BNC Ref. DA005-25
CODE:OPW

> 10 November 2025

ASSESSMENT MANAGER
CHARTERS TOWERS REGIONAL COUNCIL
PO BOX 189
CHARTERS TOWERS QLD 4820
Via: Email

Dear Assessment Manager,

RE: LODGEMENT OF A DEVELOPMENT APPLICATION UNDER CHAPTER 3, PART 2 OF THE *PLANNING ACT 2016*
DEVELOPMENT PERMIT FOR CODE ASSESSABLE OPERATIONAL WORKS
9 BLACKS ROAD, BROUGHTON QLD 4820

BNC Planning acting on behalf of the applicant submits the attached development application to the Charters Towers Regional Council in accordance Chapter 3, Part 2 of the *Planning Act 2016.* The development application is seeking a development permit for operational works associated with a reconfiguring a lot over the above referenced premises.

This development application is being made to the Charters Towers Regional Council as the relevant assessment manager under the *Planning Regulation 2017* and has been made in the *approved form* as required under s51 of the *Planning Act 2016*. The common material making up the development application includes:

- Relevant development application forms.
- A detailed planning report and the relevant site detail.
- Development plans and other relevant supporting information.
- An estimate bill of quantities/cost of works schedule for the works being assessed.

Please contact me to confirm receipt of this development application and to confirm the assessment manager application fee amount and payment options. I trust this information is sufficient for acceptance of the development application as *properly made* subject to payment of the application fee. Please contact me should there be any issues or if you require any further information.

Kind regards,

Benjamin Collings, Director
BNC Planning Pty Ltd

Bill of Quantities – Operational Works

Client: 9 Blacks Road, Charters Towers

Project: Water Installation, Road Preparation (Two Coat Seal), and Crossover Access

Date: 13 June 2025

Company: APEC Services Pty Ltd

Section A – Water Installation (HDPE)

Item No.	Description	Unit	Qty	Rate (AUD)	Amount (AUD)
A1	Locate and expose existing water main	m	10	45.00	450.00
A2	Supply and install 100mm HDPE PN12.5 pipe (blue stripe)	m	350	20.00	7,000.00
A3	Trenching, bedding, backfill, and compaction	m	350	20.00	7,000.00
A4	Supply and install water service connections (DN25–32mm)	each	4	800.00	3,200.00
A5	Thrust blocks and anchor points	lot	1	750.00	750.00
A6	Inline isolation valve installation with pit	each	1	680.00	680.00
A7	Pressure testing and chlorination	lot	1	700.00	700.00
	Subtotal Section A				19,780.00

Section B – Road Preparation (Two Coat Bitumen Seal)

Item No.	Description	Unit	Qty	Rate (AUD)	Amount (AUD)
B1	Sub-base preparation (150mm gravel, compacted to 98% MDD)	m^2	4500	4.00	12,000.00
B2	Supply and apply two coat bitumen	m^2	4500	9.00	25,500.00

	seal (2L/m^2)				
	Subtotal Section B				37,500.00

Grand Total (Ex. GST)

Section A – Water Installation	$ 19,780.00
Section B – Road Preparation	$ 37,500.00
TOTAL	$57,280

OCT 2025

BNC PLANNING

DEVELOPMENT APPLICATION
PLANNING ACT 2016

DEVELOPMENT PERMIT

OPERATIONAL WORKS

at
9 Blacks Road BROUGHTON QLD 4820
Lot 4 on SP200726

for
Works Associated with Reconfiguring a Lot

bncplanning.com.au

PLANNING REPORT

DEVELOPMENT APPLICATION FOR A DEVELOPMENT PERMIT
PLANNING ACT 2016

CODE ASSESSABLE OPERATIONAL WORKS

9 BLACKS ROAD, BROUGHTON QLD 4820
being
LOT 4 ON SP200726
for
WORKS ASSOCIATED WITH RECONFIGURING A LOT

BNC Planning Pty Ltd
ABN 80 147 498 397
FILE REF: DA005-25 v2.0 OCTOBER 2025

DOCUMENT CONTROL

Prepared by		Client	File Ref.	Report
BNC Planning		Burdekin Clarke Pty Ltd and Burdekin Doonan Pty Ltd	DA005-25	Report No. DA005-25-PR-OPW
Version	**Date**	**Author**		
1.0	June 2025	SSM:BNC		
2.0	October 2025	SSM:BNC		

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APPENDICIES

1.0 EXECUTIVE SUMMARY

This development application is made in accordance with the provisions of Chapter 3, Part 2 of the *Planning Act 2016* (the Act) and is seeking a development permit for operational works. The operational works are subsequent to Reconfiguring a lot development approval issued by the Charters Towers Regional Council over land addressed as 9 Blacks Road, Broughton more particularly described as Lot 4 on SP200726. The parent development approval is in the form of a Development Permit for a one (1) lot into seven (7) lots subdivision and was issued subject to conditions.

This development proposal relates to the operational works required to facilitate the subdivision and are a requirement of the conditions of approval from the parent development permit. Following a detailed assessment of the proposal against the applicable assessment benchmarks it has been determined that the development proposal is consistent with all applicable codes and policies, including the conditions of approval from the parent development permit. This development application therefore must be approved in accordance with rules of code assessment as established under Act, subject to the imposition of reasonable and relevant conditions. A summary of the development application is provided below:

Table 1.0: Development application summary

APPLICATION SUMMARY	
Application Type	Development Application for a Development Permit
Development Type	Code Assessable Operational Works
Application Description	Civil works (water supply)
Property Address	9 Blacks Road, Broughton QLD 4820
Legal Description	Lot 4 on SP200726
Applicant:	Burdekin Clarke Pty Ltd and Burdekin Doonan Pty Ltd C/- BNC Planning
State Referral Agencies	NA

2.0 BACKGROUND

This operational works application is associated with a recently issued Reconfiguring a lot development permit to facilitate a subdivision at the subject site. Any pertinent existing approvals which may affect the assessment of the proposal are identified in the table below:

APPLICATION REF.	**DECISION AND DATE**
RL19/102	Development Permit – Reconfiguring a Lot – 3 March 2023

3.0 PROPOSAL SUMMARY

The applicant is seeking a development permit to undertake the operational works required to satisfy the relevant conditions of approval for the parent development permit, including acceptance of the associated design certification. The works being assessed relate to civil works. An assessment of the proposed design detail provided in support of this operational works application is discussed in **section 4** below.

4.0 ASSESSMENT

The proposed development is identified as *code assessable* in the operational works tables of assessment. There are no other relevant components of the planning scheme or *Planning Regulation* which affect the level of assessment for the development. The development application is therefore subject to a bound assessment against the specifically identified assessment benchmarks.

4.1 Assessment Benchmarks Pertaining to State Planning Instruments

State Planning Policy

There are no applicable components of the State planning policy.

Regional Plan

There are no applicable components of the North Queensland Regional plan.

State Development Assessment Provisions

Under Schedule 10 of the *Planning Regulation 2017*, the development application does not trigger any referral agency assessment or assessment against the State development assessment provisions.

Assessment Benchmarks Summary

A summary of the relevant state level assessment benchmarks is provided in the table below:

State Planning Instruments	
Assessment Benchmarks	NA

4.2 Assessment Benchmarks Pertaining to Local Planning Instruments

The proposed operational works are subsequent to a parent Reconfiguring a lot development approval. While the tables of assessment for operational works nominate a range of planning scheme codes as the assessment benchmarks, the conditions of approval also constitute assessment benchmarks and require direct compliance. These conditions make reference to the relevant codes from the planning scheme which provides the link between the conditions and the assessment benchmarks. Accordingly, the development has been assessed against the applicable conditions of approval from the development permit as a means of demonstrating compliance with the assessment benchmarks.

The application has been assessed against each of the applicable local level assessment benchmarks and found to be:

- compliant with the relevant conditions of approval from development permit RL19/102;
- compliant with the purpose and applicable outcomes from the relevant planning scheme codes, policies and nominated design standards; and
- consistent with the strategic framework for the planning scheme.

Any pertinent issues arising from the assessment against the local level assessment benchmarks are addressed below. As discussed above, the justification for approval has been provided as an assessment against the conditions of approval only, given they make reference to and as such integrate the requirements of the relevant code-based assessment benchmarks. For clarity, any codes or outcomes not specifically addressed below or in the proposal justification report are considered to be objectively satisfied.

4.2.1 Development Permit RL19/102

The proposed development is identified as *code assessable* in the operational works tables of assessment. The assessment table below provides the necessary justification to demonstrate compliance against the relevant assessment benchmarks.

RL19/102	
Condition	**Justification**
Condition 6. Condition 7. Condition 8. Condition 12. Condition 13.	The scope of works required under this operational works development application relate to water supply, internal private roadworks and the associated stormwater management works. The proponent has engaged an RPEQ civil engineer to prepare the attached working drawings. The detail as shown on the plans confirms compliance with the relevant standards and outcomes referenced in the conditions. The working drawings and design certification are included in **Appendix 2**.

4.3 External Referrals

The development application does not trigger assessment by any referral agencies.

4.4 Public Notification

The application is code assessable and will not be subject to the public notification requirements from the *Planning Act 2016* and Development Assessment Provisions.

5.0 CONCLUSION:

This development application is made in accordance with the provisions of Chapter 3, Part 2 of the *Planning Act 2016* (the Act) and is seeking a development permit for operational works. The operational works are subsequent to a Reconfiguring a lot development approval issued by the Charters Towers Regional Council over land addressed as 9 Blacks Road, Broughton. The development proposal is to facilitate approval of the relevant works detail to confirm compliance with the conditions of approval from the parent development permit. An assessment of the proposed works has been undertaken which confirms that they are consistent with the conditions of approval from the parent development permit and the other applicable assessment benchmark. It is therefore recommended that council **approve** the development application by delegated authority and issue a development permit subject to the imposition of reasonable and relevant conditions.

STATEMENT OF REASONS

Subject to the imposition of reasonable and relevant conditions, the development is able to comply with the following applicable assessment benchmarks against which the application was required to be assessed.

Applicable Assessment Benchmarks:

Planning Scheme	
Assessment Benchmarks:	▪ Development Works code ▪ Conditions of approval from RL19/102

State Planning Instruments	
Assessment Benchmarks:	NA

Reason for approval despite non-compliance with assessment benchmarks

There were no areas of non-compliance with the assessment benchmarks, subject to the imposition of the reasonable and relevant conditions.

APPENDIX 1

DEVELOPMENT APPLICATION FORMS

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*)	Burdekin Clarke Pty Ltd and Burdekin Doonan Pty Ltd C/- BNC Planning
Contact name *(only applicable for companies)*	Benjamin Collings
Postal address *(P.O. Box or street address)*	PO Box 5493
Suburb	Townsville
State	QLD
Postcode	4810
Country	Australia
Contact number	(07) 4724 1763 or 0438 789 612
Email address *(non-mandatory)*	enquire@bncplanning.com.au
Mobile number *(non-mandatory)*	
Fax number *(non-mandatory)*	
Applicant's reference number(s) *(if applicable)*	DA005-25

1.1) Home-based business

☐ Personal details to remain private in accordance with section 264(6) of *Planning Act 2016*

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
		9	Blacks Road	Broughton
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4820	4	SP200726	Charters Towers Region
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 *Airport Assets (Restructuring and Disposal) Act 2008*	
Name of airport:	
☐ Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*	
EMR site identification:	
☐ Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*	
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)*:

Works associated with reconfiguring a lot

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 *DA Form 2 – Building work details*

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?

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	☒ Stormwater	☒ Water infrastructure
☐ Drainage work	☐ Earthworks	☐ Sewage infrastructure
☐ Landscaping	☐ Signage	☐ Clearing vegetation
☐ Other – please specify:		

14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*	
☒ Yes – specify number of new lots:	7
☐ No	

14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*
$57,280

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
☐ 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 2under 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	RL19/102	3 March 2023	Townsville City 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 Form1 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.qldgov.au for information regarding assessment of Queensland heritage places.

Name of the heritage place:		Place ID:	

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 ***Note**: See the Planning Regulation 2017 for referral requirements*	☒ Yes
If building work is associated with the proposed development, Parts 4 to 6 of *DA Form 2 – Building work details* have been completed and attached to this development application	☐ 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

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

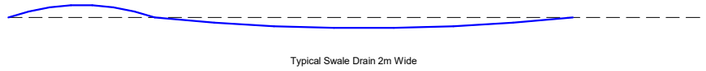
Date received: | Reference number(s):

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	

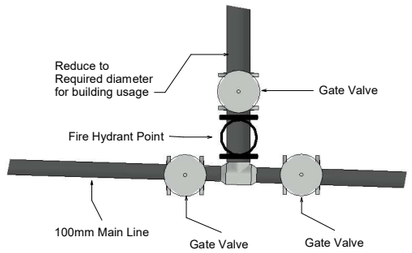
QLeave notification and payment *Note: For completion by assessment manager if applicable*			
Description of the work			
QLeave project number			
Amount paid ($)		Date paid (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

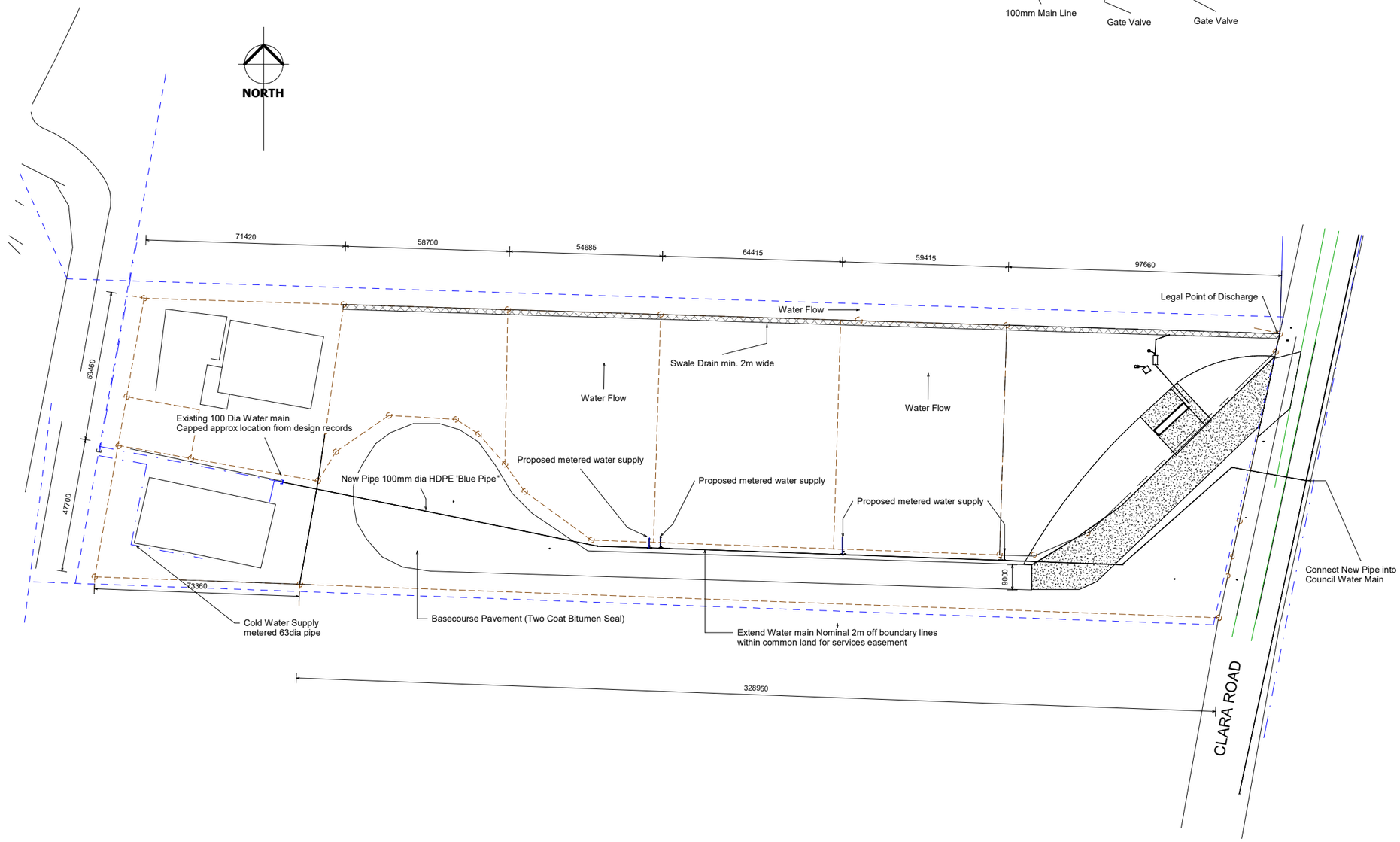
APPENDIX 2

WORKING DRAWINGS



3 Swale Cross
1 : 10





1 SITEWORKS DETAILS 2
Water Main (Fire)
1 : 750

REV.	DESCRIPTION	BY	APPD	DATE
	REVISION SCHEDULE			

APECS
Australian Professional Engineering Consultancy Service

DRAWN.		
DESIGNED.	PDD	
CHECKED.	PDD	
APPROVED.	SK	

For Aproval

Client :
Peter Doonan

Project :
OP Works

Address :
CLARA ROAD
CHARTERS TOWERS Q
4820

Sheet Name :
Proposed Water Main Extn

SCALE	A1	As indicated
	ORIGINAL	A1
PROJECT	190105/230109	
SHEET No	501	DATE ISSUED
ISSUED	02-09-2025	

SKIPSTONE CONSULTING
Peter D Duncan RPEQ, CPEng
Consulting Engineers and Project Managers

STORMWATER ASSESSMENT REPORT

CLARK SUBDIVISION CLARA ROAD CHARTERS TOWERS

PROJECT REFERENCE 190105

REV 2

DATE: 4 OCTOBER 2025

e. peterd@skipstoneconsulting.co.nz
p. +64 021 397008
96 Kerrs Road, Christchurch, New Zealand 8063

Authorisations

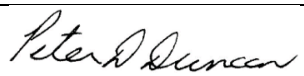
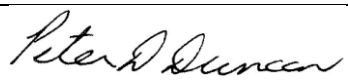
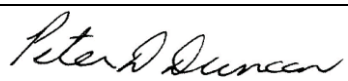
Project Report details	Accountability	Signature - which confirms relevant work has been completed and approved	Date	Qualification
Author	Project QA Manager and Project Director		10-6 2019	CPEng, RPEQ 1670
Review	Authorised Principal engineer for the project	Engineer Paul Harries	17-6 2019	BEng
Approval	Authorised Signatory		17-6 2019	RPEQ 1670
Revision	Authorised Signatory		4-10-2025	RPEQ 1670

TABLE OF CONTENTS

1 INTRODUCTION

This report covers the stormwater flow investigation for a subdivision at Clara Road, Charters Towers.

The report has been prepared by Peter Duncan MIPENZ, MIE AUST, CPENG RPEQ. These design reports, in this format, form part of the Quality Assurance procedure in the business. Each report is tailored for the site and purpose but essentially acts as a checklist for design considerations and a record of the design process.

1.1 Background

Skipstone Consulting was commissioned by Owen Clark to provide a stormwater assessment in response to a request for information (RFI) for preliminary planning considerations from TMR. Peter Duncan has local experience in Charters Towers and with this site in particular having prepared the development plan in 2009-2012.

The proposal was first developed in 2009 to develop the site between Blacks Road and Clara Road in Charters Towers. Subsequently in 2019 there is a subdivision proposal to divide the property at Lot 1 RP… Into 7 lots. The site has already been developed for commercial activity. An additional 4 new buildings on their own allotment is proposed, compared to the original proposal which allowed for an additional 6 leased buildings.

The proposed overall development allotments and site layout are attached at Appendix A.

Revision 2 of the report was prepared in 2025 to specifically address the installation of the Pacific Petroleum automated fuel station at Lot 1. In addition, the changes to Australian Rainfall and Runoff and recommended assessment methodology for small level sites has been used in development of the runoff volumes at various storm return periods.

1.2 Scope of Report

The site is located on the outskirts of Charters Towers.

The state planning requirements include the investigation of stormwater effects on state-controlled road.

. A copy of the Transport and Main Roads information document is attached at Appendix B.

To demonstrate compliance with PO12-PO14, it is recommended the applicant provide evidence that the

development achieves the requirements in either: clause a) below, or submit SMP as detailed in clause b)

below, as follows:

a) Submit supporting documentation certified by a suitably qualified Registered Professional

Engineer of Queensland (RPEQ) which demonstrates compliance with points i) to vi):

i) the development complies with AO13.1, AO13.2 and AO13.3;

ii) the development does not concentrate stormwater flows towards the state-controlled-road corridor;

iii) the development does not increase the peak flow onto the state-controlled road

corridor;

iv) the development does not divert catchment runoff towards the state-controlled road corridor;

v) the development does not encroach or block a major flowpath from the state-controlled road corridor; and:

vi) the development does not involve excavation/filling of floodplain near the state-controlled road with supporting flood modelling.

In meeting the above requirements, we advise as follows:

i) Section AO 13.1-13.3 are discussed below

ii)The site is below the level of the state highway and slopes away from state-controlled road

iii) There is no stormwater flow onto the state-controlled road from this site – the natural slope is away from the site – there is no proposed work on state-controlled road

iv) Drawing shows the stormwater flow away from state-controlled road

v) proposed work on the site is 200m from the edge of the state-controlled road

vi) The topography of the site is just below the top of the local ridge, and has a gentle slope diagonally across the site and towards Clara Road.

The requirements indicated that the assessment of stormwater impacts should include the state controlled road corridor, however our assessment of the catchment is that the state controlled road corridor is outside of the catchment providing stormwater to the site.

2 EXISTING SITUATION

2.1 Site Location

The subject site is located approximately 3km west of the start of Flinders Highway section 14B. The site is bounded by Blacks Road to the west and Clara Road to the east. Blacks Road is included in the Flinders Highway Road reserve as an access to properties.

Previous planning approvals allowed for 9 industrial buildings which could be leased by business for commercial and industrial activity on the site. The proposal varies (what we believe to be the current approval) to allow for the site to be subdivided into 7 allotments. Currently there are two businesses operating from the site. The owners of the site operate Steel Supplies Charters Towers from two buildings and a Rural Supplies business operates from the larger industrial building. The bulk of the site is used for storage. (at October 2025)

AO13.1 Development does not create any new points of discharge to a state-controlled road. AND

AO13.2 Stormwater run-off is discharged to a lawful point of discharge.

Note: Section 3.4 of the Queensland Urban Drainage Manual, Department of Energy and Water Supply, 2013, provides further information on lawful points of discharge. AND

AO13.3 Development does not worsen the condition of an existing lawful point of discharge to the state-controlled road.

In meeting the above requirements the following advice is given:

- There are no points of discharge from the site to the state-controlled road – the existing point of discharge at Clara Road will not change.
- Stormwater runoff is discharged to Charters Towers Regional Council controlled points of discharge
- The development is designed to restrict flows to achieve the condition of no worsening.

2.2 2010 Stormwater Assessment

The site was assessed in 2010 using the Rational Method.

The following assumptions were made:

- Site area assumed to be 41670m2 – based on a catchment assessment
- Slope is approximately 1% and falls across the site and to Clara Road.
- The site is located at the top of the catchment area and does not include the state-controlled road
- The site is effectively on unvegetated hard ground with a normal runoff coefficient of approximately 0.7
- With additional impervious are the runoff coefficient of 0.75 has been used to assess the fully developed site.
- A vegetated swale drain is to be used to reduces the stormwater leaving the site to meet no worsening conditions.
- Rainfall intensities included consideration of climate change

	Location charter Towers							
	ARI	A	B	C	D	E	F	G
	1	3.688	-0.55924000	-0.05553400	0.00887890	0.00247020	-0.00049250	-0.00002283
	2	3.954783	-0.55805000	-0.05693100	0.00810830	0.00283340	-0.00038437	-0.00004980
	5	4.238566	-0.55579000	-0.06073300	0.00677630	0.00369640	-0.00018590	-0.00010383
	10	4.378882	-0.55464000	-0.06319800	0.00617930	0.00420920	-0.00009974	-0.00013123
	20	4.536441	-0.55385000	-0.06493000	0.00564430	0.00458000	-0.00001419	-0.00015437
	50	4.715267	-0.55235000	-0.06704600	0.00484080	0.00506560	0.00009898	-0.00018553
	100	4.834744	-0.55174000	-0.06810400	0.00440190	0.00531940	0.00016568	-0.00020255
		Return Period						
	Duration	1	2	5	10	20	50	100
5min	0.08	113.75	148.16	195.35	223.88	261.07	310.95	349.72
6 min	0.10	106.78	139.21	183.84	210.76	245.97	293.20	329.96
10 min	0.17	89.52	116.74	154.25	176.82	206.49	246.19	277.11
20 min	0.33	68.58	89.39	118.20	135.61	158.46	188.98	212.72
30 min	0.50	57.21	74.61	98.81	113.51	132.73	158.45	178.43
1 hr	1.00	39.96	52.18	69.31	79.75	93.36	111.64	125.81
2 hr	2.00	26.50	34.60	45.93	52.83	61.82	73.92	83.29
3 hr	3.00	20.51	26.77	35.47	40.74	47.63	56.89	64.06
6 hr	6.00	13.12	17.10	22.60	25.92	30.26	36.09	40.61
12 hr	12.00	8.45	11.03	14.66	16.87	19.74	23.61	26.62
24 hr	24.00	5.49	7.24	9.84	11.45	13.53	16.38	18.59
48 hr	48.00	3.51	4.69	6.61	7.85	9.43	11.62	13.34
72 hr	72.00	2.60	3.51	5.03	6.03	7.31	9.08	10.50

Spread sheet for Rational Method Calculations of Peak Flow							
Base model							
Data Cells							
	M2	Ha	KM2			Time of Concentration	
Area	41630	4.163	0.04163				
Stream Slope	6		14.05152		tc	20.24861	MIN
Length	427		0.427			0.337477	HOURS
Rainfall Intensity							
ARI	tc	depth	I	I BOM			
5	20.24861		0	118.2			
10	20.24861		0	135.61			
20	20.24861		0	158.46			
50	20.24861		0	188.98			
100	20.24861		0	212.72			
Calculate Q	FCIA						
ARI	F	C	i	A	Q		
5	0.278	0.7	118.2	0.04163	0.9576	cumecs	
10	0.278	0.7	135.61	0.04163	1.10	cumecs	
20	0.278	0.7	158.46	0.04163	1.28	cumecs	
50	0.278	0.7	188.98	0.04163	1.53	cumecs	
100	0.278	0.7	212.72	0.04163	1.72	cumecs	

Calculate Q	FCIA					
ARI	F	C	i	A	Q	
5	0.278	0.75	118.2	0.04163	1.0260	cumecs
10	0.278	0.75	135.61	0.04163	1.18	cumecs
20	0.278	0.75	158.46	0.04163	1.38	cumecs
50	0.278	0.75	188.98	0.04163	1.64	cumecs
100	0.278	0.75	212.72	0.04163	1.85	cumecs

Volume of vegetated swale – buffer storage

- Estimated 120m3 (386x(1.5+0.5)/2x0.5=193m3)
- Increase time of Concentration due to buffer storage and vegetation.
- Assume 30-minute time of concentration for the provided landscape works.

Rainfall Intensity						
ARI	tc	depth	I	I BOM		
5	30		0	99		
10	30		0	113.5		
20	30		0	132.73		
50	30		0	188.98		
100	30		0	212.72		
Calculate Q	FCIA					
ARI	F	C	i	A	Q	
5	0.278	0.75	99	0.04163	0.8593	cumecs
10	0.278	0.75	113.5	0.04163	0.99	cumecs
20	0.278	0.75	132.73	0.04163	1.15	cumecs
50	0.278	0.75	158.45	0.04163	1.38	cumecs
100	0.278	0.75	178	0.04163	1.55	cumecs

In 2011 it was concluded that the landscape works proposed would return the flow leaving the site to at least the original flow rate.

2.3 2019 Stormwater Assessment

The assumed reduction in impervious area with the current proposal is not significant (or accurate enough) to warrant a change in assessment.

In 2011 the rainfall intensities included allowances for environmental changes to rainfall and runoff.

The soil conditions for the site mean that almost all of the rainfall will runoff towards Clara Road. The swale and other vegetation work on the site will result in no worsening of flow to Clara Road.

2.4 2025 Stormwater Assessment

The recommendation from Australian Rainfall and Runoff uses “Friends Equation” to confirm the time of concentration. In effect, the initial flow leaving the site was reduced to 700l/s or approximately 56% of the original assessed site outflow.

Copyright Commonwealth of Australia 2016 Bureau of Meteorology (ABN 92 637 533 532)								
IFD Design Rainfall Intensity (mm/h)								
Issued:	3-Oct-25							
Location L	ssct							
Requested	Latitude	20° 06' 14"	Longitude	146° 15' 00"				
Nearest gr	Latitude	20.1125 (S)	Longitude	146.2625 (E)				
		Annual Exceedance Probability (AEP)						
Duration	Duration in	63.20%	50%	20%	10%	5%	2%	1%
1 min	1	130	148	203	238	271	312	341
2 min	2	111	127	173	203	232	264	286
3 min	3	104	119	163	191	217	248	270
4 min	4	99.4	113	155	182	207	238	259
5 min	5	95.3	109	149	175	199	228	249
10 min	10	79.9	91.3	125	147	167	192	211
15 min	15	69	78.9	108	127	144	166	182
20 min	20	61	69.7	95.5	112	127	146	161
25 min	25	54.8	62.5	85.7	100	114	131	144
30 min	30	49.8	56.8	77.8	91.2	104	119	131
45 min	45	39.4	44.9	61.5	72.1	82.1	94.4	103
1 hour	60	32.8	37.4	51.2	60.1	68.4	78.7	86.1
1.5 hour	90	24.9	28.4	38.8	45.6	52	60	65.7
2 hour	120	20.3	23.1	31.6	37.2	42.4	49.1	53.9
3 hour	180	15	17.1	23.4	27.6	31.6	36.7	40.5
4.5 hour	270	11	12.5	17.3	20.4	23.5	27.5	30.5
6 hour	360	8.81	10	13.9	16.5	19	22.4	25
9 hour	540	6.45	7.38	10.3	12.3	14.2	16.9	19
12 hour	720	5.19	5.94	8.34	9.99	11.6	13.9	15.7
18 hour	1080	3.83	4.4	6.24	7.53	8.82	10.6	12.1
24 hour	1440	3.1	3.57	5.1	6.19	7.29	8.83	10.1
30 hour	1800	2.63	3.04	4.38	5.33	6.29	7.64	8.72
36 hour	2160	2.31	2.67	3.86	4.72	5.59	6.78	7.75
48 hour	2880	1.88	2.18	3.17	3.89	4.62	5.61	6.4
72 hour	4320	1.4	1.63	2.4	2.94	3.5	4.23	4.8
96 hour	5760	1.13	1.32	1.95	2.39	2.83	3.41	3.85
120 hour	7200	0.957	1.12	1.64	2.01	2.37	2.84	3.2
144 hour	8640	0.831	0.974	1.42	1.73	2.03	2.42	2.72
168 hour	10080	0.734	0.861	1.25	1.51	1.76	2.09	2.35

Spread sheet for Rational Method Calculations of Peak Flow Small Catchments							
Base model							
Data Cells							
			Friends Eqn		t=(107nLxS^0.333)/S^0.2		
Area	4288						
			n	0.033			
	M2	KM2	Ha	Time of Concentration			
Area	40000	0.04	4	tc	35.60708	min	
Stream Slope	1			0.232558			
Length	430	0.43					0.002326
Intensity-Frequency-Duration Table			Runoff Coefficient C		0.7		
Rainfall intensity in mm/hr							
For Pacific Petroleum NASS RD							
$^{1}I_{y}$	**ARI (Yr)**				Cy	0.966	1.008
	63.20%	50%	20%	10%	5%	2%	1%
Duration	**1.5**	**2**	**5**	**10**	**20**	**50**	**100**
30 minute	49.8	56.8	77.8	91.2	104	119	131
Cy	0.825	0.85	0.95	1	1.05	1.15	1.2
Cy*C	0.5775	0.595	0.665	0.7	0.735	0.805	0.84
Q M3/s	0.319806	0.375812	0.575315	0.709901	0.850013	1.06524	1.223645
QL/s	319.8056	375.8115	575.3154	709.9008	850.0128	1065.24	1223.645
$^{1}I_{y}$	**ARI (Yr)**			Runoff Coefficient C		0.6	
	63.20%	50%	20%	10%	5%	2%	1%
Duration	**1.5**	**2**	**5**	**10**	**20**	**50**	**100**
1hour	32.8	37.4	51.2	60.1	68.4	78.7	86.1
Cy	0.825	0.85	0.95	1	1.05	1.15	1.2
CyC	0	0.51	0.57	0.6	0.63	0.69	0.72
Q M3/s	0	0.212103	0.324526	0.400987	0.479183	0.603849	0.689351
QL/s	0	212.1029	324.5261	400.9872	479.183	603.8494	689.351

The proposal drawings include a vegetated swale drain running the length of the site. The wide flat drain is designed to treat the likely contaminants from an industrial subdivision. One of the key design features is the vegetation which treats and reduces contaminants including carbon, particulates and petroleum spills. The site at Clara Road prior to the legal point of discharge includes an oil water separator (SPEL Rank) which collects oil and

petroleum from the paved forecourt and protects the stormwater discharge against accidental spills.

Stormwater discharge from the SPEL tank is to the swale drain.

The swale drain prevents discharge to the neighbour's property and allows for storage during the 1% storm event. The estimated storage of the vegetated drain is about 100m^3 over the total length of swale drain.

Each site allows for discharge of stormwater from the surface landscape to the swale drain. Stormwater design for each of the buildings and site is to include surface drainage through landscape so that the time of concentration limits the flow to the swale drain. Each lot also includes and allowance for treated wastewater discharge through either an evapo-transpiration trench or a Wisconsin mound.

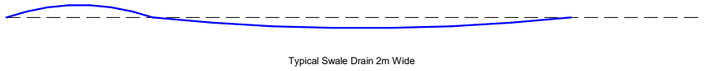
3 CONCLUSION

The site is at the top of the catchment and all flow is directed away from the state-controlled road area.

Existing landscaping from 2011 should be renewed to ensure proper operation of drainage.

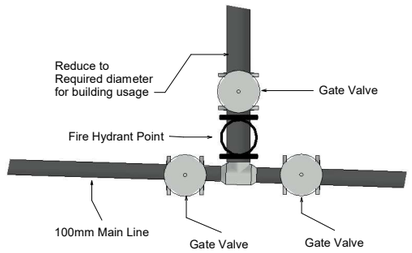
The proposed subdivision will also mean that once subdivided individual owners will have responsibility for ensuring that stormwater minimisation and "no worsening" This would be available using buffer storage tanks for each building.

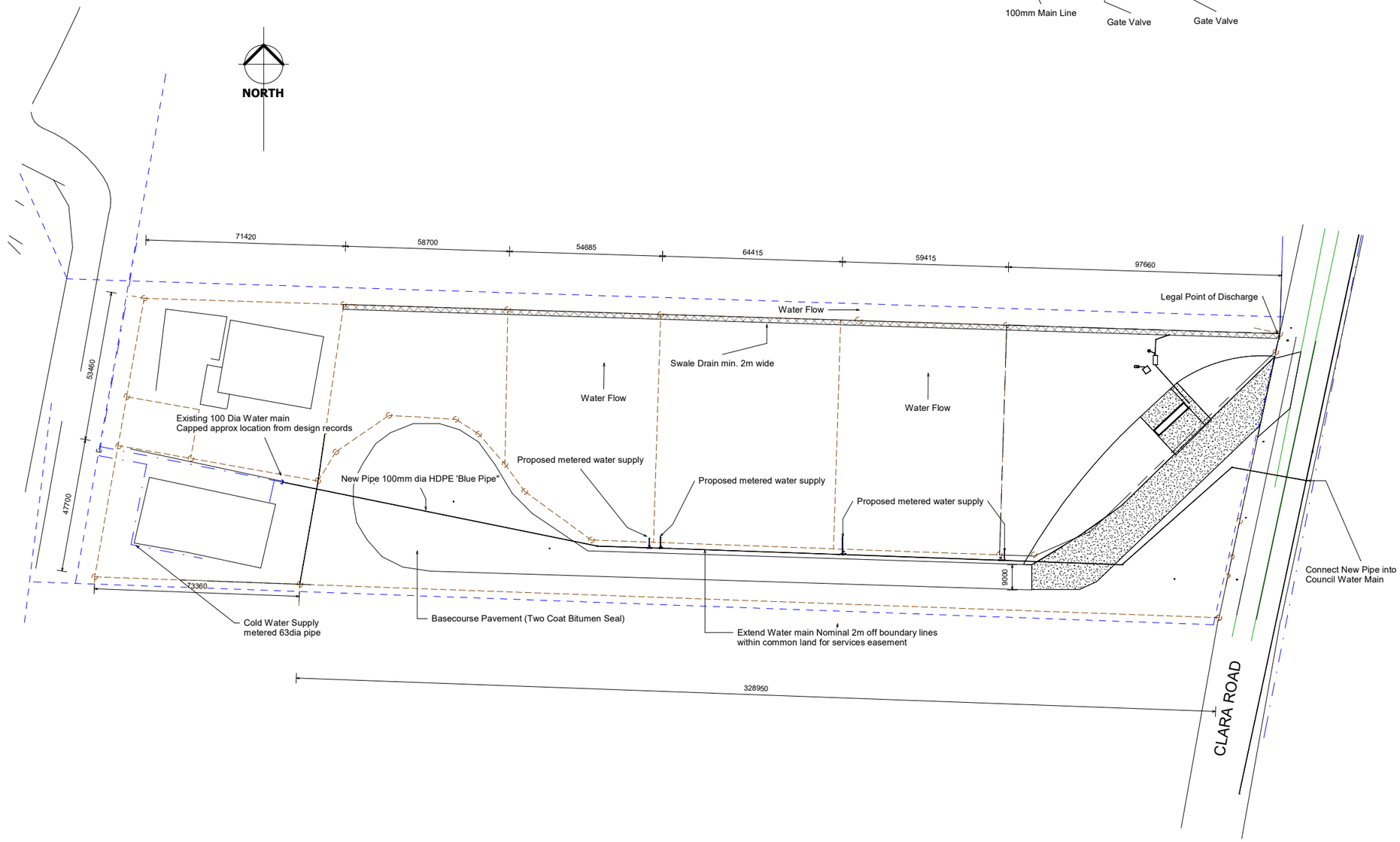
APPENDIX A – PROPOSAL DRAWINGS



Typical Swale Drain 2m Wide

3 Swale Cross
1 : 10





1 SITEWORKS DETAILS 2
Water Main (Fire)
1 : 750

REV.	DESCRIPTION	BY	APPD	DATE
	REVISION SCHEDULE			

APECS
Australian Professional Engineering Consultancy Service

DRAWN.		
DESIGNED.	PDD	
CHECKED.	PDD	
APPROVED.	SK	

For Aproval

Client :
Peter Doonan

Project :
OP Works

Address :
CLARA ROAD
CHARTERS TOWERS Q
4820

Sheet Name :
Proposed Water Main Extn

SCALE	A1	As indicated
	ORIGINAL	A1
PROJECT	190105/230109	
SHEET No	501	DATE ISSUED
ISSUED	02-09-2025	

APPENDIX B – QUALIFICATIONS AND EXPERIENCE

Peter Duncan

Principal Civil/Structural Engineer

- BEng (Civil), MBA, RPEQ, MIE Aust., MIPENZ, CP Eng
- Member Institution of Engineers, Australia, CP Eng (Australia)
- National Professional Engineers Register, Australia
- Member Institution of Professional Engineers, New Zealand
- Chartered Professional Engineer New Zealand (Civil and Structural Disciplines)
- International Engineers Register New Zealand

Brief summary of working career:

- Peter began his career in Queensland working for Telstra in 1980, as a civil engineer.
- He joined the private sector as a Consultant in 1990 working for Ekert Management Group until 1997. During this time he became a director and partner of the firm.
- He was the Engineering Manager of Special Projects for Hamilton City Council (NZ) in 1997.
- Peter joined Meritec and Worley Consultants in New Zealand in 1999 as Senior Engineer for the company.
- Whilst at Rangitikei District Council, Peter worked as "Assets Manager" which is equivalent to Director of Engineering (May 2000).
- From 2005 to 2007 Peter was Director of Engineering at Flinders Shire.
- In 2007 Peter opened Duncan Projects in Townsville.
- In 2013 Peter opened Duncan Projects in Christchurch and Hamilton
- Duncan Projects joined the Frontier Engineers Consortium in 2013 for work in Christchurch. Peter was appointed Managing Director of Frontier Engineers in December 2013 and works full time at Frontier Engineers.
- Skipstone Consulting 2015-Present

Peter Duncan is a qualified Civil and Structural Engineer specialising in Structural and Infrastructure Design as well as Project, Planning and Water Management. Peter opened Duncan Projects in October 2007 and has since developed the business with a number of key clients, primarily in the area of structural engineering design and structural certification of buildings.

Peter's experience comes from a career spanning 30 years which has included 8 years as a Senior Manager in Local Governments in New Zealand and Australia and another 8 consecutive years as Director and Project Manager at Ekert Management Group Pty Ltd. Peter has vast experience in major project work, leading multi-disciplinary teams, design and construction.

His most significant major project began in 1989 and took until 1997 to complete which was the Jindalee Operational Radar Network (JORN). Prior to 1989 Peter worked on Telecommunications Infrastructure Projects for Telecom Australia including the Remote Rural Areas Program. This work included structural design of "Post Disaster" function Buildings.

Over his career, Peter has reported to Councils on a number of issues including Drainage Policies and issues that required straight forward policy advice, very often on issues that were especially complex.

Peter is also qualified in training and assessment in civil engineering related disciplines and has worked with both Engineers Australia and the Institution of Engineers New Zealand assessing candidates for corporate membership. Peter has also lectured at James Cook University in Project Management. He has written and delivered training programs for Quality Management and Tennis Coaching.

Structures:
Peter's structural experience includes the design of special buildings for Australian Defence Department as part of the Jindalee Operational Radar Project, "post disaster" function buildings for cyclonic regions, foundations for tower structures and the design and construction of bridges for walkways and highways.

Peter has experience with investigations of structure condition and failures, including vibration induced failure and collapse, and with earthquake and cyclone strengthening of historical structures. In the last three years Peter has been directly involved with the repair and re-construction of buildings following Cyclone Yasi in North Queensland and repair of bridge structures following the flooding in Queensland.

At Hamilton City Council, Peter was responsible for the structural checking of building consents submitted for construction.

He has experience in demolition and deconstruction and has held certification with Occupational Health and Safety (QLD) for both demolition and asbestos identification.

Major Structural Design Projects include:

- Telecommunications Structures – Buildings and Towers
- Jindalee Operational Radar Network - Buildings and infrastructure
- All Souls - St Gabriels – New Gymnasium
- Blackheath and Thornburgh College – New Library and Kindergarten
- Steel Supplies Charters Towers - Industrial Buildings
- Carter Street Townsville – Unit Development
- Christmas Island – Drumsite Village

Structural Design Projects involving design and assessment of buildings to previous and current earthquake codes in New Zealand include:

- Hamilton Gardens Russian "Bell-Watchtower"
- Hamilton Hammond Park – Pedestrian Bridge
- Hamilton – Strengthening of unreinforced clay brick masonry office building
- Carter Street Townsville – Unit Development – specific design checks for earthquake loading
- Christchurch – 35A Lookaway Place – New house structure on steep land to replaced damaged residence
- Lyttleton – 31 Bridle Path – New House structure on steep land to replace damaged residence demolished following earthquakes
- 14 Wairarapa Terrace – Specific Foundation design and repair strategy

Infrastructure Asset Management:
Peter has been responsible for the development of Infrastructure Asset Management Plans for local government in New Zealand and Australia. He has developed a number of engineering systems for asset management planning, asset valuation and condition assessment. His work to date has included the development of Asset Management Plans and Asset Valuation for Rangitikei District Council in New Zealand and Total Asset Management Plans and other related plans for Flinders Shire Council in North West Queensland. Charters Towers Regional Council, Mount Isa City Council and Richmond Shire Council

He has also studied system failure rates as part of risk management strategy and undertaken studies of risk assessment as a means of making and supporting management decisions.

Peter has also been involved in developing building maintenance systems while at Hamilton City Council in New Zealand, including maintenance schedules and contracts for building maintenance. This work was based on his experience in developing building maintenance systems for the Jindalee Operational Radar Project (JORN), and his early career work with the Buildings and Property Department of Telecom Australia. Peter has also used this experience while Assets Manager at Rangitikei District Council.

Contract and Construction Management:
Peter has considerable expertise in contracts and construction management gained from his diverse practice in the engineering industry. Peter was the Design and Construction manager for the infrastructure on the Australian Defence Departments Jindalee Operational Radar Network at sites across Australia.

Peter's experience with contracts includes developing and managing partnering, performance based and design-construct contracts; alternative dispute resolution including preparing claim and dispute resolution evidence.

Peter has worked with loss adjusters to investigate construction failures providing independent reports and evidence, including expert testimony in court.

Environmental and Landscape:
Some of Peter's other relevant environmental projects include: Development of Wetlands adjacent to the Waipa River, development of projects in Hamilton including significant parts of the Waikato River walkway, while Engineering Manager Special Projects For Hamilton City Council (work included the project management, planning and community consultation). Water quality projects for storm water in Hamilton Gardens and at the Bay of Plenty Polytechnic. During his early career Peter was active in undertaking environmental impact and visual impact studies for the construction of communications towers in Queensland, including projects in the Wet Tropical Rainforests of Far North Queensland; walkway and lookout projects in various parks; and erosion protection projects including two on the Waikato River at Hamilton, New Zealand.

Peter is also qualified to investigate and certify contaminated land reports to the Queensland EPA.
Peter has experience with the geotechnical requirements for protection of land with steep slopes, which has included assessment of slope stability, retaining structures, repair of land slips and subsidence.

New Zealand assessments have included work on land slip areas in Hamilton in 1997 - 1999, Rangitikei 2000 – 2005, and particularly including monitoring of the Taihape slip circle and repair of steep land following the Manawatu floods in 2004.

Australian assessments have included retaining walls and building designs in Brisbane (Mt Glorious), Queensland Microwave Radio Sites (SEACOM Route) and Townsville buildings on Castle Hill and Nobby Headland (Magnetic Island)

Current work in Christchurch New Zealand includes design and repair of retaining structures and steep land affected by the earthquakes of 2010 and 2011.

Water, Storm water and Wastewater:
Investigation Projects undertaken by Peter include water loss and leakage at both Flinders Shire and Rangitikei District Councils, stream flood flow and mitigation for subdivision development.

He has analysed the fee structures for water and wastewater charging while Asset Manager at Rangitikei District.

Design projects include the augmentation of Hughenden Wastewater Treatment Plant and the replacement of the Mangaweka Wastewater treatment plant.

Wastewater (Sewage) design of treatment and effluent disposal systems including discharge to land, and domestic on-site disposal of effluents. At Rangitikei Peter was responsible for ensuring that the discharge effluent met stringent environmental conditions. Minor wastewater projects include

- Design of effluent disposal system for the JORN project (four sites)
- Modification to designs for water treatment process JORN Qld sites
- Design of effluent disposal system adjacent to Duddings Lake (Rangitikei District Environmentally sensitive water body)
- Advice on effluent Quality at Marton, Taihape and Bay of Plenty
- On-site waste water disposal various sites in Queensland
- Sewerage design for new works on Christmas Island
- Environmentally sound storm water design for QLD subdivisions

Road Networks
Peter also has experience with designing and managing road networks and road maintenance contracts. Highlights include

- Chair of the NW Regional Road Group – Flinders Shire
- Chair of the Regional Road Safety Committee – Rangitikei District
- Member of Regional Road Committees in Manawatu and Hawkes Bay NZ
- Managed Flinders Shire Road Network
- Managed Rangitikei District Road Network.
- Subdivision Design
- Road work for Christmas Island project
- Isaac Regional Council – NDRRA Flood damage repair to road network.
- Traffic intersection assessments and reports including cycle networks – Rangitikei District, Flinders Shire, Duncan Management Group (Townsville/Mackay area)

APPENDIX 3

DEVELOPMENT PERMIT RL19/102

CHARTERS TOWERS
REGIONAL COUNCIL

03 March 2023

Our Ref: 4758090
File Ref: RL19/102
Enquiries: Jorja Feldt

Burdekin Clarke Pty Ltd and Burdekin Doonan Pty Ltd
C/- Steel Supplies Charters Towers
9 Blacks Road
BROUGHTON QLD 4820

Sent via email: *pdoonan@ssctowers.com.au* / *bimbadeenco@bigpond.com*

Dear Owen and Peter

Changed Decision Notice
(Given under Section 83 of the *Planning Act 2016*)

The assessment manager wishes to advise that the application was approved under delegated authority on 2 March 2023. The nature of the changes agreed to are detailed below including the conditions of the approval and notice of reasons. This changed decision notice replaces the original decision notice dated 11 November 2019.

Applicant details

Applicant name:	Burdekin Clarke Pty Ltd and Burdekin Doonan Pty Ltd C/- Steel Supplies Charters Towers

Location details

Street address:	9 Blacks Road, Broughton QLD 4820
Real property description:	Lot 4 on SP200726
Current lawful use:	Steel depot and fabrication facility / Warehouse and showroom

Application details

Application number:	RI19/102
Approval type:	Development Permit
Development type:	Reconfiguring a Lot
Category of assessment:	Code Assessment
Description of development:	Subdivision (One (1) Lot into Seven (7) Lots and Two (2) Access Easements)
Categorising instrument:	Charters Towers Regional Town Plan Version 2

1. Nature of the change(s) agreed to

The changes agreed to as part of this changed decision notice are:

1) Realign the boundaries between Proposed Lots 1 and 2 and amend conditions accordingly.

CHARTERS TOWERS
REGIONAL COUNCIL

Date: 03 March 2023
Ref No: 4758090

2. Details of the approval

Details of the approval are listed below in accordance with the *Planning Regulation 2017.*

	Planning Regulation 2017 reference	Development Permit	Preliminary Approval
Development assessable under the planning scheme, a temporary local planning instrument, a master plan or a preliminary approval which includes a variation approval		☒	☐

3. Conditions of approval

Conditions of this approval are included within **Attachment 1**.

4. Currency period for the development application approval

In accordance with section 85 of the *Planning Act 2016*, this approval has a currency period of four (4) years from the date of the original decision notice.

5. Further development permits

Please be advised that no further development permits are required to be obtained before the development can be carried out.

6. Referral agencies

The referral agencies for this application are:

Agency:	Trigger:	Advice/Concurrence:	Address:	Date and Ref:
Department of State Development, Manufacturing, Infrastructure and Planning	10.9.4.2.1.1 State transport corridors and future State transport corridors	Concurrence	North and North West regional office Level 4, 445 Flinders Street, Townsville PO Box 5666 Townsville QLD 4810	22 October 2019 1909-13275 SRA
Department of State Development, Manufacturing, Infrastructure and Planning	10.9.4.2.3.1 State transport corridors and future State transport corridors	Concurrence	North and North West regional office Level 4, 445 Flinders Street, Townsville PO Box 5666 Townsville QLD 4810	22 October 2019 1909-13275 SRA

The conditions imposed by the referral agencies are included as an attachment.

CHARTERS TOWERS
REGIONAL COUNCIL

Date: 03 March 2023
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7. Submission(s)

Properly made submissions were not made in relation this development.

8. Notice of reasons

This notice is prepared in accordance with Section 83(9) of the *Planning Act 2016* to inform the public about a decision that has been made in relation to a development application.

<table>
<tr><td>Description of the development:</td><td colspan="2">The proposed development is for Development Permit for a Reconfiguration of a Lot (one into seven lots and two access easements).</td></tr>
<tr><td>Reasons for the decision:</td><td colspan="2">The development application is approved and the reasons for the decision are based on the following;
1) The proposal will provide for lots that are of a sufficient size, shape and dimension suitable for the Environs Planning Area - Industry Sub Area
2) The proposal utilises the existing Type 2 Road Train access arrangements via Depot and Clara Roads and therefore does not propose any worsening impacts on Council's road network, and
3) Where the proposal has not complied with an Acceptable Solution, the proposal has been conditioned to comply with the Performance Criteria of the applicable assessment benchmarks.</td></tr>
<tr><td rowspan="4">Assessment benchmarks:</td><td colspan="2">The proposed development was assessed against the assessment benchmarks of the State Planning Policy – July 2017 and the Aligned Planning Scheme for Dalrymple Shire 2006 specifically the Environs Planning Area Code, Reconfiguring a Lot Code and Landscaping Code.</td></tr>
<tr><td colspan="2">The development was assessed against all the assessment benchmarks listed above and complies with all, with the exceptions listed and responded below.</td></tr>
<tr><td>Assessment benchmark:</td><td>Reasons for the approval despite non-compliance with benchmark:</td></tr>
<tr><td>Environs Planning Area AS10.3</td><td>Despite the proposal not complying with AO10.3, the proposal has been conditioned to comply with PO10. Council has conditioned that the applicant is to provide evidence that the proposed lots are connected to reticulated electricity prior to the endorsement of the Survey Plan.</td></tr>
<tr><td></td><td>Landscaping Code A1.1 and P1</td><td>The proposal does not include any provisions for an entry structure therefore noncompliance is identified against A1.1 and P1. Whilst no alternative solution is proposed, given the development is for a small-scale industrial subdivision and not an estate, it is considered that the requirement for an entry statement is not relevant in this instance.</td></tr>
<tr><td>Relevant matters:</td><td colspan="2">Not applicable</td></tr>
</table>

9. Other requirements under section 43 of the *Planning Regulation 2017*

There are no other requirements.

CHARTERS TOWERS
REGIONAL COUNCIL

Date: 03 March 2023
Ref No: 4758090

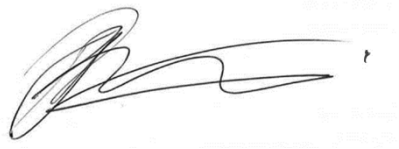
10. Appeal rights

The rights of an applicant to appeal to a tribunal or the Planning and Environment Court against a decision are set out in Chapter 6, Part 1 of the *Planning Act 2016*. For particular applications, there may also be a right to make an application for a declaration by a tribunal (see Chapter 6, Part 2 of the *Planning Act 2016).* Information about how to proceed with an appeal to the Planning and Environment Court may be found on the Court's website: http://www.courts.qld.gov.au/courts/planning-and-environment-court.

An applicant may also have a right to appeal to the Development tribunal. For more information, see schedule 1 of the *Planning Act 2016*. The timeframes for starting an appeal in the Planning and Environment Court are set out in Section 229 and Schedule 1 of the *Planning Act 2016*.

Should you wish to discuss this matter, please contact Jorja Feldt, Planner on (07) 4761 5300 or email development@charterstowers.qld.gov.au.

Yours faithfully



Paul Want
Manager Planning and Development

CHARTERS TOWERS
REGIONAL COUNCIL

Attachment 1—Conditions of the approval

<table>
<tr><th>Condition Number</th><th>Condition</th><th>Timing</th></tr>
<tr><td colspan="3">Approved Plans/Documents</td></tr>
<tr><td>1.</td><td>Development is to be carried out generally in accordance with the submitted application including the following plans and supporting documentation except where amendments are required to satisfy the conditions of this approval:

<table>
<tr><th>Drawing Title:</th><th>Prepared by:</th><th>Date:</th><th>Ref No:</th></tr>
<tr><td>Proposed Subdivision</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>102</td></tr>
<tr><td>Proposed Subdivision</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>103</td></tr>
<tr><td>Site Proposal</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>104</td></tr>
<tr><td>Catchment on Plan</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>105</td></tr>
<tr><td>Catchment</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>106</td></tr>
<tr><td>Proposed water Main Extn</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>501</td></tr>
<tr><td>Intersection Blacks Road</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>901</td></tr>
<tr><td>Intersection Depot Road</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>902</td></tr>
<tr><td>Swept Path Turning</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>904</td></tr>
<tr><td>Swept Path Turning 2</td><td>Skipstone Consulting</td><td>29/01/2023</td><td>906</td></tr>
</table>

And supporting documents:

<table>
<tr><th>Document Title:</th><th>Prepared by:</th><th>Date:</th><th>Ref No:</th><th>Rev:</th></tr>
<tr><td>Traffic Impact Assessment Report</td><td>Skipstone Consulting</td><td>17 September 2019</td><td>190105</td><td>3</td></tr>
<tr><td>Stormwater Assessment Report Clark Subdivision Clara Road Charters Towers</td><td>Skipstone Consulting</td><td>17 June 2019</td><td>190105</td><td>1</td></tr>
</table>

a) The applicant as is to provide an amended Plan of Survey demonstrating Access Easement A forming part of Lot 5 and not a separate lot.</td><td>At all times</td></tr>
<tr><td colspan="3">General</td></tr>
<tr><td>2.</td><td>The applicant is to;
a) Comply with all conditions within this Development Permit with conditions prevailing over the approved plan(s) and document(s) in all instances
b) Meet the cost of all works associated with the development including any alterations, relocations or repairs to damaged Council infrastructure including roads, water, sewer and stormwater services, and
c) All repairs, alterations and relocations of Council infrastructure are to be in accordance with the relevant Council policy and/or Australian Standard.</td><td>At all times</td></tr>
</table>

CHARTERS TOWERS
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Environmental		
3.	The applicant is to ensure that erosion and sedimentation control management is undertaken and maintained to prevent soil erosion and sedimentation runoff to watercourses and Council's storm water drainage system. Erosion and sediment control are to be in accordance with *Sediment Control – Engineering Guidelines for Queensland 1996 (Construction Sites)* and *the Queensland Urban Drainage Manual 2013*.	At all times
4.	The construction of the development must be limited to 0630—1830 Monday to Saturday and not at all on Sunday and public holidays as per Section 440R of the *Environmental Protection Act 1994*. Noise generated from construction must be within the limits set by the *Environmental Protection Act 1994* and the *Environmental Protection (Noise) Policy 20019*.	At all times
5.	The applicant is to ensure that; a) Works occur so they do not cause unreasonable interference with the amenity of adjoining premises because of noise, air or other chemical pollutants b) The premises including the adjoining Council controlled road reserve are kept in a safe, clean and tidy state, and c) All construction materials are contained wholly within the premises.	As part of construction works
Operational Works		
6.	A Development Permit for Operational Works must be obtained from Council prior to the commencement of construction. The Development Application for Operational Works is to include water infrastructure. OR The applicant must lodge and have approved by Council, a Private Works Agreement for the extension of Council's watermain undertaken by Council at the cost of the applicant.	Prior to the lodgement of survey plan for endorsement
7.	The Development Application for Operational Works is to be designed and constructed in accordance with Australian Standards, the Water Reticulation Code of Australia (WSA03-1999) and any other applicable standards at the time of lodgement. All Operational Works that relate to this development must be accepted as on maintenance by Council.	As part operational works
Transport and Access		
8.	All vehicle movements areas contained within Easement A and Easement B are to be constructed, sealed and maintained with a minimum of two coat bitumen seal based on 150-millimetre deep gravel pavement. The sealed pavement of Easement A is to have a minimum width of 9m in addition to a turning circle which is to allow for the largest anticipated turning vehicle being 53.5m in length.	As part of construction and prior to the lodgement of survey plan for endorsement
9.	The applicant shall lodge and obtain approval for an application to carry out public access work as part of works within the Council controlled road reserve.	Prior to works within Council's road reserve

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10.	The applicant is to have approved by Council, a design for a driveway crossover at the frontage of Clara Road having a minimum design width of 9m. Upon approval of the design by Council, the applicant is to construct the driveway crossover.	As part of construction
11.	Traffic signage demonstrating that internal speed limits are not to exceed 15km/h are to be placed within the registered property boundaries of Lot 5 and 6 adjacent the driveway crossovers. Signage is to be designed in accordance with the Department of Transport and Main Roads Queensland Manual on Uniform Traffic Control Devices July 2019.	As part of construction
Water and Sewer		
12.	The applicant shall lodge and have approved, an application for connection to water supply as part of the development's connection into Council's controlled water service infrastructure.	Prior to works on Council's water infrastructure
13.	The applicant as part of the Operational Works/Private Works Agreement must extend Council's existing 100mm water main located at Blacks Road through the premises and connect through to the existing water main located at Clara Road. The extension is to be in accordance with Condition 1 – Site Plan.	As part of construction
14.	The applicant is to pay the full cost of a 25-millimetre water meter in the form of a bond for Lot 1, Lot 2, Lot 3, Lot 4 and Lot 5.	Prior to the lodgement of survey plan for endorsement
Electricity and Telecommunication		
15.	The applicant is to submit to Council a Certificate of Electricity Supply demonstrating that supply is provided and available to each proposed lot.	Prior to the lodgement of survey plan for endorsement
16.	The applicant is to submit to Council a Provisioning of Telecommunication Services demonstrating that supply is provided and available to each proposed lot.	Prior to the lodgement of survey plan for endorsement
Survey Plan Endorsement		
17.	The applicant is to provide at no cost to Council, one copy of the fully executed easement documentation for the following; a) Access easement A in favour of Lot 1, Lot 2, Lot 3 and Lot 4 burdening Lot 5 having a minimum width of 9m along the access handle and turning circle catering for the largest anticipated vehicle turning being 53.5m in length. The easement documentation must clearly state that the maintenance costs of the pavement within the easement is to be shared equally by the registered owners of Lot 1, Lot 2, Lot 3, Lot 4 and Lot 5 b) Access easement B in favour of Lot 7 burdening Lot 6 having a minimum width of 9m. The easement documentation must clearly state that the maintenance costs of the pavement within the easement is to be shared equally by the registered owners of Lot 6 and Lot 7 c) Water easement in favour of Council burdening all affected lots having a minimum width of 2m either side (4m in total) from the centreline of Council's asset. The easement documentation must clearly state that no buildings and/or structures are to be constructed in or above the zone of	As part of the lodgement of survey plan for endorsement

	influence of Council's asset and that Council will have free and unobstructed access in order to fix, maintain or repair the asset in the event of a failure, and d) Drainage easement in favour Council burdening all affected lots as determined by the existing drainage swale. The easement documentation must clearly state that the maintenance costs of the drainage swale is the responsibility of each registered owner as the swale pertains to the extremities of each individual lot. The easement documentation must also clearly state that no buildings and/or structures are to be constructed in or above the drainage swale.	
18.	The applicant is to lodge to Council, for approval, an application for Survey Plan Endorsement which includes; a) Payment of application fee in accordance with Council's fees and charges at the time of lodgement b) All survey marks in their correct position in accordance with the Survey Plan c) A compliance report demonstrating compliance with all associated Development Permit(s) d) One copy of the survey plan and easement documentation each fully executed for the lodgement with the Titles Office e) Payment of any outstanding rates and charges in accordance with Schedule 18, Item 2(1)(c) of the *Planning Regulation 2017,* and f) Payment of any outstanding Adopted Infrastructure Charges.	As part of the lodgement of survey plan for endorsement

Advisory Notes	
Aboriginal and Cultural Heritage	
A.	The *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003* requires anyone who carries out a land-use activity to exercise a duty of care. Land users must take all reasonable and practicable measures to ensure their activity does not harm Aboriginal or Torres Strait Islander cultural heritage. Prior to carrying out works, it is advised that you contact the Department of Aboriginal and Torres Strait Islander Partnerships on (07) 4799 7470 or by post at PO Box 5620 TOWNSVILLE QLD 4810. For further information on cultural heritage duty of care please visit: https://www.datsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage/cultural-heritage-duty-care
Abandoned Mine Shafts	
B.	The city of Charters Towers is subject to a significant number of abandoned mine shafts due to the former gold rush era. It is recommended that all searches be undertaken through the Queensland State Government's Department of Natural Resources Mines and Energy (DNRME) to ensure that the development is not unduly impacted upon by these shafts. The DNRME can be contacted on 13 74 68.

CHARTERS TOWERS
REGIONAL COUNCIL

Workplace Health and Safety	
C.	Ensure compliance with the *Work Health and Safety Act 2011*. It states that the project manager/applicant is obliged to ensure construction work is planned and managed in a way that prevents or minimises risks to the health and safety of members of the public at or near the workplace during construction work. It is the principal contractor's responsibility to ensure compliance with the *Work Health and Safety Act 2011*. It states that the principal contractor is obliged on a construction workplace to ensure that work activities at the workplace prevent or minimise risks to the health and safety of the public at or near the workplace during the work. It is the responsibility of the person in control of the workplace to ensure compliance with the *Work Health and Safety Act 2011*. It states that the person in control of the workplace is obliged to ensure there is appropriate, safe access to and from the workplace for persons other than the person's workers.
Environmental nuisance	
D.	Ensure compliance with the *Environmental Protection Act 1994*. It states that a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm. Environmental harm includes environmental nuisance. In this regard persons and entities, involved in the civil, earthworks and construction phases of this development, are to adhere to their "general environmental duty" to minimise the risk of causing environmental harm. Environmental harm is defined by the Act as any adverse effect, or potential adverse effect whether temporary or permanent and of whatever magnitude, duration or frequency on an environmental value and includes environmental nuisance. Therefore, no person should cause any interference with the environment or amenity of the area because of the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit, sediment, oil or otherwise, or cause hazards likely in the opinion of the Council to cause undue disturbance or annoyance to persons or affect property not connected with the use.
Ergon Energy and Telstra Corporation Contact Details	
E.	Where a condition requires connections to reticulated electricity and/or telecommunications or a certificate of supply, please contact the below; a) Ergon Energy Connection Solution's Team – (07) 4931 1012, and/or b) Telstra Smart Communities Team – 1800 226 543.
Council Forms, Policies and Drawings	
F.	In achieving compliance with conditions, the below Council forms will need to be completed for this development; a) F0227/RI - Application to carry out works on a road or interfere with a road or its operation; b) F0313/IS – Request for water supply connection, and In addition, Council's Standard Drawings for roads, driveways and grids can be found at www.charterstowers.qld.gov.au/drawings-specifications.

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1 SITEWORKS Context

1 : 1500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Context

For Aproval

ORIGINAL	A3
SCALE	1 : 1500
PROJECT NO	190105/230109
SHEET	102
DATE	29-1-2023

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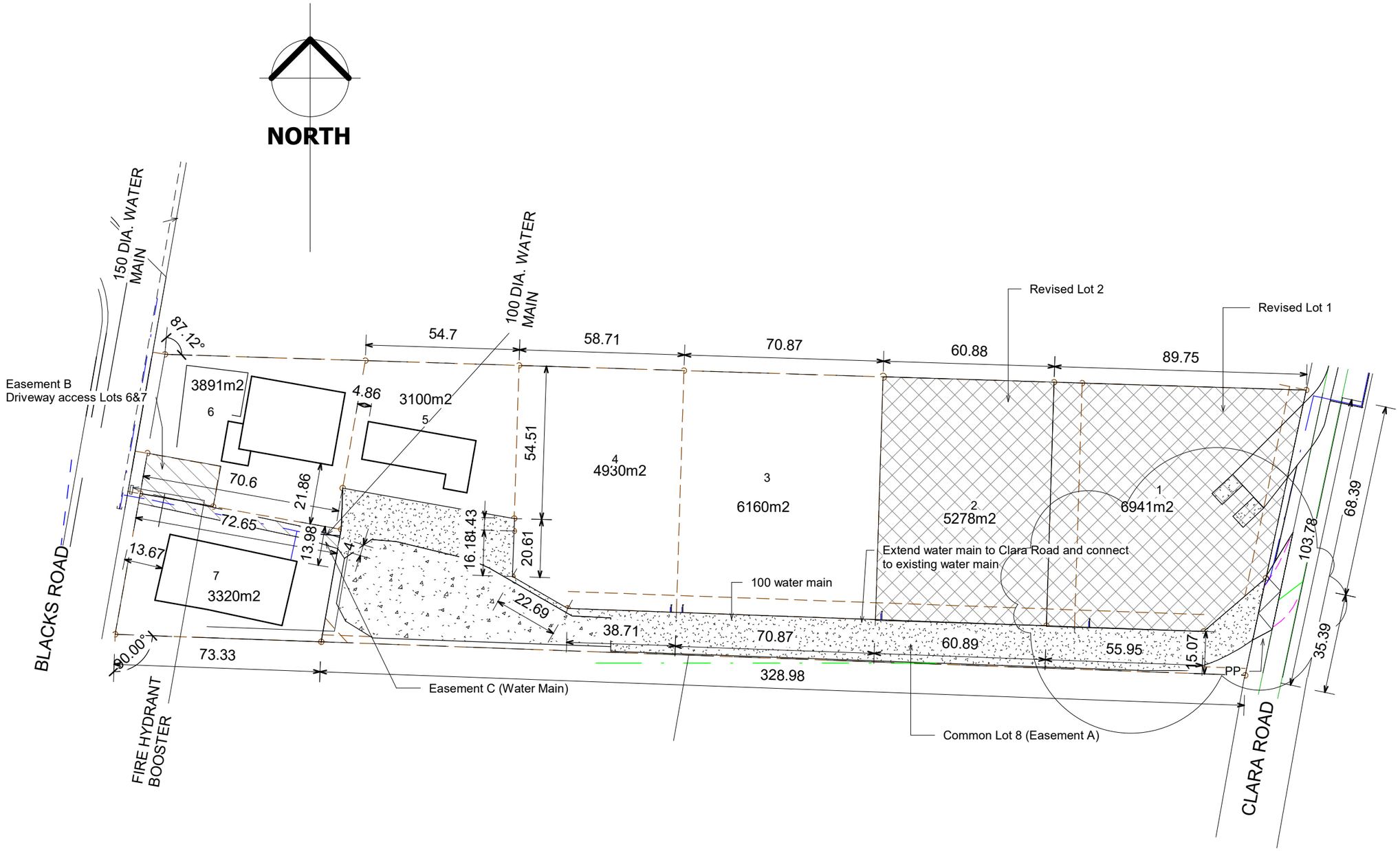

1 Prop Subdivision1

1 : 1500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q 4820

PROPOSED SUBDIVISION

Proposed Subdivision

For Aproval

ORIGINAL	A3
SCALE	1 : 1500
PROJECT NO	190105/230109
SHEET	103
DATE	29-1-2023

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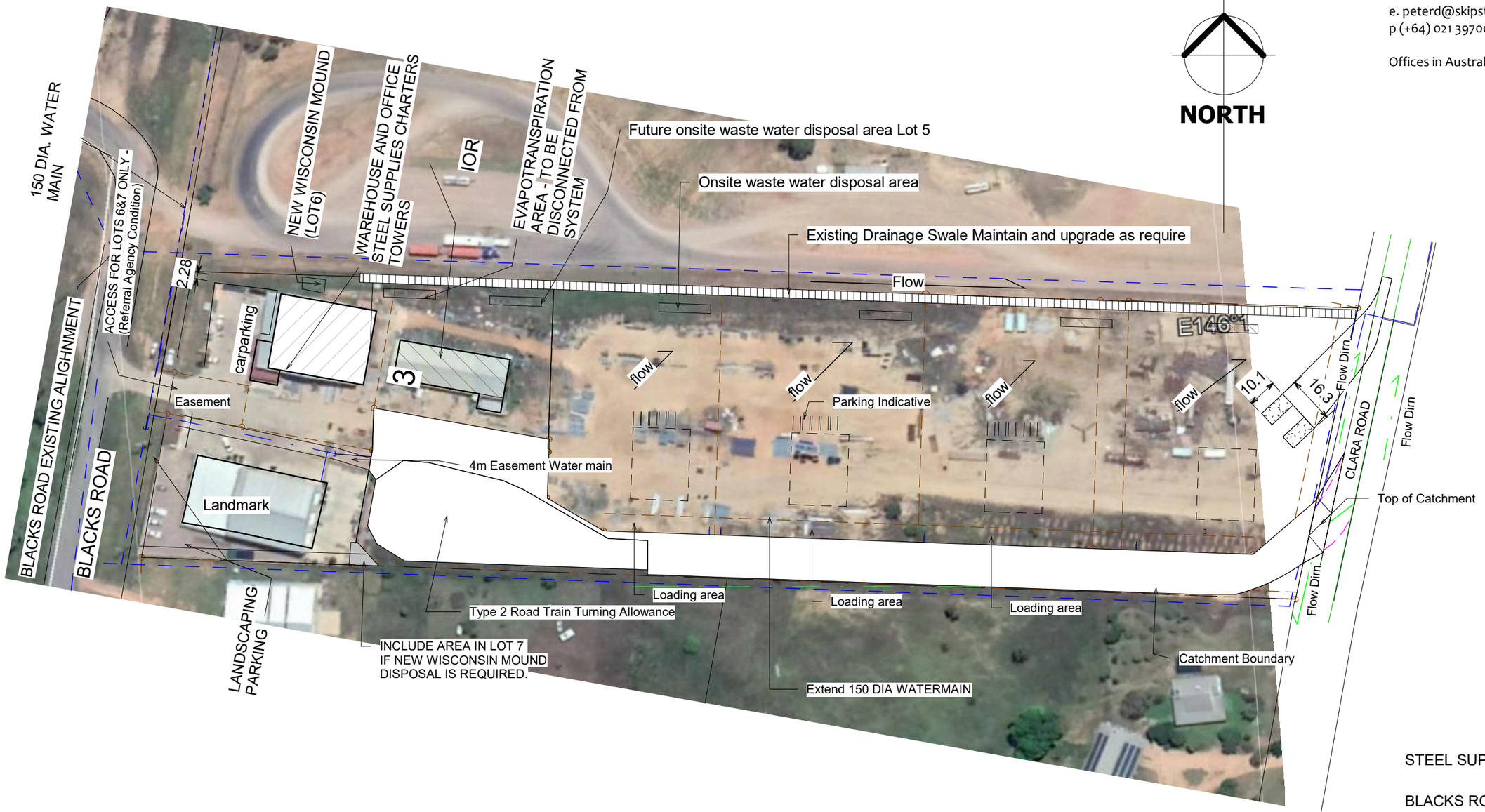
NORTH



1 PROPOSED SITEWORKS DETAILS
1 : 1500

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STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q 4820

PROPOSED SUBDIVISION

Site Proposal

For Aproval

ORIGINAL	A3
SCALE	1 : 1500
PROJECT NO	190105/230109
SHEET	104
DATE	29-1-2023

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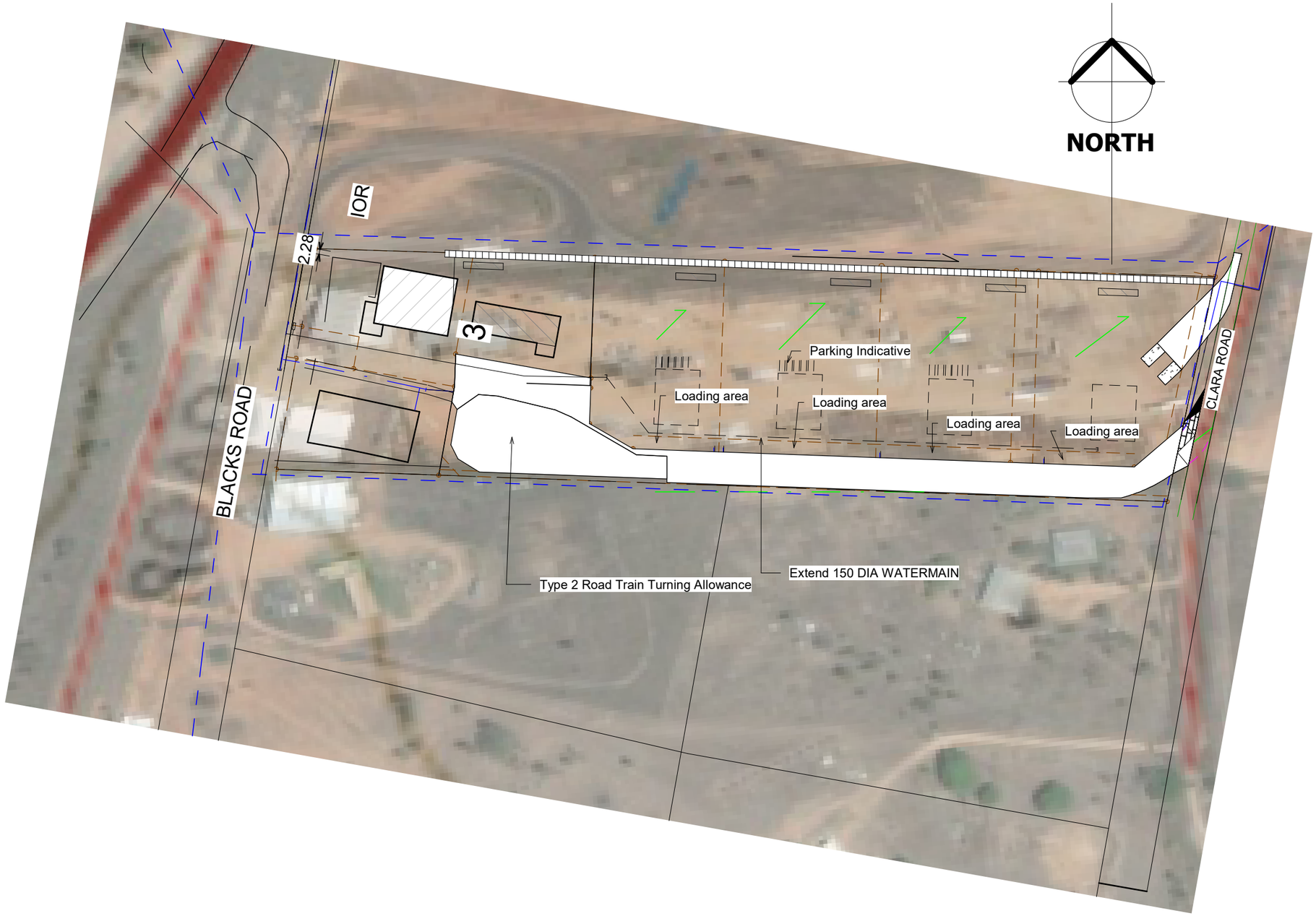

1 PSite Catchment
1 : 2000

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Catchment On Plan

For Aproval

ORIGINAL	A3
SCALE	1 : 2000
PROJECT NO	190105/230109
SHEET	105
DATE	29-1-2023

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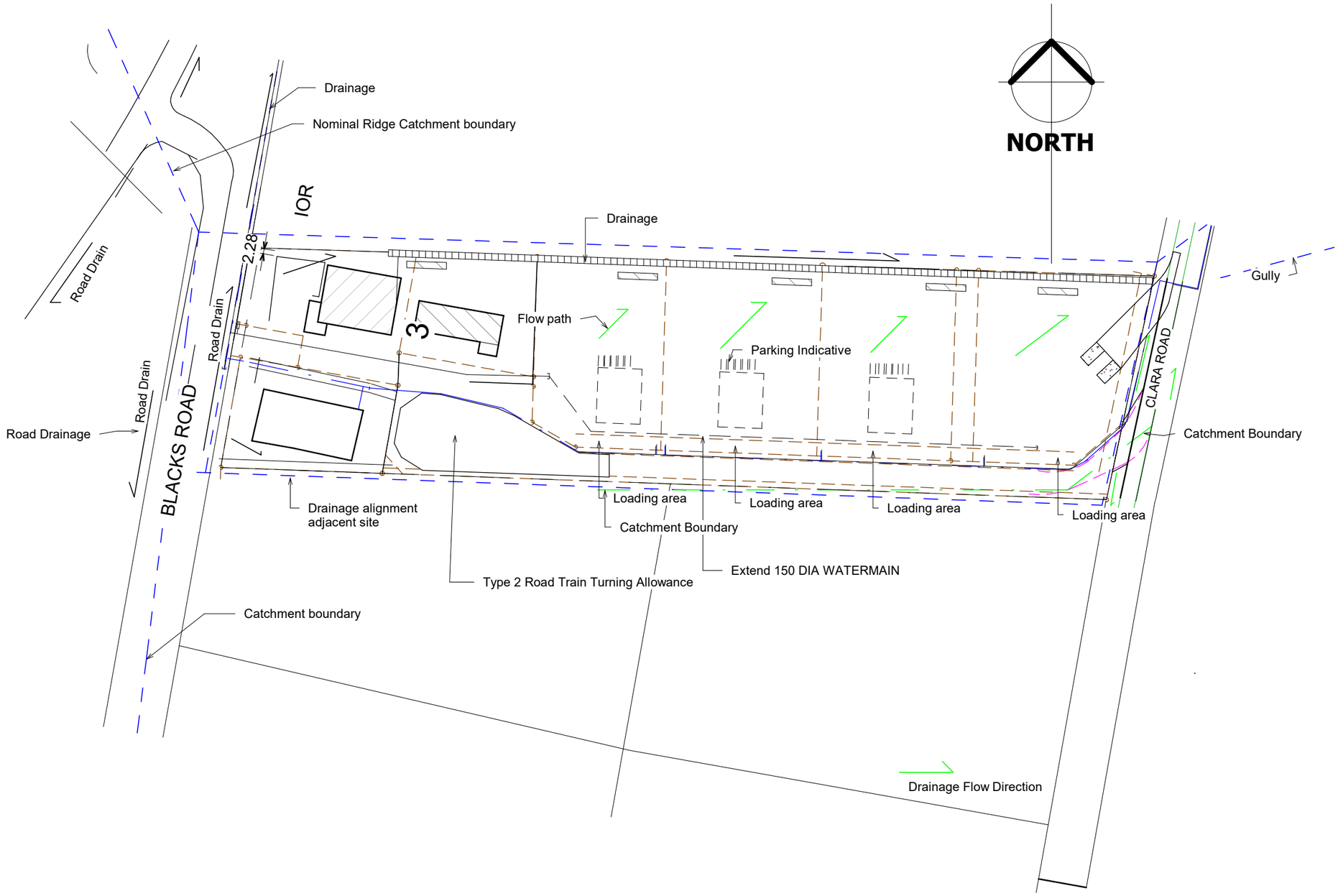

1 Site Catchment

1 : 2000

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Catchment

For Aproval

ORIGINAL	A3
SCALE	1 : 2000
PROJECT NO	190105/230109
SHEET	106
DATE	29-1-2023

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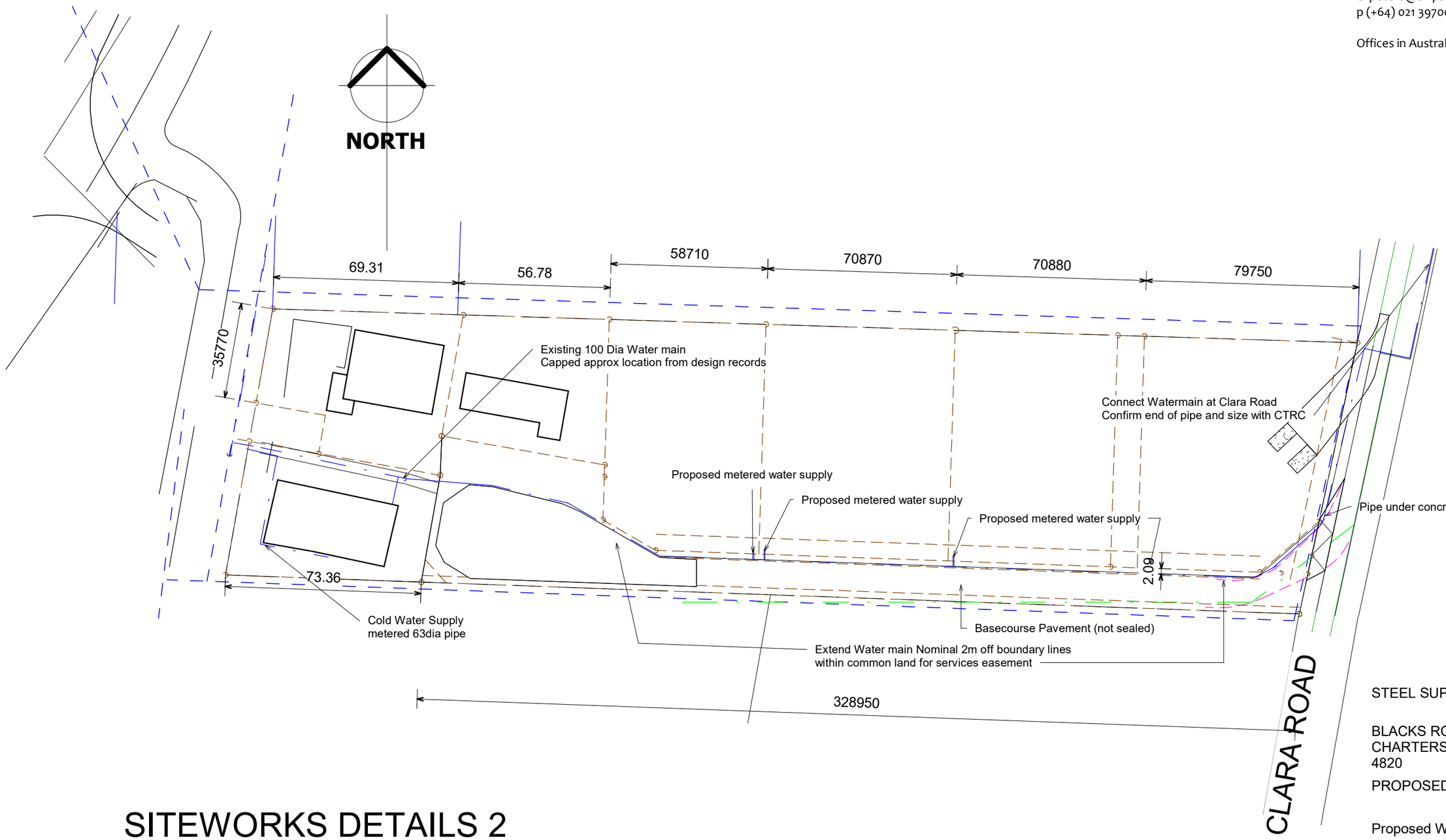

SITEWORKS DETAILS 2

1 Water Main (Fire)

1 : 1500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Proposed Water Main Extn

For Aproval

ORIGINAL	A3
SCALE	1 : 1500
PROJECT NO	190105/230109
SHEET	501
DATE	29-1-2023

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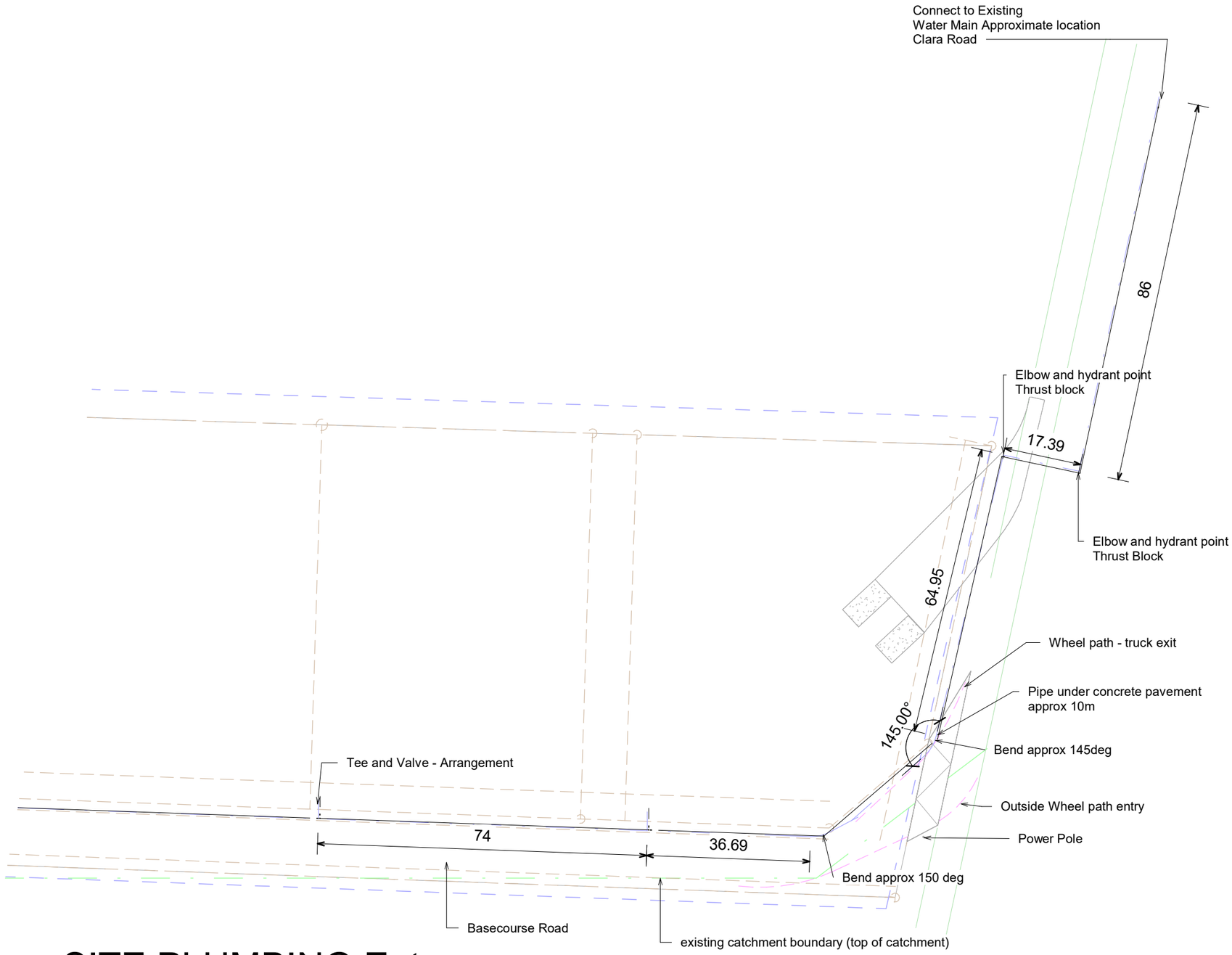

SITE PLUMBING Entry
3 Pipeline Exten Clara Rd
1 : 1000

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Water Main Extn Clara Rd

For Aproval

ORIGINAL	A3
SCALE	1 : 1000
PROJECT NO	190105/230109
SHEET	502
DATE	29-1-2023

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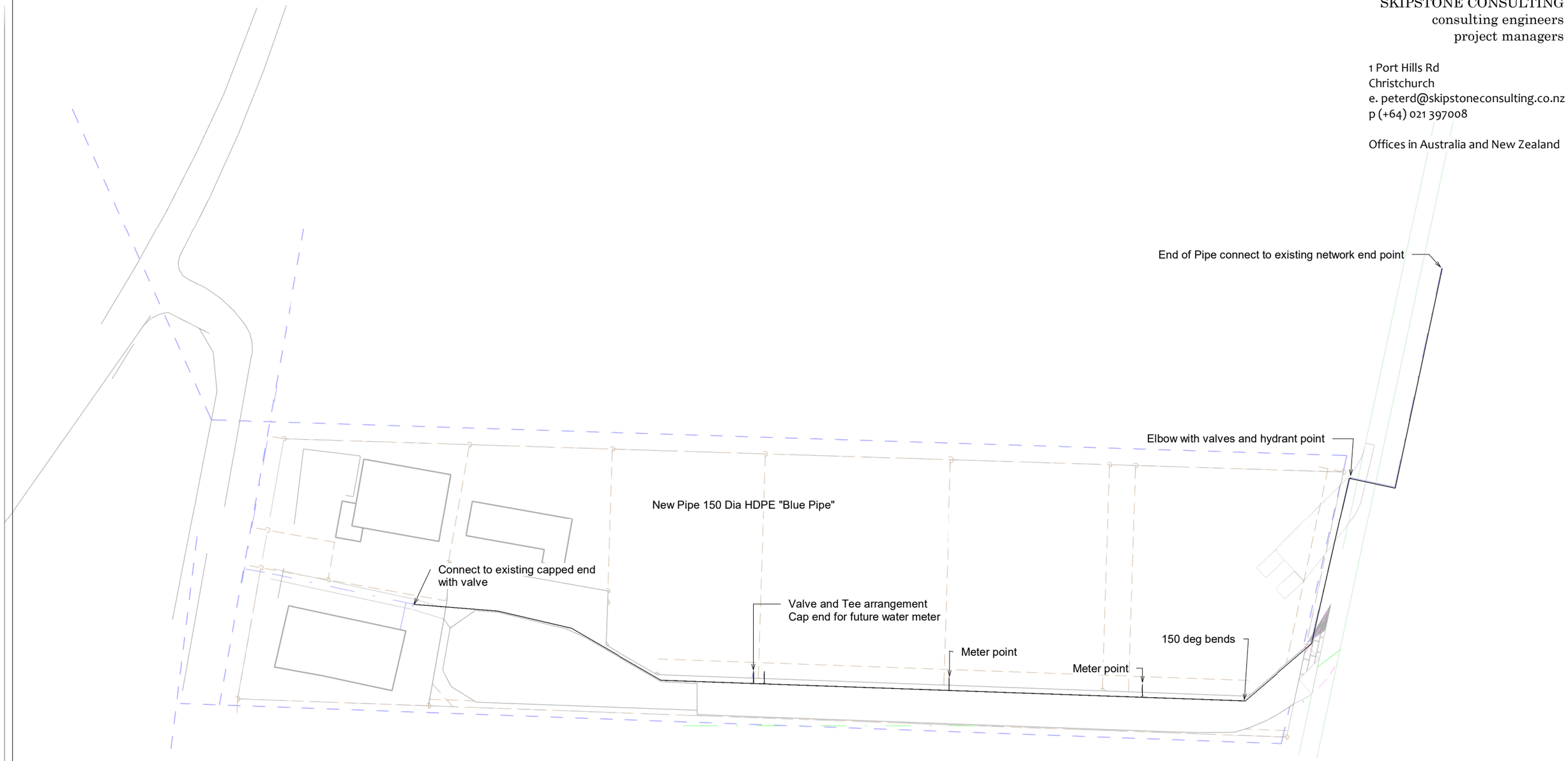

1 SITE PLUMBING Entry Pipeline Exten Clara

1 : 1500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Water Main Plumbing

For Aproval

ORIGINAL	A3
SCALE	1 : 1500
PROJECT NO	190105/230109
SHEET	503
DATE	29-1-2023

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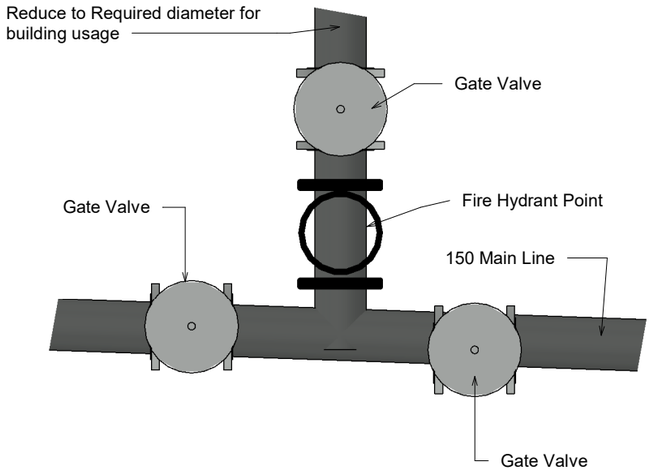

1

SITE PLUMBING Tee Details

1 : 20

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Details Water Pipeline

For Aproval

ORIGINAL	A3
SCALE	1 : 20
PROJECT NO	190105/230109
SHEET	504
DATE	29-1-2023

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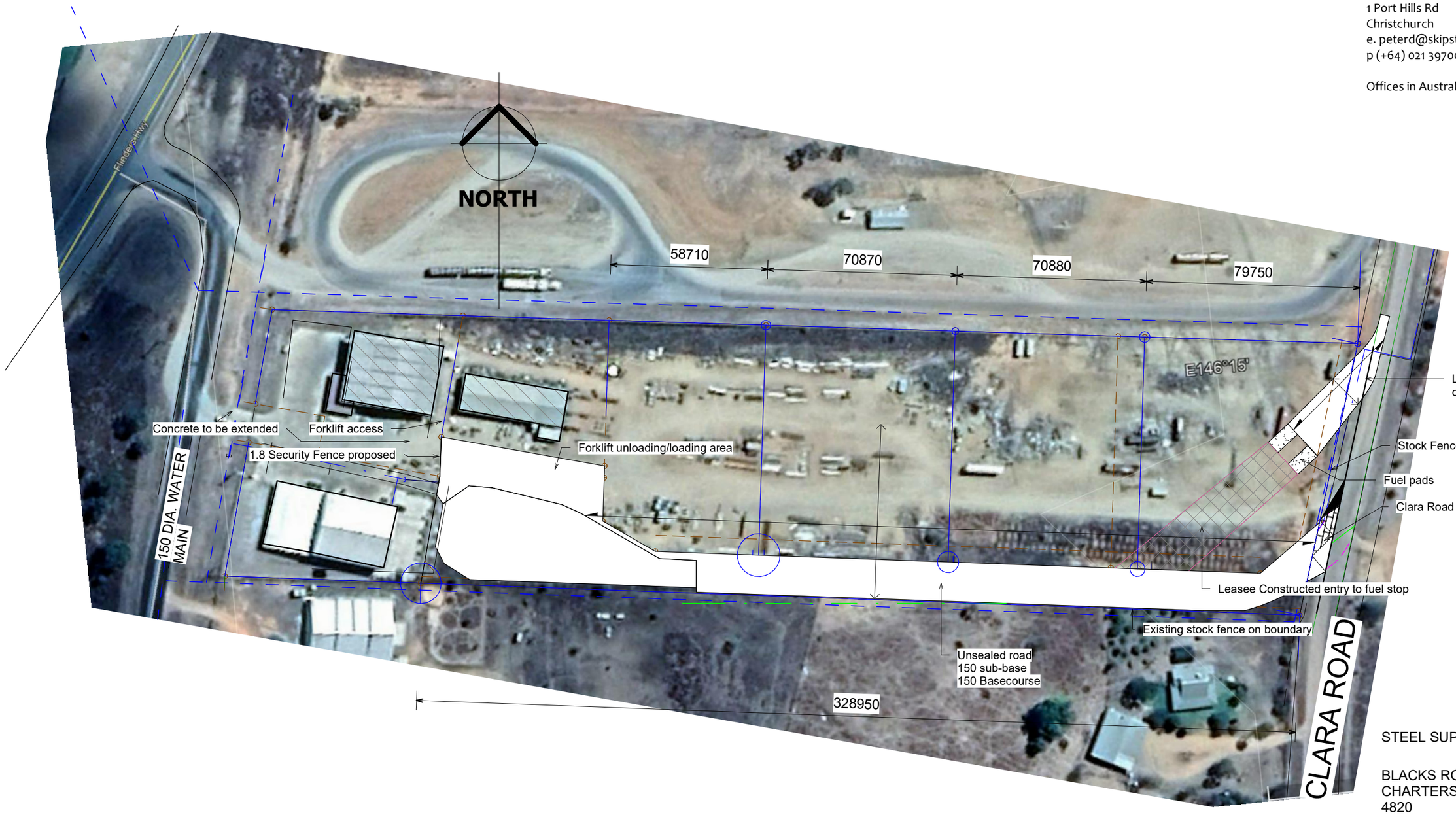

1 SITEWORKS Entry Clara Road
1 : 1500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q 4820

PROPOSED SUBDIVISION

New Road - Clara Road Entry

For Aproval

ORIGINAL	A3
SCALE	1 : 1500
PROJECT NO	190105/230109
SHEET	510
DATE	29-1-2023

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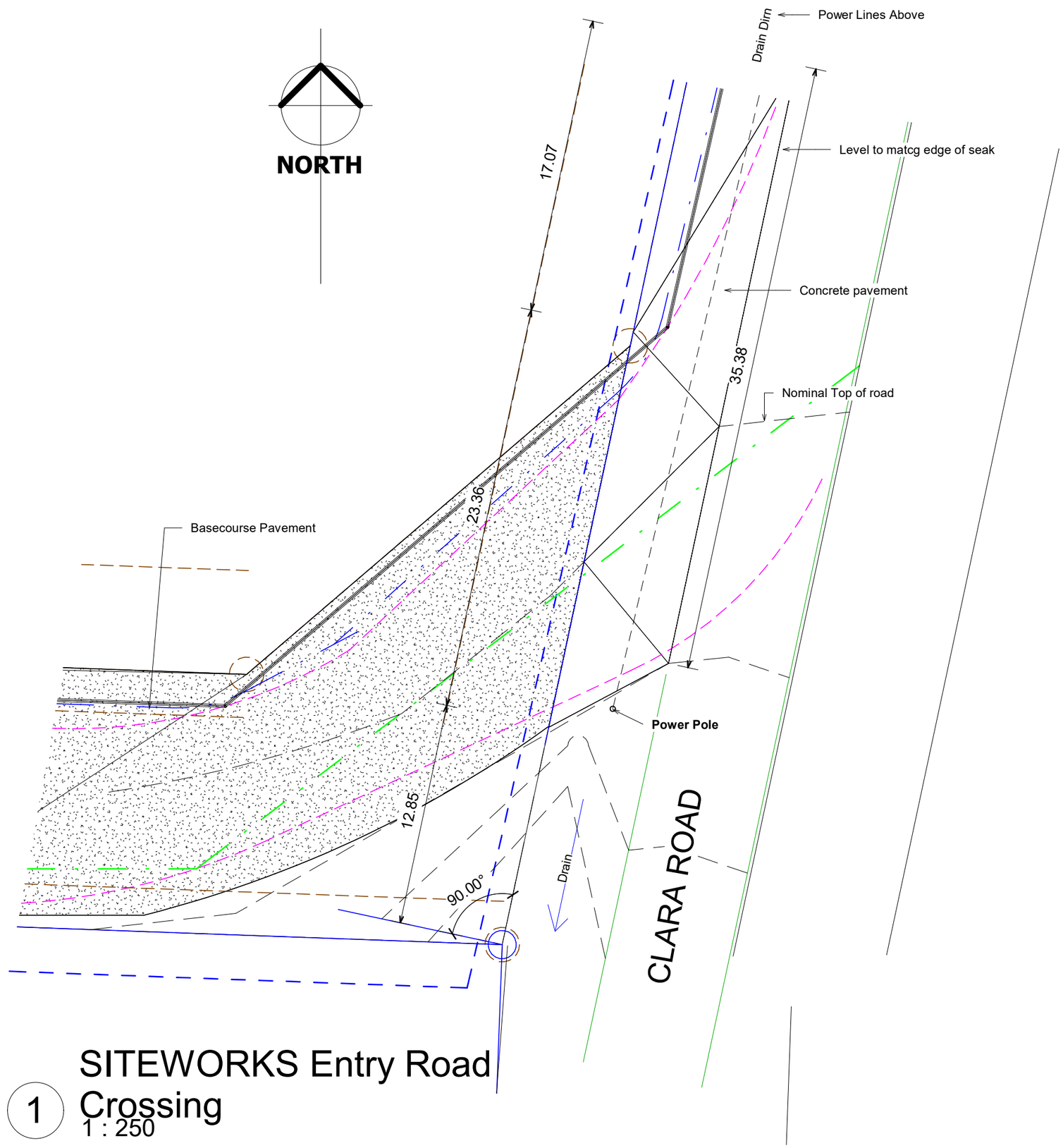

1 SITEWORKS Entry Road Crossing

1 : 250

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Clara Road Crossing

For Aproval

ORIGINAL	A3
SCALE	1 : 250
PROJECT NO	190105/230109
SHEET	511
DATE	29-1-2023

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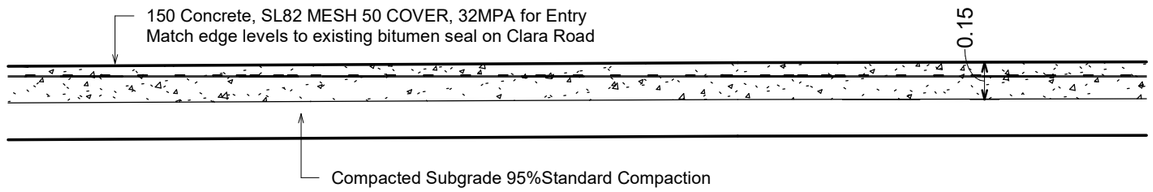

1

S2 Entry Pavement

1 : 25

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Clara Road Pavement Detail

For Aproval

ORIGINAL	A3
SCALE	1 : 25
PROJECT NO	190105/230109
SHEET	512
DATE	29-1-2023

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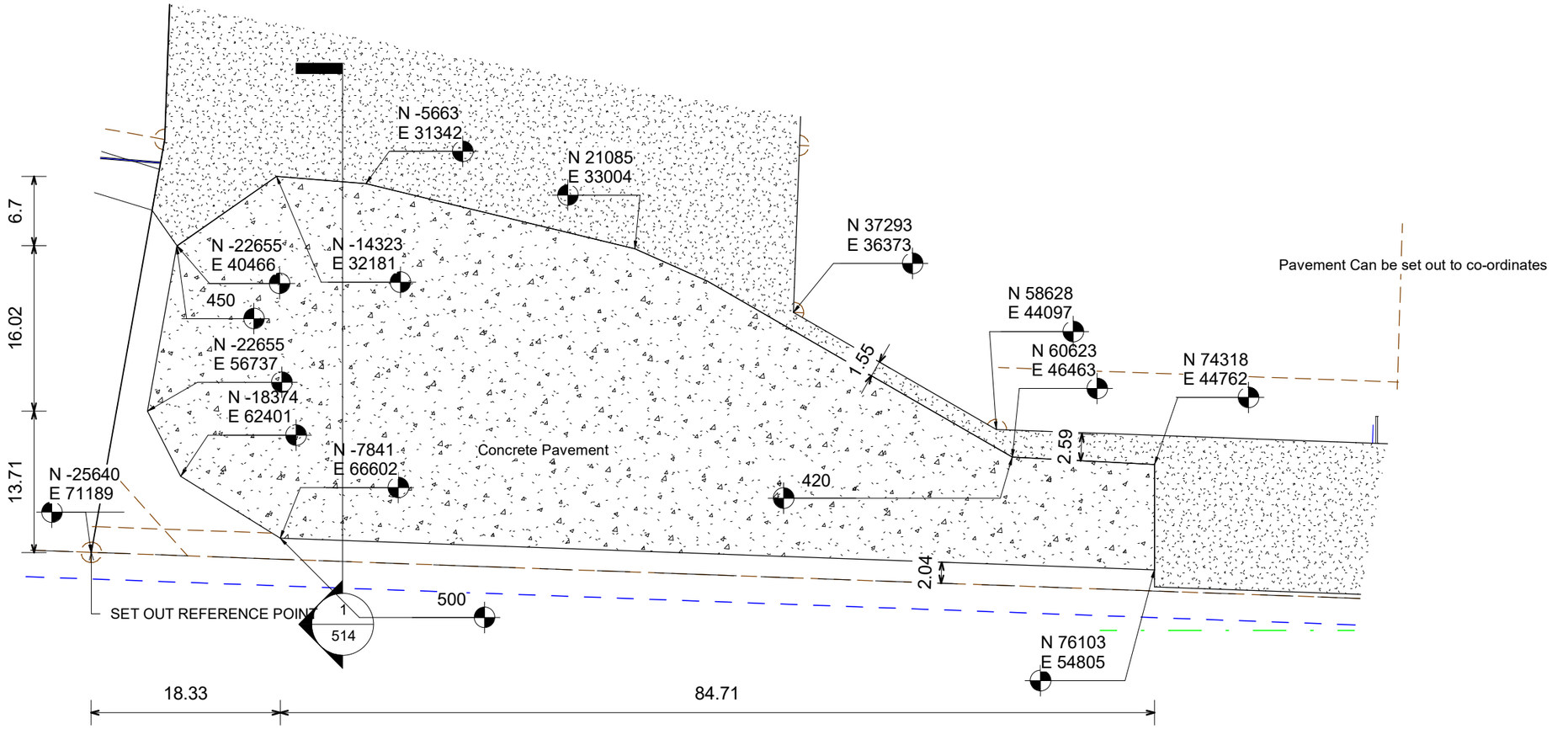

1 SITEWORKS Turning Area

1 : 500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Turning Area Dimensions

For Aproval

ORIGINAL	A3
SCALE	1 : 500
PROJECT NO	190105/230109
SHEET	513
DATE	29-1-2023

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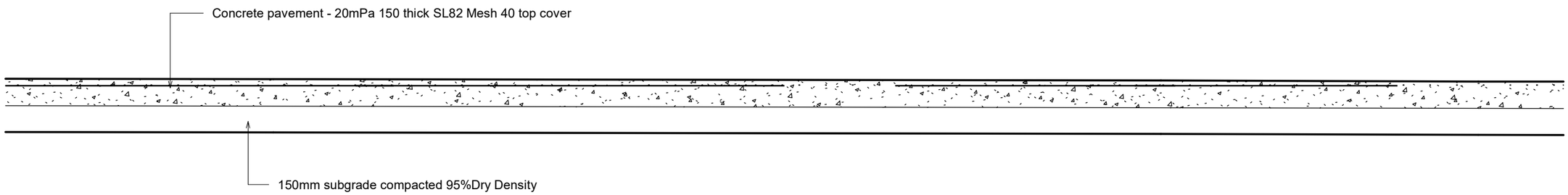

1

S1 Concrete Pavement

1 : 25

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Turning Area Pavement

For Aproval

ORIGINAL	A3
SCALE	1 : 25
PROJECT NO	190105/230109
SHEET	514
DATE	29-1-2023

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1 Intersection Blacks Road

1 : 2000

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STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Intersection Blacks Road

For Aproval

ORIGINAL	A3
SCALE	1 : 2000
PROJECT NO	190105/230109
SHEET	901
DATE	29-1-2023

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1 Intersection Depot Road

1 : 2000

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Intersection Depot Road

For Aproval

ORIGINAL	A3
SCALE	1 : 2000
PROJECT NO	190105/230109
SHEET	902
DATE	29-1-2023

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1 Intersection Clara Road

1 : 2000

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Intersection Clara Rd "Puma"

For Aproval

ORIGINAL	A3
SCALE	1 : 2000
PROJECT NO	190105/230109
SHEET	903
DATE	29-1-2023

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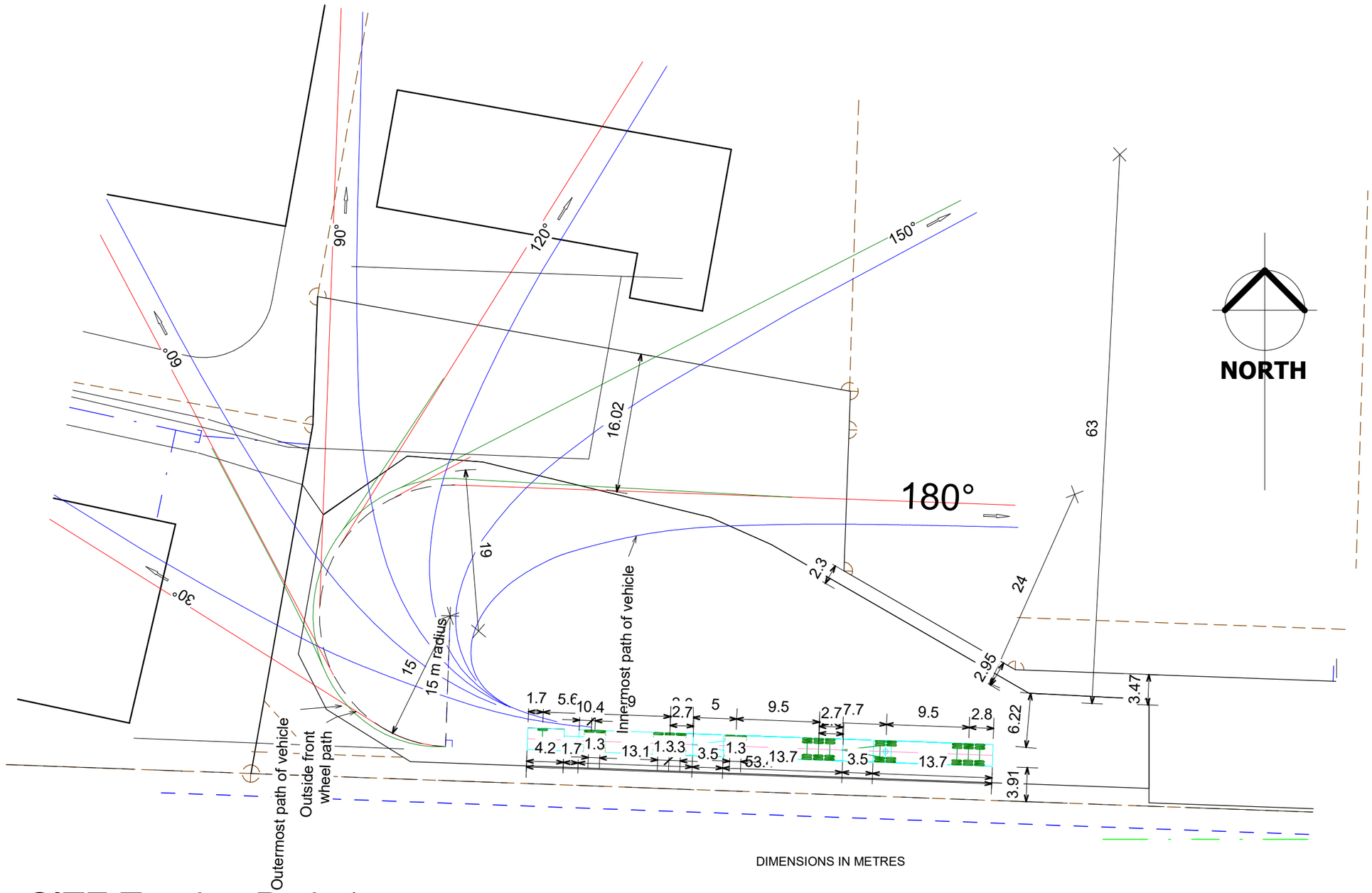

DIMENSIONS IN METRES

1 SITE Turning Path 1

1 : 500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Swept Path Turning

For Aproval

ORIGINAL	A3
SCALE	1 : 500
PROJECT NO	190105/230109
SHEET	904
DATE	29-1-2023

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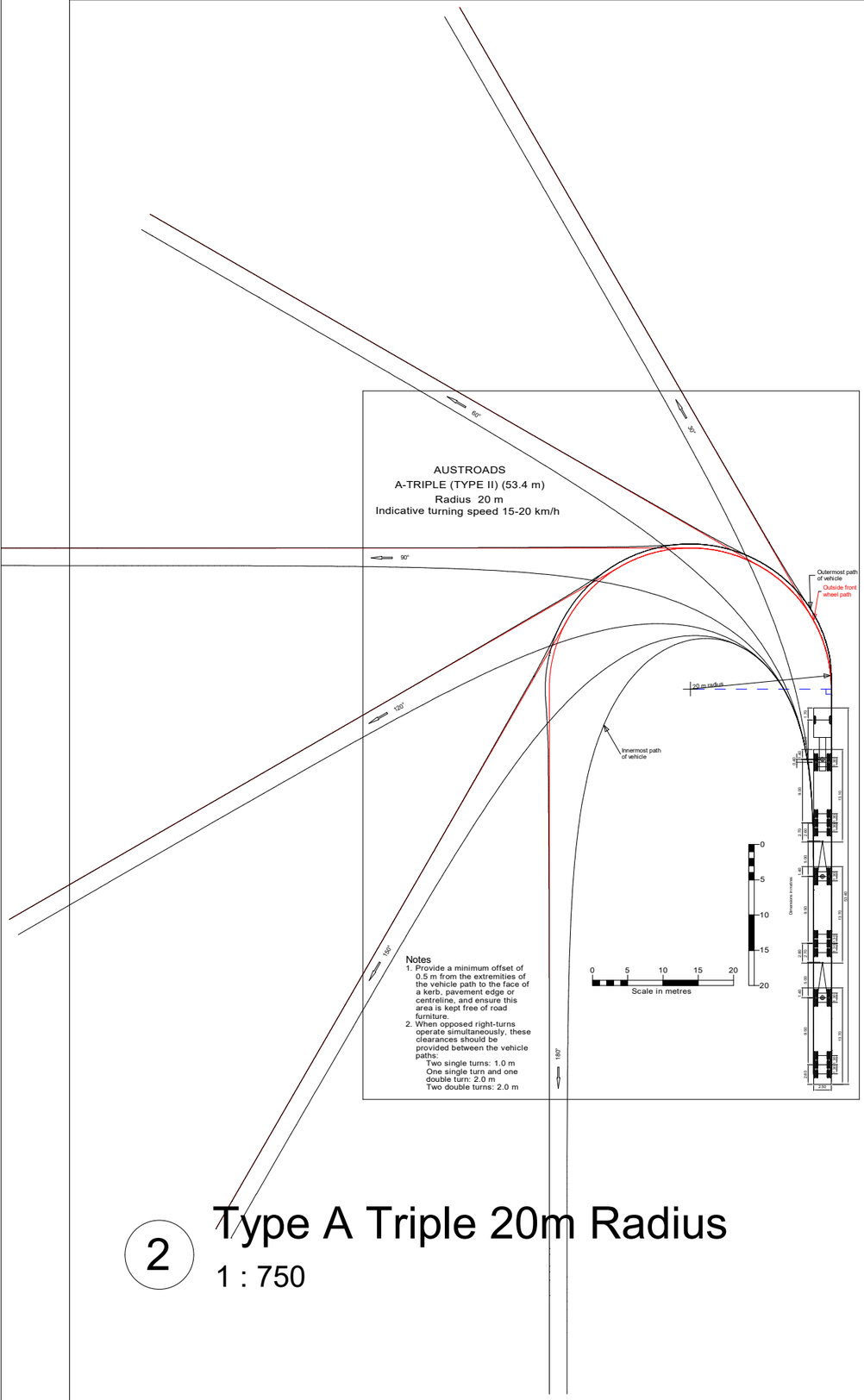
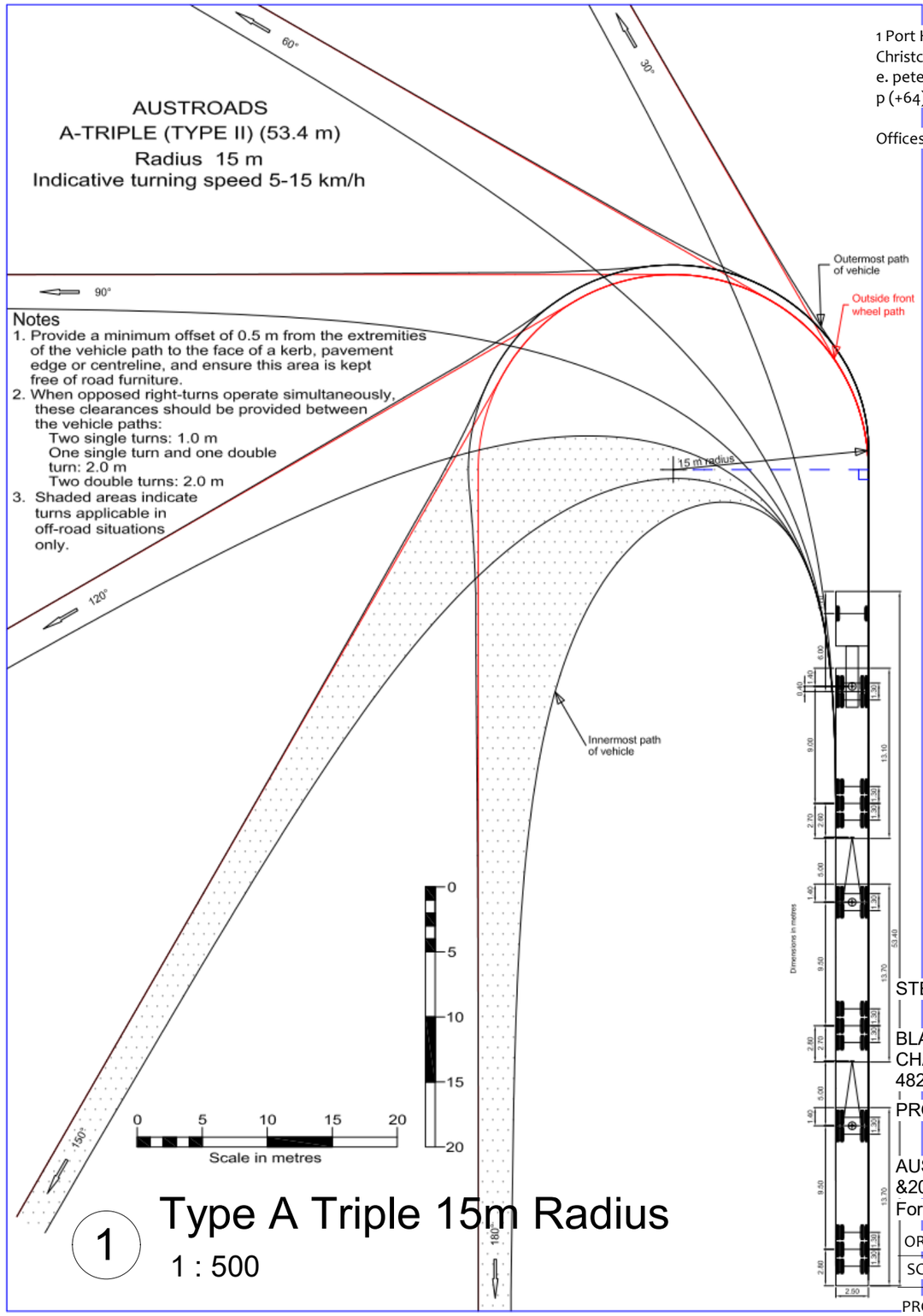


2 Type A Triple 20m Radius
1 : 750



1 Type A Triple 15m Radius
1 : 500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q 4820

PROPOSED SUBDIVISION

AUSTROADS TYPE 2 15M &20mRAD
For Aproval

ORIGINAL	A3
SCALE	As indicated
PROJECT NO	190105/230109
SHEET	905
DATE	29-1-2023

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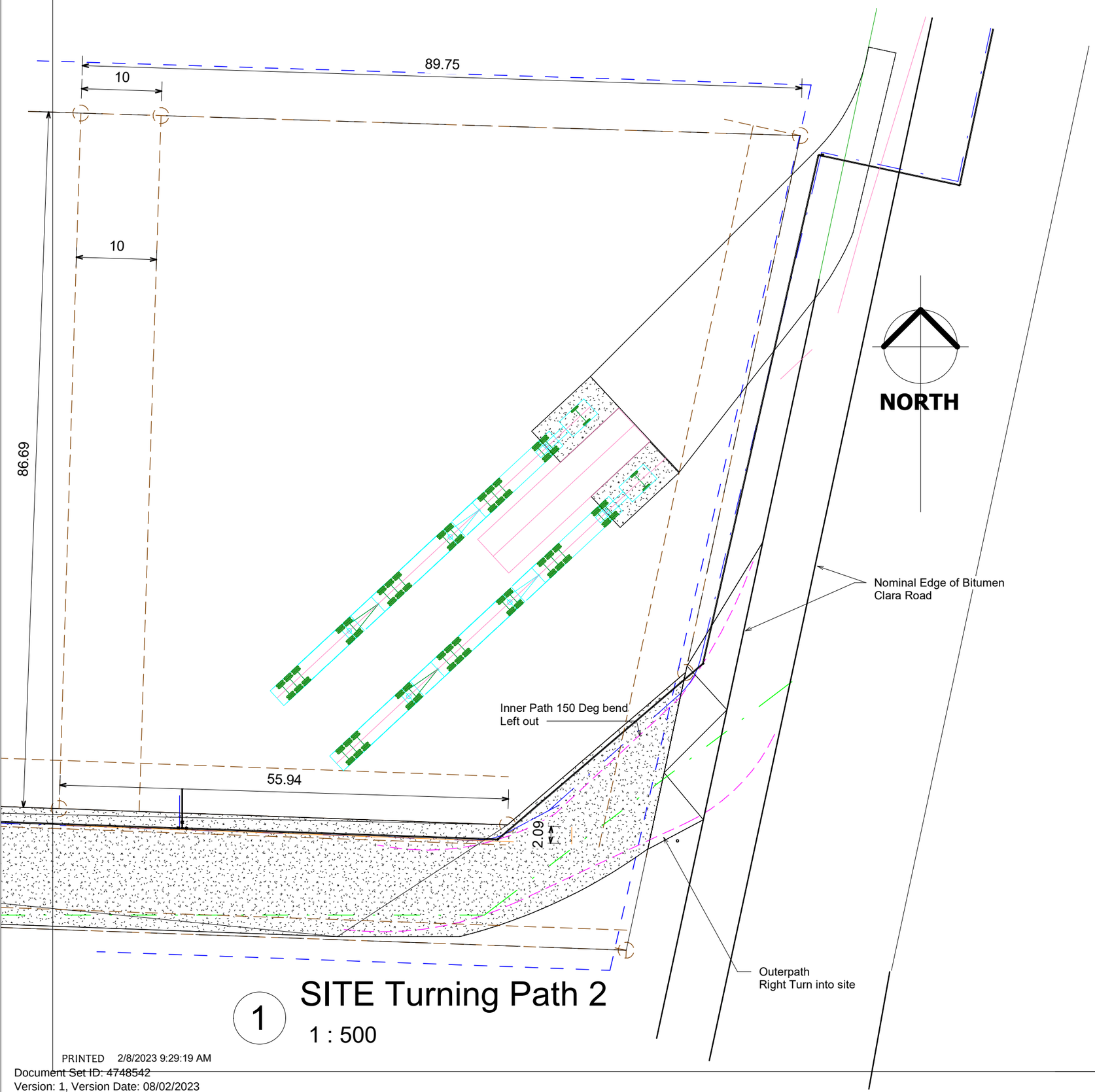

SITE Turning Path 2

1 : 500

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STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Swept Path Turning 2

For Aproval

ORIGINAL	A3
SCALE	1 : 500
PROJECT NO	190105/230109
SHEET	906
DATE	29-1-2023

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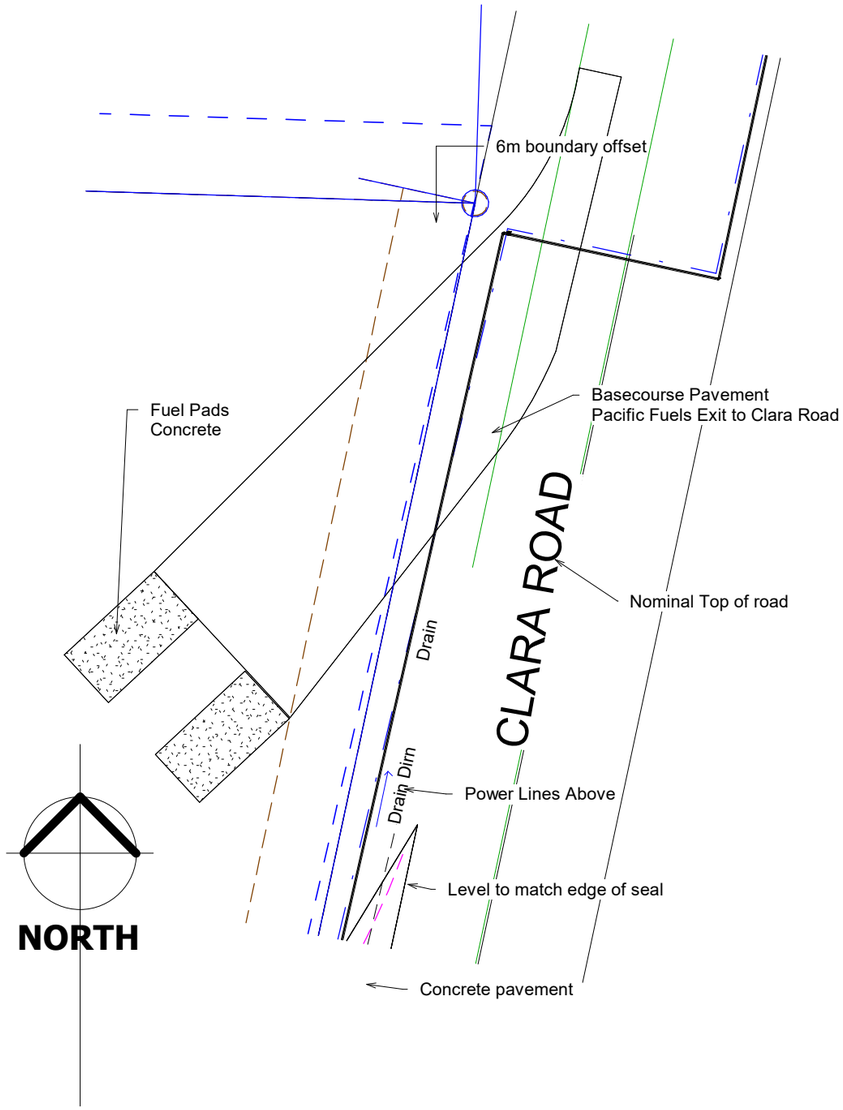

1 SITEWORKS Entry Road Crossing Pacific Fuel Exit

1 : 500

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Clara Road Fuel Stn Exit

For Aproval

ORIGINAL	A3
SCALE	1 : 500
PROJECT NO	190105/230109
SHEET	511A
DATE	29-1-2023

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SKIPSTONE CONSULTING
Peter D Duncan RPEQ, CPEng
Consulting Engineers and Project Managers

STORMWATER ASSESSMENT REPORT

CLARK SUBDIVISION CLARA ROAD CHARTERS TOWERS

PROJECT REFERENCE 190105

REV 1

DATE: 17 JUNE 2019

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Authorisations

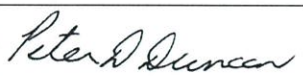
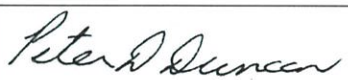
Project Report details	Accountability	Signature - which confirms relevant work has been completed and approved	Date	Qualification
Author	Project QA Manager and Project Director		10-6 2019	CPEng, RPEQ 1670
Review	Authorised Principal engineer for the project	Engineer Paul Harries	17-6 2019	BEng
Approval	Authorised Signatory		17-6 2019	RPEQ 1670

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TABLE OF CONTENTS

1 INTRODUCTION

This report covers the stormwater flow investigation for a subdivision at Clara Road, Charters Towers.

The report has been prepared by Peter Duncan MIPENZ, MIE AUST, CPENG RPEQ. These design reports, in this format, form part of the Quality Assurance procedure in the business. Each report is tailored for the site and purpose but essentially acts as a checklist for design considerations and a record of the design process.

1.1 Background

Skipstone Consulting has been commissioned by Owen Clark to provide a stormwater assessment in response to a request for information (RFI) for preliminary planning considerations from TMR. Peter Duncan has local experience in Charters Towers and with this site in particular having prepared the development plan in 2009-2012.

The proposal was first developed in 2009 to develop the site between Blacks Road and Clara Road in Charters Towers. Subsequently in 2019 there is a subdivision proposal to divide the property at Lot 1 RP... Into 7 lots. The site has already been developed for commercial activity. An additional 4 new buildings on their own allotment is proposed, compared to the original proposal which allowed for an additional 6 leased buildings.

The proposed overall development allotments and site layout are attached at Appendix A.

1.2 Scope of Report

The site is located on the outskirts of Charters Towers.

The state planning requirements include the investigation of stormwater effects on state-controlled road.

. A copy of the Transport and Main Roads information document is attached at Appendix B.

To demonstrate compliance with PO12-PO14, it is recommended the applicant provide evidence that the

development achieves the requirements in either: clause a) below, or submit SMP as detailed in clause b)

below, as follows:

a) Submit supporting documentation certified by a suitably qualified Registered Professional

Engineer of Queensland (RPEQ) which demonstrates compliance with points i) to vi):

i) the development complies with AO13.1, AO13.2 and AO13.3;

ii) the development does not concentrate stormwater flows towards the state-controlled-road corridor;

iii) the development does not increase the peak flow onto the state-controlled road

corridor;

iv) the development does not divert catchment runoff towards the state-controlled road corridor;

v) the development does not encroach or block a major flowpath from the state-controlled road corridor; and:

vi) the development does not involve excavation/filling of floodplain near the state-controlled road with supporting flood modelling.

In meeting the above requirements, we advise as follows:

i) Section AO 13.1-13.3 are discussed below

ii)The site is below the level of the state highway and slopes away from state-controlled road

iii) There is no stormwater flow onto the state-controlled road from this site – the natural slope is away from the site – there is no proposed work on state-controlled road

iv) Drawing shows the stormwater flow away from state-controlled road

v) proposed work on the site is 200m from the edge of the state-controlled road

vi) The topography of the site is just below the top of the local ridge, and has a gentle slope diagonally across the site and towards Clara Road.

The requirements indicated that the assessment of stormwater impacts should include the state controlled road corridor, however our assessment of the catchment is that the state controlled road corridor is outside of the catchment providing stormwater to the site.

2 EXISTING SITUATION

2.1 Site Location

The subject site is located approximately 3km west of the start of Flinders Highway section 14B. The site is bounded by Blacks Road to the west and Clara Road to the east. Blacks Road is included in the Flinders Highway Road reserve as an access to properties.

Previous planning approvals allowed for 9 industrial buildings which could be leased by business for commercial and industrial activity on the site. The proposal varies (what we believe to be the current approval) to allow for the site to be subdivided into 7 allotments. Currently there are two businesses operating from the site. The owners of the site operate Steel Supplies Charters Towers from two buildings and a Rural Supplies business operates from the larger industrial building. The bulk of the site is used for storage.

AO13.1 Development does not create any new points of discharge to a state-controlled road. AND

AO13.2 Stormwater run-off is discharged to a lawful point of discharge.

Note: Section 3.4 of the Queensland Urban Drainage Manual, Department of Energy and Water Supply, 2013, provides further information on lawful points of discharge. AND

AO13.3 Development does not worsen the condition of an existing lawful point of discharge to the state-controlled road.

In meeting the above requirements the following advice is given:

- There are no points of discharge from the site to the state-controlled road – the existing point of discharge at Clara Road will not change.
- Stormwater runoff is discharged to Charters Towers Regional Council controlled points of discharge
- The development is designed to restrict flows to achieve the condition of no worsening.

2.2 2010 Stormwater Assessment

The site was assessed in 2010 using the Rational Method.

The following assumptions were made:

- Site area assumed to be 41670m2 – based on a catchment assessment
- Slope is approximately 1% and falls across the site and to Clara Road.
- The site is located at the top of the catchment area and does not include the state-controlled road
- The site is effectively on unvegetated hard ground with a normal runoff coefficient of approximately 0.7
- With additional impervious are the runoff coefficient of 0.75 has been used to assess the fully developed site.
- A vegetated swale drain is to be used to reduced the stormwater leaving the site to meet no worsening conditions.
- Rainfall intensities included consideration of climate change

	Location charter Towers							
	ARI	A	B	C	D	E	F	G
	1	3.688	-0.55924000	-0.05553400	0.00887890	0.00247020	-0.00049250	-0.00002283
	2	3.954783	-0.55805000	-0.05693100	0.00810830	0.00283340	-0.00038437	-0.00004980
	5	4.238566	-0.55579000	-0.06073300	0.00677630	0.00369640	-0.00018590	-0.00010383
	10	4.378882	-0.55464000	-0.06319800	0.00617930	0.00420920	-0.00009974	-0.00013123
	20	4.536441	-0.55385000	-0.06493000	0.00564430	0.00458000	-0.00001419	-0.00015437
	50	4.715267	-0.55235000	-0.06704600	0.00484080	0.00506560	0.00009898	-0.00018553
	100	4.834744	-0.55174000	-0.06810400	0.00440190	0.00531940	0.00016568	-0.00020255
			Return Period					
	Duration	1	2	5	10	20	50	100
5min	0.08	113.75	148.16	195.35	223.88	261.07	310.95	349.72
6 min	0.10	106.78	139.21	183.84	210.76	245.97	293.20	329.96
10 min	0.17	89.52	116.74	154.25	176.82	206.49	246.19	277.11
20 min	0.33	68.58	89.39	118.20	135.61	158.46	188.98	212.72
30 min	0.50	57.21	74.61	98.81	113.51	132.73	158.45	178.43
1 hr	1.00	39.96	52.18	69.31	79.75	93.36	111.64	125.81
2 hr	2.00	26.50	34.60	45.93	52.83	61.82	73.92	83.29
3 hr	3.00	20.51	26.77	35.47	40.74	47.63	56.89	64.06
6 hr	6.00	13.12	17.10	22.60	25.92	30.26	36.09	40.61
12 hr	12.00	8.45	11.03	14.66	16.87	19.74	23.61	26.62
24 hr	24.00	5.49	7.24	9.84	11.45	13.53	16.38	18.59
48 hr	48.00	3.51	4.69	6.61	7.85	9.43	11.62	13.34
72 hr	72.00	2.60	3.51	5.03	6.03	7.31	9.08	10.50

Spread sheet for Rational Method Calculations of Peak Flow							
Base model							
Data Cells							
	M2	Ha	KM2			Time of Concentration	
Area	41630	4.163	0.04163				
Stream Slope	6		14.05152		tc	20.24861	MIN
Length	427		0.427			0.337477	HOURS
Rainfall Intensity							
ARI	tc	depth	I	I BOM			
5	20.24861		0	118.2			
10	20.24861		0	135.61			
20	20.24861		0	158.46			
50	20.24861		0	188.98			
100	20.24861		0	212.72			
Calculate Q	FCIA						
ARI	F	C	i	A	Q		
5	0.278	0.7	118.2	0.04163	0.9576	cumecs	
10	0.278	0.7	135.61	0.04163	1.10	cumecs	
20	0.278	0.7	158.46	0.04163	1.28	cumecs	
50	0.278	0.7	188.98	0.04163	1.53	cumecs	
100	0.278	0.7	212.72	0.04163	1.72	cumecs	

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Calculate Q	FCIA					
ARI	F	C	i	A	Q	
5	0.278	0.75	118.2	0.04163	1.0260	cumecs
10	0.278	0.75	135.61	0.04163	1.18	cumecs
20	0.278	0.75	158.46	0.04163	1.38	cumecs
50	0.278	0.75	188.98	0.04163	1.64	cumecs
100	0.278	0.75	212.72	0.04163	1.85	cumecs

Volume of vegetated swale – buffer storage

- Estimated 120m3 (386x(1.5+0.5)/2x0.5=193m3)
- Increase time of Concentration due to buffer storage and vegetation.
- Assume 30-minute time of concentration for the provided landscape works.

Rainfall Intensity						
ARI	tc	depth	I	I BOM		
5	30		0	99		
10	30		0	113.5		
20	30		0	132.73		
50	30		0	188.98		
100	30		0	212.72		
Calculate Q	FCIA					
ARI	F	C	i	A	Q	
5	0.278	0.75	99	0.04163	0.8593	cumecs
10	0.278	0.75	113.5	0.04163	0.99	cumecs
20	0.278	0.75	132.73	0.04163	1.15	cumecs
50	0.278	0.75	158.45	0.04163	1.38	cumecs
100	0.278	0.75	178	0.04163	1.55	cumecs

In 2011 it was concluded that the landscape works proposed would return the flow leaving the site to at least the original flow rate.

2.3 2019 Stormwater Assessment

The assumed reduction in impervious area with the current proposal is not significant (or accurate enough) to warrant a change in assessment.

In 2011 the rainfall intensities included allowances for environmental changes to rainfall and runoff.

The soil conditions for the site mean that almost all of the rainfall will runoff towards Clara Road. The swale and other vegetation work on the site will result in no worsening of flow to Clara Road.

3 CONCLUSION

The site is at the top of the catchment and all flow is directed away from the state-controlled road area.

Existing landscaping from 2011 should be renewed to ensure proper operation of drainage.

The proposed subdivision will also mean that once subdivided individual owners will have responsibility for ensuring that stormwater minimisation and "no worsening" This would be available using buffer storage tanks for each building.

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APPENDIX A –Request for Information Document

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APPENDIX B – PROPOSAL DRAWINGS

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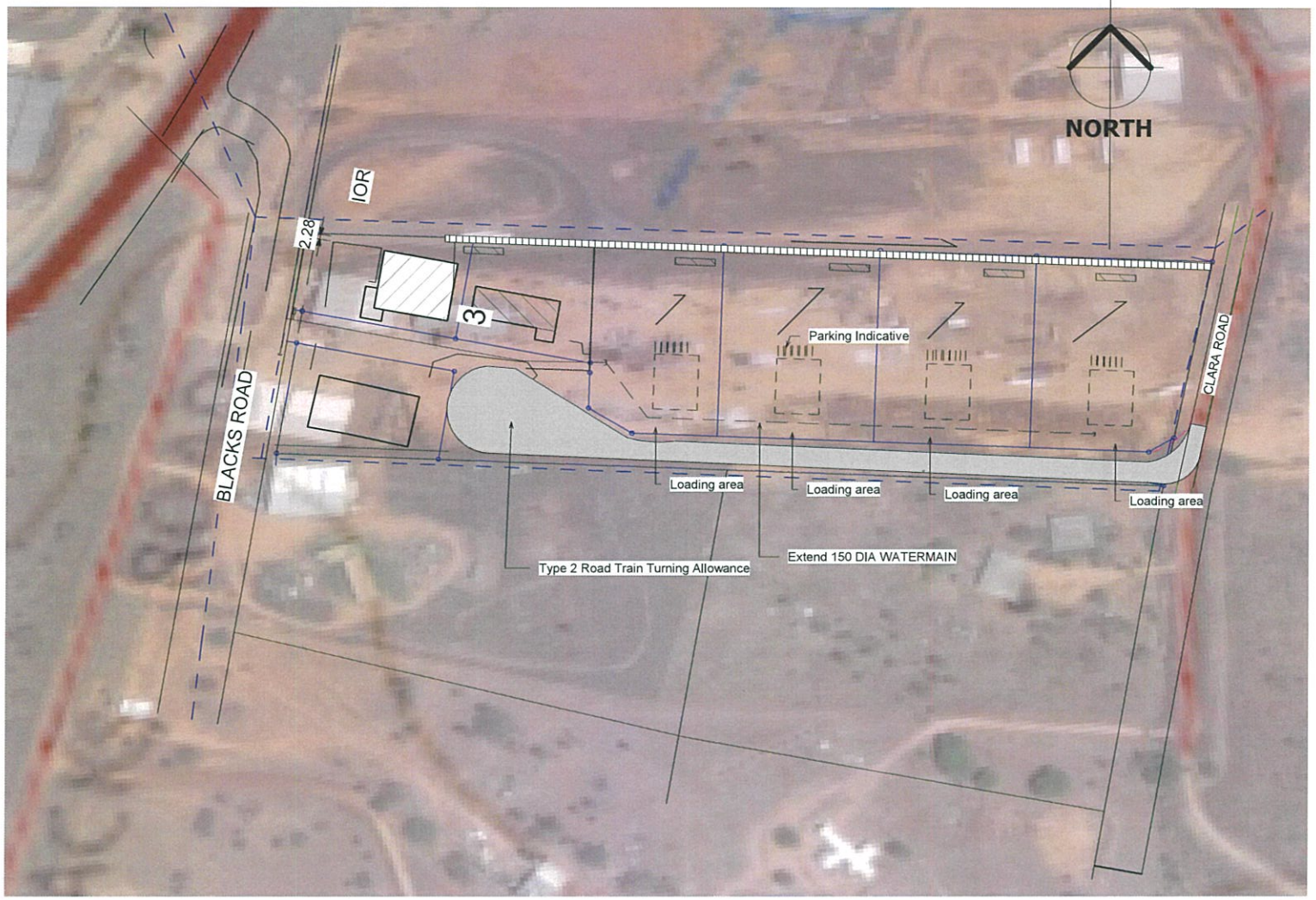

1 PSite Catchment
1 : 2000

STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Catchment On Plan

Project Status

ORIGINAL	A3
SCALE	1 : 2000
PROJECT NO	190105
SHEET	105
DATE	Issue Date

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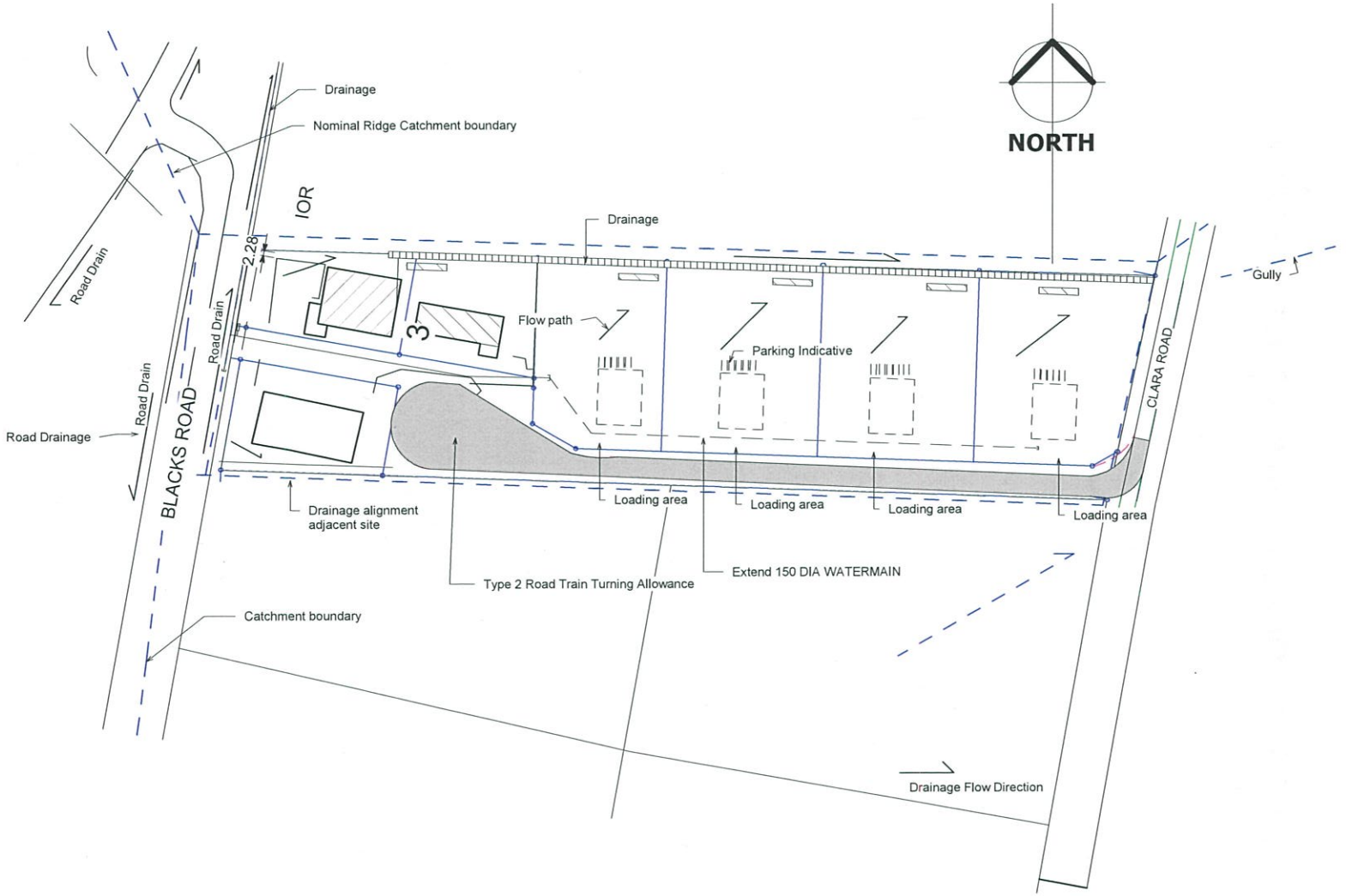

1 Site Catchment
1 : 2000

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STEEL SUPPLIES

BLACKS ROAD
CHARTERS TOWERS Q
4820

PROPOSED SUBDIVISION

Catchment

Project Status

ORIGINAL	A3
SCALE	1 : 2000
PROJECT NO	190105
SHEET	106
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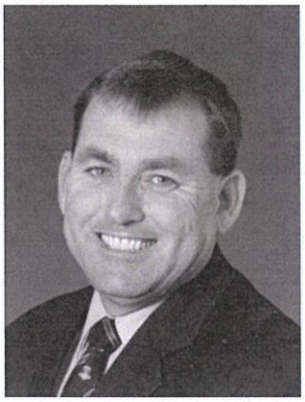
APPENDIX C – QUALIFICATIONS AND EXPERIENCE



Peter Duncan

Principal Civil/Structural Engineer

- BEng (Civil), MBA, RPEQ, MIE Aust., MIPENZ, CP Eng
- Member Institution of Engineers, Australia, CP Eng (Australia)
- National Professional Engineers Register, Australia
- Member Institution of Professional Engineers, New Zealand
- Chartered Professional Engineer New Zealand (Civil and Structural Disciplines)
- International Engineers Register New Zealand

Brief summary of working career:

- Peter began his career in Queensland working for Telstra in 1980, as a civil engineer.
- He joined the private sector as a Consultant in 1990 working for Ekert Management Group until 1997. During this time he became a director and partner of the firm.
- He was the Engineering Manager of Special Projects for Hamilton City Council (NZ) in 1997.
- Peter joined Meritec and Worley Consultants in New Zealand in 1999 as Senior Engineer for the company.
- Whilst at Rangitikei District Council, Peter worked as "Assets Manager" which is equivalent to Director of Engineering (May 2000).
- From 2005 to 2007 Peter was Director of Engineering at Flinders Shire.
- In 2007 Peter opened Duncan Projects in Townsville.
- In 2013 Peter opened Duncan Projects in Christchurch and Hamilton
- Duncan Projects joined the Frontier Engineers Consortium in 2013 for work in Christchurch. Peter was appointed Managing Director of Frontier Engineers in December 2013 and works full time at Frontier Engineers.
- Skipstone Consulting 2015-Present

Peter Duncan is a qualified Civil and Structural Engineer specialising in Structural and Infrastructure Design as well as Project, Planning and Water Management. Peter opened Duncan Projects in October 2007 and has since developed the business with a number of key clients, primarily in the area of structural engineering design and structural certification of buildings.

Peter's experience comes from a career spanning 30 years which has included 8 years as a Senior Manager in Local Governments in New Zealand and Australia and another 8 consecutive years as Director and Project Manager at Ekert Management Group Pty Ltd. Peter has vast experience in major project work, leading multi-disciplinary teams, design and construction.

His most significant major project began in 1989 and took until 1997 to complete which was the Jindalee Operational Radar Network (JORN). Prior to 1989 Peter worked on Telecommunications Infrastructure Projects for Telecom Australia including the Remote Rural Areas Program. This work included structural design of "Post Disaster" function Buildings.

Over his career, Peter has reported to Councils on a number of issues including Drainage Policies and issues that required straight forward policy advice, very often on issues that were especially complex.

Peter is also qualified in training and assessment in civil engineering related disciplines and has worked with both Engineers Australia and the Institution of Engineers New Zealand assessing candidates for corporate membership. Peter has also lectured at James Cook University in Project Management. He has written and delivered training programs for Quality Management and Tennis Coaching.

Structures:
Peter's structural experience includes the design of special buildings for Australian Defence Department as part of the Jindalee Operational Radar Project, "post disaster" function buildings for cyclonic regions, foundations for tower structures and the design and construction of bridges for walkways and highways.

Peter has experience with investigations of structure condition and failures, including vibration induced failure and collapse, and with earthquake and cyclone strengthening of historical structures. In the last three years Peter has been directly involved with the repair and re-construction of buildings following Cyclone Yasi in North Queensland and repair of bridge structures following the flooding in Queensland.

At Hamilton City Council, Peter was responsible for the structural checking of building consents submitted for construction.

He has experience in demolition and deconstruction and has held certification with Occupational Health and Safety (QLD) for both demolition and asbestos identification.

Major Structural Design Projects include:

- Telecommunications Structures – Buildings and Towers
- Jindalee Operational Radar Network - Buildings and infrastructure
- All Souls - St Gabriels – New Gymnasium
- Blackheath and Thornburgh College – New Library and Kindergarten
- Steel Supplies Charters Towers - Industrial Buildings
- Carter Street Townsville – Unit Development
- Christmas Island – Drumsite Village

Structural Design Projects involving design and assessment of buildings to previous and current earthquake codes in New Zealand include:

- Hamilton Gardens Russian "Bell-Watchtower"
- Hamilton Hammond Park – Pedestrian Bridge
- Hamilton – Strengthening of unreinforced clay brick masonry office building
- Carter Street Townsville – Unit Development – specific design checks for earthquake loading
- Christchurch – 35A Lookaway Place – New house structure on steep land to replaced damaged residence
- Lyttleton – 31 Bridle Path – New House structure on steep land to replace damaged residence demolished following earthquakes
- 14 Wairarapa Terrace – Specific Foundation design and repair strategy

Infrastructure Asset Management:
Peter has been responsible for the development of Infrastructure Asset Management Plans for local government in New Zealand and Australia. He has developed a number of engineering systems for asset management planning, asset valuation and condition assessment. His work to date has included the development of Asset Management Plans and Asset Valuation for Rangitikei District Council in New Zealand and Total Asset Management Plans and other related plans for Flinders Shire Council in North West Queensland. Charters Towers Regional Council, Mount Isa City Council and Richmond Shire Council

He has also studied system failure rates as part of risk management strategy and undertaken studies of risk assessment as a means of making and supporting management decisions.

Peter has also been involved in developing building maintenance systems while at Hamilton City Council in New Zealand, including maintenance schedules and contracts for building maintenance. This work was based on his experience in developing building maintenance systems for the Jindalee Operational Radar Project (JORN), and his early career work with the Buildings and Property Department of Telecom Australia. Peter has also used this experience while Assets Manager at Rangitikei District Council.

Contract and Construction Management:
Peter has considerable expertise in contracts and construction management gained from his diverse practice in the engineering industry. Peter was the Design and Construction manager for the infrastructure on the Australian Defence Departments Jindalee Operational Radar Network at sites across Australia.

Peter's experience with contracts includes developing and managing partnering, performance based and design-construct contracts; alternative dispute resolution including preparing claim and dispute resolution evidence.

Peter has worked with loss adjusters to investigate construction failures providing independent reports and evidence, including expert testimony in court.

Environmental and Landscape:
Some of Peter's other relevant environmental projects include: Development of Wetlands adjacent to the Waipa River, development of projects in Hamilton including significant parts of the Waikato River walkway, while Engineering Manager Special Projects For Hamilton City Council (work included the project management, planning and community consultation). Water quality projects for storm water in Hamilton Gardens and at the Bay of Plenty Polytechnic. During his early career Peter was active in undertaking environmental impact and visual impact studies for the construction of communications towers in Queensland, including projects in the Wet Tropical Rainforests of Far North Queensland; walkway and lookout projects in various parks; and erosion protection projects including two on the Waikato River at Hamilton, New Zealand.

Peter is also qualified to investigate and certify contaminated land reports to the Queensland EPA.
Peter has experience with the geotechnical requirements for protection of land with steep slopes, which has included assessment of slope stability, retaining structures, repair of land slips and subsidence.

New Zealand assessments have included work on land slip areas in Hamilton in 1997 - 1999, Rangitikei 2000 – 2005, and particularly including monitoring of the Taihape slip circle and repair of steep land following the Manawatu floods in 2004.

Australian assessments have included retaining walls and building designs in Brisbane (Mt Glorious), Queensland Microwave Radio Sites (SEACOM Route) and Townsville buildings on Castle Hill and Nobby Headland (Magnetic Island)

Current work in Christchurch New Zealand includes design and repair of retaining structures and steep land affected by the earthquakes of 2010 and 2011.

Water, Storm water and Wastewater:
Investigation Projects undertaken by Peter include water loss and leakage at both Flinders Shire and Rangitikei District Councils, stream flood flow and mitigation for subdivision development.

He has analysed the fee structures for water and wastewater charging while Asset Manager at Rangitikei District.

Design projects include the augmentation of Hughenden Wastewater Treatment Plant and the replacement of the Mangaweka Wastewater treatment plant.

Wastewater (Sewage) design of treatment and effluent disposal systems including discharge to land, and domestic on-site disposal of effluents. At Rangitikei Peter was responsible for ensuring that the discharge effluent met stringent environmental conditions. Minor wastewater projects include

- Design of effluent disposal system for the JORN project (four sites)
- Modification to designs for water treatment process JORN Qld sites
- Design of effluent disposal system adjacent to Duddings Lake (Rangitikei District Environmentally sensitive water body)
- Advice on effluent Quality at Marton, Taihape and Bay of Plenty
- On-site waste water disposal various sites in Queensland
- Sewerage design for new works on Christmas Island
- Environmentally sound storm water design for QLD subdivisions

Road Networks
Peter also has experience with designing and managing road networks and road maintenance contracts. Highlights include

- Chair of the NW Regional Road Group – Flinders Shire
- Chair of the Regional Road Safety Committee – Rangitikei District
- Member of Regional Road Committees in Manawatu and Hawkes Bay NZ
- Managed Flinders Shire Road Network
- Managed Rangitikei District Road Network.
- Subdivision Design
- Road work for Christmas Island project
- Isaac Regional Council – NDRRA Flood damage repair to road network.
- Traffic intersection assessments and reports including cycle networks – Rangitikei District, Flinders Shire, Duncan Management Group (Townsville/Mackay area)

SKIPSTONE CONSULTING
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TRAFFIC IMPACT ASSESSMENT REPORT

CLARK SUBDIVISION CLARA ROAD CHARTERS TOWERS

PROJECT REFERENCE 190105

REV 3

DATE: 17 SEPTEMBER 2019

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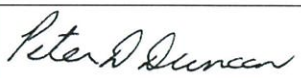
Project Report details	Accountability	Signature - which confirms relevant work has been completed and approved	Date	Qualification
Author	Project QA Manager and Project Director		10-9 2019	CPEng, RPEQ 1670
Review	Authorised Principal engineer for the project	Engineer Paul Harries	17-6 2019	BEng
Approval	Authorised Signatory		17-9 2019	RPEQ 1670

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1 INTRODUCTION

This report covers the traffic investigation and intersection information for a subdivision at Clara Road, Charters Towers. The proposal includes access to the site by Type 1 and Type 2 Road Trains.

The report has been prepared by Peter Duncan MIPENZ, MIE AUST, CPENG RPEQ. These design reports, in this format, form part of the Quality Assurance procedure in the business. Each report is tailored for the site and purpose but essentially acts as a checklist for design considerations and a record of the design process.

1.1 Background

Skipstone Consulting has been commissioned by Owen Clark to provide a traffic impact assessment in response to a request for information (RFI) for preliminary planning considerations from TMR.

The proposal was first propagated in 2009 to develop the site between Blacks Road and Clara Road in Charters Towers. Subsequently in 2019 there is a subdivision proposal to divide the property at Lot 1 RP... Into 7 lots. The site has already been developed for the same amount of commercial and vehicle activity and is 50% developed with three buildings on the site. An additional 4 new buildings on their own allotment is proposed, compared to the original proposal which allowed for an additional 6 leased buildings.

The proposed overall development allotments and site layout are attached at Appendix A.

Summary of Road Network:

Road	Lanes	Jurisdiction	Divided	Speed	Comment
14B Flinders Highway	2	TMR	No	80	State Highway
Blacks Road	2	TMR	No		Access road
Depot Road	2	Council	No		
Clara Road	2	Council	No		

1.2 Scope of Report

The site is located on the outskirts of Charters Towers. The main traffic movement for heavy vehicles turning off the main road is at the intersection of Depot Road with access to Clara Road. The report investigates the impacts of the additional buildings and businesses on the overall traffic movement and main intersections with the Flinders Highway.

. A copy of the Transport and Main Roads information document is attached at Appendix B.

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