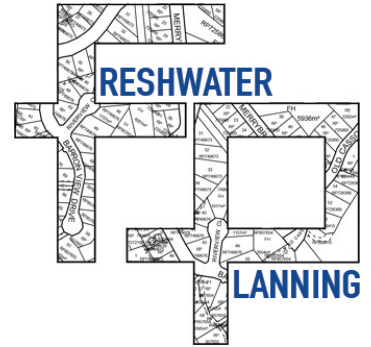


Your Ref:
Our Ref: F22/23 OPW

06 December, 2022

Chief Executive Officer
Mareeba Shire Council
PO Box 154
MAREEBA QLD 4880



Attention: Regional Planning Group

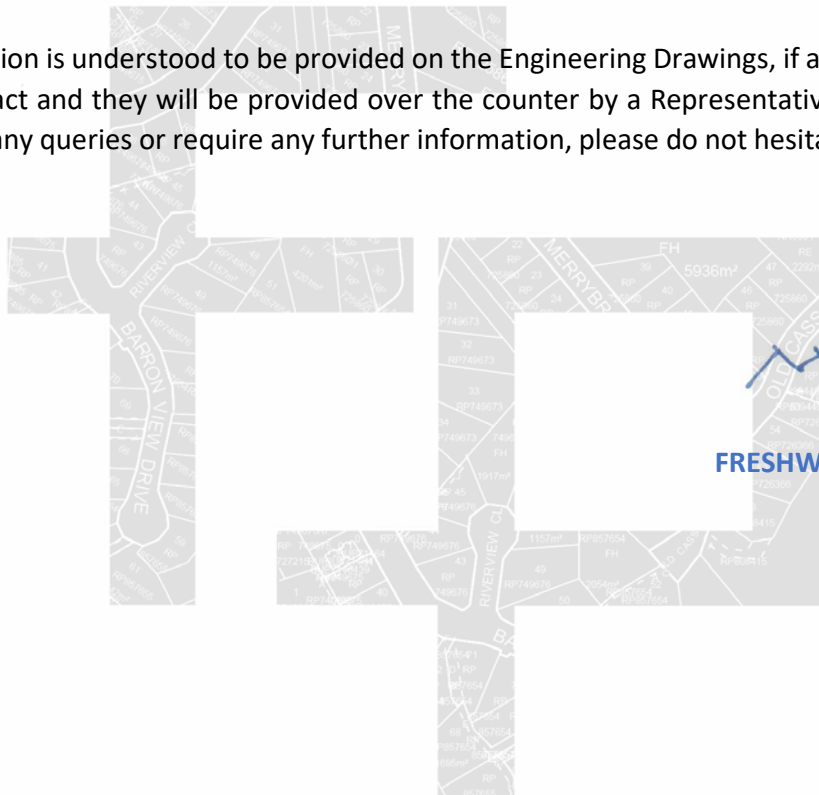
Dear Sir,

**RE: APPLICATION FOR OPERATIONAL WORKS – AMAROO STAGES 13A, 13B & 14A
LOT 500 ON SP336235, EMERALD END ROAD, MAREEBA.**

This application is for an Operational Works Application over land described as Lot 500 on SP336235, situated on Emerald End Road, Mareeba is submitted on behalf of BTM & S Stankovich Pty Ltd the owner of the site.

The application comprises of Application Forms, Engineering Drawings and this Town Planning Letter. It is understood that the proponent will provide payment of the Application Fee over the counter at the Mareeba Shire Council.

All required information is understood to be provided on the Engineering Drawings, if a Hard Copy is required do not hesitate to contact and they will be provided over the counter by a Representative of BTM & S Stankovich Pty Ltd. If you have any queries or require any further information, please do not hesitate to contact Freshwater Planning Pty Ltd.



Yours faithfully,


MATTHEW ANDREJIC
FRESHWATER PLANNING PTY LTD

DA Form 1 – Development application details

Approved form (version 1.3 effective 28 September 2020) made under section 282 of the Planning Act 2016.

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

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

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

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

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

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

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

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) <i>(individual or company full name)</i>	BTM & S Stankovich Pty Ltd
Contact name <i>(only applicable for companies)</i>	
Postal address <i>(P.O. Box or street address)</i>	C/ Freshwater Planning Pty Ltd 17 Barronview Drive
Suburb	Freshwater
State	QLD
Postcode	4870
Country	Australia
Contact number	0402729004
Email address <i>(non-mandatory)</i>	FreshwaterPlanning@outlook.com
Mobile number <i>(non-mandatory)</i>	
Fax number <i>(non-mandatory)</i>	
Applicant's reference number(s) <i>(if applicable)</i>	F22/23 OPW

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
			Emerald End Road	Mareeba
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
	4880	500	SP336235	Mareeba Shire Council
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)

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

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

Coordinates of premises by longitude and latitude

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

Coordinates of premises by easting and northing

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

3.3) Additional premises

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

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

In or adjacent to a water body or watercourse or in or above an aquifer
 Name of water body, watercourse or aquifer:

On strategic port land under the *Transport Infrastructure Act 1994*
 Lot on plan description of strategic port land:
 Name of port authority for the lot:

In a tidal area
 Name of local government for the tidal area (if applicable):
 Name of port authority for tidal area (if applicable):

On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*
 Name of airport:

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

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

Yes – All easement locations, types and dimensions are included in plans submitted with this development application

No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect
a) What is the type of development? <i>(tick only one box)</i>
<input type="checkbox"/> Material change of use <input type="checkbox"/> Reconfiguring a lot <input checked="" type="checkbox"/> Operational work <input type="checkbox"/> Building work
b) What is the approval type? <i>(tick only one box)</i>
<input checked="" type="checkbox"/> Development permit <input type="checkbox"/> Preliminary approval <input type="checkbox"/> Preliminary approval that includes a variation approval
c) What is the level of assessment?
<input checked="" type="checkbox"/> Code assessment <input type="checkbox"/> Impact assessment <i>(requires public notification)</i>
d) Provide a brief description of the proposal <i>(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):</i>
Operational Works and the Approved Reconfiguration
e) Relevant plans <i>Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.</i>
<input type="checkbox"/> 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? <i>(tick only one box)</i>
<input type="checkbox"/> Material change of use <input type="checkbox"/> Reconfiguring a lot <input type="checkbox"/> Operational work <input type="checkbox"/> Building work
b) What is the approval type? <i>(tick only one box)</i>
<input type="checkbox"/> Development permit <input type="checkbox"/> Preliminary approval <input type="checkbox"/> Preliminary approval that includes a variation approval
c) What is the level of assessment?
<input type="checkbox"/> Code assessment <input type="checkbox"/> Impact assessment <i>(requires public notification)</i>
d) Provide a brief description of the proposal <i>(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):</i>
e) Relevant plans <i>Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.</i>
<input type="checkbox"/> Relevant plans of the proposed development are attached to the development application
6.3) Additional aspects of development
<input type="checkbox"/> 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
<input checked="" type="checkbox"/> Not required

Section 2 – Further development details

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

Division 1 – Material change of use

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

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition <i>(include each definition in a new row)</i>	Number of dwelling units <i>(if applicable)</i>	Gross floor area (m ²) <i>(if applicable)</i>

8.2) Does the proposed use involve the use of existing buildings on the premises?	
<input type="checkbox"/> Yes	
<input type="checkbox"/> No	

Division 2 – Reconfiguring a lot

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

9.1) What is the total number of existing lots making up the premises?	

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

10) Subdivision				
10.1) For this development, how many lots are being created and what is the intended use of those lots:				
Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?	
<input type="checkbox"/> Yes – provide additional details below	
<input type="checkbox"/> No	
How many stages will the works include?	
What stage(s) will this development application apply to?	

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

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

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

Division 3 – Operational work

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

14.1) What is the nature of the operational work?	
<input checked="" type="checkbox"/> Road work <input checked="" type="checkbox"/> Drainage work <input type="checkbox"/> Landscaping <input checked="" type="checkbox"/> Other – please specify:	<input checked="" type="checkbox"/> Stormwater <input checked="" type="checkbox"/> Earthworks <input type="checkbox"/> Signage See Operational Works Plan
<input checked="" type="checkbox"/> Water infrastructure <input checked="" type="checkbox"/> Sewage infrastructure <input type="checkbox"/> Clearing vegetation	
14.2) Is the operational work necessary to facilitate the creation of new lots? (e.g. subdivision)	
<input checked="" type="checkbox"/> Yes – specify number of new lots:	45 and a Balance Allotment
<input type="checkbox"/> No	
14.3) What is the monetary value of the proposed operational work? (include GST, materials and labour)	
\$ TBD	

PART 4 – ASSESSMENT MANAGER DETAILS

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

PART 5 – REFERRAL DETAILS

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

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

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

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

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

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

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

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

18) Has any referral agency provided a referral response for this development application?		
<input type="checkbox"/> Yes – referral response(s) received and listed below are attached to this development application		
<input checked="" type="checkbox"/> 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 (<i>if applicable</i>).		

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules
<input checked="" type="checkbox"/> I agree to receive an information request if determined necessary for this development application
<input type="checkbox"/> I do not agree to accept an information request for this development application
Note: <i>By not agreeing to accept an information request I, the applicant, acknowledge:</i>
<ul style="list-style-type: none"> • <i>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</i> • <i>Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.</i>
<i>Further advice about information requests is contained in the DA Forms Guide.</i>

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? (e.g. a preliminary approval)			
<input checked="" type="checkbox"/> Yes – provide details below or include details in a schedule to this development application <input type="checkbox"/> No			
List of approval/development application references	Reference number	Date	Assessment manager
<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Development application	RAL/22/0019	27/10/2022	Mareeba Shire Council
<input type="checkbox"/> Approval <input type="checkbox"/> Development application			

21) Has the portable long service leave levy been paid? (only applicable to development applications involving building work or operational work)		
<input type="checkbox"/> Yes – a copy of the receipted QLeave form is attached to this development application <input type="checkbox"/> 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 <input checked="" type="checkbox"/> 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?
<input type="checkbox"/> Yes – show cause or enforcement notice is attached <input checked="" type="checkbox"/> 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 <i>Environmental Protection Act 1994</i> ?	
<input type="checkbox"/> 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 <input checked="" type="checkbox"/> No <i>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.</i>	
Proposed ERA number:	Proposed ERA threshold:
Proposed ERA name:	
<input type="checkbox"/> 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 ?	
<input type="checkbox"/> Yes – Form 69: Notification of a facility exceeding 10% of schedule 15 threshold is attached to this development application <input checked="" type="checkbox"/> No <i>Note: See www.business.qld.gov.au for further information about hazardous chemical notifications.</i>	

Clearing native vegetation

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

- Yes – this development application includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)
- No

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

Environmental offsets

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

- Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter
- No

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

Koala habitat in SEQ Region

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

- Yes – the development application involves premises in the koala habitat area in the koala priority area
- Yes – the development application involves premises in the koala habitat area outside the koala priority area
- No

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

Water resources

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

- Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development
- No

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

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

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

Waterway barrier works

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

- Yes – the relevant template is completed and attached to this development application
- No

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

Marine activities

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

- Yes – an associated resource allocation authority is attached to this development application, if required under the *Fisheries Act 1994*
- No

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

Quarry materials from a watercourse or lake

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

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

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

Quarry materials from land under tidal waters

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

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

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

Referable dams

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

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

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

Tidal work or development within a coastal management district

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

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

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

Queensland and local heritage places

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

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

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

Name of the heritage place:		Place ID:	
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Brothels

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

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

Decision under section 62 of the Transport Infrastructure Act 1994

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

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

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

23.16) 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.dsdmip.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	<input checked="" type="checkbox"/> Yes
Note: See the Planning Regulation 2017 for referral requirements	
If building work is associated with the proposed development, Parts 4 to 6 of DA Form 2 – Building work details have been completed and attached to this development application	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
Supporting information addressing any applicable assessment benchmarks is with the development application	<input checked="" type="checkbox"/> Yes
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 .	
Relevant plans of the development are attached to this development application	<input checked="" type="checkbox"/> Yes
Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans .	
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (see 21)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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			
<i>Note: For completion by assessment manager if applicable</i>			
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			



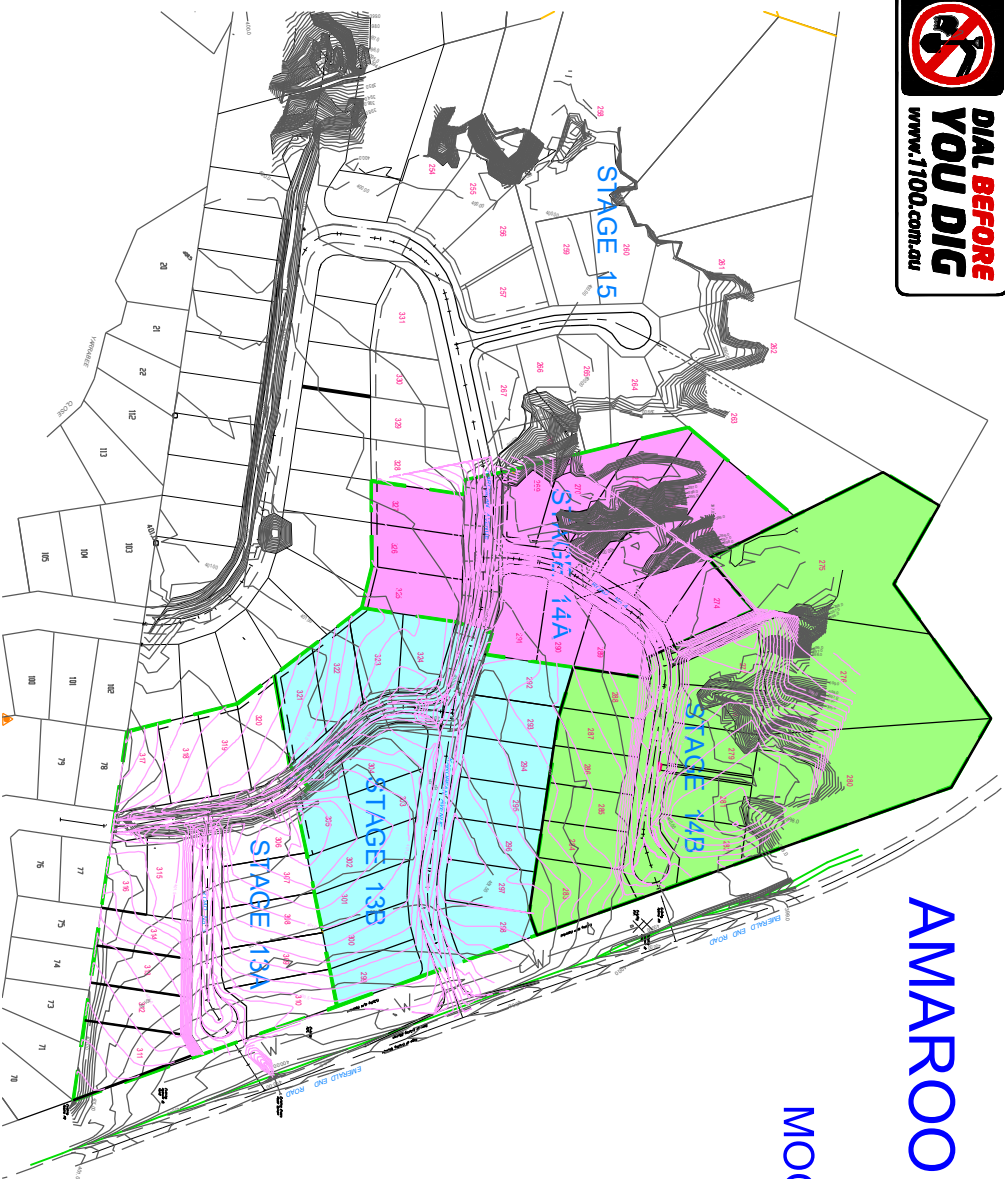
AMAROO RESIDENTIAL DEVELOPMENT

STAGES 13 & 14

MOONDANI AVENUE, MAREEBA

Mareeba Shire Council

STAGE 13A - 15 ALLOTMENTS
STAGE 13B - 18 ALLOTMENTS
STAGE 14A - 12 ALLOTMENTS
STAGE 14B - 14 ALLOTMENTS



SITE PLAN N.T.S

FNQROC STANDARD DRAWINGS

Drawing Number	Rev.	Drawing Description
S1015	B	ACCESS CROSSOVERS
S1016	A	KERB RAMP
S1040	E	STREET NAME SIGNS
S1050	B	GRATED KERB INLET PIT PIPE DIA. >600
S1055	D	GRATED KERB INLET PIT PIPE DIA. <600
S1065	B	STORMWATER MANHOLES 1050 & 1500.
S2000	C	VALVE BOX INSTALLATION
S2005	C	HYDRANT BOX INSTALLATION
S2010	D	KERB/ROAD MARKERS
S2016	B	WATER RETICULATION BEDDING DETAILS
S2020	C	MAIN CONNECTION DETAILS
S3000	C	SEWERAGE MANHOLES
S3005	D	STANDARD HOUSE CONNECTION BRANCHES
S3015	C	BEDDING AND TRENCHING DETAILS - SEWERAGE

MAREEBA SHIRE COUNCIL - SPECIFIC DRAWINGS

Drawing Number	Rev.	Drawing Description
S2000	A	MSC VALVE BOX INSTALLATION
S2005	A	MSC HYDRANT BOX INSTALLATION
S2015	D	MSC THRUST BLOCK DETAILS
S2020	D	MSC MAIN CONNECTION DETAILS
S2060	A	MSC DOMESTIC WATER SERVICE CONNECTION DETAILS

ISSUE FOR APPROVAL

DRAWING INDEX - STAGES 13 & 14

Drawing Number	Drawing Description
AP-ST1314-C01	COVER SHEET, SITE PLAN AND DRAWING LIST
AP-ST1314-C02	OVERALL SITE PLAN - STAGES 13 & 14
AP-ST1314-C03	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 13A
AP-ST1314-C04	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 13B
AP-ST1314-C05	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 13C
AP-ST1314-C06	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 14A
AP-ST1314-C07	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 14B
AP-ST1314-C08	ROAD CENTRE LINE SETOUT TABLES
AP-ST1314-C09	INTERSECTION & CUL-DE-SAC DETAILS - SHEET 1 of 3
AP-ST1314-C10	INTERSECTION & CUL-DE-SAC DETAILS - SHEET 2 of 3
AP-ST1314-C11	INTERSECTION & CUL-DE-SAC DETAILS - SHEET 3 of 3
AP-ST1314-C12	TYPICAL CROSS SECTIONS AND DETAILS
AP-ST1314-C13	LONGITUDINAL SECTION - KAROBEAN AVENUE
AP-ST1314-C14	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 1 of 4
AP-ST1314-C15	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 2 of 4
AP-ST1314-C16	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 3 of 4
AP-ST1314-C17	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 4 of 4
AP-ST1314-C18	LONGITUDINAL SECTION - MOONDANI AVENUE
AP-ST1314-C19	CROSS SECTIONS - MOONDANI AVENUE - SHEET 1 of 2
AP-ST1314-C20	CROSS SECTIONS - MOONDANI AVENUE - SHEET 2 of 2
AP-ST1314-C21	LONGITUDINAL SECTIONS - ROAD 3 & ALLAMBEE CLOSE
AP-ST1314-C22	CROSS SECTIONS - ROAD 3
AP-ST1314-C23	CROSS SECTIONS - ALLAMBEE CLOSE - SHEET 1 of 2
AP-ST1314-C24	CROSS SECTIONS - ALLAMBEE CLOSE - SHEET 2 of 2
AP-ST1314-C25	OVERALL EARTHWORKS PLAN - STAGES 13 & 14
AP-ST1314-C26	EARTHWORKS PLAN - STAGE 13A
AP-ST1314-C27	EARTHWORKS PLAN - STAGE 13B
AP-ST1314-C28	EARTHWORKS PLAN - STAGE 14A
AP-ST1314-C29	EARTHWORKS PLAN - STAGE 14B
AP-ST1314-C30	STORMWATER DRAINAGE CATCHMENT PLAN
AP-ST1314-C31	STORMWATER DRAINAGE - LONGITUDINAL SECTIONS - SHEET 1 of 3
AP-ST1314-C32	STORMWATER DRAINAGE - LONGITUDINAL SECTIONS - SHEET 2 of 3
AP-ST1314-C33	STORMWATER DRAINAGE - LONGITUDINAL SECTIONS - SHEET 3 of 3
AP-ST1314-C34	STORMWATER DRAINAGE - CALCULATIONS TABLE - SHEET 1 of 3
AP-ST1314-C35	STORMWATER DRAINAGE - CALCULATIONS TABLE - SHEET 2 of 3
AP-ST1314-C36	STORMWATER DRAINAGE - CALCULATIONS TABLE - SHEET 3 of 3
AP-ST1314-C37	STORMWATER DRAINAGE - CALCULATIONS TABLE - SHEET 3 of 3
AP-ST1314-C38	STORMWATER DRAINAGE STRUCTURES SCHEDULE AND PIPE TABLE
AP-ST1314-S01	SEWERAGE RETICULATION - LAYOUT PLAN - SHEET 1 of 5
AP-ST1314-S02	SEWERAGE RETICULATION - LAYOUT PLAN - SHEET 2 of 5
AP-ST1314-S03	SEWERAGE RETICULATION - LAYOUT PLAN - SHEET 3 of 5
AP-ST1314-S04	SEWERAGE RETICULATION - LAYOUT PLAN - SHEET 4 of 5
AP-ST1314-S05	SEWERAGE RETICULATION - LAYOUT PLAN - SHEET 5 of 5
AP-ST1314-S06	SEWERAGE RETICULATION - LONGITUDINAL SECTIONS - SHEET 1 of 3
AP-ST1314-S07	SEWERAGE RETICULATION - LONGITUDINAL SECTIONS - SHEET 2 of 3
AP-ST1314-S08	SEWERAGE RETICULATION - LONGITUDINAL SECTIONS - SHEET 3 of 3
AP-ST1314-W01	WATER RETICULATION PLAN - STAGE 13A
AP-ST1314-W02	WATER RETICULATION PLAN - STAGE 13B
AP-ST1314-W03	WATER RETICULATION PLAN - STAGE 14A
AP-ST1314-W04	WATER RETICULATION PLAN - STAGE 14B
AP-ST1314-EC01	EROSION & SEDIMENT CONTROL PLAN - STAGE 13 & 14
AP-ST1314-EC02	EROSION & SEDIMENT CONTROL GENERAL NOTES PLAN
AP-ST1314-EC03	EROSION & SEDIMENT CONTROL GENERAL DETAILS PLAN
S2060	DOMESTIC WATER SERVICE CONNECTION DETAILS - MODIFIED

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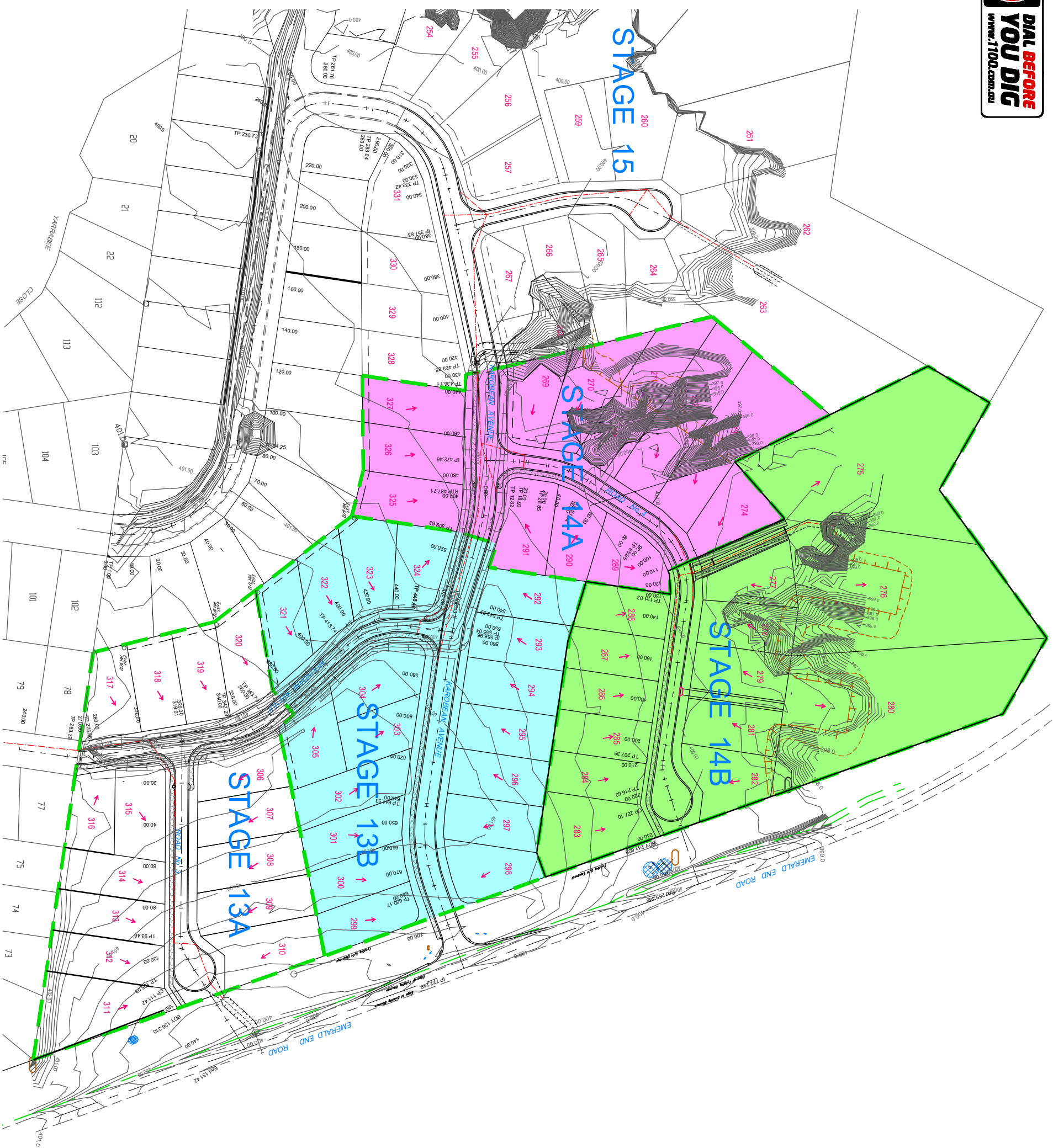
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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

DRAWING **COVER SHEET, SITE PLAN AND DRAWING LIST**

APPROVED	DATE
RMM	08/22
AP-ST1314-C01	B



LEGEND

- ORIGINAL CONTOURS - PRE BULK EARTHWORKS (0.5m INTERVALS)
- STAGE BOUNDARY
- PROPOSED KERB AND CHANNEL
- PROPOSED ROOF WATER KERB ADAPTORS
- ALLOTMENT STORMWATER RUNOFF DIRECTION
- PROPOSED STORMWATER DRAINAGE
- CONCRETE FOOTPATH

FOR ASSOCIATED ROAD LONGITUDINAL SECTIONS AND CROSS SECTIONS REFER TO DRAWINGS AP-ST1314-C16 TO C20.

NOTES

1. LEVEL DATUM: AHD
2. ORIGIN OF LEVELS: PSM160508; RL 402.411 CNR HASTIE ROAD AND CEOLA DRIVE.
3. NATURAL SURFACE CONTOUR INTERVAL: 0.20m INDEXED: 1.00m
4. NATURAL SURFACE CONTOURS DERIVED FROM TWINE FIELD SURVEY WITH ADDITIONAL DATA DERIVED FROM LIDAR INFORMATION.
5. DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
6. REFER TO FNOROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS ROADWORKS, SEWERAGE, WATER AND STORMWATER DRAINAGE.
7. FOR INTERSECTION AND CUL DE SAC DETAILS REFER TO DRAWINGS AP-ST1314-C08 TO C11.

ISSUE FOR APPROVAL

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REVISION	DATE	DESCRIPTION
A	08/22	ORIGINAL ISSUE FOR COMMENT
B	11/22	ORIGINAL ISSUE FOR APPROVAL

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING OVERALL SITE PLAN STAGES 13 & 14

DRAWN	DATE	APPROVED	DATE
RMM	08/22	RPEO	
DWG. NO. AP-ST1314-C02		REVISION B	



STORMWATER STRUCTURE TABLE

NO	TYPE	EASTING	NORTHING
5/4	KERB INLET PIT ON GRADE (S)	334,010.072	8120752.414
6/4	KERB INLET PIT ON GRADE (S)	334,029.339	8120764.791
7/4	KERB INLET PIT ON GRADE (S)	334,074.998	8120764.263
8/4	KERB INLET PIT ON GRADE (S)	334,008.260	8120775.139
9/4	KERB INLET PIT IN SAG (S)	334,126.901	8120781.884
10/4	OUTLET HEADWALL	334,134.505	8120788.077

- CO-ORDINATES REFER TO MIDDLE OF HEADWALL AS SHOWN
- CO-ORDINATES REFER TO CENTRE OF MANHOLE AS SHOWN
- SETOUT REFERS TO MID POINT OF GRATE ON LIP OF KERB AS SHOWN

LEGEND

	ORIGINAL CONTOURS - PRE BULK EARTHWORKS (0.5m INTERVALS)
	STAGE BOUNDARY
	PROPOSED KERB AND CHANNEL
	PROPOSED ROOFWATER KERB ADAPTORS
	ALLOTMENT STORMWATER RUNOFF DIRECTION
	PROPOSED STORMWATER DRAINAGE
	PROPOSED SEWERAGE RETICULATION
	PROPOSED WATER RETICULATION - Ø150
	CONCRETE FOOTPATH

FOR ASSOCIATED ROAD LONGITUDINAL SECTIONS AND CROSS SECTIONS REFER TO DRAWINGS AP-ST1314-C16 TO C20.

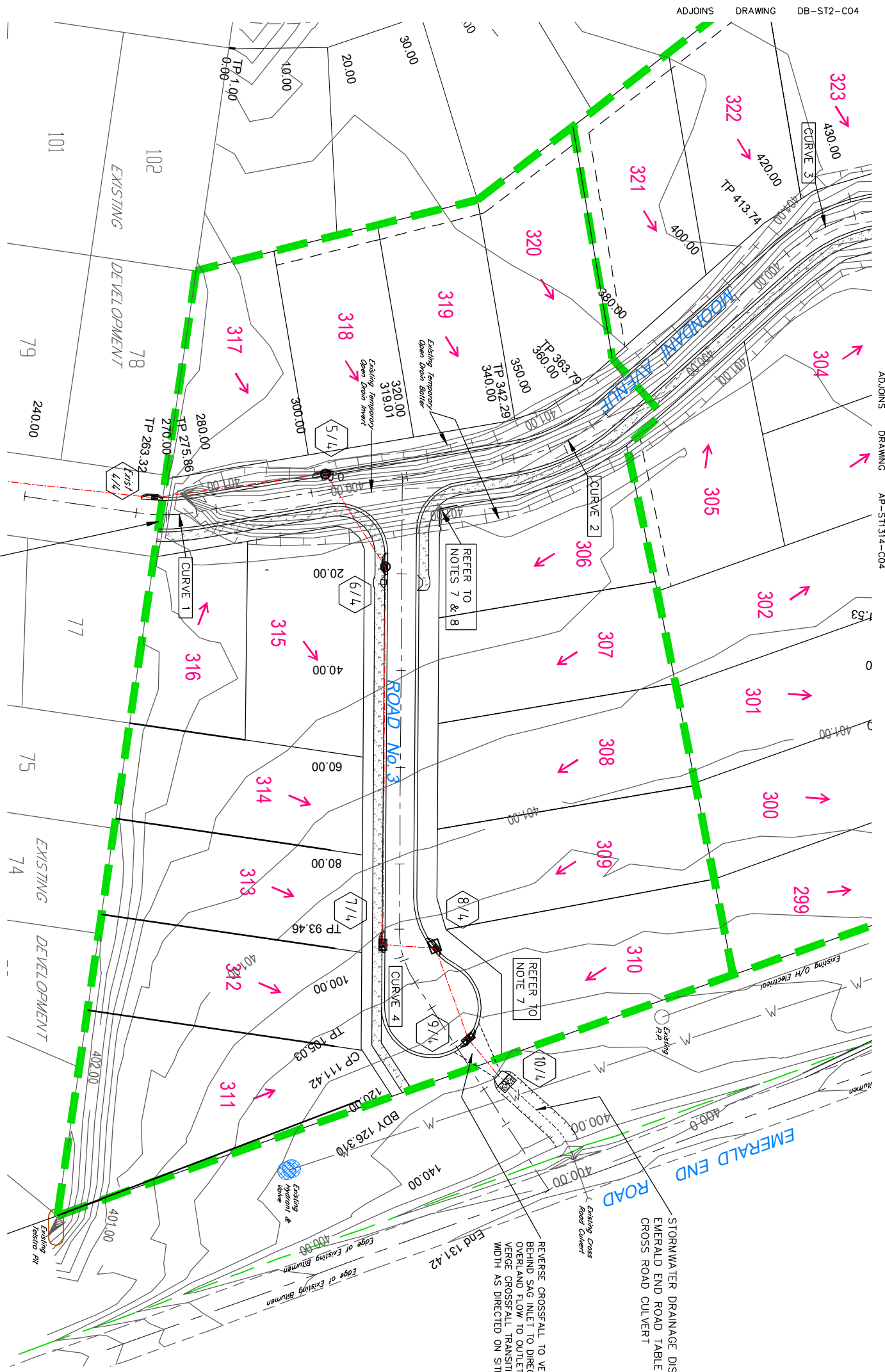
CURVE TABLE

CURVE No	ROAD No	RADIUS	ARC	TANGENT	SECANT
1	MOONDANI AVENUE	4.000	12.536	6.320	0.496
2	MOONDANI AVENUE	38.50	21.503	11.039	1.551
3	MOONDANI AVENUE	37.50	32.725	17.486	3.876
4	ROAD No. 3	20.00	11.571	5.952	0.867

NOTES

1. LEVEL DATUM: AHD
2. ORIGIN OF LEVELS: PSM160508; RL 402.411 CNR HASTIE ROAD AND CEOLA DRIVE.
3. NATURAL SURFACE CONTOUR INTERVAL: 0.20m INDEXED: 1.00m
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6. REFER TO FNOROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS ROADWORKS, SEWERAGE, WATER AND STORMWATER DRAINAGE.
7. FOR INTERSECTION AND CUL DE SAC DETAILS REFER TO DRAWING AP-ST1314-C08.
8. PROVIDE TWO STANDARD FNOROC SINGLE PLATE STREET NAME SIGNS ON SAME STANDARD - "MOONDANI AVENUE" AND "ROAD No. 3" (APPROVED ROAD NAME TO BE VERIFIED) REFER TO FNOROC STANDARD DRAWING S1040 FOR FURTHER DETAILS.

ISSUE FOR APPROVAL



CONTROL STATIONS

Point	Easting	Northing	Elevation
PSM 182856	333549.907	8120741.716	399.855
PSM 168684	334232.225	8120673.283	401.463
STN 1 (Pn)	33456.097	8120760.320	399.385
STN 2 (Pn)	333961.659	8120661.682	401.981
STN 3 (Pn)	333979.294	8120549.185	402.459

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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 13A

APPROVED	DATE
RMM	08/22
AP-ST1314-C03	B



STORMWATER STRUCTURE TABLE

NO	TYPE	EASTING	NORTHING
1/A	KERB INLET PIT ON GRADE (S)	333972.422	8120890.618
2/A	Ø1050 MANHOLE	333954.400	8120897.797
1/C	KERB INLET PIT ON GRADE (S)	333959.358	8120880.897
2/C	KERB INLET PIT ON GRADE (S)	333952.754	8120882.563
3/A	Ø1050 MANHOLE	333901.769	8120910.286
1/4A	KERB INLET PIT ON GRADE (S)	333891.134	8120919.086
1/B	BACK OF KERB OPENING	334.112.14.7	8120891.916
2/B	BACK OF KERB OPENING	334.105.613	8120905.963

- ⊕ CO-ORDINATES REFER TO MIDDLE OF HEADWALL AS SHOWN
- ⊕ CO-ORDINATES REFER TO CENTRE OF MANHOLE AS SHOWN
- ⊕ SETOUT REFERS TO MID POINT OF GRATE ON LIP OF KERB AS SHOWN

CONTROL STATIONS

Point	Easting	Northing	Elevation
PSM 182856	333549.907	812074.716	399.855
PSM 168684	334232.225	8120673.283	401.663
STN 1 (Pm)	333456.097	8120760.320	399.385
STN 2 (Pm)	333961.659	8120661.682	401.981
STN 3 (Pm)	333979.294	812054.9185	402.459

LEGEND

- ORIGINAL CONTOURS - PRE BULK EARTHWORKS (0.5m INTERVALS)
- STAGE BOUNDARY
- PROPOSED KERB AND CHANNEL
- PROPOSED ROOF WATER KERB ADAPTORS
- ALLOTMENT STORMWATER RUNOFF DIRECTION
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWERAGE RETICULATION
- PROPOSED WATER RETICULATION - Ø150
- CONCRETE FOOTPATH

FOR ASSOCIATED ROAD LONGITUDINAL SECTIONS AND CROSS SECTIONS REFER TO DRAWINGS AP-ST1314-C11 TO C18.

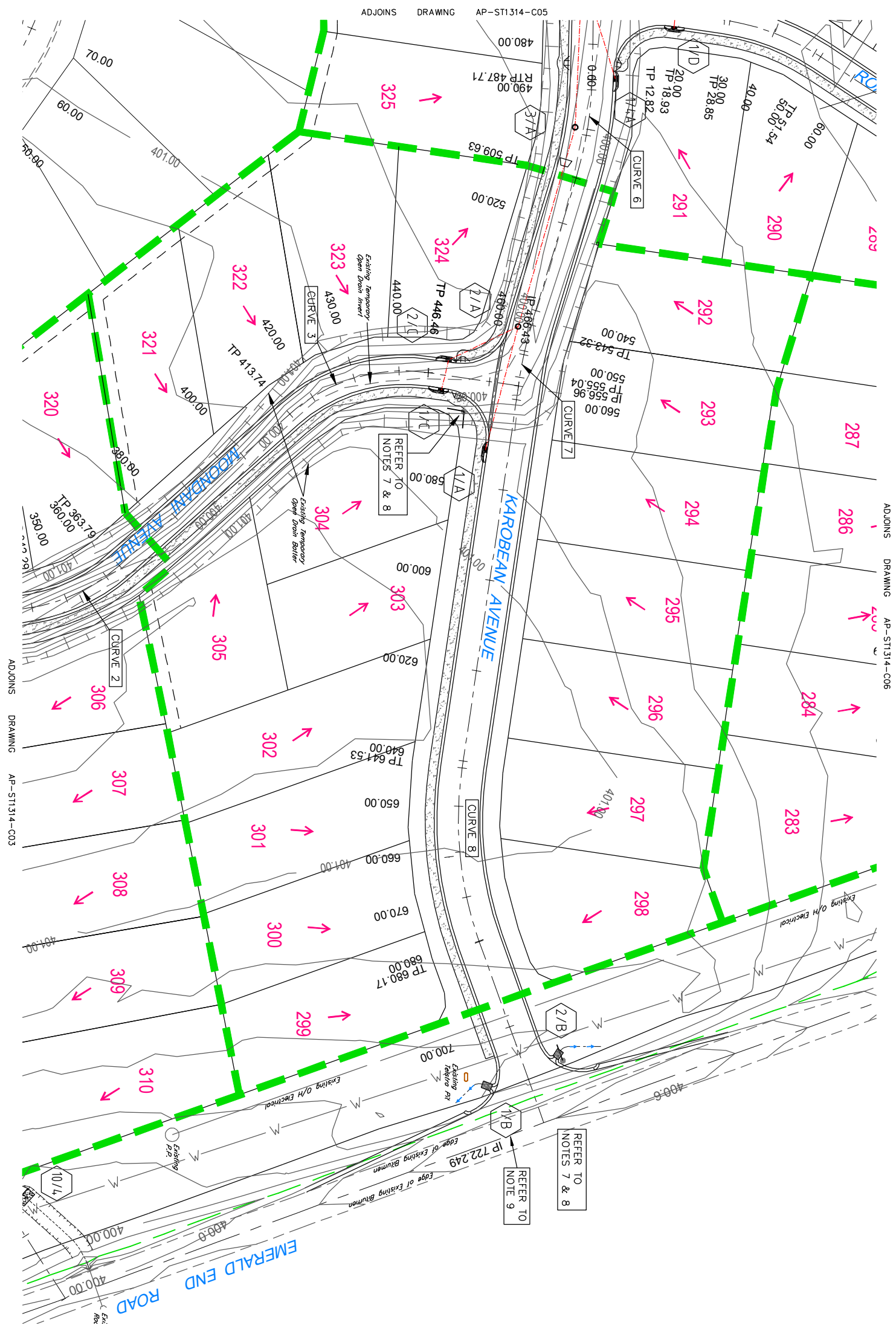
CURVE No	ROAD No	RADIUS	ARC	TANGENT	SECANT
2	MOONDANI AVENUE	38.50	21.503	11.039	1.551
3	MOONDANI AVENUE	37.50	32.725	17.486	3.876
6	KAROBEAN AVENUE	81.00	21.912	11.023	0.747
7	KAROBEAN AVENUE	79.00	11.720	5.870	0.218
8	KAROBEAN AVENUE	79.00	38.647	19.718	2.423

CURVE TABLE

NOTES

- LEVEL DATUM: AHD
- ORIGIN OF LEVELS: PSM160508; RL 402.411 CNR HASTIE ROAD AND CEOLA DRIVE.
- NATURAL SURFACE CONTOUR INTERVAL: 0.20m INDEXED: 1.00m
- NATURAL SURFACE CONTOURS DERIVED FROM TWINE FIELD SURVEY WITH ADDITIONAL DATA DERIVED FROM LIDAR INFORMATION.
- DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
- REFER TO FNOROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS ROADWORKS, SEWERAGE, WATER AND STORMWATER DRAINAGE.
- FOR INTERSECTION AND CUL DE SAC DETAILS REFER TO DRAWINGS AP-ST1314-C09 & C10.
- PROVIDE TWO STANDARD FNOROC SINGLE PLATE STREET NAME SIGNS ON SAME STANDARD - "MOONDANI AVENUE" AND "KAROBEAN AVENUE" REFER TO FNOROC STANDARD DRAWING S1040 FOR FURTHER DETAILS.
- AT LOCATIONS 1/B AND 2/B PROVIDE KERB AND CHANNEL OPENING TO DRAIN ROAD PAVEMENT AND DIRECT RUNOFF TO EXISTING TABLE DRAINS. REFER TO DWG. AP-ST1314-C10 FOR FURTHER DETAILS.

ISSUE FOR APPROVAL



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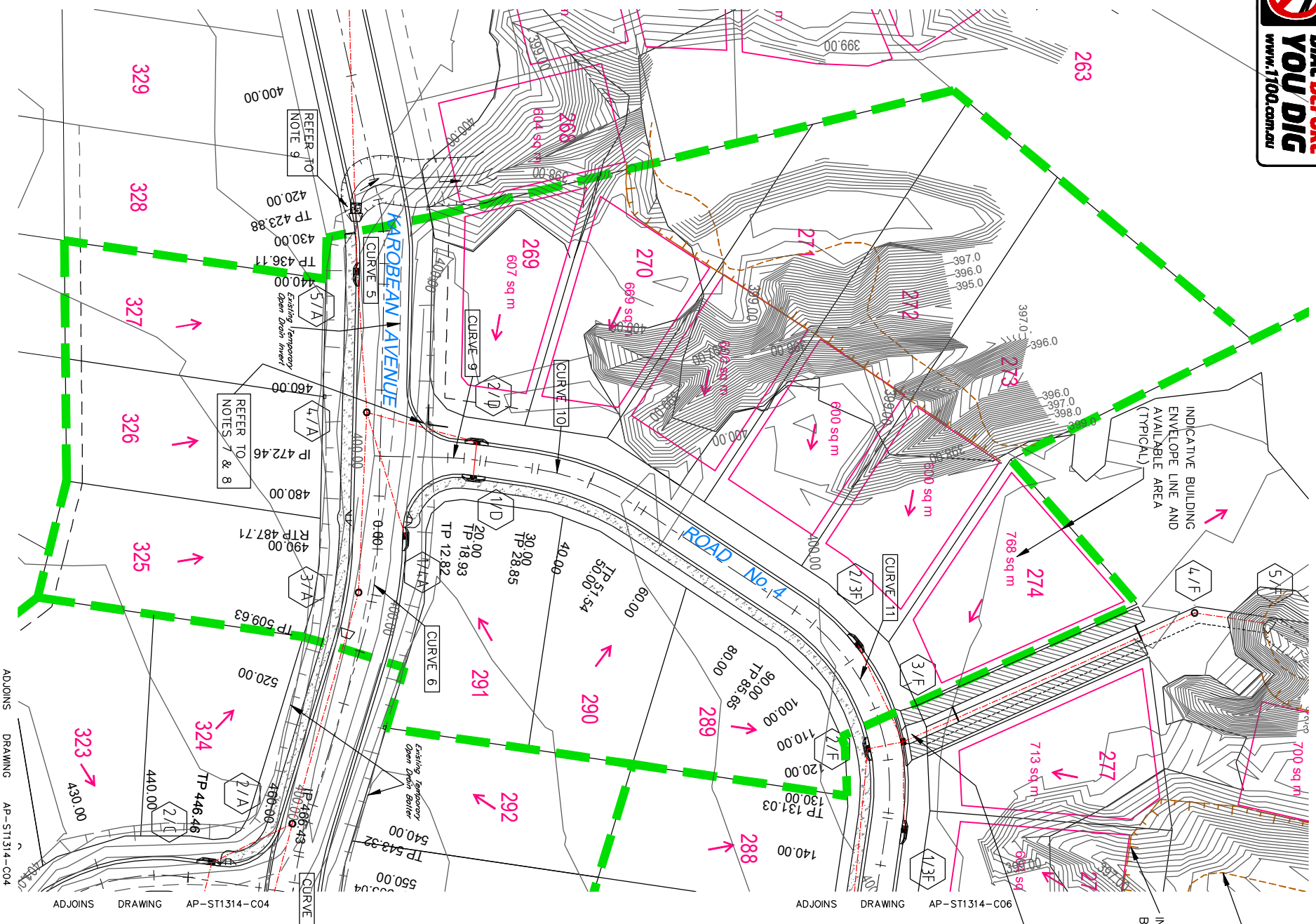
Associated Consultant
T.S. Adli and Associates
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REVISION	DATE	DESCRIPTION
A	08/22	ORIGINAL ISSUE FOR COMMENT
B	11/22	ORIGINAL ISSUE FOR APPROVAL

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 13B

APPROVED	DATE	REVISION
RMM	08/22	B



CONTROL STATIONS

Point	Easting	Northing	Elevation
PSM 182856	33356.907	812071.716	399.855
PSM 186884	334232.225	8120673.283	401.643
STN 1 (Pnl)	333456.097	8120160.320	399.385
STN 2 (Pnl)	33396.169	8120661.682	401.981
STN 3 (Pnl)	333979.294	812054.9185	402.459

INDICATIVE TOP OF FILL BATTER LINE (TYPICAL)

INDICATIVE TOE OF FILL BATTER LINE (TYPICAL)

INDICATIVE BUILDING ENVELOPE LINE AND AVAILABLE AREA (TYPICAL)

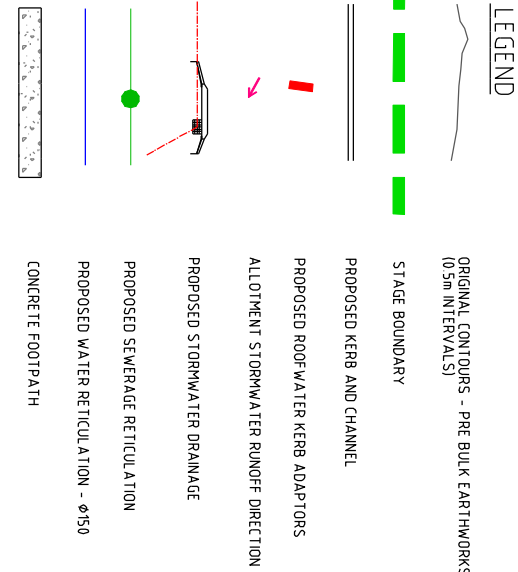
REVERSE CROSSFALL TO VERGE BEHIND SAG INLET TO DIRECT OVERLAND FLOW TO DRAIN OUTLET.

VERGE CROSSFALL TRANSITION WIDTH AS DIRECTED ON SITE.

WHERE DIRECTED - PROVIDE TEMPORARY OUTLET DRAIN FROM EXTENT OF STAGE 4A WORKS.

STORMWATER STRUCTURE TABLE

NO	TYPE	EASTING	NORTHING
3/A	Ø1050 MANHOLE	333901.769	8120910.286
4/A	Ø1050 MANHOLE	333867.791	8120911.824
5/A	KERB INLET PIT ON GRADE (S)	333841.224	8120910.028
1/4A	KERB INLET PIT ON GRADE (S)	333891.134	8120919.066
1/D	KERB INLET PIT IN SAG (S)	333880.164	8120931.941
2/D	KERB INLET PIT IN SAG (S)	333873.414	8120932.559
2/3F	KERB INLET PIT ON GRADE (S)	333911.703	8121004.579
2/F	KERB INLET PIT IN SAG (S)	333931.276	8121006.351
3/F	KERB INLET PIT IN SAG (S)	333929.943	8121013.071
1/3F	KERB INLET PIT ON GRADE (S)	333946.476	8121013.224
4/F	Ø1050 MANHOLE	333905.620	8121068.074
5/F	OUTLET HEADWALL	333907.594	8121081.455



FOR ASSOCIATED ROAD LONGITUDINAL SECTIONS AND CROSS SECTIONS REFER TO DRAWINGS AP-ST1314-C11 TO C22.

CURVE TABLE

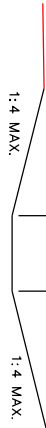
CURVE No	ROAD No	RADIUS	ARC	TANGENT	SECANT
5	KAROBEBAN AVENUE	51.00	12.228	6.143	0.369
6	KAROBEBAN AVENUE	81.00	21.912	11.023	0.717
7	KAROBEBAN AVENUE	79.00	11.720	5.870	0.218
9	ROAD No. 4	6.109	3.058	1.528	0.093
10	ROAD No. 4	52.00	22.689	11.528	1.262
11	ROAD No. 4	4.000	4.5379	25.482	7.427

NOTES

- LEVEL DATUM: AHD
- ORIGIN OF LEVELS: PSM160508; RL 402.411 CNR HASTIE ROAD AND CEOLA DRIVE.
- NATURAL SURFACE CONTOUR INTERVAL: 0.20m INDEXED: 1.00m
- NATURAL SURFACE CONTOURS DERIVED FROM TWINE FIELD SURVEY WITH ADDITIONAL DATA DERIVED FROM LIDAR INFORMATION.
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- REFER TO FNOROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS ROADWORKS, SEWERAGE, WATER AND STORMWATER DRAINAGE.
- FOR INTERSECTION AND CUL DE SAC DETAILS REFER TO DRAWING AP-ST1314-C09.
- PROVIDE TWO STANDARD FNOROC SINGLE PLATE STREET NAME SIGNS ON SAME STANDARD - "MOONDANI AVENUE" AND "ROAD No. 3" (APPROVED ROAD NAME TO BE VERIFIED)
- REFER TO FNOROC STANDARD DRAWING S1040 FOR FURTHER DETAILS.
- PROVIDE TEMPORARY OUTLET HEADWALL TO Ø600 CULVERT OUTSIDE STAGE 4A EXTENTS AND CONSTRUCT TEMPORARY OUTLET DRAIN TO DIRECT RUNOFF TO EXISTING NATURAL GULLY. MINIMUM GRADE OF DRAIN 1 : 100 (1%). FOR FURTHER DETAILS OF TEMPORARY OPEN DRAIN REFER TO SECTION A ON THIS DRAWING.

ISSUE FOR APPROVAL

SECTION A TEMPORARY OUTLET DRAIN N.T.S.



DESIGN DISCHARGE - Q2 = 0.433 cumecs
Q100 = 1.271 cumecs

SLOPE - 1.0%

n = 0.033 (FOR TURP)

Ø2 FLOW DEPTH = 344mm

Ø2 FLOW VELOCITY = 0.918 m/s

Ø100 FLOW DEPTH = 515mm

Ø100 FLOW VELOCITY = 1.201 m/s

- CO-ORDINATES REFER TO MIDDLE OF HEADWALL AS SHOWN
- CO-ORDINATES REFER TO CENTRE OF MANHOLE AS SHOWN
- SETOUT REFERS TO MID POINT OF GRATE ON LIP OF KERB AS SHOWN

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REVISION	DATE
A ORIGINAL ISSUE FOR APPROVAL	11/22
B ORIGINAL ISSUE FOR COMMENT	08/22

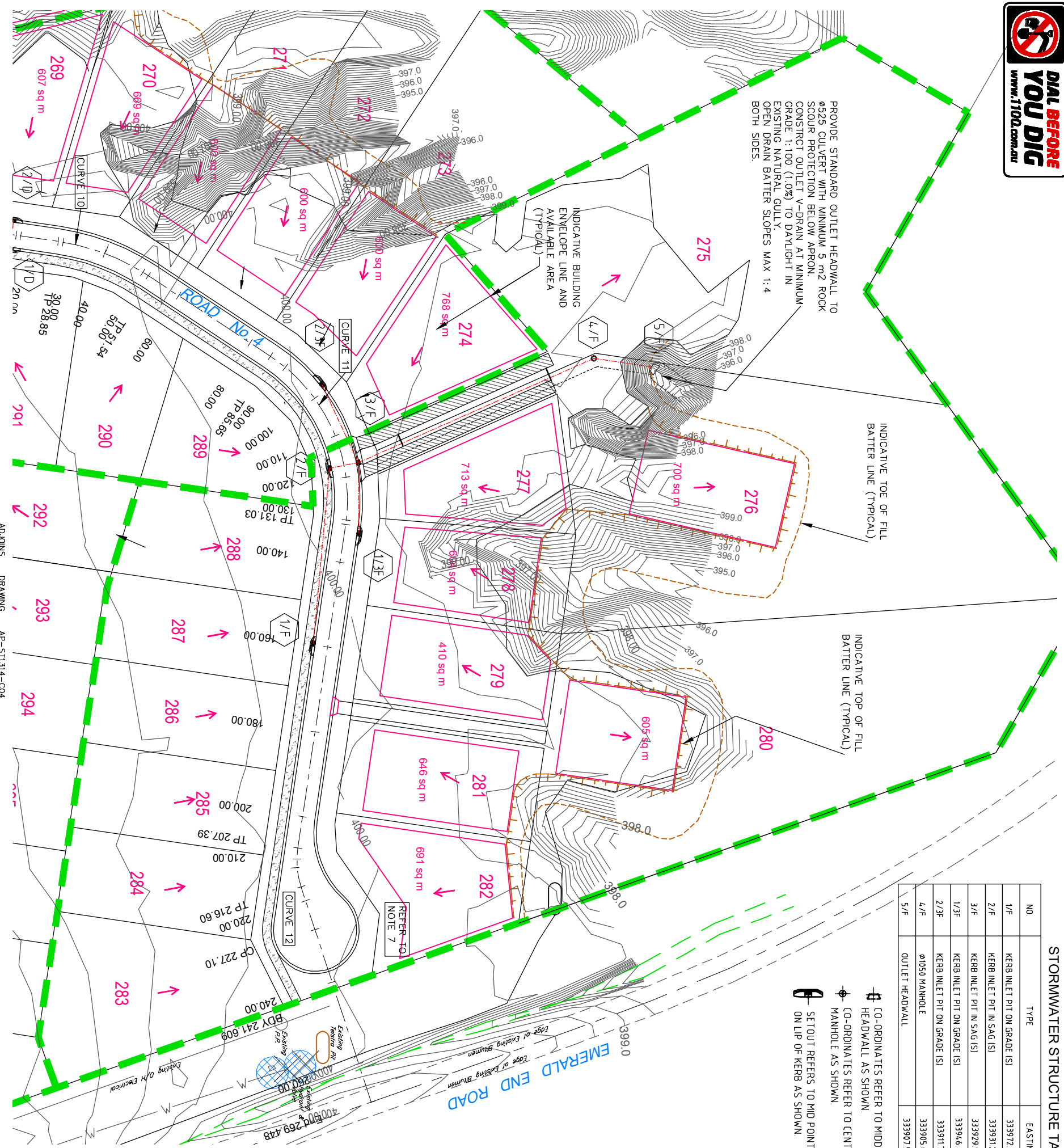
CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

DRAWING **ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 14A**

DATE	DATE
APPROVED RYM	08/22
APPROVED RPEO	
DWG. NO. AP-ST1314-C05	REVISION B



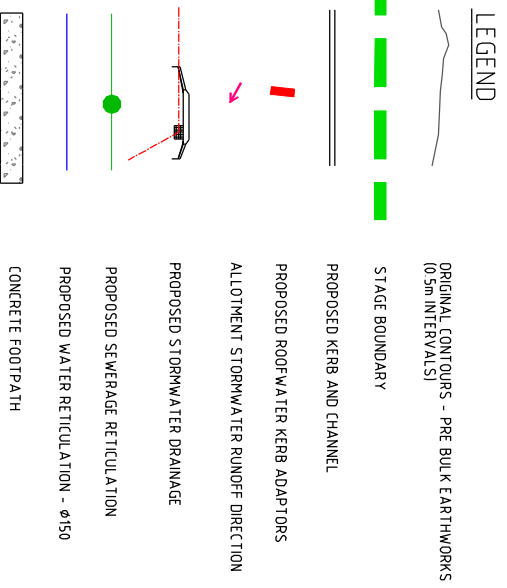
PROVIDE STANDARD OUTLET HEADWALL TO Ø225 CULVERT WITH MINIMUM 5 m² ROCK SCOUR PROTECTION BELOW APRON. CONSTRUCT OUTLET V-DRAIN AT MINIMUM GRADE 1:100 (1.0%) TO DAYLIGHT IN EXISTING NATURAL GULLY. OPEN DRAIN BATTER SLOPES MAX 1:4 BOTH SIDES.



STORMWATER STRUCTURE TABLE

NO	TYPE	EASTING	NORTHING
1/F	KERB INLET PIT ON GRADE (SI)	333972.183	8127002.585
2/F	KERB INLET PIT IN SAG (SI)	333931.276	8127006.361
3/F	KERB INLET PIT IN SAG (SI)	333929.983	8127013.071
1/3F	KERB INLET PIT ON GRADE (SI)	333946.476	8127013.224
2/3F	KERB INLET PIT ON GRADE (SI)	333911.703	8127004.579
4/F	Ø1050 MANHOLE	333905.620	8127068.074
5/F	OUTLET HEADWALL	333907.594	8127081.465

- ☒ CO-ORDINATES REFER TO MIDDLE OF HEADWALL AS SHOWN
- ☒ CO-ORDINATES REFER TO CENTRE OF MANHOLE AS SHOWN
- ☒ SETOUT REFERS TO MID POINT OF GRATE ON LIP OF KERB AS SHOWN



FOR ASSOCIATED ROAD LONGITUDINAL SECTIONS AND CROSS SECTIONS REFER TO DRAWINGS AP-ST1314-C20 TO C22.

CURVE TABLE

CURVE No.	ROAD No.	RADIUS	ARC	TANGENT	SECANT
10	ROAD No. 4	52.00	22.689	11.528	12.62
11	ROAD No. 4	4.00	45.379	25.482	7.427
12	ROAD No. 4	20.00	9.207	4.686	0.542

- NOTES**
- LEVEL DATUM: AHD
 - ORIGIN OF LEVELS: PSM160508; RL 402.411 CNR HASTIE ROAD AND CEOLA DRIVE.
 - NATURAL SURFACE CONTOUR INTERVAL: 0.20m INDEXED: 1.00m
 - NATURAL SURFACE CONTOURS DERIVED FROM TWINE FIELD SURVEY WITH ADDITIONAL DATA DERIVED FROM LIDAR INFORMATION.
 - DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
 - REFER TO ENROCC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS ROADWORKS, SEWERAGE, WATER AND STORMWATER DRAINAGE.
 - FOR INTERSECTION AND CUL DE SAC DETAILS REFER TO DRAWING AP-ST1314-C10.

CONTROL STATIONS

Point	Easting	Northing	Elevation
PSM 182856	33354.9907	812074.1716	399.855
PSM 168684	334232.225	8120673.283	4.01463
STN 1 (Pnl)	333456.097	8120760.320	399.385
STN 2 (Pnl)	333961.659	8120661.682	4.01981
STN 3 (Pnl)	333979.294	812054.9185	4.02459

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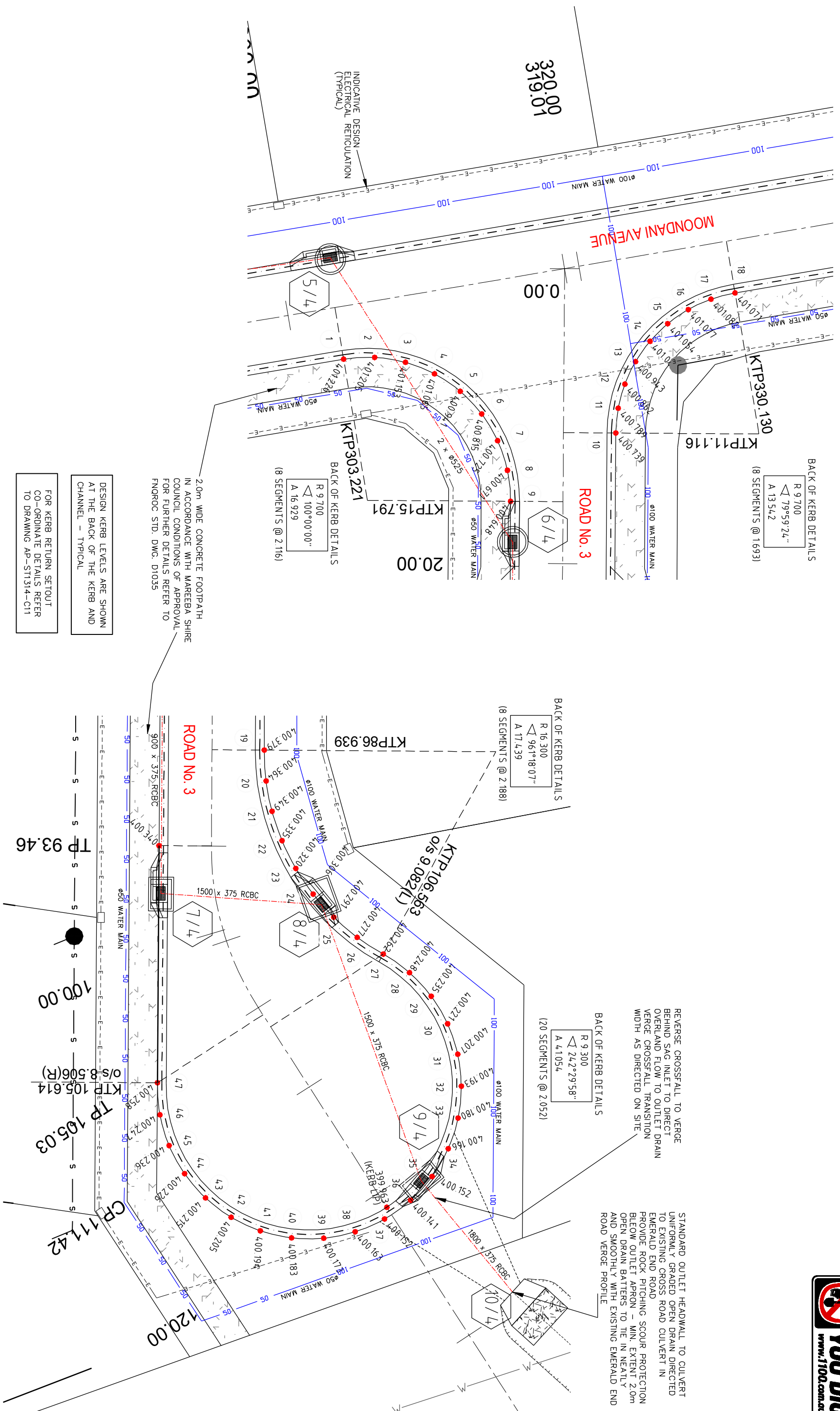
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 14B

DATE	DATE
APPROVED RYM	08/22
APPROVED RPEO	
DWG. NO. AP-ST1314-C06	REVISION B



STANDARD OUTLET HEADWALL TO CULVERT UNFORMALLY GRADED OPEN DRAIN DIRECTED TO EXISTING CROSS ROAD CULVERT IN EMERALD END ROAD PROVIDE ROCK PITCHING SCOUR PROTECTION BLOW OUTLET APRON - MIN. EXTENT 2.0m OPEN DRAIN BATTERS TO THE IN NEATLY AND SMOOTHLY WITH EXISTING EMERALD END ROAD VERGE PROFILE

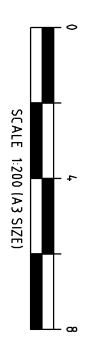


REFER TO DRAWING AP-ST1314-C38 FOR FURTHER DETAILS OF STRUCTURES 5/4, 6/4, 7/4, 8/4 AND 9/4.

FOR KERB RETURN SETOUT CO-ORDINATE DETAILS REFER TO DRAWING AP-ST1314-C11

DESIGN KERB LEVELS ARE SHOWN AT THE BACK OF THE KERB AND CHANNEL - TYPICAL

2.0m WIDE CONCRETE FOOTPATH IN ACCORDANCE WITH MAREEBA SHIRE COUNCIL CONDITIONS OF APPROVAL FOR FURTHER DETAILS REFER TO FNOROC STD. DWG. D1035



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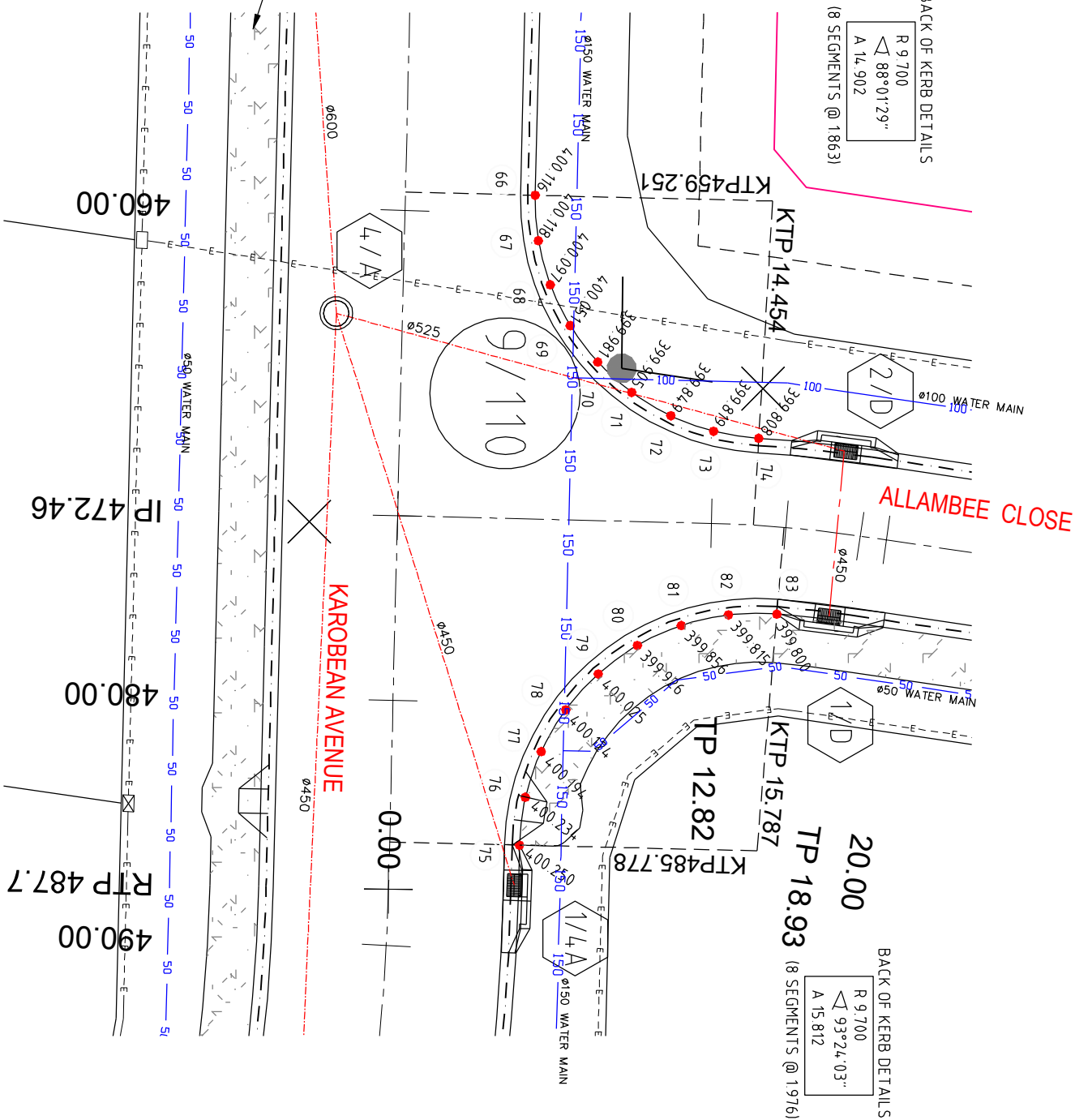
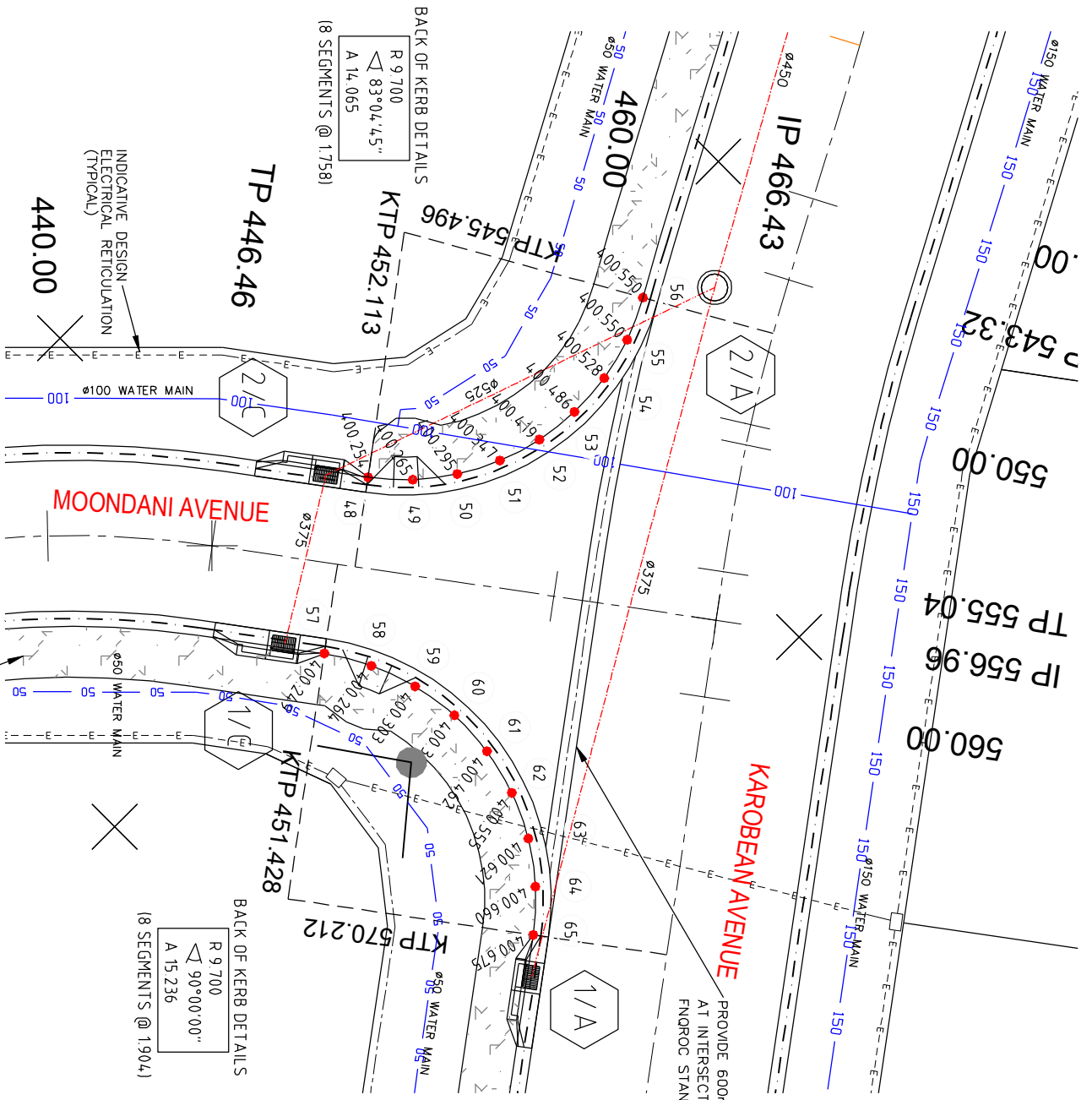
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A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **INTERSECTION AND CUL DE SAC DETAILS SHEET 1 of 3**

APPROVED	DATE
RMM	08/22
RPB	

DWG. NO.	REVISION
AP-ST1314-C08	B

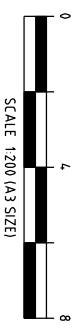


2.0m WIDE CONCRETE FOOTPATH IN ACCORDANCE WITH MAREEBA SHIRE COUNCIL CONDITIONS OF APPROVAL FOR FURTHER DETAILS REFER TO FNOROC STD. DWG. D1035

DESIGN KERB LEVELS ARE SHOWN AT THE BACK OF THE KERB AND CHANNEL - TYPICAL

FOR KERB RETURN SETOUT CO-ORDINATE DETAILS REFER TO DRAWING AP-ST1314-C11

FOR GENERAL ROADWORKS AND DRAINAGE NOTES REFER TO DRAWING AP-ST1314-C03



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A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **INTERSECTION DETAILS SHEET 2 of 3**

APPROVED	DATE
RMM	08/22
RPB	
DWG. NO. AP-ST1314-C09	REVISION B

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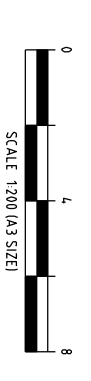
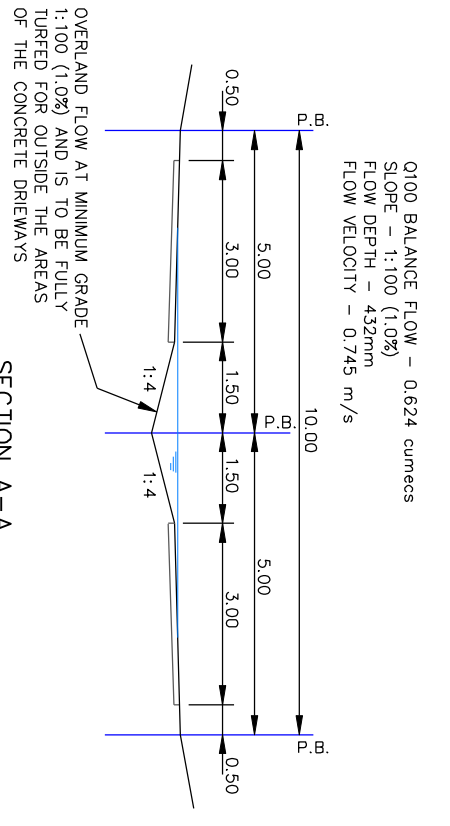
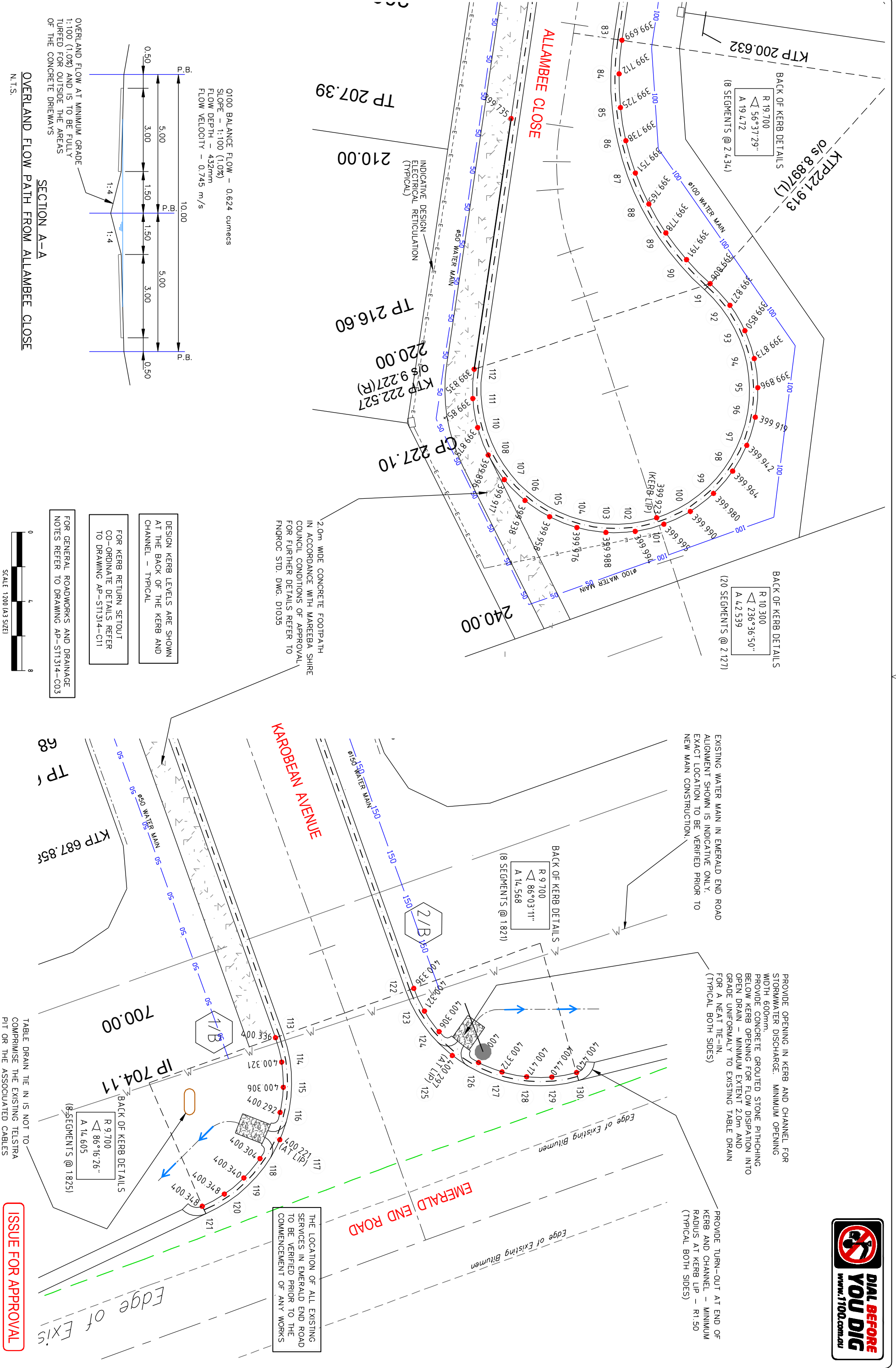
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CLIENT: **BT, M & S STANKOVICH PTY LTD**
PROJECT: **AMAROO RESIDENTIAL DEVELOPMENT**
STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING: **INTERSECTION AND CUL DE SAC DETAILS**
SHEET 3 of 3

APPROVED	DATE
RMM	08/22
AP-ST1314-C10	B



DESIGN KERB LEVELS ARE SHOWN
AT THE BACK OF THE KERB AND
CHANNEL - TYPICAL

FOR KERB RETURN SETOUT
CO-ORDINATE DETAILS REFER
TO DRAWING AP-ST1314-C11

FOR GENERAL ROADWORKS AND DRAINAGE
NOTES REFER TO DRAWING AP-ST1314-C03

2.0m WIDE CONCRETE FOOTPATH
IN ACCORDANCE WITH MAREEBA SHIRE
COUNCIL CONDITIONS OF APPROVAL
FOR FURTHER DETAILS REFER TO
FNOROC STD. DWG. D1035

EXISTING WATER MAIN IN EMERALD END ROAD
ALIGNMENT SHOWN IS INDICATIVE ONLY.
EXACT LOCATION TO BE VERIFIED PRIOR TO
NEW MAIN CONSTRUCTION.

PROVIDE OPENING IN KERB AND CHANNEL FOR
STORMWATER DISCHARGE. MINIMUM OPENING
WIDTH 600mm.
PROVIDE CONCRETE GROUTED STONE PITCHING
BELOW KERB OPENING FOR FLOW DISPATION INTO
OPEN DRAIN - MINIMUM EXTENT 2.0m AND
GRADE UNIFORMLY TO EXISTING TABLE DRAIN
FOR A NEAT TIE-IN
(TYPICAL BOTH SIDES)

PROVIDE TURN-OUT AT END OF
KERB AND CHANNEL - MINIMUM
RADIUS AT KERB LIP - R1.50
(TYPICAL BOTH SIDES)

THE LOCATION OF ALL EXISTING
SERVICES IN EMERALD END ROAD
TO BE VERIFIED PRIOR TO THE
COMMENCEMENT OF ANY WORKS

TABLE DRAIN TIE IN IS NOT TO
COMPRMISE THE EXISTING TELSTRA
PIT OR THE ASSOCIATED CABLES

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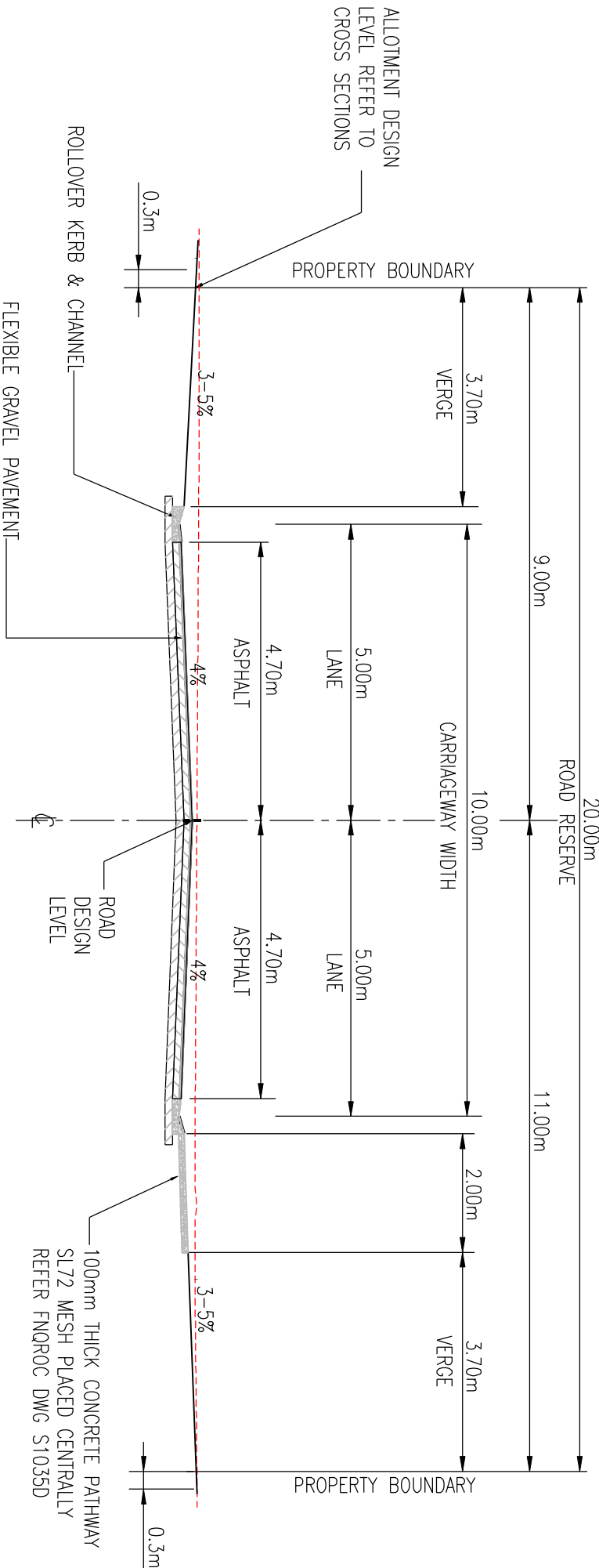
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CLIENT: **BT, M & S STANKOVICH PTY LTD**
PROJECT: **AMAROO DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

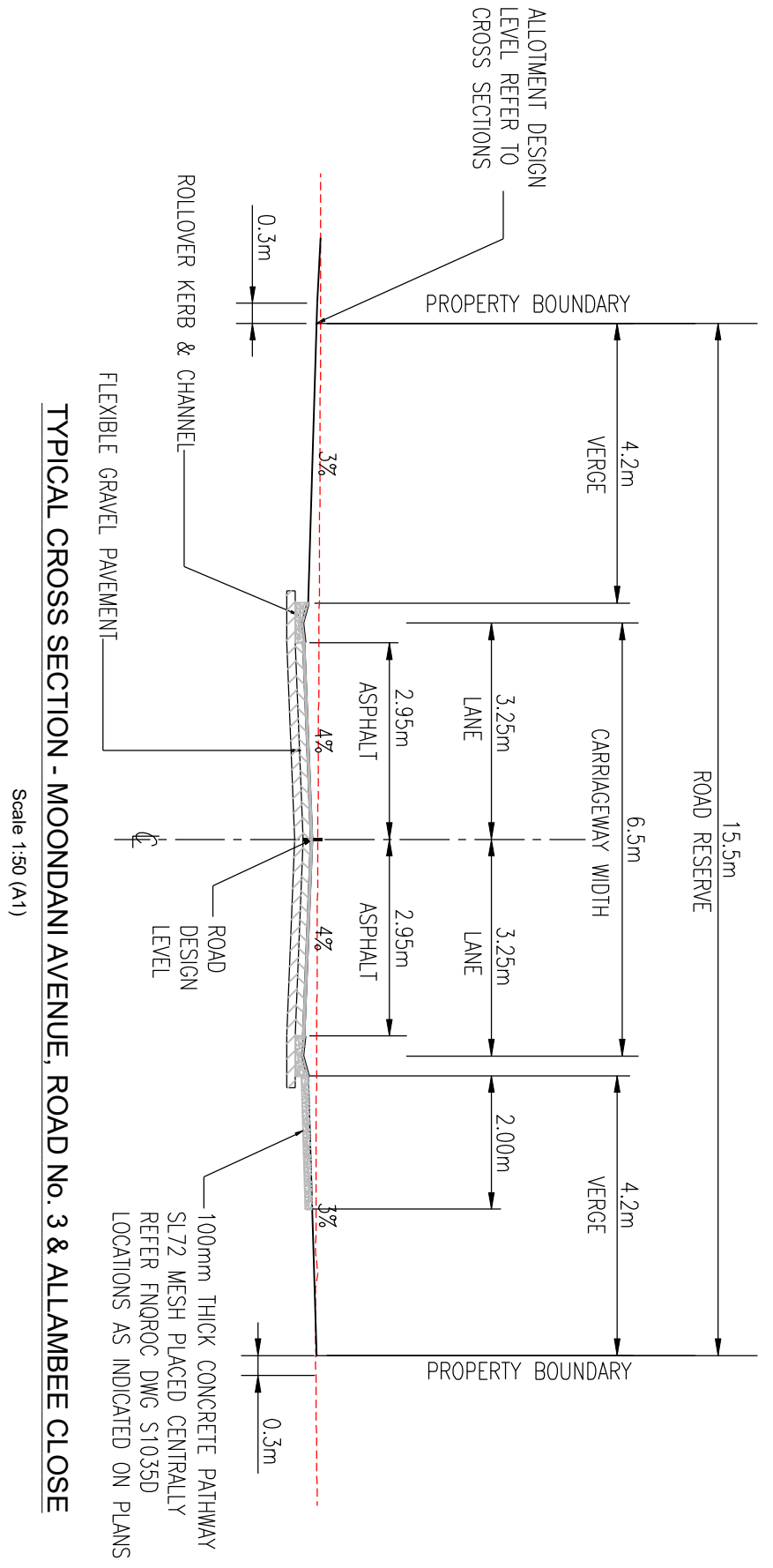
DRAWING: **TYPICAL CROSS SECTIONS AND DETAILS**

DATE	08/22
APPROVED	RPM
DWG. NO.	AP-ST1314-C12
REVISION	B

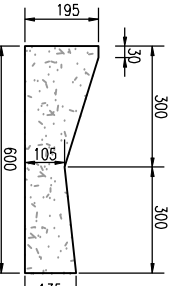
PL01 DATE: 09 November, 2022 - 11:28am



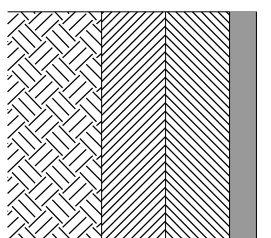
TYPICAL CROSS SECTION - KAROBEAN DRIVE
Scale 1:50 (A1)



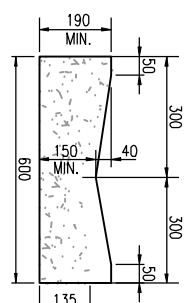
TYPICAL CROSS SECTION - MOONDANI AVENUE, ROAD NO. 3 & ALLAMBEE CLOSE
Scale 1:50 (A1)



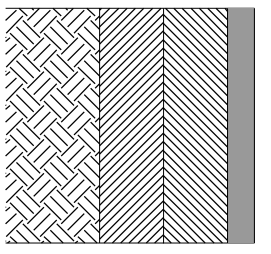
ROLLOVER KERB AND CHANNEL
SCALE 1:10 (A1)



PAVEMENT DETAIL
N.T.S.



CONCRETE INVERT
SCALE 1:10 (A1)



PAVEMENT DETAIL
N.T.S.

ISSUE FOR APPROVAL



NOTE: SUBGRADE CBR RESULTS AND FINAL PAVEMENT DESIGN ARE TO BE SUBMITTED TO COUNCIL FOR APPROVAL PRIOR TO PLACEMENT OF GRAVEL.

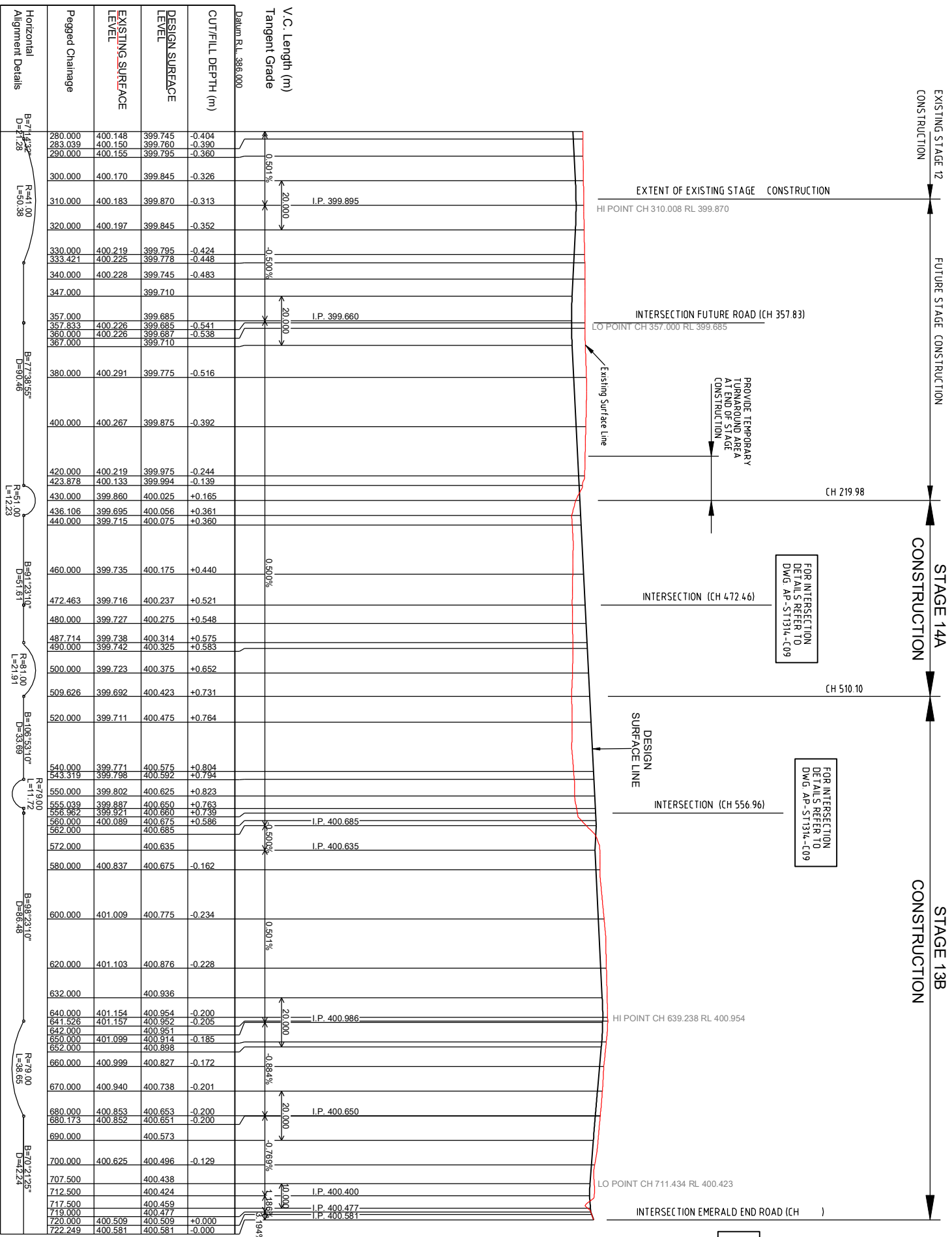
30mm ASPHALT
110mm BASE, TYPE 2.2 MINIMUM CBR 60% COMPACTED TO 100% SRDD.
140mm SUB BASE, TYPE 2.3 MINIMUM CBR 45% COMPACTED TO 100% SRDD.
SUB-GRADE CBR 7% (ASSUMED) COMPACTED TO 98% SRDD.
(CBR TO BE CONFIRMED BY TAKING SAMPLES AT 100m INTERVALS, MINIMUM OF 3).

35mm ASPHALT
150mm BASE, TYPE 2.2 MINIMUM CBR 60% COMPACTED TO 100% SRDD.
130mm SUB BASE, TYPE 2.3 MINIMUM CBR 45% COMPACTED TO 100% SRDD.
SUB-GRADE CBR 7% (ASSUMED) COMPACTED TO 98% SRDD.
(CBR TO BE CONFIRMED BY TAKING SAMPLES AT 100m INTERVALS, MINIMUM OF 3).

100mm THICK CONCRETE PATHWAY
SL72 MESH PLACED CENTRALLY
REFER FNQROC DWG S1035D

100mm THICK CONCRETE PATHWAY
SL72 MESH PLACED CENTRALLY
REFER FNQROC DWG S1035D
LOCATIONS AS INDICATED ON PLANS

APPROVED PAVEMENT - KAROBEAN AVENUE
 URBAN ACCESS STREET
 35mm ASPHALTIC SURFACING
 150mm BASECOURSE, CLASS 1B - CBR 60
 150mm SUB-BASE, CLASS 2 - CBR 45
 TOTAL PAVEMENT THICKNESS OF 315mm INCLUDING AC ON
 DESIGN SUBGRADE OF CBR 6
 SUBGRADE STABILITY TO BE CONFIRMED BY LOAD TESTING AND
 LEVEL MEASUREMENT AT THE TIME OF JOINT SUBGRADE (BOX)
 INSPECTION DURING THE CONSTRUCTION PHASE.



Station	Existing Level (m)	Design Surface Level (m)	Cut/Fill Depth (m)	V.C. Length (m)	Tangent Grade
280.000	280.000	399.745	-0.404		0.501%
283.039	283.039	399.760	-0.390		0.501%
290.000	290.000	399.795	-0.360		0.501%
300.000	400.170	399.845	-0.326		0.501%
310.000	400.183	399.870	-0.313		0.501%
320.000	400.197	399.845	-0.352		0.501%
330.000	400.219	399.795	-0.424		-0.500%
333.421	400.225	399.778	-0.448		-0.500%
340.000	400.228	399.745	-0.483		-0.500%
347.000		399.710			-0.500%
357.000		399.685			-0.500%
357.833	400.226	399.685	-0.541		-0.500%
360.000	400.226	399.687	-0.538		-0.500%
367.000		399.710			-0.500%
380.000	400.291	399.775	-0.516		0.500%
400.000	400.267	399.875	-0.392		0.500%
420.000	400.219	399.975	-0.244		0.500%
423.878	400.133	399.994	-0.139		0.500%
430.000	399.860	400.025	+0.165		0.500%
436.106	399.695	400.056	+0.361		0.500%
440.000	399.715	400.075	+0.360		0.500%
460.000	399.735	400.175	+0.440		0.500%
472.463	399.716	400.237	+0.521		0.500%
480.000	399.727	400.275	+0.548		0.500%
487.714	399.738	400.314	+0.575		0.500%
490.000	399.742	400.325	+0.583		0.500%
500.000	399.723	400.375	+0.652		0.500%
509.626	399.692	400.423	+0.731		0.500%
520.000	399.711	400.475	+0.764		0.500%
540.000	399.771	400.575	+0.804		0.500%
543.319	399.798	400.592	+0.794		0.500%
550.000	399.802	400.625	+0.823		0.500%
555.039	399.887	400.650	+0.763		0.500%
558.982	399.921	400.680	+0.739		0.500%
560.000	400.089	400.675	+0.586		0.500%
562.000		400.685			0.500%
572.000		400.635			0.500%
580.000	400.837	400.675	-0.162		0.501%
600.000	401.009	400.775	-0.234		0.501%
620.000	401.103	400.876	-0.228		0.501%
632.000		400.936			0.501%
640.000	401.154	400.954	-0.200		0.501%
641.526	401.157	400.952	-0.205		0.501%
642.000		400.951			0.501%
650.000	401.099	400.914	-0.185		-0.884%
652.000		400.898			-0.884%
660.000	400.999	400.827	-0.172		-0.884%
670.000	400.940	400.738	-0.201		-0.884%
680.000	400.853	400.653	-0.200		-0.884%
680.173	400.852	400.651	-0.200		-0.884%
690.000		400.573			-0.884%
700.000	400.625	400.496	-0.129		-0.769%
707.500		400.438			-0.769%
712.500		400.424			-0.769%
717.500		400.459			-0.769%
719.000		400.477			-0.769%
720.000	400.509	400.509	+0.000		-0.769%
722.249	400.581	400.581	-0.000		-0.769%

LONGITUDINAL SECTION - KAROBEAN AVENUE

SCALE: HORIZ 1:2000 VERT 1:200 (A3 SIZE)

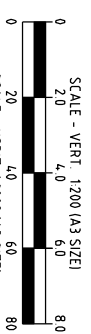
FOR ASSOCIATED ROAD CROSS SECTIONS REFER TO DWG. AP-ST1314-C14 TO C17

FOR INTERSECTION DETAILS REFER TO DWG. AP-ST1314-C10

FOR INTERSECTION DETAILS REFER TO DWG. AP-ST1314-C09

FOR INTERSECTION DETAILS REFER TO DWG. AP-ST1314-C09

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CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING ROAD LONGITUDINAL SECTION
KAROBEAN AVENUE

DRAWN	DATE
RMM	08/22

APPROVED	DATE
RPEO	

DWG. NO.	REVISION
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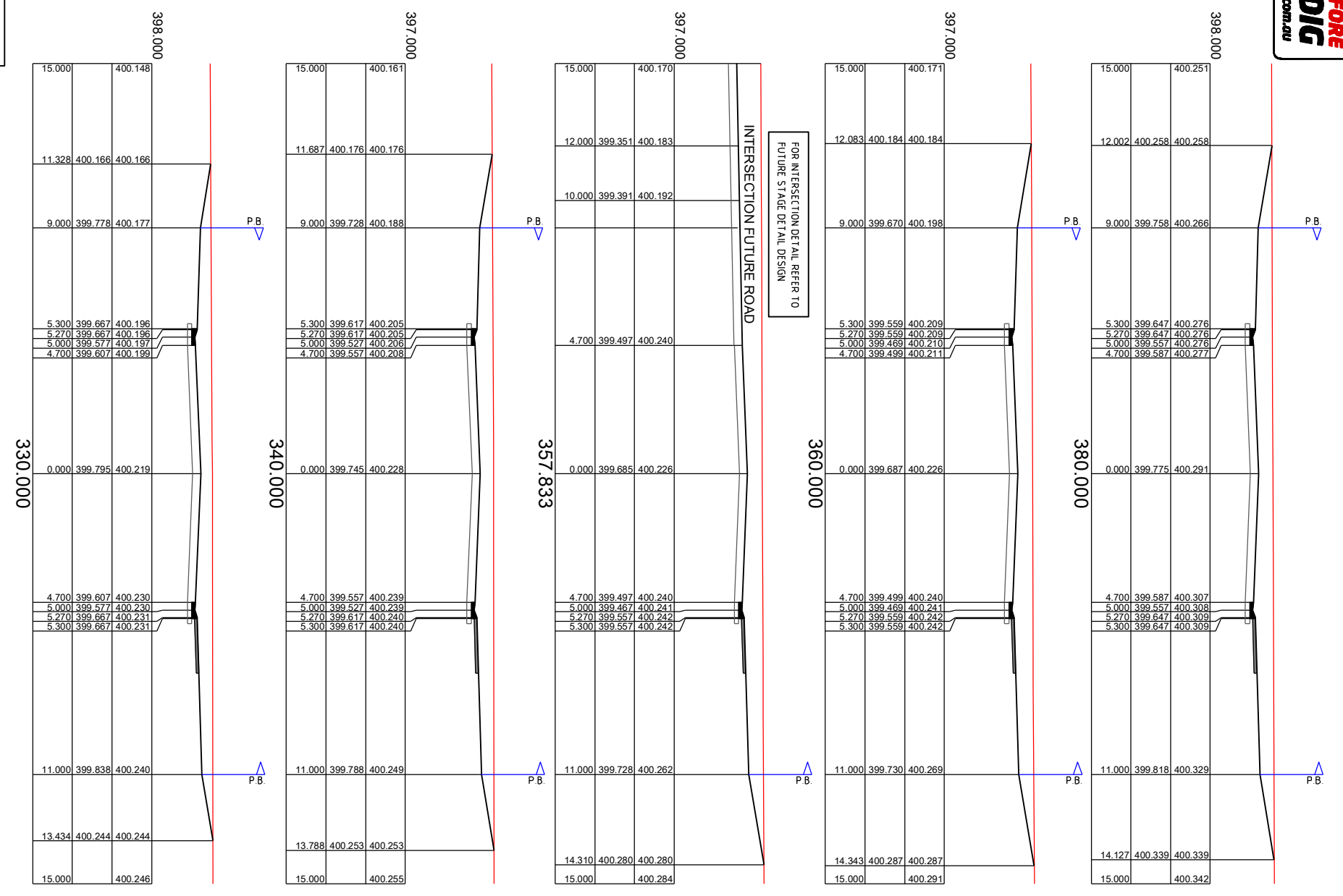
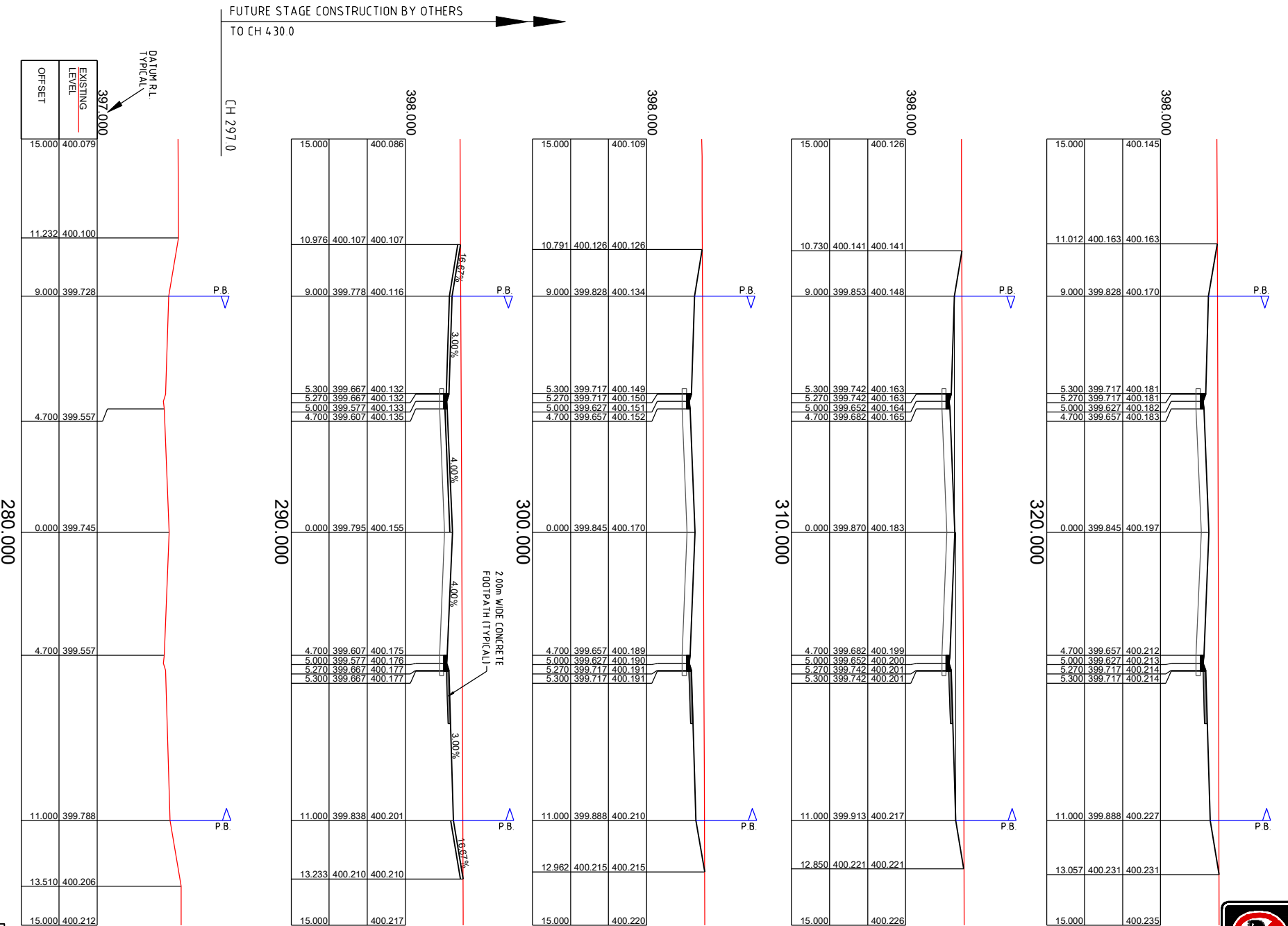
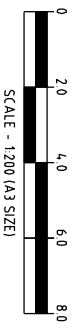
CLIENT **BT, M & S STANKOVICH PTY LTD**
 PROJECT **AMAROO DEVELOPMENT STAGES 13 & 14**
 MOONDANI AVENUE, MAREEBA

DRAWING **ROAD CROSS SECTIONS**
 KAROBEAN AVENUE
 SHEET 1 of 4

DATE **08/22**
 APPROVED **RMM**
 DWG. NO. **AP-ST1314-C14**
 REVISION **B**

FOR ASSOCIATED LONGITUDINAL SECTION REFER TO DRAWING AP-ST1314-C13

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A ORIGINAL ISSUE FOR COMMENT	08/22

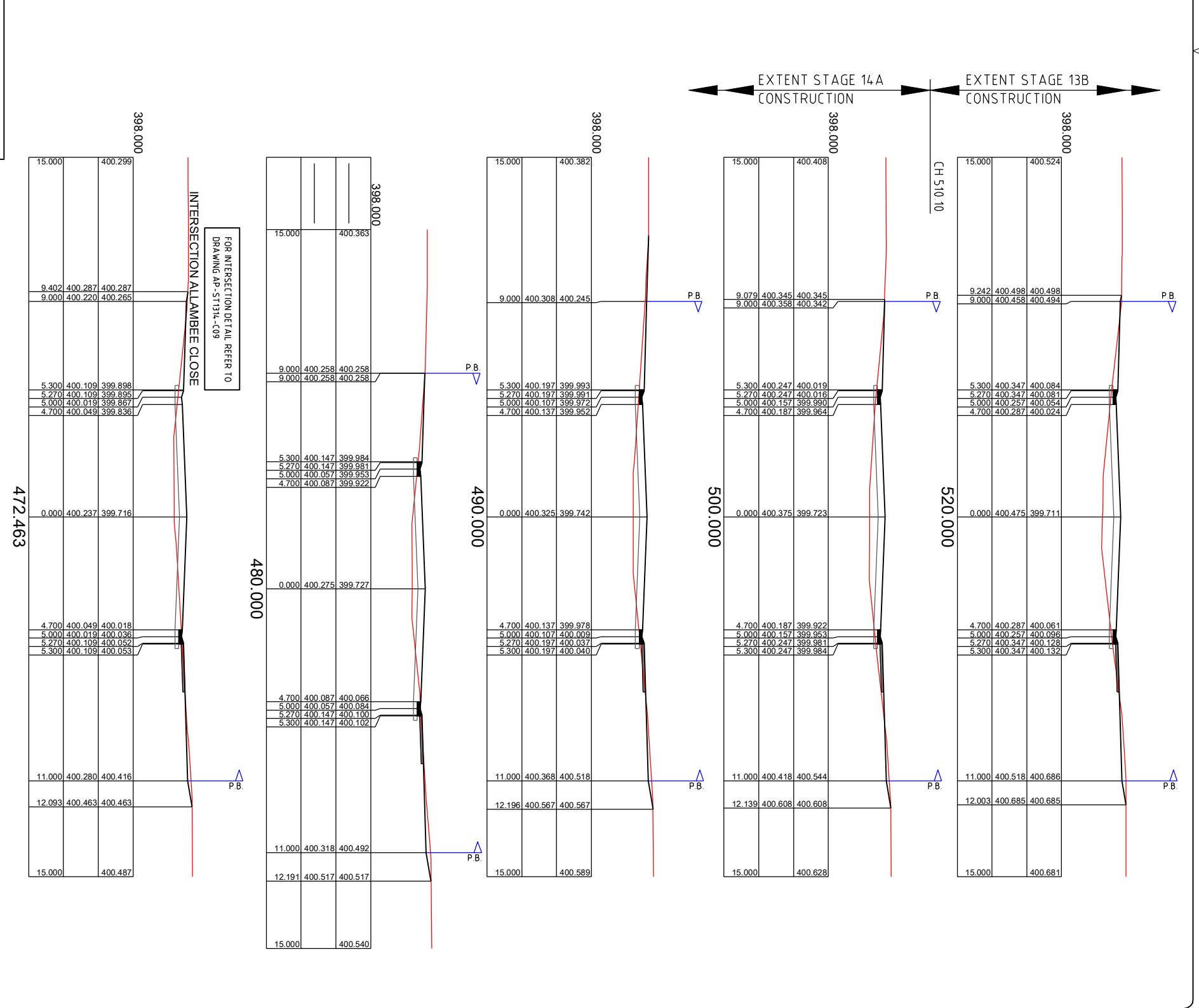
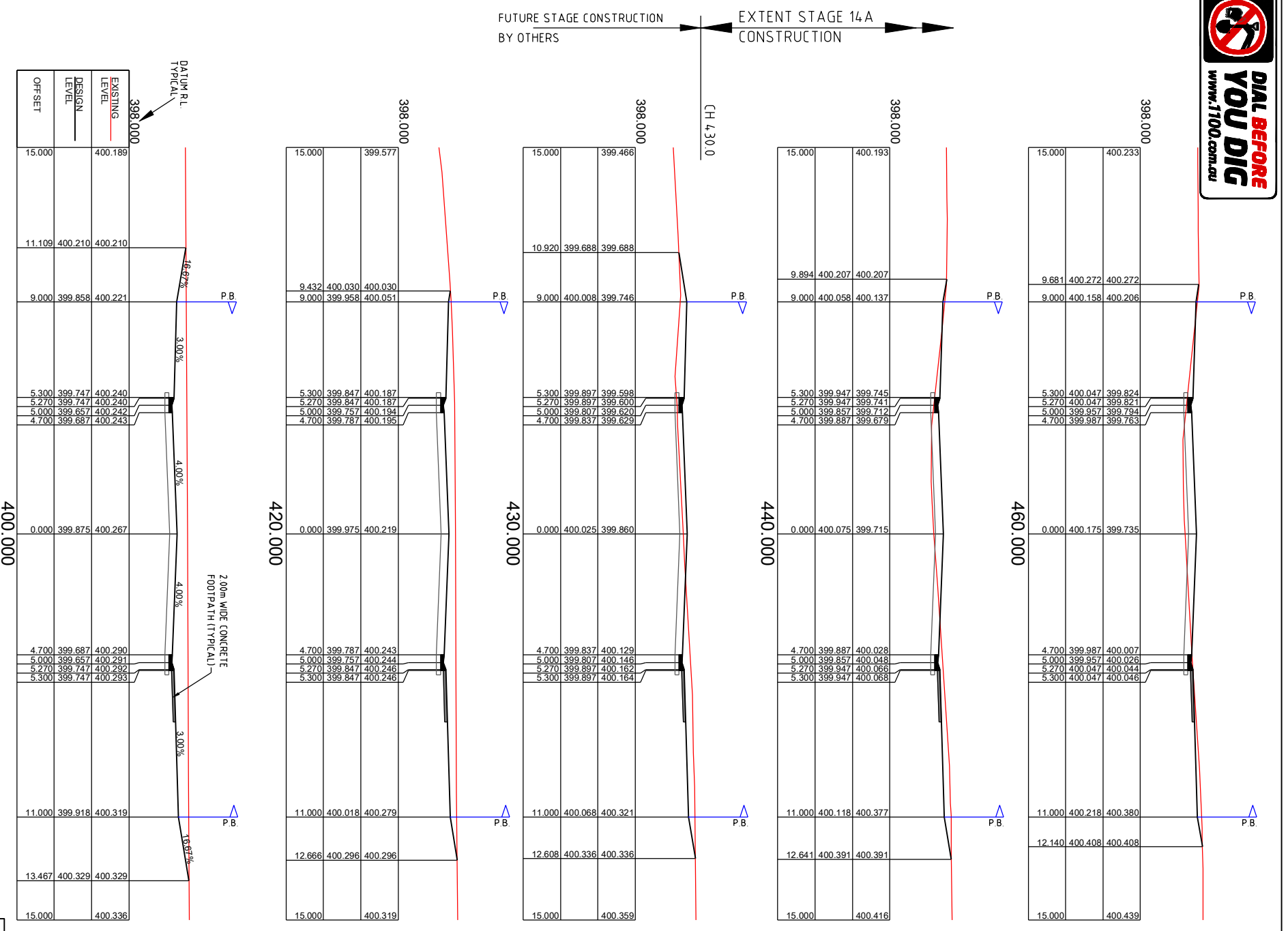
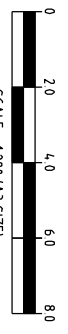
CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO DEVELOPMENT**
STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING **ROAD CROSS SECTIONS**
KAROBAN AVENUE
SHEET 2 of 4

APPROVED	DATE
RMM	08/22
AP-ST1314-C15	B

FOR ASSOCIATED LONGITUDINAL SECTION REFER TO DRAWING AP-ST1314-C13

ISSUE FOR APPROVAL



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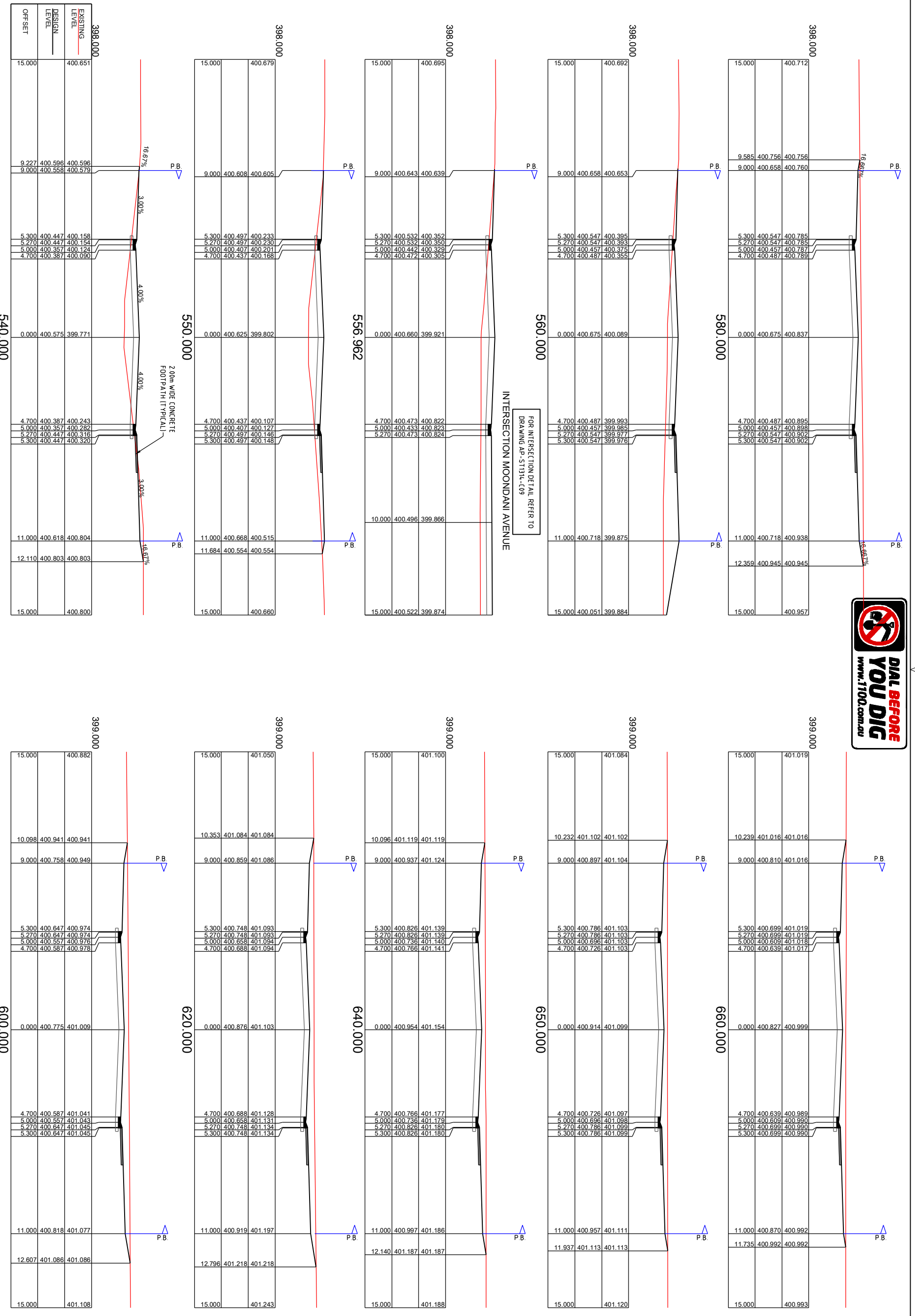
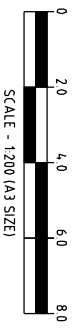
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING ROAD CROSS SECTIONS
KAROBAN AVENUE
 SHEET 3 of 4

DRAWN RYM
APPROVED RPEO
DWG. NO. AP-ST1314-C16
DATE 08/22
REVISION B

FOR ASSOCIATED LONGITUDINAL SECTION REFER TO DRAWING AP-ST1314-C13

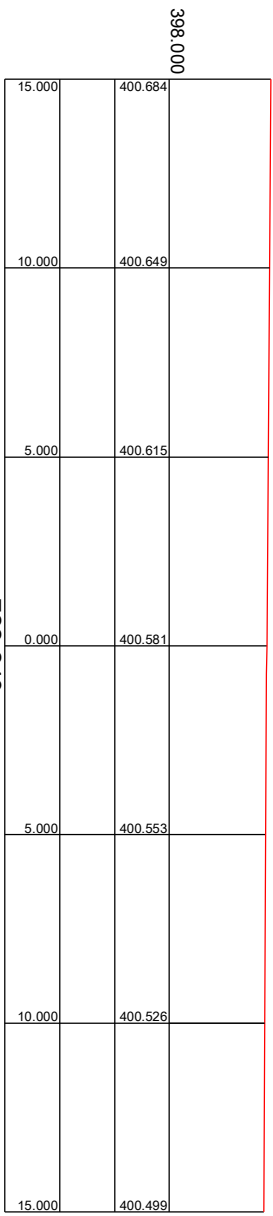
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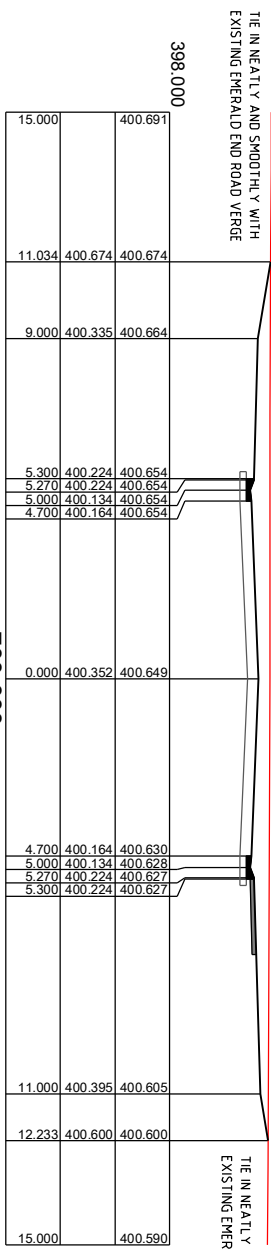


FOR INTERSECTION DETAIL REFER TO
DRAWING AP-ST1314-C10

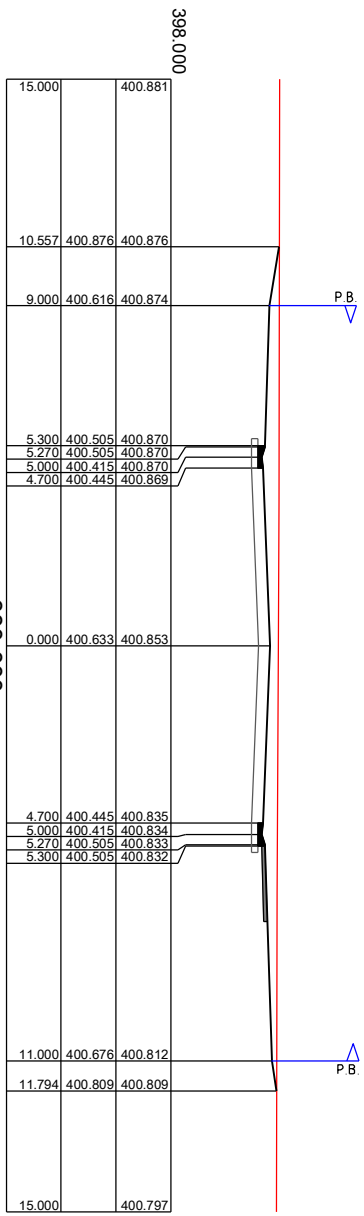
EXISTING EMERALD END ROAD



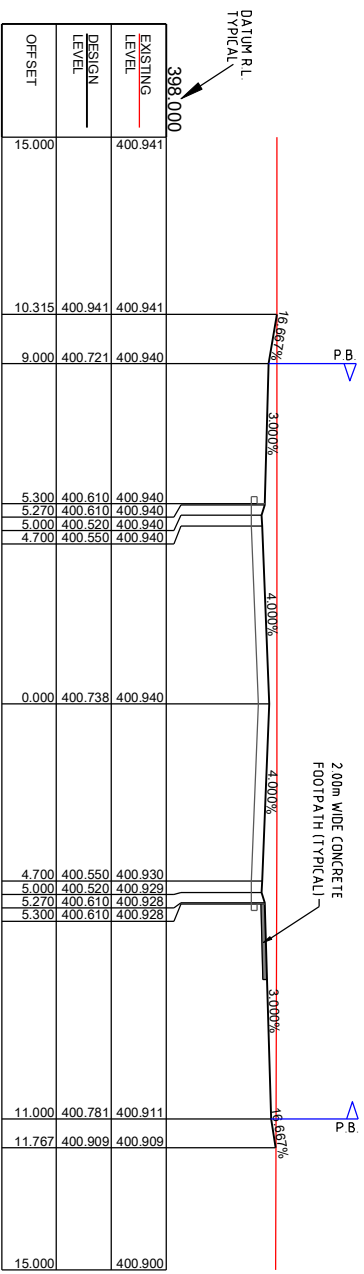
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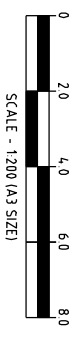
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670.000

FOR ASSOCIATED LONGITUDINAL SECTION
REFER TO DRAWING AP-ST1314-C13

ISSUE FOR APPROVAL



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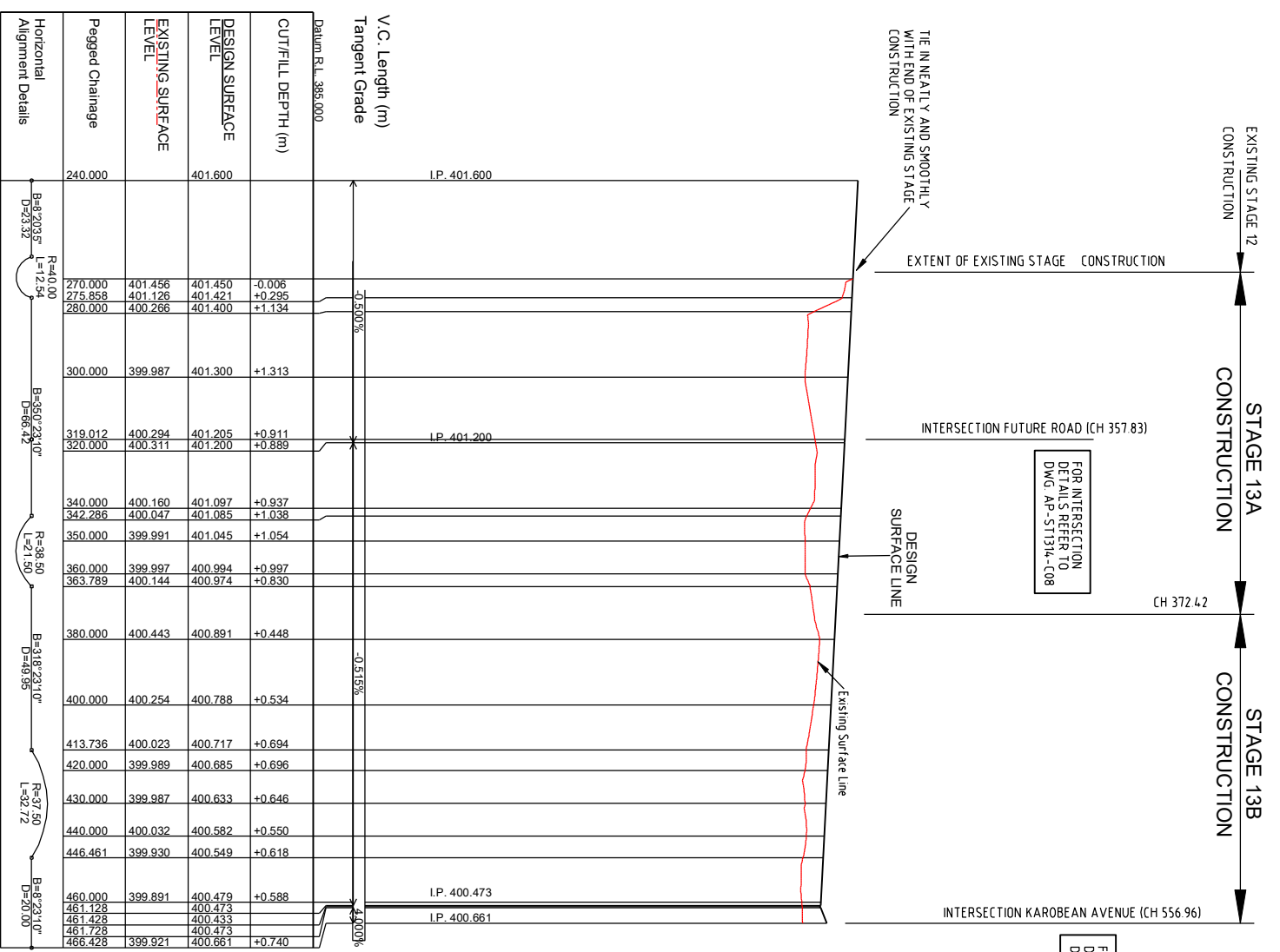
CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **ROAD CROSS SECTIONS KAROBEAN AVENUE SHEET 4 of 4**

DRAWN **RMM** DATE **08/22**
APPROVED **RPEO** REVISION **B**
DWG. NO. **AP-ST1314-C17**



APPROVED PAVEMENT - MOONDANI AVENUE
 URBAN ACCESS STREET
 35mm ASPHALTIC SURFACING
 110mm BASECOURSE, CLASS 1B - CBR 80
 140mm SUB-BASE, CLASS 2 - CBR 45
 TOTAL PAVEMENT THICKNESS OF 285mm INCLUDING AC ON
 DESIGN SUBGRADE OF CBR 6
 SUBGRADE STABILITY TO BE CONFIRMED BY LOAD TESTING AND
 LEVEL MEASUREMENT AT THE TIME OF JOINT SUBGRADE (BOX)
 INSPECTION DURING THE CONSTRUCTION PHASE.



LONGITUDINAL SECTION - MOONDANI AVENUE

SCALE: HORIZ 1:2000 VERT 1:200 (A3 SIZE)



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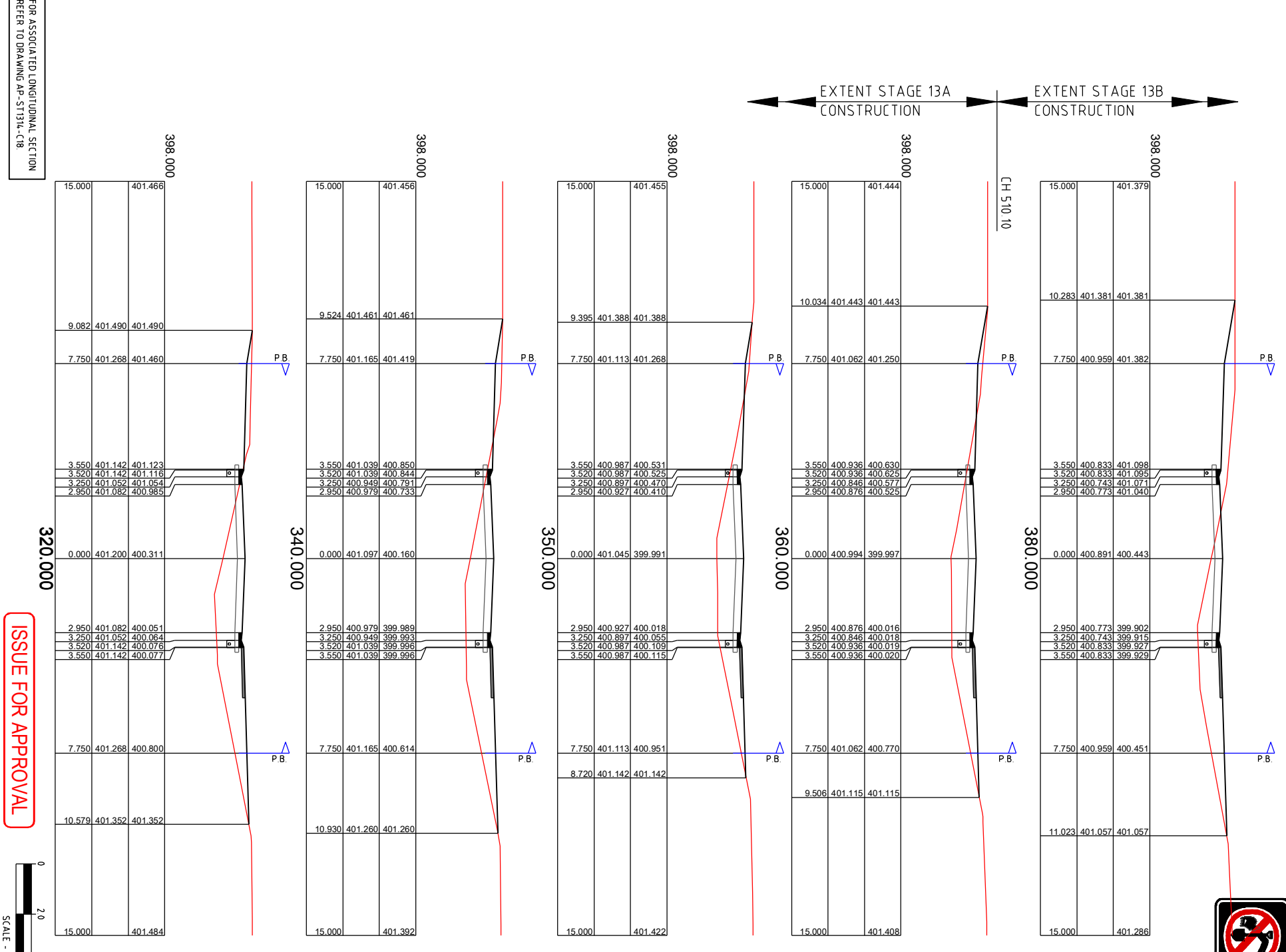
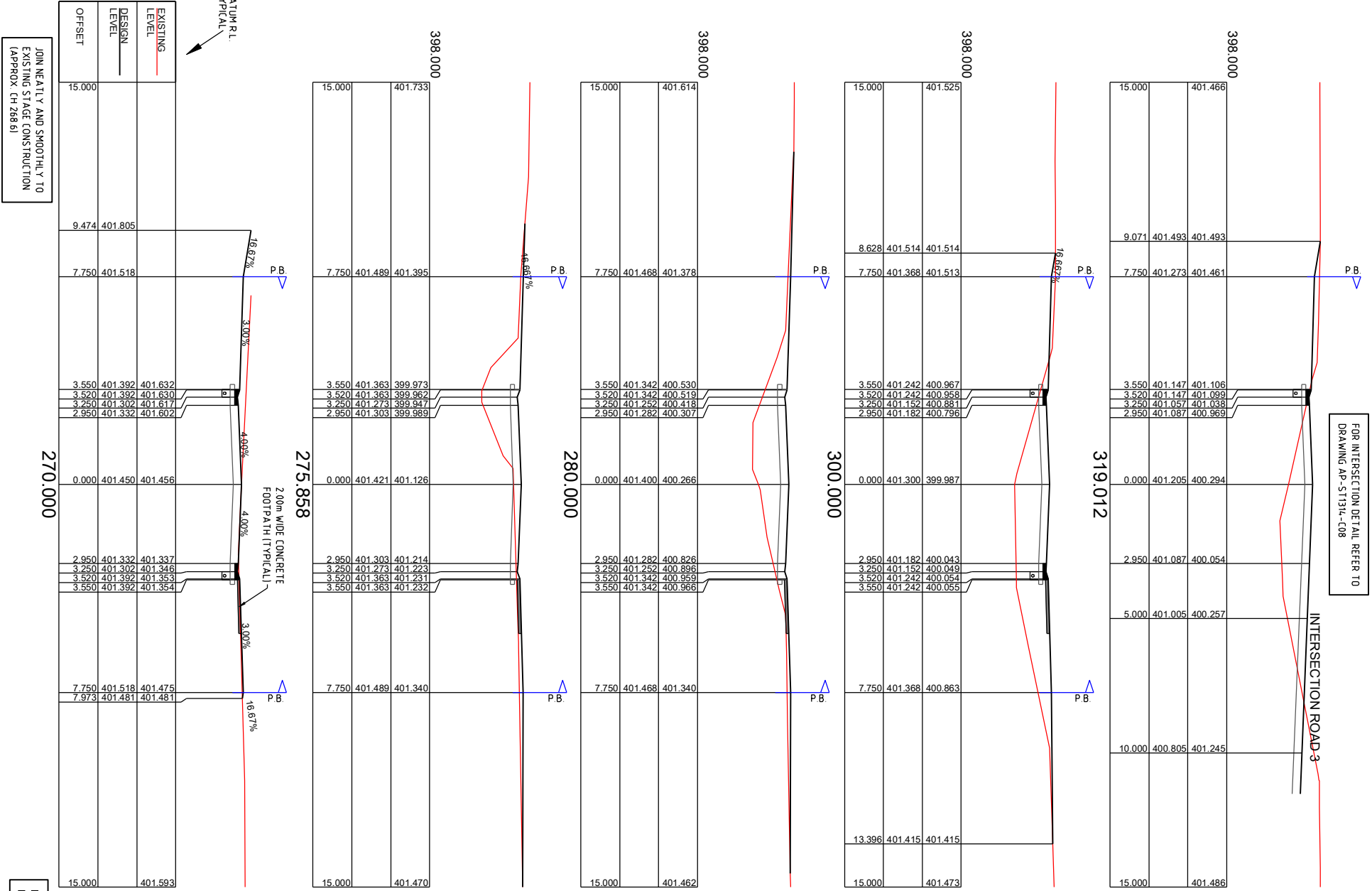
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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
 PROJECT **AMAROO DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **ROAD LONGITUDINAL SECTION MOONDANI AVENUE**

DRAWN **RMM** DATE **08/22**
 APPROVED **RPEO**
 DWG. NO. **AP-ST1314-C18** REVISION **B**



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REVISION	DATE
A ORIGINAL ISSUE FOR COMMENT	08/22
B ORIGINAL ISSUE FOR APPROVAL	11/22

CLIENT: BT, M & S STANKOVICH PTY LTD
PROJECT: AMAROO DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING: ROAD CROSS SECTIONS MOONDANI AVENUE SHEET 1 of 2

APPROVED: RMM
DATE: 08/22
DWG. NO.: AP-ST1314-C19
REVISION: B



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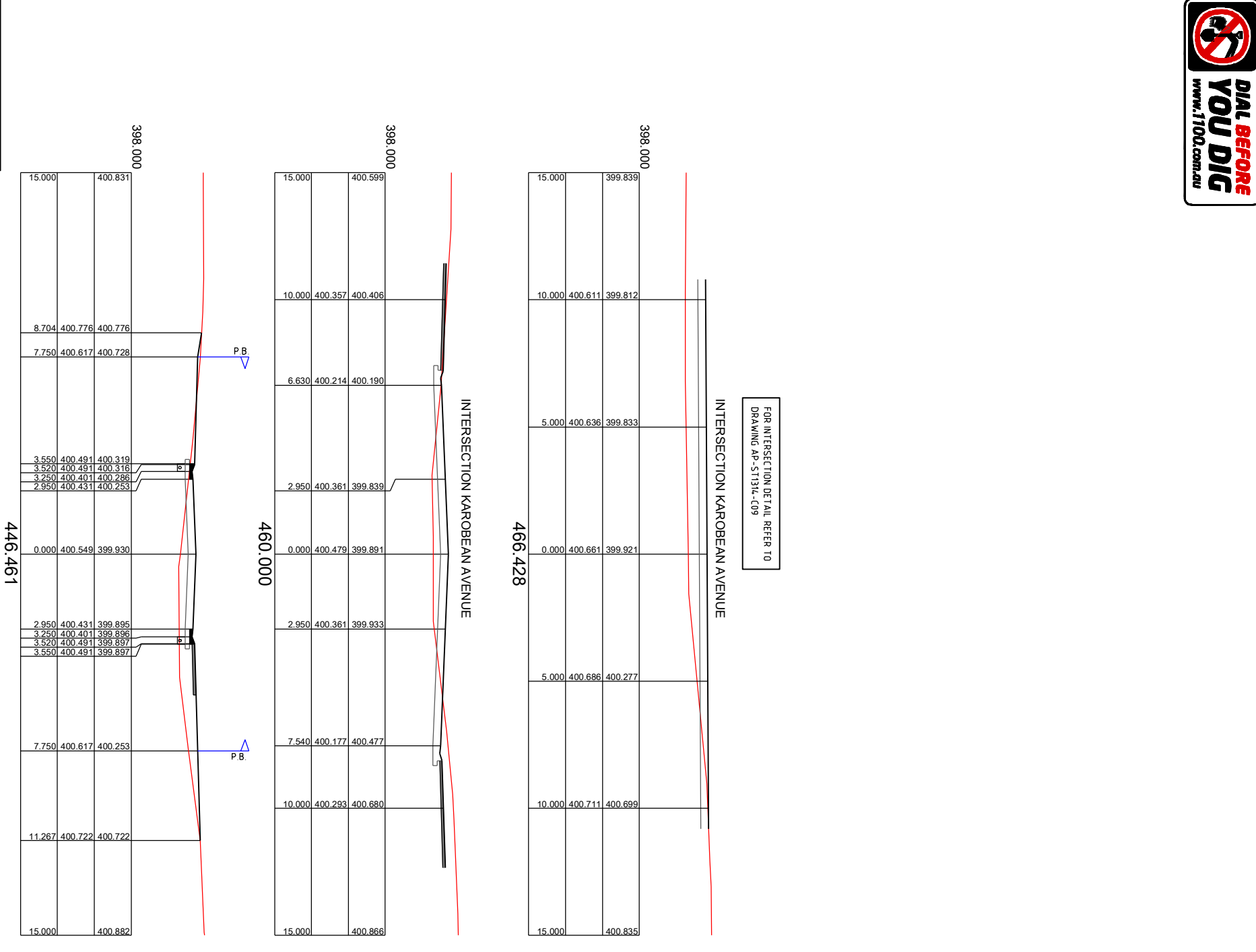
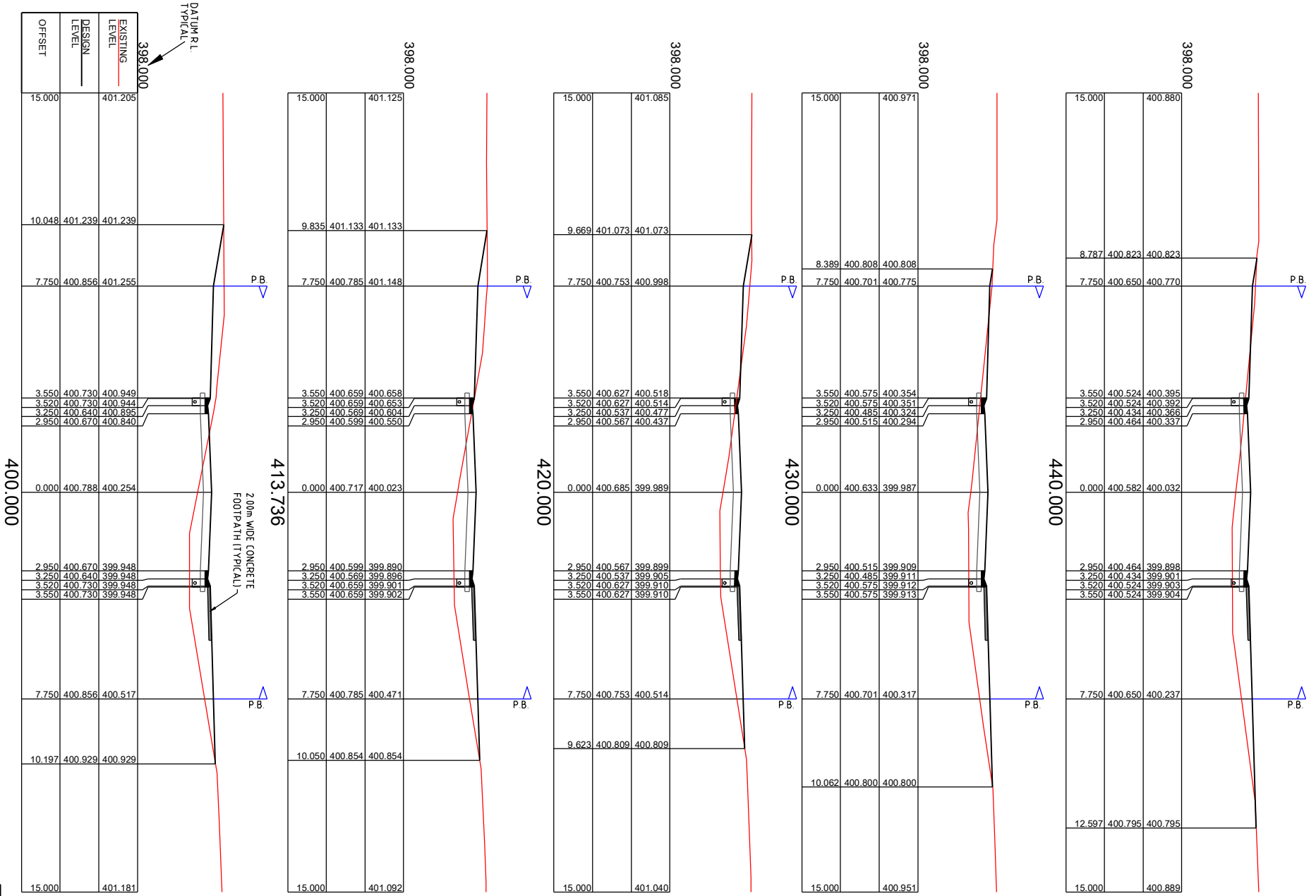
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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT
 STAGES 13 & 14
 MOONDANI AVENUE, MAREEBA

DRAWING ROAD CROSS SECTIONS
 MOONDANI AVENUE
 SHEET 2 of 2

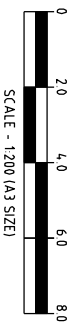
DRAWN RMM
APPROVED RPEO
 DWG. NO. AP-ST1314-C20
DATE 08/22
REVISION B



FOR ASSOCIATED LONGITUDINAL SECTION
 REFER TO DRAWING AP-ST1314-C18

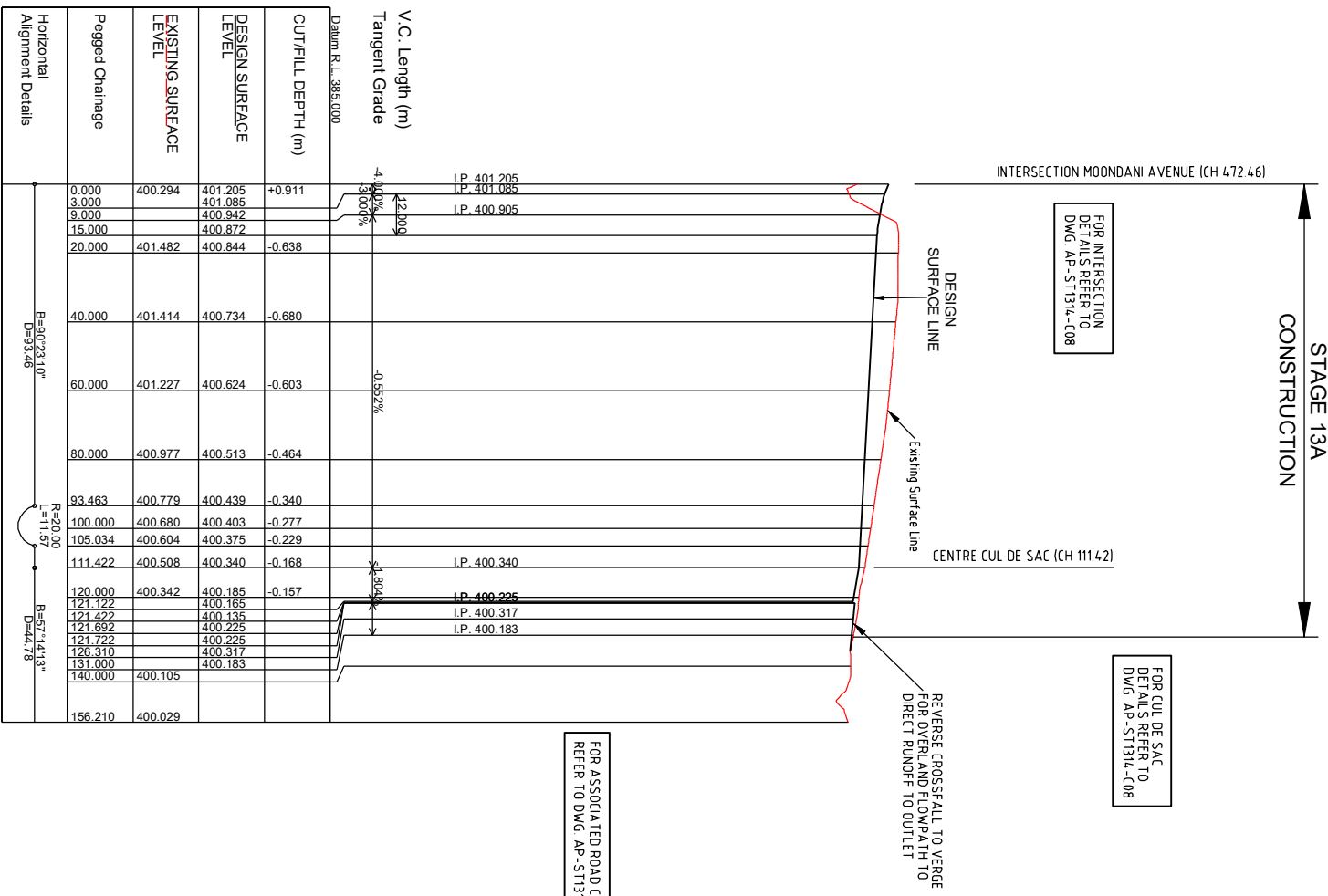
FOR INTERSECTION DETAIL REFER TO
 DRAWING AP-ST1314-C09

ISSUE FOR APPROVAL



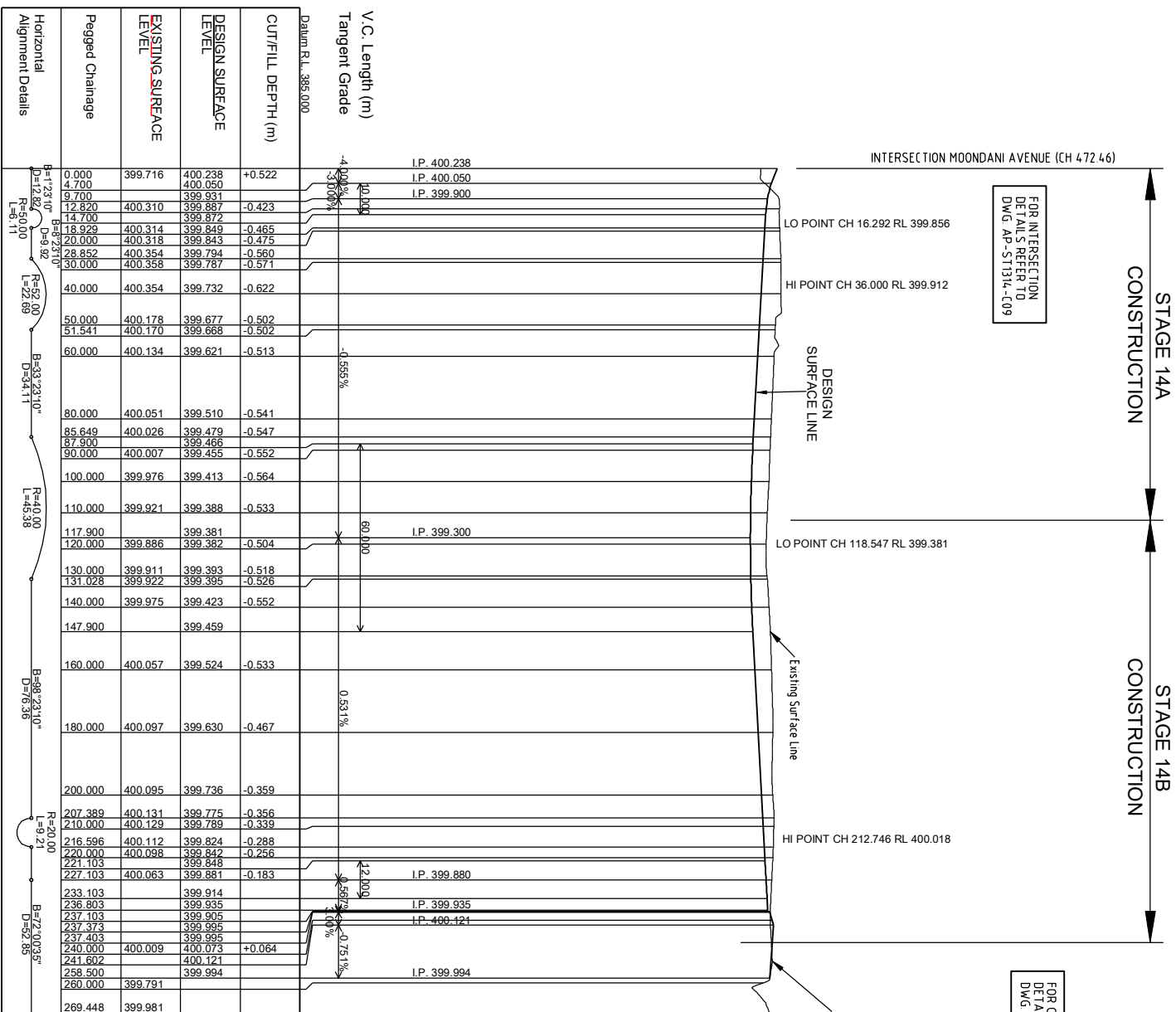
APPROVED PAVEMENT - ROAD 3
 URBAN ACCESS STREET
 35mm ASPHALTIC SURFACING
 110mm BASECOURSE, CLASS 1B - CBR 60
 140mm SUB-BASE, CLASS 2 - CBR 45
 TOTAL PAVEMENT THICKNESS OF 285mm INCLUDING AC ON
 DESIGN SUBGRADE OF CBR 6.
 SUBGRADE STABILITY TO BE CONFIRMED BY LOAD TESTING AND
 LEVEL MEASUREMENT AT THE TIME OF JOINT SUBGRADE (BOX)
 INSPECTION DURING THE CONSTRUCTION PHASE.

APPROVED PAVEMENT - ROAD 3
 URBAN ACCESS STREET
 35mm ASPHALTIC SURFACING
 110mm BASECOURSE, CLASS 1B - CBR 60
 140mm SUB-BASE, CLASS 2 - CBR 45
 TOTAL PAVEMENT THICKNESS OF 285mm INCLUDING AC ON
 DESIGN SUBGRADE OF CBR 6.
 SUBGRADE STABILITY TO BE CONFIRMED BY LOAD TESTING AND
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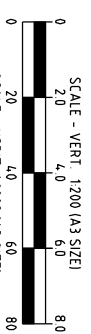
LONGITUDINAL SECTION - ROAD 3

SCALE: HORIZ: 1:2000 VERT: 1:200 (A3 SIZE)



LONGITUDINAL SECTION - ALLAMBEE CLOSE

SCALE: HORIZ: 1:2000 VERT: 1:200 (A3 SIZE)



ISSUE FOR APPROVAL

FOR ASSOCIATED ROAD CROSS SECTIONS REFER TO DWG AP-ST1314-C22

FOR ASSOCIATED ROAD CROSS SECTIONS REFER TO DWG AP-ST1314-C23 & 24

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REVISION	DATE
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A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING ROAD LONGITUDINAL SECTIONS
ROAD 3 & ALLAMBEE CLOSE

DRAWN	DATE
RMM	08/22
APPROVED	DATE
RPEO	
DWG. NO.	REVISION
AP-ST1314-C21	B

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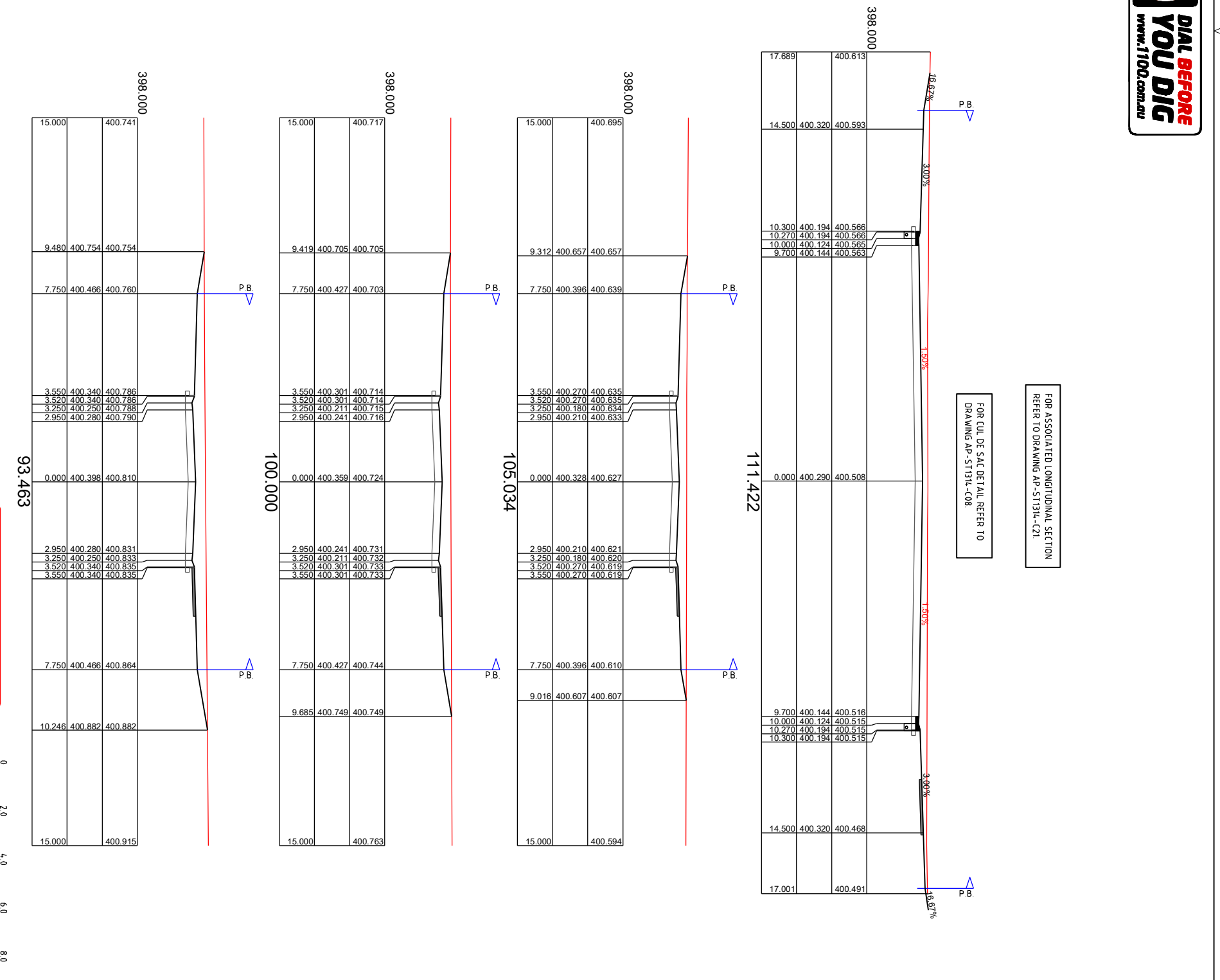
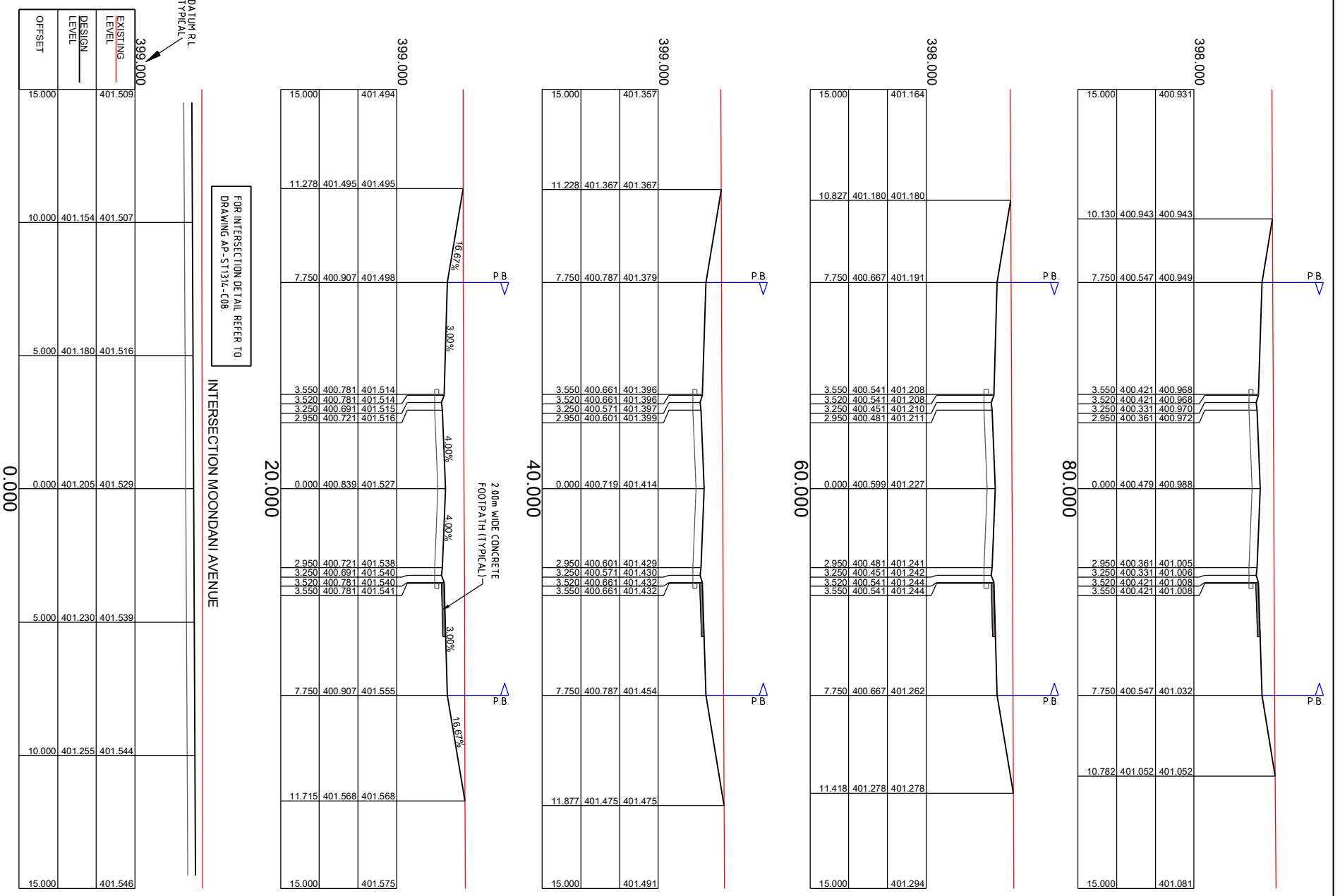
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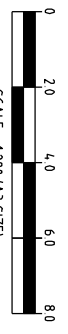
CLIENT **BT, M & S STANKOVICH PTY LTD**
 PROJECT **AMAROO DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **ROAD CROSS SECTIONS ROAD 3**

DATE	REVISION
08/22	B



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FOR ASSOCIATED LONGITUDINAL SECTION REFER TO DRAWING AP-ST1314-L21
 FOR CUL DE SAC DETAIL REFER TO DRAWING AP-ST1314-T08

FOR INTERSECTION DETAIL REFER TO DRAWING AP-ST1314-T08

INTERSECTION MOONDANI AVENUE

200m WIDE CONCRETE FOOTPATH (TYPICAL)

OFFSET	EXISTING LEVEL	DESIGN LEVEL
15.000	401.509	401.507
10.000	401.154	401.507
5.000	401.180	401.516
0.000	401.205	401.529
5.000	401.230	401.539
10.000	401.255	401.544
15.000	401.546	

15.000	400.741	400.741
9.480	400.754	400.754
7.750	400.466	400.760
3.550	400.340	400.786
3.520	400.340	400.786
3.250	400.250	400.788
2.950	400.280	400.790
0.000	400.398	400.810
2.950	400.280	400.831
3.250	400.250	400.833
3.520	400.340	400.835
3.550	400.340	400.835
7.750	400.466	400.864
10.246	400.882	400.882
15.000	400.915	

15.000	400.717	400.717
9.419	400.705	400.705
7.750	400.427	400.703
3.550	400.301	400.714
3.520	400.301	400.714
3.250	400.211	400.715
2.950	400.241	400.716
0.000	400.359	400.724
2.950	400.241	400.731
3.250	400.211	400.732
3.520	400.301	400.733
3.550	400.301	400.733
7.750	400.427	400.744
9.685	400.749	400.749
15.000	400.763	

15.000	400.695	400.695
9.312	400.657	400.657
7.750	400.396	400.639
3.550	400.270	400.635
3.520	400.270	400.635
3.250	400.180	400.634
2.950	400.210	400.633
0.000	400.328	400.627
2.950	400.210	400.621
3.250	400.180	400.620
3.520	400.270	400.619
3.550	400.270	400.619
7.750	400.396	400.610
9.016	400.607	400.607
15.000	400.594	

17.689	400.613	400.613
14.500	400.320	400.593
10.300	400.194	400.566
10.270	400.194	400.566
10.000	400.124	400.565
9.700	400.144	400.563
0.000	400.290	400.508
9.700	400.144	400.516
10.000	400.124	400.515
10.270	400.194	400.515
10.300	400.194	400.515
14.500	400.320	400.468
17.001	400.491	

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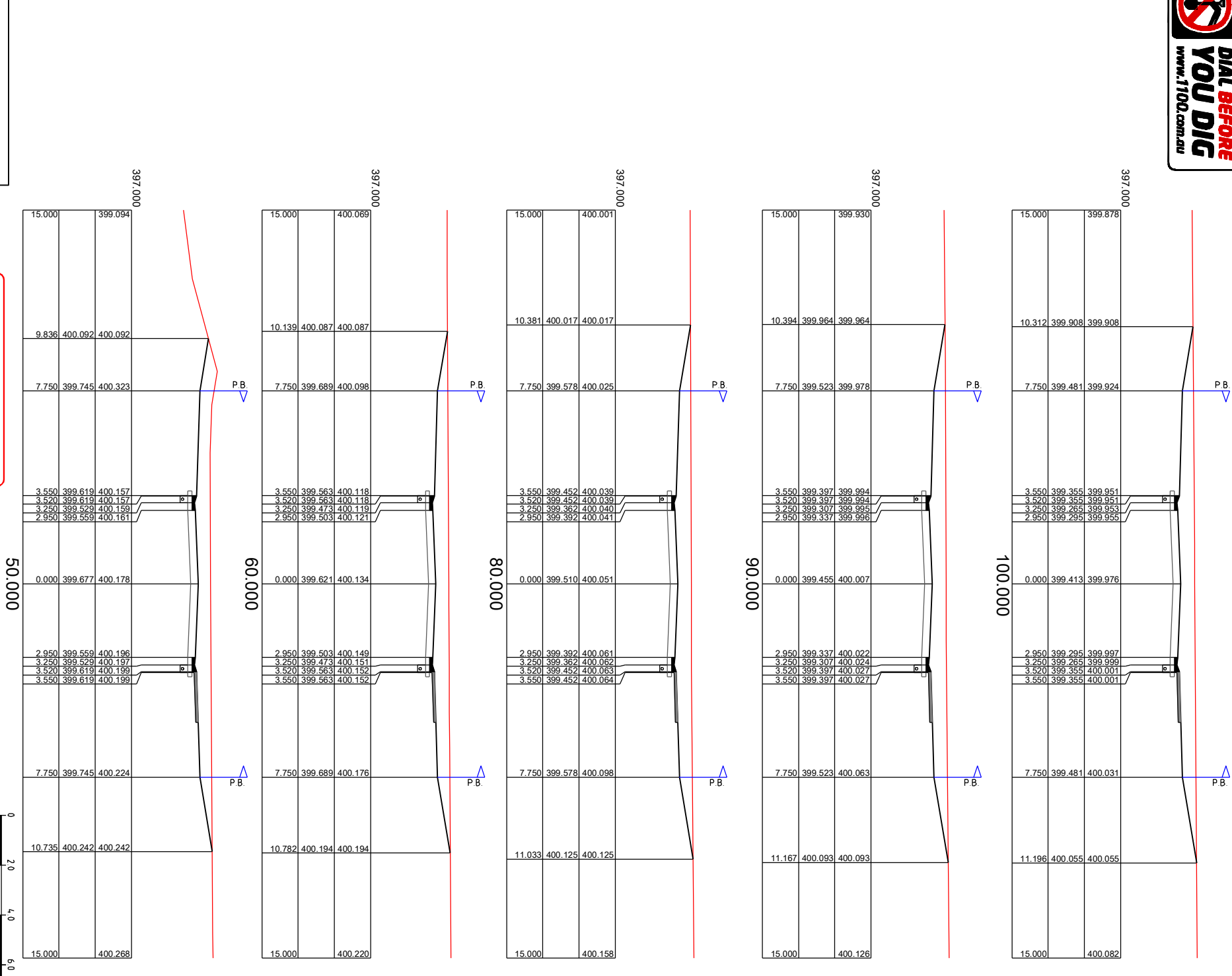
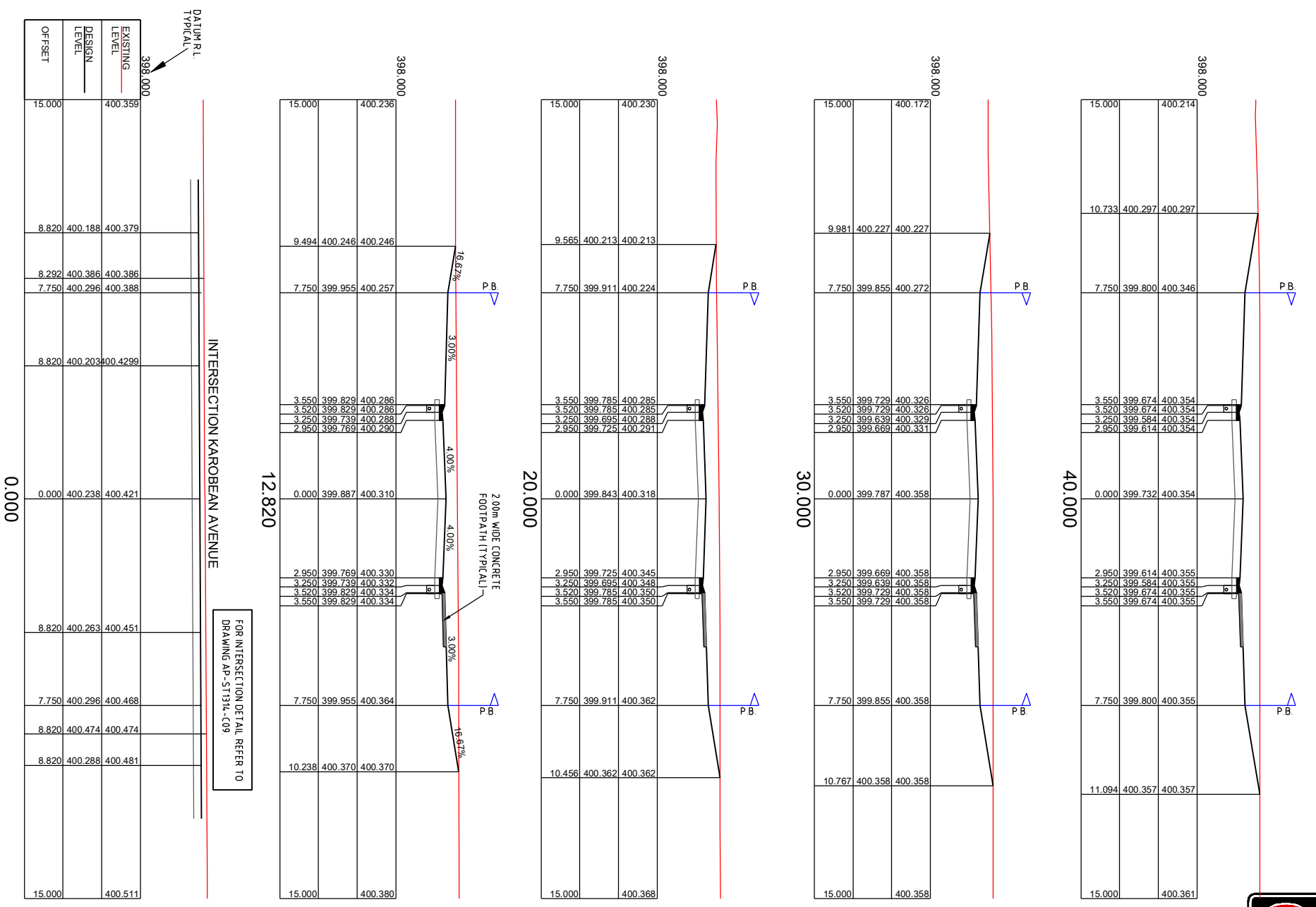
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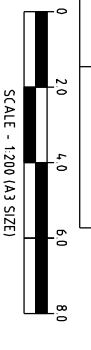
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING ROAD CROSS SECTIONS
ALLAMBEE CLOSE
SHEET 1 of 2

DRAWN RYM
APPROVED RPEO
DWG. NO. AP-ST1314-C23
DATE 08/22
REVISION B



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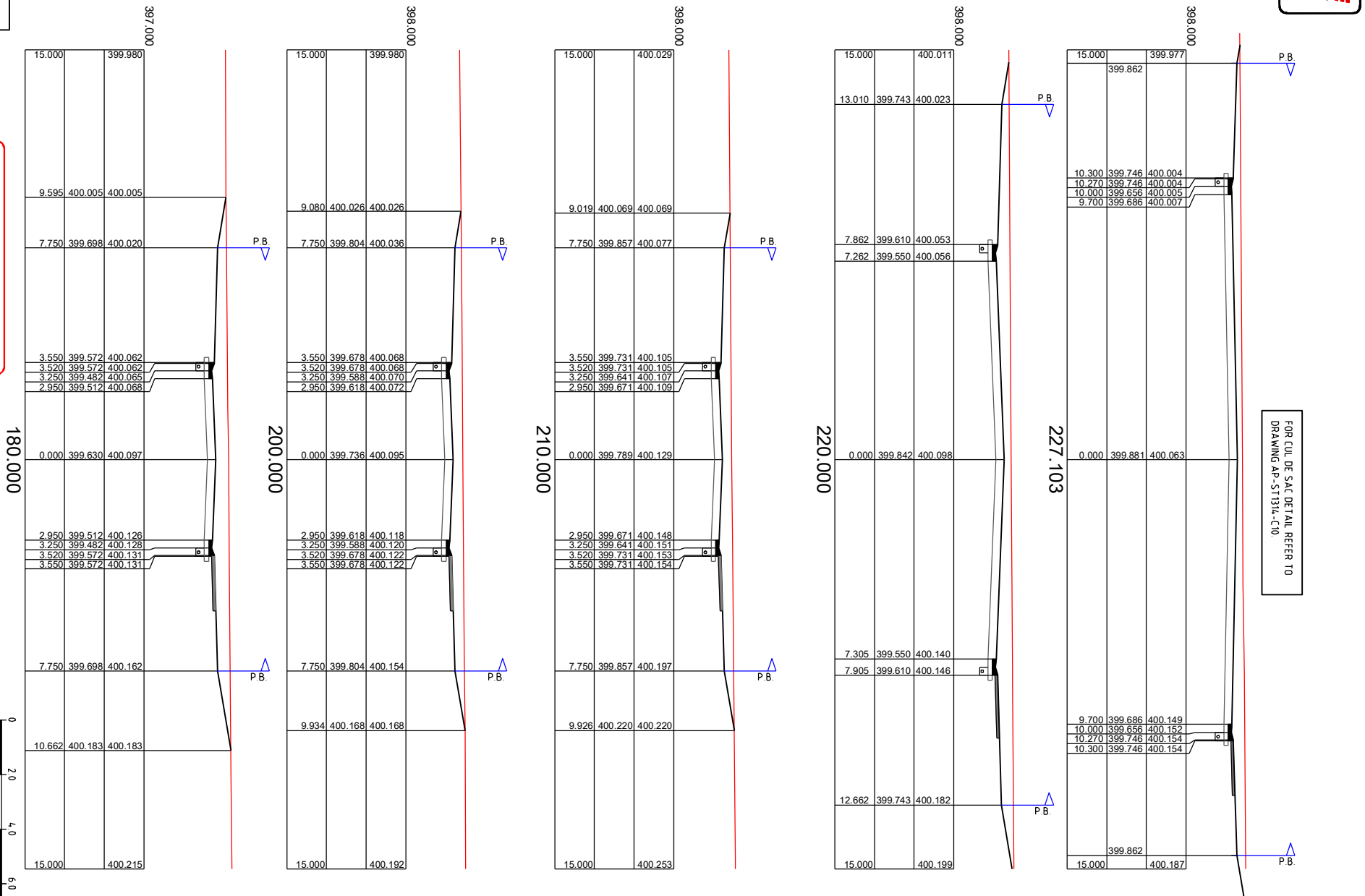
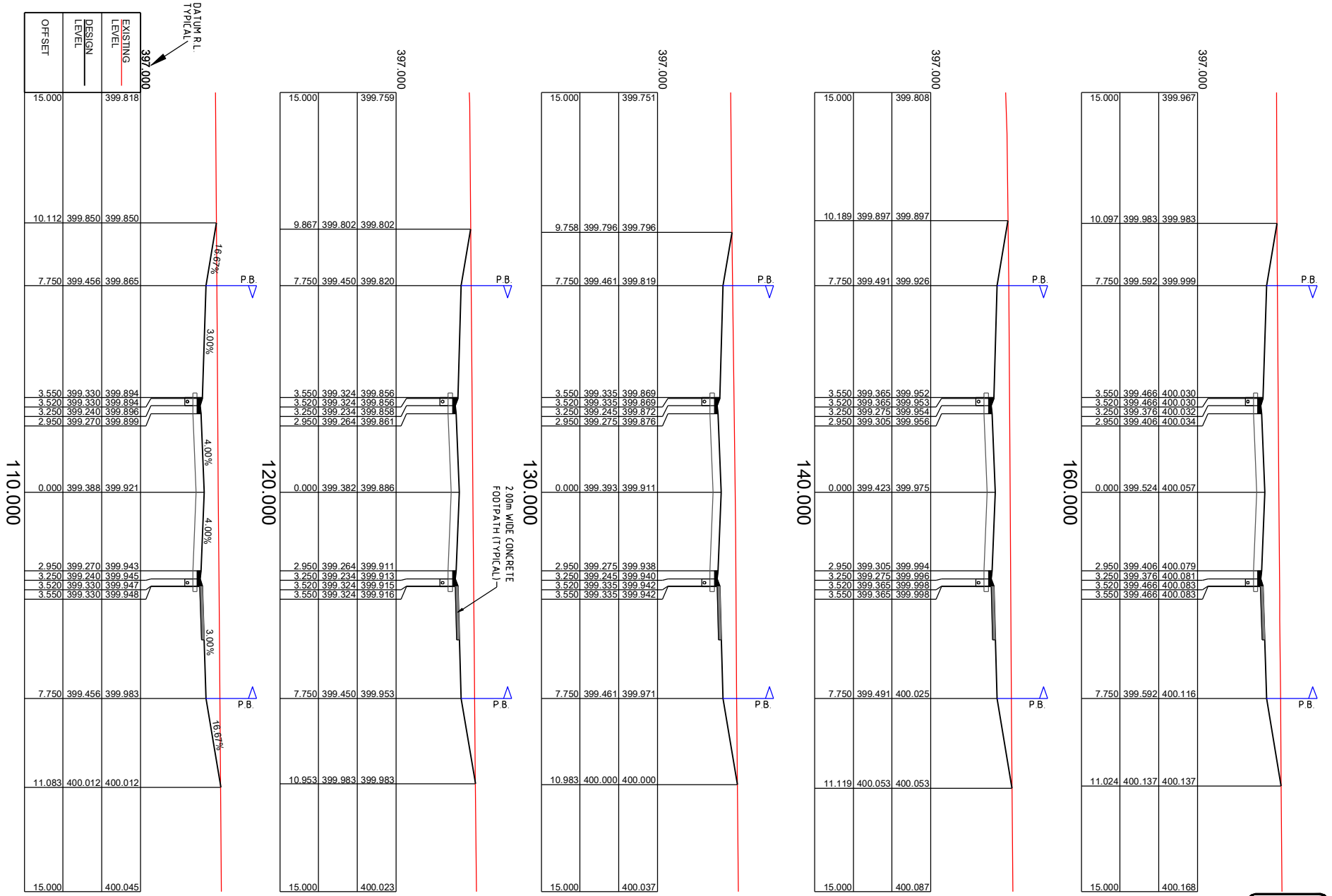
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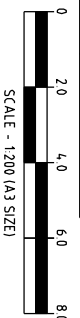
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT STAGES 13 & 14
 MOONDANI AVENUE, MAREEBA

DRAWING ROAD CROSS SECTIONS
 ALLAMBEE CLOSE
 SHEET 2 of 2

DATE	REVISION
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FOR CIVIL DETAIL REFER TO DRAWING AP-ST1314-C10

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B	11/22	ORIGINAL ISSUE FOR APPROVAL

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT
STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING OVERALL EARTHWORKS PLAN
STAGES 13 & 14

DATE	DATE	REVISION
08/22 <td></td> <td>B</td>		B

AP-**ST1314-C25**



INDICATIVE BULK EARTHWORKS VOLUMES
 CUT =
 FILL =
 BALANCE =
 L- EXPORT / STOCKPILE, - (IMPORT)
 NOTES
 1 EXCLUDES PRELIMINARY ROAD PAVEMENT BOX EXCAVATION
 2 EXCLUDES PRELIMINARY ROAD PAVEMENT BOX EXCAVATION APPROX 1356 m² AT ASSUMED THICKNESS OF 285mm

GENERAL NOTES

1. LEVEL DATUM: AHD
2. ORIGIN OF LEVELS: PSN180503; RL: 400.897
CNR WRA CLOSE AND CEOLA DRIVE
3. DESIGN SURFACE CONTOUR INTERVAL: 0.10m
INDEXED: 0.20m
4. DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
5. REFER TO PAVING SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER AND STORMWATER DRAINAGE.
6. ALLOTMENTS SHALL BE PROVIDED WITH A MINIMUM FINISHED SURFACE GRADIENT OF 0.3% TO FACILITATE DRAINAGE.
7. ALL EMBANKMENTS AND CUTTINGS MUST BE OUTSIDE THE ROAD RESERVE. THE TOE OF ANY CUT BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY; THE TOP OF ANY FILL BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY.

LEGEND

- Earthworks Cut Area
- Earthworks Fill Area
- Earthworks Boundary
- Design Contours with Labels (0.10m Intervals)
- Design Level
- Lot Number & Lot Fall Direction

EARTHWORKS NOTES

1. ALL EARTHWORKS SHALL BE IN ACCORDANCE WITH AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS' AND FINROC STANDARD SPECIFICATIONS.
2. EARTHWORKS TO BE LEVEL, 3" CONTROLLED FILL, COMPACTION TESTING IS TO COMPLY WITH SECTION 5 OF 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS' UNLESS NOTED OTHERWISE. FILL LAYERS SHALL NOT EXCEED 200mm DEPTH AND COMPACTED TO 95% STANDARD COMPACTION. COMPACTION TESTS TO BE CARRIED OUT AT 1 TEST PER 500m² OR 1 PER 1000m³ PER LAYER, WHICHEVER GIVES GREATER NUMBER OF TESTS.
3. ALL DISTURBED AREAS ARE TO BE TOPSOILED AND SEEDED IN ACCORDANCE WITH THE FINROC STANDARD SPECIFICATIONS, WITH EXCEPTION OF BATTERS STEEPER THAN 1 IN 4 THAT ARE TO BE TOPSOILED AND HYDROMULCHED.
4. DUST SUPPRESSION MEASURES MUST BE UNDERTAKEN TO ENSURE THAT DUST DOES NOT CAUSE A NUISANCE TO SURROUNDING AREAS AND RESIDENTS. SUCH MEASURES MUST BE SUBMITTED AS PART OF THE SEDIMENT CONTROL PLAN.
5. IF ANY DUST OR MUD IS BROUGHT ONTO THE ROAD PAVEMENT FROM WORKS ON THE SUBJECT LAND, IT MUST BE PROPERLY CLEANED AWAY TO ELIMINATE MUD OR DUST NUISANCE NO LATER THAN AT THE END OF EACH WORKING DAY.
6. ALLOTMENTS SHALL BE PROVIDED WITH A MINIMUM FINISHED SURFACE GRADIENT OF 0.3% TO FACILITATE DRAINAGE.
7. ALL EMBANKMENTS AND CUTTINGS MUST BE OUTSIDE THE ROAD RESERVE. THE TOE OF ANY CUT BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY; THE TOP OF ANY FILL BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY.



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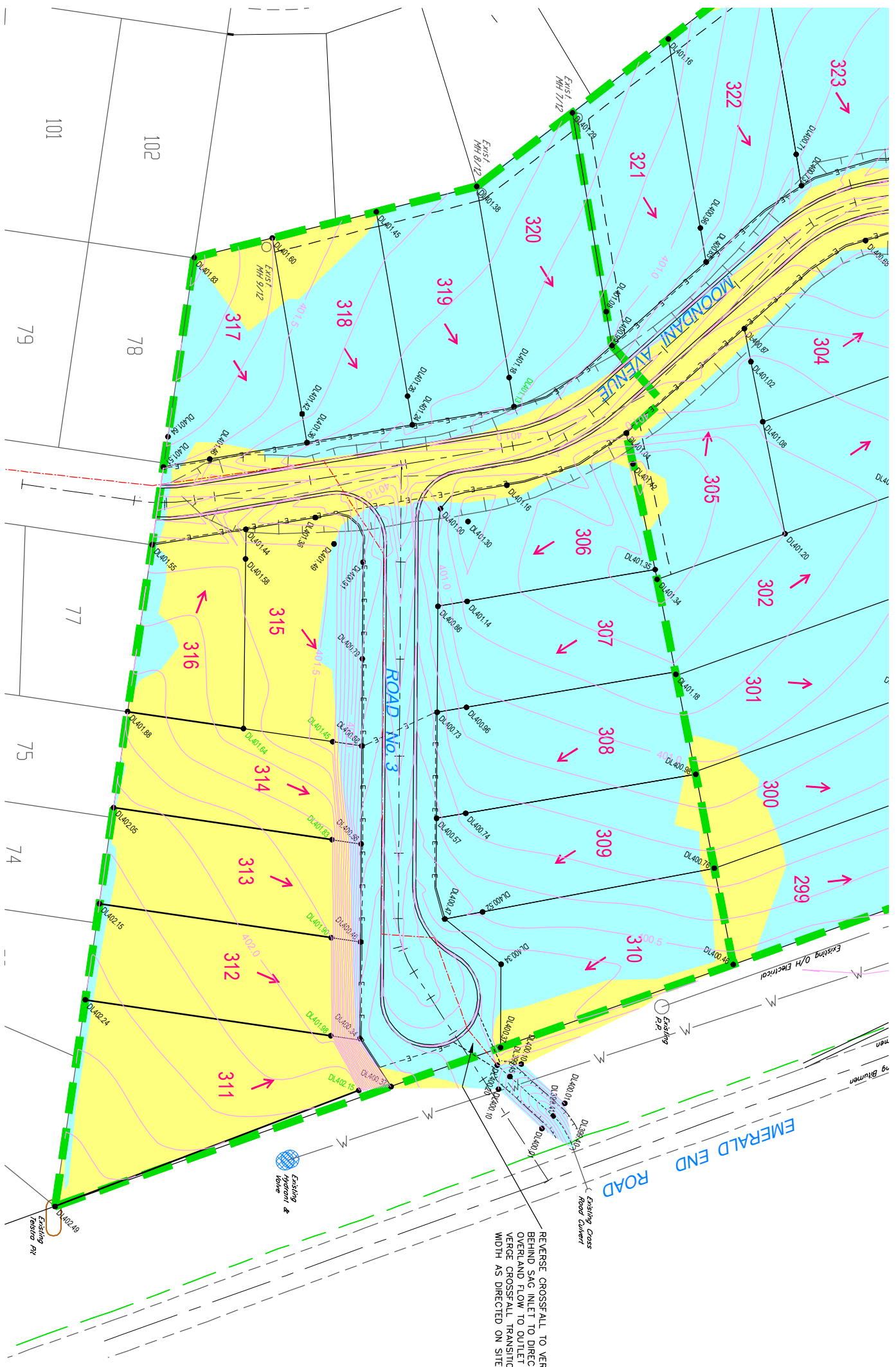
REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **EARTHWORKS PLAN STAGE 13A**

APPROVED	DATE
RMM	08/22
AP-ST1314-C26	B

ISSUE FOR APPROVAL



FOR STAGE 13B DETAILS REFER TO DRAWING AP-ST1314-C27

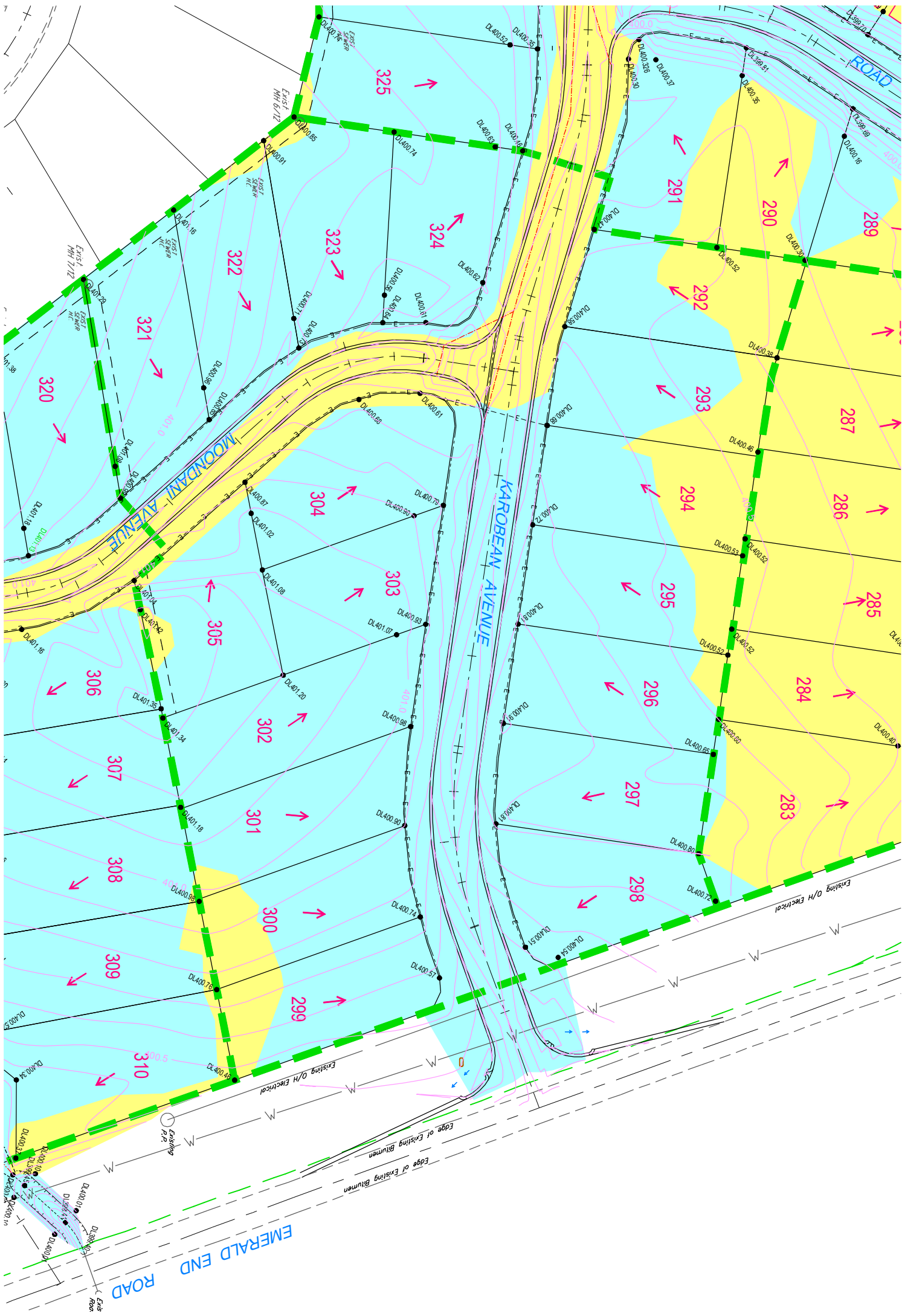
REVERSE CROSSFALL TO VERGE BEHIND SAG INLET TO DIRECT OVERLAND FLOW TO OUTLET DRAIN VERGE CROSSFALL TRANSITION WIDTH AS DIRECTED ON SITE

LEGEND

- Earthworks Cut Area
- Earthworks Fill Area
- Earthworks Boundary
- Design Contours with Labels (0.10m Intervals)
- Design Level
- Lot Number & Lot Fall Direction

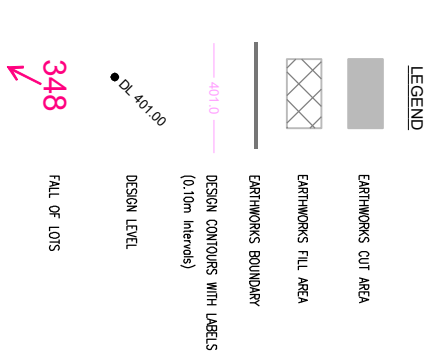
- GENERAL NOTES**
- LEVEL DATUM AND ORIGIN OF LEVELS: PSN16503; RL 400.897
 - CUR MARK CLOSE AND CEQA DRIVE
 - DESIGN SURFACE CONTOUR INTERVAL: 0.10m INDEXED: 0.20m
 - DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
 - REFER TO ROADWORK SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER AND STORMWATER DRAINAGE.
 - ALL EMBANKMENTS AND CUTTINGS MUST BE OUTSIDE THE ROAD RESERVE. THE TOE OF ANY CUT BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY; THE TOP OF ANY FILL BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY.
 - ALLOTMENTS SHALL BE PROVIDED WITH A MINIMUM FINISHED SURFACE GRADIENT OF 0.5% TO FACILITATE DRAINAGE.
 - IF ANY DUST OR MUD IS BOUGHT ONTO THE ROAD PAVEMENT FROM WORKS ON THE SUBJECT LAND, IT MUST BE PROPERLY CLEANED AWAY TO ELIMINATE MUD OR DUST NUISANCE NO LATER THAN AT THE END OF EACH WORKING DAY.
 - ALL DISTURBED AREAS ARE TO BE TOPSOILED AND SEEDED IN ACCORDANCE WITH THE PANCRO STANDARD SPECIFICATIONS, WITH EXCEPTION OF BATTERS STEEPER THAN 1 IN 4 THAT ARE TO BE TOPSOILED AND HYDROMULCHED.
 - DUST SUPPRESSION MEASURES MUST BE UNDERTAKEN TO ENSURE THAT DUST DOES NOT CAUSE A NUISANCE TO SURROUNDING AREAS AND RESIDENTS, SUCH MEASURES MUST BE SUBMITTED AS PART OF THE SEDIMENT CONTROL PLAN.
 - IF ANY DUST OR MUD IS BOUGHT ONTO THE ROAD PAVEMENT FROM WORKS ON THE SUBJECT LAND, IT MUST BE PROPERLY CLEANED AWAY TO ELIMINATE MUD OR DUST NUISANCE NO LATER THAN AT THE END OF EACH WORKING DAY.
 - ALLOTMENTS SHALL BE PROVIDED WITH A MINIMUM FINISHED SURFACE GRADIENT OF 0.5% TO FACILITATE DRAINAGE.
 - ALL EMBANKMENTS AND CUTTINGS MUST BE OUTSIDE THE ROAD RESERVE. THE TOE OF ANY CUT BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY; THE TOP OF ANY FILL BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY.





FOR STAGE 13A DETAILS REFER TO DRAWING AP-ST1314-C26

FOR OVERALL SITE CUT / FILL SHADING REFER TO DRAWING AP-ST1314-C23



- GENERAL NOTES**
- LEVEL DATUM: AHD
 - ORIGIN OF LEVELS: PSAM160503; RL 400.897 ONE METER ABOVE AND CEOLA DRIVE
 - DESIGN SURFACE CONTOUR INTERVAL: 0.10m INDEXED: 0.20m
 - DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
 - REFER TO FINROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER AND STORMWATER DRAINAGE.

ISSUE FOR APPROVAL



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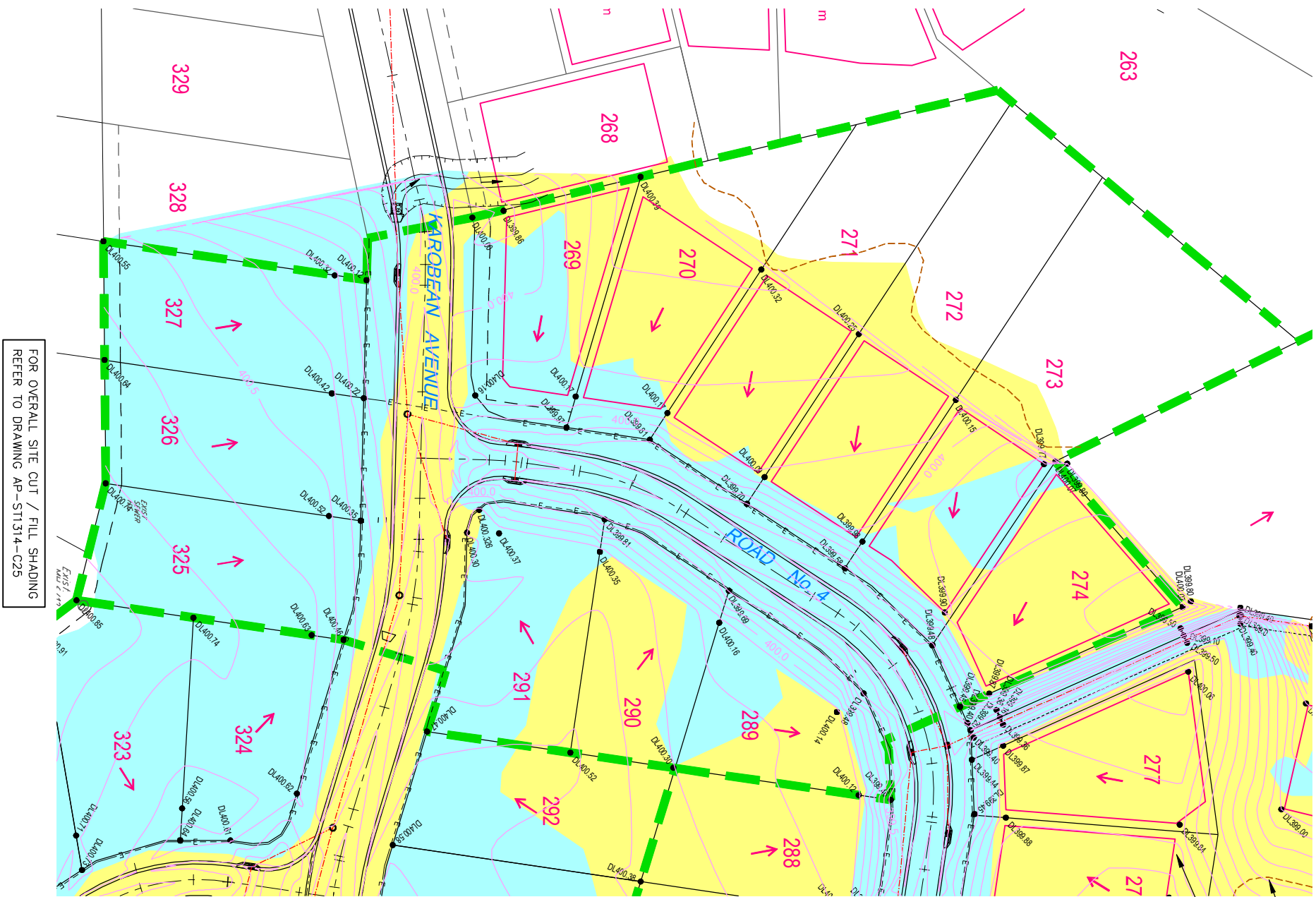
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B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING EARTHWORKS PLAN
STAGE 13B

APPROVED	DATE
RMM	08/22
AP-1314-C27	B



FOR OVERALL SITE CUT / FILL SHADING REFER TO DRAWING AP-ST1314-C25

FOR STAGE 14B DETAILS REFER TO DRAWING AP-ST1314-C29

INDICATIVE TOE OF FILL BATTER LINE (TYPICAL)
INDICATIVE TOP OF FILL BATTER LINE (TYPICAL)

INDICATIVE TOE OF FILL BATTER LINE (TYPICAL)
INDICATIVE TOP OF FILL BATTER LINE (TYPICAL)



LEGEND
 ■ EARTHWORKS CUT AREA
 ■ EARTHWORKS FILL AREA
 — EARTHWORKS BOUNDARY
 — DESIGN CONTOURS WITH LABELS (0.10m Intervals)
 ● D1400.00
 — DESIGN LEVEL
 ↗ 348
 FALL OF LOTS

- EARTHWORKS NOTES**
1. ALL EARTHWORKS SHALL BE IN ACCORDANCE WITH AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS' AND FINROC STANDARD SPECIFICATIONS.
 2. EARTHWORKS TO BE LEVEL '3' CONTROLLED FILL. COMPACTION TESTING IS TO COMPLY WITH SECTION 5 OF 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS' UNLESS NOTED OTHERWISE. FILL LAYERS SHALL NOT EXCEED 200mm DEPTH AND COMPACTED TO 95% STANDARD COMPACTION. COMPACTION TESTS TO BE CARRIED OUT AT 1 TEST PER 500m² OR 1 PER 1000m² PER LAYER, WHICHEVER GIVES GREATER NUMBER OF TESTS.
 3. ALL DISTURBED AREAS ARE TO BE TOPSOILED AND SEEDED IN ACCORDANCE WITH THE FINROC STANDARD SPECIFICATIONS, WITH EXCEPTION OF BATTERS STEEPER THAN 1 IN 4 THAT ARE TO BE TOPSOILED AND HYDROMULCHED.
 4. DUST SUPPRESSION MEASURES MUST BE UNDERTAKEN TO ENSURE THAT DUST DOES NOT CAUSE A NUISANCE TO SURROUNDING AREAS AND RESIDENTS. SUCH MEASURES MUST BE SUBMITTED AS PART OF THE SEDIMENT CONTROL PLAN.
 5. IF ANY DUST OR MUD IS BROUGHT ONTO THE ROAD PAVEMENT FROM WORKS ON THE SUBJECT LAND, IT MUST BE PROPERLY CLEANED AWAY TO ELIMINATE MUD OR DUST NUISANCE NO LATER THAN AT THE END OF EACH WORKING DAY.
 6. ALLOTMENTS SHALL BE PROVIDED WITH A MINIMUM FINISHED SURFACE GRADIENT OF 0.5% TO FACILITATE DRAINAGE.
 7. ALL EMBANKMENTS AND CUTTINGS MUST BE OUTSIDE THE ROAD RESERVE. THE TOE OF ANY CUT BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY. THE TOP OF ANY FILL BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY.
- GENERAL NOTES**
1. LEVEL DATUM AND ORIGIN OF LEVELS: PSAD1950; R: 400.897
 2. CUR MARK CLOSE AND CEOLA DRIVE
 3. DESIGN SURFACE CONTOUR INTERVAL: 0.10m INDEXED: 0.20m
 4. DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
 5. REFER TO FINROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER AND STORMWATER DRAINAGE.

ISSUE FOR APPROVAL

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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
 PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
 MOONDANI AVENUE, MAREEBA

DRAWING **EARTHWORKS PLAN**
STAGE 14A

DATE	DATE
APPROVED RMM	08/22
APPROVED RPEC	
DWG. NO. AP-ST1314-C28	REVISION B

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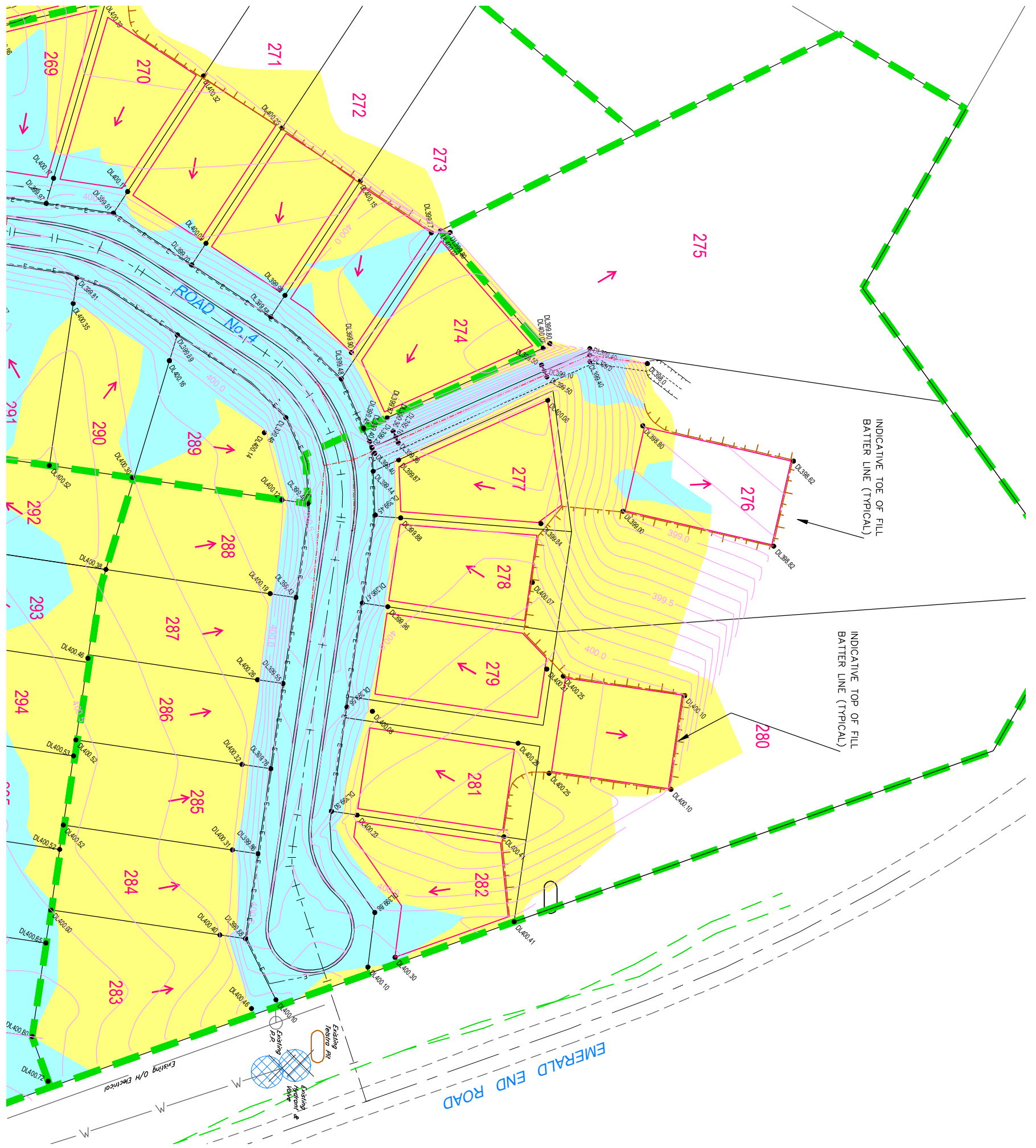
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING EARTHWORKS PLAN
STAGE 14B

DATE	DATE
08/22	08/22

APPROVED: RMM
 RPEO
 DWG. NO. AP-ST1314-C29
 REVISION B

FOR OVERALL SITE CUT / FILL SHADING REFER TO DRAWING AP-ST1314-C25



LEGEND

- EARTHWORKS CUT AREA
- EARTHWORKS FILL AREA
- EARTHWORKS BOUNDARY
- DESIGN CONTOURS WITH LABELS (0.10m Interval)
- DESIGN LEVEL
- FALL OF LOTS

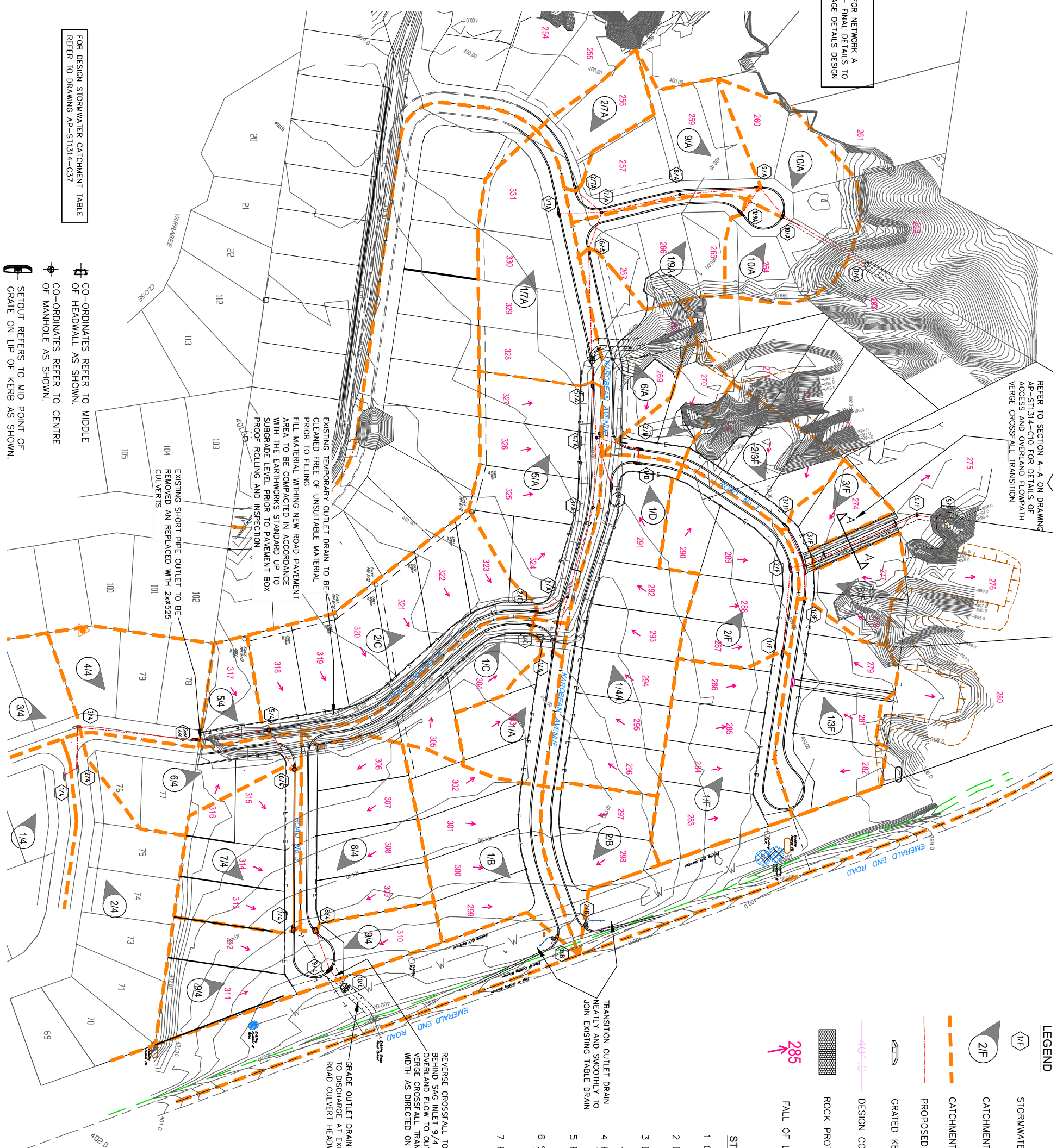
- EARTHWORKS NOTES**
- ALL EARTHWORKS SHALL BE IN ACCORDANCE WITH AS2798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS' AND FINROC STANDARD SPECIFICATIONS.
 - EARTHWORKS TO BE LEVEL '3' CONTROLLED FILL. COMPACTION TESTING IS TO COMPLY WITH SECTION 5 OF 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS' UNLESS NOTED OTHERWISE. FILL LAYERS SHALL NOT EXCEED 200mm DEPTH AND COMPACTED TO 95% STANDARD COMPACTION. COMPACTION TESTS TO BE CARRIED OUT AT 1 TEST PER 500m² OR 1 PER 1000m³ PER LAYER, WHICHEVER GIVES GREATER NUMBER OF TESTS.
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 - ALL EMBANKMENTS AND CUTTINGS MUST BE OUTSIDE THE ROAD RESERVE. THE TOE OF ANY CUT BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY; THE TOP OF ANY FILL BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY.
- GENERAL NOTES**
- LEVEL DATUM AND
 - ORIGIN OF LEVELS: PSN180503; RL 400.897
 ONE MARRA CLOSE AND COOLA DRIVE
 - DESIGN SURFACE CONTOUR INTERVAL: 0.10m
 INDEXED: 0.20m
 - DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
 - REFER TO FINROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER AND STORMWATER DRAINAGE.

ISSUE FOR APPROVAL



NOTE:
DESIGN NETWORK INDICATIVE FOR NETWORK A FROM 5/A TO OUTLET 10/A - FINAL DETAILS TO BE VERIFIED WITH FUTURE STAGE DETAILS DESIGN

REFER TO SECTION A-A ON DRAWING AP-ST1314-C10 FOR DETAILS OF ACCESS AND OVERLAND FLOWPATH VERGE CROSSFALL TRANSITION



- LEGEND**
- STORMWATER STRUCTURE LABEL
 - CATCHMENT LABEL
 - CATCHMENT BOUNDARIES
 - PROPOSED STORMWATER DRAINAGE PIPE CENTRE LINE
 - GRATED KERB INLET PIT
 - DESIGN CONTOURS WITH LABELS
 - ROCK PROTECTION
 - FALL OF LOTS/DIRECTION OF OVERLAND FLOWS

- STORMWATER NOTES**
- 1 ORIGIN OF LEVELS: PSM160503; RL 400.897 CNR MARIA CLOSE AND CEOLA DRIVE
 - 2 DESIGN SURFACE CONTOUR INTERVAL: 0.10m INDEXED: 0.20m
 - 3 DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO THE COMMENCEMENT OF WORK.
 - 4 FOR SPECIFICATIONS OF STORMWATER DRAINAGE REFER TO FNOROC STANDARD SPECIFICATIONS.
 - 5 FOR STANDARD STORMWATER DRAINAGE DETAILS REFER FNOROC STD DWGS S1045 - S1100
 - 6 STORMWATER PIPES TO BE "BLACK BRUTE" FOR PIPES UP TO 600mm DIAMETER AND REINFORCED CONCRETE FOR PIPES OVER 600mm DIAMETER TO AS 4058.
 - 7 PIPE 3, 4 & 5 TO HAVE ROCK PROTECTION AT DOWNSREAM INVERT TO PROTECT OUTFALL.

EXISTING TEMPORARY OUTLET DRAIN TO BE CLEANED FREE OF UNSUITABLE MATERIAL PRIOR TO FILLING
FILL MATERIAL WITHING NEW ROAD PAVEMENT AREA TO BE COMPACTED IN ACCORDANCE WITH THE EARTHWORKS STANDARDS UP TO SUBGRADE LEVEL PRIORS TO PAVEMENT BOX PROOF ROLLING AND INSPECTION

EXISTING SHORT PIPE OUTLET TO BE REMOVED AND REPLACED WITH 2x4525 CULVERTS

REVERSE CROSSFALL TO VERGE BEHIND SAG INLET 9/4 TO DIRECT OVERLAND FLOW TO OUTLET DRAIN VERGE CROSSFALL TRANSITION WIDTH AS DIRECTED ON SITE

GRADE OUTLET DRAIN UNIFORMLY TO DISCHARGE AT EXISTING CROSS ROAD CULVERT HEADWALL

NOTE:
STORMWATER DRAINAGE NETWORK FROM 4/4 TO BE REVISED FROM THE CURRENT APPROVED CULVERT DESIGN TO ENSURE A PRACTICAL OUTLET TO EMERALD END ROAD TABLE DRAIN AND CROSS ROAD CULVERT

FOR DESIGN STORMWATER CATCHMENT TABLE REFER TO DRAWING AP-ST1314-C37

- CO-ORDINATES REFER TO MIDDLE OF HEADWALL AS SHOWN.
- CO-ORDINATES REFER TO CENTRE OF MANHOLE AS SHOWN.
- SETOUT REFERS TO MID POINT OF GRATE ON LIP OF KERB AS SHOWN.

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REVISION	DATE	COMMENT
A	08/22	ORIGINAL ISSUE FOR COMMENT
B	11/22	ORIGINAL ISSUE FOR APPROVAL

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **STORMWATER DRAINAGE CATCHMENT PLAN**

APPROVED	DATE	REVISION
RMM	08/22	B
AP-ST1314-C30		





NOTE:
ALL FUTURE STAGE MANHOLE DETAILS ARE TO BE VERIFIED WITH THE ASSOCIATED STAGE PROGRESSIVE DETAILED DESIGN

FOR DETAILS OF STORMWATER DRAINAGE REFER TO DWG. DB-ST1E-C19

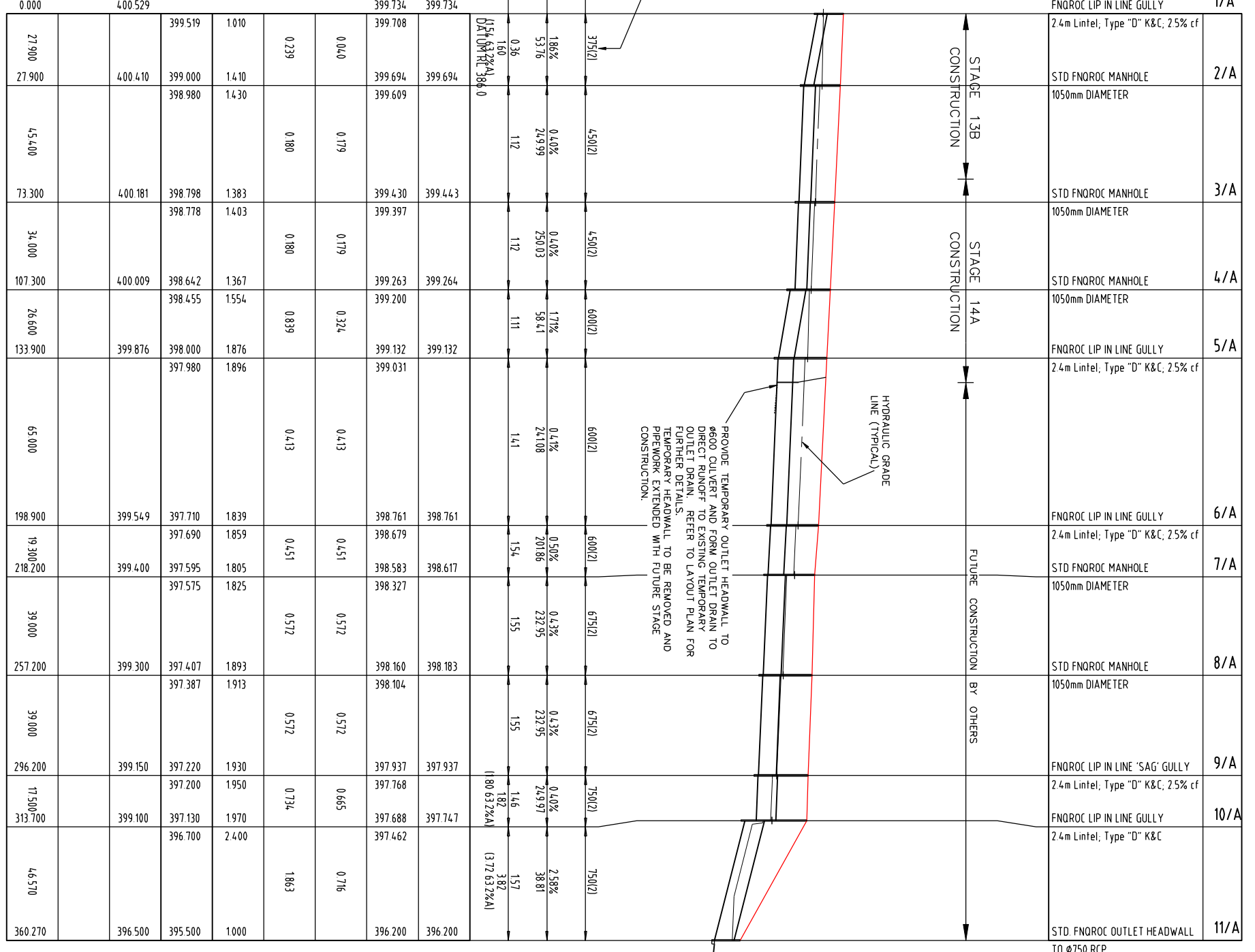
NOTE:
PIPE CLASS TO BE VERIFIED WITH THE MANUFACTURER TO APPROPRIATELY SUIT THE DESIGN COVER

VERIFY ALL SERVICE CROSSING LEVELS PRIOR TO CONSTRUCTION

INDICATES PIPE DIAMETER 375(2)

STRUCTURE DESCRIPTION	STRUCTURE	1/A	2/A	3/A	4/A	5/A	6/A	7/A	8/A	9/A	10/A	11/A
FNQROC LIP IN LINE GULLY	2.4m LinTel, Type "D" K&C, 2.5% cf											
STD FNQROC MANHOLE	1050mm DIAMETER											
STD FNQROC MANHOLE	1050mm DIAMETER											
STD FNQROC MANHOLE	1050mm DIAMETER											
FNQROC LIP IN LINE GULLY	2.4m LinTel, Type "D" K&C, 2.5% cf											
FNQROC LIP IN LINE GULLY	2.4m LinTel, Type "D" K&C, 2.5% cf											
STD FNQROC MANHOLE	1050mm DIAMETER											
STD FNQROC MANHOLE	1050mm DIAMETER											
FNQROC LIP IN LINE 'SAG' GULLY	2.4m LinTel, Type "D" K&C, 2.5% cf											
FNQROC LIP IN LINE GULLY	2.4m LinTel, Type "D" K&C											
STD FNQROC OUTLET HEADWALL	TO Ø750 RCP											

LINE Project File: Amaroob\STATES\FD\X



PROVIDE TEMPORARY OUTLET HEADWALL TO Ø600 CULVERT AND FORM OUTLET DRAIN TO DIRECT FLOW TO EXISTING TEMPORARY OUTLET DRAIN. REFER TO LAYOUT PLAN FOR FURTHER DETAILS. TEMPORARY HEADWALL TO BE REMOVED AND PIPEWORK EXTENDED WITH FUTURE STAGE CONSTRUCTION.

FUTURE STAGE OUTLET HEADWALL AND OPEN CHANNEL TO EXISTING NATURAL GULLY - BY OTHERS

STRUCTURE DESCRIPTION	STRUCTURE	1/D	2/D	4/A	1/A	4/A	1/A	7/A
FNQROC LIP IN LINE 'SAG' GULLY	2.4m LinTel, Type "D" K&C							
FNQROC LIP IN LINE 'SAG' GULLY	2.4m LinTel, Type "D" K&C							
STD FNQROC MANHOLE	1050mm DIAMETER							
FNQROC LIP IN LINE GULLY	2.4m LinTel, Type "D" K&C, 2.5% cf							
STD FNQROC MANHOLE	1050mm DIAMETER							
FNQROC LIP IN LINE GULLY	2.4m LinTel, Type "D" K&C, 2.5% cf							
STD FNQROC MANHOLE	1050mm DIAMETER							
FNQROC LIP IN LINE GULLY	2.4m LinTel, Type "D" K&C							
STD FNQROC MANHOLE	1050mm DIAMETER							

ALL CULVERTS UP TO Ø600 ARE TO BE "BLACKMAX" OR APPROVED EQUIVALENT AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS

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CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT
STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 2 of 3

APPROVED	DATE
AP-ST1314-C32	08/22



NOTE:
ALL FUTURE STAGE MANHOLE DETAILS ARE TO BE VERIFIED WITH THE ASSOCIATED STAGE PROGRESSIVE DETAILED DESIGN

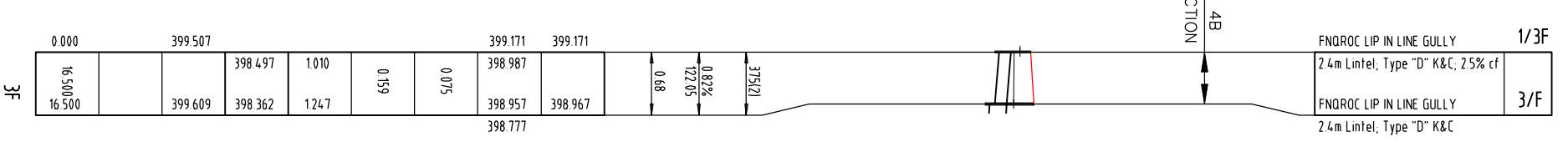
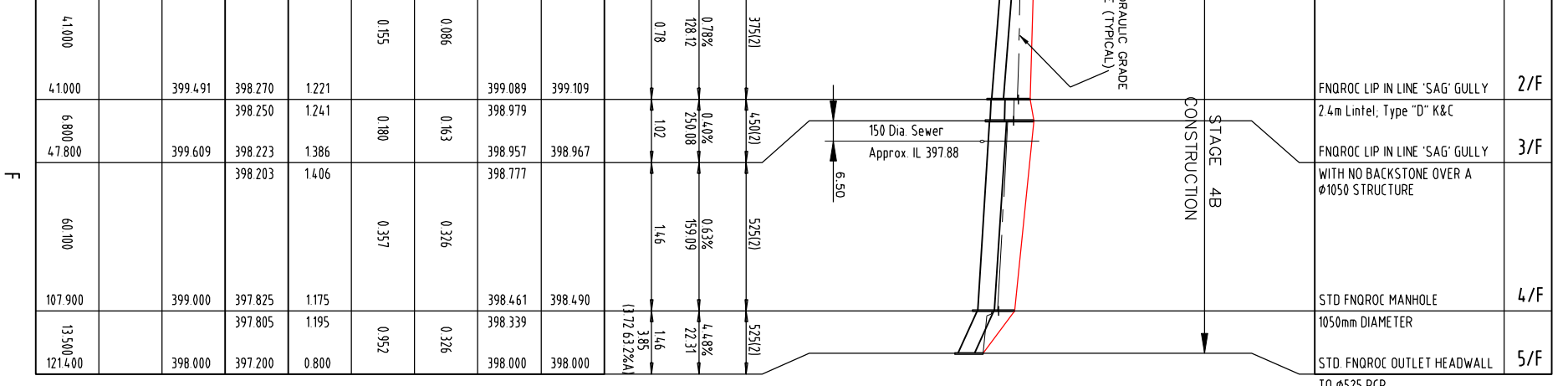
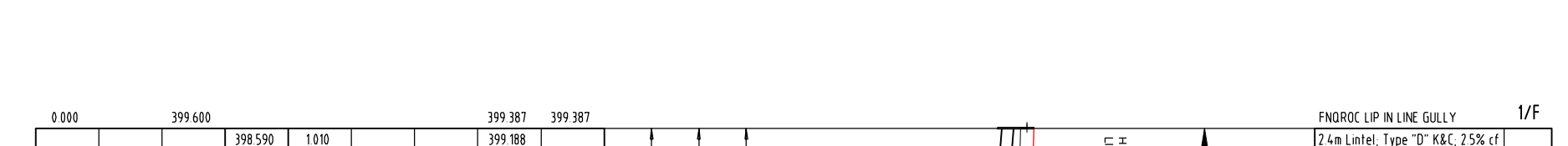
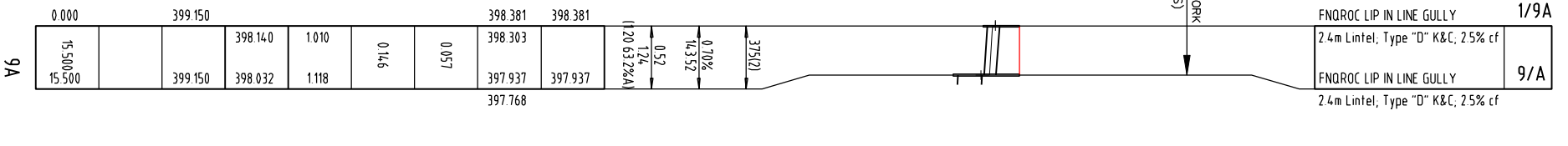
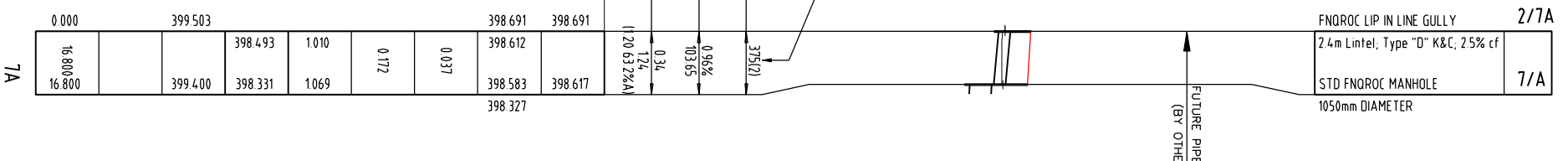
FOR DETAILS OF STORMWATER DRAINAGE REFER TO DWG. DB-ST1E-C19

NOTE:
PIPE CLASS TO BE VERIFIED WITH THE MANUFACTURER TO APPROPRIATELY SUIT THE DESIGN COVER

VERIFY ALL SERVICE CROSSING LEVELS PRIOR TO CONSTRUCTION

INDICATES PIPE DIAMETER
INDICATES PIPE CLASS

PIPE SIZE(mm) (class)	375(2)
PIPE GRADE %	0.96%
PIPE SLOPE 1 in X	103.65
FULL PIPE FLOW VELOCITY (m/s)	0.31
PART FLOW VELOCITY (m/s)	1.24 (120.632%AV)
WATER LEVEL IN STRUCTURE	398.617
HYDRAULIC GRADE LEVEL	398.583
PIPE FLOW (Cumecs)	0.037
PIPE CAPACITY AT GRADE (Cumecs)	0.172
DEPTH TO INVERT	1.069
INVERT LEVEL OF DRAIN	398.331
DESIGN SURFACE LEVEL	399.400
ROAD CHAINAGE (Offset)	399.503
RUNNING CHAINAGE	16.800



DESIGN DISCHARGE - Q2 = 0.325 cumecs
SLOPE - 1.0%
n = 0.033 (FOR TURF)
Q2 FLOW DEPTH - 309mm
Q2 FLOW VELOCITY - 0.833 m/s
Q100 FLOW DEPTH - 462mm
Q100 FLOW VELOCITY - 1.117 m/s

SECTION 'B'
TEMPERARY OUTLET DRAIN
N.T.S.

WHERE DIRECTED-PROVIDE TEMPORARY OUTLET HEADWALL TO 4375mm DIA. AND CONSTRUCT TEMPORARY OUTLET DRAIN TO DIRECT RUNOFF EXISTING NATURAL GULLY. HEADWALL TO BE REMOVED AND PIPEWORK EXTENDED WITH STAGE 4B CONSTRUCTION. TYPICAL TEMPORARY OUTLET DRAIN AS PER SECTION 'B' ON THIS DRAWING.

ALL CULVERTS UP TO 6600 ARE TO BE BLACKMAX OR APPROVED EQUIVALENT AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS

ISSUE FOR APPROVAL



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A ORIGINAL ISSUE FOR COMMENT	08/22
B ORIGINAL ISSUE FOR APPROVAL	11/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

DRAWING **STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 3 of 3**

DRAWN RMM	DATE 08/22
APPROVED RPEO	DATE
DWG. NO. AP-ST1314-C33	REVISION B

Robin Masingger Civil Design Consultant

Associated Consultant T.S. Aditi and Associates

Revision table with columns for REVISION, DATE

CLIENT BT, M & S STANKOVICH PTY LTD

DRAWING STORMWATER DRAINAGE CALCULATIONS TABLE SHEET 1 of 3

Approval table with columns for APPROVED, DATE, REVISED, DATE

STRUCTURE TYPES: FNOROC LIP IN LINE GULLY

STRUCTURE TYPES: FNOROC LIP IN LINE SAG GULLY

STRUCTURE TYPES: STD FNOROC MANHOLE

Main calculation table with columns: LOCATION, TIME, SUB-CATCHMENT RUNOFF, INLET DESIGN, DRAIN DESIGN, HEADLOSSES, PART FULL, DESIGN LEVELS. Rows include design details for various catchment areas and pipe sections.

CALCULATIONS TABLE

ISSUE FOR APPROVAL

LOCATION	TIME	INLET DESIGN	DRAIN DESIGN	HEADLOSSES	PART FULL	DESIGN LEVELS																																														
DESIGN AEP	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	LAND USE	SLOPE OF CATCHMENT	SUB-CATCHMENT TIME OF CONC.	RAINFALL INTENSITY	10yr RUNOFF CO-EFFICIENT	CO-EFFICIENT OF RUNOFF	SUB-CATCHMENT AREA	EQUIVALENT AREA	SUM OF (C x A)	SUB-CATCHMENT DISCHARGE	FLOW IN K&C (INC. BYPASS)	ROAD GRADE AT INLET	MINOR FLOW ROAD CAPACITY	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	CRITICAL TIME OF CONC.	RAINFALL INTENSITY	TOTAL (C x A)	MAJOR TOTAL FLOW	MAJOR SURFACE FLOW CAPACITY	MAJOR SURFACE FLOW	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE / BOX DIMENSIONS (CLASS)	FLOW VELOCITY FULL (PIPE GRADE VELOCITY)	TIME OF FLOW IN REACH	STRUCTURE CHART No.	STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS	VELOCITY HEAD	U/S HEADLOSS COEFFICIENT	U/S PIPE STRUCT. HEADLOSS	LAT. HEADLOSS CO-EFFICIENT	LAT. PIPE STRUCT. HEADLOSS	W.S.E CO-EFFICIENT	CHANGE IN W.S.E	PIPE FRICTION SLOPE	PIPE FRICTION HEADLOSS (L x Sf)	DEPTH	VELOCITY	OBVERT LEVELS	DRAIN SECTION H.G.L.	UPSTREAM H.G.L.	LAT. H.G.L.	W.S.E.	SURFACE OR K&C INVERT LEVEL	STRUCTURE No.
100	100	10/20	100		5.00	5.00	113	0.72	0.21	0.087	0.18	0.18	112	112	0.00	130	1	UNBLOCKED	0	UNBLOCKED	511	113	0.186	118	118	78	78	0.4	450(2)	0.6	0.35	0.11	0.34	0.06	0.86	0.237	0.014	0.952	0.87	0.95	0.02	0.02	0.07	0.220	123	398.482	398.780	398.812	399.281	399.313	399.500	100
500	500	10/20	500		5.00	5.00	246	0.72	0.21	0.087	0.18	0.18	246	246	0.00	240	1	UNBLOCKED	0	UNBLOCKED	511	246	0.186	246	246	144	144	0.4	450(2)	0.6	0.35	0.11	0.34	0.06	0.86	0.237	0.014	0.952	0.87	0.95	0.02	0.02	0.07	0.220	123	398.482	398.780	398.812	399.281	399.313	399.500	100
500	500	10/20	500		5.00	5.00	82	0.72	0.21	0.087	0.18	0.18	82	82	0.00	130	1	UNBLOCKED	0	UNBLOCKED	511	82	0.186	82	82	32	32	0.4	450(2)	0.6	0.35	0.11	0.34	0.06	0.86	0.237	0.014	0.952	0.87	0.95	0.02	0.02	0.07	0.220	123	398.482	398.780	398.812	399.281	399.313	399.500	100
500	500	10/20	500		5.00	5.00	82	0.72	0.21	0.087	0.18	0.18	82	82	0.00	130	1	UNBLOCKED	0	UNBLOCKED	511	82	0.186	82	82	32	32	0.4	450(2)	0.6	0.35	0.11	0.34	0.06	0.86	0.237	0.014	0.952	0.87	0.95	0.02	0.02	0.07	0.220	123	398.482	398.780	398.812	399.281	399.313	399.500	100
500	500	10/20	500		5.00	5.00	82	0.72	0.21	0.087	0.18	0.18	82	82	0.00	130	1	UNBLOCKED	0	UNBLOCKED	511	82	0.186	82	82	32	32	0.4	450(2)	0.6	0.35	0.11	0.34	0.06	0.86	0.237	0.014	0.952	0.87	0.95	0.02	0.02	0.07	0.220	123	398.482	398.780	398.812	399.281	399.313	399.500	100
500	500	10/20	500		5.00	5.00	82	0.72	0.21	0.087	0.18	0.18	82	82	0.00	130	1	UNBLOCKED	0	UNBLOCKED	511	82	0.186	82	82	32	32	0.4	450(2)	0.6	0.35	0.11	0.34	0.06	0.86	0.237	0.014	0.952	0.87	0.95	0.02	0.02	0.07	0.220	123	398.482	398.780	398.812	399.281	399.313	399.500	100

CALCULATIONS TABLE

STRUCTURE TYPES:

- 1 FNOROC LIP IN LINE GULLY
2.4m Lintel, Type "D" K&C,
(STANDARD STRUCTURE SIZE UNLESS NOTED OTHERWISE ON LONG SECTION)
- 13S.06 FNOROC LIP IN LINE SAG GULLY
2.4m Lintel, Type "D" K&C,
(STANDARD STRUCTURE SIZE UNLESS NOTED OTHERWISE ON LONG SECTION)
- 24 STD FNOROC MANHOLE
1050mm DIAMETER
(UNLESS NOTED OTHERWISE ON THE LONG SECTIONS)

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REVISION	DATE
A ORIGINAL ISSUE FOR APPROVAL	11/22
B ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT. M & S STANKOVICH PTY LTD**
PROJECT **AMAROO DEVELOPMENT**
STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING **STORMWATER DRAINAGE**
CALCULATIONS TABLE
SHEET 2 of 3

DRAWN **RMM** DATE **08/22**
APPROVED **RPEO**
DWG. NO. **AP-ST1314-C35** REVISION **B**

ISSUE FOR APPROVAL

CATCHMENT TABLE table with columns: CATCHMENT NAME, CATCHMENT AREA (ha), RUNOFF COEFF. MINOR, RUNOFF COEFF. MAJOR, IMPERVIOUS CATCHMENT AREA MINOR (ha), IMPERVIOUS CATCHMENT AREA MAJOR (ha)

CATCHMENT TABLE

Project File: Amaroos\1\TABLES\FDXX

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STRUCTURE SCHEDULE table with columns: PIT, INTERNAL, INLET, MANHOLE, OUTLET, INVERT, F.S.L, DEPTH

STRUCTURE SCHEDULE

Revision table with columns: REVISION, DATE

CLIENT BT, M & S STANKOVICH PTY LTD PROJECT AMAROO DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA

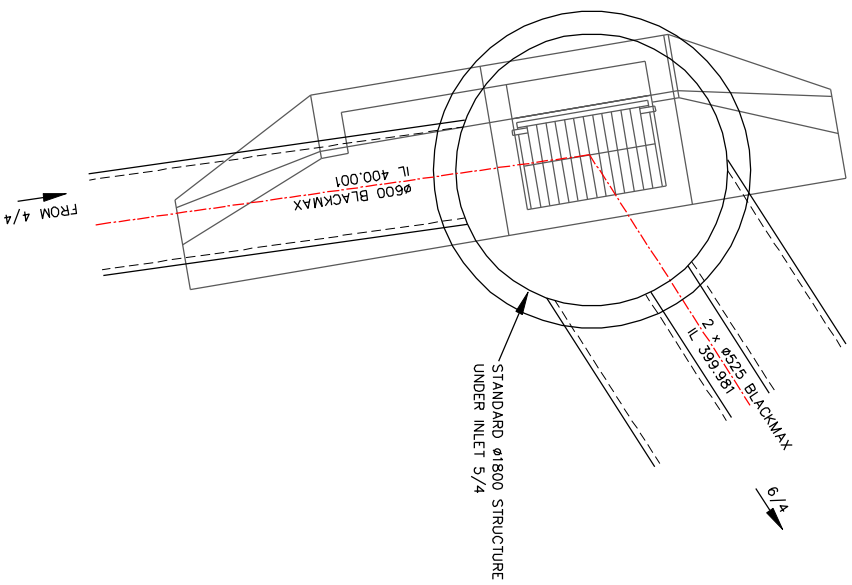
DRAWING STORMWATER DRAINAGE CATCHMENT TABLE, STRUCTURES SCHEDULE AND PIPE TABLE

DATE 08/22 APPROVED RPEO AP-ST1314-C37

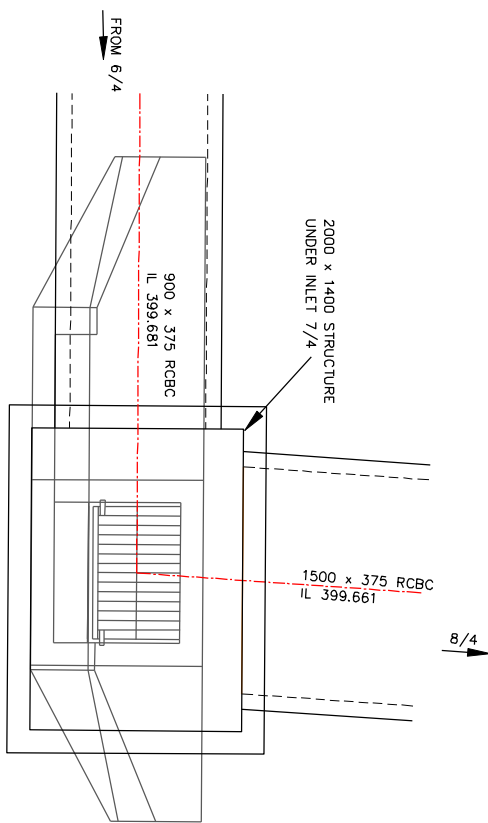
PIPE TABLE table with columns: STRUCTURE LINE NAME, DESCRIPTION, PIPE, SURFACE LEVELS, PIPE SIZE (Class), PIPE INVERT LEVELS, PIPE GRADE (%)

PIPE TABLE

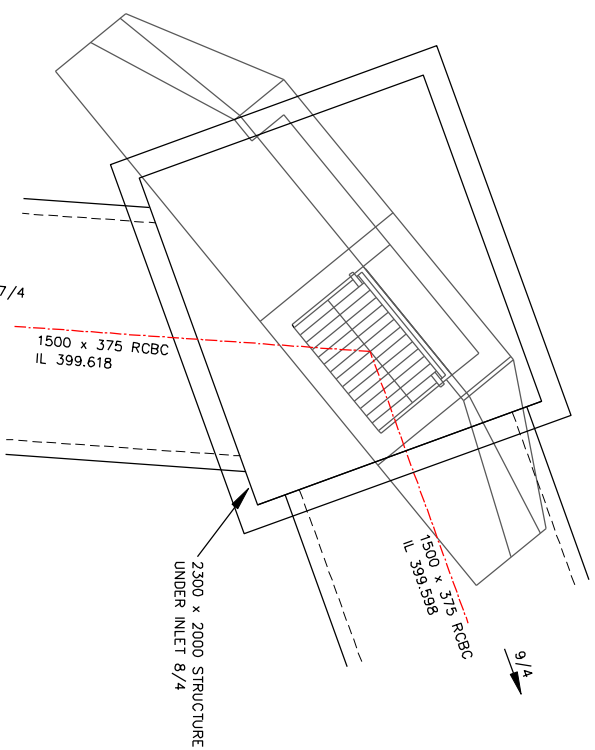
ISSUE FOR APPROVAL



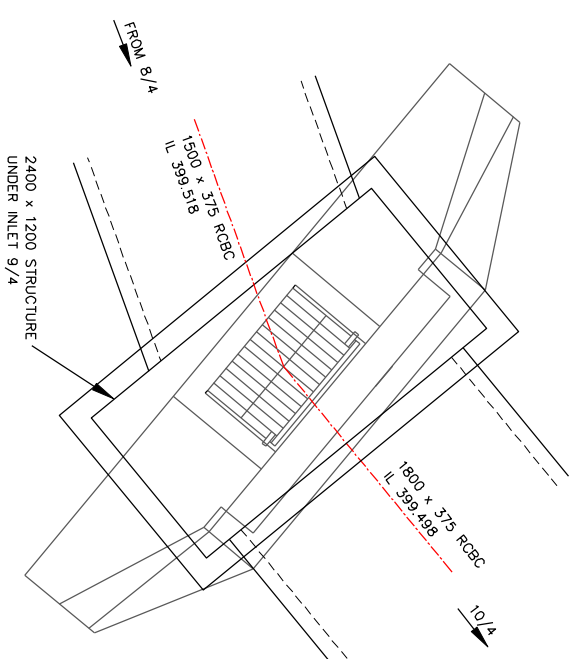
INLET 5/4
SCALE 1:50 (A3 SIZE)



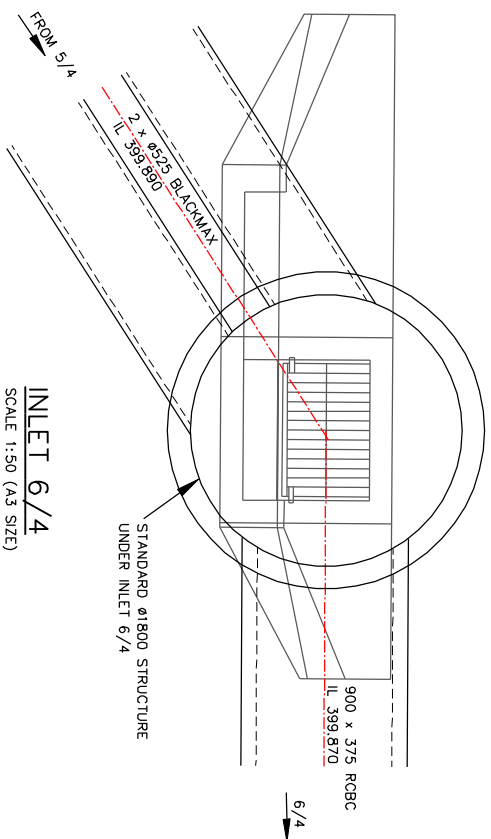
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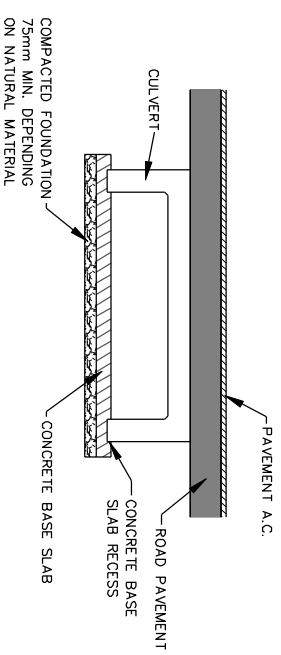
INLET 8/4
SCALE 1:50 (A3 SIZE)



INLET 9/4
SCALE 1:50 (A3 SIZE)



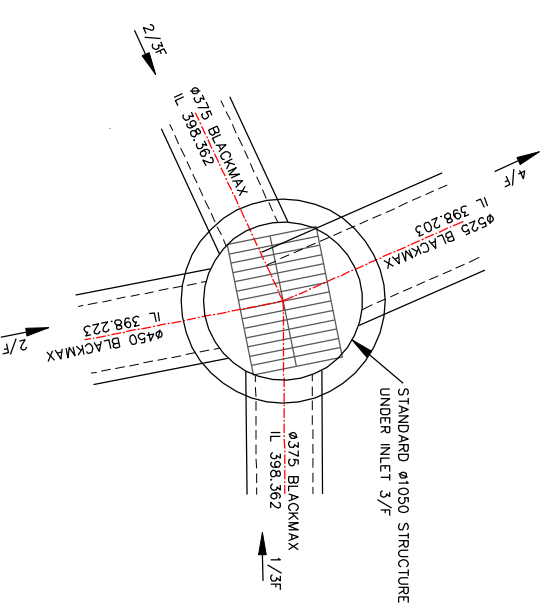
INLET 6/4
SCALE 1:50 (A3 SIZE)



TYPICAL RCBC INSTALLATION SECTION
SCALE 1:50 (A3 SIZE)

NOTE:
INSTALLATION OF THE REINFORCED CONCRETE BOX CULVERTS TO BE IN ACCORDANCE WITH THE CULVERT MANUFACTURERS SPECIFICATIONS

FOR TYPICAL TOP SLAB REINFORCEMENT FOR THE RECTANGULAR STRUCTURES REFER TO FNORC STANDARD DRAWING 1086.



INLET 3/4
SCALE 1:50 (A3 SIZE)

ISSUE FOR APPROVAL

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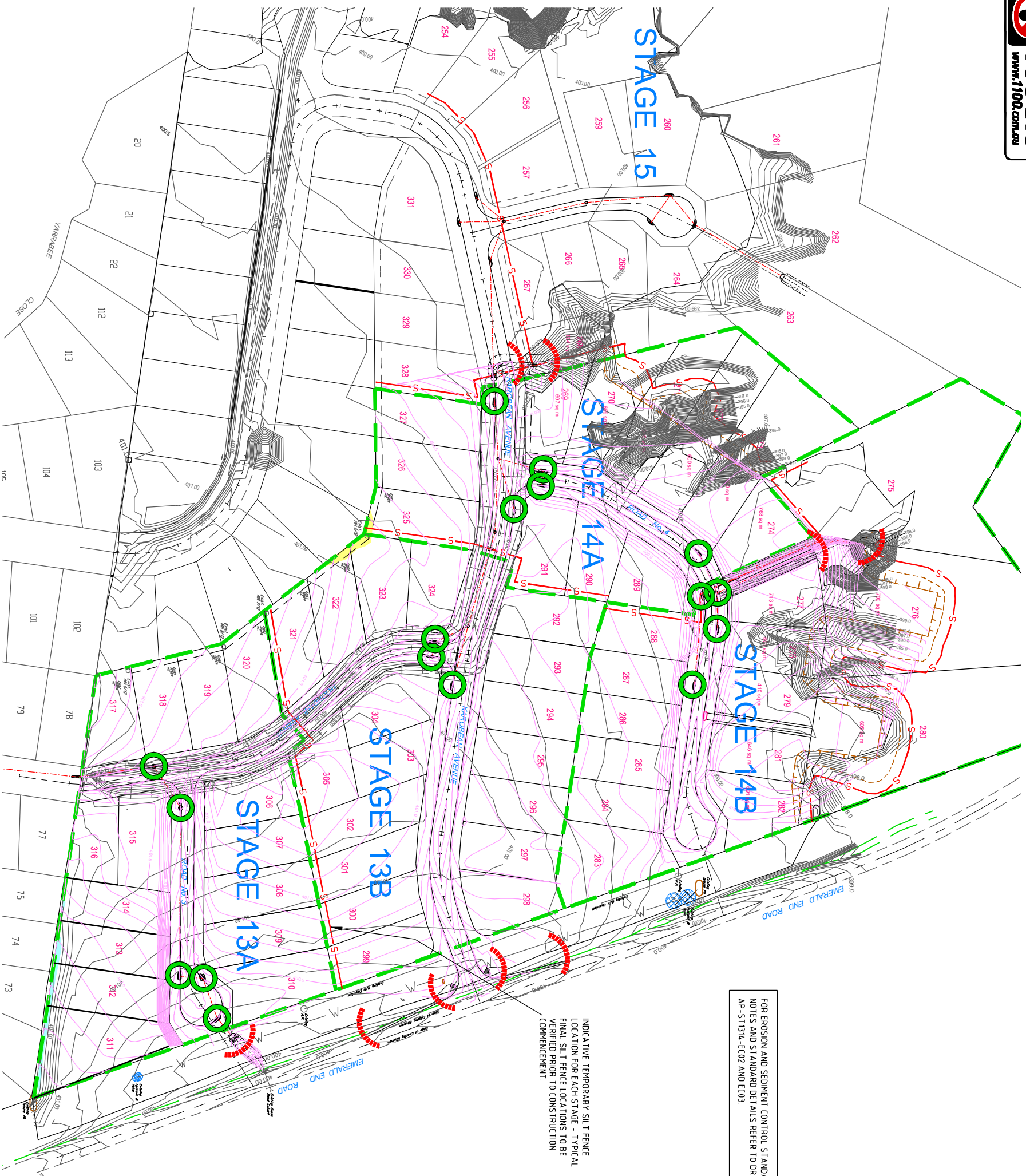
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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
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CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

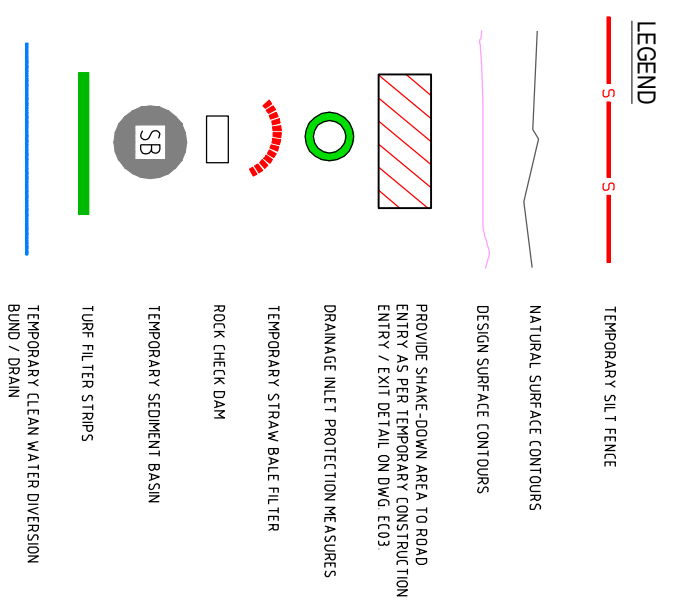
DRAWING **STORMWATER DRAINAGE STRUCTURE DETAILS PLAN**

APPROVED	DATE
RPM	08/22
AP-ST1314-C38	B



FOR EROSION AND SEDIMENT CONTROL STANDARD NOTES AND STANDARD DETAILS REFER TO DRAWINGS AP-S1314-EC02 AND EC03

INDICATIVE TEMPORARY SILT FENCE LOCATION FOR EACH STAGE - TYPICAL FINAL SILT FENCE LOCATIONS TO BE VERIFIED PRIOR TO CONSTRUCTION COMMENCEMENT.



- EROSION AND SEDIMENT CONTROL NOTES:**
- 1 THE CONTRACTOR SHALL PREPARE AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH THE PROVISIONS OF THE FNROC DEVELOPMENT MANUAL.
 - 2 EXACT LOCATION OF SEDIMENT CONTROL DEVICES (SCD) TO BE AGREED ON SITE AND IN ACCORDANCE WITH THE CONTRACTORS STORMWATER MANAGEMENT PLAN (SWMMP).
 - 3 ALL SCD TO BE CONSTRUCTED IN ACCORDANCE WITH THE INSTITUTE OF ENGINEERS GUIDELINES.
 - 4 DESIGN CONTOURS SHOWN ARE AT 0.2M INTERVALS.
 - 5 INSTALL PERIMETER SCD AND STABILISED ENTRY/EXIT POINT PRIOR TO DISTURBANCE.
 - 6 STOCKPILE LOCATIONS TO BE AGREED ON SITE WITH ENGINEER. STOCKPILES TO BE PROTECTED AS THEY ARE CREATED WITH UP-SLOPE PERIMETER BANK AND DOWN SLOPE SEDIMENT FENCE.
 - 7 SEDIMENT FENCES ARE TO BE INSTALLED SUCH THAT THE BASE OF THE FENCE IS PLACED 150mm MIN. BELOW GROUND LEVEL AND ANCHORED SECURELY IN POSITION.
 - 8 ALL VEHICLES AND EQUIPMENT ENTRY/EXIT POINTS SHALL HAVE SHAKER GRIDS TO PREVENT VEHICLES FROM TRACKING MUD AND SOIL OFF SITE. LOCATIONS TO BE DETERMINED ON SITE.
 - 9 SAND BAG CHECK DAM INSTALLATION TO CORRESPOND WITH THE INSTALLATION OF STORMWATER MANHOLES AND KERB & CHANNEL.
 - 10 PLACE 300mm TURF STRIP BEHIND KERB IN ACCORDANCE FNROC STD DWG SS010.
 - 11 GRASS SEEDING, HYDROMULCH AND/OR TURF TO BE APPLIED TO FINISHED IMMEDIATELY FOLLOWING COMPLETION IN ACCORDANCE WITH THE DEVELOPMENT MANUAL.
 - 12 ALL SEDIMENT CONTROL MEASURES ARE TO REMAIN IN PLACE UNTIL THE END OF THE MAINTENANCE PERIOD UNLESS NOTED OTHERWISE. ALL SEDIMENT CONTROL DEVICES ARE TO BE FULLY MAINTAINED IN AN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND THE MAINTENANCE PERIOD.

MAINTENANCE:

- 1 CONTRACTOR TO MONITOR SCD ON A DAILY BASIS OR AS DETAILED IN COUNCIL APPROVED SWMP.
- 2 CONTRACTOR TO ENSURE ALL SCD ARE FULLY MAINTAINED AND CLEAN UNTIL 80% GRASS COVER.
- 3 WATERING AND MAINTENANCE OF GRASSSED AREAS TO BE IN ACCORD. WITH CLAUSE WITH 4.8 OF THE FNROC DEVELOPMENT MANUAL.

ISSUE FOR APPROVAL

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CLIENT BT, M & S STANKOVICH PTY LTD PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA		DRAWING EROSION & SEDIMENT CONTROL PLAN STAGES 13 & 14	
B ORIGINAL ISSUE FOR APPROVAL A ORIGINAL ISSUE FOR COMMENT REVISION		DATE 11/22 DATE 08/22 DATE	
APPROVED RYM DATE 08/22		APPROVED RPEO DATE 08/22	
DWG. NO. AP-ST1314-EC01		REVISION B	
PLOT DATE: 10 November, 2022 - 12:02pm			



SPECIFICATIONS FOR SITE REVEGETATION

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION, EXTENT, AND APPLICATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF APPLICATION CONTACT THE ENGINEER, LANDSCAPE ARCHITECT OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. ENSURE ALL NECESSARY SOIL TESTING (e.g. SOIL pH, NUTRIENT LEVELS) AND ANALYSIS HAS BEEN COMPLETED, AND REQUIRED SOIL ADJUSTMENTS PERFORMED PRIOR TO PLANTING.
3. APPLY SOIL CONDITIONERS AND FERTILISER AS SPECIFIED ON THE APPROVED PLANS. RIP THE SOIL 100 TO 150mm TO MIX THE COMPONENTS INTO THE SOIL AND TO LOOSEN AND ROUGHEN THE SOIL SURFACE BEFORE SEEDING.
4. WHERE POSSIBLE, THERE SHOULD BE SUFFICIENT SOIL DEPTH TO PROVIDE AN ADEQUATE ROOT ZONE. THE DEPTH TO ROCK OR IMPERMEABLE LAYERS SUCH AS HARDPANS SHOULD BE 300mm OR MORE, EXCEPT ON SLOPES STEEPER THAN 2:1(H:V) WHERE SUCH SOIL DEPTH MAY NOT BE FEASIBLE.
5. ENSURE THE SOIL pH IS WITHIN THE SPECIFIED RANGE.
6. APPLY SEED UNIFORMLY BY HAND OR WITH A CYCLONE SEEDER, DROP-TYPE SPREADER, DRILL, HYDROSEEDER, HYDROMULCHER, OR OTHER SUITABLE EQUIPMENT AS SPECIFIED.
7. WHEN USING BROADCAST-SEEDING METHODS, SUBDIVIDE THE AREA INTO WORKABLE SECTIONS AND APPLY ONE-HALF THE SPECIFIED QUANTITY OF SEED WHILE MOVING BACK AND FORTH ACROSS THE AREA, MAKING A UNIFORM PATTERN. THEN APPLY THE SECOND HALF IN THE SAME WAY, BUT MOVING AT RIGHT ANGLES TO THE FIRST PASS. COVER BROADCAST SEED BY RAKING OR CHAIN DRAGGING. THEN FIRM THE SURFACE WITH A ROLLER TO PROVIDE GOOD SEED CONTACT.
8. APPLY SEED AT THE RECOMMENDED RATE, AND DISC OR OTHERWISE MECHANICALLY TREAT THE SURFACE TO BRING THE SEED INTO CONTACT WITH THE SOIL.
9. THE SEEDED AREA SHOULD BE MULCHED AS SPECIFIED IN THE APPROVED PLAN.

MAINTENANCE

1. DURING THE CONSTRUCTION PHASE, INSPECT THE TREATED AREA FORTNIGHTLY AND AFTER RUNOFF-PRODUCING RAINFALL. MAKE REPAIRS AS NEEDED.
2. WATERING THE VEGETATION PERIODICALLY IS ESSENTIAL, ESPECIALLY IN THE FIRST 7 DAYS AFTER ESTABLISHMENT. USE LOW-PRESSURE SPRAYS BECAUSE HIGH-PRESSURE JETS CAN WASH AWAY THE SEED AND MULCH COVER.
3. WATERING SHOULD START IMMEDIATELY AFTER PLANTING. WATERING SHOULD COMPLY WITH SPECIFICATIONS. GENERALLY WATERING SHOULD VARY ACCORDING TO WEATHER AND SOIL CONDITIONS. A TYPICAL WATERING SCHEDULE MAY CONSIST OF THE FOLLOWING:
 - (i) 25mm EVERY SECOND DAY FOR THE FIRST THREE WEEKS;
 - (ii) 25mm TWICE A WEEK FOR THE NEXT THREE WEEKS; AND
 - (iii) 25mm ONCE WEEKLY FOR A FURTHER TWO WEEKS.

MAINTENANCE CONT.

4. MONITOR SITE REVEGETATION, PARTICULARLY AFTER RAINFALL, AND APPROPRIATE MAINTENANCE AND/OR AMENDMENT TO ENSURE THAT THE REVEGETATION IS CONTROLLING EROSION AND STABILISING SOIL SLOPES AS REQUIRED.
5. WHERE PRACTICABLE, FILL IN, OR LEVEL OUT, ANY RILL EROSION BETWEEN PLANTS. IF EXCESSIVE EROSION OCCURS, THEN CONSIDER INCREASING THE PLANTING DENSITY, APPLYING APPROPRIATE EROSION CONTROL MEASURES, OR INTRODUCING ALTERNATIVE, NON-CLUMPING PLANT SPECIES
6. AREAS MUST BE RE-SEEDED AND MULCHED IF THE VEGETATION FAILS TO ESTABLISH OR IS DAMAGED BY RUNOFF OR CONSTRUCTION ACTIVITIES.
7. IF THE TEMPORARY VEGETATION COVER OR EROSION CONTROL MEASURE (e.g. MULCH COVER) SHOULD FAIL FOR ANY REASON BEFORE ESTABLISHMENT OF THE PERMANENT VEGETATION COVER, THEN IT MUST BE REPLACED WITH AN APPROPRIATE TYPE OF COVER SUFFICIENT TO CONTROL SOIL EROSION.
8. IF THE PERMANENT VEGETATION SHOULD FAIL TO ESTABLISH OR TO ADEQUATELY RESTRAIN EROSION FOR ANY REASON DURING THE CONSTRUCTION OR MAINTENANCE PERIOD, THE AREA SHOULD BE REVEGETATED OR PROTECTED WITH OTHER EROSION CONTROL MEASURES AS APPROPRIATE.
9. IN AREAS WHERE THE OBTAINED VEGETATION COVER IS CONSIDERED INADEQUATE FOR EROSION CONTROL, THE AFFECTED AREA SHOULD BE OVER-SEEDED AND FERTILISED USING HALF THE ORIGINALLY SPECIFIED RATES, OR AS DIRECTED.
10. MAINTAIN GRASS BLADE LENGTH AT A MINIMUM 50mm HEIGHT WITHIN MEDIUM TO HIGH VELOCITY DRAINAGE AREAS, AND 20 TO 50mm WITHIN LOW VELOCITY FLOW PATHS.
11. WHERE NECESSARY, OR AS DIRECTED BY THE SITE SUPERVISOR, SLASH THE TEMPORARY CROPPGRASS COVER TO ALLOW THE SUCCESSFUL GROWTH OF THE UNDERLYING PERMANENT VEGETATION COVER.
12. CONTROL WEED GROWTH WITHIN 1m OF IMMATURE TREES FOR 6 TO 12 MONTHS FOR FAST GROWING SPECIES, AND 18 TO 20 MONTHS FOR SLOWER GROWING SPECIES, OR UNTIL THE END OF THE SPECIFIED MAINTENANCE PERIOD.
13. WHERE MULCH IS USED TO CONTROL WEED GROWTH, INSPECT AND WHERE NECESSARY, RENEW AT MAINTENANCE PERIODS NOT EXCEEDING 4 TO 6 MONTHS
14. APPLY ADDITIONAL SEED, MULCH AND/OR SOIL CONDITIONING AS REQUIRED. MULCHES USUALLY NEED TO BE MAINTAINED OR RENEWED (AS NECESSARY) 2 TO 3 TIMES A YEAR.
15. INSPECT AND WHERE NECESSARY REPAIR PROTECTIVE FENCING AT MAINTENANCE PERIODS NOT EXCEEDING 1 MONTH.
16. RE-FIRM PLANTS LOOSENED BY WIND-ROCK, LIVESTOCK OR WILDLIFE.
17. REPLACE DEAD OR SEVERELY RETARDED PLANTS.
18. PRUNE ANY PLANTS OF DEAD OR DISEASED PARTS. CUT OFF ALL DAMAGED TREE LIMBS ABOVE THE TREE COLLAR AT THE TRUNK OR MAIN BRANCH. USE SEVERAL CUTS INCLUDING UNDERCUTTING TO AVOID PEELING BARK FROM THE HEALTHY AREAS OF THE TREE.
19. DISPOSE OF CLEARED VEGETATION IN AN APPROPRIATE MANNER SUCH AS CHIPPING OR MULCHING, ON-SITE BURIAL OR OFF-SITE DISPOSAL. CLEARED VEGETATION SHOULD NOT BE DUMPED NEAR A WATERCOURSE OR ON A FLOODPLAIN WHERE IS COULD BE REMOVED BY FLOODWATERS. VEGETATION SHOULD NOT BE BURNED ON-SITE WITHOUT SPECIFIC APPROVAL FROM THE LOCAL AUTHORITY.
20. REPAIR DAMAGED TREE ROOTS BY CUTTING OFF THE DAMAGED AREAS AND SEALING THEM WITH AN APPROVED PRODUCT. SPREAD MOIST TOPSOIL OVER EXPOSED ROOTS

Classifications of sediment traps based on particle size

Classification	Minimum particle size	Typical trapped particles
Type 1	< 0.045mm	Clay, Silt & Sand
Type 2	0.045mm to 0.14mm	Silt & Sand
Type 3	> 0.14mm	Sand
Supplementary	> 0.42mm	Coarse Sand

NOTE - TESTING AND CLASSIFICATION MUST BE COMPLETED AND FORWARDED TO SUPERINTENDENT FOR CONFIRMATION PRIOR TO THE COMMENCING EARTHWORKS RESULTS MAY VARY ESC CONTROLS.

FOR GENERAL SEDIMENT AND EROSION CONTROL DETAILS REFER TO DRAWING AP-ST1314-EC03

ISSUE FOR APPROVAL

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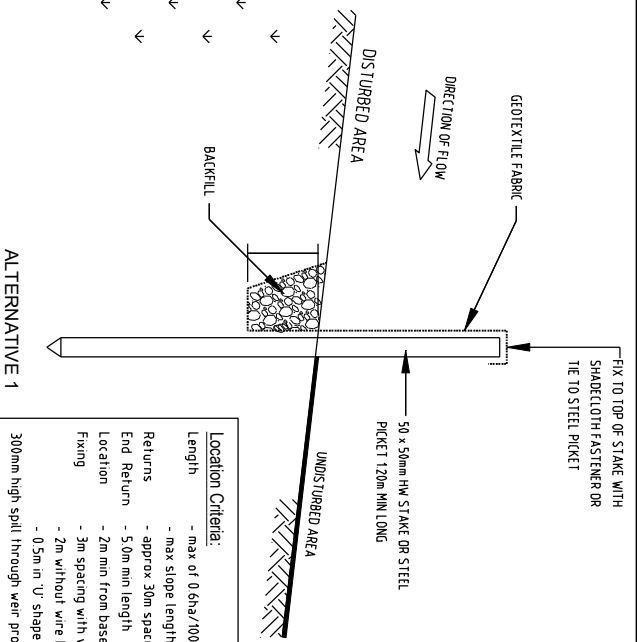
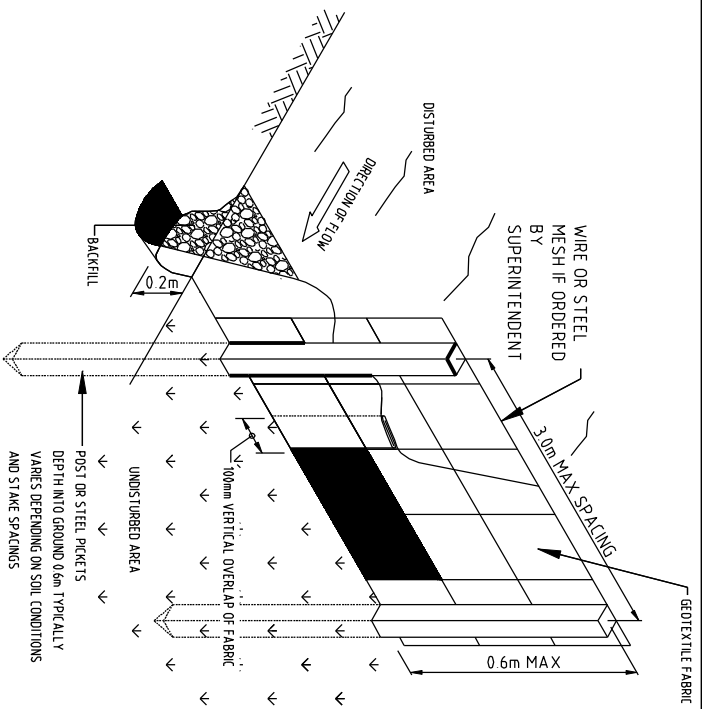
Associated Consultant
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REVISION	ISSUE FOR APPROVAL	DATE
A	ORIGINAL ISSUE FOR COMMENT	08/22
B	ORIGINAL ISSUE FOR APPROVAL	11/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

DRAWING **EROSION & SEDIMENT CONTROL**
GENERAL NOTES PLAN

DRAWN	DATE
RMM	08/22
APPROVED	DATE
RPEC	
DWG. NO.	REVISION
AP-ST1314-EC02	B



ALTERNATIVE 1

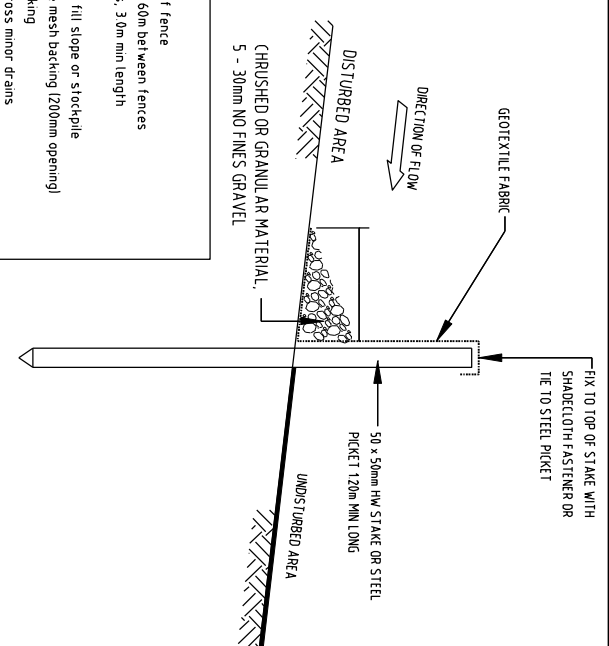
NOTE: 300mm HIGH SPILL THROUGH WEB PROVIDED AT 20M SPACINGS FOR FENCES INSTALLED ALONG CONTOURS TO CONTROL OVERFLOW

Location Criteria:

- max of 0.6ha/100m of fence
- max slope length of 60m between fences
- approx 30m spacings, 3.0m min length
- 5.0m min length
- 2m min from base of fill slope or stockpile
- 3m spacing with wire mesh backing (2000mm opening)
- 2m without wire backing
- 0.5m in 'U' shape across minor drains

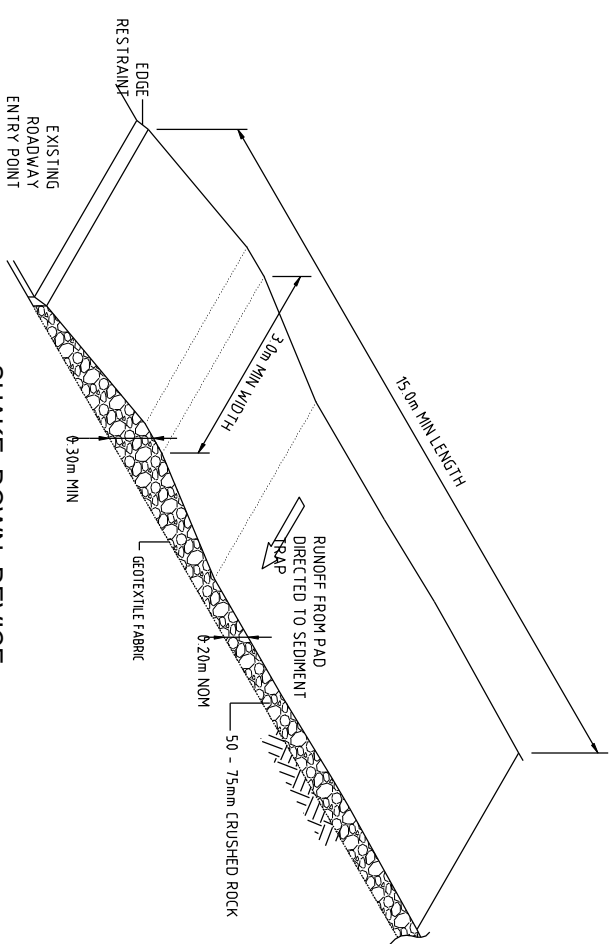
300mm high spill through web provided at low points and 20m spacings for fences installed along contours to control overflow, unless directed otherwise by superintendent.

ALTERNATIVE 2



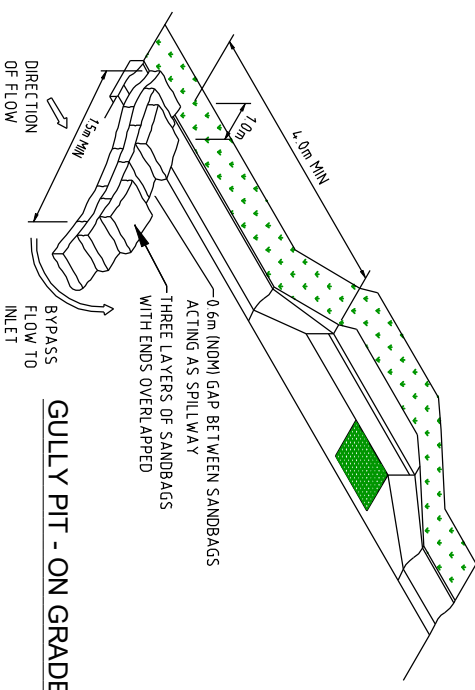
GEOTEXTILE SEDIMENT FENCE

N.T.S.



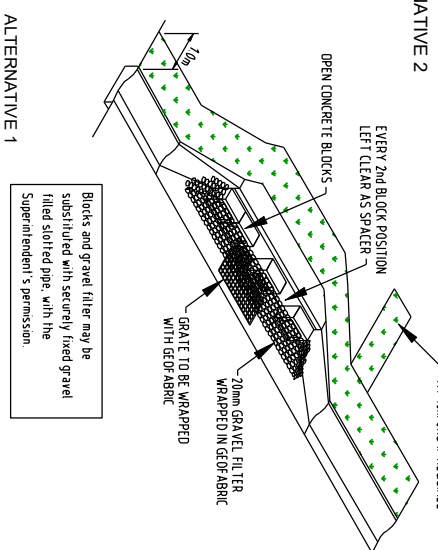
SHAKE DOWN DEVICE

N.T.S.



GULLY PIT - ON GRADE

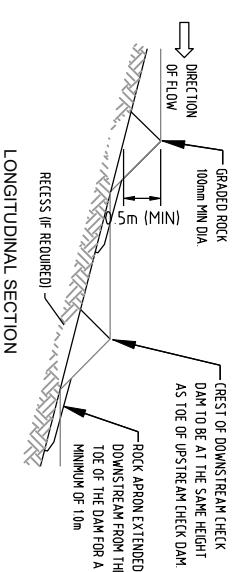
N.T.S.



GULLY PIT - SAG TYPE

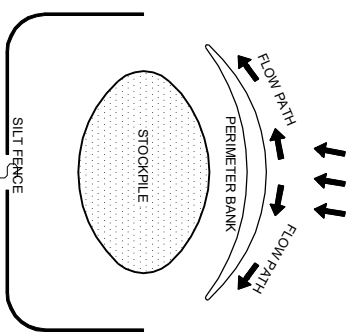
ALTERNATIVE 2

FURTHER ALTERNATIVES TO STORMWATER GULLY TREATMENTS ARE TO BE VERIFIED BY THE SUPERVISOR IN CONSULTATION WITH THE COUNCIL REPRESENTATIVE.



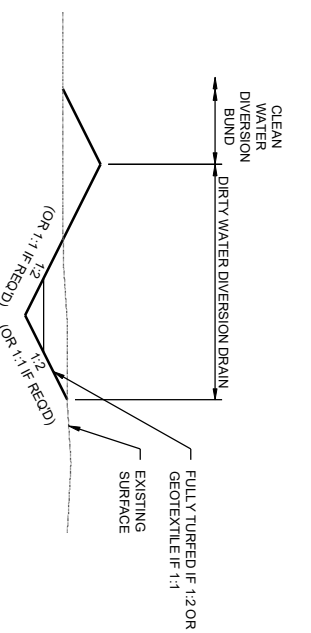
STORMWATER GULLY TREATMENTS

N.T.S.



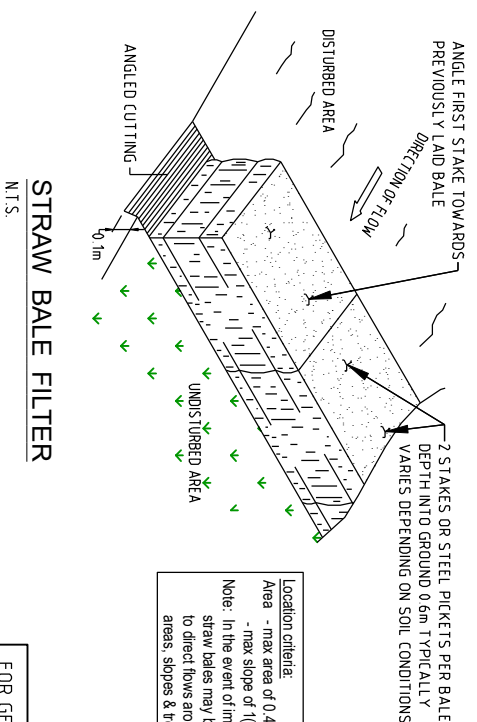
STOCKPILE EROSION PREVENTION DETAIL

N.T.S.



CLEAN WATER / DIRTY WATER DIVERSION DETAIL

N.T.S.



STRAW BALE FILTER

N.T.S.

Location criteria:

- max area of 0.4ha
- max slope of 1(v) : 2(h)

Note: In the event of imminent rainfall, straw bales may be temporarily used to direct flows around excavated areas, slopes & benches.

CHECK DAM

N.T.S.

- NOTES
- Where slope of channel exceeds 5%, provide rock check dams at 3m spacing
 - 500mm deep use sand/gravel filled bags
 - 500mm deep use rock check dams
 - for slopes > 1:10 use recessed rock check dams

FOR GENERAL SEDIMENT AND EROSION CONTROL NOTES REFER TO DRAWINGS AP-ST1314-EC01 AND EC02

ISSUE FOR APPROVAL

Reference Document: IECA 2008, Best Practice Erosion and Sediment Control. International Erosion Control Association (Australia) Picton, NSW.

NOTE: Variations/Alternatives (eg PMCA standards) may be used with the Superintendent's permission.



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Ph. 0407 969 040
Email - trevor.adil@gmail.com

REVISION	DATE	FOR COMMENT
A	08/22	ORIGINAL ISSUE
B	11/22	ORIGINAL ISSUE FOR APPROVAL

CLIENT: BT, M & S STANKOVICH PTY LTD
PROJECT: AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING: EROSION & SEDIMENT CONTROL
GENERAL DETAILS PLAN

DATE	DATE
08/22	08/22

APPROVED: RYM
DWG. NO: AP-ST1314-EC03

Robin Mansinger
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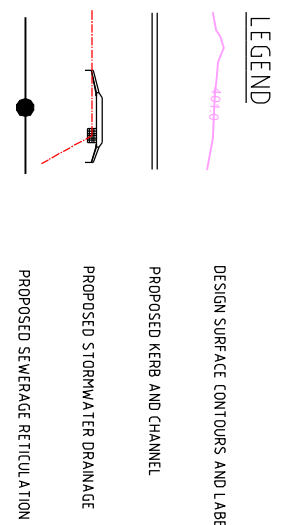
REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT: **BT, M & S STANKOVICH PTY LTD**
PROJECT: **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

DRAWING: **SEWERAGE RETICULATION LAYOUT PLAN**
STAGE 13A
SHEET 1 of 5

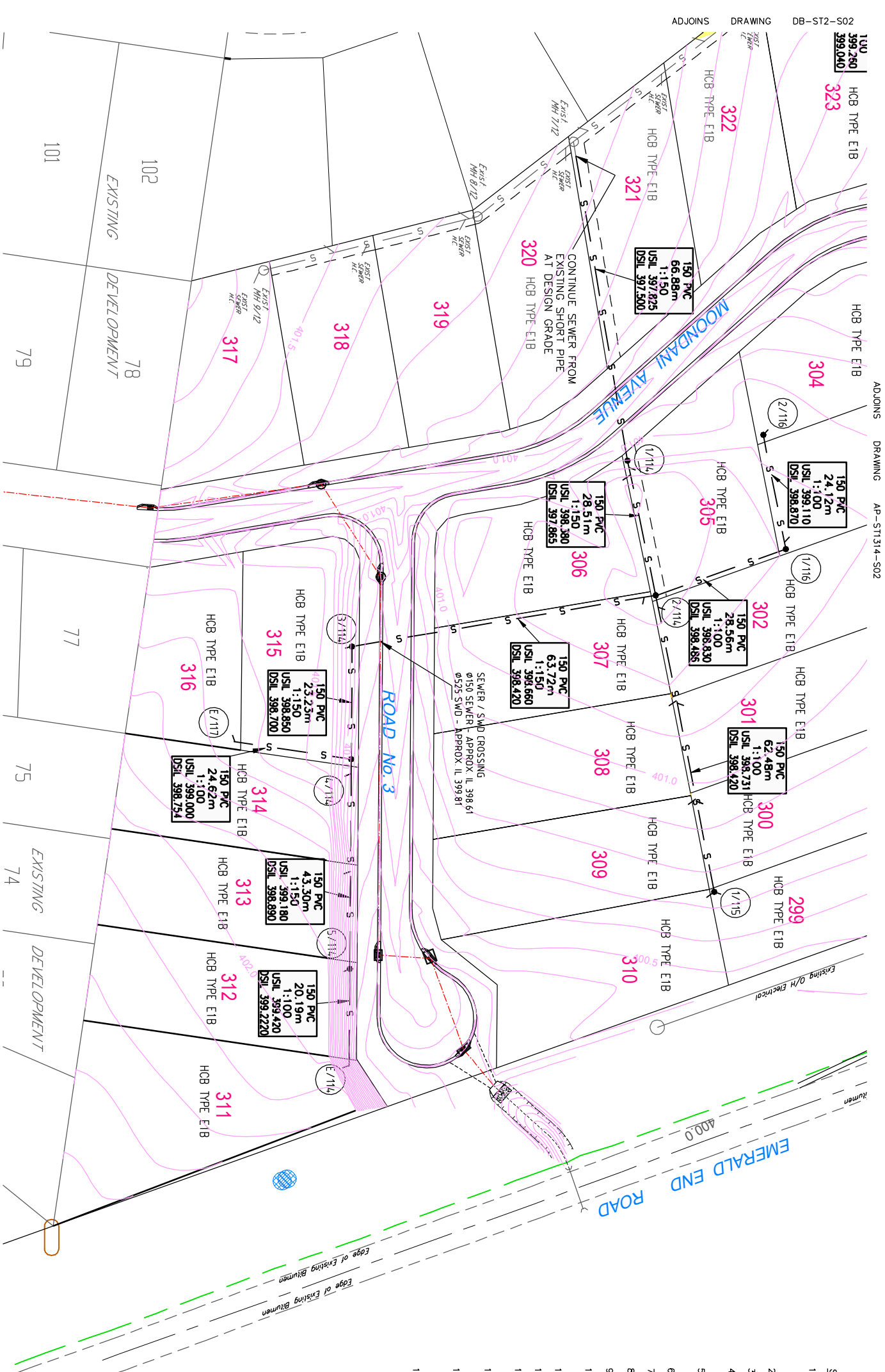
DATE	REVISION
08/22	B

FOR ASSOCIATED LONGITUDINAL SECTIONS REFER TO DRAWINGS AP-ST1314-S06 TO S08



CONTROL STATIONS

Point	Easting	Northing	Elevation
PSM 182856	33354.9 907	812074.176	399.855
PSM 168684	334232.225	8120673.283	4.01463
STN 1 (Pnl)	333456.097	8120760.320	399.385
STN 2 (Pnl)	333961.659	8120661.682	4.01981
STN 3 (Pnl)	333979.294	812054.9 185	4.02459



- SEWER NOTES**
- ALL SEWERS Ø150 PVC CLASS SEH UNO. SEWER MANHOLES ARE TO BE LOCATED 1.5m FROM FRONT BOUNDARIES TO CENTRE OF MANHOLE AND 0.8m FROM SIDE AND REAR BOUNDARIES TO CENTRE OF MANHOLE U.N.O.
 - REFER TO FNROC STANDARD DRAWINGS S3000 TO S3015 FOR SEWER CONSTRUCTION DETAILS.
 - REFER DWG AP18-018-C09 FOR SEWER LONGITUDINAL SECTIONS.
 - THE CONTRACTOR IS TO CONFIRM THE LOCATIONS AND LEVELS OF EXISTING SERVICES PRIOR TO CONSTRUCTION COMMENCING.
 - CONNECTIONS TO EXISTING WATER & SEWER MAINS TO BE UNDERTAKEN OR SUPERVISED BY MAREEBA SHIRE COUNCIL.
 - ENSURE MIN. 150mm CLEARANCE BETWEEN ALL SERVICES AND STORMWATER STRUCTURES.
 - SEWER TO HAVE MINIMUM 800mm COVER UNDER ROADS AND 600mm ELSEWHERE.
 - ALL MANHOLES ARE TO FINISH 50mm ABOVE FINISHED DESIGN SURFACE LEVEL.
 - ALL TYPE EIB HCB'S TO BE FABRICATED FIBREGLASS, HEAVY DUTY, DEEP SEWER DROPS.
 - BRING ALL HCB'S TO SURFACE WITH A VERTICAL RISER FITTED WITH A BOLTED TRAP SCREW & CONCRETE SURROUND.
 - INSTALL A RED PAINTED STAR PICKET ADJACENT TO RISER, 1m HIGH.
 - MANHOLE COVERS ARE TO BE GAS TIGHT.
 - MANHOLE COVERS ARE TO BE LOCATED SUCH THAT THE POSITION OF THE ACCESS IS DIRECTLY OVER THE OUTLET PIPE.
 - THE INSTALLATION OF PRECAST MANHOLE COVERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDED PROCEDURES AND REQUIREMENTS.
 - WHERE MANHOLES OCCUR AT THE ENDS OF SEWER LINES, THE STUB FOR THAT END ALLOTMENT SHALL CONNECT INTO THE MANHOLE IN ORDER TO AVOID A DRY MANHOLE SITUATION.
 - DESIGN CONTOURS ARE 0.1M INTERVAL.

FNROC DRAWINGS

- S3000C SEWERAGE MANHOLES
- S3005D PROPERTY CONNECTION BRANCHES
- S3015C SEWER BEDDING AND TRENCH DETAILS
- S2015A MSC THRUST BLOCK DETAILS
- S3020D SEWERAGE PUMP STATION DETAILS
- S3025C SEWERAGE PUMP STATION PRECAST UNITS
- S3030B SEWERAGE PUMP STATION DETAILS
- S3035A PUMP STATION OVERTLOW

SEWER STRUCTURE SETOUT

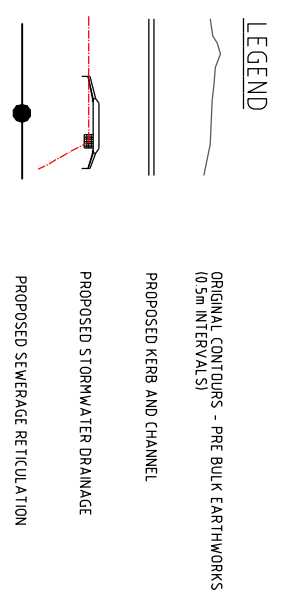
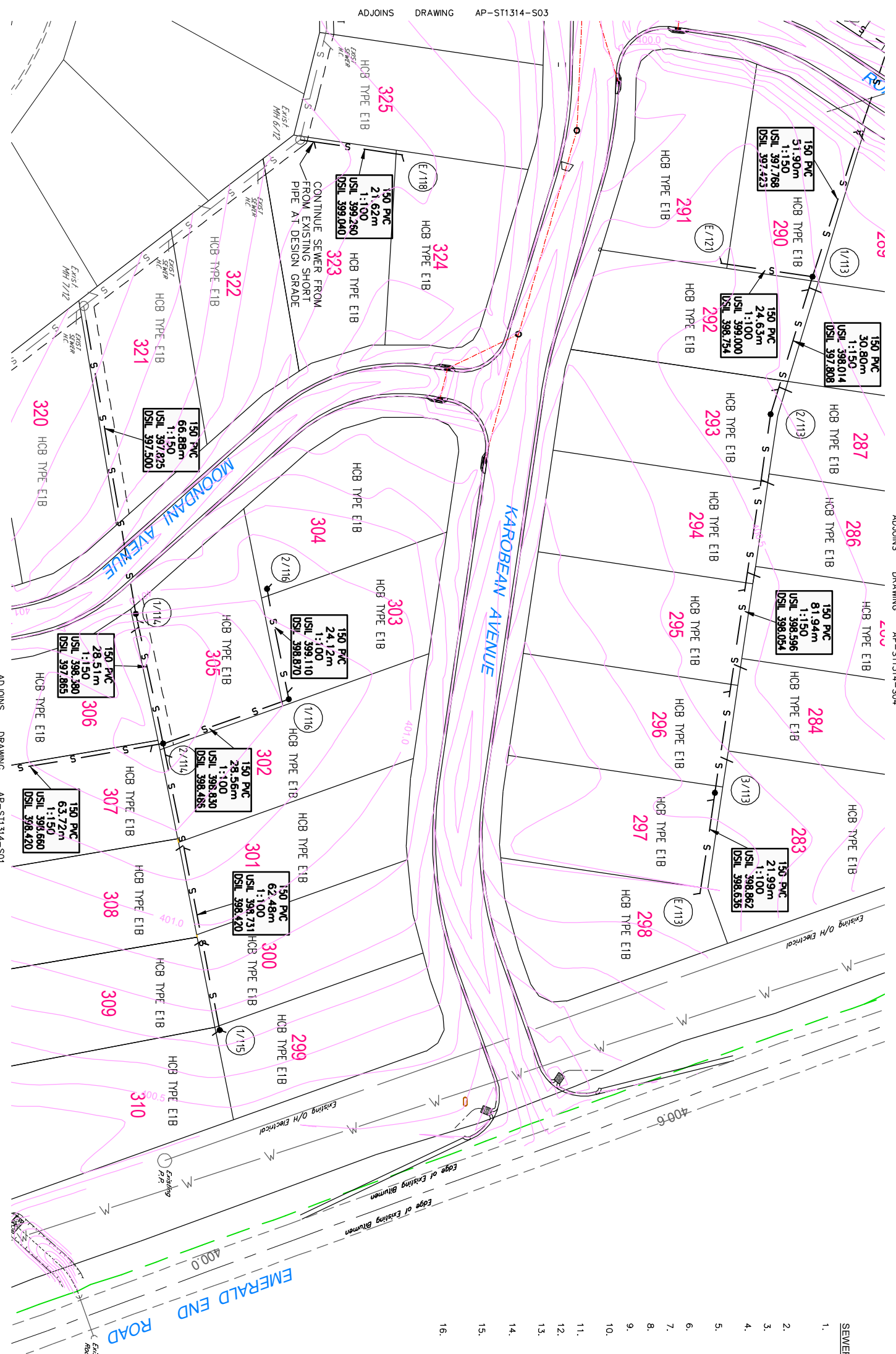
No.	EASTING	NORTHING	LEVEL	DESCRIPTION
1/114	334005.291	8120815.826	Top RL 401.10	Manhole Ø1050
2/114	334033.111	8120821.660	Top RL 401.35	Manhole Ø1050
3/114	334043.753	8120758.833	Top RL 400.85	Manhole Ø1050
4/114	334066.991	8120758.676	Top RL 400.72	Manhole Ø1050
5/114	334110.393	8120758.394	Top RL 400.56	Manhole Ø1050
E/114	334130.387	8120758.248	Top RL 400.60	Dead End
1/115	334094.492	8120833.793	Top RL 400.80	Manhole Ø1050
1/116	334023.597	8120848.577	Top RL 401.20	Manhole Ø1050
2/116	333999.940	8120843.897	Top RL 401.10	Manhole Ø1050
E/117	334063.417	8120734.308	Top RL 401.85	Dead End

ISSUE FOR APPROVAL





- SEWER NOTES**
- ALL SEWERS #150 PVC CLASS SEH U.N.O. SEWER MANHOLES ARE TO BE LOCATED 1.5m FROM FRONT BOUNDARIES TO CENTRE OF MANHOLE AND 0.8m FROM SIDE AND REAR BOUNDARIES TO CENTRE OF MANHOLE U.N.O.
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 - ENSURE MIN. 150mm CLEARANCE BETWEEN ALL SERVICES AND STORMWATER STRUCTURES.
 - SEWER TO HAVE MINIMUM 800mm COVER UNDER ROADS AND 600mm ELSEWHERE.
 - ALL MANHOLES ARE TO FINISH 50mm ABOVE FINISHED DESIGN SURFACE LEVEL.
 - ALL TYPE E1B HCB'S TO BE FABRICATED FIBREGLASS, HEAVY DUTY, DEEP SEWER DROPS.
 - BRING ALL HCB'S TO SURFACE WITH A VERTICAL RISER FITTED WITH A BOLTED TRAP SCREW & CONCRETE SURROUND.
 - INSTALL A RED PAINTED STAR PICKET ADJACENT TO RISER, 1m HIGH.
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 - WHERE MANHOLES OCCUR AT THE ENDS OF SEWER LINES, THE STUB FOR THAT END ALLOTMENT SHALL CONNECT INTO THE MANHOLE IN ORDER TO AVOID A DRY MANHOLE SITUATION.
 - DESIGN CONTOURS ARE 0.1M INTERVAL.



FOR ASSOCIATED LONGITUDINAL SECTIONS REFER TO DRAWINGS AP-ST1314-S06 TO S08

- FNOROC DRAWINGS**
- S3000C SEWERAGE MANHOLES
 - S3005D PROPERTY CONNECTION BRANCHES
 - S3015C SEWER BEDDING AND TRENCH DETAILS
 - S2015A MSC THRUST BLOCK DETAILS
 - S3020D SEWERAGE PUMP STATION DETAILS
 - S3025C SEWERAGE PUMP STATION PRECAST UNITS
 - S3030B SEWERAGE PUMP STATION DETAILS
 - S3035A PUMP STATION OVERFLOW

SEWER STRUCTURE SETOUT

No.	EASTING	NORTHING	LEVEL	DESCRIPTION
E/118	333907.000	8120873.076	Top RL 400.78	Dead End
1/113	333933.092	8120960.780	Top RL 400.32	Manhole Ø1050
2/113	333962.588	8120951.832	Top RL 400.42	Manhole Ø1050
3/113	334043.635	8120939.882	Top RL 400.68	Manhole Ø1050
E/113	334065.391	8120936.674	Top RL 400.83	Dead End
E/117	333930.178	8120941.014	Top RL 401.85	Dead End
1/114	334005.291	8120815.828	Top RL 401.10	Manhole Ø1050
2/114	334033.111	8120821.660	Top RL 401.35	Manhole Ø1050
1/115	334094.492	8120833.793	Top RL 400.80	Manhole Ø1050
1/116	334023.597	8120848.577	Top RL 401.20	Manhole Ø1050
2/116	333999.940	8120843.897	Top RL 401.10	Manhole Ø1050

CONTROL STATIONS

Point	Eastng	Northng	Elevation
PSM 182856	33354.9907	812074.1716	399.855
PSM 168684	334232.225	8120673.283	401.643
STN 1 (P/n)	333456.097	8120760.320	399.885
STN 2 (P/n)	333961.659	8120661.682	401.981
STN 3 (P/n)	333979.294	812054.985	402.459

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 Email - trevor.adli@gmail.com

REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
 PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **SEWERAGE RETICULATION LAYOUT PLAN**
 STAGE 13B
 SHEET 2 of 5

DRAWN	DATE
RMM	08/22

APPROVED	DATE
RPED	

DWG. NO.	REVISION
AP-ST1314-S02	B

PL01 DATE: 10 November, 2022 - 2:22pm



LEGEND

ORIGINAL CONTOURS - PRE BUILT EARTHWORKS (0.5m INTERVALS)

PROPOSED KERB AND CHANNEL

PROPOSED STORMWATER DRAINAGE

PROPOSED SEWERAGE RETICULATION

STAGE BOUNDARY

FOR ASSOCIATED LONGITUDINAL SECTIONS REFER TO DRAWINGS AP-ST1314-S06 TO S08

- SEWER NOTES**
- ALL SEWERS Ø150 PVC CLASS SEH U.N.O. SEWER MANHOLES ARE TO BE LOCATED 1.5m FROM FRONT BOUNDARIES TO CENTRE OF MANHOLE AND 0.8m FROM SIDE AND REAR BOUNDARIES TO CENTRE OF MANHOLE U.N.O.
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 - CONNECTIONS TO EXISTING WATER & SEWER MAINS TO BE UNDERTAKEN OR SUPERVISED BY MAREEBA SHIRE COUNCIL.
 - ENSURE MIN. 150mm CLEARANCE BETWEEN ALL SERVICES AND STORMWATER STRUCTURES.
 - SEWER TO HAVE MINIMUM 800mm COVER UNDER ROADS AND 600mm ELSEWHERE.
 - ALL MANHOLES ARE TO FINISH 50mm ABOVE FINISHED DESIGN SURFACE LEVEL.
 - ALL TYPE EIB HCB'S TO BE FABRICATED FIBREGLASS, HEAVY DUTY, DEEP SEWER DROPS.
 - BRING ALL HCB'S TO SURFACE WITH A VERTICAL RISER FITTED WITH A BOLTED TRAP SCREW & CONCRETE SURROUND.
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 - WHERE MANHOLES OCCUR AT THE ENDS OF SEWER LINES, THE STUB FOR THAT END ALTERNATELY SHALL CONNECT INTO THE MANHOLE IN ORDER TO AVOID A DRY MANHOLE SITUATION.
 - DESIGN CONTOURS ARE 0.1M INTERVAL.

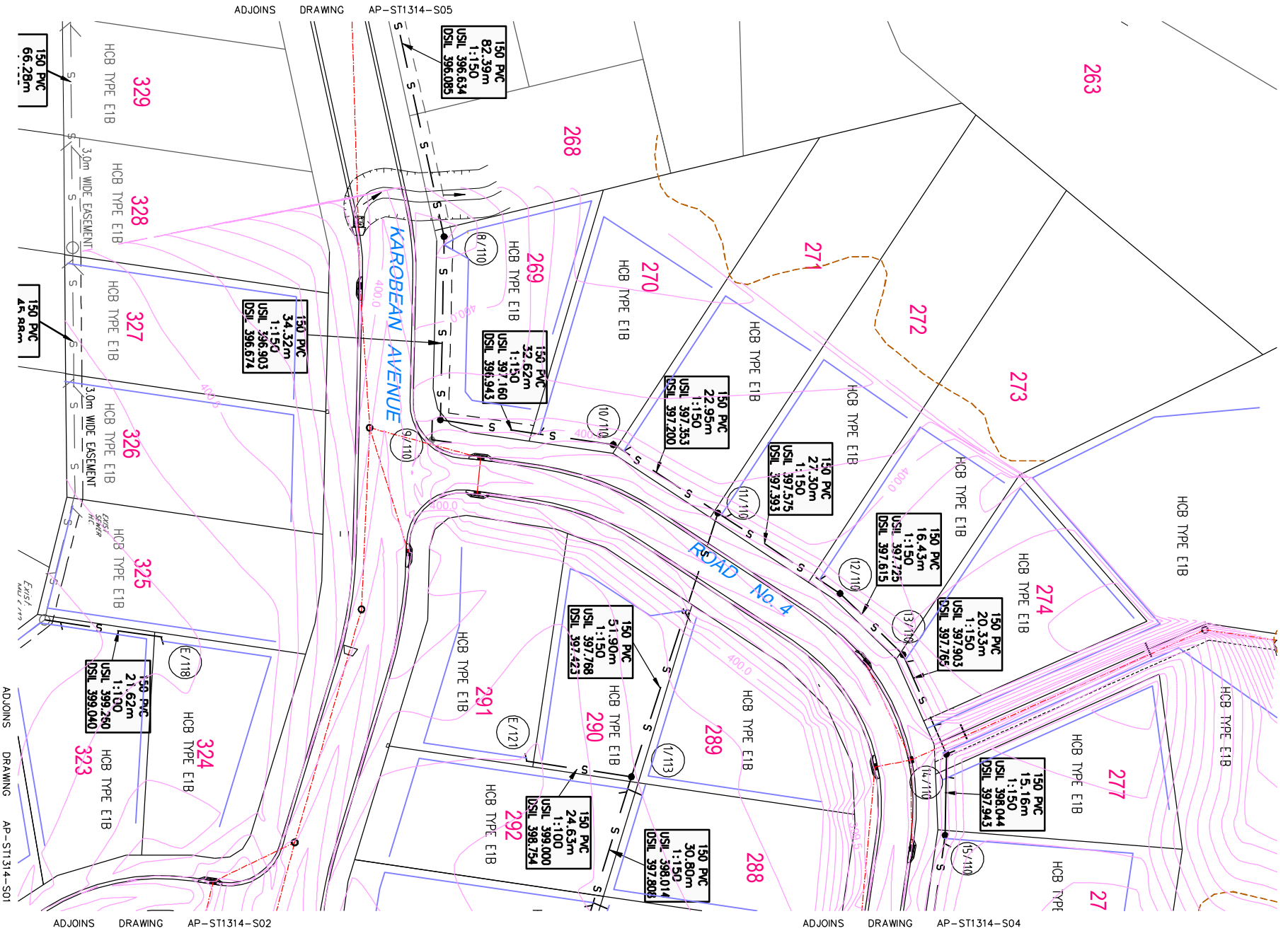
FNOROC DRAWINGS

- S3000C SEWERAGE MANHOLES
- S3005D PROPERTY CONNECTION BRANCHES
- S3015C SEWER BEDDING AND TRENCH DETAILS
- S2015A MSC THRUST BLOCK DETAILS
- S3020D SEWERAGE PUMP STATION DETAILS
- S3025C SEWERAGE PUMP STATION PRECAST UNITS
- S3030B SEWERAGE PUMP STATION DETAILS
- S3035A PUMP STATION OVERFLOW

No.	EASTING	NORTHING	LEVEL	DESCRIPTION
8/110	333832.007	8120925.764	Top RL 400.25	Manhole Ø1050
9/110	333866.319	8120925.064	Top RL 400.16	Manhole Ø1050
10/110	333870.931	8120957.361	Top RL 400.05	Manhole Ø1050
11/110	333883.794	8120976.986	Top RL 400.00	Manhole Ø1050
12/110	333898.792	8120999.794	Top RL 399.77	Manhole Ø1050
13/110	333910.249	8121011.568	Top RL 399.72	Manhole Ø1050
14/110	333927.218	8121018.966	Top RL 399.68	Manhole Ø1050
15/110	333944.054	8121019.506	Top RL 399.71	Manhole Ø1050
1/113	333933.092	8120960.780	Top RL 400.32	Manhole Ø1050
E/117	333930.178	8120941.014	Top RL 400.51	Dead End

CONTROL STATIONS

Point	Easting	Northing	Elevation
PSM 182856	33354.9907	812071.1716	399.855
PSM 168684	334232.225	8120673.283	401.63
STN 1 (Pm)	333456.097	8120760.320	399.385
STN 2 (Pm)	333961.659	8120661.682	401.981
STN 3 (Pm)	333979.294	812054.9185	402.459



ISSUE FOR APPROVAL

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B ORIGINAL ISSUE FOR APPROVAL	11/22
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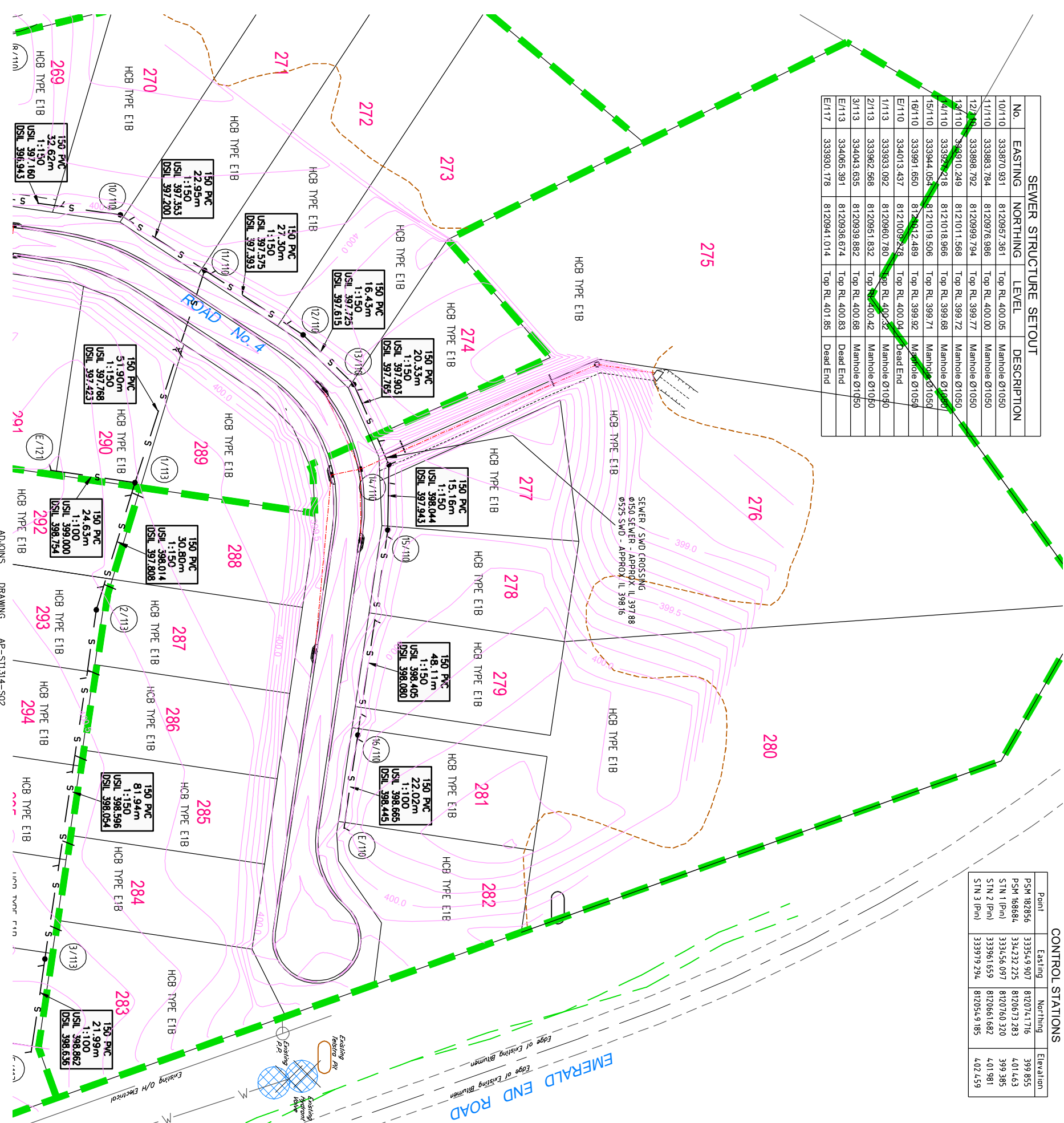
CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14 MOONDANI AVENUE, MAREEBA**

DRAWING **SEWERAGE RETICULATION LAYOUT PLAN STAGE 14A SHEET 3 OF 5**

APPROVED	DATE
AP-1314-S03	08/22

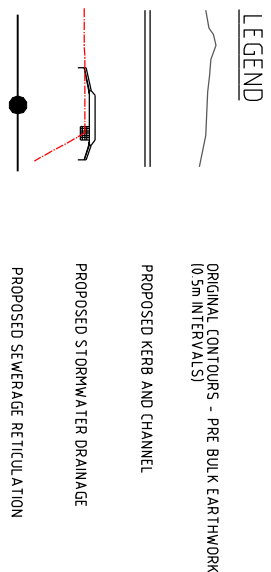
No.	EASTING	NORTHING	LEVEL	DESCRIPTION
10/110	333870.931	8120957.361	Top RL 400.05	Manhole Ø1050
11/110	333883.784	8120976.986	Top RL 400.00	Manhole Ø1050
12/110	333898.792	8120999.794	Top RL 399.77	Manhole Ø1050
13/110	333910.249	8121011.568	Top RL 399.72	Manhole Ø1050
14/110	333926.218	8121018.966	Top RL 399.68	Manhole Ø1050
15/110	333944.054	8121019.506	Top RL 399.71	Manhole Ø1050
16/110	333991.650	8120912.489	Top RL 399.92	Manhole Ø1050
17/110	333993.092	8120960.780	Top RL 400.22	Manhole Ø1050
18/110	334013.437	8120951.832	Top RL 400.42	Manhole Ø1050
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21/110	334065.391	8120941.014	Top RL 401.85	Manhole Ø1050
22/110	333930.178	8120941.014	Top RL 401.85	Manhole Ø1050
23/110				Dead End

Point	Eastng	Northng	Elevation
PSM 182856	333549.907	812074.716	399.855
PSM 168884	334232.225	8120673.283	401.63
STN 1 (Pn)	333456.097	8120760.320	399.385
STN 2 (Pn)	333961.659	8120661.682	401.981
STN 3 (Pn)	333979.294	8120549.185	402.459



CONTROL STATIONS

- SEWER NOTES**
- ALL SEWERS Ø150 uPVC CLASS 5EH UNO. SEWER MANHOLES ARE TO BE LOCATED 1.5m FROM FRONT BOUNDARIES TO CENTRE OF MANHOLE AND 0.5m FROM SIDE AND REAR BOUNDARIES TO CENTRE OF MANHOLE UNO.
 - REFER TO FNROC STANDARD DRAWINGS S3000 TO S3015 FOR SEWER CONSTRUCTION DETAILS.
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 - THE CONTRACTOR IS TO CONFIRM THE LOCATIONS AND LEVELS OF EXISTING SERVICES PRIOR TO CONSTRUCTION COMMENCING.
 - CONNECTIONS TO EXISTING WATER & SEWER MAINS TO BE UNDERTAKEN OR SUPERVISED BY MAREEBA SHIRE COUNCIL.
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 - DESIGN CONTOURS ARE 0.1M INTERVAL.



FOR ASSOCIATED LONGITUDINAL SECTIONS REFER TO DRAWINGS AP-ST1314-S06 TO S08

ENROC DRAWINGS

S3000C	SEWERAGE MANHOLES
S3005D	PROPERTY CONNECTION BRANCHES
S3015C	SEWER BEDDING AND TRENCH DETAILS
S2015A	MSC THRUST BLOCK DETAILS
S3020D	SEWERAGE PUMP STATION DETAILS
S3025C	SEWERAGE PUMP STATION PRECAST UNITS
S3030B	SEWERAGE PUMP STATION DETAILS
S3035A	PUMP STATION OVERFLOW

ISSUE FOR APPROVAL

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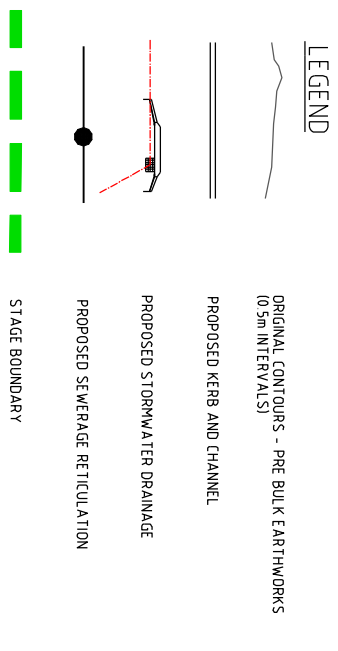
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CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING SEWERAGE RETICULATION LAYOUT PLAN
STAGE 14B
SHEET 4 OF 5

DATE	DATE
APPROVED RYM	08/22
APPROVED RPEO	
DWG. NO. AP-ST1314-S04	REVISION B





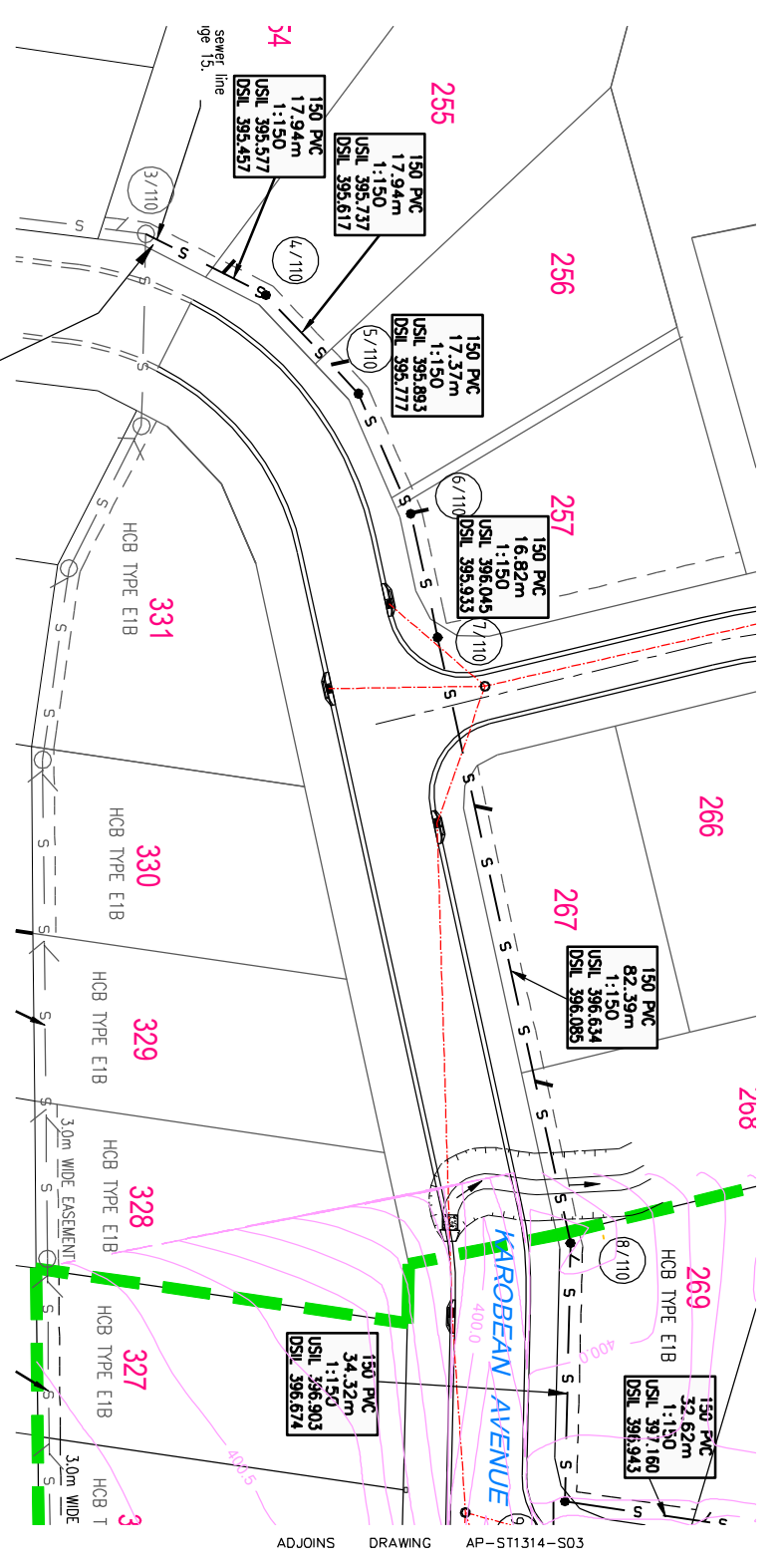
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Point	Easting	Northing	Elevation
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STN 2 (Pm)	333961.659	8120661.682	4.01981
STN 3 (Pm)	333979.294	812054.9185	4.02459



CONTINUE SEWER FROM EXISTING MH 3/110 FROM EXISTING STAGE 12. LIVE CONNECTION WORKS TO BE UNDERTAKEN LOCAL AUTHORITY

SEWER STRUCTURE SETOUT

No.	EASTING	NORTHING	LEVEL	DESCRIPTION
4/110	333706.105	8120885.330	Top RL 400.10	Manhole Ø1050
5/110	333719.171	8120897.620	Top RL 400.09	Manhole Ø1050
6/110	333735.082	8120904.562	Top RL 400.02	Manhole Ø1050
7/110	333751.526	8120908.141	Top RL 399.94	Manhole Ø1050
8/110	333832.007	8120925.764	Top RL 400.25	Manhole Ø1050

- SEWER NOTES**
- ALL SEWERS Ø150 PPC CLASS SEH U.N.O. SEWER MANHOLES ARE TO BE LOCATED 1.5m FROM FRONT BOUNDARIES TO CENTRE OF MANHOLE AND 0.8m FROM SIDE AND REAR BOUNDARIES TO CENTRE OF MANHOLE U.N.O.
 - REFER TO FNOROC STANDARD DRAWINGS S3000 TO S3015 FOR SEWER CONSTRUCTION DETAILS.
 - REFER DWG AP18-018-C09 FOR SEWER LONGITUDINAL SECTIONS.
 - THE CONTRACTOR IS TO CONFIRM THE LOCATIONS AND LEVELS OF EXISTING SERVICES PRIOR TO CONSTRUCTION COMMENCING.
 - CONNECTIONS TO EXISTING WATER & SEWER MAINS TO BE UNDERTAKEN OR SUPERVISED BY MAREEBA SHIRE COUNCIL.
 - ENSURE MIN. 150mm CLEARANCE BETWEEN ALL SERVICES AND STORMWATER STRUCTURES.
 - SEWER TO HAVE MINIMUM 800mm COVER UNDER ROADS AND 600mm ELSEWHERE.
 - ALL MANHOLES ARE TO FINISH 50mm ABOVE FINISHED DESIGN SURFACE LEVEL.
 - ALL TYPE E1B HCB'S TO BE FABRICATED FIBREGLASS, HEAVY DUTY, DEEP SEWER DROPS.
 - BRING ALL HCB'S TO SURFACE WITH A VERTICAL RISER FITTED WITH A BOLTED TRAP SCREW & CONCRETE SURROUND.
 - INSTALL A RED PAINTED STAR PICKET ADJACENT TO RISER, 1m HIGH.
 - MANHOLE COVERS ARE TO BE GAS TIGHT.
 - MANHOLE COVERS ARE TO BE LOCATED SUCH THAT THE POSITION OF THE ACCESS IS DIRECTLY OVER THE OUTLET PIPE.
 - THE INSTALLATION OF PRECAST MANHOLE COVERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDED PROCEDURES AND REQUIREMENTS.
 - WHERE MANHOLES OCCUR AT THE ENDS OF SEWER LINES, THE STUB FOR THAT END ALLOTMENT SHALL CONNECT INTO THE MANHOLE IN ORDER TO AVOID A DRY MANHOLE SITUATION.
 - DESIGN CONTOURS ARE 0.1M INTERVAL.

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REVISION	DATE
A ORIGINAL ISSUE FOR COMMENT	08/22
B ORIGINAL ISSUE FOR APPROVAL	11/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

DRAWING **SEWERAGE RETICULATION LAYOUT PLAN**
SHEET 5 of 5

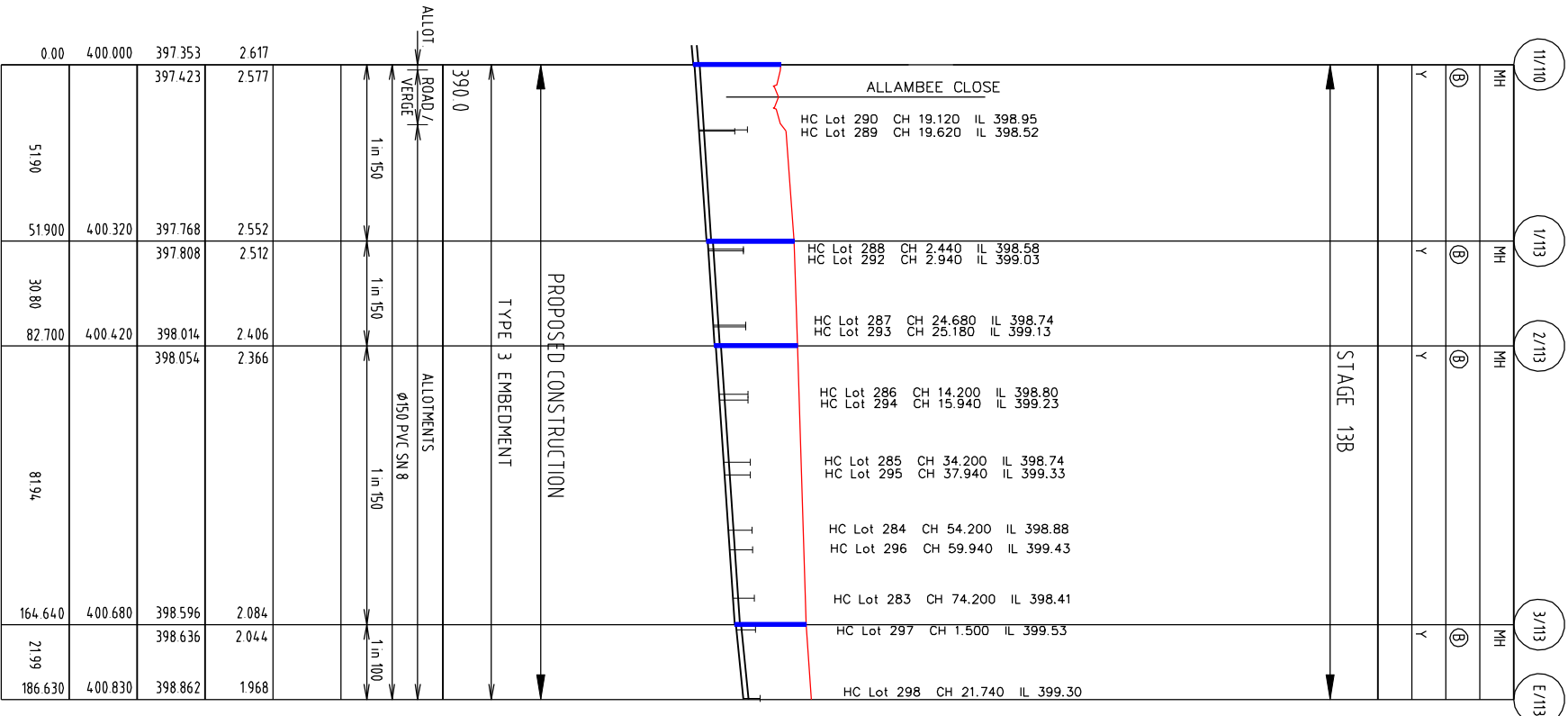
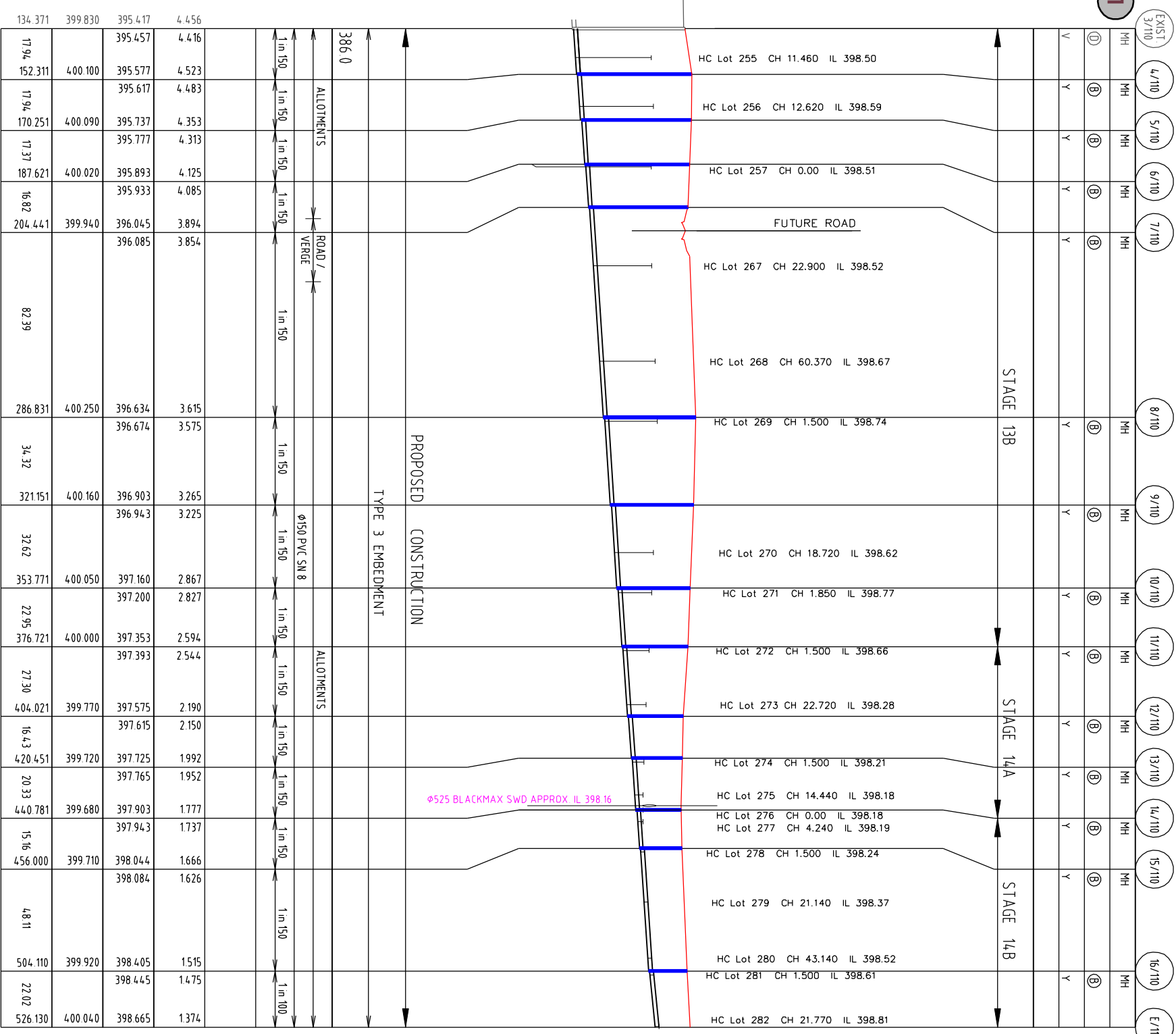
DATE	DATE
APPROVED RYM	08/22
APPROVED RPEO	
DWG. NO. AP-ST1314-S05	REVISION B

MANHOLE No. / LINE
MANHOLE TYPE
COVER TYPE/CLASS
DROP TYPE
JUNCTION LINE No.

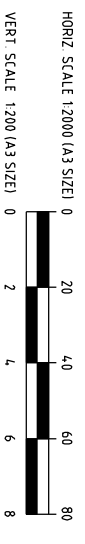
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DATUM R.L.
SEWER LOCATION
DIAMETER
GRADE
JUNCT INV LEVEL
DEPTH TO INVERT
INVERT LEVEL
DESIGN SURFACE LEVEL
CHAINAGE



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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT: **BT, M & S STANKOVICH PTY LTD**
PROJECT: **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MONDANI AVENUE, MAREEBA

DRAWING: **SEWERAGE RETICULATION LONGITUDINAL SECTIONS**
SHEET 2 of 3

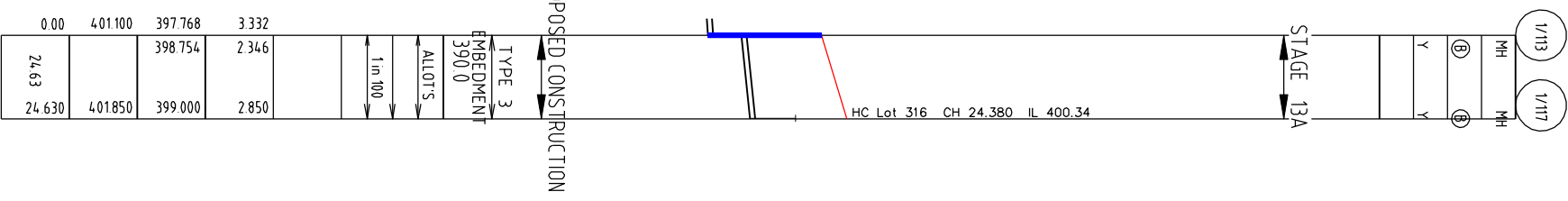
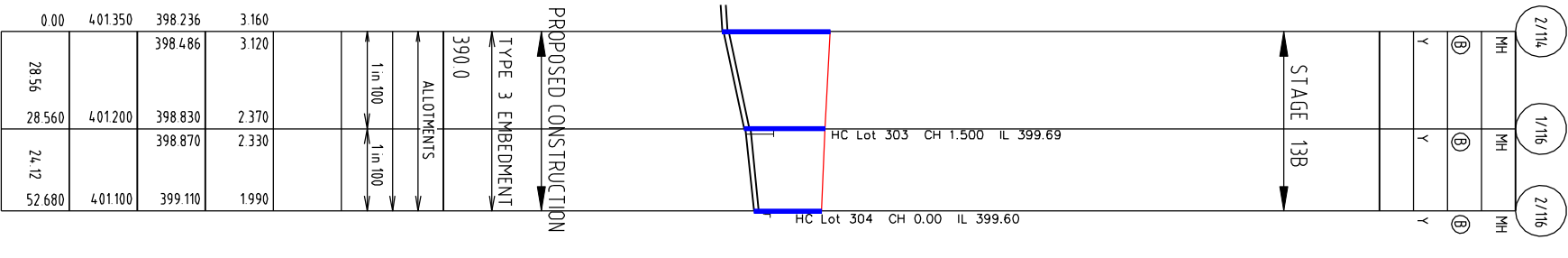
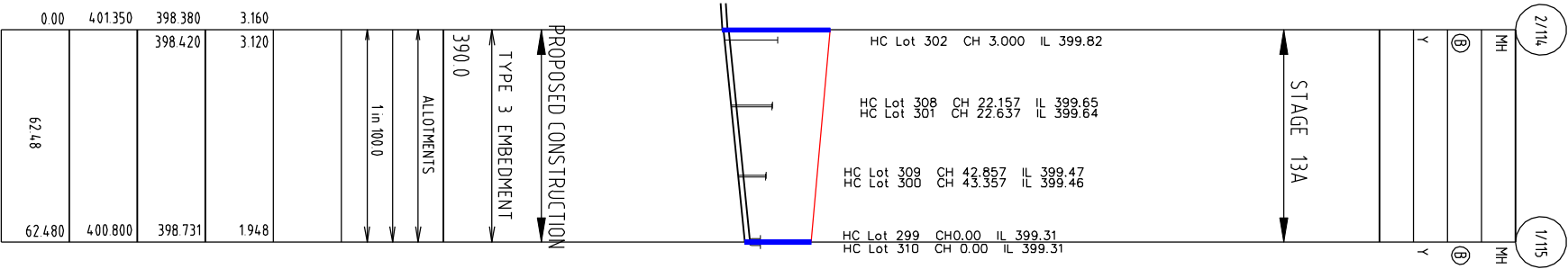
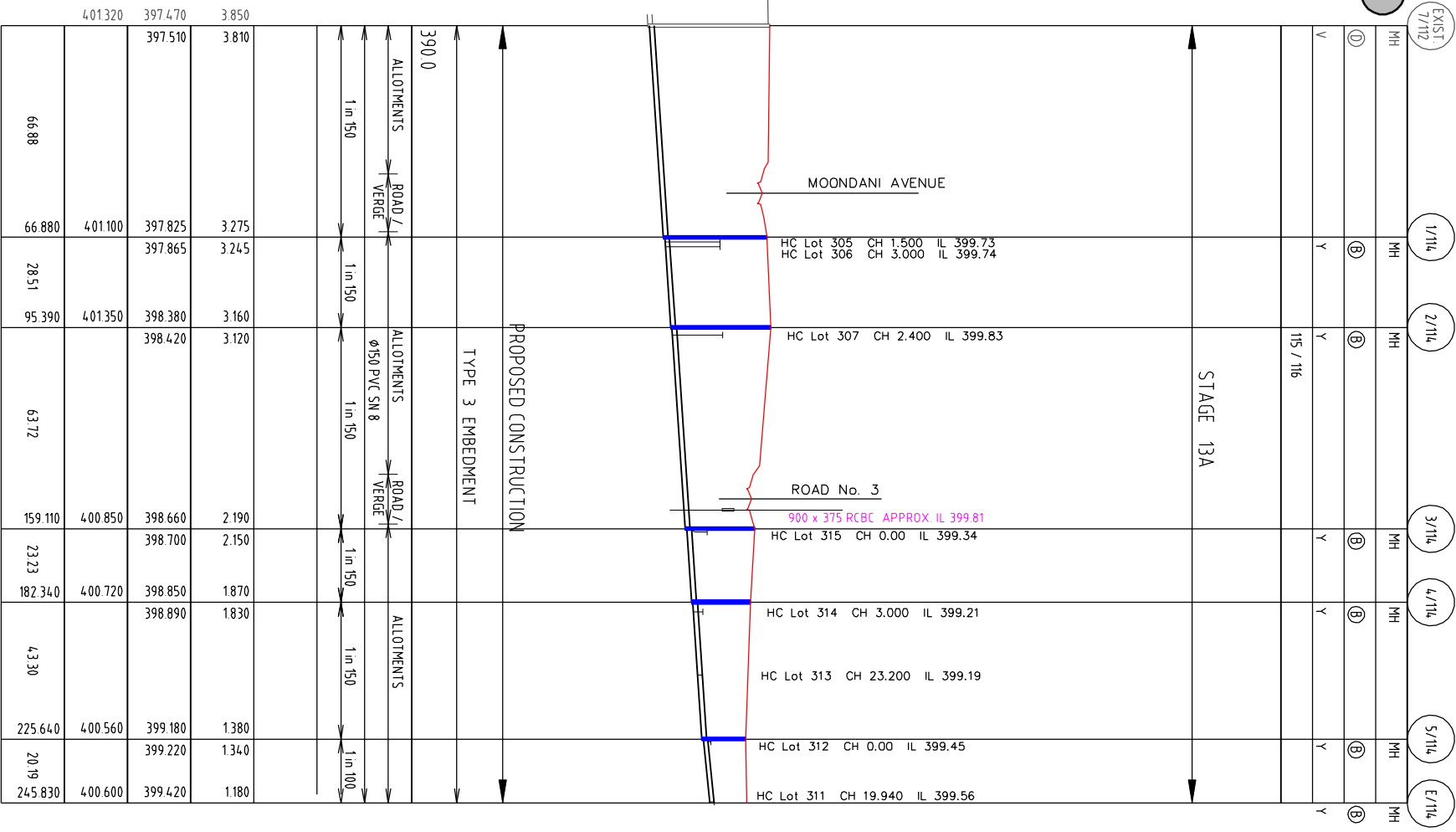
DRAWN: **RMM**
APPROVED: **RPEO**
DATE: **08/22**
DWG. NO.: **AP-ST1314-S06**
REVISION: **B**

MANHOLE No. / LINE
MANHOLE TYPE
COVER TYPE/CLASS
DROP TYPE
JUNCTION LINE No.

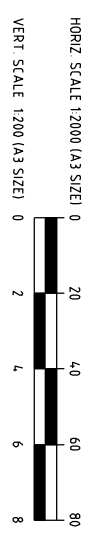
REFER TO LIVE CONNECTIONS TABLE ON DWG R09-AP-S01



DATUM R.L.
SEWER LOCATION
DIAMETER
GRADE
JUNCT INV LEVEL
DEPTH TO INVERT
INVERT LEVEL
DESIGN SURFACE LEVEL
CHAINAGE



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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	8/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MONDANI AVENUE, MAREEBA

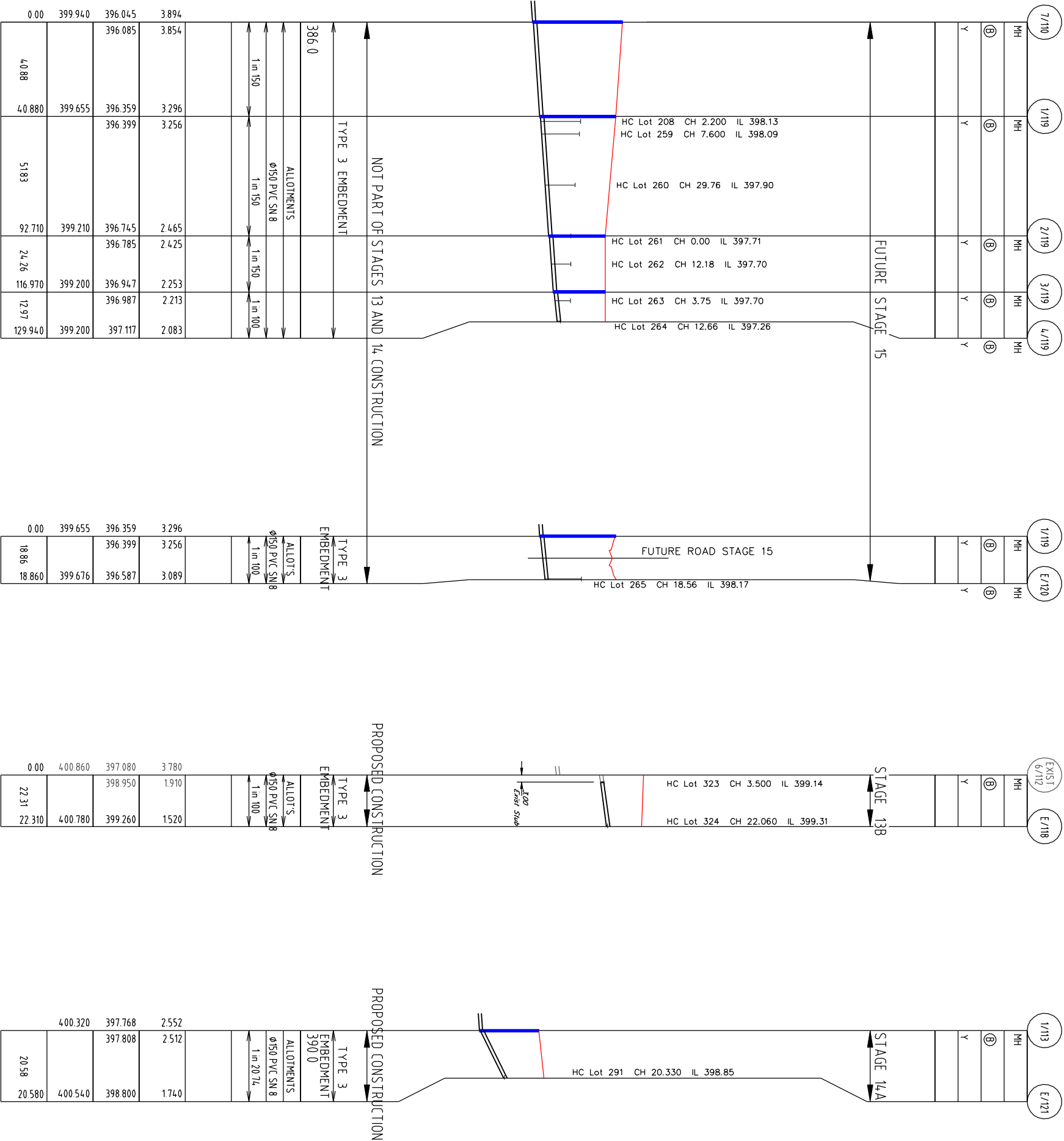
DRAWING **SEWERAGE RETICULATION LONGITUDINAL SECTIONS**
SHEET 1 of 3

DRAWN **RMM** DATE **08/22**
APPROVED **RPEO**
DWG. NO. **AP-ST1314-S07** REVISION **B**

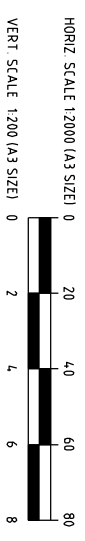
MANHOLE No. / LINE
MANHOLE TYPE
COVER TYPE/CLASS
DROP TYPE
JUNCTION LINE No.



DATUM R.L.
SEWER LOCATION
DIAMETER
GRADE
JUNCT INV LEVEL
DEPTH TO INVERT
INVERT LEVEL
DESIGN SURFACE LEVEL
CHAINAGE



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CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MONDANI AVENUE, MAREEBA

DRAWING SEWERAGE RETICULATION LONGITUDINAL SECTIONS
SHEET 3 of 3

APPROVED	RMM	DATE	08/22
DWG. NO.	AP-ST1314-S08	REVISION	B

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B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

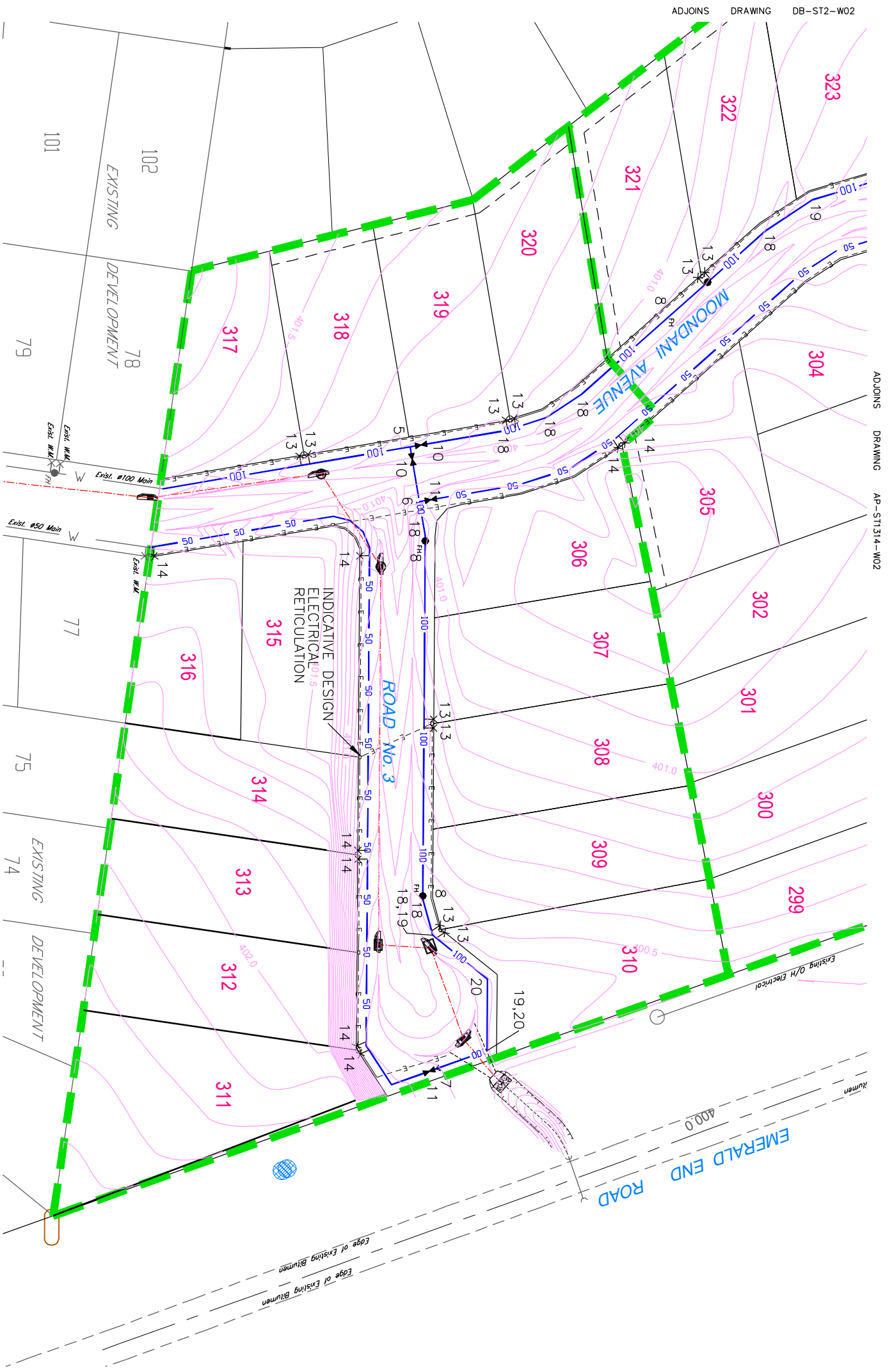
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING WATER RETICULATION LAYOUT PLAN
STAGE 13A

APPROVED	DATE
RMM	08/22
AP- ST1314-W01	B

REF CODE	DESCRIPTION
1	150 x 150 x 150 D.I.C.L. Tee with concrete thrust block.
2	150 x 150 x 100 D.I.C.L. Tee with concrete thrust block.
3	150 x 150 x 50 D.I.C.L. Tee with concrete thrust block.
4	100 x 100 x 150 D.I.C.L. Tee with concrete thrust block.
5	100 x 100 x 100 D.I.C.L. Tee with concrete thrust block.
6	100 x 100 x 50 D.I.C.L. Tee with concrete thrust block.
7	100 x 50 Reducer
8	80 dia. Spring Hydrant "Moxi Flow" 2000 Type (DN80) complete with D.I.C.L. Tee, Riser, C.I. cover box margin and kerb marker. (100 Mon)
9	150 dia. Sluice Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
10	100 dia. Sluice Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
11	50 dia. Gate Valve DR Brass complete with C.I. cover box margin and kerb marker.
12	150 dia. steel or bronze tapping board to 40 or 200 copper service to brass stop cock, meter & dirt box.
13	100 dia. steel or bronze stop cock, meter & dirt box copper service
14	50 dia. service fitting to 40 or 200 copper service to brass stop cock, meter & dirt box.
15	150 dia. D.I.C.L. 1 1/2" bend with concrete thrust block.

REF CODE	DESCRIPTION
16	150 dia. D.I.C.L. 22 1/2" bend with concrete thrust block.
17	150 dia. D.I.C.L. 45" bend with concrete thrust block.
18	100 dia. D.I.C.L. 1 1/4" bend with concrete thrust block.
19	100 dia. D.I.C.L. 22 1/2" bend with concrete thrust block.
20	100 dia. D.I.C.L. 45" bend with concrete thrust block.
21	100 dia. D.I.C.L. 90" bend with concrete thrust block.
22	50 dia. 90" bend with concrete thrust block.
23	150 dia. D.I.C.L. Dead end cap with concrete thrust block.
24	100 dia. D.I.C.L. Dead end cap with concrete thrust block.
25	50 dia. D.I.C.L. Dead end cap with concrete thrust block.



WATER RETICULATION NOTES

1. WATER SUPPLY PRESSURE PIPES TO COMPLY WITH AS1477.
2. WATER RETICULATION TO BE HYDRAULICALLY PRESSURE TESTED TO 1250 KPA AFTER LAYING AND BEFORE BEING CONNECTED TO THE EXISTING COUNCIL PIPELINE. THE TEST PRESSURE SHALL BE HELD FOR 15 MINUTES MIN. WITHOUT LOSS.
3. MINIMUM COVER TO ALL PIPES (TOP OF PIPE TO FINISHED SURFACE LEVEL) SHALL BE 600MM IN NON-TRAFFICKED AREAS AND 800MM IN TRAFFICKED AREAS.
4. WATER RETICULATION ALIGNMENT FOR ALL ROADS SHALL BE 2.0M FROM PROPERTY BOUNDARY.
5. A CONTINUOUS STAINLESS STEEL OR COPPER WIRE SHALL BE LAID 150MM ABOVE PIPE. AS THE TRENCH IS BACKFILLED, THIS WIRE SHALL BE WRAPPED ONCE AROUND HYDRANTS AND SLUICE VALVES.
6. FOR MINIMUM BENDING RADIUS TO 50 DIA POLYETHYLENE REFER TO MANUFACTURERS SPECIFICATIONS.
7. PVC PIPE MAY BE DEFLECTED TO ACHIEVE MINOR ANGLE CHANGES IN PROPERTY BOUNDARIES. FOR MAXIMUM DEFLECTIONS REFER TO MANUFACTURERS SPECIFICATIONS.
8. PROVIDE WATER SERVICE AND METER TO EACH PROPERTY.
9. PROPERTIES LOCATED ON THE OPPOSITE SIDE OF THE ROAD TO THE RETICULATION MAIN SHALL BE SERVICED BY A 50mm Dia (63 OD) POLYETHYLENE LOOP MAIN CI 16.
10. RETICULATION MAIN TO BE 150Ø OR 100Ø uPVC Series 2 MIN PN16

FNQROC DRAWINGS

- S2010D - Kerb/Road Markers
- S2016B - Water Reticulation Bedding Details <300
- S2025B - Water Service Road Crossings Low Density Residential

MAREEBA SHIRE STANDARD DRAWINGS

- S2000A - MSC Valve Box Installation
- S2005A - MSC Hydrant Box Installation
- S2015A - MSC Thrust Block Details
- S2020D - MSC Main Connection Details
- S2060A - MSC Domestic Water Service Connection Details

LEGEND

- INDICATIVE ELECTRICAL LAYOUT
- PROPOSED STORMWATER DRAINAGE
- PROPOSED WATER RETICULATION - Ø150
- STAGE BOUNDARY



ISSUE FOR APPROVAL



WATER RETICULATION NOTES

1. WATER SUPPLY PRESSURE PIPES TO COMPLY WITH AS14177.
2. WATER RETICULATION TO BE HYDRAULICALLY TESTED TO 1250 KPA AFTER LAYING AND BEFORE BEING CONNECTED TO THE EXISTING COUNCIL PIPELINE. THE TEST PRESSURE SHALL BE HELD FOR 15 MINUTES MIN. WITHOUT LOSS.
3. MINIMUM COVER TO ALL PIPES (TOP OF PIPE TO FINISHED SURFACE LEVEL) SHALL BE 600MM IN NON-TRAFFICKED AREAS AND 800MM IN TRAFFICKED AREAS.
4. WATER RETICULATION ALIGNMENT FOR ALL ROADS SHALL BE 2.0M FROM PROPERTY BOUNDARY.
5. A CONTINUOUS STAINLESS STEEL OR COPPER WIRE SHALL BE LAID 150MM ABOVE AROUND HYDRANTS AND SLUCE VALVES.
6. FOR MINIMUM BENDING RADIUS TO 50 DIA POLYETHYLENE REFER TO MANUFACTURERS SPECIFICATIONS.
7. PVC PIPE MAY BE DEFLECTED TO ACHIEVE MINOR ANGLE CHANGES IN PROPERTY BOUNDARIES. FOR MAXIMUM DEFLECTIONS REFER TO MANUFACTURERS SPECIFICATIONS.
8. PROVIDE WATER SERVICE AND METER TO EACH PROPERTY.
9. PROPERTIES LOCATED ON THE OPPOSITE SIDE OF THE ROAD TO THE RETICULATION MAIN SHALL BE SERVICED BY A 50mm Dia (63 OD) POLYETHYLENE LOOP MAIN CI 16.
10. RETICULATION MAIN TO BE 150ø OR 100ø uPVC Series 2 MIN PN16

ENROC DRAWINGS

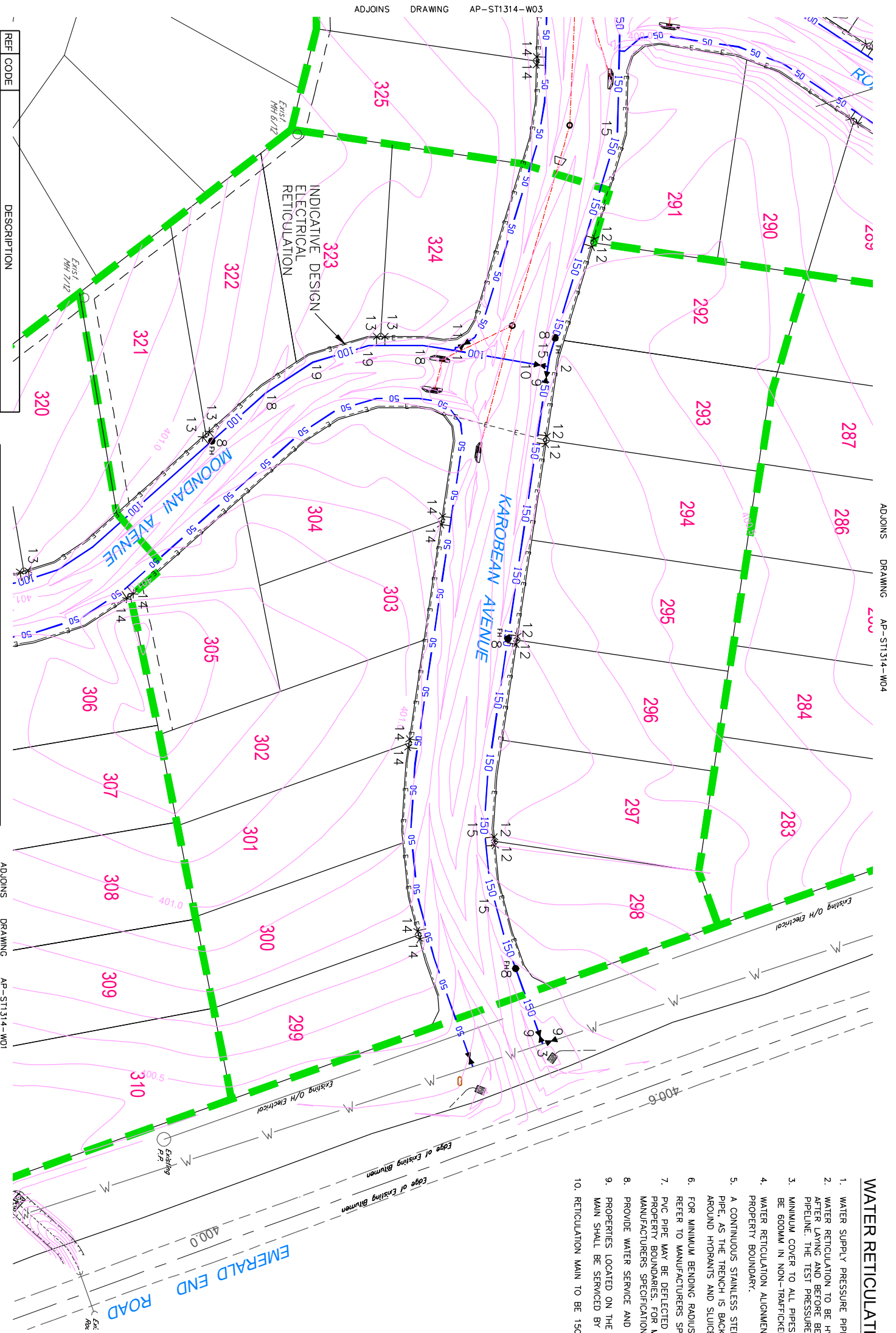
- S2010D - Kerb/Road Markers
- S2016B - Water Reticulation Bedding Details <300
- S2025B - Water Service Road Crossings Low Density Residential

MAREEBA SHIRE STANDARD DRAWINGS

- S2000A - MSC Valve Box Installation
- S2005A - MSC Hydrant Box Installation
- S2015A - MSC Thrust Block Details
- S2020D - MSC Main Connection Details
- S2060A - MSC Domestic Water Service Connection Details

LEGEND

- INDICATIVE ELECTRICAL LAYOUT
- PROPOSED STORMWATER DRAINAGE
- PROPOSED WATER RETICULATION - ø150
- STAGE BOUNDARY



REF CODE	DESCRIPTION
1	100 x 100 x 50 D.I.C.L. Tee with concrete thrust block.
2	150 x 150 x 100 D.I.C.L. Tee with concrete thrust block.
3	150 x 150 x 150 D.I.C.L. Tee with concrete thrust block.
4	100 x 100 x 150 D.I.C.L. Tee with concrete thrust block.
5	100 x 100 x 100 D.I.C.L. Tee with concrete thrust block.
6	50 x 50 x 50 D.I.C.L. Tee with concrete thrust block.
7	100 x 50 Reducer
8	80 dia. Spring Hydrant. Max 2000 Type (ONSD) complete with D.I.C.L. Tee, Reser. C.I. cover box margin and kerb marker. (150 Main)
9	150 dia. Sluce Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
10	100 dia. Sluce Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
11	50 dia. Gate Valve DR Brass complete with C.I. cover box margin and kerb marker.
12	150 dia. steel or bronze tapping band to 40 or 20ø copper service to brass stop cock, meter & dirt box.
13	100 dia. steel or bronze tapping band to 40 or 20ø copper service to brass stop cock, meter & dirt box.
14	50 dia. service fitting to 40 or 20ø copper service to brass stop cock, meter & dirt box.
15	150 dia. D.I.C.L. 11½" bend with concrete thrust block.

REF CODE	DESCRIPTION
16	150 dia. D.I.C.L. 22½" bend with concrete thrust block
17	150 dia. D.I.C.L. 45" bend with concrete thrust block.
18	100 dia. D.I.C.L. 11½" bend with concrete thrust block.
19	100 dia. D.I.C.L. 22½" bend with concrete thrust block.
20	100 dia. D.I.C.L. 45" bend with concrete thrust block.
21	100 dia. D.I.C.L. 90" bend with concrete thrust block.
22	50 dia. 90" bend with concrete thrust block.
23	150 dia. D.I.C.L. Dead end cap with concrete thrust block.
24	100 dia. D.I.C.L. Dead end cap with concrete thrust block.
25	50 dia. D.I.C.L. Dead end cap with concrete thrust block.
150	Proposed Water Main 150ø (Class 16)
50	Proposed Water Main 100ø (Class 16)
50	Existing Water Main

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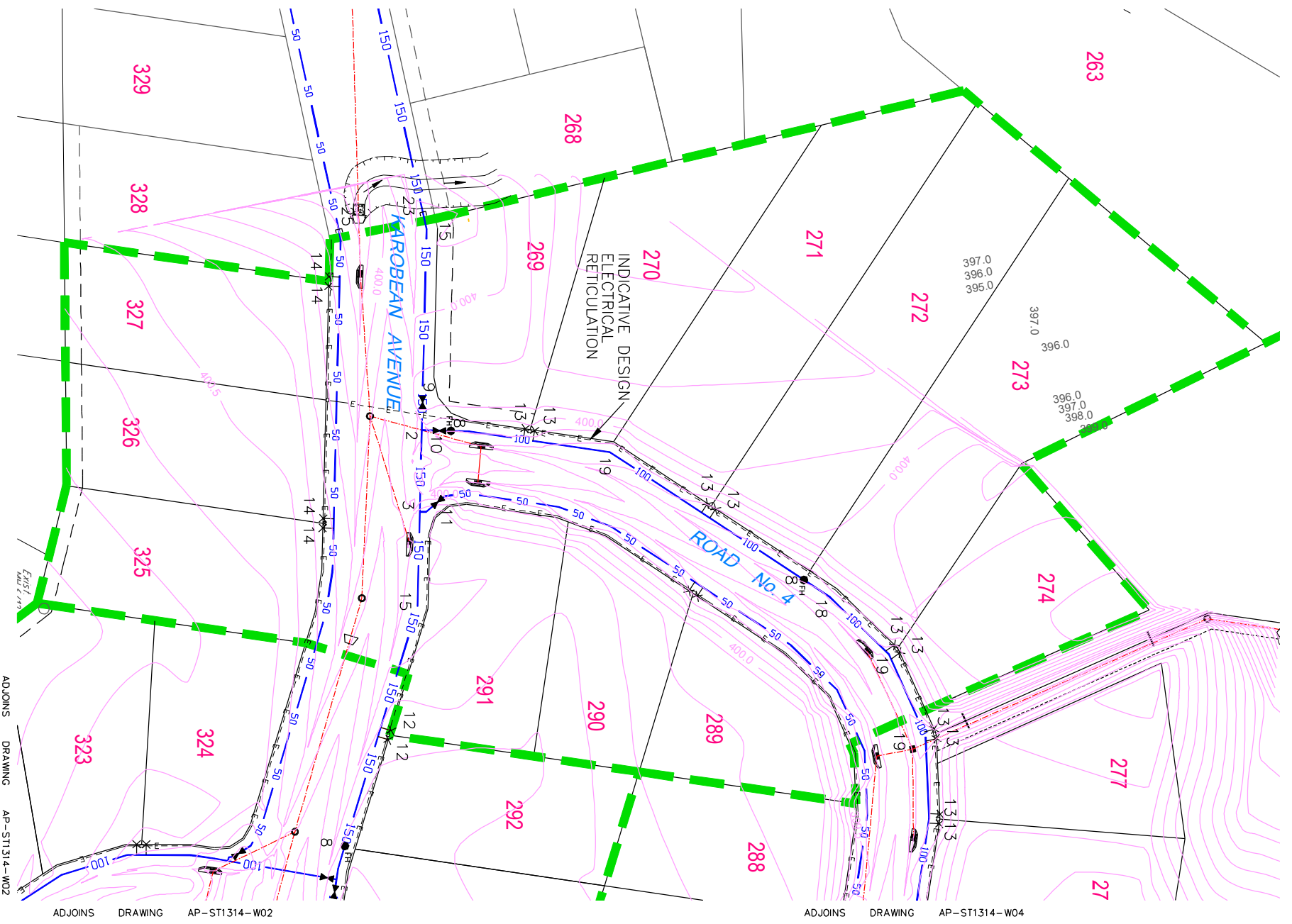
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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING WATER RETICULATION LAYOUT PLAN
STAGE 13B

APPROVED	DATE
RMM	08/22
DWG. NO.	REVISION
AP-ST1314-W02	B



WATER RETICULATION NOTES

1. WATER SUPPLY PRESSURE PIPES TO COMPLY WITH AS1477.
2. WATER RETICULATION TO BE HYDRAULICALLY TESTED TO 1250 KPA AFTER LAYING AND BEFORE BEING CONNECTED TO THE EXISTING COUNCIL PIPELINE. THE TEST PRESSURE SHALL BE HELD FOR 15 MINUTES MIN. WITHOUT LOSS.
3. MINIMUM COVER TO ALL PIPES (TOP OF PIPE TO FINISHED SURFACE LEVEL) SHALL BE 600MM IN NON-TRAFFICKED AREAS AND 800MM IN TRAFFICKED AREAS.
4. WATER RETICULATION ALIGNMENT FOR ALL ROADS SHALL BE 2.0M FROM PROPERTY BOUNDARY.
5. A CONTINUOUS STAINLESS STEEL OR COPPER WIRE SHALL BE LAID 150MM ABOVE PIPE. AS THE TRENCH IS BACKFILLED, THIS WIRE SHALL BE WRAPPED ONCE AROUND HYDRANTS AND SLUICE VALVES.
6. FOR MINIMUM BENDING RADIUS TO 50 DIA POLYETHYLENE REFER TO MANUFACTURERS SPECIFICATIONS.
7. PVC PIPE MAY BE DEFLECTED TO ACHIEVE MINOR ANGLE CHANGES IN PROPERTY BOUNDARIES. FOR MAXIMUM DEFLECTIONS REFER TO MANUFACTURERS SPECIFICATIONS.
8. PROVIDE WATER SERVICE AND METER TO EACH PROPERTY.
9. PROPERTIES LOCATED ON THE OPPOSITE SIDE OF THE ROAD TO THE RETICULATION MAIN SHALL BE SERVICED BY A 50mm Dia (63 OD) POLYETHYLENE LOOP MAIN CI 16.
10. RETICULATION MAIN TO BE 150Ø OR 100Ø uPVC Series 2 MIN PN16

FNQROC DRAWINGS

- S2010D – Kerb/Road Markers
- S2016B – Water Reticulation Bedding Details <300
- S2025B – Water Service Road Crossings Low Density Residential

MAREEBA SHIRE STANDARD DRAWINGS

- S2000A – MSC Valve Box Installation
- S2005A – MSC Hydrant Box Installation
- S2015A – MSC Thrust Block Details
- S2020D – MSC Main Connection Details
- S2060A – MSC Domestic Water Service Connection Details

REF CODE	DESCRIPTION
1	150 x 150 x 150 D.I.C.L. Tee with concrete thrust block.
2	150 x 150 x 100 D.I.C.L. Tee with concrete thrust block.
3	150 x 150 x 50 D.I.C.L. Tee with concrete thrust block.
4	100 x 100 x 150 D.I.C.L. Tee with concrete thrust block.
5	100 x 100 x 100 D.I.C.L. Tee with concrete thrust block.
6	50 x 50 x 50 D.I.C.L. Tee with concrete thrust block.
7	100 x 50 Reducer
8	80 dia. Spring Hydrant 'Maxi Flow' 2000 Type (ON80) complete with D.I.C.L. Tee, Riser, C.I. cover box margin and kerb marker. (150 Main)
9	150 dia. Sluice Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
10	100 dia. Sluice Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
11	50 dia. gate Valve DR Brass connections with C.I. cover box margin and kerb marker.
12	150 dia. steel or bronze tapping band to 40 or 20Ø copper service to brass stop cock, meter & dirt box.
13	100 dia. steel or bronze tapping band to 40 or 20Ø copper service to brass stop cock, meter & dirt box.
14	50 dia. service fitting to 40 or 20Ø copper service to brass stop cock, meter & dirt box.
15	150 dia. D.I.C.L. 11 1/2" bend with concrete thrust block.

REF CODE	DESCRIPTION
16	150 dia. D.I.C.L. 22 1/2" bend with concrete thrust block
17	150 dia. D.I.C.L. 45° bend with concrete thrust block.
18	100 dia. D.I.C.L. 11 1/2" bend with concrete thrust block.
19	100 dia. D.I.C.L. 22 1/2" bend with concrete thrust block
20	100 dia. D.I.C.L. 45° bend with concrete thrust block.
21	100 dia. D.I.C.L. 90° bend with concrete thrust block.
22	50 dia. 90° bend with concrete thrust block.
23	150 dia. D.I.C.L. Dead end cop with concrete thrust block.
24	100 dia. D.I.C.L. Dead end cop with concrete thrust block.
25	50 dia. D.I.C.L. Dead end cop with concrete thrust block.
150	Proposed Water Main 150Ø (Class 16)
100	Proposed Water Main 100Ø (Class 16)
50	Proposed Water Main 50Ø I.D. (Class 16)
v	Existing Water Main

LEGEND

- INDICATIVE ELECTRICAL LAYOUT
- PROPOSED STORMWATER DRAINAGE
- PROPOSED WATER RETICULATION - Ø150
- STAGE BOUNDARY



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A ORIGINAL ISSUE FOR COMMENT	08/22

CLIENT **BT, M & S STANKOVICH PTY LTD**
PROJECT **AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14**
MOONDANI AVENUE, MAREEBA

DRAWING **WATER RETICULATION LAYOUT PLAN**
STAGE 14A

APPROVED	DATE
RMM	08/22
AP-ST1314-W03	B



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 Mbl 0424 037 310
 ABN 77 969 712 753

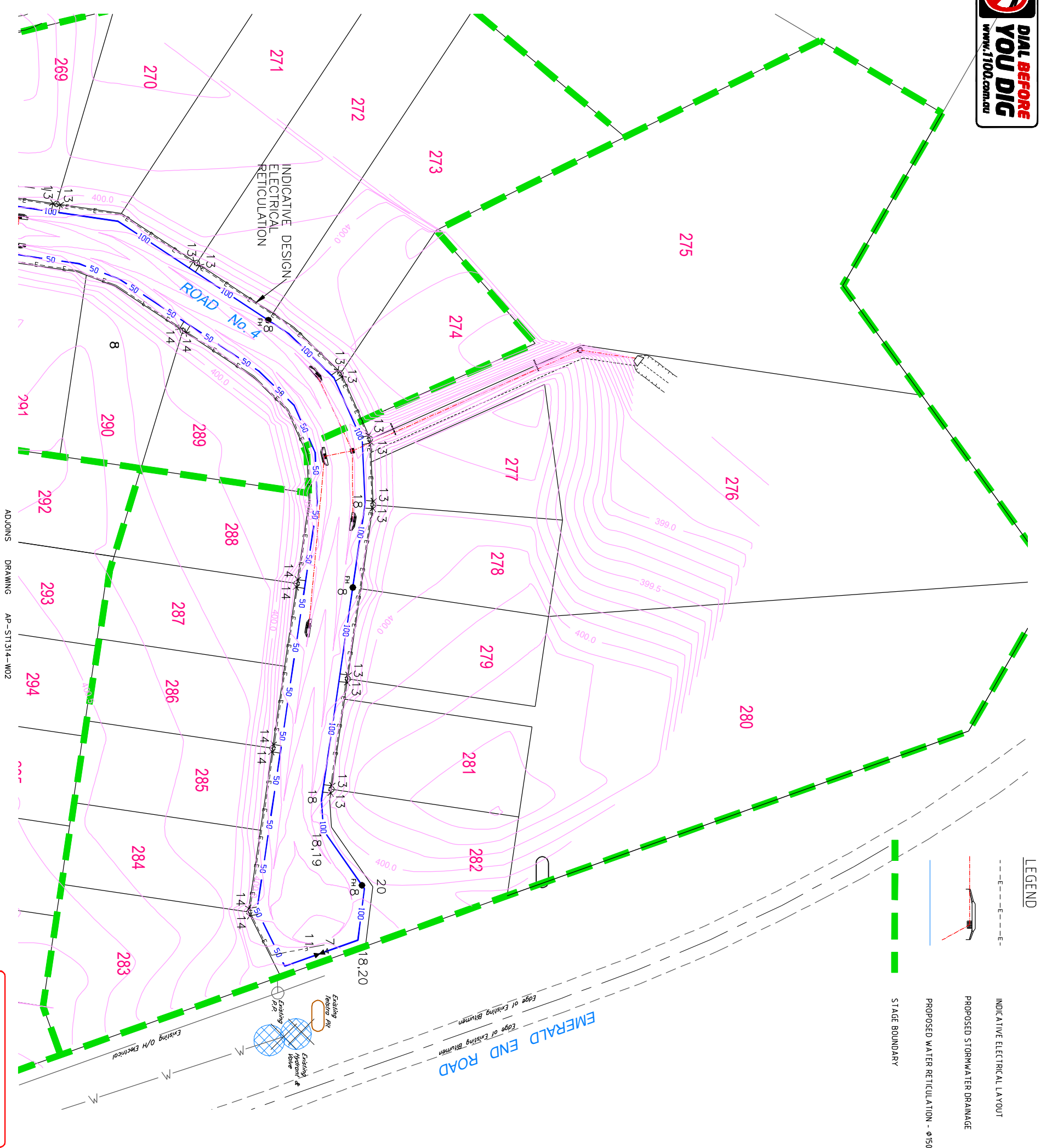
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REVISION	DATE
B ORIGINAL ISSUE FOR APPROVAL	11/22
A ORIGINAL ISSUE FOR COMMENT	08/22

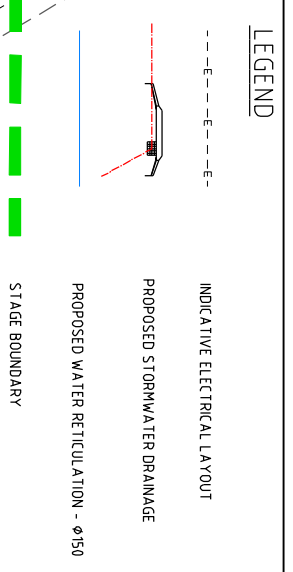
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT
STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING WATER RETICULATION LAYOUT PLAN
STAGE 14B

APPROVED	DATE
RMM	08/22
AP-ST1314-W04	



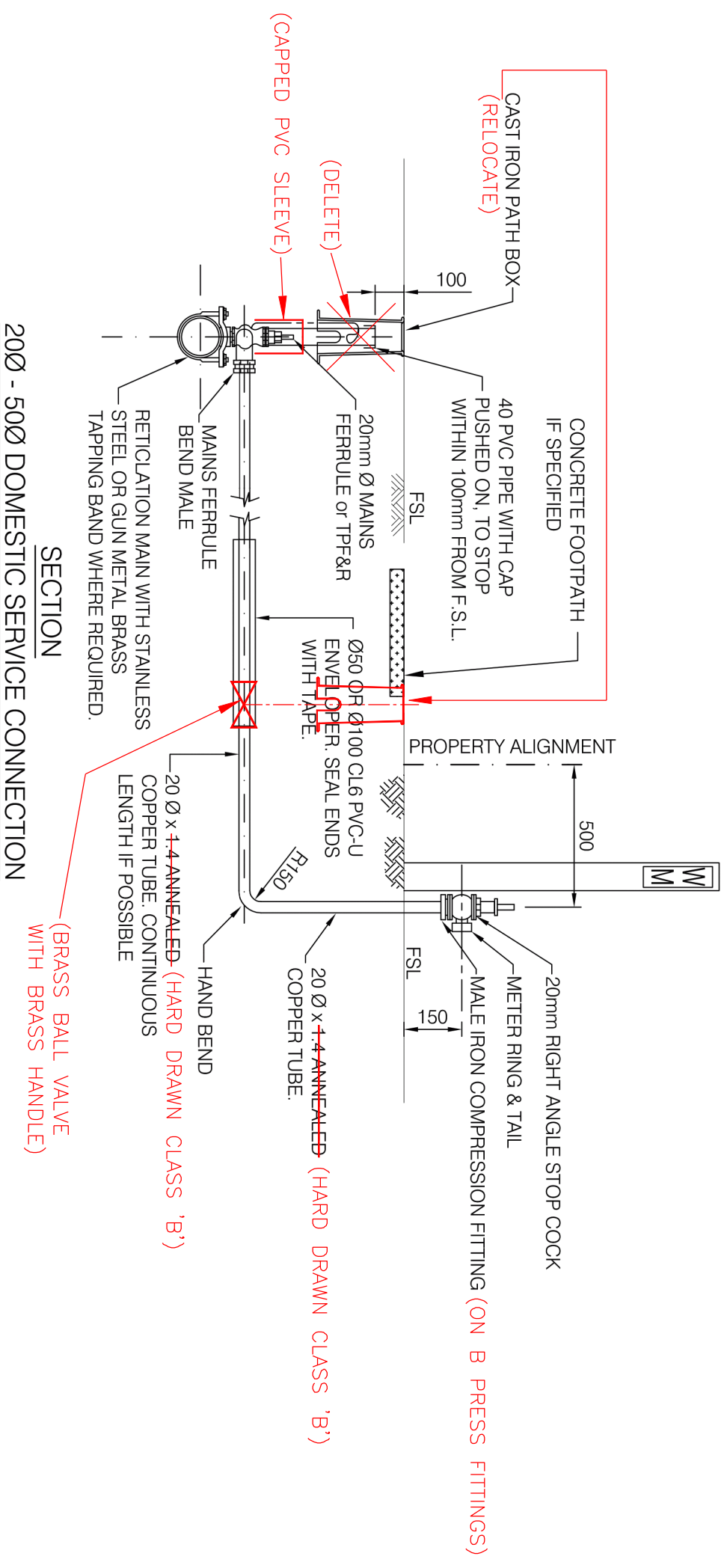
ISSUE FOR APPROVAL



- WATER RETICULATION NOTES**
1. WATER SUPPLY PRESSURE PIPES TO COMPLY WITH AS1477.
 2. WATER RETICULATION TO BE HYDRAULICALLY PRESSURE TESTED TO 1250 KPA AFTER LAYING AND BEFORE BEING CONNECTED TO THE EXISTING COUNCIL PIPELINE. THE TEST PRESSURE SHALL BE HELD FOR 15 MINUTES MIN. WITHOUT LOSS.
 3. MINIMUM COVER TO ALL PIPES (TOP OF PIPE TO FINISHED SURFACE LEVEL) SHALL BE 800MM IN NON-TRAFFICKED AREAS AND 1000MM IN TRAFFICKED AREAS.
 4. WATER RETICULATION ALIGNMENT FOR ALL ROADS SHALL BE 2.0M FROM PROPERTY BOUNDARY.
 5. A CONTINUOUS STAINLESS STEEL OR COPPER WIRE SHALL BE LAID 150MM ABOVE PIPE. AS THE TRENCH IS BACKFILLED, THIS WIRE SHALL BE WRAPPED ONCE AROUND HYDRANTS AND SLUICE VALVES.
 6. FOR MINIMUM BENDING RADIUS TO 50 DIA POLYETHYLENE REFER TO MANUFACTURERS SPECIFICATIONS.
 7. PVC PIPE MAY BE DEFLECTED TO ACHIEVE MINOR ANGLE CHANGES IN PROPERTY BOUNDARIES. FOR MAXIMUM DEFLECTIONS REFER TO MANUFACTURERS SPECIFICATIONS.
 8. PROVIDE WATER SERVICE AND METER TO EACH PROPERTY.
 9. PROPERTIES LOCATED ON THE OPPOSITE SIDE OF THE ROAD TO THE RETICULATION MAIN SHALL BE SERVICED BY A 50mm Dia (63 OD) POLYETHYLENE LOOP MAIN CI 16.
 10. RETICULATION MAIN TO BE 150ø OR 100ø uPVC Series 2 MIN PN16

- FNOROC DRAWINGS**
- S2010D – Kerb/Road Markers
 - S2016B – Water Reticulation Bedding Details <300
 - S2025B – Water Service Road Crossings Low Density Residential
- MAREEBA SHIRE STANDARD DRAWINGS**
- S2000A – MSC Valve Box Installation
 - S2005A – MSC Hydrant Box Installation
 - S2015A – MSC Thrust Block Details
 - S2020D – MSC Main Connection Details
 - S2060A – MSC Domestic Water Service Connection Details

REF CODE	DESCRIPTION
1	150 x 150 x 150 D.I.C.L. Tee with concrete thrust block.
2	150 x 150 x 100 D.I.C.L. Tee with concrete thrust block.
3	150 x 150 x 50 D.I.C.L. Tee with concrete thrust block.
4	100 x 100 x 150 D.I.C.L. Tee with concrete thrust block.
5	100 x 100 x 100 D.I.C.L. Tee with concrete thrust block.
6	50 x 50 x 50 D.I.C.L. Tee with concrete thrust block.
7	100 x 50 Reducer
8	80 dia. Spring Hydrant "Manit FLOW" 2000 Taps (DN80) complete with D.I.C.L. tap riser. C.I. cover box with kerb marker (150 Main)
9	150 dia. Sluice Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
10	100 dia. Sluice Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
11	50 dia. Gate Valve DR Brass complete with C.I. cover box margin and kerb marker.
12	150 dia. steel or bronze tapping bond to 40 or 20ø copper service to brass stop cock, meter & dirt box.
13	100 dia. steel or bronze tapping bond to 40 or 20ø copper service to brass stop cock, meter & dirt box.
14	50 dia. service fitting to 40 or 20ø copper service to brass stop cock, meter & dirt box.
15	150 dia. D.I.C.L. 11½" bend with concrete thrust block.
16	150 dia. D.I.C.L. 22½" bend with concrete thrust block
17	150 dia. D.I.C.L. 45° bend with concrete thrust block.
18	100 dia. D.I.C.L. 11½" bend with concrete thrust block.
19	100 dia. D.I.C.L. 22½" bend with concrete thrust block.
20	100 dia. D.I.C.L. 45° bend with concrete thrust block.
21	100 dia. D.I.C.L. 90° bend with concrete thrust block.
22	50 dia. 90° bend with concrete thrust block.
23	150 dia. D.I.C.L. Dead end cap with concrete thrust block.
24	100 dia. D.I.C.L. Dead end cap with concrete thrust block.
25	50 dia. D.I.C.L. Dead end cap with concrete thrust block.
150	Proposed Water Main 150ø (Class 16)
	Proposed Water Main 100ø (Class 16)
50	Proposed Water Main 50ø I.D. (Class 16)
v	Existing Water Main



NOTES

1. For valve box installation refer to Standard Drawing S2000.
2. Copper pipe configuration may be rotated to horizontal and modified to suit angle of take off, so depth of cover to main and valve is maintained.
3. Connection details to existing mains greater than Ø300mm are to be to the specific requirements of Council and are to be on the project drawings.
4. Connections to existing mains shall be carried out only with prior approval of Council, with all fittings to be supplied ready for installation by the contractor.
5. Standard domestic service is Ø20mm.
6. Standard location of water service ~~to be on opposite boundary to electrical supply and~~ 1000mm inside the front boundary and offset ~~500mm~~ from the side boundary. **(By 1000mm)**
7. Conduits under footpaths (where required) shall be a minimum of Ø50mm of PVC Class 6 with 450mm cover, 300mm offset from the side boundary and extending 200mm past the edge of the footpath.
8. The position of the conduits under footpaths shall be clearly marked by the casting of non-ferrous cuphead bolt into the property side of the footpath while the concrete is wet.
9. All meter installations to be undertaken by Mareeba Shire Council.
10. All dimensions are in millimeters.

A	ORIGINAL ISSUE	04/10/17
	REVISIONS	DATE

DISCLAIMER

The authors and sponsoring organisations shall have no liability or responsibility to the user or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused, directly or indirectly, by the adoption and use of these Standard Drawings including, but not limited to, any interruption of service, loss of business or anticipatory profits, or consequential damages resulting from the use of these Standard Drawings. Persons must not rely on these Standard Drawings as the equivalent of, or a substitute for, project-specific design and assessment by an appropriately qualified professional.



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NOTE:
 UP-DATED DETAILS FOR WATER SERVICE / ELECTRICAL SERVICE
 CO-LOCATION INSTALLATION AS PER PREVIOUS STAGE AND IN
 ACCORDANCE WITH EMAIL APPROVAL ADVICE FROM GLENDA KIRK
 (DIRECTOR INFRASTRUCTURE SERVICES) DATED 22/11/2018.

ISSUE FOR APPROVAL

DOMESTIC WATER SERVICE CONNECTION DETAILS		Standard Drawing S2060
A		