE WITH AS2890.
- ALL LINE MARKING SUBJECT TO PEDESTRIAN TRAFFIC SHALL MEET THE MINIMUM PENDULUM OR RAMP RECOMMENDATIONS IN THE PEDESTRIAN SURFACES NOTES.

EXCAVATION AND BACKFILLING OF TRENCHES, SHORING AND

LIABILITY FOR DAMAGE:

- THE CONTRACTOR SHALL SUPPLY AND DISPLAY ON SITE OF WORKS, ALL APPROPRIATE NOTIFICATION SIGNS AND SAFETY MARKING APPLICABLE FOR A CONSTRUCTION SITE IN ACCORDANCE WITH ALL REQUIRED REGULATORY GUIDELINES AND LEGISLATION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL TRENCH EXCAVATION IS CARRIED OUT IN ACCORDANCE WITH THE MINES REGULATION ACTS, THE WORKPLACE HEALTH AND SAFETY ACT 2011.
- DURING THE EXCAVATION, ET CETERA AND CONSTRUCTION OF THE WORKS OF THE CONTRACT, THE CONTRACTOR IS TO ADOPT EVERY PRECAUTION AND PROVIDE ALL MATERIALS, LABOUR, ET CETERA AND CAREFULLY EXECUTE AT HIS OWN COST WHENEVER CONSIDERED NECESSARY BY THE SUPERINTENDENT AND TO HIS ENTIRE SATISFACTION. STRONG SHORING AND IN SANDY OR LOOSE SOIL, CLOSE TIMBERING AND OTHER WORK THAT MAYBE REQUIRED TO PREVENT EARTH OR OTHER MATERIALS AT SIDES OF EXCAVATION FROM BEING SHAKEN, SLIPPING OR FALLING IN.
- THE CONTRACTOR SHALL ENSURE THAT ALL TRENCHES OVER 1.5m IN DEPTH ARE SHORED IN ACCORDANCE WITH THE REQUIREMENTS OF THE WORKPLACE HEALTH AND SAFETY ACT 2011. WHERE APPROVED BY OFFICERS OF THE DIVISION OF OCCUPATIONAL SAFETY, TRENCHES MAY BE BATTERED BACK, THE ABSOLUTE MAXIMUM SLOPE OF THE BATTER IS TO BE FORTY-FIVE (45) DEGREES FROM THE HORIZONTAL FROM A POINT 15m MAXIMUM ABOVE THE BOTTOM OF THE TRENCH. THE ACTUAL MAXIMUM BATTER SLOPE IS TO BE DETERMINED AFTER INSPECTION OF THE STABILITY OF THE TRENCH.
- THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE SHOULD AN ACCIDENT OCCUR OR DAMAGE TO PROPERTY RESULT FROM THE CONTRACTORS WORK AND SHALL RESTORE SAME AT HIS OWN COST.
- THE CONTRACTOR SHALL ENSURE THAT ALL TRENCHES IN UNSUITABLE MATERIAL ARE SHORED OR SHIELDS ARE USED DURING PIPE LAYING OPERATIONS. AT ALL TIMES WHEN TRENCHES AND EXCAVATIONS ARE OPEN AND THE CONTRACTOR AND HIS EMPLOYEES ARE NOT IN ATTENDANCE THE TRENCHES SHALL BE BARRICADED. THIS SHALL APPLY PARTICULARLY TO MANHOLES AND CHAMBERS PRIOR TO AND DURING CONSTRUCTION.
- TRENCH WIDTHS SHALL CONFORM TO INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALIA QUEENSLAND DIVISION INC. STANDARD DRAWINGS AND BE OF WIDTH TO SUIT NUMBER OF SERVICES.
- DEPTH TO PIPE INVERTS SHOWN ON JOB DRAWINGS SHALL BE INCREASED TO ALLOW FOR BEDDING, PIPE BEDDING REQUIREMENTS VARY WITH STRATA AND MUST COMPLY WITH THE REQUIREMENTS OF THE RELEVANT STANDARD PLANS AND SPECIFICATION.
- STORMWATER DRAINAGE PIPES ARE TO BE BACKFILLED IN ACCORDANCE WITH INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALIA STANDARD DRAWINGS DS-030 IN PARTICULAR WITH RELATION TO THE DEPTH OF SAND BEDDING, EMBEDMENT ZONE AND COMPACTION OF BACKFILL.

WATER RETICULATION NOTES:

- ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT LATEST ISSUE LOCAL COUNCIL/AUTHORITY STANDARD DRAWINGS.
- ALL WATER MAINS ARE TO BE LOCATED ON A **15mm** +0.1m ALIGNMENT OFFSET FROM PROPERTY BOUNDARIES - U.N.O.
- ALL 15mm HYDRANTS TO BE LOCATED WITHIN THE PROPERTY BOUNDARY U.N.O.
- ALL UPVC MAINS ARE TO BE CLASS PN16, SERIES 2 COMPATIBLE TO AS1477, RUBBER RING JOINTED, WITH SOCKETED DIAL FITTINGS - U.N.O.
- ALL 630m MAINS TO BE POLYETHYLENE CLASS PN16 TO AS4130
- ALL TRENCHES UNDER ROAD PAVEMENTS (INCLUDING FUTURE) ARE TO BE BACKFILLED WITH CRUSHER DUST TO SUBGRADE LEVEL.
- DETAILS TO EXISTING WATER MAINS TO BE CARRIED OUT BY THE LOCAL COUNCIL/AUTHORITY AT THE CONTRACTOR'S EXPENSE.

ELECTRICAL AND COMMUNICATION CONDUITS NOTES:

- ALL ELECTRICAL AND COMMUNICATION CONDUITS ARE TO BE INSTALLED BY THE CONTRACTOR STRICTLY IN ACCORDANCE WITH THE LOCAL ELECTRICITY AND COMMUNICATION PROVIDER'S SPECIFICATIONS - U.N.O.

DEWATERING:

- THE CONTRACTOR IS TO ALLOW A PROVISIONAL SUM FOR PREPARING AND UNDERTAKING A DEWATERING MANAGEMENT STRATEGY FOR WORKS THAT ENCOUNTER GROUNDWATER.

AS CONSTRUCTED NOTES:

- THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT SURVEYOR TO CARRY OUT 'WORKS AS CONSTRUCTED' SURVEY AND SUBMIT DETAILS SHOWN ON A DRAWING TO THE SUPERINTENDENT AT COMPLETION OF CONSTRUCTION.
- 'WORKS AS CONSTRUCTED' SURVEY IS TO INCLUDE BUT NOT BE LIMITED TO:
 - LEVEL AND LOCATION OF RETAINING WALLS, FEATURES, EARTHWORKS AND FINISHED SURFACE LEVELS
 - LEVEL AND LOCATION OF NEW KERB, KERB AND CHANNEL, CONCRETE INVERT AND KERB RAMP
 - LEVEL AND LOCATION OF ALL DRAINAGE STRUCTURES, PIPE SIZES AND INVERT LEVELS FOR STORMWATER DRAINAGE
 - LEVEL AND LOCATION OF ALL SEWER MAINTENANCE HOLES, SEWER PIPE SIZES, INVERT LEVELS AND HOUSE CONNECTION
 - LOCATION OF ALL WATER MAINS, PIPE SIZES, HYDRANTS, SLUICE VALVES, TEES, AND METERS FOR WATER RETICULATION
 - ANY DETAILS RELATED TO FINAL ROAD TRUNCATION, ROAD WORKS, AND SERVICES
 - ANY DETAILS REQUIRED BY THE DEVELOPMENT APPROVAL
- AS CONSTRUCTED SURVEY IS TO BE PROVIDED IN DWG, PDF AND ADAC FORMATS BY THE CONTRACTOR TO THE SUPERINTENDENT.

REQUIRED HOLD POINT INSPECTIONS:

CONTRACTOR IS REQUIRED TO COMPLETE ALL HOLD POINT INSPECTIONS. FAILURE TO DO SO WILL RESULT IN NON-ISSUANCE OF FORM 12. REQUIRED HOLD POINT INSPECTIONS LISTED BELOW:

- PRE-START MEETING
- SUBGRADE PROOF-ROLL INSPECTION
- PRE-SEAL INSPECTION
- STORMWATER PIPES PRIOR TO BACKFILL INSPECTION
- PRE-BACKFILL OF TRENCHES INSPECTION
- WATER MAIN PRESSURE TESTING
- PRACTICAL COMPLETION/ON MAINTENANCE

MAINTENANCE NOTES:

- CONTRACTOR TO REQUEST AND ATTEND ON-MAINTENANCE INSPECTION WITH SUPERINTENDENT AND LOCAL COUNCIL OFFICERS (IF REQUIRED).
- SUCH MAINTENANCE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROVISIONS OF THE GENERAL CONDITIONS OF CONTRACT WITH RESPECT TO MAKING GOOD DEFECTS AND OTHER FAILS DUE TO FAULTY REPAIR AND/OR WORKMANSHIP AND SHALL INCLUDE CLEANING UP AND REPAIR DUE TO STORM DAMAGE.
- THE DEFECTS LIABILITY PERIOD SHALL BE 12 MONTHS FROM THE DATE

CONCRETE NOTES:

1. BUILDER TO ENSURE CONCRETE MATERIAL AND QUALITY BY THE CONCRETE SUPPLIER TO BE IN ACCORDANCE WITH RELEVANT CODES AND REGULATIONS.
2. ALL CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE FOLLOWING CODES, UNLESS SPECIFICALLY VARIED BY THE CONTRACT DOCUMENTS.
- AS2870 - RESIDENTIAL SLABS AND FOOTINGS (IF APPLICABLE).
 - AS3600 - CONCRETE STRUCTURES
 - AS3610 - FORMWORK FOR CONCRETE
 - AS/NZS 4671 - STEEL REINFORCING MATERIALS
3. PROVIDE THE ENGINEER WITH AT LEAST 48 HOURS NOTICE OF REINFORCEMENT BEING READY FOR INSPECTION. NO CONCRETE IS TO BE POURED WITHOUT INSPECTION.
4. THE CHARACTERISTIC COMPRESSIVE STRENGTH OF CONCRETE TEST CYLINDERS (f'c) SHALL BE AS FOLLOWS:

f ' c AT 28 DAYS (MPa)	SLUMP (mm)	MAXIMUM AGGREGATE SIZE (mm)
N25	80	20
N32	80	20

5. NO ADDITIVES SHALL BE ADDED OR APPLIED TO THE CONCRETE MIX WITHOUT THE APPROVAL OF THE ENGINEER.
6. THE MAXIMUM PERMISSIBLE TRANSPORT TIME FOR CONCRETE BETWEEN BATCHING AND PLACEMENT ON SITE SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE:

AMBIENT AIR TEMPERATURE	MAXIMUM BATCHING TO PLACEMENT TIME
10 - 24 DEGREES	120 MINUTES
25 - 27 DEGREES	90 MINUTES
28 - 30 DEGREES	60 MINUTES
31 - 33 DEGREES	45 MINUTES
34 - 36 DEGREES	30 MINUTES
37+ DEGREES	NO PLACEMENT OF CONCRETE UNLESS CHILLED WATER OR IN ICE MIX

7. THE EXPOSURE CLASSIFICATION FOR INDIVIDUAL CONCRETE ELEMENTS IS AS FOLLOWS:

LOCATION	EXPOSURE CLASSIFICATION
FOOTINGS	A2
INTERNAL CONCRETE SURFACES	A1
EXTERNAL CONCRETE SURFACES	B1

8. CURING REQUIREMENTS:

EXPOSURE CLASSIFICATION	MINIMUM f'c (MPa)	MINIMUM INITIAL CONTINUAL CURING DURATION (SEE AS3600 CL 17.15.1)
A1	20	3 DAYS
A2	25	3 DAYS
B1	32	7 DAYS
B2	40	7 DAYS
C1 & C2	50	7 DAYS

9. CURING SHALL BE EFFECTED BY USE OF AN APPROVED CURING COMPOUND WHICH SHALL BE APPLIED TO ALL CONCRETE SURFACES WHERE VISIBLE IMMEDIATELY ONCE CONCRETE IS HARD AND TO ALL FORMED SURFACES IMMEDIATELY AFTER FORMS ARE REMOVED, EXCEPT WHERE AN APPLIED FINISH IS TO BE USED. THE CURING COMPOUND SHALL THEN BE TAKEN OUT BY MAINTAINING THE SURFACE IN A MOIST CONDITION. OTHER CURING METHODS SHALL BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO USE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEASURING AND RECORDING THE AIR TEMPERATURE, RELATIVE HUMIDITY, CONCRETE TEMPERATURE AND WIND VELOCITY (MEASURED 1m ABOVE THE AS PLACED CONCRETE) AT THE TIME OF CONCRETE PLACEMENT AND CONTINUE UNTIL CURING HAS COMMENCED. THIS INFORMATION SHALL BE USED IN CONJUNCTION WITH FIGURE 1 TO DETERMINE THE RATE OF EVAPORATION OF WATER FROM THE FRESHLY PLACED CONCRETE AND UNPROTECTED SURFACE OF THE CONCRETE. THE RATE OF EVAPORATION SHALL BE MONITORED BY THE CONTRACTOR UNTIL SUCH TIME AS CURING COMMENCES. WHEN THE VALUE OF THE RATE OF EVAPORATION AS DETERMINED FROM FIGURE 1 EXCEED 0.5kg/m2 PER HOUR, THE CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMISE EVAPORATION MOISTURE LOSSES SUCH AS THE APPLICATION OF ALIPHATIC ALCOHOL BASED EVAPORATIVE RETARDING COMPOUND. PLASTIC SHRINKAGE OR DRYING CRACKING IS LIKELY TO OCCUR WHEN SITE CONDITIONS GIVE AN EVAPORATION RATE OF 1kg/m2 PER HOUR. THEREFORE, PRECAUTIONS ARE RECOMMENDED WHEN THE EVAPORATION RATE IS LIKELY TO EXCEED 0.5kg/m2 PER HOUR. THE APPLICATION OF ALIPHATIC ALCOHOL, WHEN REQUIRED, IS TO BE APPLIED IMMEDIATELY AFTER THE INITIAL SCREENING AND WHILE THERE IS BLEED WATER STILL PRESENT ON THE SURFACE. REPEATED APPLICATIONS MAY BE NECESSARY. THE APPLICATION OF THE ALIPHATIC ALCOHOL SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. DETAILS OF THE PRODUCT AND ITS APPLICATION PROCEDURE SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW NOT LESS THAN 4 WEEKS PRIOR TO THE COMMENCEMENT OF PLACEMENT. THE CONCRETE SHALL NOT BE PLACED IN WEATHER WITH TEMPERATURES EXCEEDING 32°C.

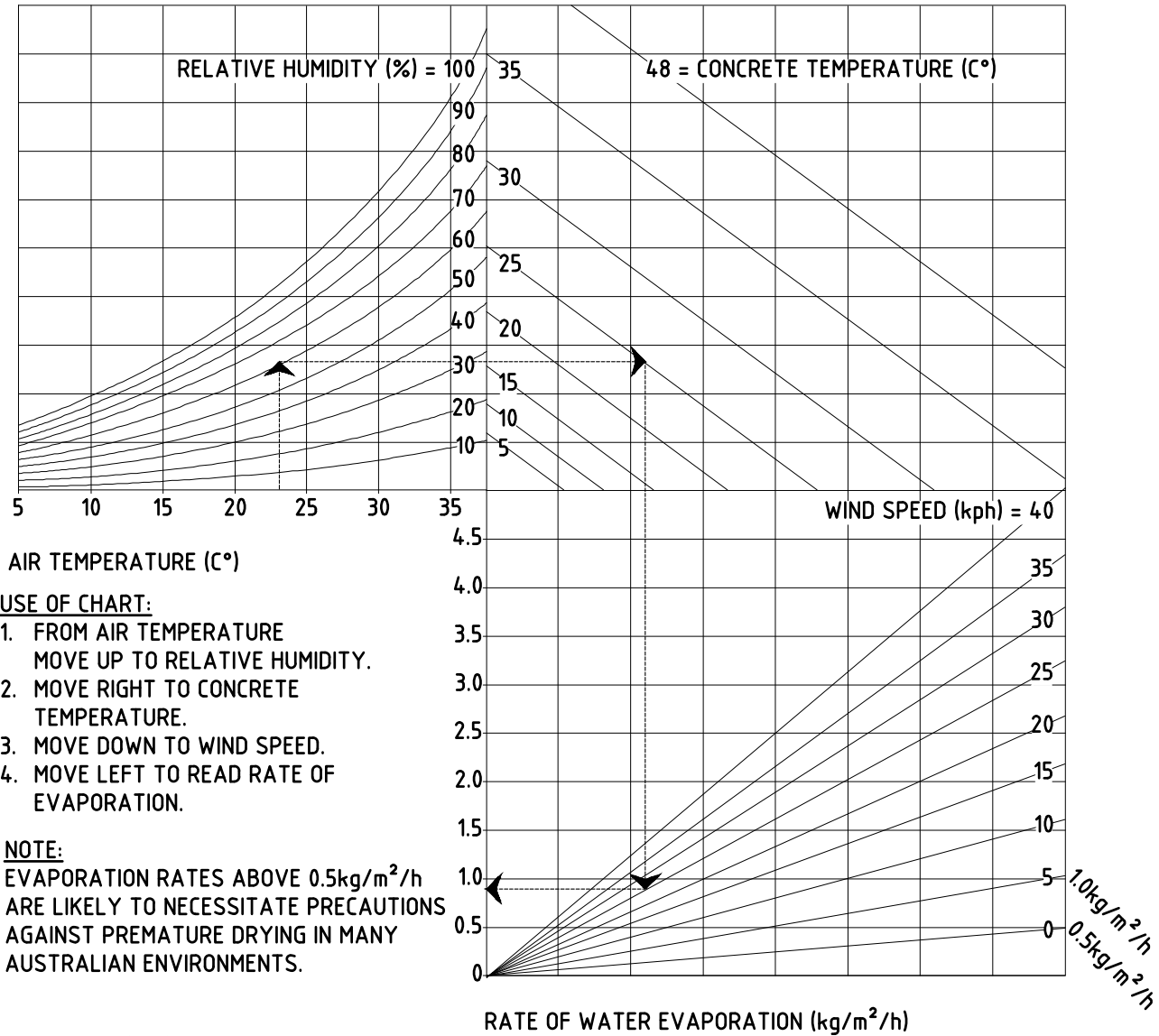


FIGURE 1:
EFFECT OF AMBIENT CONDITIONS ON RATE OF EVAPORATION ACI 305²

12. ALL CONCRETE SHALL BE VIBRATED IN ACCORDANCE WITH AS3600.
13. SIZES SHOWN ARE STRUCTURAL SIZES AND DO NOT INCLUDE APPLIED FINISHES.
14. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT IN TRUE PROJECTION.
15. NO CHASES OR HOLES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS WILL BE PERMITTED IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT.
16. FORMWORK FINISHES AND FINISH CLASS AS PER THE ARCHITECT'S SPECIFICATION.
17. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED WITHOUT APPROVAL FROM SUPERINTENDENT.
18. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. VIBRATORS SHALL NOT BE USED TO SPREAD CONCRETE.
19. STRIPPING OF FORMWORK SHALL BE AS PER THE FOLLOWING:

FORMED SURFACE	CLASSIFICATION	HOT CONDITIONS >20°C	AVERAGE CONDITIONS <=20°C > 12°C	COLD CONDITIONS <=12°C >=5°C
VERTICAL FACES	CLASSES 1, 2, 3	1 DAY 9 HOURS	2 DAYS 12 HOURS	3 DAYS 18 HOURS
	CLASSES 4, 5	A MINIMUM OF ONE DAY APPLIES TO THE STRIPPING OF VERTICAL FACES WHERE FROST DAMAGE IS LIKELY		
BEAM AND SLAB SOFFITS	FORMS SUPPORTING MEMBERS (SHORES OR BACKPROPS)	4 DAYS	6 DAYS	8 DAYS
		12 DAYS	18 DAYS	24 DAYS

20. STRIPPING OF FORMWORK AND REPROPPING OF SUSPENDED SLABS AND BEAMS SHALL BE CARRIED OUT PROGRESSIVELY SO THAT AT NO STAGE IS THE SLAB OR BEAM UNSUPPORTED UNTIL IT IS PERMITTED TO FULLY REMOVE ALL PROPPING.
21. IN MULTISTORY CONSTRUCTION, PROPS SHALL BE LOCATED IN THE SAME POSITION ON EACH FLOOR SO THAT THEY WILL BE CONTINUOUS IN THEIR SUPPORT FROM FLOOR TO FLOOR. WHERE THE NUMBER OF PROPS ON A FLOOR IS REDUCED, THE REMAINING PROPS SHALL BE LOCATED DIRECTLY UNDER PROPS ON THE FLOOR ABOVE.
22. SPLICES IN REINFORCEMENT TO BE MADE IN PLACES SHOWN OR APPROVED IN ALL CASES. GENERALLY, AT THE MIDSPAN FOR TOP STEEL AND NEAR SUPPORTS FOR BOTTOM STEEL. IN ALL CASES THE LAP LENGTH SHALL BE AS PER NOTE 25.
23. SL72, RL918 etc INDICATES REINFORCING FABRIC CONFORMING TO AS/NZS 4671. LAP LENGTHS SHALL BE:

FABRIC	END LAP (mm)	SIDE LAP (mm)
RL718, RL918	425	125
SL62, SL72, SL81, SL82, SL92, SL102	425	225
L8, L11, & L12 TRENCH MESH	350	-

24. TOP STEEL HAS MAIN BARS OR WIRES ON TOP. BOTTOM STEEL HAS MAIN BARS OR WIRES ON BOTTOM.

25. UNLESS NOTED OTHERWISE BAR LAPS SHALL BE:

BAR DIAMETER (mm)	TENSION LAP (mm)	TENSION ANCHORAGE (mm)
12	600	500
16	900	800
20	1200	1000
24	1600	1300
28	2000	1600
32	2400	1900
36	2800	2300
40	NA	NA

- LAPPED SPlicing NOT PERMITTED FOR N40 BARS. SPLICES SHALL BE ACHIEVED BY USE OF MECHANICAL COUPLERS.
26. ALL STARTER BARS TO REINFORCED CONCRETE WALLS, COLUMNS AND ALL MASONRY WALLS AND PIERS ARE TO BE TIED INTO THE FOOTING REINFORCEMENT.
27. NO CONSTRUCTION OR EXPANSION JOINTS ARE PERMITTED UNLESS SHOWN ON DRAWINGS.
28. CONCRETE TESTING RESULTS TO BE PROVIDED AT 1 TEST PER 50m3 WITH A MINIMUM OF 1 TEST PER DAY.
29. ALL TRAFFICABLE CONCRETE SLABS SHALL BE BROOM FINISHED PERPENDICULAR TO TRAFFIC FLOW. FOR SLABS WITH FALLS OF GREATER THAN 1 IN 10 (10%) USE HEAVY DUTY BROOM FINISH.
30. WHERE SERVICE PIPES PENETRATE CONCRETE ELEMENTS, PROVISION SHOULD BE MADE TO ALLOW FOR MOVEMENT OF THE ELEMENT.

MASONRY NOTES:

1. ALL MASONRY AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF AS3700 - MASONRY AND THE REFERENCED STANDARDS THEREIN.
2. MINIMUM DURABILITY REQUIREMENTS:

LOCATION	SALT ATTACHED RESISTANCE GRADE OF MASONRY UNITS	MORTAR CLASS	DURABILITY CLASS OF WALL TIES AND BUILT IN COMPONENTS
INTERIOR MASONRY	GENERAL PURPOSE	M3	R3
EXTERIOR MASONRY - GREATER THAN 1km FROM SALT WATER	GENERAL PURPOSE	M3	R3
EXTERIOR MASONRY - UP TO 1km FROM SALT WATER	GENERAL PURPOSE	M4	R4

3. ALL MASONRY INDICATED ON THE DRAWINGS SHALL HAVE AN UNCONFINED COMPRESSIVE STRENGTH (f'c) AS PER BELOW U.N.O.
- HOLLOW CONCRETE MASONRY: 15 MPa
4. MORTAR SHALL BE CLASS M3 OR M4 IN ACCORDANCE WITH NOTE 2 ABOVE. REFER TO AS3700 FOR COMPLYING MIX PROPORTIONS. SAND SHALL BE CLEAN WELL GRADED AND FREE OF SILT AND CLAY. NO 'BRICKIES LOAM' ALLOWED.
5. GROUT USED IN REINFORCED MASONRY SHALL BE S20, 230mm SLUMP AND 10mm MAXIMUM AGGREGATE SIZE UNLESS NOTED OTHERWISE. CEMENT CONTENT SHALL NOT BE LESS THAN 300kg/m.
6. ADDITIVES SHALL NOT BE ADDED TO THE GROUT OR MORTAR WITHOUT THE SPECIFIC PERMISSION OF THE SUPERINTENDENT.
7. FACE BED HOLLOW UNITS AND FULLY FILL VERTICAL JOINTS. NO RAKING OF MORTAR JOINTS IS PERMITTED.
8. GROUTING SHALL NOT COMMENCE UNTIL THE MORTAR JOINTS HAVE GAINED SUFFICIENT STRENGTH TO RESIST BLOWOUT AND CORES HAVE BEEN CLEANED OUT.
9. ALL CORES SHALL BE FILLED WITH GROUT, UNLESS NOTED OTHERWISE.
10. ALL MASONRY BLOCKS SHALL BE BLOCKS UNLESS NOTED OTHERWISE.
11. FOR REINFORCED BLOCK MASONRY, CONTROL JOINTS TO OCCUR WHERE SHOWN ON DRAWINGS (BCJ) OTHERWISE AT MAXIMUM 10m CENTERS. JOINTS TO BE PLACED AT THE FOLLOWING LOCATIONS: - 4m FROM CORNERS - ALL MAJOR CHANGES IN WALL HEIGHT (GREATER THAN 1m) - CHANGES IN WALL THICKNESS OTHER THAN ENGAGED PIERS - T-JUNCTIONS
12. MAXIMUM POUR HEIGHT FOR 200 SERIES MASONRY BLOCKS SHALL BE 2400mm.
13. GROUT FILLED HOLLOW MASONRY SHALL HAVE CLEAN-OUT UNITS LAID ON THE FOOTING AND THE BASE OF EACH POUR. ALL MORTAR WHICH HAS FALLEN DOWN CORES SHALL BE SATISFACTORILY CLEANED OUT AND INSPECTED BY THE ENGINEER PRIOR TO GROUTING.
14. COMPACTION OF GROUT SHALL BE BY VIBRATION OR RODDING WITH A ROD NOT LESS THAN 25mm DIAMETER.
15. REINFORCEMENT IN MASONRY SHALL BE UNCOATED CARBON STEEL AND COMPLY WITH THE REQUIREMENTS OF AS4671.
16. ALL MASONRY CAPPING BLOCKS ARE TO BE FIXED USING AN APPROVED CONSTRUCTION ADHESIVE. MORTAR JOINING SHALL NOT BE PERMITTED.
17. NO HOLES OR CHASES SHALL BE CUT INTO BLOCKWORK/BRICKWORK WITHOUT PRIOR APPROVAL OF THE ENGINEER.
18. ALL STARTER BARS ARE TO BE TIED TO FOUNDATION REINFORCING PRIOR TO POUR. WET SET IS NOT PERMITTED.
19. ALL REINFORCEMENT SHALL HAVE MASONRY BAR CHAIRS OR BE TIED INTO POSITION TOP AND BOTTOM FOR BLOCKWORK.

KERB NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH AUSTRROADS TECHNICAL SPECIFICATIONS ATS 2245-25, EXCEPT FOR DIMENSIONS WITHIN THESE DRAWINGS.
2. ALL CONCRETE TO BE N32 MINIMUM IN ACCORDANCE WITH AS1379 AND AS3600 UNLESS APPROVED OTHERWISE BY RELEVANT COUNCIL.
3. CONTROL JOINTS SHALL BE AT 3m CENTRES UNLESS OTHERWISE DIRECTED BY RELEVANT COUNCIL.
4. EXPANSION JOINTS SHALL BE AT 12m CENTRES UNLESS OTHERWISE DIRECTION BY RELEVANT COUNCIL. EXPANSION JOINTS, PERFORMED, PREFORMED JOINTING MATERIAL OF BITUMINOUS FIBREBOARD OR EQUIVALENT APPROVED BY RELEVANT COUNCIL.
5. TOOL JOINTS TO BE A MINIMUM 50% OF TOTAL SECTION WIDTH TO PROVIDE A WEAKENED PLANE.

AMENDMENTS

Rev:	Date:	Description:	By:	Appd:
A	27.01.26	PRELIMINARY	LJM	MCW
B	27.03.26	PRELIMINARY ISSUE	JT	PAP
C	22.04.26	FOR APPROVAL	HJD	PAP
D	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

THE DM GROUP

15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

PROJECT NOTES - SHEET 2



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Drawn:	LJM
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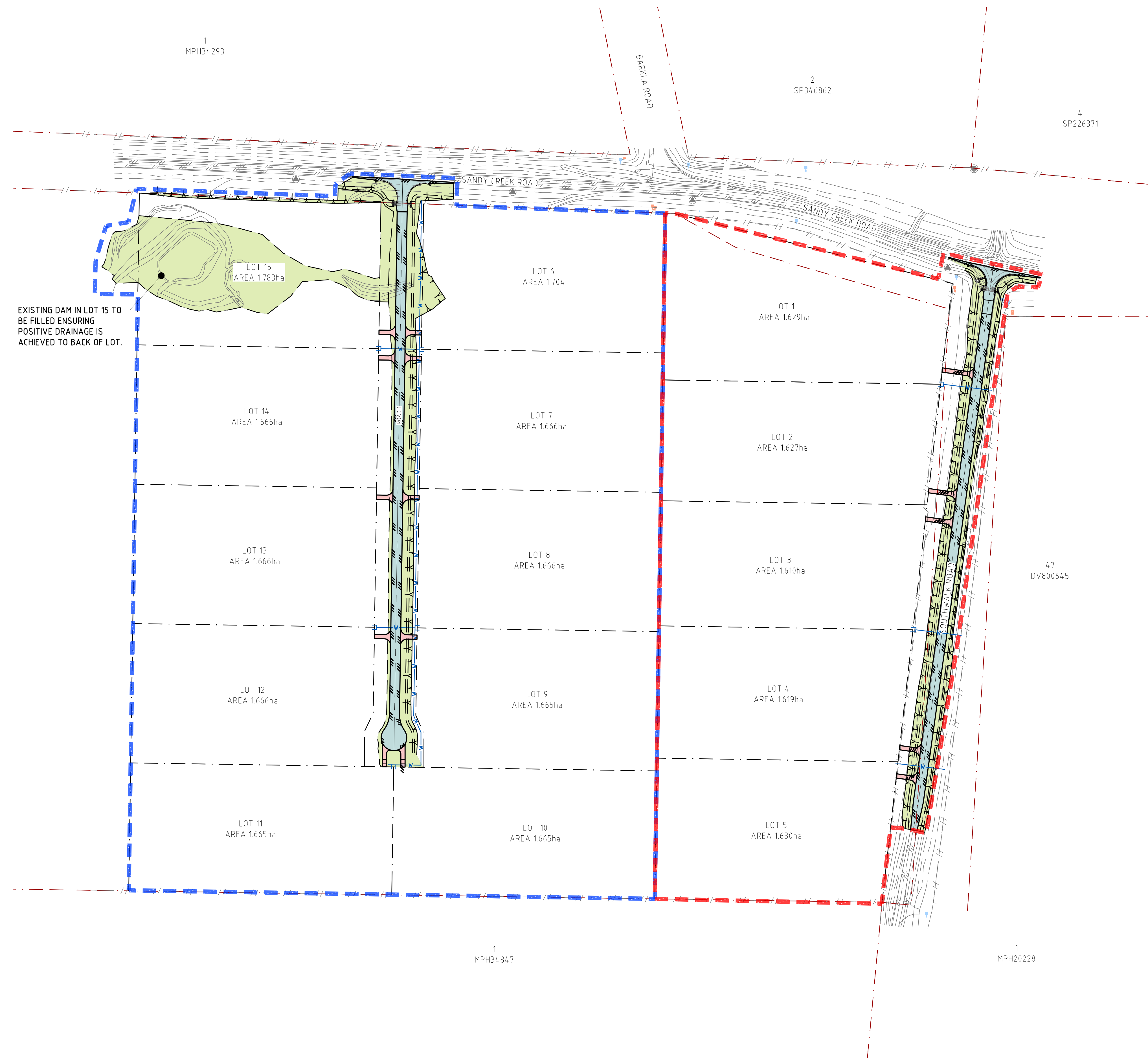
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Drawing No: C102
Rev: D

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EXISTING DAM IN LOT 15 TO BE FILLED ENSURING POSITIVE DRAINAGE IS ACHIEVED TO BACK OF LOT.

NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING.

LEGEND:

- Ex.T — Ex.T — Ex.T — EXISTING UNDERGROUND TELECOMMUNICATIONS
- Ex.W — Ex.W — EXISTING WATER MAIN
- - - - - EXISTING LOT BOUNDARY
- - - - - EXISTING LOT EASEMENT
- - - - - EXISTING TOE OF BATTER
- - - - - EXISTING TOP OF BATTER
- - - - - EXISTING ROAD CENTRELINE
- - - - - EXISTING EDGE OF BITUMEN
- - - - - EXISTING FENCE
- → → → → PROPOSED OVERLAND FLOW
- - - - - PROPOSED TOE OF BATTER
- - - - - PROPOSED TOP OF BATTER
- - - - - PROPOSED LOT BOUNDARY
- - - - - PROPOSED ROAD CENTRELINE
- - - - - PROPOSED EDGE OF BITUMEN
- W — W — W — PROPOSED WATER MAIN

- [Red dashed box] STAGE 1 WORKS BOUNDARY
- [Blue dashed box] STAGE 2 WORKS BOUNDARY

HATCH LEGEND

- [Blue hatched box] EXTENT OF GRAVEL PAVEMENT, REFER PROJECT NOTES FOR DETAILS.
- [Red hatched box] EXTENT OF DRIVEWAY ACCESS, REFER CTRC STD DWG CTRC-001 FOR DETAILS.
- [Green hatched box] EXTENT OF DISTURBED AREA TO BE REVEGETATED

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D	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP	

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS
GENERAL ARRANGEMENT LAYOUT PLAN

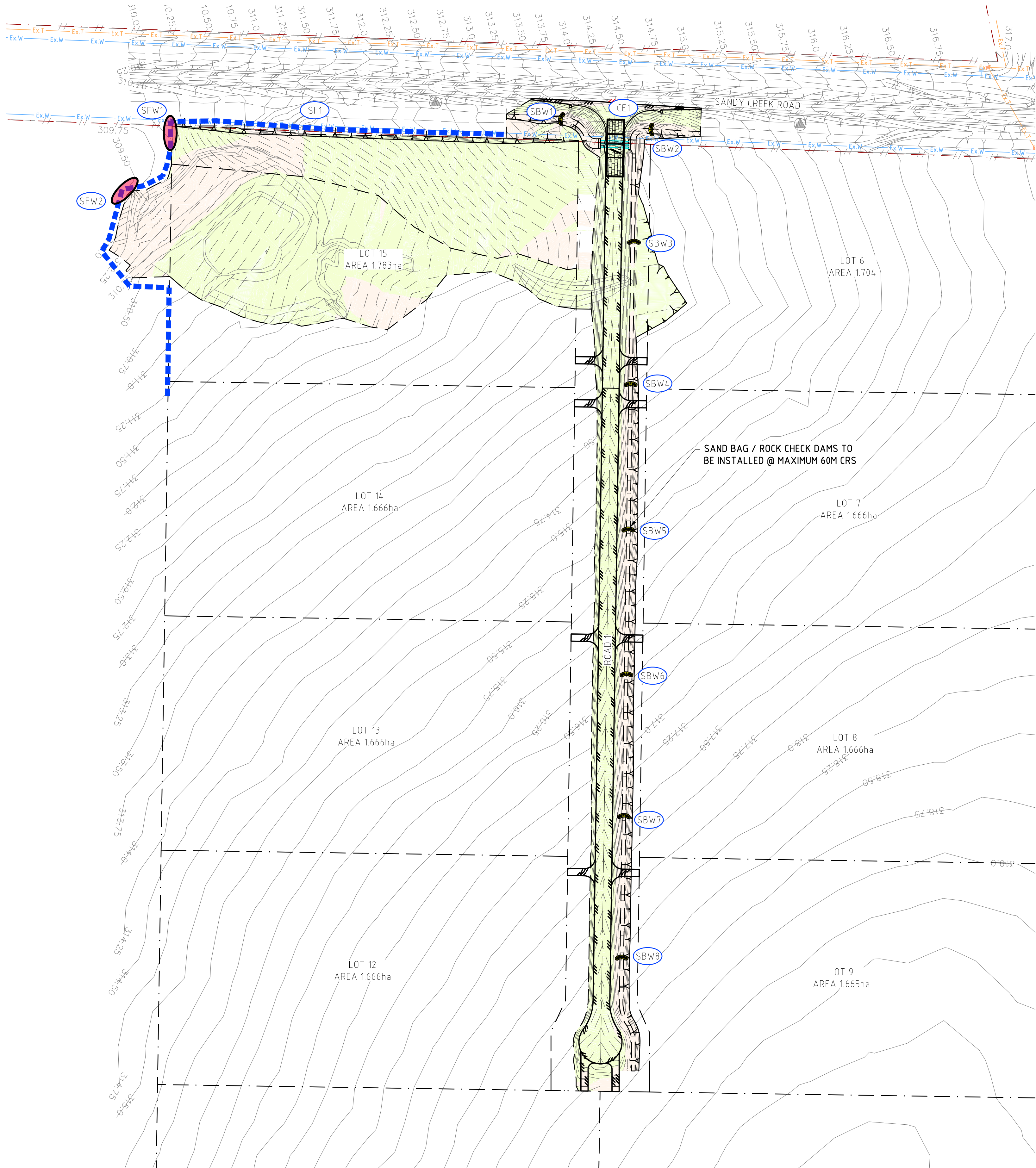
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NOTES:

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CUT AND FILL LEGEND

NOTE: CUT AND FILL AREAS ARE FROM EXISTING SURFACE TO DESIGN SURFACE

- FILL AREA:- ALL FILL AREAS ARE TO BE INITIALLY FILLED IN THE LOWER LAYERS WITH ALL OF THE FILL MATERIAL GENERATED ON SITE,
- CUT AREA:- ALL AREAS OF CUT WITHIN THE PROJECT

LEGEND:

- STRUCTURE NAME
- CONSTRUCTION ENTRY/EXIT, REFER IECA STD DWG EXIT-03
- SAND BAG CHECK DAM REFER IECA STD DWG RCD-01
- SEDIMENT FENCE WITH RETURNS @ 20m CRS REFER IECA STD DWG ESC-04 & ESC-05
- SEDIMENT FENCE SPILL THROUGH WEIR REFER IECA STD DWG ESC-04 & ESC-05

LEGEND:

- EXISTING UNDERGROUND TELECOMMUNICATIONS
- EXISTING WATER MAIN
- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN

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A	22.04.26	FOR APPROVAL	HJD	PAP
B	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SESC CONSTRUCTION PHASE - SHEET 1

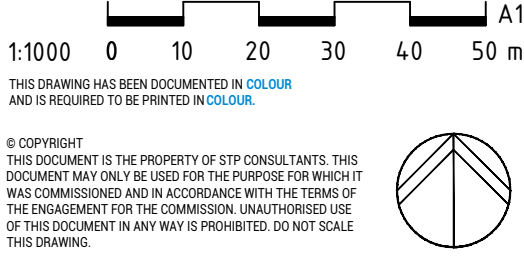


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Job No: STP25-2146
Drawing No: C201
Rev: B

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CUT AND FILL LEGEND

NOTE: CUT AND FILL AREAS ARE FROM EXISTING SURFACE TO DESIGN SURFACE

FILL AREA:- ALL FILL AREAS ARE TO BE INITIALLY FILLED IN THE LOWER LAYERS WITH ALL OF THE FILL MATERIAL GENERATED ON SITE,

CUT AREA:- ALL AREAS OF CUT WITHIN THE PROJECT

LEGEND:

- ###

STRUCTURE NAME
- 

CONSTRUCTION ENTRY/EXIT,
REFER IECA STD DWG EXIT-03

CE#
- 

SAND BAG CHECK DAM
REFER IECA STD DWG RCD-01

SBW#

LEGEND:

- Ex.T

EXISTING UNDERGROUND TELECOMMUNICATIONS
- Ex.W

EXISTING WATER MAIN
- - - - -

EXISTING LOT BOUNDARY
- - - - -

EXISTING LOT EASEMENT
- - - - -

EXISTING TOE OF BATTER
- - - - -

EXISTING TOP OF BATTER
- - - - -

EXISTING ROAD CENTRELINE
- - - - -

EXISTING EDGE OF BITUMEN
- - - - -

EXISTING FENCE
- >->->-

PROPOSED OVERLAND FLOW
- - - - -

PROPOSED TOE OF BATTER
- - - - -

PROPOSED TOP OF BATTER
- - - - -

PROPOSED LOT BOUNDARY
- - - - -

PROPOSED ROAD CENTRELINE
- - - - -

PROPOSED EDGE OF BITUMEN

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SITE COORDINATES E418023.020 N77804.26.220

AMENDMENTS				
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B	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SESC CONSTRUCTION PHASE - SHEET 2

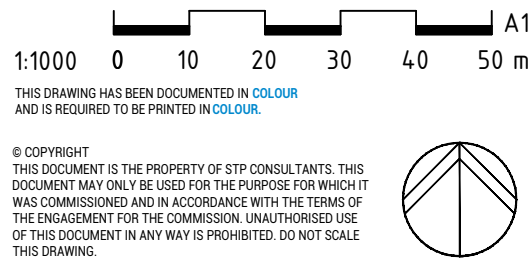


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Rev: B

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NOTES:

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EROSION CONTROL MEASURE TIMING TABLE

STRUCTURE NAME	TYPE	PROCEDURE/TIMING
CE1	CONSTRUCTION ENTRY/EXIT	•INSTALL PRIOR TO COMMENCING CLEARING •REMOVE ON COMPLETION OF ALL EARTHWORKS
CE2	CONSTRUCTION ENTRY/EXIT	•INSTALL PRIOR TO COMMENCING CLEARING •REMOVE ON COMPLETION OF ALL EARTHWORKS
SF1	SEDIMENT FENCE	•INSTALL PRIOR TO COMMENCING CLEARING •REMOVE AT ON-MAINTENANCE
SFW1	SEDIMENT FENCE WEIR	•INSTALL PRIOR TO COMMENCING CLEARING •REMOVE AT ON-MAINTENANCE
SFW2	SEDIMENT FENCE WEIR	•INSTALL PRIOR TO COMMENCING CLEARING •REMOVE AT ON-MAINTENANCE
SBW1	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF CUTOFF DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW2	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF OPEN DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW3	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW4	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW5	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW6	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW7	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW8	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW9	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW10	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW11	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW12	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW13	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW14	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW15	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW16	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW17	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW18	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW19	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW20	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW21	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW22	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW23	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE
SBW24	SAND BAG CHECK DAM	•INSTALL ON COMPLETION OF TABLE DRAIN EARTHWORKS/PROFILING •REMOVE AT ON-MAINTENANCE

WATER QUALITY MONITORING TABLE	
NO OCCURRENCE OF GULLY EROSION OR EXCESSIVE SEDIMENT DEPOSITS	MONTHLY
NO RELEASE OF CONSTRUCTION MATERIAL AND SILT TO THE MAIN WATERWAY	WEEKLY
INSPECTION OF SEDIMENT FENCES	WEEKLY/ AFTER HEAVY RAIN EVENTS

SEQUENCE OF ACTIONS TO BE UNDERTAKEN BY CONTRACTOR

1. SITE POSSESSION	- ERECTION OF BARRIER FENCING TO BUFFER AREAS AND DRAINAGE RESERVES AS DIRECTED BY SUPERINTENDENT. - INSTALLATION OF CONSTRUCTION EXIT. - CONSTRUCT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILT FENCING AND DIVERSION BANKS.
2. CONSTRUCTION	- TOPSOIL TO BE STRIPPED AND STOCKPILED IN LOCATIONS AGREED WITH THE SUPERINTENDENT. A SEDIMENT FENCE IS TO BE CONSTRUCTED ON THE DOWNHILL SIDE OF THE STOCKPILE TO TRAP SEDIMENT. A DIVERSION DRAIN IS TO BE INSTALLED UPSTREAM OF THE STOCKPILE. - SEDIMENT CONTROL DEVICES REQUIRED TO BE REMOVED TO ALLOW CONSTRUCTION ACCESS ARE TO BE REINSTATED AT THE COMPLETION OF EACH WORKDAY. - MOVEMENT OF CONSTRUCTION EQUIPMENT SHALL BE LIMITED TO THE AREA OF WORK AND EXISTING ROADS. - DISTURBED AREAS ARE TO BE GRASSED FOLLOWING FINAL TRIMMING IN ACCORDANCE WITH DRAWING. - AREAS ARE TO BE DISTURBED AND RESTORED PROGRESSIVELY. - TURF STRIPS (1000MM WIDE) SHALL BE LAID TO THE BASE OF ALL DOWNSTREAM EARTHWORKS BATTERS STEEPER THAN 1 IN 4. BATTERS SHALL BE TOPSOILED AND GRASS SEEDDED IMMEDIATELY UPON COMPLETION OF EARTHWORKS. - MULCH PILES ARE TO BE RESPREAD ONTO LANDSCAPED AREAS. - KERB SEDIMENT TRAPS ARE TO BE PROVIDED AT EACH DRAINAGE PIT ADJACENT DISTURBED AREAS.
3. MAINTENANCE	- REGULARLY CHECK CAPACITY OF EROSION CONTROL DEVICES ON A WEEKLY BASIS OR AFTER SIGNIFICANT RAIN EVENT.
GENERAL	- PLANS TO BE READ IN CONJUNCTION WITH STORMWATER QUALITY MANAGEMENT PLAN FOR THE SITE. - THE CONTRACTOR WILL BE RESPONSIBLE FOR THE MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES FROM THE POSSESSION OF THE SITE UNTIL THE SITE IS ACCEPTED BY THE LOCAL AUTHORITY "OFF MAINTENANCE"OR UNTIL STABILISATION HAS OCCURRED TO THE SATISFACTION OF THE SUPERINTENDENT. - ADDITIONAL CONTROL DEVICES MAY BE REQUIRED BY THE SUPERINTENDENT. - ALTERNATIVE DESIGNS ARE TO BE APPROVED BY THE SUPERINTENDENT PRIOR TO CONSTRUCTION.

DEVICE	CONSTRUCTION REQUIREMENTS	MAINTENANCE REQUIREMENTS
CONSTRUCTION EXITS - USED TO PREVENT THE TRACKING OF DEBRIS FROM TYRES OF VEHICLES ONTO PUBLIC ROAD.	- REFER IECA STD DWG EXIT-03 - SURFACE WATER FLOWING TO THE CONSTRUCTION EXIT - SEDIMENT TRAP MUST BE PIPED UNDER THE TRAP - OR A PERIMETER BANK SHOULD BE CONSTRUCTED TO DIRECT SURFACE FLOW AWAY FROM THE TRAP - WASH-OFF TO BE DIRECTED TO A SEDIMENT TRAP OR BUFFER ZONE. - ONLY PROVIDE ONE CONSTRUCTION EXIT FOR THE SITE UNLESS SITE ACCESS OR TOPOGRAPHY REQUIRE MORE. - ENSURE THAT CONTAMINATED VEHICLES CANNOT BYPASS IT WHEN EXITING THE SITE.	- REMOVAL OF SEDIMENT AND/OR ADDING EXTRA AGGREGATE. - REMOVE SEDIMENT TRANSPORTED ONTO ROADWAYS. AND APPLY CORRECTIVE MEASURES TO ENSURE NO RE-OCCURRENCE. - EXTEND THE LENGTH OF THE GRAVEL PAD IF EXCESSIVE SEDIMENT IS STILL BEING TRANSPORTED OFF THE SITE.
ROCK/SAND BAG CHECK DAMS - USED TO INTERCEPT CONCENTRATED FLOW.	- REFER IECA STD DWG RCD-01 - PROVIDE DOWNSTREAM OF ALL OUTLETS AND AT 60M MAX. ALONG OPEN CHANNELS AND AROUND FIELD INLETS - SHOULD BE EMBEDDED AT LEAST 200MM INTO THE SOIL TO PREVENT WATER TUNNELLING BENEATH THEM. - ACCESS WILL BE REQUIRED FOR MAINTENANCE.	- EXCESSIVE SEDIMENT SHOULD BE REMOVED FROM UPSTREAM OF THE DAM. - THE UPSTREAM GRAVEL FILTER LAYER SHOULD BE REESTABLISHED WHEN SEDIMENT BEGINS TO FLOW THROUGH THE STRUCTURE OR WHEN PERMEABILITY IS EXCESSIVELY REDUCED.
SEDIMENT FENCES - USED TO TEMPORARILY REDUCE THE VELOCITY OF CONTAMINATED SHEET FLOW AND TO INDUCE GRAVITATIONAL SETTLEMENT OF THE ENTRAINED SEDIMENT.	- REFER IECA STD DWG ESC-04 & ESC-05 - ALL SEDIMENT FENCES TO BE INSTALLED PARALLEL TO CONTOURS. - REGULAR TURN-BACKS AND A FIRM WIRE MESH BACKING ARE REQUIRED TO PREVENT THE FURTHER CONCENTRATION OF FLOW. - THE FENCE SHOULD BE SEGMENTED INTO A SERIES OF L SHAPED FENCES TO AVOID THE CONCENTRATION OF FLOW ALONG THE FENCE.	- REGULAR INSPECTIONS AND MAINTENANCE ARE REQUIRED TO REPAIR DAMAGE CAUSED BY ON-SITE VEHICLES OR THE MOVEMENT OF STOCKPILE MATERIAL. - INSPECT AFTER EACH STORM EVENT THAT RESULTS IN RUN-OFF. - REMOVE EXCESSIVE SEDIMENT DEPOSITS. - INVESTIGATE THE SOURCE OF EXCESSIVE SEDIMENT. AND APPLY REMEDIAL ACTION IMMEDIATELY. - IF THE FENCE IS REGULARLY DAMAGED, INSTALL A SECOND FENCE AT LEAST 1 METRE DOWNSLOPE OF THE EXISTING FENCE.

FOR APPROVAL

AMENDMENTS

Rev:	Date:	Description:	By:	Appd:
A	22.04.26	FOR APPROVAL	HJD	PAP
B	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

THE DM GROUP

15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SESC PROCEDURES & NOTES



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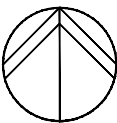
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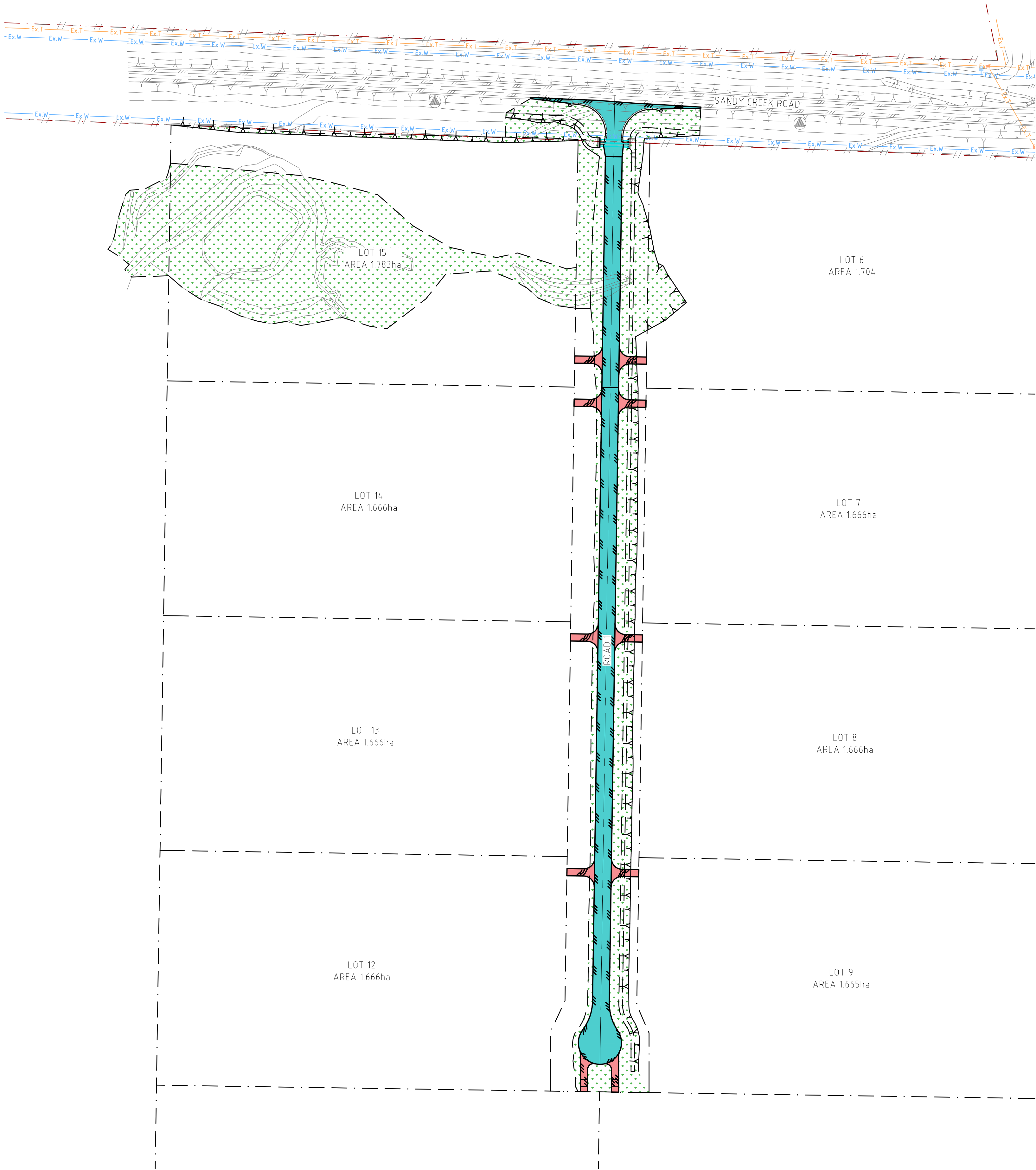
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CIVIL

Job No: STP25-2146
Drawing No: C203
Rev: B

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NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING.

LEGEND

- PROPOSED GRAVEL PAVEMENTS
- PROPOSED RURAL ACCESS DRIVEWAYS
- CONCRETE TO BE CONSTRUCTED AS PER CTRC REQUIREMENT
- BFM HYDROMULCHED AREAS WITH APPROVED MIX

LEGEND:

- EXISTING UNDERGROUND TELECOMMUNICATIONS
- EXISTING WATER MAIN
- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN

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LEVEL DATUM
PM79954
LEVEL DATUM RL314.342 AHD DERIVED
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IN ASSOCIATION WITH

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SESC ON MAINTENANCE - SHEET 1

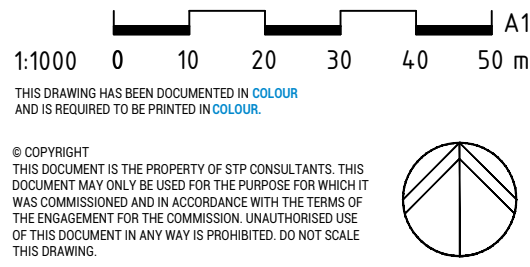


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CIVIL

Job No: STP25-2146
Drawing No: C204
Rev: B

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SANDY CREEK ROAD, SOUTHERN CROSS

SESC ON MAINTENANCE - SHEET 2



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Job No:

Drawing No:

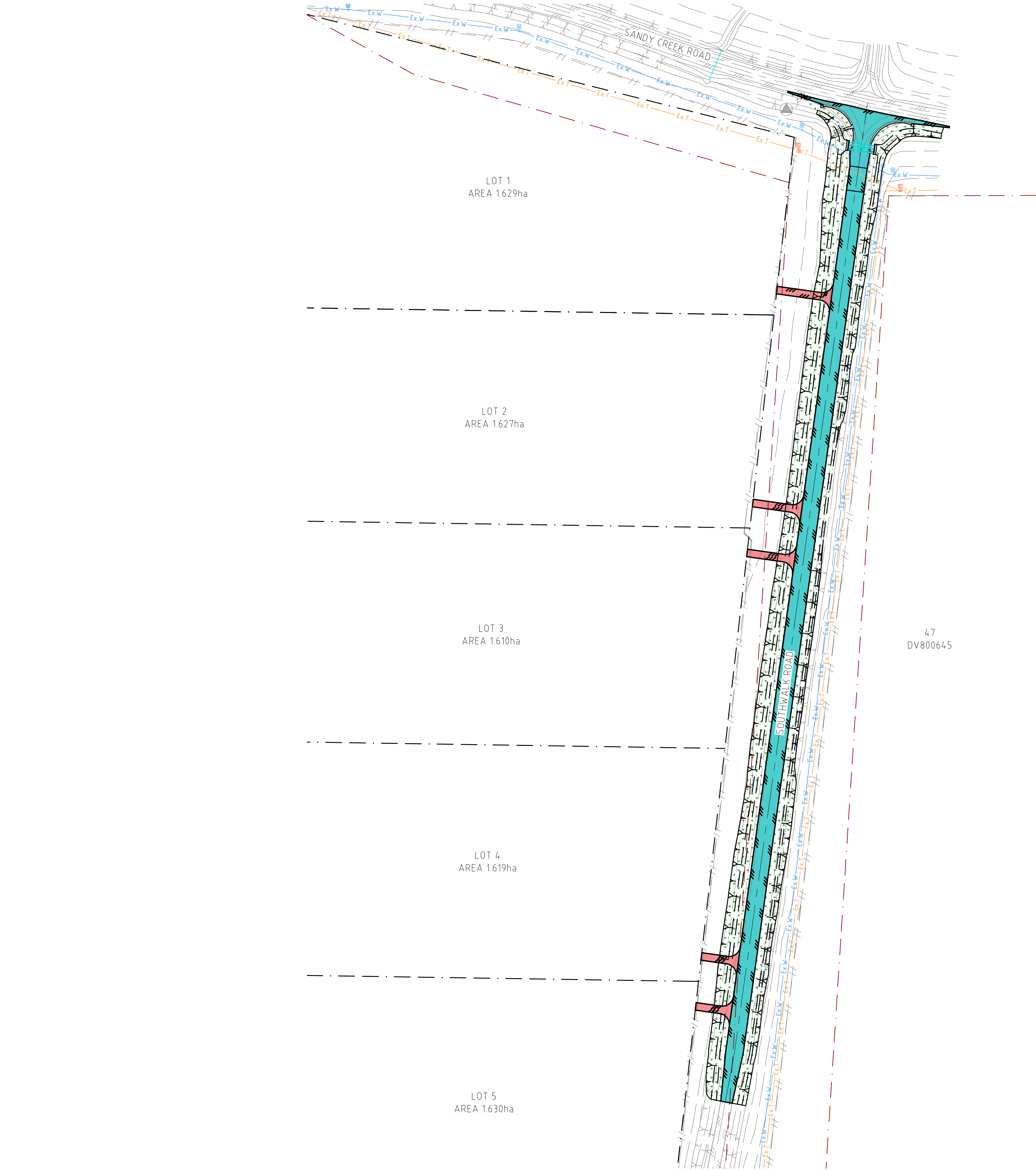
Rev:

STP25-2146

C205

B

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NOTES:

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LEGEND

- PROPOSED GRAVEL PAVEMENTS
- PROPOSED RURAL ACCESS DRIVEWAYS
- CONCRETE TO BE CONSTRUCTED AS PER CTRC REQUIREMENT
- BFM HYDROMULCHED AREAS WITH APPROVED MIX

LEGEND:

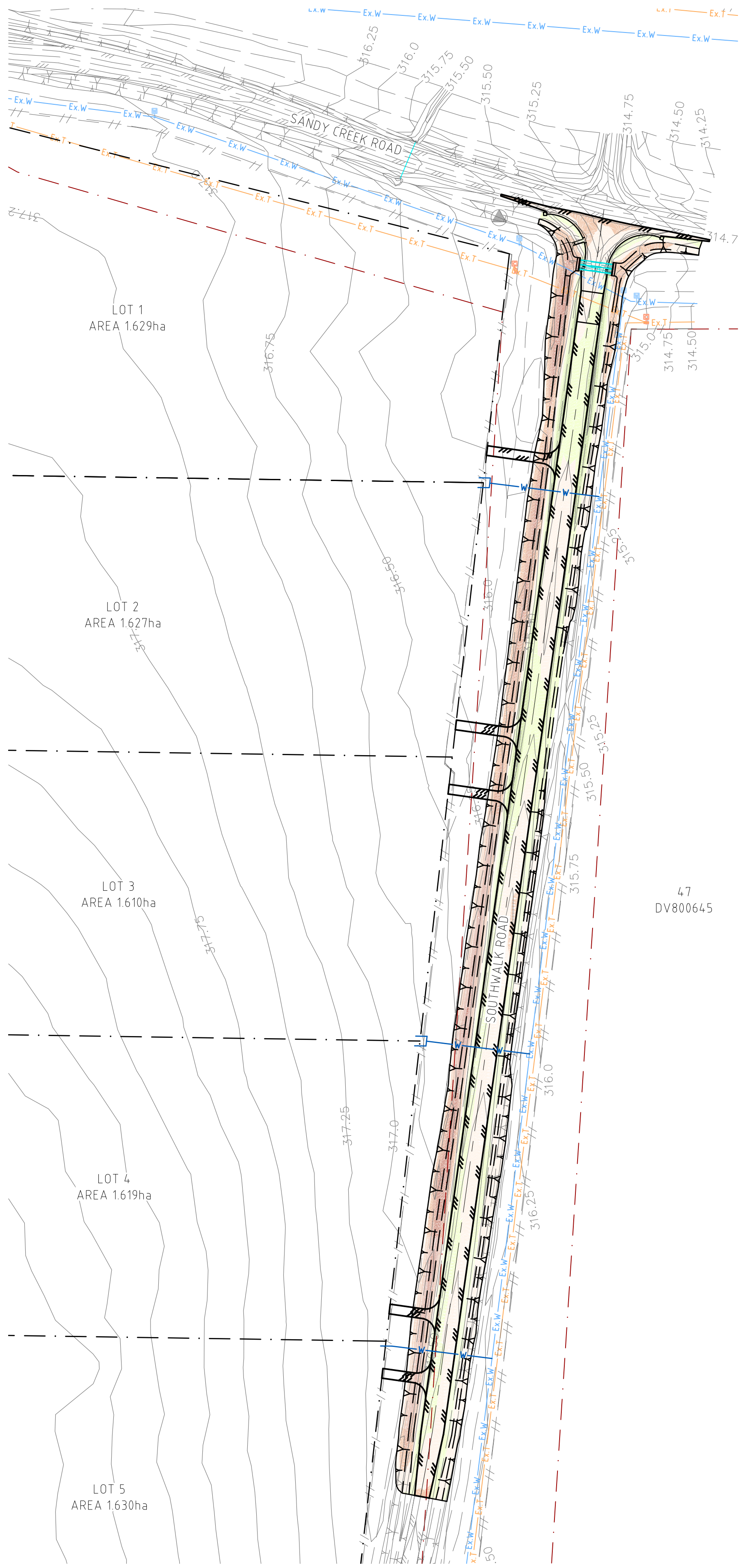
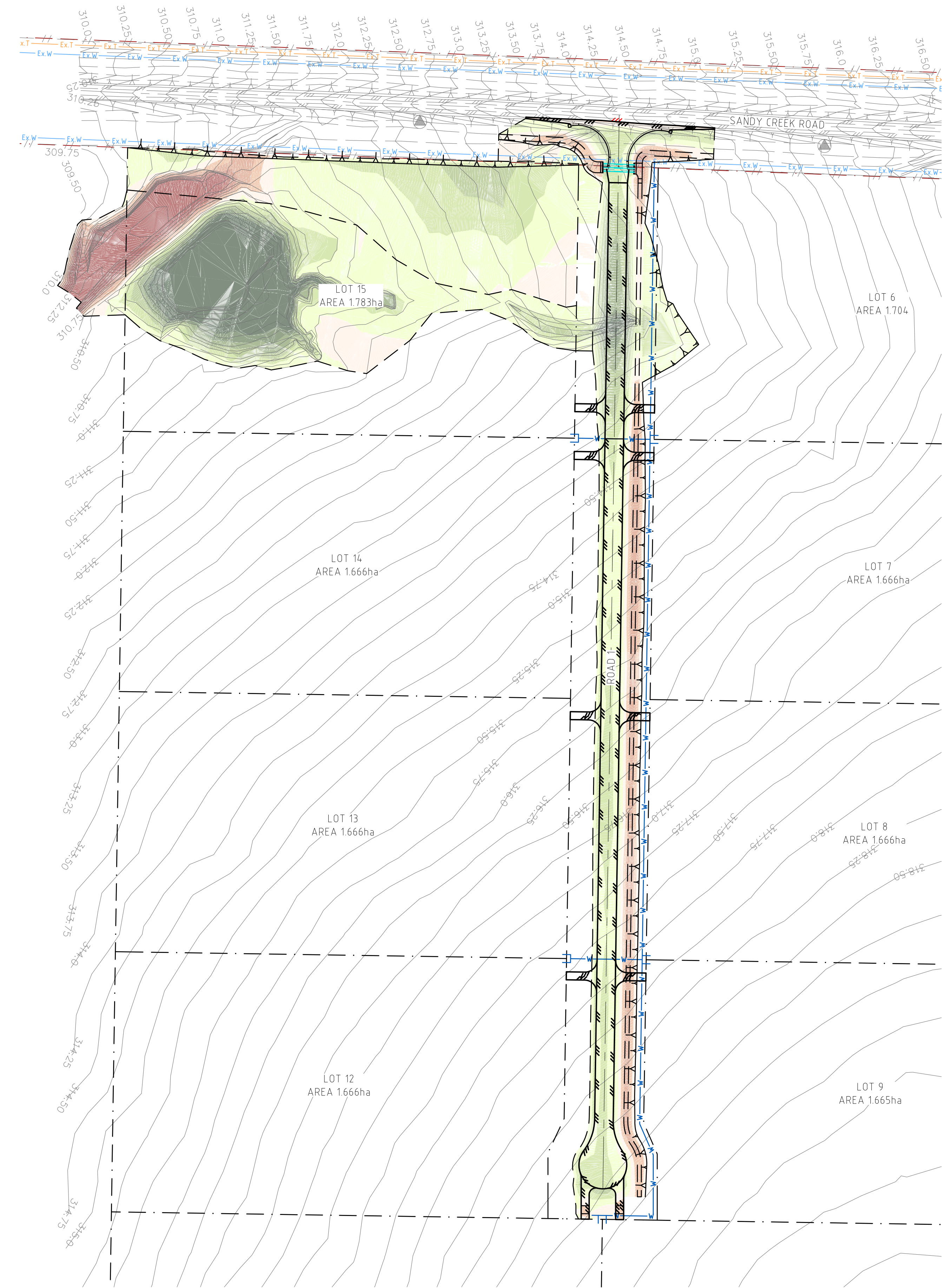
- EXISTING UNDERGROUND TELECOMMUNICATIONS
- EXISTING WATER MAIN
- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN

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NOTES:

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LEGEND:

- EXISTING UNDERGROUND TELECOMMUNICATIONS
- EXISTING WATER MAIN
- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED WATER MAIN

CUT AND FILL LEGEND

CUT > 1.0m	FILL 0m - 0.2m
CUT 0.8m - 1.0m	FILL 0.2m - 0.4m
CUT 0.6m - 0.8m	FILL 0.4m - 0.6m
CUT 0.4m - 0.6m	FILL 0.6m - 0.8m
CUT 0.2m - 0.4m	FILL 0.8m - 1.0m
CUT 0m - 0.2m	FILL > 1.0m

VOLUMES (NET)

CUT - 4080m³
FILL - 6750m³
BALANCE - 2670m³

NOTE: QUANTITIES ARE APPROXIMATELY ONLY, MEASURED FROM 100mm STRIPPED EXISTING SURFACE TO SUBGRADE WITH NO ALLOWANCE BEING MADE FOR BULKING OR LOSSES.

DIRTY WATER NOTE

ALL DIRTY WATER TRAPPED IN PAVEMENT BOXING & DRAINS DURING EARTHWORKS PROCEDURES TO BE FLOCKED PRIOR TO DISCHARGE

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IN ASSOCIATION WITH

THE DM GROUP

15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

EARTHWORKS MANAGEMENT LAYOUT PLAN

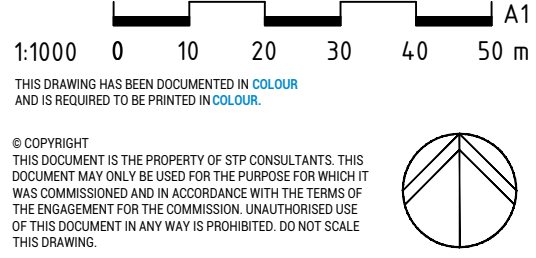


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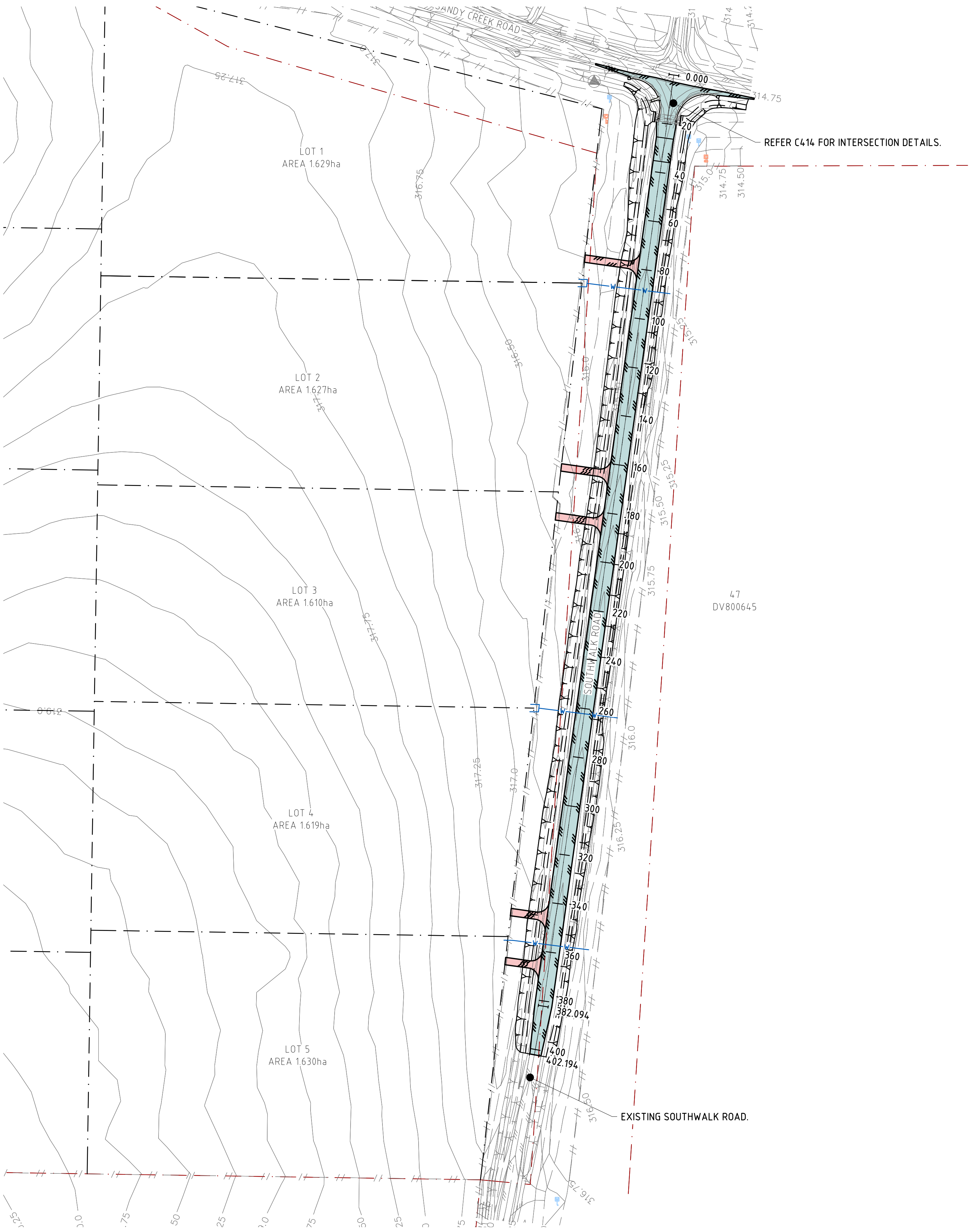
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Approved:	PP
RPEQ No:	13231



CIVIL

Job No: STP25-2146
Drawing No: C301
Rev: B

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NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING.

LEGEND:

- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- EXISTING CONTOUR (0.25m CONTOUR INTERVAL)
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED WATER MAIN

HATCH LEGEND

EXTENT OF GRAVEL PAVEMENT,
REFER PROJECT NOTES FOR DETAILS.

SOUTHWALK ROAD CENTRELINE SETOUT TABLE

PT	CHAINAGE	EASTING	NORTHING	BEARING	DEP.SEG	DEP.LEN
S	0.000	18037.029	780359.269	187°59'02.43"	LINE	382.094
	20.000	18034.251	780339.463	187°59'02.43"		
	40.000	18031.473	780319.656	187°59'02.43"		
	60.000	18028.695	780299.850	187°59'02.43"		
	80.000	18025.917	780280.044	187°59'02.43"		
	100.000	18023.139	780260.238	187°59'02.43"		
	120.000	18020.361	780240.432	187°59'02.43"		
	140.000	18017.583	780220.626	187°59'02.43"		
	160.000	18014.806	780200.820	187°59'02.43"		
	180.000	18012.028	780181.014	187°59'02.43"		
	200.000	18009.250	780161.207	187°59'02.43"		
	220.000	18006.472	780141.401	187°59'02.43"		
	240.000	18003.694	780121.595	187°59'02.43"		
	260.000	18000.916	780101.789	187°59'02.43"		
	280.000	17998.138	780081.983	187°59'02.43"		
	300.000	17995.360	780062.177	187°59'02.43"		
	320.000	17992.582	780042.371	187°59'02.43"		
	340.000	17989.804	780022.564	187°59'02.43"		
	360.000	17987.026	780002.758	187°59'02.43"		
	380.000	17984.248	779982.952	187°59'02.43"		
DIS	382.094	17983.957	779980.879	190°25'47.87"	LINE	20.101
E	400.000	17980.716	779963.268	190°25'47.87"		
	402.194	17980.319	779961.110	190°25'47.87"		

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LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

AMENDMENTS

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A	27.03.26	PRELIMINARY ISSUE	JT	PP
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C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SOUTHWALK ROAD CENTRELINE SETOUT

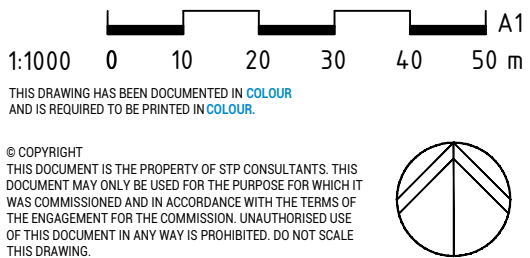


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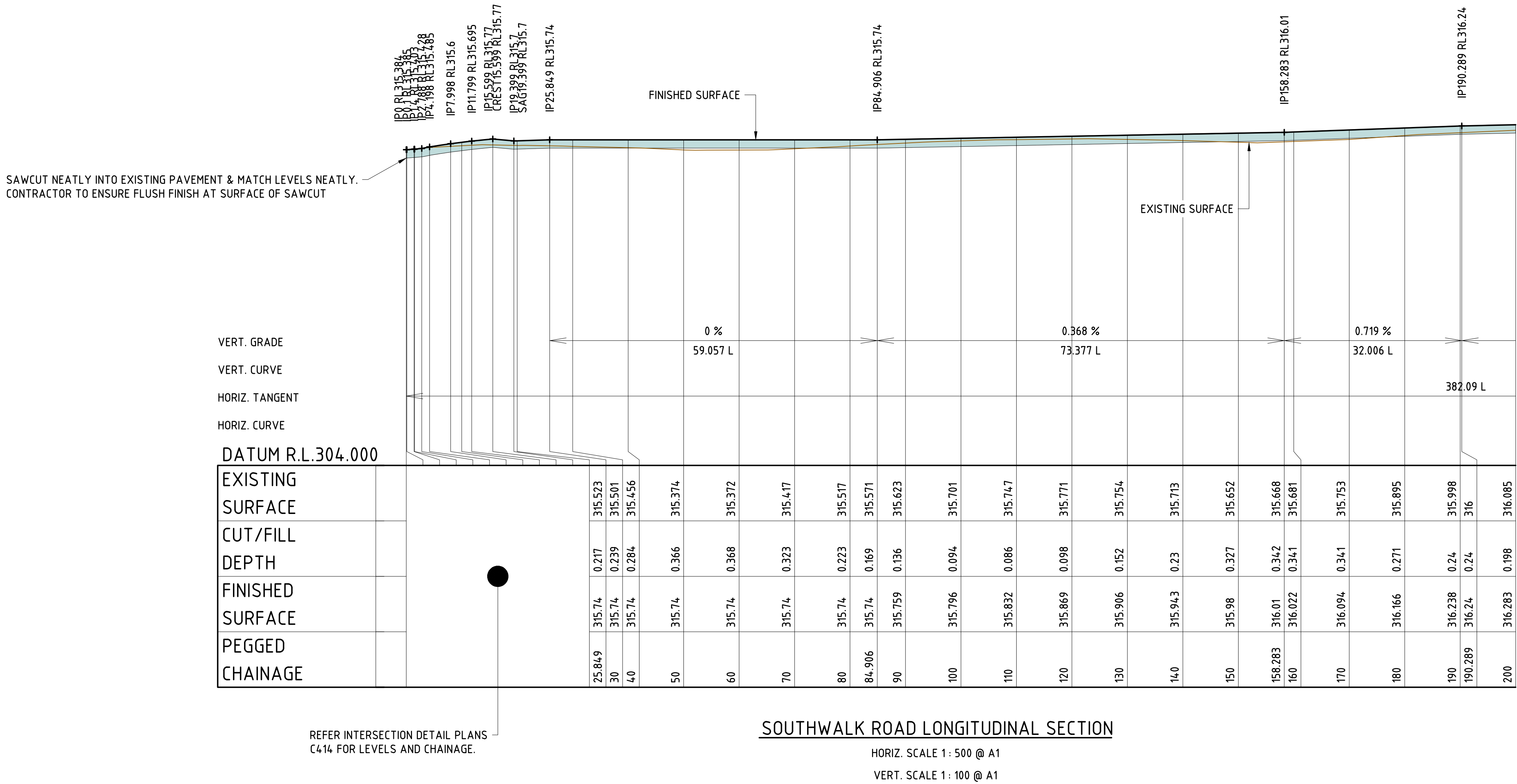
CIVIL

Job No: STP25-2146
Drawing No: C401
Rev: C

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NOTES:

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IN ASSOCIATION WITH

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SOUTHWALK ROAD LONGSECTION - SHEET 1

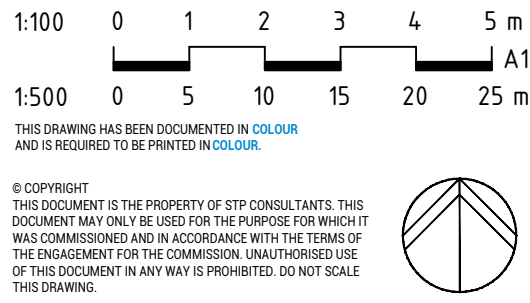


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LEVEL DATUM

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LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

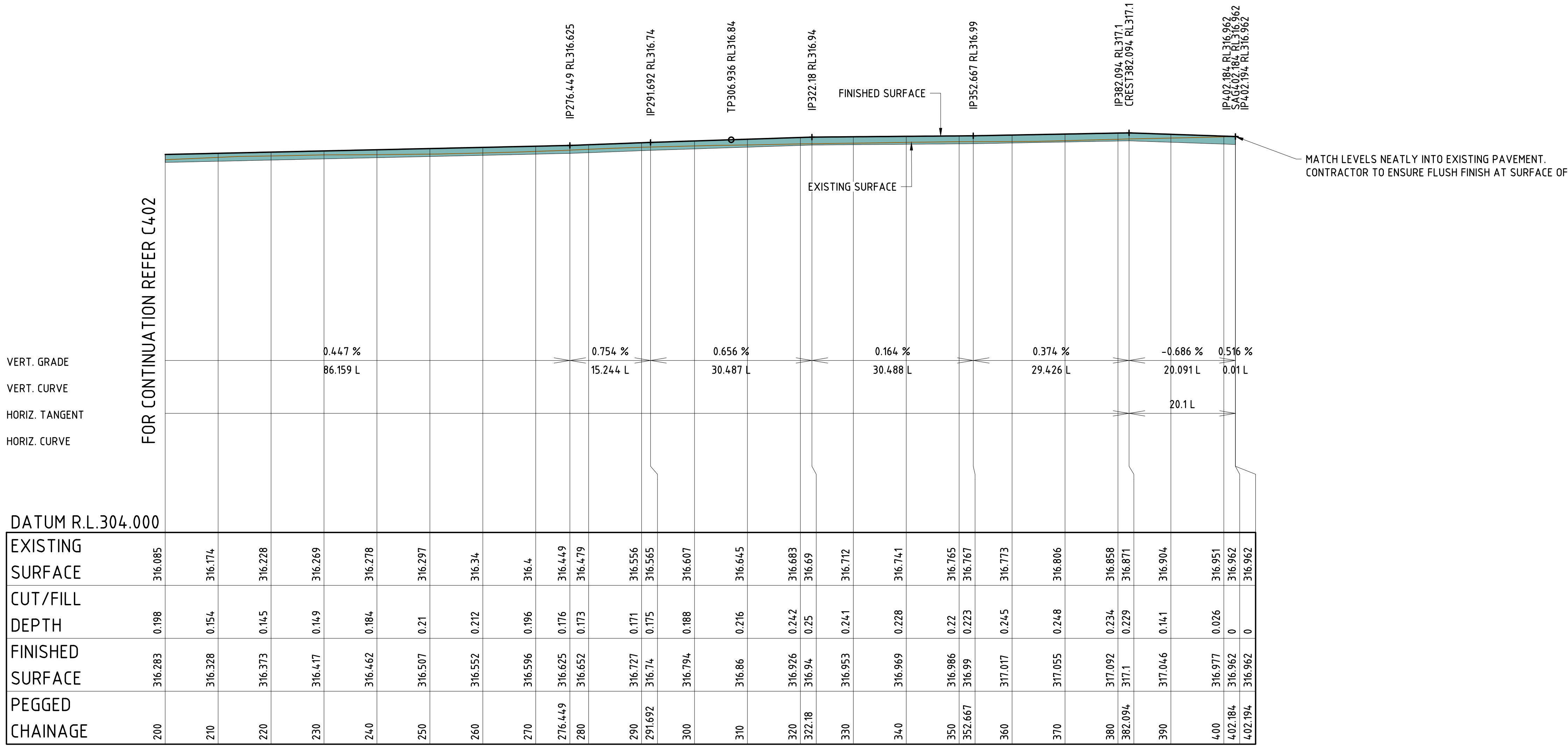
CIVIL

Job No: STP25-2146
Drawing No: C402
Rev: C

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NOTES:

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SOUTHWALK ROAD LONGITUDINAL SECTION

HORIZ. SCALE 1 : 500 @ A1

VERT. SCALE 1 : 100 @ A1

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SOUTHWALK ROAD LONGSECTION - SHEET 2

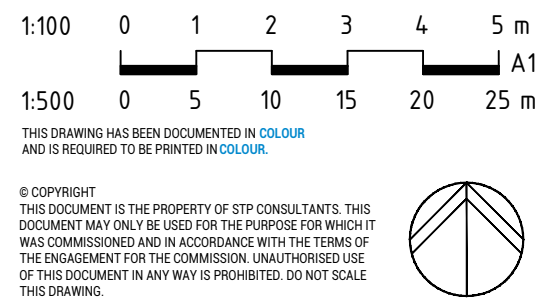


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Approved: PP
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LEVEL DATUM

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SITE COORDINATES E418023.020 N77804.26.220

CIVIL

Job No: STP25-2146
Drawing No: C403
Rev: C

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FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING

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E: 18003.694
N: 780121.595
Z: 316.462

Datum RL313									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 240

E: 18006.472
N: 780141.401
Z: 316.373

Datum RL313									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 220

E: 18009.25
N: 780161.207
Z: 316.283

Datum RL313									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 200

E: 18012.028
N: 780181.014
Z: 316.166

Datum RL313									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 180

E: 17992.582
N: 780042.371
Z: 316.926

Datum RL314									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 320

E: 17995.36
N: 780062.177
Z: 316.794

Datum RL314									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 300

E: 17998.138
N: 780081.983
Z: 316.652

Datum RL314									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 280

E: 18000.916
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Z: 316.552

Datum RL313									
FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 260

NOTES:

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IN ASSOCIATION WITH

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SOUTHWALK ROAD CROSS SECTIONS - SHEET 2

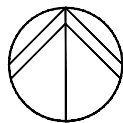
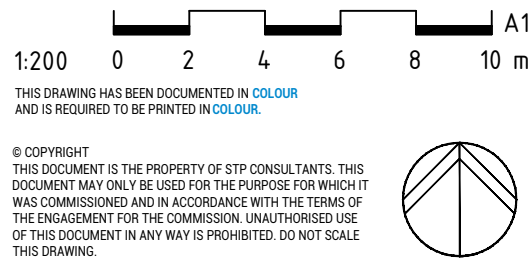


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Approved:	PP
RPEQ No:	13231



LEVEL DATUM
PM79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

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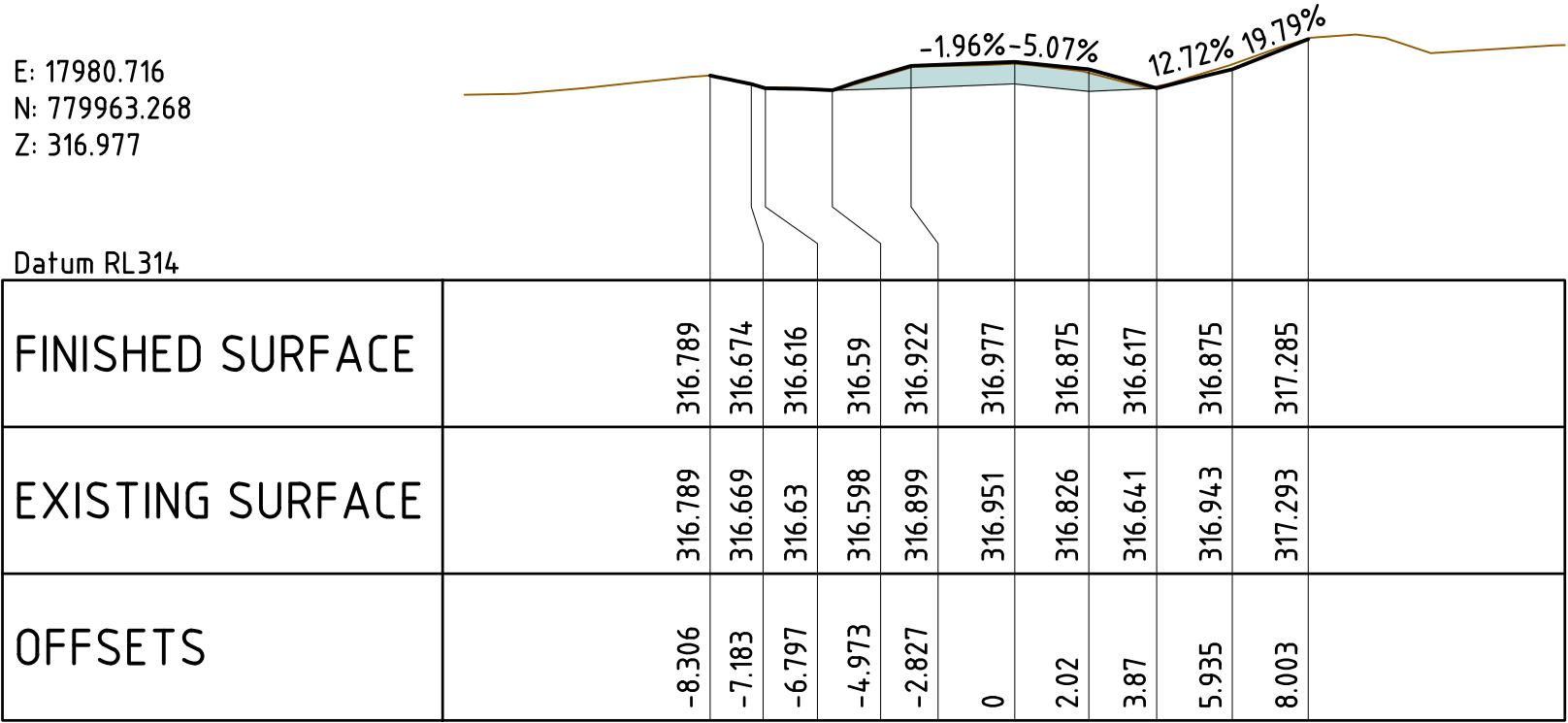
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Job No: STP25-2146
Drawing No: C405
Rev: C

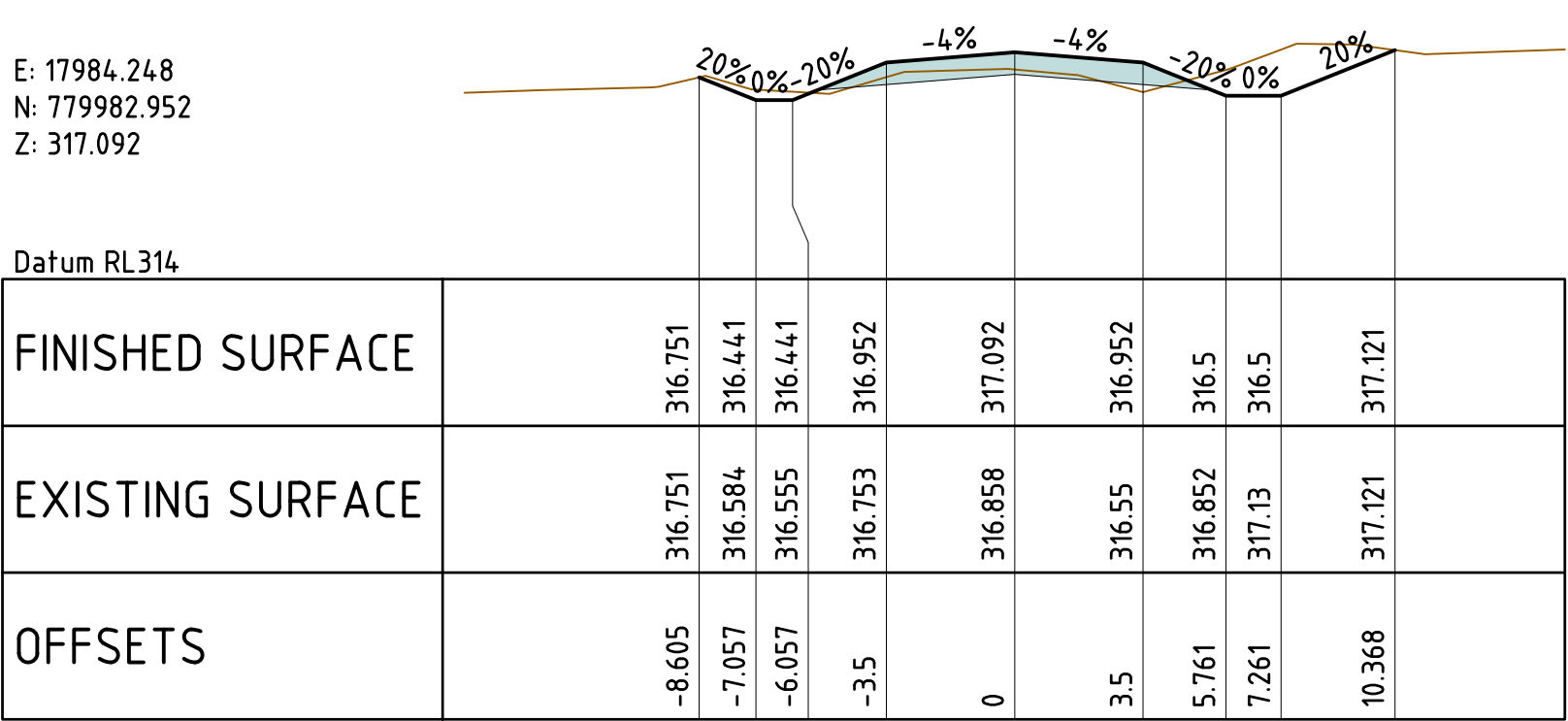
NOT FOR CONSTRUCTION

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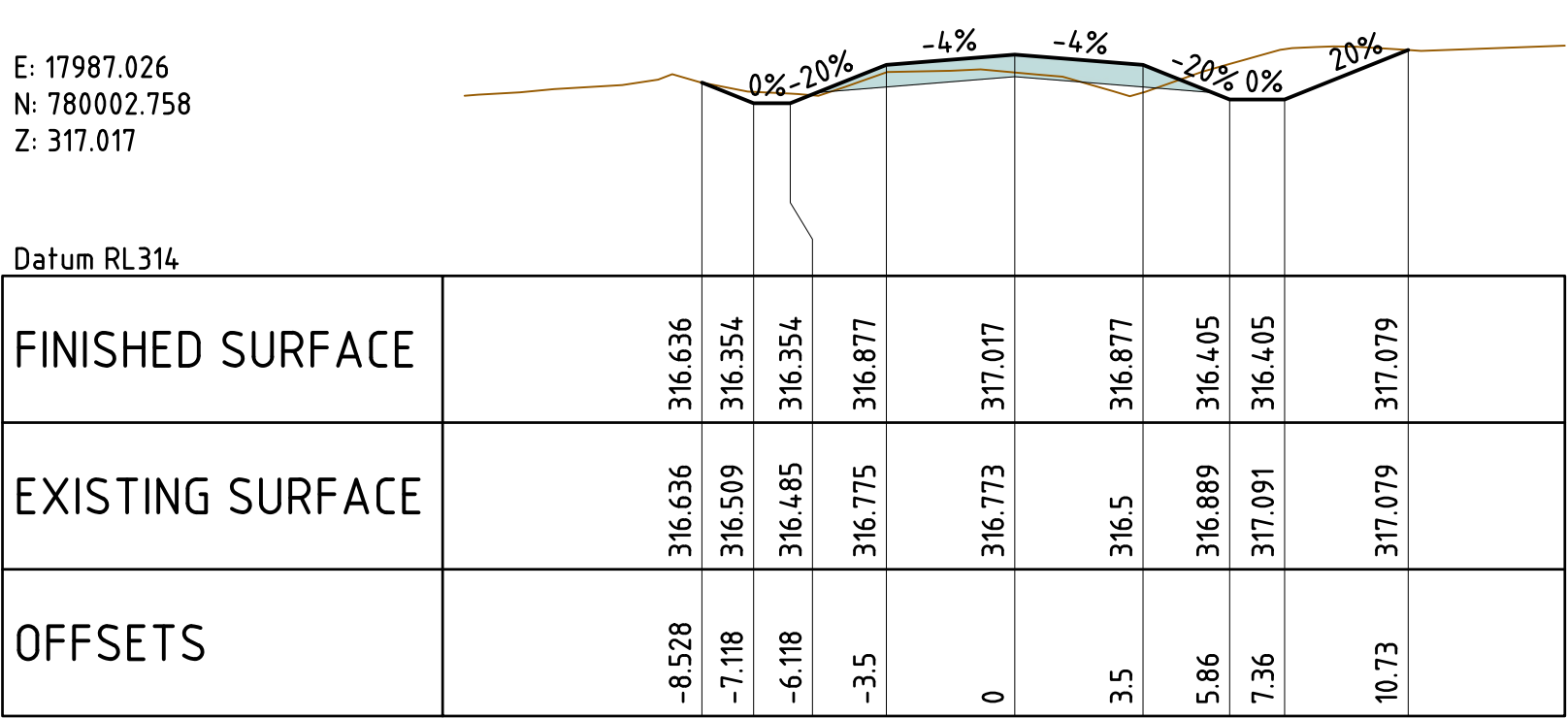
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FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING.



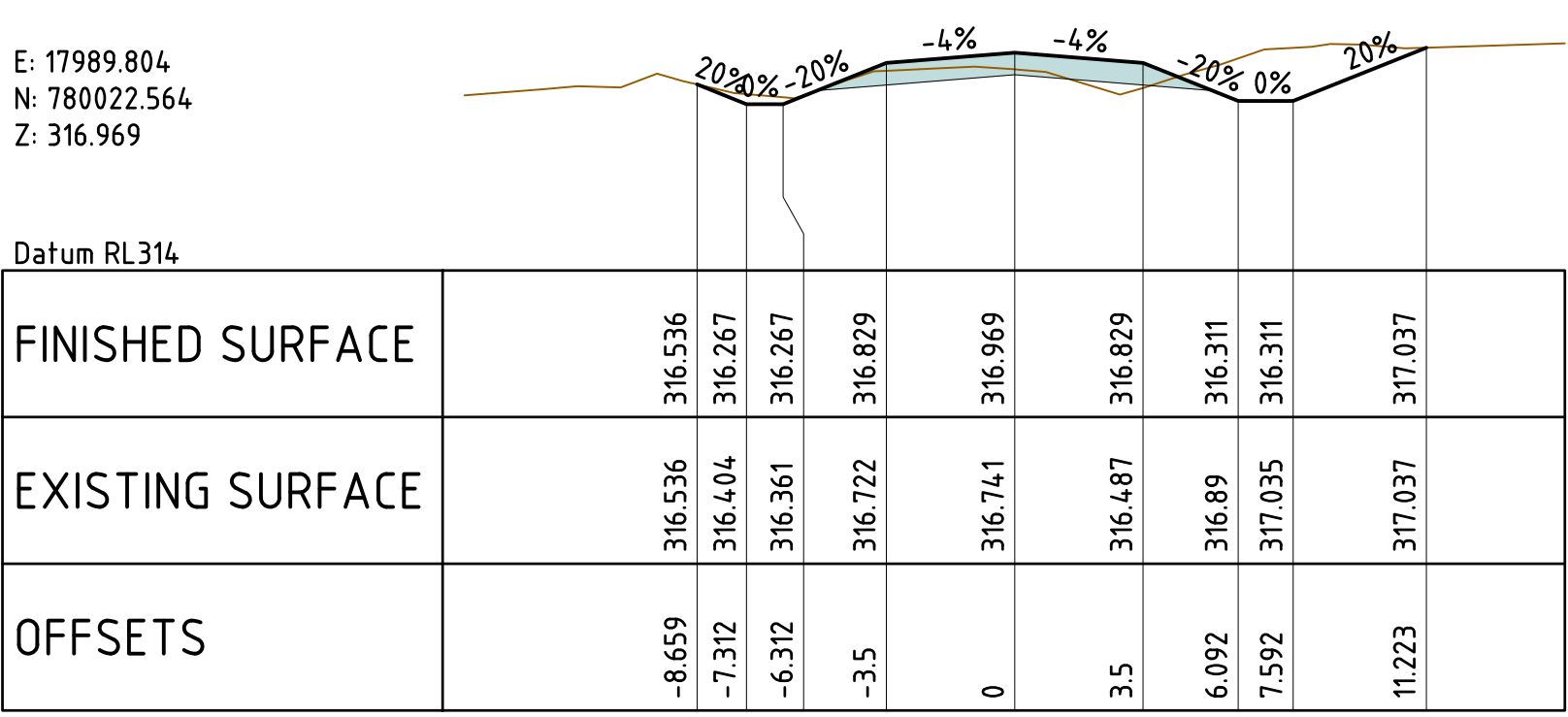
CH 400



CH 380



CH 360



CH 340

AMENDMENTS					
Rev:	Date:	Description:	By:	Appd:	
A	27.03.26	PRELIMINARY ISSUE	JT	PP	
B	22.04.26	FOR APPROVAL	HJD	PAP	
C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP	

IN ASSOCIATION WITH

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

SOUTHWALK ROAD CROSS SECTIONS - SHEET 3

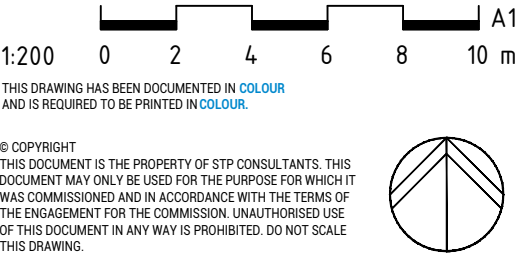


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Approved:	PP
RPEQ No:	13231



LEVEL DATUM
PM79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

FOR APPROVAL

CIVIL

Job No: STP25-2146
Drawing No: C406
Rev: C

NOT FOR CONSTRUCTION

NOTES:

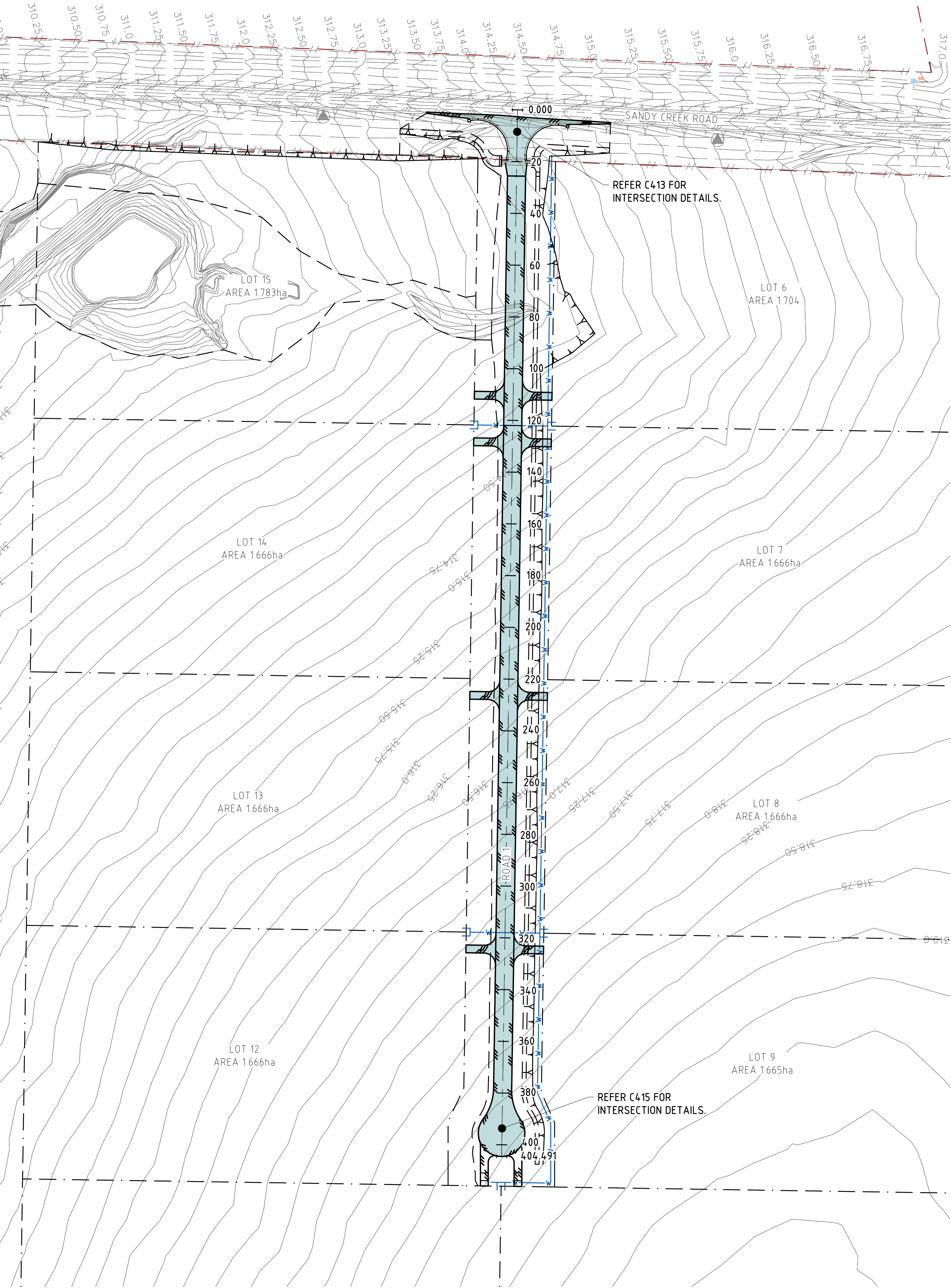
FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING.

LEGEND:

- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED WATER MAIN

HATCH LEGEND

- EXTENT OF GRAVEL PAVEMENT,
REFER PROJECT NOTES FOR DETAILS.



ROAD 1 CENTRELINE SETOUT TABLE

PT	CHAINAGE	EASTING	NORTHING	BEARING	DEP.SEG	DEP.LEN
S	0.000	17621.336	780421.494	180°52'20.59"	LINE	404.491
	10.000	17621.184	780411.495	180°52'20.59"		
	20.000	17621.032	780401.496	180°52'20.59"		
	30.000	17620.879	780391.497	180°52'20.59"		
	40.000	17620.727	780381.498	180°52'20.59"		
	50.000	17620.575	780371.499	180°52'20.59"		
	60.000	17620.423	780361.501	180°52'20.59"		
	70.000	17620.270	780351.502	180°52'20.59"		
	80.000	17620.118	780341.503	180°52'20.59"		
	90.000	17619.966	780331.504	180°52'20.59"		
	100.000	17619.814	780321.505	180°52'20.59"		
	110.000	17619.661	780311.506	180°52'20.59"		
	120.000	17619.509	780301.508	180°52'20.59"		
	130.000	17619.357	780291.509	180°52'20.59"		
	140.000	17619.205	780281.510	180°52'20.59"		
	150.000	17619.052	780271.511	180°52'20.59"		
	160.000	17618.900	780261.512	180°52'20.59"		
	170.000	17618.748	780251.513	180°52'20.59"		
	180.000	17618.595	780241.515	180°52'20.59"		
E	190.000	17618.443	780231.516	180°52'20.59"		
	200.000	17618.291	780221.517	180°52'20.59"		

ROAD 1 CENTRELINE SETOUT TABLE

PT	CHAINAGE	EASTING	NORTHING	BEARING	DEP.SEG	DEP.LEN
S	210.000	17618.139	780211.518	180°52'20.59"		
	220.000	17617.986	780201.519	180°52'20.59"		
	230.000	17617.834	780191.520	180°52'20.59"		
	240.000	17617.682	780181.522	180°52'20.59"		
	250.000	17617.530	780171.523	180°52'20.59"		
	260.000	17617.377	780161.524	180°52'20.59"		
	270.000	17617.225	780151.525	180°52'20.59"		
	280.000	17617.073	780141.526	180°52'20.59"		
	290.000	17616.921	780131.527	180°52'20.59"		
	300.000	17616.768	780121.528	180°52'20.59"		
	310.000	17616.616	780111.530	180°52'20.59"		
	320.000	17616.464	780101.531	180°52'20.59"		
	330.000	17616.312	780091.532	180°52'20.59"		
	340.000	17616.159	780081.533	180°52'20.59"		
	350.000	17616.007	780071.534	180°52'20.59"		
	360.000	17615.855	780061.535	180°52'20.59"		
	370.000	17615.703	780051.537	180°52'20.59"		
	380.000	17615.550	780041.538	180°52'20.59"		
	390.000	17615.398	780031.539	180°52'20.59"		
E	400.000	17615.246	780021.540	180°52'20.59"		
	404.491	17615.178	780017.049	180°52'20.59"		

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LEVEL DATUM

PM79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

AMENDMENTS

Rev:	Date:	Description:	By:	Appd:
A	27.03.26	PRELIMINARY ISSUE	JT	PP
B	22.04.26	FOR APPROVAL	HJD	PAP
C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

ROAD 1 CENTRELINE SETOUT

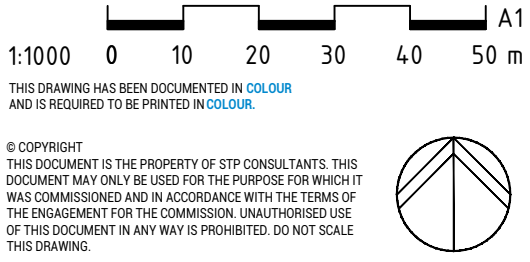


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Approved: PP
RPEQ No: 13231



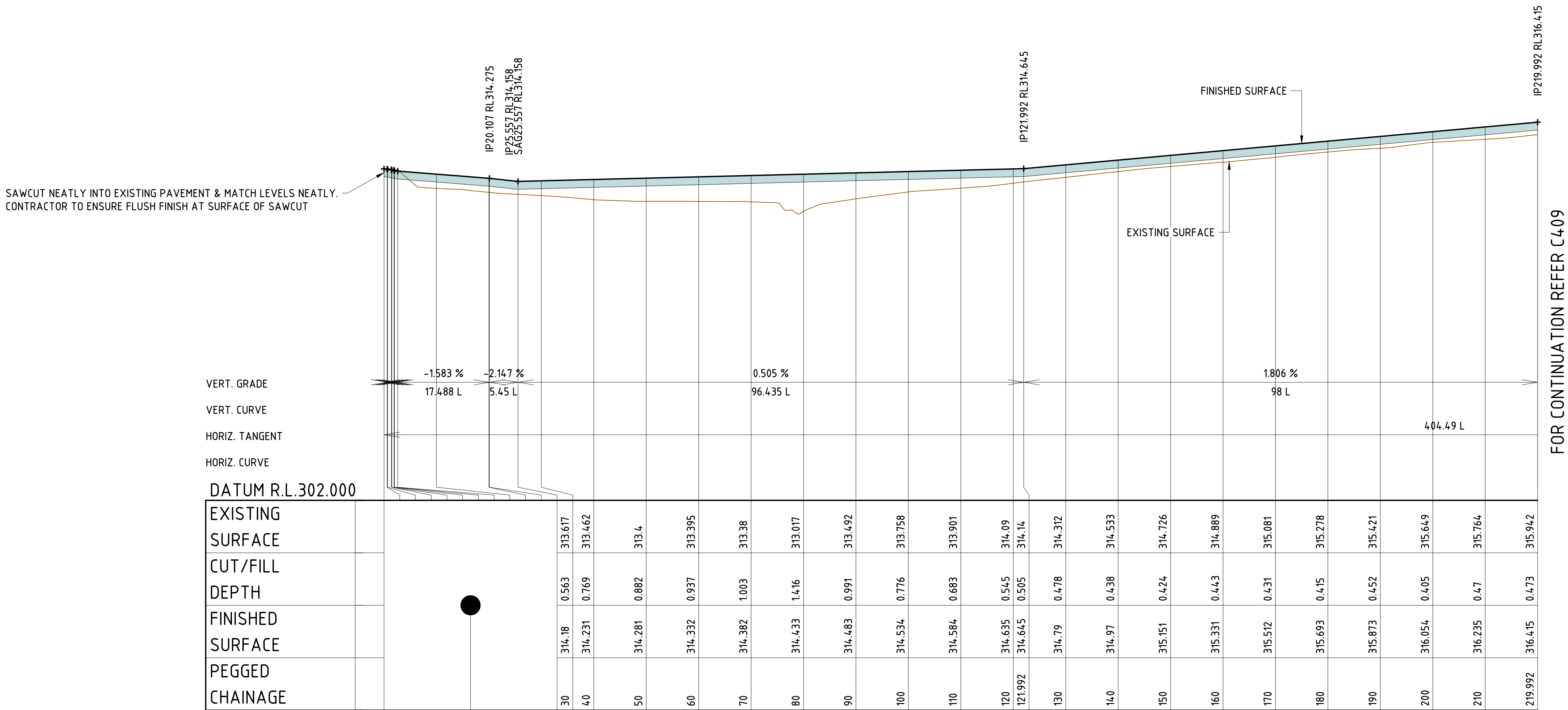
CIVIL

Job No: STP25-2146
Drawing No: C407
Rev: C

NOT FOR CONSTRUCTION

NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING.



REFER INTERSECTION DETAIL PLAN C413 FOR LEVELS AND CHAINAGE.

ROAD 1 LONGITUDINAL SECTION

HORIZ. SCALE 1 : 500 @ A1

VERT. SCALE 1 : 100 @ A1

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LEVEL DATUM

PM79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

AMENDMENTS

Rev:	Date:	Description:	By:	Appd:
A	27.03.26	PRELIMINARY ISSUE	JT	PAP
B	22.04.26	FOR APPROVAL	HJD	PAP
C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

ROAD 1 LONGSECTION - SHEET 1

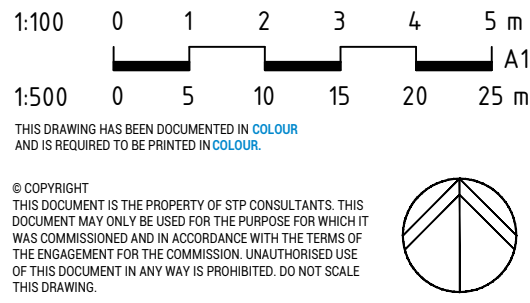


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CIVIL

Job No: STP25-2146
Drawing No: C408
Rev: C

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HORIZ. SCALE 1 : 500 @ A1

VERT. SCALE 1 : 100 @ A1

AMENDMENTS				
Rev:	Date:	Description:	By:	Appd:
A	27.03.06	PRELIMINARY ISSUE	JT	PP
B	22.04.06	FOR APPROVAL	HD	PP
C	08.05.06	OPERATIONAL WORKS ISSUE	HJD	PAP

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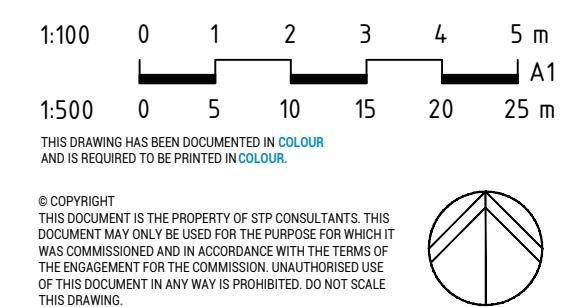
15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

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Approved:	PP
RPEQ No:	13231



PM79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N7780426.220

Job No: STP25-2146 Drawing No: C409 Rev: C

NOT FOR CONSTRUCTION

E: 17619.814
N: 780321.505
Z: 314.534

Datum RL311						
FINISHED SURFACE		313.945	313.944	313.694	313.394	313.534
EXISTING SURFACE		313.945	313.928	313.907	313.891	313.627
OFFSETS		-11.268	-10.25	-9	-7.5	0

CH 100

E: 17620.118
N: 780341.503
Z: 314.433

Datum RL310						
FINISHED SURFACE	313.853		313.843	313.593	314.293	313.067
EXISTING SURFACE	313.66		313.386	313.321	313.186	312.699
OFFSETS	-20		-10.25	-9	-3.5	0

CH 80

E: 17620.423
N: 780361.501
Z: 314.332

Datum RL310						
FINISHED SURFACE	313.748	313.742	313.492	314.192	314.332	312.958
EXISTING SURFACE	313.748	313.634	313.609	313.481	313.395	312.982
OFFSETS	-16.474	-10.25	-9	-3.5	0	20

CH 60

E: 17620.727
N: 780381.498
Z: 314.231

Datum RL311						
FINISHED SURFACE	313.666	313.391	314.091	314.231	313.33	313.19
EXISTING SURFACE	313.666	313.63	313.597	313.525	313.462	313.135
OFFSETS	-10.378	-9	-3.5	0	3.5	7.303

CH 40

E: 17618.595
N: 780241.515
Z: 315.693

Datum RL312						
FINISHED SURFACE	315.49	314.853	314.853	315.271	315.553	315.693
EXISTING SURFACE	315.49	315.43	315.403	315.363	315.336	315.219
OFFSETS	-12.188	-9	-7.5	-5.112	-3.5	3.5

CH 180

E: 17618.9
N: 780261.512
Z: 315.331

Datum RL312						
FINISHED SURFACE	315.08	314.491	314.491	315.191	315.331	314.806
EXISTING SURFACE	315.081	315.024	315.001	314.941	314.889	314.836
OFFSETS	-11.943	-9	-7.5	-3.5	0	3.5

CH 160

E: 17619.205
N: 780281.51
Z: 314.97

Datum RL312						
FINISHED SURFACE	314.723	314.13	314.13	314.83	314.97	314.441
EXISTING SURFACE	314.723	314.676	314.652	314.59	314.533	314.474
OFFSETS	-11.963	-9	-7.5	-3.5	0	3.5

CH 140

E: 17619.509
N: 780301.508
Z: 314.635

Datum RL311						
FINISHED SURFACE	314.286	313.795	313.795	314.495	314.635	313.966
EXISTING SURFACE	314.286	314.244	314.218	314.155	314.09	313.966
OFFSETS	-11.455	-9	-7.5	-3.5	0	6.147

CH 120

AMENDMENTS					
Rev:	Date:	Description:	By:	Appd:	
A	27.03.26	PRELIMINARY ISSUE	JT	PAP	
B	22.04.26	FOR APPROVAL	HJD	PAP	
C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP	

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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

ROAD 1 CROSS SECTIONS - SHEET 1

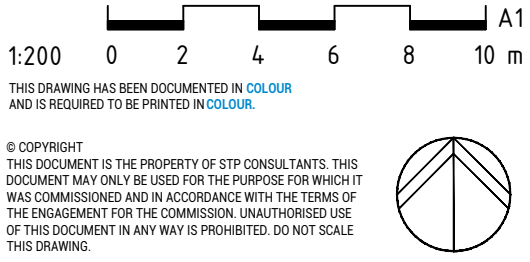


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Approved:	PP
RPEQ No:	13231



LEVEL DATUM
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LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

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CIVIL

Job No: STP25-2146
Drawing No: C410
Rev: C

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AMENDMENTS				
Rev:	Date:	Description:	By:	Appd:
A	27.03.26	PRELIMINARY ISSUE	JT	PP
B	22.04.26	FOR APPROVAL	HJD	PAP
C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

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SANDY CREEK ROAD, SOUTHERN CROSS

ROAD 1 CROSS SECTIONS - SHEET 2



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Drawn:	LJM
Approved:	PP
RPEQ No:	13231

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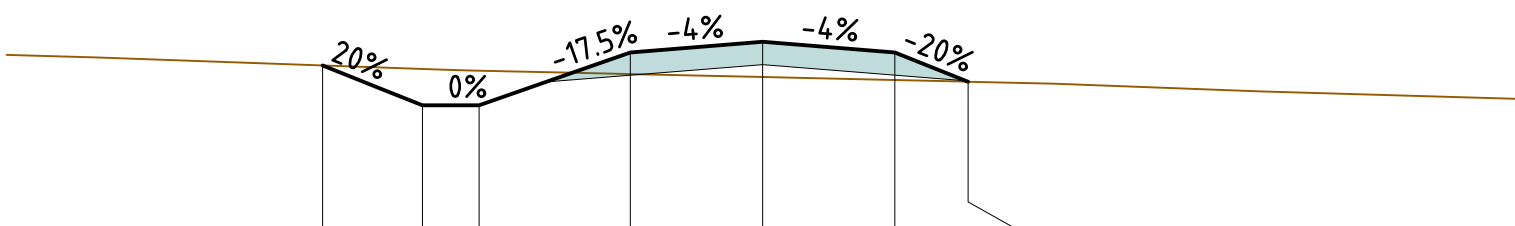
Job No: PM79954
Drawing No: STP25-2146
Rev: C411

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NOTES:

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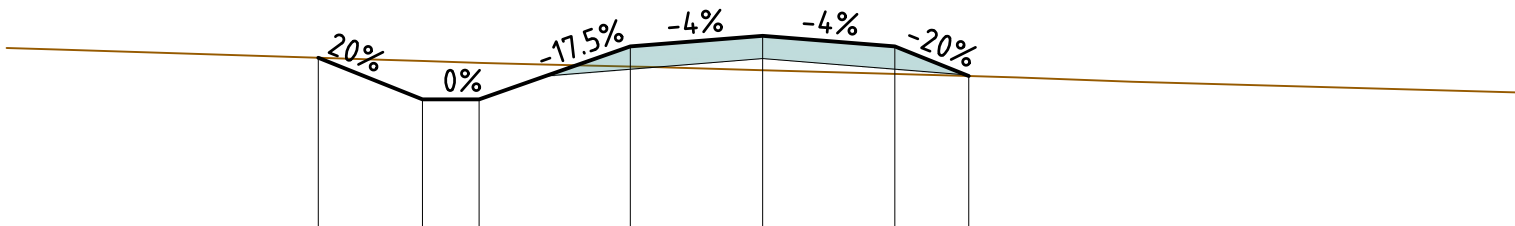
E: 17616.464
N: 780101.531
Z: 318.118



FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 320

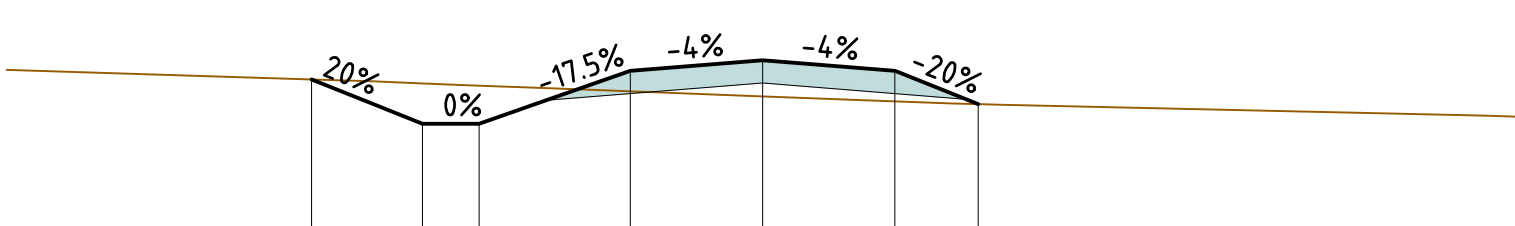
E: 17616.768
N: 780121.528
Z: 317.797



FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 300

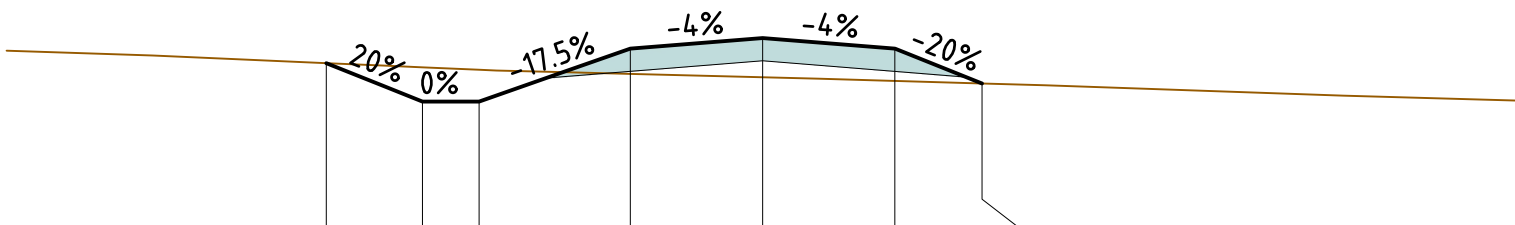
E: 17617.073
N: 780141.526
Z: 317.472



FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 280

E: 17617.377
N: 780161.524
Z: 317.132



FINISHED SURFACE									
EXISTING SURFACE									
OFFSETS									

CH 260

THE DM GROUP

15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

ROAD 1 CROSS SECTIONS - SHEET 2



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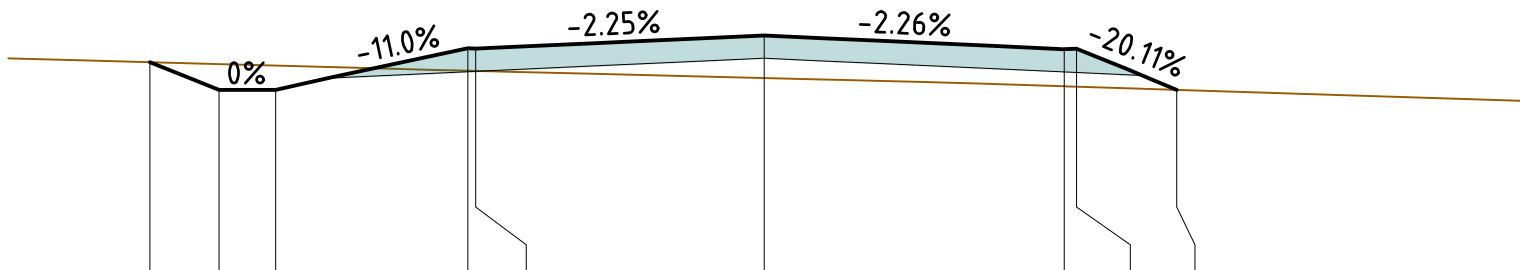
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NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING.

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N: 780021.54
Z: 319.268

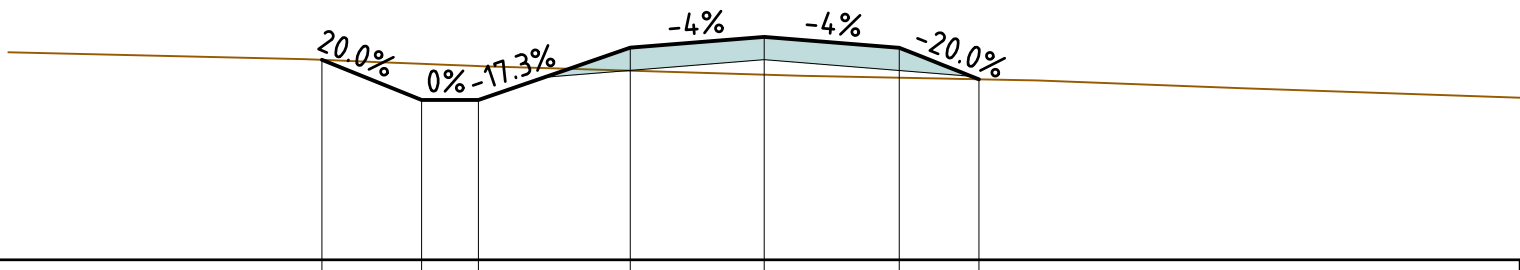


Datum RL316

FINISHED SURFACE		318.916	318.55	318.549		319.1	319.094		319.268		319.087	319.093	318.55
EXISTING SURFACE		318.916	318.891	318.87		318.802	318.8		318.705		318.597	318.592	318.55
OFFSETS		-16.25	-14.422	-12.922		-7.839	-7.633		0		7.936	8.263	10.912

CH 400

E: 17615.55
N: 780041.538
Z: 318.948

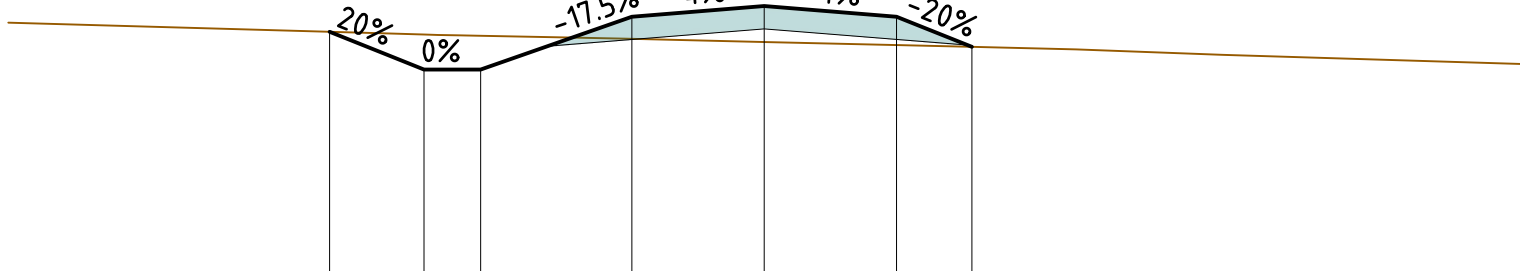


Datum RL316

FINISHED SURFACE			318.644	318.113	318.113		318.806		318.948		318.805	318.387	
EXISTING SURFACE			318.644	318.592	318.562		318.502		318.449		318.409	318.387	
OFFSETS			-11.702	-9.065	-7.56		-3.542		0		3.573	5.681	

CH 380

E: 17615.855
N: 780061.535
Z: 318.668

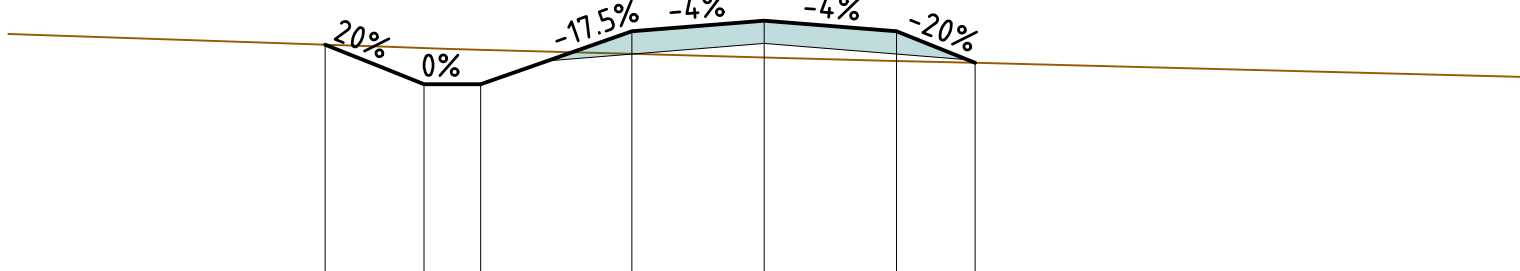


Datum RL315

FINISHED SURFACE		318.327	317.828	317.828		318.528		318.668		318.528	318.129	
EXISTING SURFACE		318.327	318.292	318.275		318.235		318.194		318.152	318.129	
OFFSETS		-11.496	-9	-7.5		-3.5		0		3.5	5.497	

CH 360

E: 17616.159
N: 780081.533
Z: 318.393



Datum RL315

FINISHED SURFACE		318.076	317.553	317.553		318.253		318.393		318.253	317.837	
EXISTING SURFACE		318.076	318.031	318.008		317.954		317.907		317.86	317.837	
OFFSETS		-11.615	-9	-7.5		-3.5		0		3.5	5.582	

CH 340

AMENDMENTS

Rev:	Date:	Description:	By:	Appd:
A	27.03.26	PRELIMINARY ISSUE	JT	PP
B	22.04.26	FOR APPROVAL	HJD	PAP
C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

THE DM GROUP

15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

ROAD 1 CROSS SECTIONS - SHEET 3

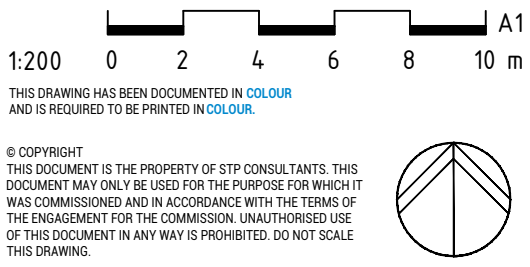


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Approved:	PP
RPEQ No:	13231



LEVEL DATUM

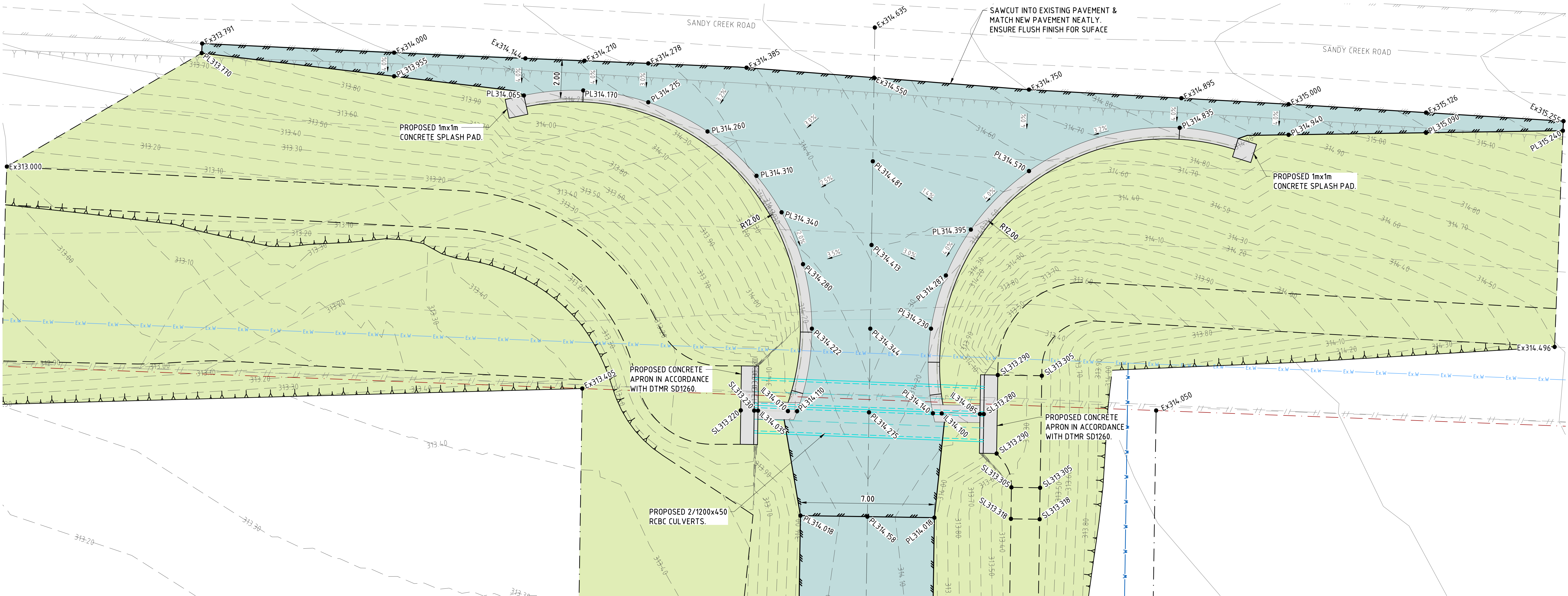
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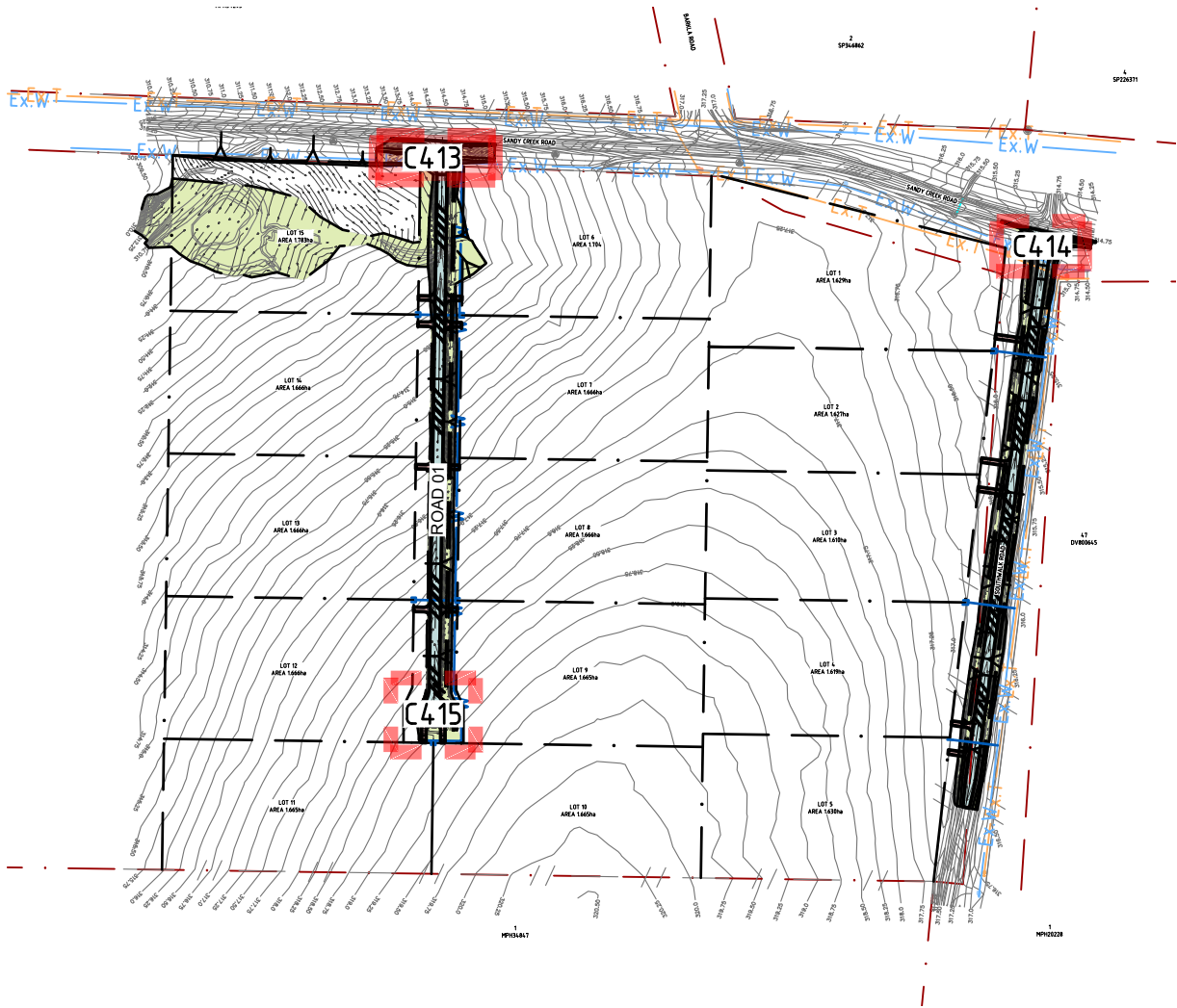
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	EXISTING LOT BOUNDARY		PROPOSED TOE OF BATTER
	EXISTING TOE OF BATTER		PROPOSED TOP OF BATTER
	EXISTING TOP OF BATTER		PROPOSED STORMWATER DRAINAGE
	EXISTING ROAD CENTRELINE		PROPOSED LOT BOUNDARY
	EXISTING EDGE OF BITUMEN		PROPOSED ROAD CENTRELINE
	EXISTING FENCE		PROPOSED EDGE OF BITUMEN
	EXISTING CONTOUR (0.25m CONTOUR INTERVAL)		PROPOSED WATER MAIN
			PROPOSED CONTOUR (0.1m CONTOUR INTERVAL)

HATCH LEGEND

	EXTENT OF CONCRETE KERB.
	EXTENT OF GRAVEL PAVEMENT, REFER PROJECT NOTES FOR DETAILS.
	EXTENT OF DISTURBED AREA TO BE REVEGETATED
	EXTENT OF PROPOSED LOTS.



LOCALITY PLAN
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15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS

INTERSECTION DETAILS - SHEET 1

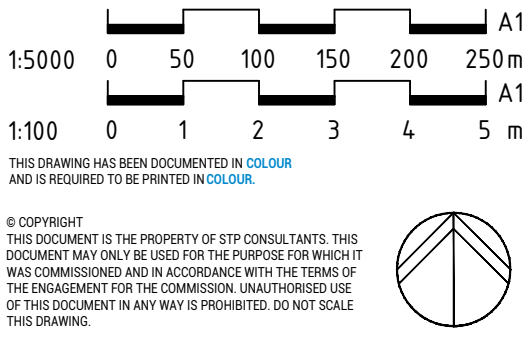


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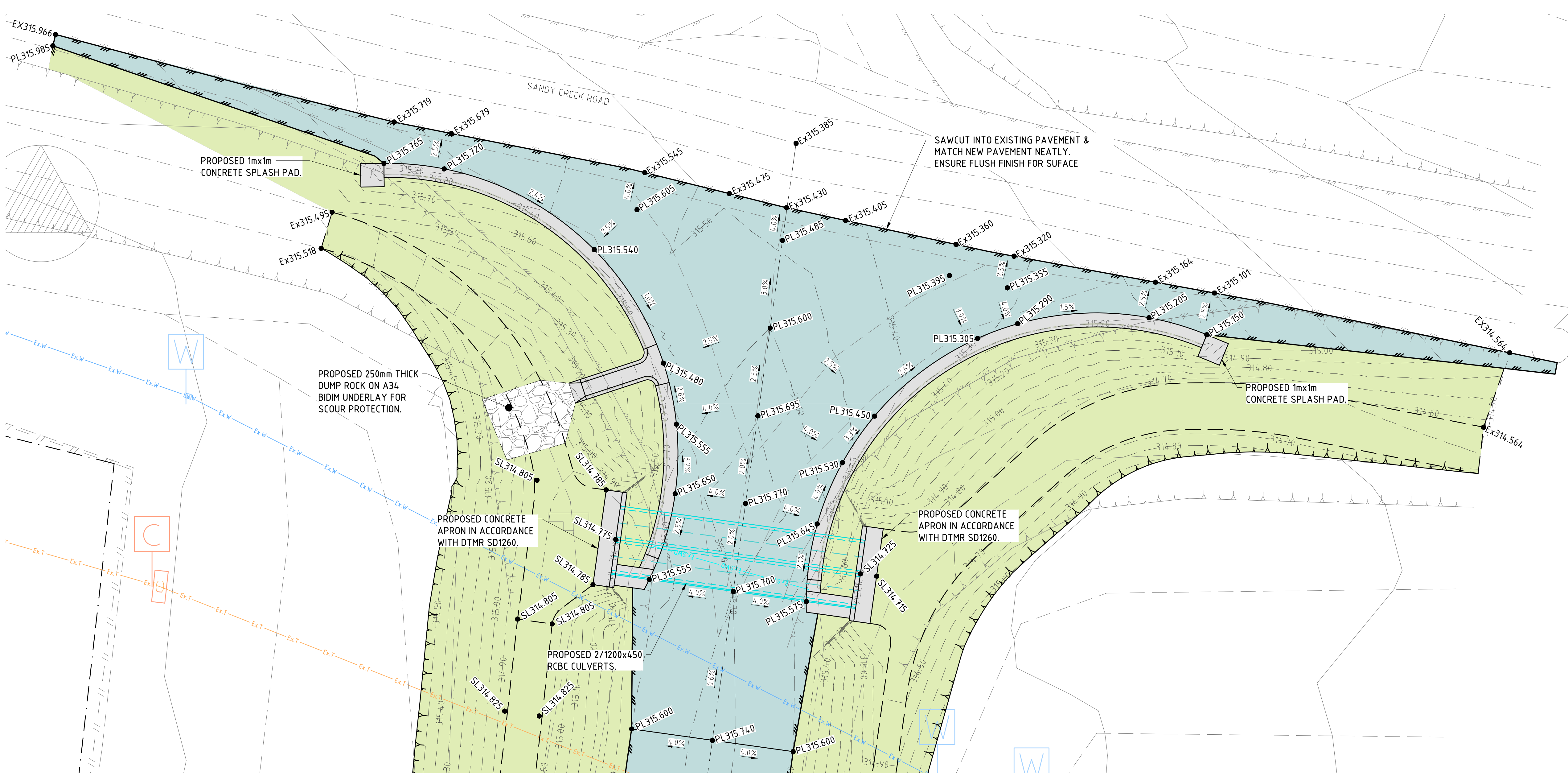
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Job No: STP25-2146
Drawing No: C413
Rev: D

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NOTES:
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LEGEND:

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EXISTING WATER MAIN

EXISTING LOT BOUNDARY

EXISTING TOE OF BATTER

EXISTING TOP OF BATTER

EXISTING ROAD CENTRELINE

EXISTING EDGE OF BITUMEN

EXISTING FENCE

EXISTING CONTOUR (0.25m CONTOUR INTERVAL)

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PROPOSED TOE OF BATTER

PROPOSED TOP OF BATTER

PROPOSED LOT BOUNDARY

PROPOSED ROAD CENTRELINE

PROPOSED EDGE OF BITUMEN

PROPOSED WATER MAIN

PROPOSED CONTOUR (0.1m CONTOUR INTERVAL)

HATCH LEGEND

EXTENT OF CONCRETE KERB.

EXTENT OF GRAVEL PAVEMENT, REFER PROJECT NOTES FOR DETAILS.

EXTENT OF 250mm THICK DUMP ROCK ON A34 BIDIM UNDERLAY FOR SCOUR PROTECTION.

EXTENT OF DISTURBED AREA TO BE REVEGETATED.

EXTENT OF PROPOSED LOTS.

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INTERSECTION DETAILS - SHEET 2

S

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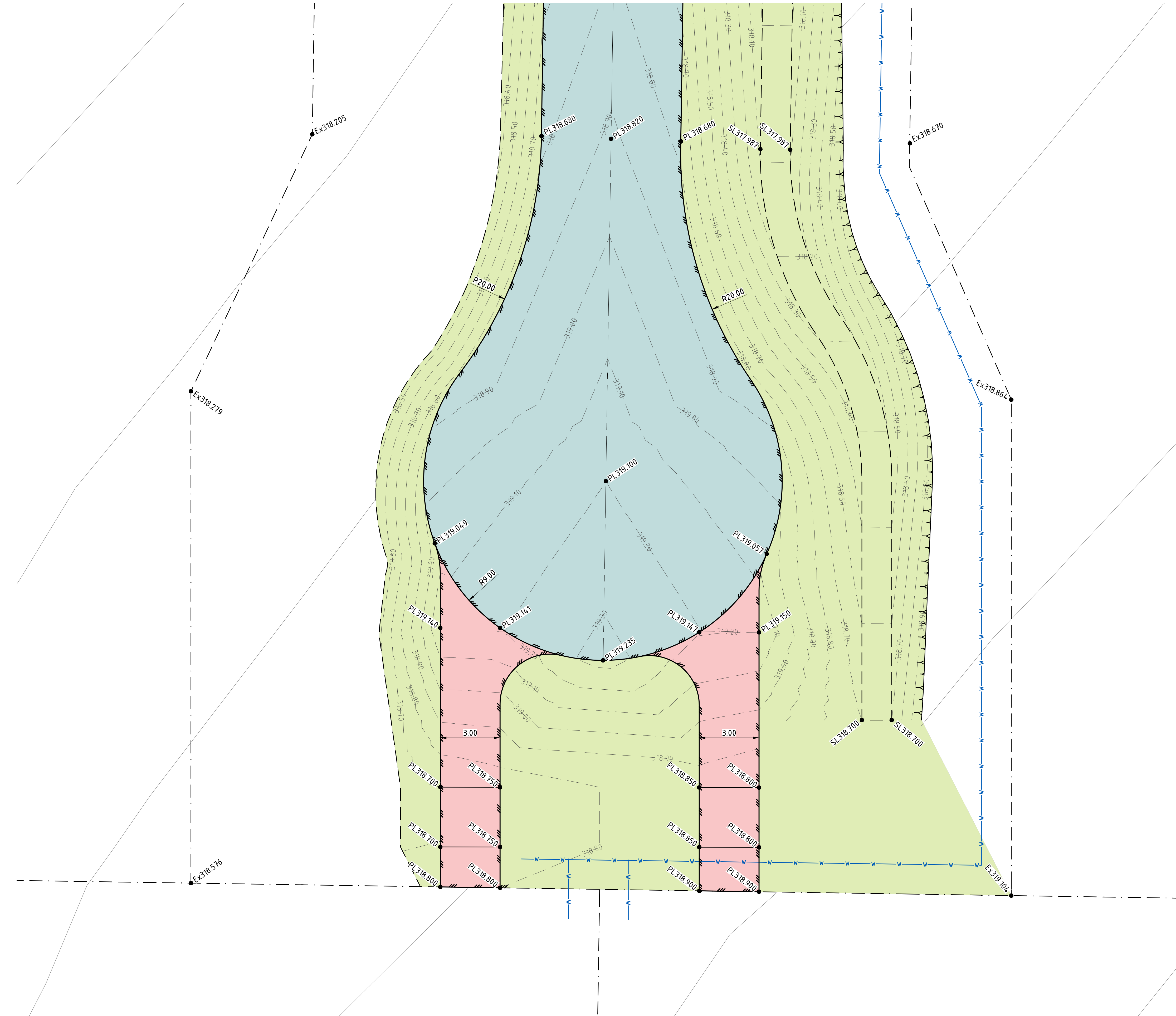
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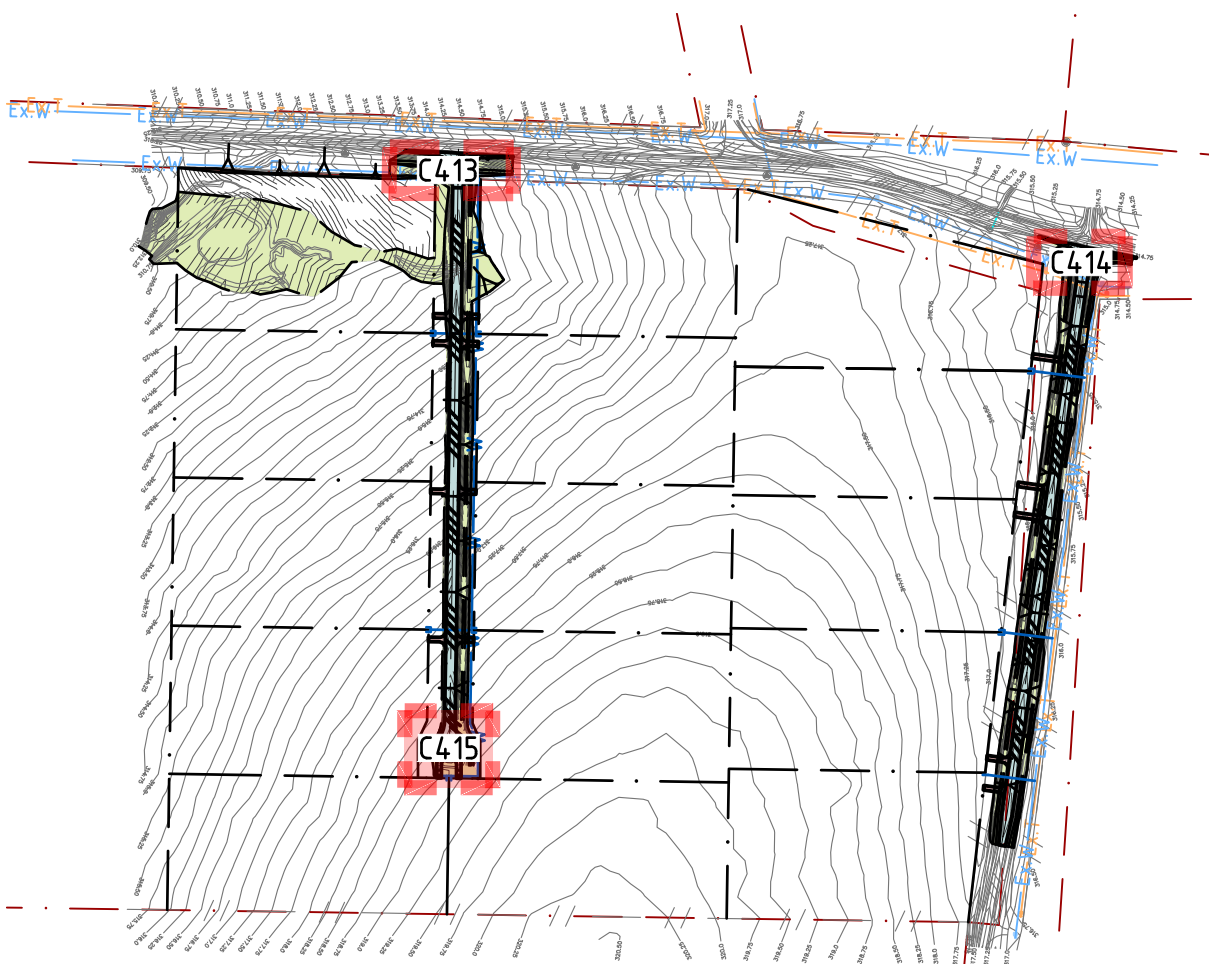
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- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED WATER MAIN, REFER WATER RETICULATION DRAWINGS FOR DETAILS
- PROPOSED CONTOUR (0.1m CONTOUR INTERVAL)
- SPOT LEVEL AT PAVEMENT
- SPOT LEVEL AT FINISHED SURFACE
- SPOT LEVEL AT EXISTING

HATCH LEGEND

- EXTENT OF GRAVEL PAVEMENT, REFER PROJECT NOTES FOR DETAILS.
- EXTENT OF DRIVEWAY ACCESS, REFER CTRC STD DWG CTRC-001 FOR DETAILS.
- EXTENT OF DISTURBED AREA TO BE REVEGETATED
- EXTENT OF PROPOSED LOTS.



LOCALITY PLAN
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INTERSECTION DETAILS - SHEET 3

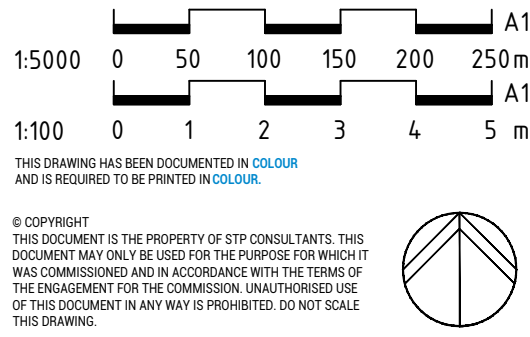


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---	EXISTING LOT BOUNDARY
---	EXISTING LOT EASEMENT
---	EXISTING TOE OF BATTER
---	EXISTING TOP OF BATTER
---	EXISTING ROAD CENTRELINE
---	EXISTING EDGE OF BITUMEN
— // — // — // —	EXISTING FENCE
→ → → →	PROPOSED OVERLAND FLOW
---	PROPOSED TOE OF BATTER
---	PROPOSED TOP OF BATTER
---	PROPOSED LOT BOUNDARY
---	PROPOSED ROAD CENTRELINE
---	PROPOSED EDGE OF BITUMEN
— W — W — W —	PROPOSED WATER MAIN
---	PROPOSED STORMWATER DRAINAGE
---	DENOTES CATCHMENT BOUNDARY
X 0.000ha	DENOTES CATCHMENT LABEL

STORMWATER DATA TABLE

CATCHMENT	TC	C100	I_{100} mm/hr	$Q_{100}m^3/sec$	$I_{10}mm/hr$	$Q_{10}m^3/sec$
A	42min	0.64	117	2.583	82	1.509
B	36min	0.64	121	2.155	84.7	1.257

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SANDY CREEK ROAD, SOUTHERN CROSS

STORMWATER MANAGEMENT PLAN

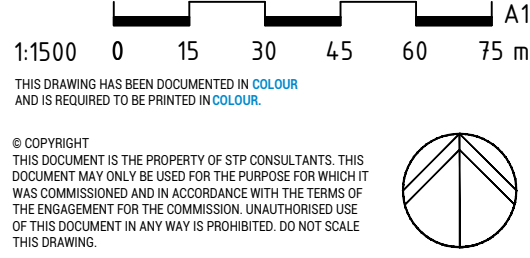


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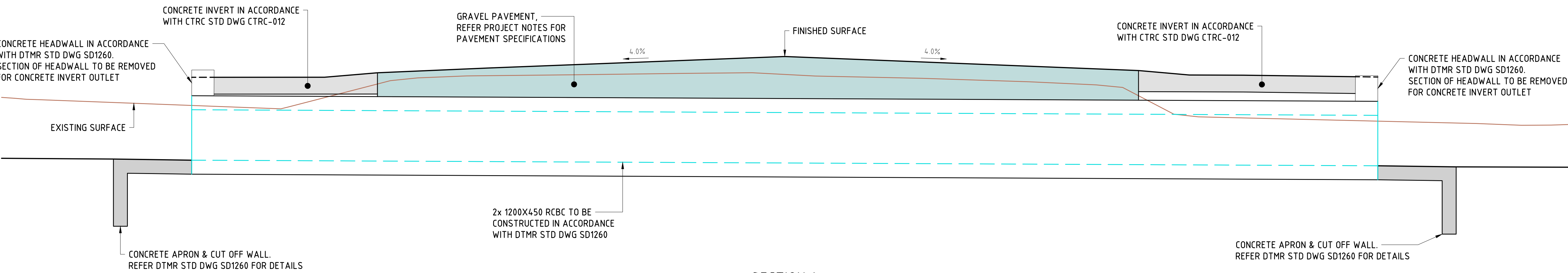
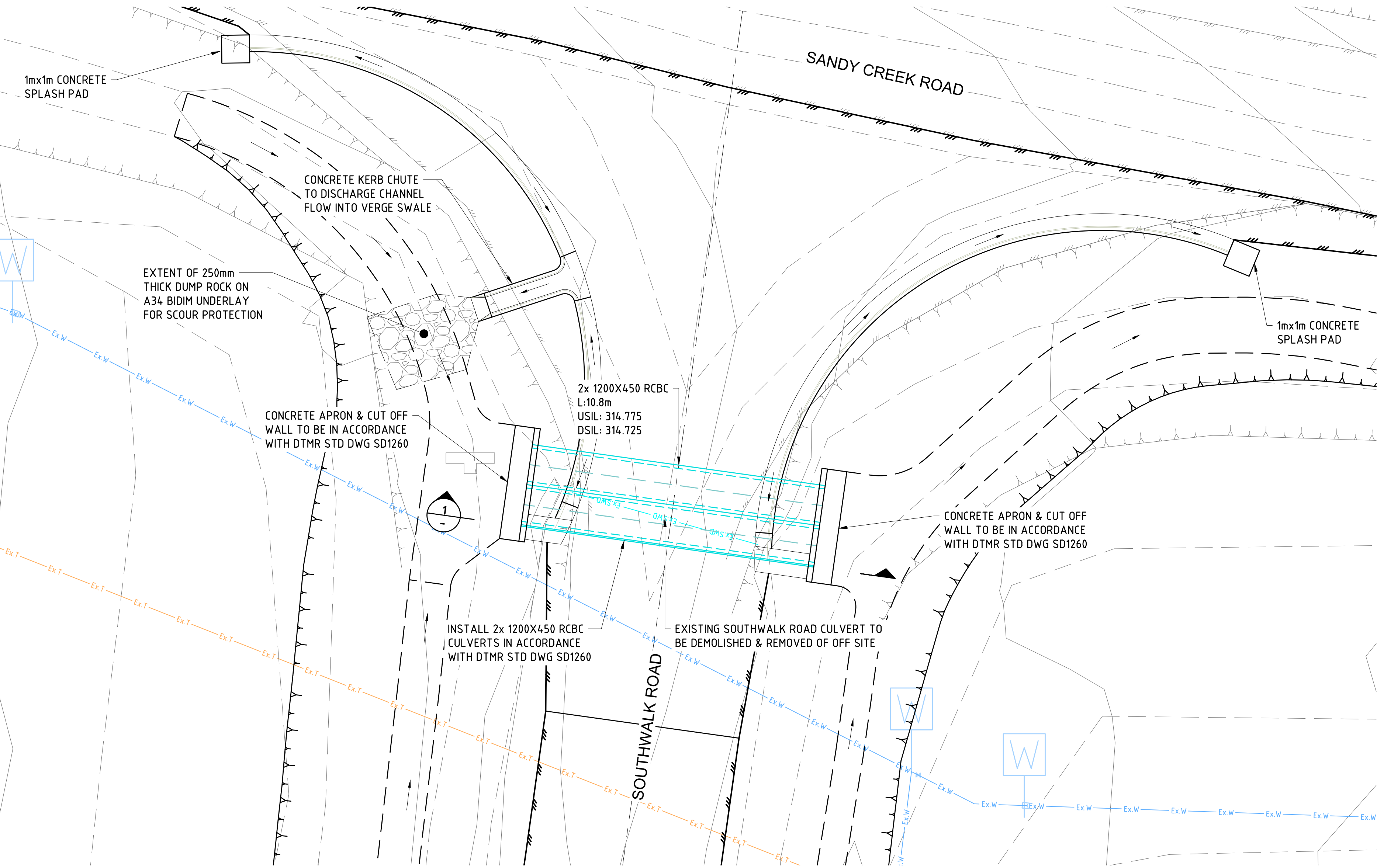
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- EXISTING UNDERGROUND TELECOMMUNICATIONS
- Ex.W

Ex.W

Ex.W
- EXISTING WATER MAIN
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- EXISTING LOT BOUNDARY
-
- EXISTING LOT EASEMENT
-
- EXISTING TOE OF BATTER
-
- EXISTING TOP OF BATTER
-
- EXISTING ROAD CENTRELINE
-
- EXISTING EDGE OF BITUMEN
-
- EXISTING FENCE
-
- PROPOSED OVERLAND FLOW
-
- PROPOSED TOE OF BATTER
-
- PROPOSED TOP OF BATTER
-
- PROPOSED LOT BOUNDARY
-
- PROPOSED ROAD CENTRELINE
-
- PROPOSED EDGE OF BITUMEN
-
- PROPOSED STORMWATER DRAINAGE



SECTION 1
SCALE 1:20 @A1

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SANDY CREEK ROAD, SOUTHERN CROSS

SOUTHWALK ROAD CULVERT PLAN



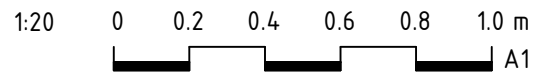
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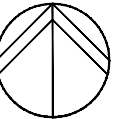
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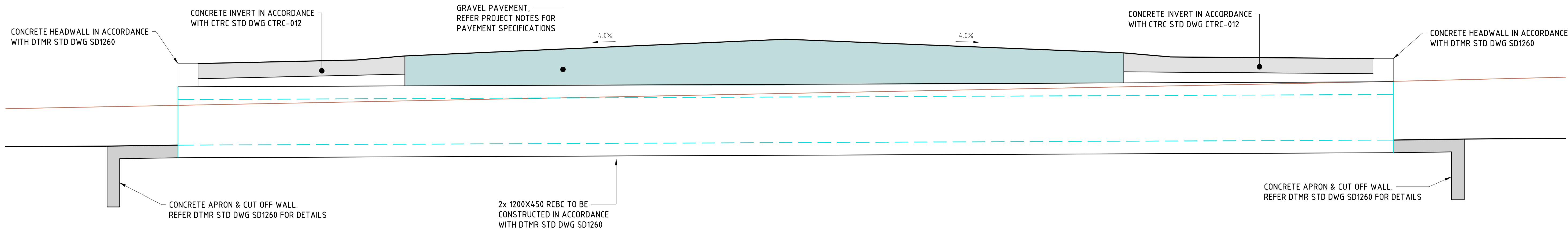
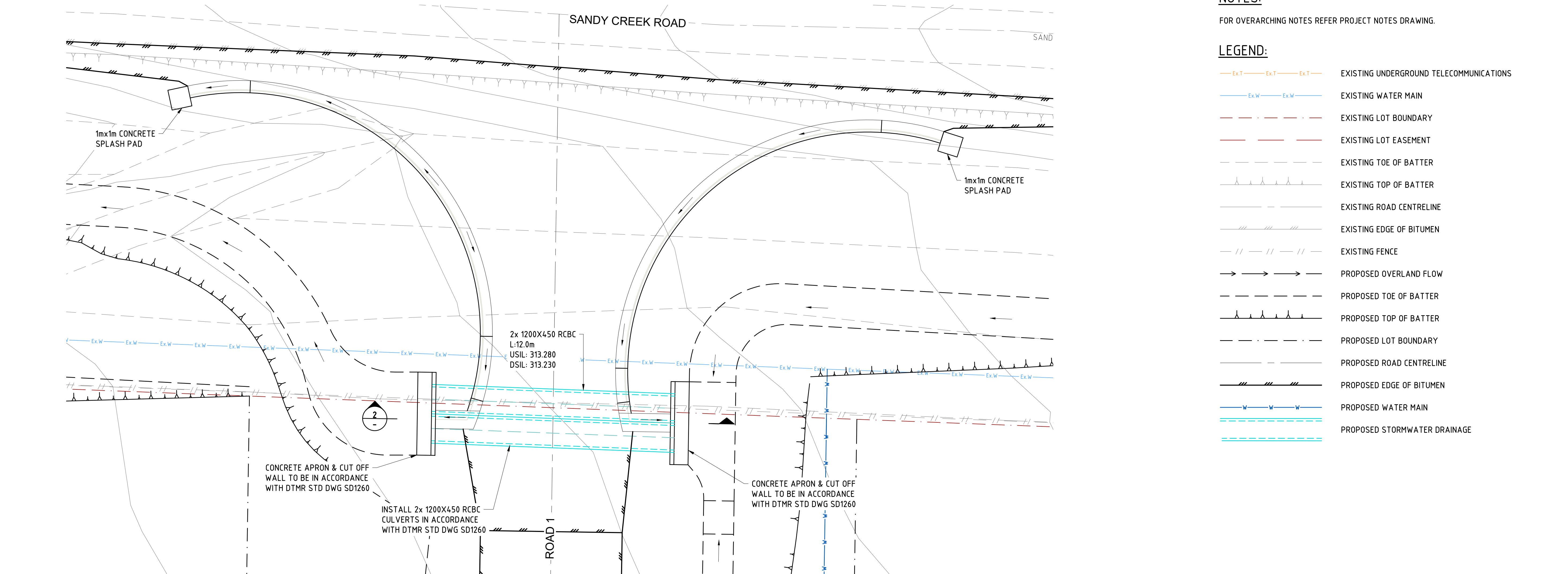
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NOTES:

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LEGEND:

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- Ex.W — Ex.W — EXISTING WATER MAIN
- - - - - EXISTING LOT BOUNDARY
- - - - - EXISTING LOT EASEMENT
- - - - - EXISTING TOE OF BATTER
- - - - - EXISTING TOP OF BATTER
- - - - - EXISTING ROAD CENTRELINE
- - - - - EXISTING EDGE OF BITUMEN
- // - // - // - EXISTING FENCE
- → → → PROPOSED OVERLAND FLOW
- - - - - PROPOSED TOE OF BATTER
- - - - - PROPOSED TOP OF BATTER
- - - - - PROPOSED LOT BOUNDARY
- - - - - PROPOSED ROAD CENTRELINE
- - - - - PROPOSED EDGE OF BITUMEN
- W - W - W - PROPOSED WATER MAIN
- - - - - PROPOSED STORMWATER DRAINAGE



SECTION 2
SCALE 1:20 @A1

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SANDY CREEK ROAD, SOUTHERN CROSS

ROAD 1 CULVERT PLAN

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Drawn: LJM

Approved: PP

RPEQ No: 13231

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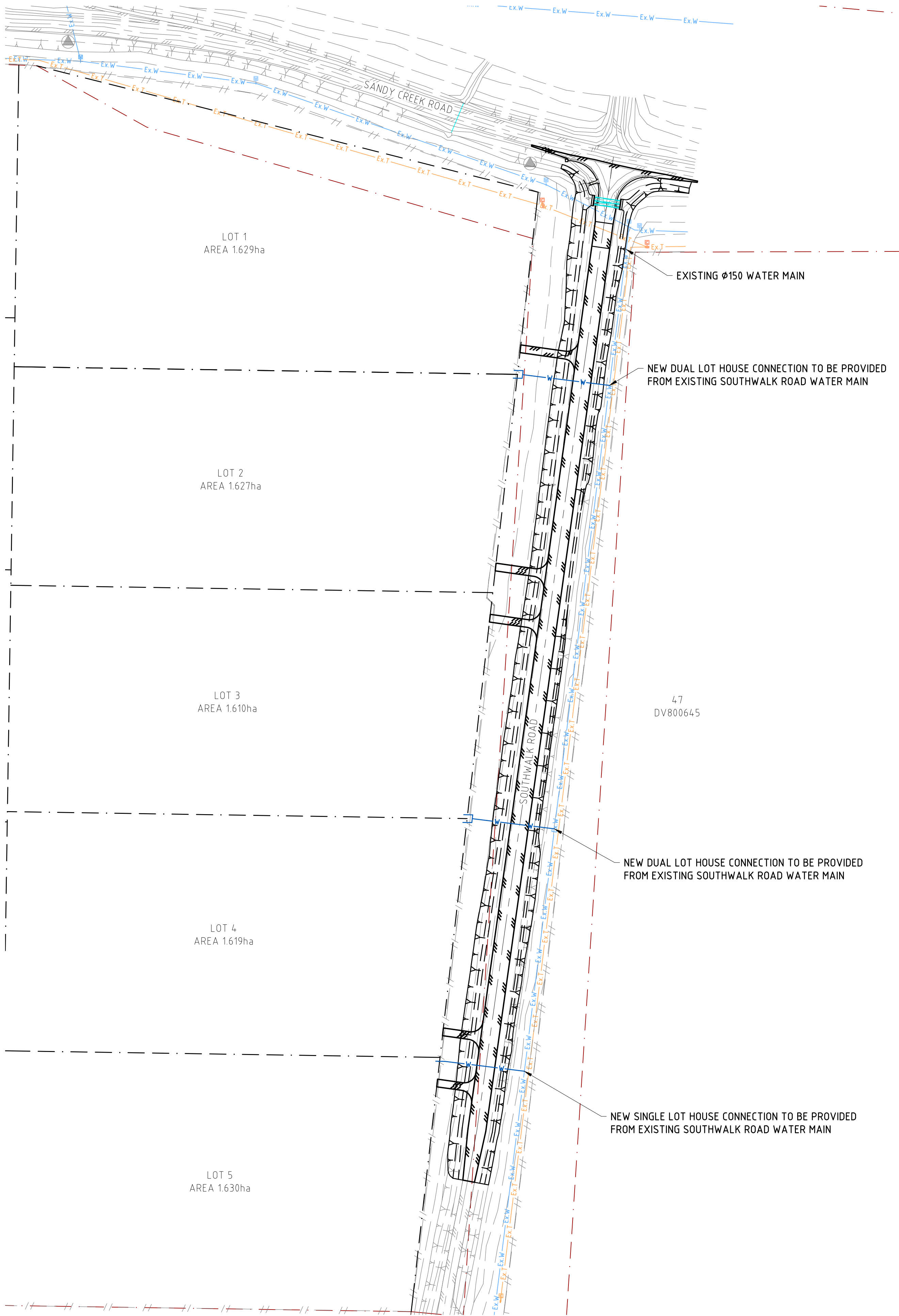
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Job No: STP25-2146

Drawing No: C503

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NOTES:

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- Ex.OHP Ex.OHP EXISTING OVERHEAD ELECTRICITY
- Ex.T Ex.T Ex.T EXISTING UNDERGROUND TELECOMMUNICATIONS
- Ex.NBN Ex.NBN EXISTING UNDERGROUND NBN
- Ex.W Ex.W EXISTING DN100 WATER MAIN
- Ex.SWD Ex.SWD EXISTING STORMWATER DRAINAGE
- Ex.S Ex.S Ex.S EXISTING SEWER MAIN
- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING OVERLAND FLOW
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- EXISTING BUILDING
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED STORMWATER DRAINAGE, REFER STORMWATER LAYOUT PLAN FOR DETAILS
- PROPOSED DN150 WATER MAIN

WATER LEGEND:

- PROPOSED TYPICAL HOUSE CONNECTIONS, REFER SEQ-WAT-1107-1 & SEQ-WAT-1108-2

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SANDY CREEK ROAD, SOUTHERN CROSS

WATER RETICULATION PLAN - SHEET 2

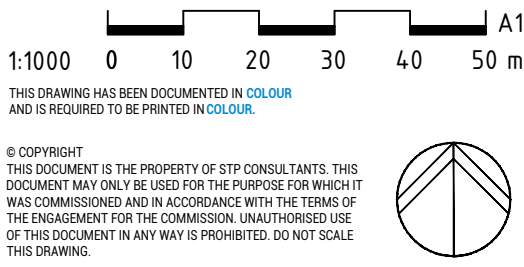


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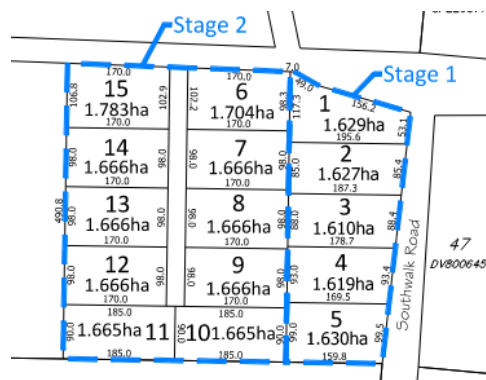
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17 Lot Rural Subdivision

SANDY CREEK ROAD, SOUTHERN CROSS

SITE BASED STORMWATER MANAGEMENT PLAN



DM GROUP

STP25-2146

DOCUMENT STATUS

Rev.	Issue	Author	Approved for Issue		
			Approved by	Signature	Date
A	For approval	Paul Petersen	Paul Petersen RPEQ 13231		8 May 2026

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1. Introduction

DM Group has engaged STP Consultants to produce a Site Based Stormwater Management Plan (SBSMP) for the proposed 17 Lot Rural Residential Development at Sandy Creek Road, Southern Cross.

This SBSMP Report focuses on the impact of the development in the following areas:

- Earthworks
- Flood Hazard Assessment
- Stormwater Management
- Stormwater Quality

1.1 Limitations

This report provides a desktop assessment, from the following sources, of the stormwater investigation from the information obtained from the following sources.

- Proposed Reconfiguration of Lots 1-15, 40 and 41 layout plan provided by Brazier and Motti.
- Survey Plan provide by Rowlands Surveying
- Charters Towers Regional Council Planning Scheme
- QUDM 4th Edition 2017
- MUSIC Modelling Guidelines November 2018 (Water by Design)
- Rainfall and Meteorological Data by the Australia Bureau of Meteorology
- Queensland Globe

2. Site Description

The site for the proposed 17 Lot Rural Residential Development is located over two allotments on Sandy Creek Road, Southern Cross and described as Lots 39 and 40 on SP192387, with a total land parcel area of 116.2 hectares. The site is zoned Rural in accordance with the Charters Towers Regional Council Planning Scheme (Appendix C), and the low-density character of the area will be maintained with the proposed rural lifestyle allotments.

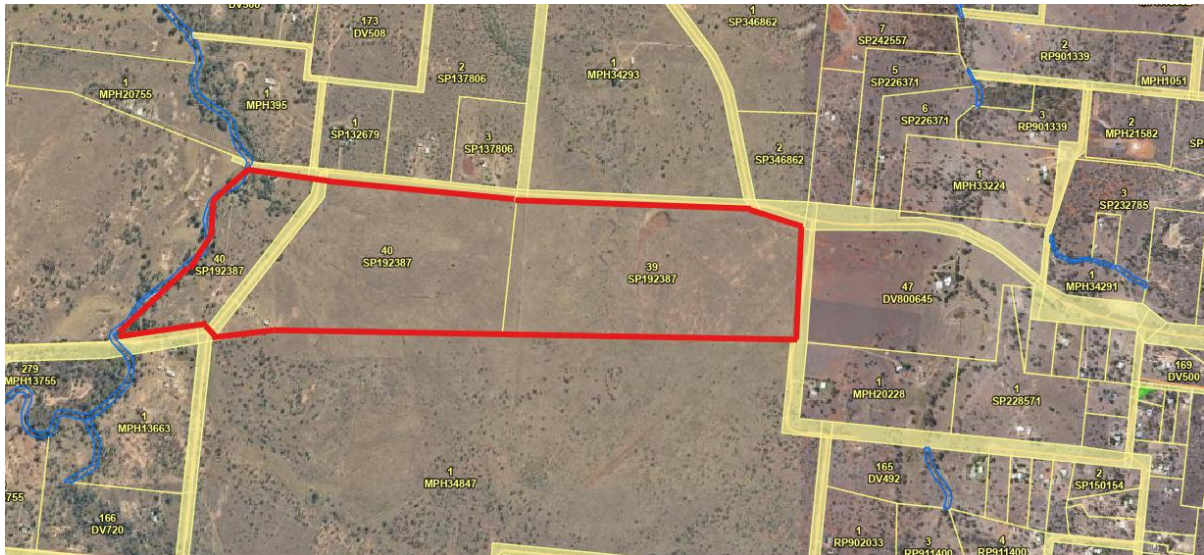


Figure 2.1 – Locality Plan (Qld Globe)

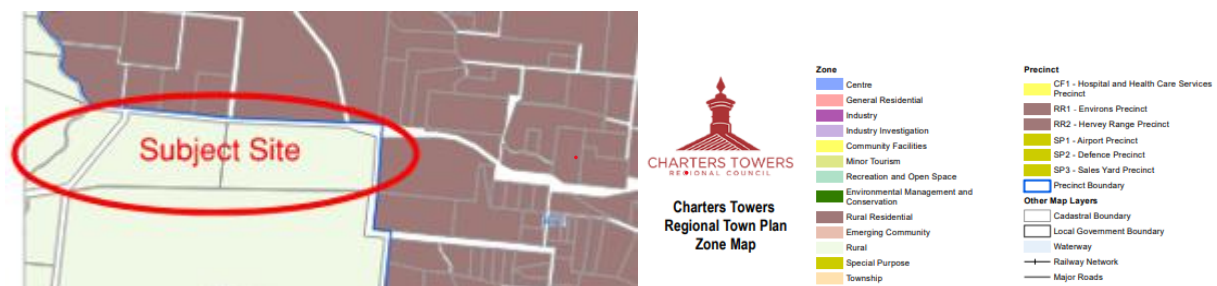


Figure 2.2 – Planning Zones (Charters Towers Regional Council (Zone Mapping))

2.1 Proposed development

The proposed 17 Lot Rural Residential Development work consists of:

- Earthworks and the formalisation of Sandy Creek Road to a Rural Feeder standard
- Earthworks and the formalisation of Southwalk Road to a Rural Feeder standard
- Construct new driveways crossovers to each allotment in with FNQROC standard drawing; and
- the construction of the reticulated water services to the allotments.

A copy of the proposed Engineering drawings is provided in Appendix A.

3. Earthworks

3.1 Existing Earthworks

A detailed survey has been undertaken by Rowlands Surveying for the extent of the proposed lots 1–15 development area and a copy is provided in Appendix B.

The subject development has a ridge line which is approximately on the rear boundary of lots 1-5 and slopes gently towards Southwalk Road at approximately 1%. The top of the ridge line is RL320.50m AHD and lowest level is in lot 1 with an RL316.0m AHD.

The balance allotments 6-15 are located on the other side of the ridge line and slope in a north-westerly direction at approximately 2%. The lowest level is in lot 15 with an RL310.0m AHD and lot 15 also has an existing small dam in the northwest corner of the lot.

Proposed lot 40 has an existing gully/watercourse (low point in the allotment) that drains to the north under Sandy Creek Road and ultimately discharges into the Burdekin River to the north. The watercourse is approximately 150m west of the rear boundary of lots 11-15. The level information for balance of lot 40 is limited however it appears there is another small ridge line approximately halfway through the allotment that defines the catchment boundary for the watercourse.

The western portion of lot 40 and all of lot 41 slope gently in a westward direction and discharge into Sandy Creek which also drains northward into the Burdekin River.

3.2 Proposed Site Earthworks

The design of the proposed 17 Lot Rural Residential Development, has been completed by STP Consultants the finished surface levels are shown on the Civil Engineering drawings contained in Appendix D.

Earthworks requirements will be limited to that necessary for the construction of the building pads, driveways, table drains, culverts and the road pavement subgrade. With the exception of the building pad, the allotments will remain undisturbed with earthworks.

Existing large and worthy vegetation shall be retained where possible on allotments.

Building pads will be approximately 20m x 20m in size, with 1 in 10 batters and will be shaped to ensure positive drainage away from the pad and towards the legal point of discharge. All building pad earthworks shall be undertaken to Level 1 testing and inspection by a NATA registered geotechnical inspection and testing authority.

The existing dam and associated gully on proposed Lot 15 are to be filled and compacted to Level 1 testing and inspection by a NATA registered geotechnical inspection and testing authority.

3.3 Minimum Floor Levels

The Charters Towers Regional Council planning scheme does not specifically state a minimum freeboard requirement above the defined flood level. It is recommended that the minimum habitable floor level of the proposed houses be set at the higher of: -

- 300mm above the 1% AEP flood level
- 300mm above the crown of the road
- Minimum of 225mm above the highest ground level
- A level which allows the connection of all sanity fixtures to the designated were connection point by means of sanitary drainage which complies with AS3500

4. Stormwater Management

4.1 Flood Hazard Overlay

As indicated on the Charters Towers Regional Council's Flood Hazard Overlay, the land for lots 1-15 is not within the flood hazard area and is not subject to inundation.

The western portion of proposed lot 40 and all of proposed lot 41 are within the flood hazard area and are subject to inundation from flooding. Further investigation, beyond the scope of this report, is required to determine the actual flood levels within the Flood Hazard Area of the two allotments.



Figure 4.1 – Flood hazard Overlay inundation (Charters Towers Regional Council)

4.2 Existing Stormwater Infrastructure

The subject site discharges rainfall runoff via overland flow to the road reserves of Sandy Creek Road and Southwalk Road.

The stormwater runoff from proposed lots 1-5 that discharges onto Southwalk Road is conveyed to the north in the existing table drain. At the intersection of Southwalk Road and Sandy Creek Road, there is an existing 525mm pipe under Southwalk Road which collects the stormwater runoff and passes the stormwater under Southwalk Road and into the Sandy Creek Road table drain which discharges in an easterly direction away from the subject site.

The stormwater runoff from lots 1-5 that discharges onto Sandy Creek Road is conveyed to the east in the existing table drain. There is an existing 525mm pipe under Sandy Creek Road that collects the stormwater and passes it under Sandy Creek Road. Any excess flows continue down to the Sandy Creek Road and Southwalk Road intersection.

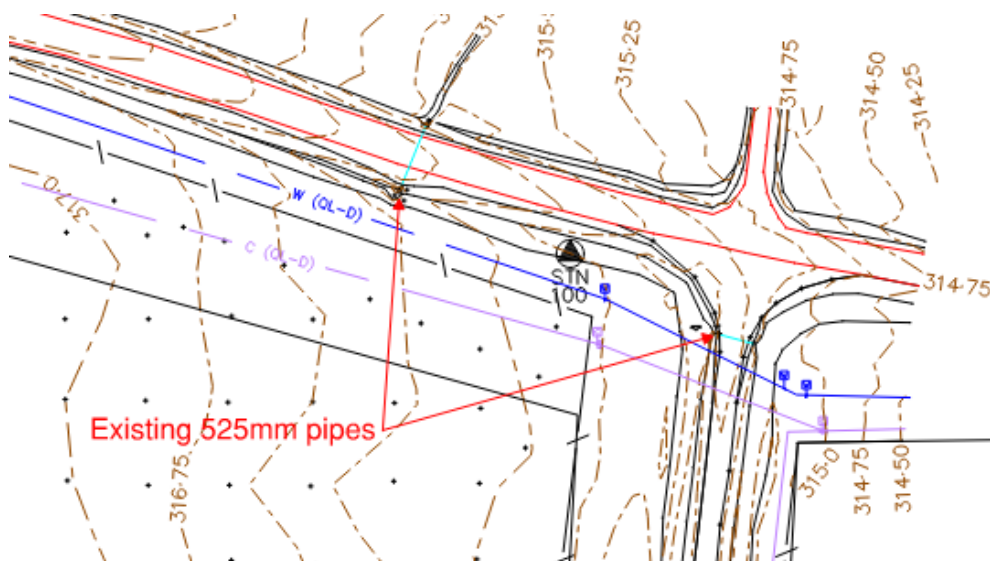


Figure 4.2 – Existing stormwater infrastructure (Rowlands survey)

All stormwater runoff from lots 6-15 either discharges into the Sandy Creek Road table drain or discharges in a westerly direction onto proposed lot 40. Irrespective if the stormwater runoff discharged onto Sandy Creek Road or lot 40 the stormwater runoff converges at the natural watercourse that runs through lot 40 at about 150m to the west of lots 11-15. This existing watercourse in lot 40 discharges in a northerly direction across Sandy Creek Road as a floodway.



Figure 4.3 – Existing floodway location – Sandy Creek Road (QGlobe)

The western portion of proposed lot 40 and all of proposed lot 41 drain in a westerly direction and this will remain unchanged with the proposed development.

4.3 Site Stormwater Drainage

The stormwater drainage layout is provided on the Civil Engineering drawings provided in Appendix D.

The roof water from the future housing will either be discharged into rainwater tanks or onto the ground via concrete splash pads at each downpipe.

The stormwater runoff from Lots 1-5 will be collected in the Southwalk Road table drain and conveyed down to the intersection with Sandy Creek Road. A new 10-year culvert is required at the intersection to pass the stormwater under Southwalk Road and discharge it into the Sandy Creek Road table drain. This discharge location is as per the existing scenario except the culvert size have been upgraded to the required 10-year ARI minor event.

The stormwater runoff from Lots 6-10 will be collected in the new cul-de-sac table drain and conveyed down to the intersection with Sandy Creek Road. A new 10-year culvert is required at the intersection to pass the stormwater under the new cul-de-sac and discharge in a westerly direction into the Sandy Creek Road table drain. This stormwater runoff always discharged into the Sandy Creek table drain however due to the new road the runoff is conveyed down to Sandy Creek Road in a table drain as opposed to overland flow.

The table drain on the western side of the new cul-de-sac will collect stormwater runoff from the half the proposed road reserve and discharge this runoff into the Sandy Creek table drain adjacent to the new cross road drainage culvert.

The stormwater runoff from Lots 11-15 will continue to discharge in a westerly direction as overland flow across proposed lot 40 and ultimately into the existing watercourse in lot 40.

The western portion of proposed lot 40 and all of proposed lot 41 will continue to remain unchanged and drain in a westerly direction.

4.4 Stormwater Runoff and Detention

The Charters Towers Regional Council Planning Scheme advises that the stormwater design criteria shall be in accordance with the Queensland Urban Drainage Manual (QUDM).

QUDM Table 7.3.1, recommends that the minor drainage system be designed for the 2-year ARI event and for the major drainage system to be designed for a 100-year ARI event in a Rural Residential development.

QUDM Table 7.3.1 also recommends that minor roads with cross drainage (culverts) be designed for the 10-year ARI event.

The subject site is zoned as Rural and in accordance with QUDM Table 4.5.1 the existing land is probably best matched to Open Space which is typically allocated a Fraction Impervious of 0.00.

Considering the proposed development of lots 1-15: -

- Typical Lot area – 16,650m²
- Typical road area per lot– 15m x 100m = 1,500m²
- Typical House area per lot – 300m²
- Typical road area per lot – 3m x 100m = 300m²
- Typical Fraction impervious for a Lot = 600m² / 18150m² = 3%

The 1-hour rainfall intensity for the 10-year ARI at Charters Towers is 59.9mm/h.

The critical Time of Concentration of rainfall events for lots 1-15 at the proposed development is unchanged for the pre- development and the post development scenario – 28 minutes.

A Rural Residential zoning, in accordance with QUDM, is typically allocated a Fraction Impervious of 0.10 to 0.20. QUDM Table 4.5.3 recommends a Coefficient of Discharge (C_{10}) value 0.65 for a Fraction Impervious of 0.20.

The actual fraction impervious for the proposed Rural Residential Lots 1-15 is 0.03, referring to the above calculation for the typical allotment.

QUDM Table 4.5.3 does not provide a Coefficient of Discharge (C_{10}) value for a fraction impervious below 0.20 and refers to Table 4.5.4 for C_{10} values with zero fraction impervious.

The land on which the proposed Rural Residential Development is to be developed is considered to have light bushland with poor/good grass coverage and sandy clay soil with a low-medium permeability. In accordance with QUDM Table 4.5.4 the existing land has a Coefficient of Discharge (C_{10}) value that varies from 0.53 to 0.70 with the average being 0.64.

Land description	Dense bushland			Medium density bush, or Good grass cover, or High density pasture, or Zero tillage cropping			Light cover bushland, or Poor grass cover, or Low density pasture, or Low cover bare fallows		
	Soil permeability			Soil permeability			Soil permeability		
Intensity (mm/hr) I_{10}	High	Med	Low	High	Med	Low	High	Med	Low
39–44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45–49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50–54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55–59	0.13	0.40	0.53	0.27	0.53	0.66	0.40	0.66	0.70
60–64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65–69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	0.70	0.70
70–90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

Figure 4.4 QUDM – C_{10} values for zero fraction impervious

Given the existing Coefficient of Discharge (C_{10}) for the subject site is estimated to be 0.64 and the typical Coefficient of Discharge (C_{10}) for rural residential allotments with a fraction impervious of 0.20 is 0.65, an interpolation of the Coefficient of Discharge for a 3% fraction impervious would remain as 0.64.

Therefore, as the Coefficient of Discharge in the pre and post development scenarios is the same as that allowed for the existing zoning and proposed development, the actual peak site discharge from the subject site will not exceed that considered for the evaluation of the flood hazard overlay and the 1% AEP Design Flood Event level.

In accordance with Clause 5.5.5 of QUDM, the development should be designed such that the peak site discharge from the site does not increase above that which would be expected from the development based on an urban density or percentage impervious surface area. As the existing and proposed fraction impervious percentages and consequential Coefficient of Runoff for the site, do not exceed the parameters for land designated *Rural*, the peak site discharge is not exceeded. Therefore, as the peak site discharge is not exceeded, the proposed Rural Residential development does not require detention.

5. Stormwater Quality Management

In accordance with the requirements of the State Planning Policy – July 2017, the Assessment Benchmarks for Water Quality, the proposed development site is greater than 2,500m² in size and will result in 6 or more lots, therefore the site does exceed the assessment benchmarks requiring a review of stormwater quality control.

As Charters Towers is in the *Western Queensland* Climatic region as defined by the State Planning Policy – July 2017, and Charters Towers Region has an estimated population of 12,000 people (Central Highlands Regional Council website), footnote 14 of Table B of Appendix 2 – Stormwater management Design objective (SPP 2017) applies. Footnote 14 notes that the Stormwater Management Design Objectives for *Western Queensland* only apply to population centres greater than 25,000 persons. Therefore, no stormwater quality management works are required for these proposed works.

Table B: Post construction phase – stormwater management design objectives

Application:

- (1) A material change of use for an urban purpose that involves premises 2500 metres² or greater in size and:
 - (a) will result in six or more dwellings; or
 - (b) an impervious area greater than 25 per cent of the net developable area.
- (2) Reconfiguring a lot for urban purposes that involves premises 2500 metres² or greater in size and will result in six or more lots.

Climatic region	Design objectives				
	Reductions in mean annual load from unmitigated development (%)				
	Total suspended solids (TSS)	Total phosphorus (TP)	Total nitrogen (TN)	Gross pollutants >5mm	Waterway stability management
South East Queensland	80	60	45	90	Limit the peak 1-year ARI event discharge within the receiving waterway to the pre-development peak 1-year ARI discharge
Central Queensland (south)	85	60	45	90	
Central Queensland (north)	75	60	40 ¹⁵	90	
Cape York ¹⁴ , wet tropics and dry tropics	80	60 ¹⁶	40	90	
Western Queensland ¹⁴	85	60	45	90	

Notes:

- Mapping of climatic regions is available on the State Planning Policy Interactive Mapping System.
- In lieu of modelling, the default bio-retention treatment area to comply with load reduction targets for all Queensland regions in 1.5 per cent of the contributing catchment area.
- Water stability objective applies if development drains to an unlined waterway within or downstream of the site where a risk of increased erosion exists due to changes in hydrology. Local government may also require application of the waterway stability objective where there are planned future rehabilitation works to return a lined channel to a natural channel design.
- The SPP Water quality guidance material provides advice on the measures that demonstrate compliance with table B.

¹⁴ Note: Applies to population centres greater than 25,000 persons.

¹⁵ Note: Mackay Regional Council has adopted a 35 per cent reduction for TN.

¹⁶ Note: Townsville City Council has adopted a 65 per cent reduction for TP.

Figure 5.1 – State Planning Policy – Footnote 14

An Erosion and Sediment Control Plan (ESCP) for the site should be implemented during construction to minimise the risk of soil leaving the site. The ESCP and associated devices will be required to be installed prior to commencement of the earthworks and associated infrastructure until the revegetation of disturbed land is completed.

6. Discussion / Conclusion

As demonstrated within the Report, the proposed 17 lot Rural Residential subdivision can be undertaken, and a summary of the requirements are as follows: -

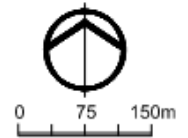
- Lots 1-15 are not within the Charters Towers Regional Council Flood Hazard Overlay area.
The minimum habitable floor level of the proposed houses for these allotments should be set at the higher of: -
 - 300mm above the 1% AEP flood level
 - 300mm above the crown of the road
 - Minimum of 225mm above the highest ground level
 - A level which allows the connection of all sanitary fixtures to the designated sewer connection point by means of sanitary drainage which complies with AS3500
- The western quarter of Lot 40 is within the Charters Towers Regional Council Flood Hazard Overlay area with the remaining three-quarters are outside the Flood Hazard Overlay.
- Lot 41 is fully within the Charters Towers Regional Council Flood Hazard Overlay area.
- The Minor Stormwater Design Event in accordance with QUDM is the 2-year ARI.
- The Minor Stormwater Design Event in accordance with QUDM for minor road cross drainage (culverts) is the 10-year ARI.
- The Major Stormwater Design Event in accordance with QUDM is the 100-year ARI.
- No onsite detention is required
- The site does not require Stormwater Quality Treatment as per the State Planning Policy
- The Legal Points of Discharge is the Sandy Creek Road and Southwalk Road, road reserves.

Based on our investigative works, we consider that Council has no impediment to the approval of this development within the context of engineering issues. We therefore recommend that Council approves the application subject to reasonable, relevant and equitable conditions.

Appendix A: Proposed Reconfiguration of lot Plan

PROPOSED RECONFIGURATION

Lots 1 - 15, 40 and 41
Cancelling Lots 39 and 40 on SP192387



Stage 1	Stage 2
Total Site Area8.116 ha	Total Site Area18.003 ha
Total.....5	Total.....10
Average Lot Area..... 1.62 ha	Average Lot Area..... 1.68 ha
	Total Length of New Road ... 396m
	30m wide road 396m

This plan is conceptual and for discussion purposes only. All areas, dimensions and land uses are preliminary, subject to investigation, survey, engineering, and Local Authority and Agency approvals.



Date: 29th January, 2025	
Scale: 1:7500	A3
Drawn: MJM	
Job No: 43948/001-01	
Plan No: 43948/002 D	

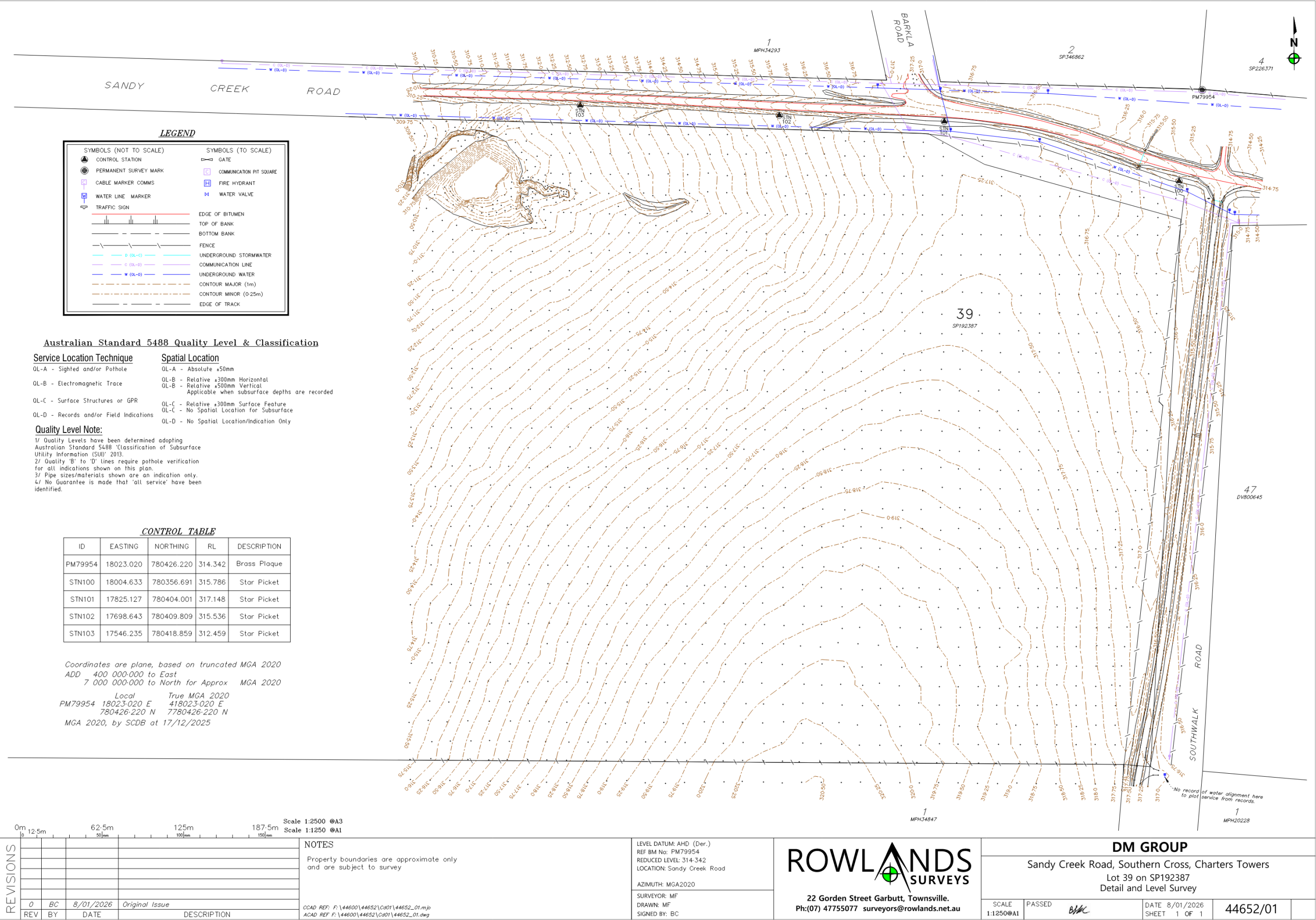
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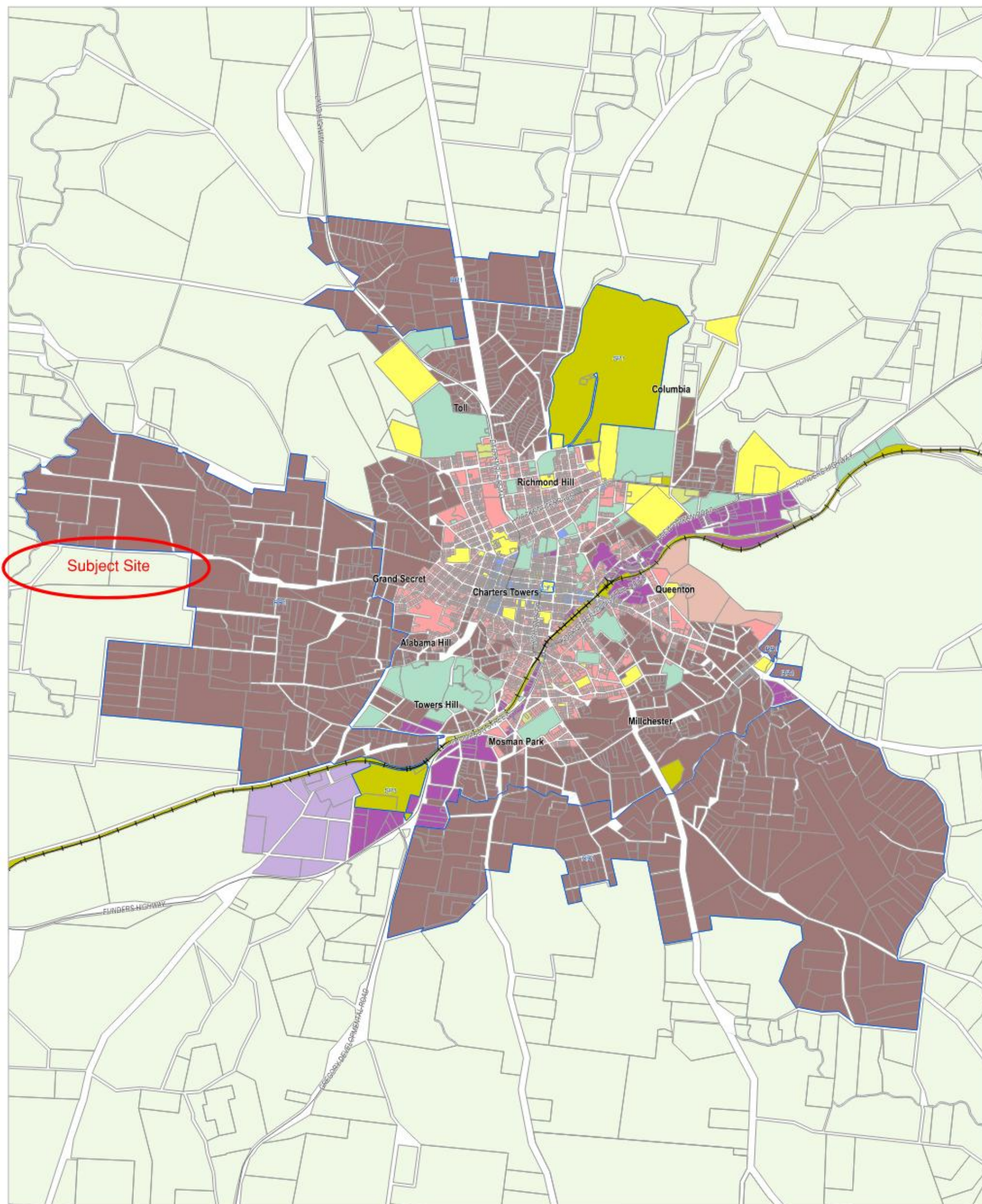
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PROJECTMANAGEMENT
MAPPING&GIS



Appendix B: Detailed Survey



Appendix C: Charters Towers Regional Council – Zone Map & Flood Hazard Overlay Map



Charters Towers Regional Town Plan Zone Map

- Zone**
- Centre
 - General Residential
 - Industry
 - Industry Investigation
 - Community Facilities
 - Minor Tourism
 - Recreation and Open Space
 - Environmental Management and Conservation
 - Rural Residential
 - Emerging Community
 - Rural
 - Special Purpose
 - Township

- Precinct**
- CF1 - Hospital and Health Care Services Precinct
 - RR1 - Environs Precinct
 - RR2 - Hervey Range Precinct
 - SP1 - Airport Precinct
 - SP2 - Defence Precinct
 - SP3 - Sales Yard Precinct
 - Precinct Boundary
- Other Map Layers**
- Cadastral Boundary
 - Local Government Boundary
 - Waterway
 - Railway Network
 - Major Roads

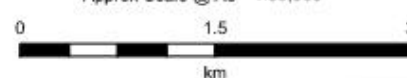
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Cadastral boundaries as at December 2019 sourced from QSpatial.

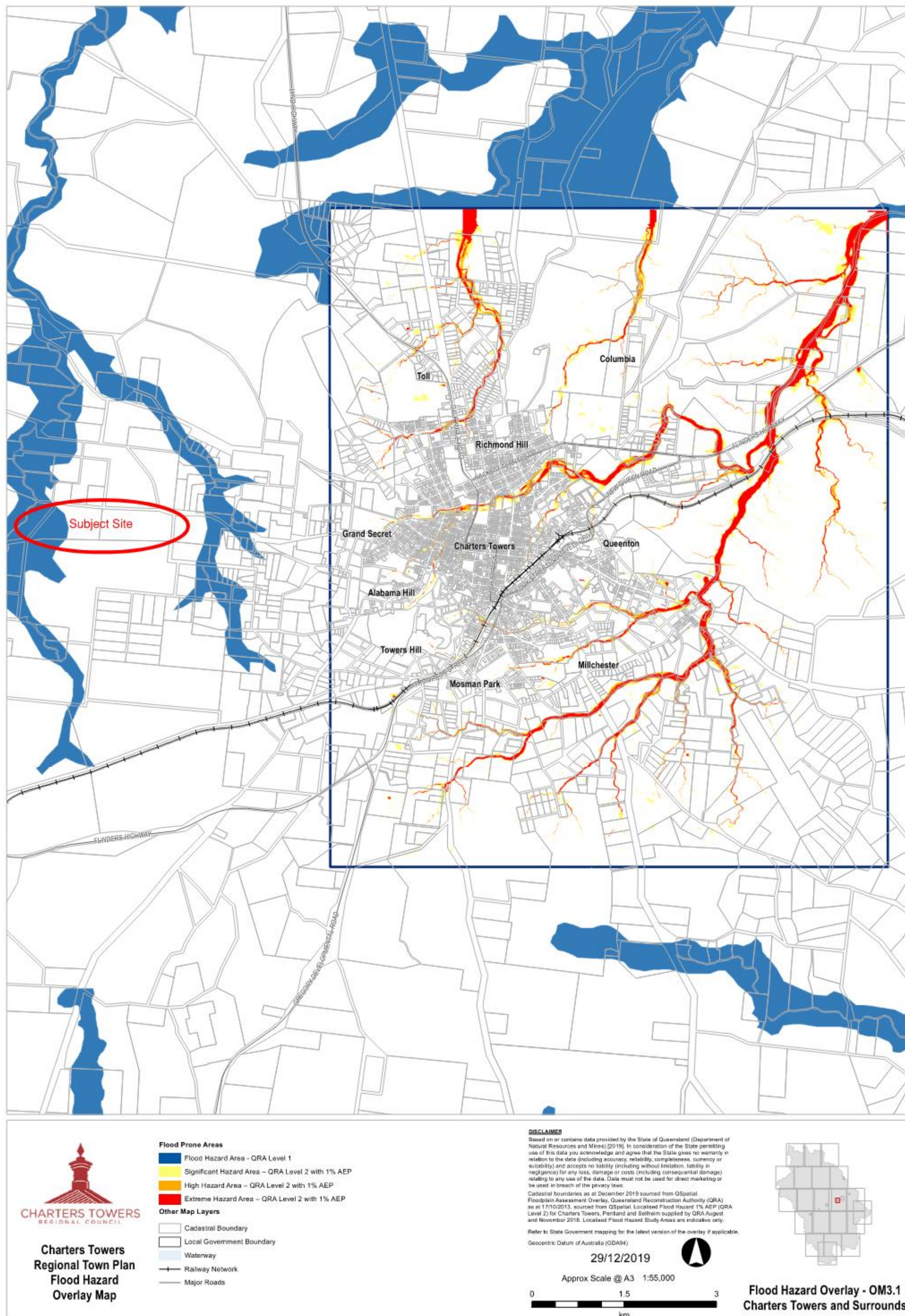
Geocentric Datum of Australia (GDA94)

29/12/2019

Approx Scale @ A3 1:55,000



Zone - ZM1.1
Charters Towers and Surrounds



Appendix D: Civil Engineering Drawings

15 LOT SUBDIVISION

SANDY CREEK ROAD, SOUTHERN CROSS

REFERENCED DRAWINGS

AUTHORITY	DRAWING NUMBER	DESCRIPTION
CTRC	001	ROADS RURAL TURNOUTS INVERTS & CULVERT DRIVEWAYS
CTRC	009	TYPICAL RURAL ROADS CROSS SECTION
CTRC	012	KERB AND CHANNEL PROFILES & DIMENSIONS
DTMR	S1243	PRECAST CULVERT HEADWALLS
DTMR	S1260	R C BOX CULVERTS AND SLAB LINK BOX CULVERTS

DRAWING SHEET LIST

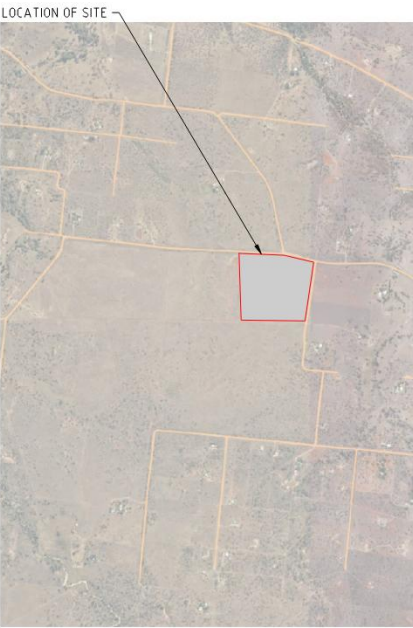
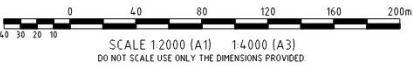
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C100	COVER SHEET
C101	PROJECT NOTES - SHEET 1
C102	PROJECT NOTES - SHEET 2
C103	GENERAL ARRANGEMENT LAYOUT PLAN
C201	SESC CONSTRUCTION PHASE - SHEET 1
C202	SESC CONSTRUCTION PHASE - SHEET 2
C203	SESC PROCEDURES & NOTES
C204	SESC ON MAINTENANCE - SHEET 1
C205	SESC ON MAINTENANCE - SHEET 2
C301	EARTHWORKS MANAGEMENT LAYOUT PLAN
C401	ROADWORKS PLAN
C402	SOUTHWALK ROAD CENTRELINE SETOUT
C403	SOUTHWALK ROAD LONGSECTION - SHEET 1
C404	SOUTHWALK ROAD LONGSECTION - SHEET 2
C405	SOUTHWALK ROAD CROSS SECTIONS - SHEET 1
C406	SOUTHWALK ROAD CROSS SECTIONS - SHEET 2
C407	SOUTHWALK ROAD CROSS SECTIONS - SHEET 3
C408	ROAD 1 CENTRELINE SETOUT
C409	ROAD 1 LONGSECTION - SHEET 1
C410	ROAD 1 LONGSECTION - SHEET 2
C411	ROAD 1 CROSS SECTIONS - SHEET 1
C412	ROAD 1 CROSS SECTIONS - SHEET 2
C413	INTERSECTION DETAILS - SHEET 1
C414	INTERSECTION DETAILS - SHEET 2
C415	INTERSECTION DETAILS - SHEET 3
C501	STORMWATER MANAGEMENT PLAN
C502	SOUTHWALK ROAD CULVERT PLAN
C503	ROAD 1 CULVERT PLAN
C601	WATER RETICULATION PLAN - SHEET 1
C602	WATER RETICULATION PLAN - SHEET 2

SURVEY INFORMATION

SURVEYOR: ROWLANDS SURVEYS
LOCAL AUTHORITY: CHARTERS TOWERS REGIONAL COUNCIL

PM79954
LEVEL DATUM RL314.342 AHD DERIVED
E418023.020 N7780426.220

REFERENCE PLANS No. 44652/01 Rev A



LOCALITY MAP
NTS



SITE LAYOUT PLAN
SCALE 1:2000 @ A1



Rev:	Date:	Description:	By:	Appd:
A	27.01.26	PRELIMINARY	LJM	MCW
B	27.03.26	PRELIMINARY ISSUE	JT	PP
C	22.04.26	FOR APPROVAL	HD	PP
D	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

THE DM GROUP
15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS
COVER SHEET



BRISBANE
CAIRNS
ROCKHAMPTON
TOWNSVILLE
MACKAY
WHITSUNDAYS
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Design:	NP
Drawn:	LJM
Approved:	PP
RPEQ No:	13231

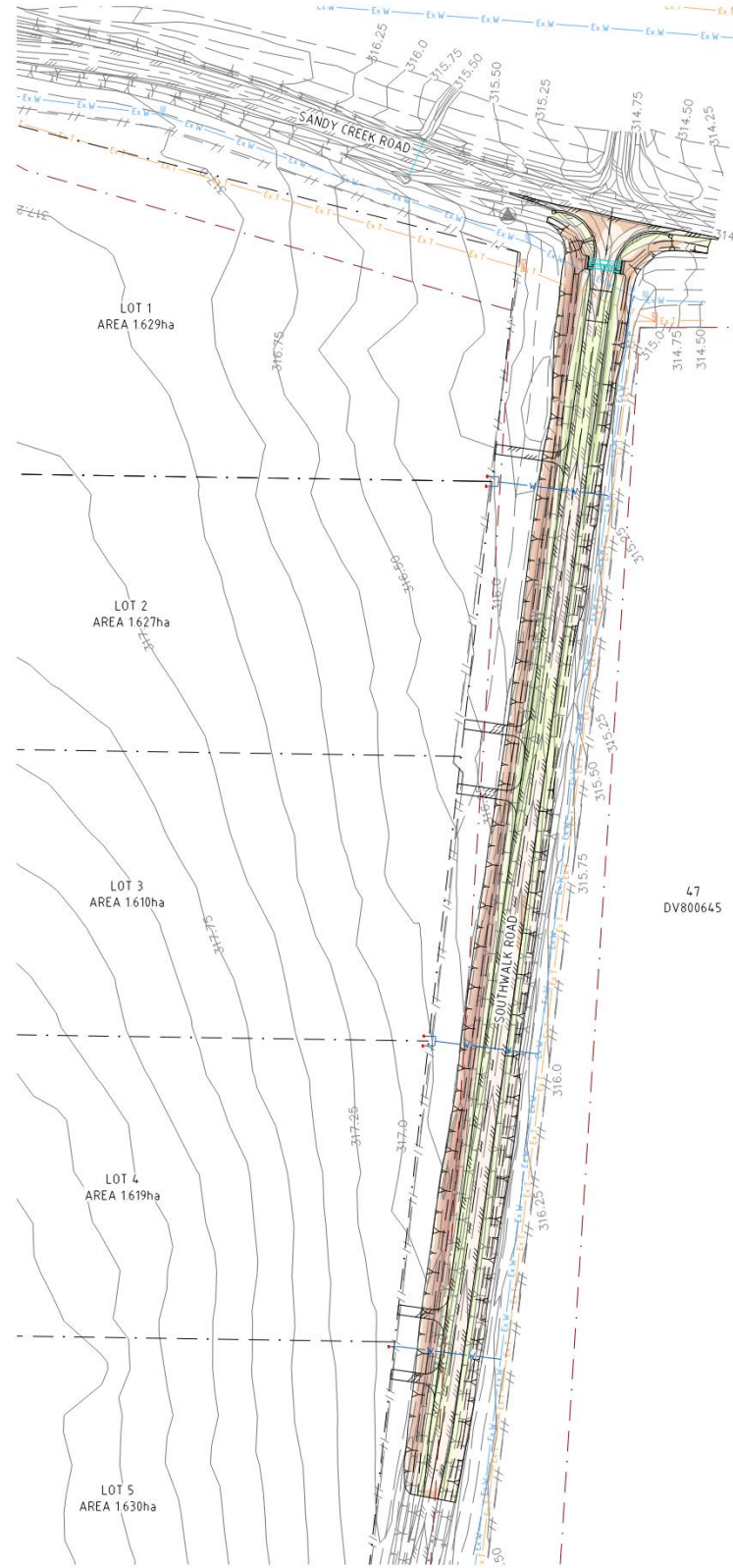
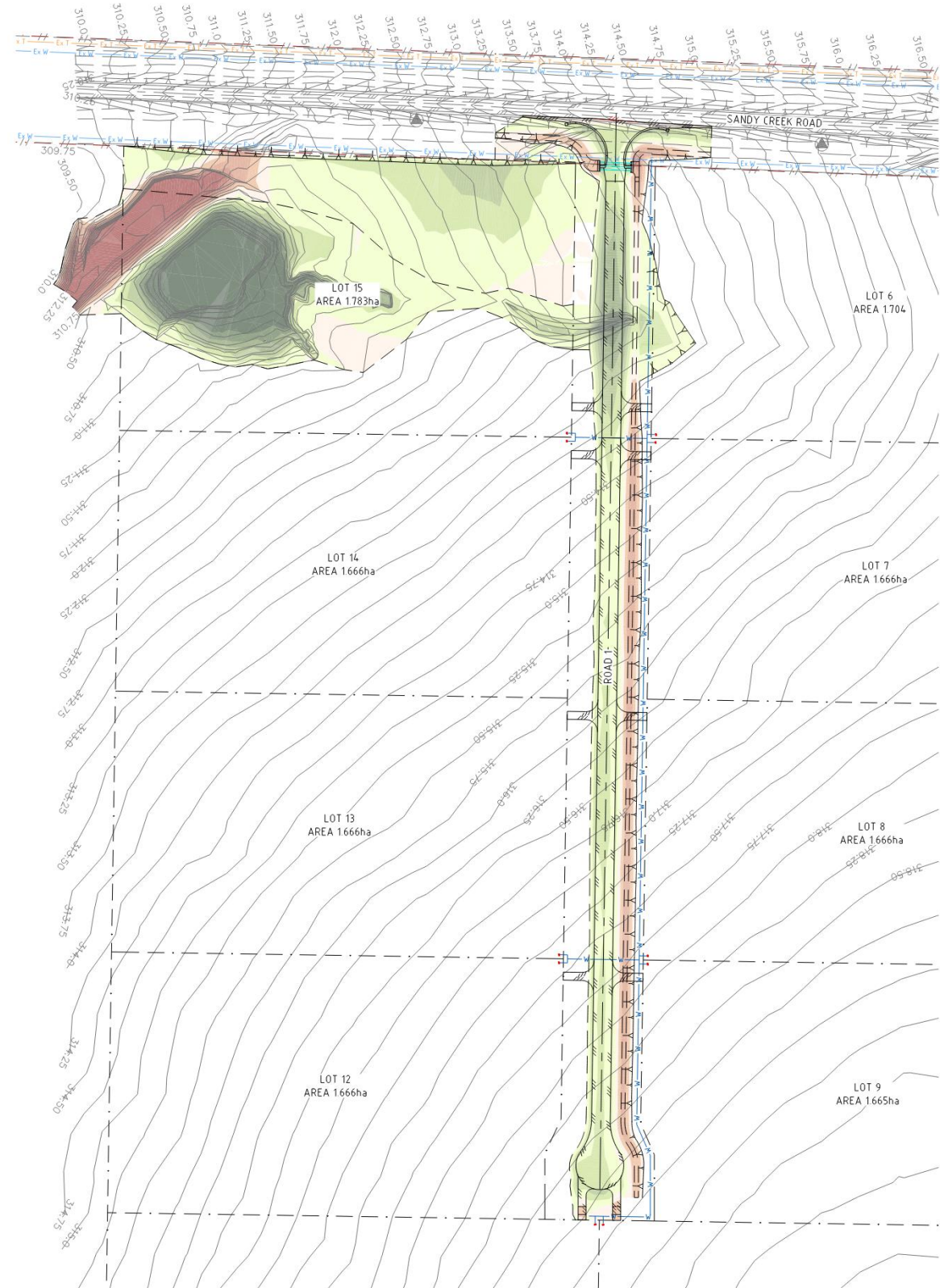
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NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING

LEGEND:

- EXISTING UNDERGROUND TELECOMMUNICATIONS
- EXISTING WATER MAIN
- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED WATER MAIN

CUT AND FILL LEGEND

CUT > 1.0m	FILL 0m - 0.2m
CUT 0.8m - 1.0m	FILL 0.2m - 0.4m
CUT 0.6m - 0.8m	FILL 0.4m - 0.6m
CUT 0.4m - 0.6m	FILL 0.6m - 0.8m
CUT 0.2m - 0.4m	FILL 0.8m - 1.0m
CUT 0m - 0.2m	FILL > 1.0m

VOLUMES (NET)

CUT - 4080m³
FILL - 6750m³
BALANCE - 2670m³

NOTE: QUANTITIES ARE APPROXIMATELY ONLY, MEASURED FROM 100mm STRIPPED EXISTING SURFACE TO SUBGRADE WITH NO ALLOWANCE BEING MADE FOR BULKING OR LOSSES.

FOR APPROVAL

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LEVEL DATUM

PH79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26 220

DIRTY WATER NOTE

ALL DIRTY WATER TRAPPED IN PAVEMENT BOXING & DRAINS DURING EARTHWORKS PROCEDURES TO BE FLOCKED PRIOR TO DISCHARGE

Rev:	Date:	Description:	By:	Appd:
A	22.04.26	FOR APPROVAL	HD	PP
B	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

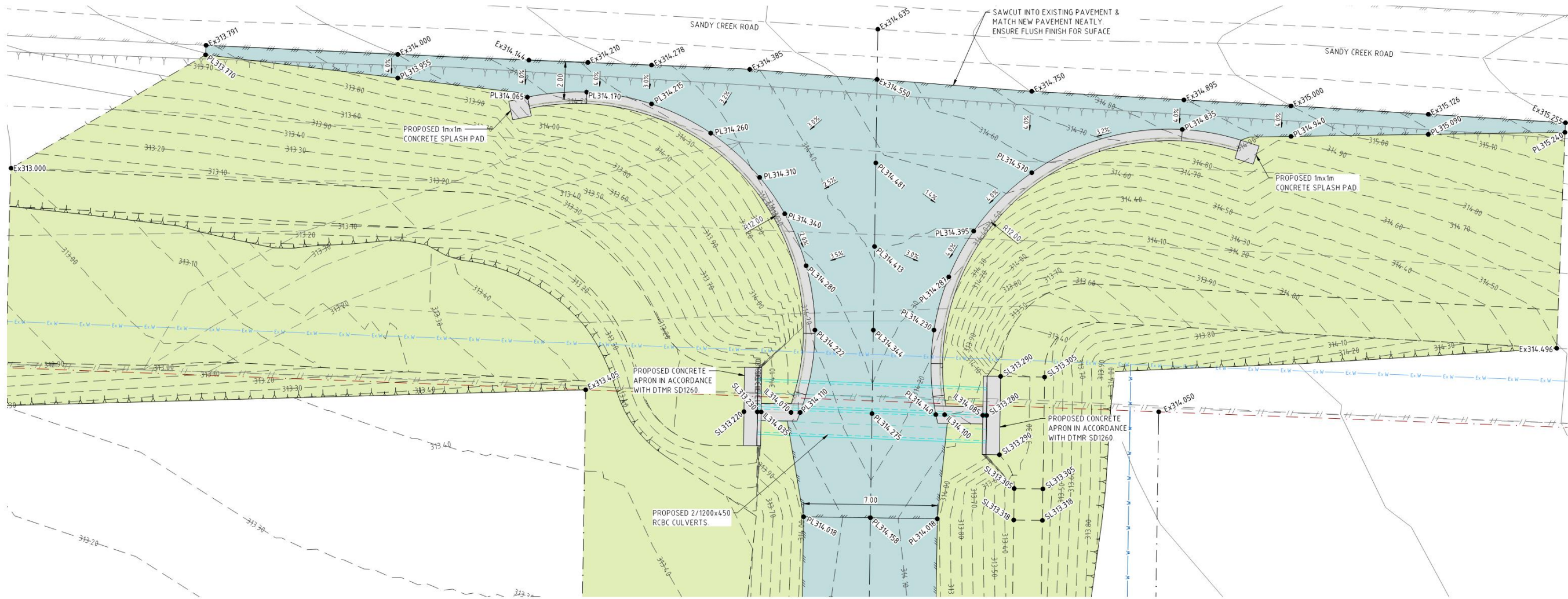
THE DM GROUP
15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS
EARTHWORKS MANAGEMENT LAYOUT PLAN

STP CONSULTANTS
BRISBANE CAIRNS ROCKHAMPTON TOWNSVILLE MACKAY WHITSUNDAYS
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Drawn: LJM
Approved: PP
RPEQ No: 13231

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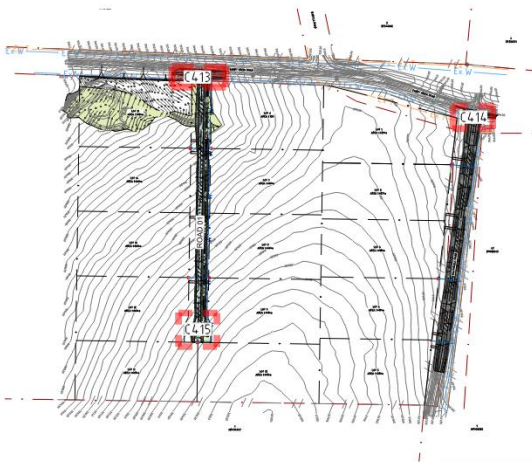
FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING

LEGEND:

	EXISTING WATER MAIN		PROPOSED OVERLAND FLOW
	EXISTING LOT BOUNDARY		PROPOSED TOE OF BATTER
	EXISTING TOE OF BATTER		PROPOSED TOP OF BATTER
	EXISTING TOP OF BATTER		PROPOSED STORMWATER DRAINAGE
	EXISTING ROAD CENTRELINE		PROPOSED LOT BOUNDARY
	EXISTING EDGE OF BITUMEN		PROPOSED ROAD CENTRELINE
	EXISTING FENCE		PROPOSED EDGE OF BITUMEN
	EXISTING CONTOUR (0.25m CONTOUR INTERVAL)		PROPOSED WATER MAIN
			PROPOSED CONTOUR (0.1m CONTOUR INTERVAL)

HATCH LEGEND

	EXTENT OF CONCRETE KERB.
	EXTENT OF GRAVEL PAVEMENT, REFER PROJECT NOTES FOR DETAILS.
	EXTENT OF DISTURBED AREA TO BE REVEGETATED
	EXTENT OF PROPOSED LOTS.



LOCALITY PLAN
SCALE 15000 @ A1

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LEVEL DATUM
PM79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

Rev:	Date:	Description:	By:	Appd:
A	06.02.26	PRELIMINARY	NP	PAP
B	27.03.26	PRELIMINARY ISSUE	JT	PAP
C	22.04.26	FOR APPROVAL	HJD	PAP
D	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

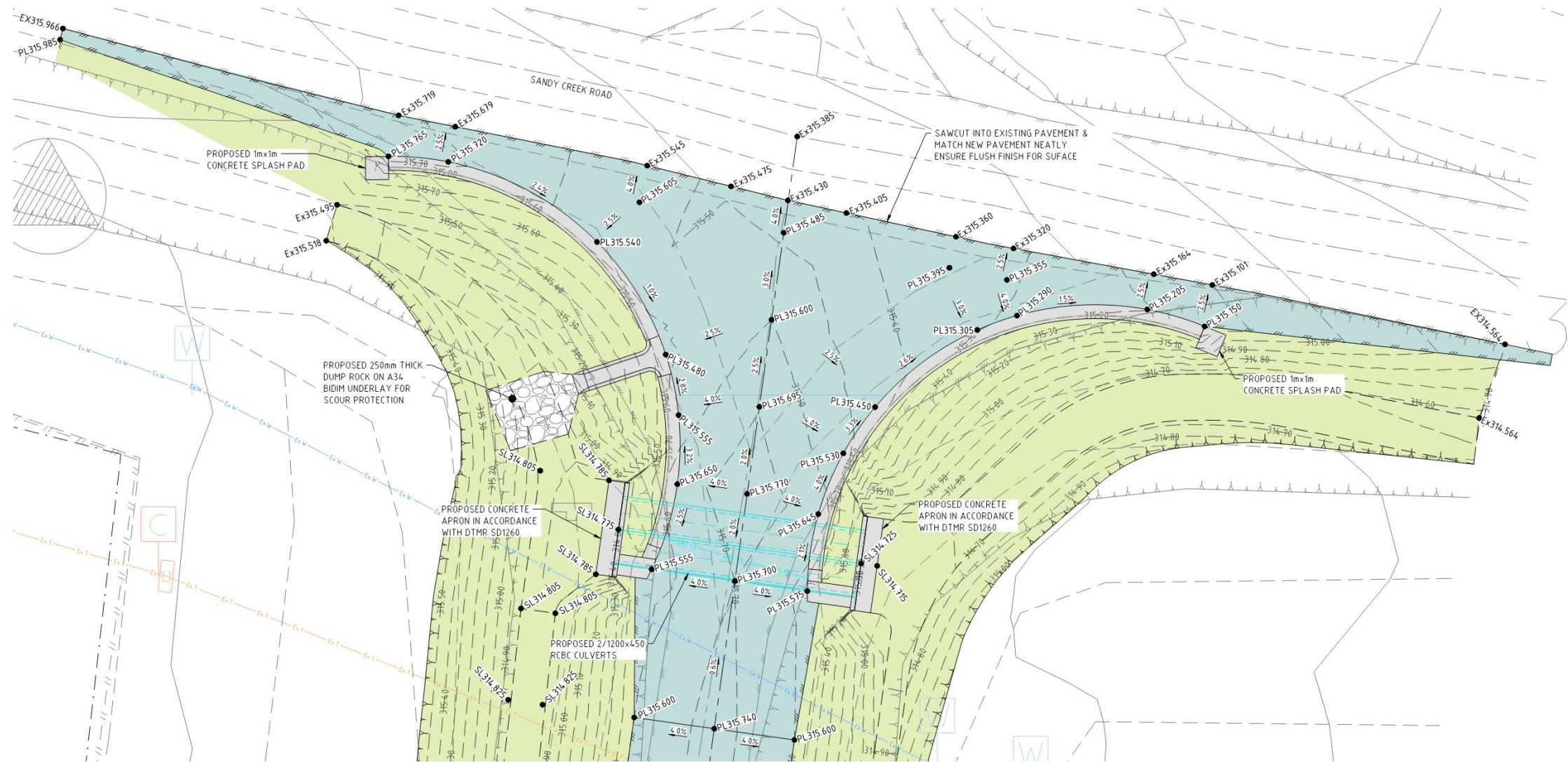
IN ASSOCIATION WITH

THE DM GROUP
15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS
INTERSECTION DETAILS - SHEET 1

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Rev: D
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NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING

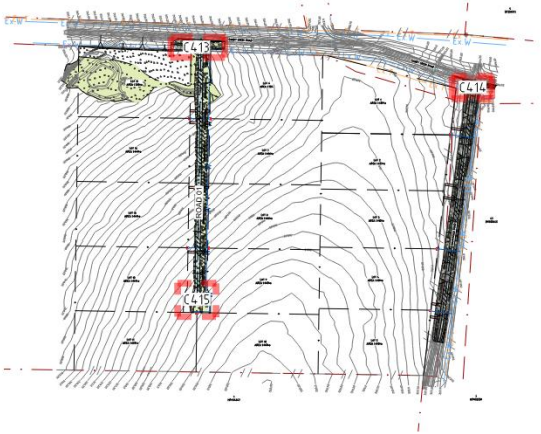
LEGEND:

- EXISTING WATER MAIN
- EXISTING LOT BOUNDARY
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- EXISTING CONTOUR (0.25m CONTOUR INTERVAL)

- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED WATER MAIN
- PROPOSED CONTOUR (0.1m CONTOUR INTERVAL)

HATCH LEGEND

- EXTENT OF CONCRETE KERB
- EXTENT OF GRAVEL PAVEMENT, REFER PROJECT NOTES FOR DETAILS
- EXTENT OF 250mm THICK DUMP ROCK ON A34 BIDIM UNDERLAY FOR SCOUR PROTECTION
- EXTENT OF DISTURBED AREA TO BE REVEGETATED
- EXTENT OF PROPOSED LOTS



LOCALITY PLAN
SCALE 1:5000 @ A1

FOR APPROVAL

ATTENTION: FOR BEST RESULTS AND ACCURATE UNDERSTANDING OF THESE DRAWINGS, PLEASE PRINT IN COLOUR

LEVEL DATUM
PM79954
LEVEL DATUM RL314.342 AHD DERIVED
SITE COORDINATES E418023.020 N77804.26.220

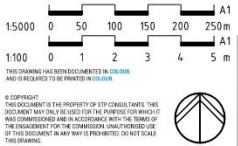
AMENDMENTS			
Rev:	Date:	Description:	By: Appd:
A	06.02.26	PRELIMINARY	NP PAP
B	27.03.26	PRELIMINARY ISSUE	JT PAP
C	22.04.26	FOR APPROVAL	HJD PAP
D	08.05.26	OPERATIONAL WORKS ISSUE	HJD PAP

IN ASSOCIATION WITH

THE DM GROUP
15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS
INTERSECTION DETAILS - SHEET 2

STP CONSULTANTS
BRISBANE CAIRNS ROCKHAMPTON TOWNSVILLE MACKAY WHITSUNDAYS
www.stpconsultants.com.au 07 3539 8300

Design: NP
Drawn: LJM
Approved: PP
RPEQ No: 13231



CIVIL
Job No: STP25-2146
Drawing No: C414
Rev: D
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NOTES:

FOR OVERARCHING NOTES REFER PROJECT NOTES DRAWING

LEGEND:

- Ex T Ex T Ex T EXISTING UNDERGROUND TELECOMMUNICATIONS
- Ex W Ex W EXISTING WATER MAIN
- EXISTING LOT BOUNDARY
- EXISTING LOT EASEMENT
- EXISTING TOE OF BATTER
- EXISTING TOP OF BATTER
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN
- EXISTING FENCE
- PROPOSED OVERLAND FLOW
- PROPOSED TOE OF BATTER
- PROPOSED TOP OF BATTER
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED WATER MAIN
- PROPOSED STORMWATER DRAINAGE
- DENOTES CATCHMENT BOUNDARY
- DENOTES CATCHMENT LABEL

STORMWATER DATA TABLE

CATCHMENT	TC	C100	i_{100} mm/hr	$Q_{100m^3/sec}$	i_{10} mm/hr	$Q_{10m^3/sec}$
A	42min	0.64	117	2.583	82	1509
B	36min	0.64	121	2.155	84.7	1257

Rev:	Date:	Description:	By:	Appd:
A	27.03.26	PRELIMINARY ISSUE	JT	PAP
B	08.05.26	FOR APPROVAL	HJD	PAP
C	08.05.26	OPERATIONAL WORKS ISSUE	HJD	PAP

IN ASSOCIATION WITH

THE DM GROUP
15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS
STORMWATER MANAGEMENT PLAN



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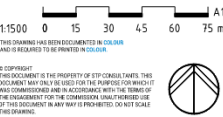
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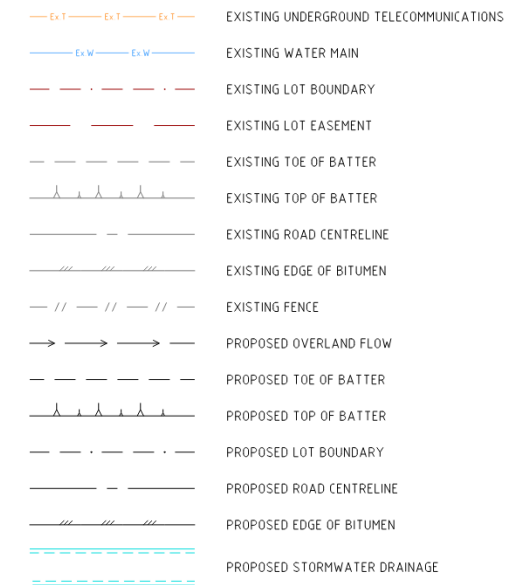
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CIVIL
Job No: STP25-2146
Drawing No: C501
Rev: C

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File Path: L:\project files\STP25-2146\17 Lot Rural Subdivision\Drawings\STP25-2146-SMMP.dwg



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SITE COORDINATES E418023.020 N77804.26 220

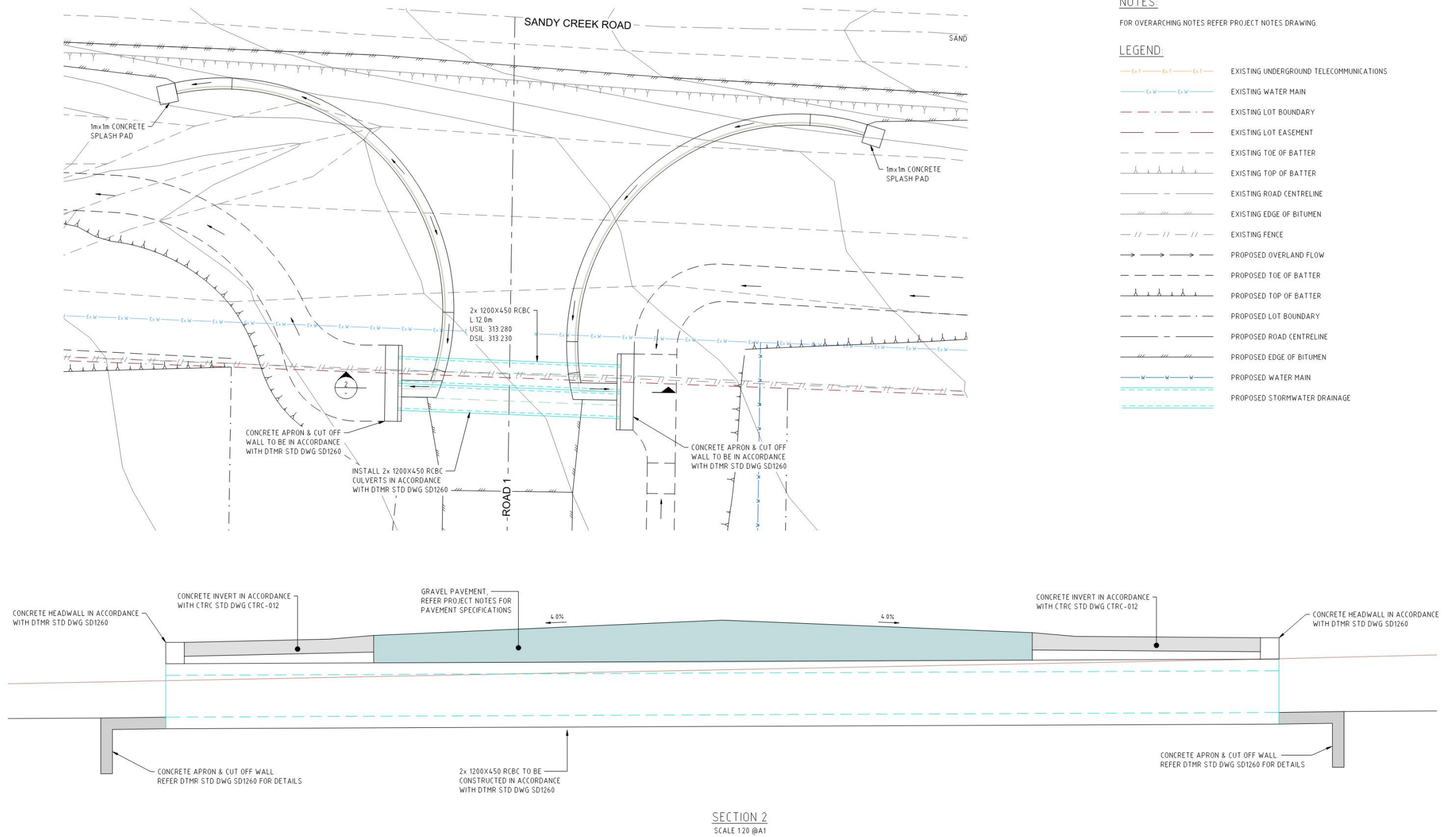
1.0 m
A1
5 m

CIVIL

Job No: Drawing No: Rev:

STP25-2146 C502 B

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AMENDMENTS			
Rev:	Date:	Description:	By: Appd:
A	22.04.26	FOR APPROVAL	HJD PAP
B	08.05.26	OPERATIONAL WORKS ISSUE	HJD PAP

IN ASSOCIATION WITH

THE DM GROUP
15 LOT SUBDIVISION
SANDY CREEK ROAD, SOUTHERN CROSS
ROAD 1 CULVERT PLAN

STP
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Drawn: LJM
Approved: PP
RPEQ No: 13231

1:20 0 0.2 0.4 0.6 0.8 1.0 m
1:100 0 1 2 3 4 5 m

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LEVEL DATUM RL314.342 AHD DERIVED
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CIVIL
Job No: STP25-2146
Drawing No: C503
Rev: B

NOT FOR CONSTRUCTION

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