

DELEGATED REPORT

TO: SENIOR PLANNER
FROM: Planning Officer **FILE:** OPW/22/0009 (Amaroo Stage 13A, 13B & 14A)
DATE: 8 February 2023

APPLICATION DETAILS

APPLICATION		PREMISES	
FILE NO:	OPW/22/0009 (Amaroo Stage 13A, 13B & 14A)	ADDRESS:	Emerald End Road, Moondani Avenue and Karobean Drive, Mareeba
APPLICANT:	BTM & S Stankovich Pty Ltd	RPD:	Lot 500 on SP336235
LODGED BY:	Freshwater Planning Pty Ltd	AREA:	20.7073 ha
DATE LODGED:	8 December 2022	OWNER:	Freshwater Planning Pty Ltd
TYPE OF APPROVAL:	Development Permit		
PROPOSED DEVELOPMENT:	Operational Works (Roadworks, Stormwater, Water & Sewer Infrastructure, Drainage and Earthworks) for Development Permit RAL/22/0019		
PLANNING SCHEME:	Mareeba Shire Council Planning Scheme 2016		
ZONE:	Residential zone		
LEVEL OF ASSESSMENT:	Code Assessment		

PREVIOUS APPLICATIONS & APPROVALS

RAL/22/0019

DESCRIPTION OF PROPOSED DEVELOPMENT

The development application seeks a Development Permit for Operational Works (Roadworks, Stormwater, Water & Sewer Infrastructure, Drainage and Earthworks) for Development Permit RAL/22/0019 – **Amaroo Estate Stage 13A, 13B & 14A.**

ASSESSMENT

State Planning Policy

Separate assessment against the State Planning Policy (SPP) is not required because the Mareeba Shire Council Planning Scheme appropriately integrates all relevant aspects of the SPP.

Relevant Development Codes

The following Development Codes are considered to be applicable to the assessment of the application:

- 6.2.6 Low density residential zone code
- 9.4.4 Reconfiguring a lot code
- 9.4.5 Works, services and infrastructure code

The application did not include a planning report and assessment against the planning scheme. An officer assessment has found that the application satisfies the relevant acceptable solutions (or probable solutions/performance criteria where no acceptable solution applies) of the relevant codes set out below.

Relevant Codes	Comments
Low density residential zone code	The application can be conditioned to comply with the relevant acceptable outcomes contained within the code.
Reconfiguring a lot code	The application can be conditioned to comply with the relevant acceptable outcomes contained within the code.
Works, services and infrastructure code	The application can be conditioned to comply with the relevant acceptable outcomes contained within the code.

Compliance with conditions of earlier related approval

RAL/22/0019

1. Development must be carried out generally in accordance with the approved plans and the facts and circumstances of the use as submitted with the application, and subject to any alterations:
 - found necessary by the Council's delegated officer at the time of examination of the engineering plans or during construction of the development because of particular engineering requirements; and
 - to ensure compliance with the following conditions of approval.
2. Timing of Effect
 - 2.1 The conditions of the development permit must be complied with to the satisfaction of Council's delegated officer prior to the endorsement of the plan of survey for each stage of the development, or alternative documentation as approved by the Land Title Act, except where specified otherwise in these conditions of approval.
3. General
 - 3.1 The applicant/developer is responsible for the cost of necessary alterations to existing public utility mains, services or installations required by works in relation to the proposed development or any works required by condition(s) of this approval.
 - 3.2 All payments or bonds required to be made to the Council pursuant to any condition of this approval or the Adopted Infrastructure Charges Notice must be made prior to the endorsement of the plan of survey, or alternative documentation as approved by the Land Title Act and at the rate applicable at the time of payment.
 - 3.3 The developer must relocate (in accordance with FNQROC standards) any services such as water, sewer, drainage, telecommunications and electricity that are not wholly

located within the lots that are being created/serviced where required by the relevant authority, unless approved by Council's delegated officer.

3.4 Where utilities (such as sewers on non-standard alignments) traverse lots to service another lot, easements must be created in favour of Council for access and maintenance purposes. The developer is to pay all costs (including Council's legal expenses) to prepare and register the easement documents.

3.5 All works must be designed, constructed and carried out in accordance with FNQROC Development Manual requirements (as amended) and to the satisfaction of Council's delegated officer.

3.6 Charges

All outstanding rates, charges, and expenses pertaining to the land are to be paid in full.

3.7 Bushfire Management

A Bushfire hazard management plan for the subject land must be prepared by suitably qualified person to the satisfaction of Council's delegated officer.

The future use of each lot must comply with the requirements of the bushfire hazard management plan at all times.

3.8 The following road names are approved:

- Kutterul Close - new cul-de-sac off Moondani Avenue; and
- Allambee Close - new cul-de-sac off Karobean Drive.

4. Infrastructure Services and Standards

4.1 Access

Access to each allotment must be constructed (from the edge of the road pavement to the property boundary of each lot) in accordance with the FNQROC Development Manual, to the satisfaction of Council's delegated officer.

The provision of layback/roll-over kerbing along the frontage of each allotment will satisfy this condition.

4.2 Stormwater Drainage

- (a) The applicant/developer must take all necessary steps to ensure a non-worsening effect on surrounding land as a consequence of the development.
- (b) Prior to works commencing the applicant must submit a Stormwater Management Plan and Report prepared and certified by a suitably qualified design engineer (RPEQ) that meets or exceeds the standards of design and construction set out in the Queensland Urban Drainage Manual (QUDM) and the FNQROC Development Manual to the satisfaction of Council's delegated officer.
- (c) Prior to works commencing the applicant must submit a Stormwater Quality Management Plan and Report prepared and certified by a suitably qualified design engineer (RPEQ) that meets or exceeds the standards of design and construction set out in the Urban Stormwater Quality Planning Guideline and the Queensland Water Quality Guideline to the satisfaction of Council's delegated officer.
- (d) The Stormwater Quality Management Plan must include an Erosion and Sediment Control Plan that meets or exceeds the Soil Erosion and Sedimentation Control Guidelines (Institute of Engineers Australia) to the satisfaction of Council's delegated officer.

- (e) The applicant/developer must construct the stormwater drainage infrastructure in accordance with the approved Stormwater Management Plan and/or Stormwater Quality Management Plan and Report.
- (f) Temporary drainage is to be provided and maintained during the construction phase of the development, discharged to a lawful point and not onto the construction site.
- (g) All stormwater channels through private property must be registered, with the easement for drainage purposes in favour of Council. All documentation leading to the registration of the easement must be completed at no cost to Council.
- (h) All stormwater drainage collected from the site must be discharged to an approved legal point of discharge.
- (i) The applicant (at their cost) must video all stormwater lines and submit the video for inspection by Council's delegated officer prior to the development being taken "off maintenance" to ensure that no defects have occurred during the 12 month maintenance period.
- (j) All drainage easements must be constructed to prevent erosion. Construction may be in the form of a concrete invert, with outlet protection.

4.3 Earthworks

All earthworks must be carried out in accordance with the requirements of the FNQROC Development Manual (as amended) to the satisfaction of Council's delegated officer.

4.4 Roadworks/footpaths - Internal

- (a) Moondani Avenue, Kutterul Close and Allambee Close are to be constructed to Access Street standard in accordance with the FNQROC Development Manual (as amended) to the satisfaction of Council's delegated officer.
- (b) Karobean Drive must be constructed to a Collector Road standard (of the same width as the existing section of Karobean Drive) in accordance with the FNQROC Development Manual (as amended) to the satisfaction of Council's delegated officer.
- (c) Temporary turnaround areas, with a bitumen and/or gravel surface, must be provided at the western end of Karobean Drive and the eastern end of Allambee Close to allow traffic manoeuvring until future stages 15 and 14B are developed.
- (d) 2 metre wide concrete pedestrian footpaths must be installed on at least 1 side of **all** proposed internal roads, including Moondani Avenue and Karobean Drive. The horizontal alignment of all footpaths (with the exception of Karobean Drive) must comply with the FNQROC development Manual (specifically Standard Drawing S1004A) and **must not be constructed abutting the kerbing.**

The Karobean Drive footpath (only) is permitted to be constructed abutting the kerbing.

4.5 Roadworks - External (Karobean Drive/Emerald End Road Intersection)

The intersection of Karobean Drive and Emerald End Road must be constructed to FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer.

4.6 Footpaths - External (Emerald End Road)

This condition is optional and may be carried out at the applicant/developer's discretion.

- (a) Council will permit the construction of a 2 metre wide concrete pedestrian footpath within the Emerald End Road reserve to create a pedestrian link between the

proposed Karobean Drive pedestrian footpath, the proposed Kutterul Close pedestrian footpath and the Dandaloo Close cul-de-sac head, and the new park/playground constructed adjacent Lot 2 on SP298298.

- (b) The footpath works must be sited as close as practically possible to the western side of the Emerald End Road reserve and must not include any vegetation plantings. The footpath must only meander where needed to avoid existing trees and a culvert crossing/bridge is required to be installed across the stormwater drain situated between drainage reserve Lot 49 on SP220745 and Emerald End Road.
- (c) The footpath may be done in 3 separate Stages or combination of the 3 Stages as follows:
 - Linking the Karobean Drive and Kutterul Close footpaths; and/or
 - Linking the Kutterul Close footpath and Dandaloo Close cul-de-sac head; and/or
 - Linking the Dandaloo Close cul-de-sac head and the park/playground adjacent Lot 2 on SP298298. For this section, the footpath is only required to be constructed to the south-east corner of Lot 10 on SP211136 with Council to complete the link between the end of this footpath and the park/playground.
- (d) The cost of the abovementioned pedestrian footpath works will be credited towards the parks and open space component (only) of the infrastructure charges payable for Stages 13A, 13B and 14A. The parks and open space component accounts for 20% of the total infrastructure charges payable for each Stage.

The cost of the pedestrian footpath works (to be credited) must be provided via an itemised quotation and must be agreed to by Council's delegated officer before works commence.

4.7 Water Supply

- (a) A water service connection must be provided to each proposed lot in accordance with FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer
- (b) Where the existing reticulated water supply does not currently service the site or is not at an adequate capacity, the developer is required to extend or upgrade the reticulated water supply infrastructure to connect the site to Council's existing infrastructure at a point that has sufficient capacity to service the development in accordance with FNQROC Development Manual standards (as amended).

4.8 Sewerage Connection

- (a) The developer must connect the proposed development to Council's reticulated sewerage system in accordance with FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer.
- (b) Where sewerage connections are not available to the site, or where existing connections are not satisfactory for the proposed development, the developer is required to extend or upgrade the reticulated sewerage infrastructure to connect the site to Council's existing infrastructure at a point that has sufficient capacity to service the development in accordance with FNQROC Development Manual standards (as amended).

4.9 Electricity provision/supply

The applicant/developer must ensure that an appropriate level of electricity supply is provided to each allotment in accordance with FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer.

Written advice from an Electricity Service Provider is to be provided to Council indicating that an agreement has been made for the provision of **underground** power reticulation.

4.10 Telecommunications

The applicant/developer must enter into an agreement with a telecommunication carrier to provide telecommunication services to each allotment and arrange provision of necessary conduits and enveloping pipes.

4.11 Lighting

Street lighting must be provided to all roads in accordance with FNQROC Development requirements (as amended) and to the satisfaction of Council's delegated officer.

4.12 Street Trees

One (1) street tree must be at the planted at centre of each lot's road frontage. Corner allotments must have a street tree planted on each frontage.

All street trees must be provided in accordance with the FNQROC Development Manual - Design Manual D9 Landscaping.

Plans for the development works required under Conditions 4.1 - 4.12 must be submitted to Council for approval as part of a subsequent application for operational works.

FNQROC Regional Development Manual

Section	Assessment
DP1 - Development Principles	Complies
AP1 - Application Procedures	Complies
D1 - Road Geometry	Will be conditioned to comply
D2 - Site Regrading	Will be conditioned to comply
D3 - Road Pavements	Will be conditioned to comply
D4 - Stormwater Drainage	Complies
D5 - Stormwater Quality Management	Complies
D6 - Water Reticulation	Will be conditioned to comply
D7 - Sewerage System	Complies
D8 - Utilities	Will be conditioned to comply
D9 - Landscaping	Will be conditioned to comply

REFERRALS

Nil

Internal Consultation

Technical Services

OFFICER'S RECOMMENDATION

1. That in relation to this operational works development application:

APPLICATION		PREMISES	
APPLICANT:	BTM & S Stankovich Pty Ltd	ADDRESS:	Emerald End Road, Moondani Avenue and Karobean Drive, Mareeba
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TYPE OF APPROVAL	Development Permit		
PROPOSED DEVELOPMENT	Operational Works (Roadworks, Stormwater, Water & Sewer Infrastructure, Drainage and Earthworks) for Development Permit RAL/22/0019		

and in accordance with the Planning Act 2016, as amended, the applicant be notified that the application for operational works:

Approved subject to the following assessment manager conditions:

(A) APPROVED DEVELOPMENT: Development Permit for Operational Works (Roadworks, Stormwater, Water & Sewer Infrastructure, Drainage and Earthworks) for Development Permit RAL/22/0019 for **Stages 13A, 13B & 14A Only**

(B) APPROVED PLANS:

Plan/Document Number	Plan/Document Title	Prepared by	Dated
AP-ST1314-C01 Rev. B	Cover Sheet, Site Plan and Drawing List	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C02 Rev. B	Overall Site Plan – Stages 13 & 14	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C03 Rev. B	Roadworks and Drainage Layout Plan – Stage 13A	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C04 Rev. B	Roadworks and Drainage Layout Plan – Stage 13B	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C05 Rev. B	Roadworks and Drainage Layout Plan – Stage 14A	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C07 Rev. B	Road Centre Line Setout Tables	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C08 Rev. B	Intersection & Cul-de-sac Details Sheet 1 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C09 Rev. B	Intersection Details Sheet 2 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C10 Rev. B	Intersection & Cul-de-sac Details Sheet 3 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C11 Rev. B	Intersection & Cul-de-sac Setout Tables	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C12 Rev. B	Typical Cross Sections and Details	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C13 Rev. B	Longitudinal Section – Karobean Avenue	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C14 Rev. B	Cross Section – Karobean Avenue – Sheet 1 of 4	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C15 Rev. B	Cross Section – Karobean Avenue – Sheet 2 of 4	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C16 Rev. B	Cross Section – Karobean Avenue – Sheet 3 of 4	Robin Mansinger Civil Design Consultant	November 2022

AP-ST1314-C17 Rev. B	Cross Section – Karoeban Avenue – Sheet 4 of 4	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C18 Rev. B	Longitudinal Section – Moondani Avenue	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C19 Rev. B	Cross Sections – Moondani Avenue – Sheet 1 of 2	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C20 Rev. B	Cross Sections – Moondani Avenue – Sheet 2 of 2	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C21 Rev. B	Longitudinal Sections – Road 3 & Allambee Close	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C22 Rev. B	Cross Section – Road 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C23 Rev. B	Cross Sections – Allambee Close – Sheet 1 of 2	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C24 Rev. B	Cross Sections – Allambee Close – Sheet 2 of 2	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C25 Rev. B	Overall Earthworks Plan – Stages 13 & 14	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C26 Rev. B	Earthworks Plan – Stage 13A	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C27 Rev. B	Earthworks Plan – Stage 13B	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C28 Rev. B	Earthworks Plan – Stage 14A	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C30 Rev. B	Stormwater Drainage Catchment Plan	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C31 Rev. B	Stormwater Drainage – Longitudinal Sections – Sheet 1 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C32 Rev. B	Stormwater Drainage – Longitudinal Sections – Sheet 2 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C33 Rev. B	Stormwater Drainage – Longitudinal Sections – Sheet 3 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C34 Rev. B	Stormwater Drainage – Calculations Table – Sheet 1 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C35 Rev. B	Stormwater Drainage – Calculations Table – Sheet 2 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C36 Rev. B	Stormwater Drainage – Calculations Table – Sheet 3 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C37 Rev. B	Stormwater Drainage Catchment Table, Structures Schedule and Pipe Table	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-C38 Rev. B	Stormwater Drainage Structures Details Plan	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-S01 Rev. B	Sewerage Reticulation – Layout Plan – Stage 13A – Sheet 1 of 5	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-S02 Rev. B	Sewerage Reticulation – Layout Plan – Stage 13B – Sheet 2 of 5	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-S03 Rev. B	Sewerage Reticulation – Layout Plan – Stage 14A – Sheet 3 of 5	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-S05 Rev. B	Sewerage Reticulation – Layout Plan – Sheet 5 of 5	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-S06 Rev. B	Sewerage Reticulation – Longitudinal Sections – Sheet 1 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-S07 Rev. B	Sewerage Reticulation – Longitudinal Sections – Sheet 2 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-S08 Rev. B	Sewerage Reticulation – Longitudinal Sections – Sheet 3 of 3	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-W01 Rev. B	Water Reticulation Plan – Stage 13A	Robin Mansinger Civil Design Consultant	November 2022

AP-ST1314-W01 Rev. B	Water Reticulation Plan – Stage 13B	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-W01 Rev. B	Water Reticulation Plan – Stage 14A	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-EC01 Rev. B	Erosion and Sediment Control Plan – Stage 13 & 14	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-EC02 Rev. B	Erosion and Sediment Control General Notes Plan	Robin Mansinger Civil Design Consultant	November 2022
AP-ST1314-EC03 Rev. B	Erosion and Sediment Control General Details Plan	Robin Mansinger Civil Design Consultant	November 2022

(C) ASSESSMENT MANAGER'S CONDITIONS (COUNCIL)

For Stages 13A, 13B & 14A Only

1 General

- 1.1 This development permit authorises works for **Stages 13A, 13B and 14A only** and does **not** authorise works for **Stage 14B**.
- 1.2 “For Construction” issue engineered drawings must be certified as approved by a suitably qualified Registered Professional Engineer of Queensland (RPEQ) and submitted to Council for review prior to the Pre-Start Meeting. The plans must be amended to include any changes required by these conditions of approval.
- 1.3 All operational works must be designed and constructed in accordance with the procedures as set out in the FNQROC Development Manual.
- 1.4 Development must be carried out substantially in accordance with the approved plans and the facts and circumstances of the use as submitted with the application, and subject to any alterations:
 - found necessary by the Council’s Delegated Officer at the time of examination of the engineering plans or during construction of the development because of particular engineering requirements;
 - to ensure the works comply in all respects with the requirements and procedures of the FNQROC Development Manual, Queensland Urban Drainage Manual and good engineering practice; and
 - to ensure compliance with the following conditions of approval.
- 1.5 Council’s examination of the documents should not be taken to mean that the documents have been checked in detail and Council takes no responsibility for their accuracy. If during construction, inadequacies of the design are discovered, it is the responsibility of the Principal Consulting Engineer to resubmit amended plans to Council for approval and rectify works accordingly.
- 1.6 All earthworks must be undertaken in accordance with Australian Standard 3798-2007, guidelines on Earthworks for Commercial and Residential Developments; additionally, further certification is to occur when works are completed and test results are compiled. This information must be provided to Council prior to Works Acceptance.

Finished design levels and gradients over each allotment must be generally in accordance with those shown on drawings *AP-ST1314-C26 Rev. B*, *AP-*

ST1314-C27 Rev. B and AP-ST1314-C28 Rev. B included in the approved plans.

- 1.7 The use of polypropylene stormwater piping or equivalent is **not permitted**. Details of stormwater piping material must be submitted to Council for approval prior to Pre-Start Meeting.
- 1.8 All water main road crossings must be constructed in ductile iron cement mortar lined (DICL) piping.
- 1.9 A street tree plan is to be provided to Council for review and approval prior to the Pre-Start Meeting occurring. The street tree plan must include 1 street tree located in the centre of each allotment frontage, on each side of the road. Corner lots must have a street tree on each frontage. The street tree species used must be approved by Council's delegated officer.

The final "for construction" plans, in particular the "typical cross section and detail plans" must be amended to include street trees to ensure their position and alignment does not interfere with any other service infrastructure.

- 1.10 The final "for construction" plans (including the "typical cross section and detail plans" and "cross section plans") must be amended so that pedestrian footpath locations and alignments comply with *Condition 4.4 – Roadworks/footpaths – Internal* of Development Permit RAL/22/0019, to the satisfaction of Council's delegated officer.

All pedestrian footpaths including the location of kerb ramps must be constructed in accordance with Australian Standard AS1428.1, to the satisfaction of Council's delegated officer.

- 1.11 Lighting in all 3 stages must be designed to a P4 standard under the FNQROC Development Manual. Street lights along Karobean Drive must be installed on the opposite side to the footpath only.
- 1.12 Domestic water service connections must be installed to comply with the original issue of Standard Drawing S2060 (unamended). Domestic water service connections must be installed on the opposite boundary to the electrical service infrastructure.

Separate approval may be sought for co-location of water service connections and electrical service infrastructure. Such a request must be accompanied by an engineered design endorsed by a suitably qualified RPEQ. If approved, the consulting engineer must also provide final certification that the constructed works comply with the endorsed design prior to works acceptance.

2 Pre-start Meeting

- 2.1 In addition to the requirements of Clause CP1.07 and CP1.08 of the FNQROC Development Manual; after documentation has been approved by Council, a pre-start meeting is to be held on site prior to the commencement of work. Part 1 of the **attached** pre-start meeting pro-forma is to be completed and returned prior to the meeting including clause 1.u 'Request for Meeting' together with the prescribed Construction Monitoring Fee as set out in Council's Schedule of Fees.

3 Inspections

- 3.1 Inspections are to be carried out as detailed in the FNQROC Manual unless advised otherwise at the pre-start meeting.

4 Construction Security Bond and Defects Liability Bond

- 4.1 In addition to Clauses CP1.06 and CP1.20 of the FNQROC Development Manual; the Construction Security Bond and Defects Liability Bond shall each be a minimum of \$1000 and Bank Guarantees shall have no termination date.
- 4.2 During the Defects Liability period, it is the responsibility of the developer to rectify any works found to be defective due to design faults and or found to exhibit faults attributed to the performance of the construction activities in terms of quality and conformance with design and specifications. The bond will be returned on satisfactory correction of any defective work and after expiration of the maintenance period. Failure to comply with a Council issued instruction to correct defective work may result in the call up of the bond to have the work completed.

5 Hours of Work

- 5.1 Work involving the operation of construction plant and equipment of any description, shall only be carried out on site during the following times:
- 7.00am to 6.00pm, Monday to Friday;
 - 7.00am to 1.00pm Saturdays;
 - No work is permitted on Sundays or Public Holidays.
- 5.2 No variation to the above working hours is allowed unless otherwise agreed in writing by Council.

6 Transportation of Soil

- 6.1 All soil transported to or from the site must be covered to prevent dust or spillage during transport. If soil is tracked or spilt onto the road pavement from works on the subject land, it must be removed no later than at the end of each working day. Sediment must not enter Council's stormwater drainage network.

(D) RELEVANT PERIOD

When approval lapses if development not started (s.85)

- Two (2) years (starting the day the approval takes effect).

(E) OTHER NECESSARY DEVELOPMENT PERMITS AND/OR COMPLIANCE PERMITS

- Nil

DECISION BY DELEGATE

DECISION

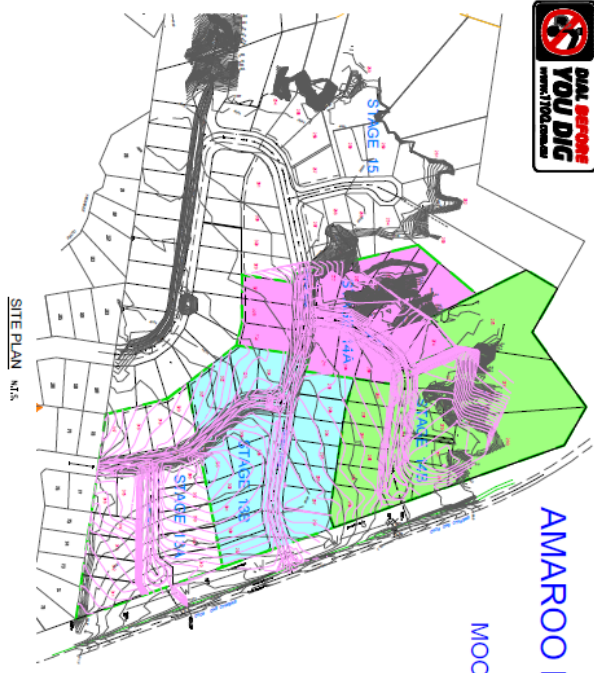
Having considered the Planning Officer's report detailed above, I approve, as delegate of Council, the application subject to the conditions listed in the report.

Dated the 8TH day of FEBRUARY 2023



BRIAN MILLARD
SENIOR PLANNER

MAREEBA SHIRE
AS DELEGATE OF THE COUNCIL



SITE PLAN N/A.

AMAROO RESIDENTIAL DEVELOPMENT

STAGES 13 & 14

MOONDANI AVENUE, MAREEBA

Mareeba Shire Council

STAGE 13A - 15 ALLOTMENTS
 STAGE 13B - 19 ALLOTMENTS
 STAGE 14A - 12 ALLOTMENTS
 STAGE 14B - 14 ALLOTMENTS

Drawing Number	Rev	Drawing Description
FNAROC STANDARD DRAWINGS		
S1015	B	ACCESS CROSSOVERS
S1016	A	KERB RAMP
S1040	E	GRADED KERB INLET FIT PIPE DIA. ≥ 600
S1052	D	GRADED KERB INLET FIT PIPE DIA. ≤ 600
S1055	B	STRAIGHT MANHOLES (900 & 1500)
S2000	C	VALVE BOX INSTALLATION
S2005	C	HYDRANT BOX INSTALLATION
S2010	C	KERBROAD MARKERS
S2016	B	WATER RETICULATION BEDDING DETAILS
S2200	C	MAIN CONNECTION DETAILS
S3000	D	SEWERAGE MANHOLES
S3005	C	STANDARD HOUSE CONNECTION BRANCHES
S3015	C	BEDDING AND TRENCHING DETAILS - SEWERAGE

Drawing Number	Rev	Drawing Description
MAREEBA SHIRE COUNCIL - SPECIFIC DRAWINGS		
S0000	A	MSC VALVE BOX INSTALLATION
S0005	A	MSC HYDRANT BOX INSTALLATION
S0015	A	MSC THRUST BLOCK DETAILS
S0020	D	MSC MAIN CONNECTION DETAILS
S0050	A	MSC DOMESTIC WATER SERVICE CONNECTION DETAILS

Drawing Number	Drawing Description
AP-ST1314C01	COVER SHEET - SITE PLAN AND DRAWING LIST
AP-ST1314C02	OVERALL SITE PLAN - STAGES 13 & 14
AP-ST1314C03	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 13A
AP-ST1314C04	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 13B
AP-ST1314C05	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 14A
AP-ST1314C06	ROADWORKS AND DRAINAGE LAYOUT PLAN - STAGE 14B
AP-ST1314C07	ROAD CENTRE LINE SETOUT TABLES
AP-ST1314C08	INTERSECTION & CUL-DE-SAC DETAILS - SHEET 1 of 3
AP-ST1314C09	INTERSECTION & CUL-DE-SAC DETAILS - SHEET 2 of 3
AP-ST1314C10	INTERSECTION & CUL-DE-SAC DETAILS - SHEET 3 of 3
AP-ST1314C11	TYPICAL CROSS SECTIONS AND DETAILS
AP-ST1314C12	LONGITUDINAL SECTION - KAROBEAN AVENUE
AP-ST1314C13	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 1 of 4
AP-ST1314C14	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 2 of 4
AP-ST1314C15	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 3 of 4
AP-ST1314C16	CROSS SECTIONS - KAROBEAN AVENUE - SHEET 4 of 4
AP-ST1314C17	LONGITUDINAL SECTION - MOONDANI AVENUE
AP-ST1314C18	CROSS SECTIONS - MOONDANI AVENUE - SHEET 1 of 2
AP-ST1314C19	CROSS SECTIONS - MOONDANI AVENUE - SHEET 2 of 2
AP-ST1314C20	CROSS SECTIONS - ROAD 3 & ALLAMBEE CLOSE
AP-ST1314C21	CROSS SECTIONS - ROAD 3
AP-ST1314C22	CROSS SECTIONS - ALLAMBEE CLOSE - SHEET 1 of 2
AP-ST1314C23	CROSS SECTIONS - ALLAMBEE CLOSE - SHEET 2 of 2
AP-ST1314C24	OVERALL EARTHWORKS PLAN - STAGES 13 & 14
AP-ST1314C25	EARTHWORKS PLAN - STAGE 13A
AP-ST1314C26	EARTHWORKS PLAN - STAGE 13B
AP-ST1314C27	EARTHWORKS PLAN - STAGE 13C
AP-ST1314C28	EARTHWORKS PLAN - STAGE 14A
AP-ST1314C29	EARTHWORKS PLAN - STAGE 14B
AP-ST1314C30	STORMWATER DRAINAGE CATCHMENT PLAN
AP-ST1314C31	STORMWATER DRAINAGE - LONGITUDINAL SECTIONS - SHEET 1 of 3
AP-ST1314C32	STORMWATER DRAINAGE - LONGITUDINAL SECTIONS - SHEET 2 of 3
AP-ST1314C33	STORMWATER DRAINAGE - LONGITUDINAL SECTIONS - SHEET 3 of 3
AP-ST1314C34	STORMWATER DRAINAGE - CALCULATIONS TABLE - SHEET 1 of 3
AP-ST1314C35	STORMWATER DRAINAGE - CALCULATIONS TABLE - SHEET 2 of 3
AP-ST1314C36	STORMWATER DRAINAGE - CALCULATIONS TABLE - SHEET 3 of 3
AP-ST1314C37	STORMWATER DRAINAGE CATCHMENT TABLE STRUCTURES SCHEDULE AND PIPE TABLE
AP-ST1314C38	STORMWATER DRAINAGE STRUCTURES DETAILS PLAN
AP-ST1314C39	SEWERAGE RETICULATION - LAYOUT PLAN - STAGE 13A - SHEET 1 of 5
AP-ST1314C40	SEWERAGE RETICULATION - LAYOUT PLAN - STAGE 13A - SHEET 2 of 5
AP-ST1314C41	SEWERAGE RETICULATION - LAYOUT PLAN - STAGE 13A - SHEET 3 of 5
AP-ST1314C42	SEWERAGE RETICULATION - LAYOUT PLAN - STAGE 13A - SHEET 4 of 5
AP-ST1314C43	SEWERAGE RETICULATION - LAYOUT PLAN - STAGE 13A - SHEET 5 of 5
AP-ST1314C44	SEWERAGE RETICULATION - LONGITUDINAL SECTIONS - SHEET 1 of 3
AP-ST1314C45	SEWERAGE RETICULATION - LONGITUDINAL SECTIONS - SHEET 2 of 3
AP-ST1314C46	SEWERAGE RETICULATION - LONGITUDINAL SECTIONS - SHEET 3 of 3
AP-ST1314C47	WATER RETICULATION PLAN - STAGE 13A
AP-ST1314C48	WATER RETICULATION PLAN - STAGE 13B
AP-ST1314C49	WATER RETICULATION PLAN - STAGE 14A
AP-ST1314C50	WATER RETICULATION PLAN - STAGE 14B
AP-ST1314C51	EROSION & SEDIMENT CONTROL PLAN - STAGE 13 & 14
AP-ST1314E01	DOMESTIC WATER SERVICE CONNECTION DETAILS - MODIFIED
AP-ST1314E02	
AP-ST1314E03	
S2000	

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

Robyn Mansinger
 Civil Design Consultant
 10 Tully Lane
 Brisbane QLD 4066
 Email: robindesign@optusnet.com.au
 Mob: 0424 007 310
 Fax: 07 799 79 730
 FIRM DATE: 10 November, 2022 - 10h5pm

Approved Consultant
 TS. Adriane Associates
 538 Malpas Way, MAREEBA QLD 4800
 Ph: 07 487 80140
 Email: tsaa@adriane.com.au

REVISION	DATE
1	10/11/2022
2	10/11/2022
3	10/11/2022
4	10/11/2022
5	10/11/2022
6	10/11/2022
7	10/11/2022
8	10/11/2022
9	10/11/2022
10	10/11/2022

Client	BT M & S STANKOVICH PTY LTD
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Client	MOONDANI AVENUE, MAREEBA

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Client	MOONDANI AVENUE, MAREEBA

ISSUE FOR APPROVAL



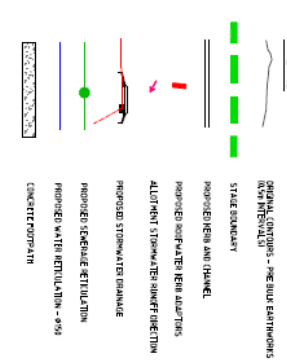
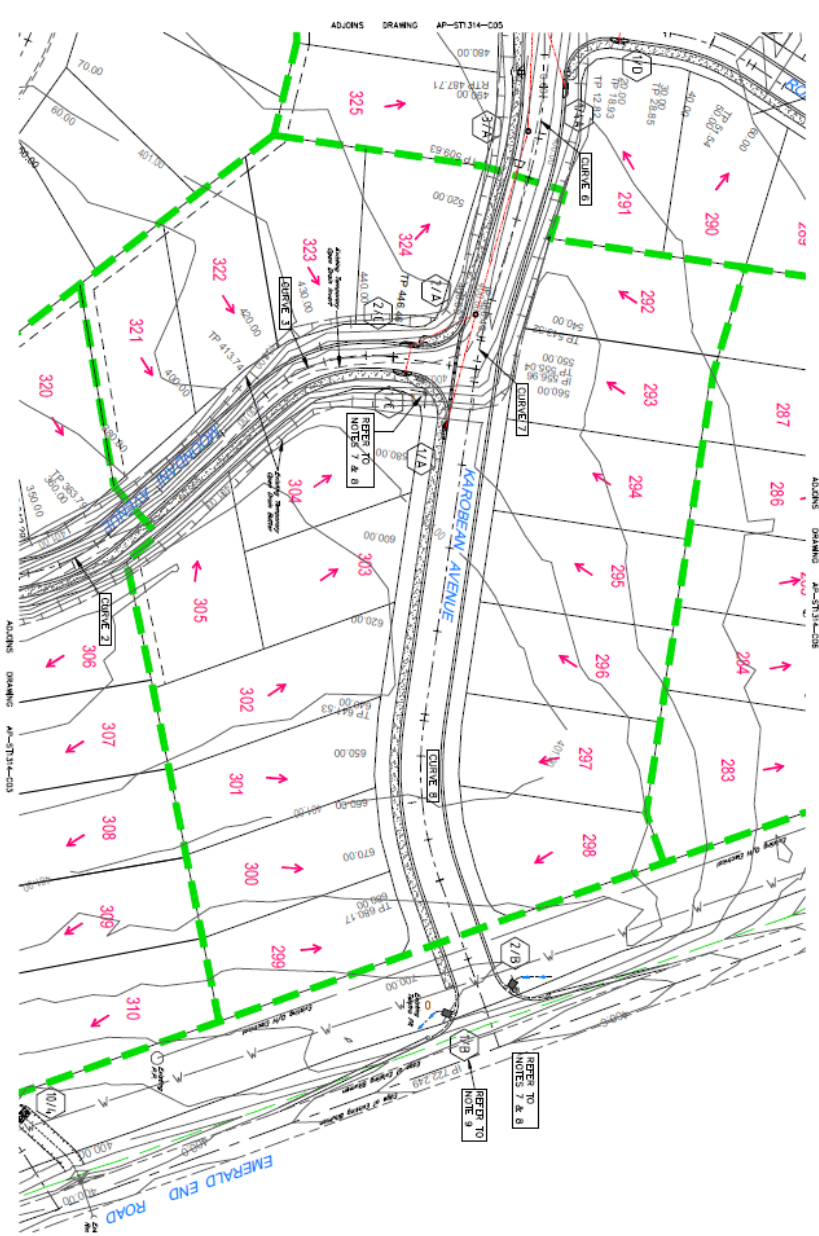
STORMWATER STRUCTURE TABLE

NO.	TYPE	EASTING	NORTHING
1/4	REIN. INLET ON GRADE (S)	339733.23	829933.68
2/4	90°/90° MANHOLE	339553.00	829897.51
3/4	REIN. INLET ON GRADE (S)	339733.08	829885.91
3/7	REIN. INLET ON GRADE (S)	339657.26	829885.26
3/4	90°/90° MANHOLE	339807.99	829875.26
3/4	REIN. INLET ON GRADE (S)	339817.34	829875.26
3/8	BACK OF REIN. GRADING	339724.71	829875.26
3/8	BACK OF REIN. GRADING	339553.00	829875.26

CO-ORDINATES REFER TO MIDDLE OF HEADWALL AS SHOWN
 CO-ORDINATES REFER TO CENTER OF MANHOLE AS SHOWN
 SETOUT REFER TO MID POINT OF GRADE ON TOP OF REIN. AS SHOWN

CONTROL STATIONS

Point	Eastings	Northings	Elevation
PSM 46856	339430.00	829713.76	99.65
PSM 46858	339222.25	829732.20	41.43
STV 1 (R/L)	339540.00	829732.20	99.36
STV 2 (R/L)	339540.00	829644.00	41.91
STV 3 (R/L)	339525.26	829541.95	42.69



CURVE TABLE

FOR ASSOCIATED ROAD LONGITUDINAL SECTIONS AND CROSS SECTIONS REFER TO DRAWINGS AP-ST1314-C11 TO C16.

CURVE NO.	ROAD NO.	RADIUS	ARC	TANGENT	SECANT
1	MONDAMI AVENUE	183.52	215.02	144.89	1.551
2	MONDAMI AVENUE	371.50	314.44	324.79	3.247
3	KAROOREN AVENUE	81.00	27.92	10.23	0.247
4	KAROOREN AVENUE	75.00	117.50	53.70	0.248
5	KAROOREN AVENUE	75.00	38.63	16.78	0.243

- NOTES**
- LEVEL DATUM AND ORIGIN OF LEVELS: PAVING/GR. RL 402.411 CAR HIGHT ROAD AND CURVA DRIVE.
 - NATURAL SURFACE CONTOUR INTERVAL: 0.20m (Rounded: 1.00m)
 - NATURAL SURFACE CONTOURS DERIVED FROM TIME 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 PROPOSED SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, SEWERAGE, WATER AND STORMWATER DRAINAGE.
 - FOR INTERSECTION AND CUL. DE. S&C DETAILS REFER TO DRAWINGS AP-ST1314-C05 & C10.
 - PROVIDE TWO STANDARD PROPOSED SINGLE PLATE STREET NAME SIGNS ON SAME STANDARD - MONDAMI AVENUE AND KAROOREN AVENUE. REFER TO PROPOSED STANDARD DRAWING STORE FOR FURTHER DETAILS.
 - AT LOCATIONS 1/8 AND 2/8 PROVIDE REIN. AND CHANNEL OPENING TO DRAIN ROAD PAVEMENT AND DIRECT RUNOFF TO EXISTING TALE DRAINS. REFER TO DWG. AP-ST1314-C10 FOR FURTHER DETAILS.

ISSUE FOR APPROVAL

Robin Mansinger
Civil Design Consultant

10 Tully Drive
Bolderon QLD 4659
email: robin@robinm.com.au
MOB: 0424 037 310
9AM-7PM 7/23

Approved Consultant
7/8 Adelaide Row
888 Melbourne Hwy, MAREEBA QLD 4880
Ph: 07 467 96344
Email: robin@robinm.com.au

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

REVISION	DATE
1. ORIGINAL ISSUE FOR APPROVAL	11/23
2. ORIGINAL ISSUE FOR APPROVAL	08/23
3. ORIGINAL ISSUE FOR APPROVAL	08/23

DATE	BY	CHKD BY
08/23	RM	RM

NO.	DATE	BY	CHKD BY
1	08/23	RM	RM

NO.	DATE	BY	CHKD BY
1	08/23	RM	RM



Robin Mansinger
Civil Design Consultant
10 Tully Lane
Buderim QLD 4556
email: robin@dialbiddon.com.au
MOB: 0424 027 310
ABN: 77 987 79 793

Associated Consultant
73, Adelaide Avenue
Brisbane QLD 4000
Ph: (07) 3830 0000
Email: raven@adelaide.com

REVISION TABLE

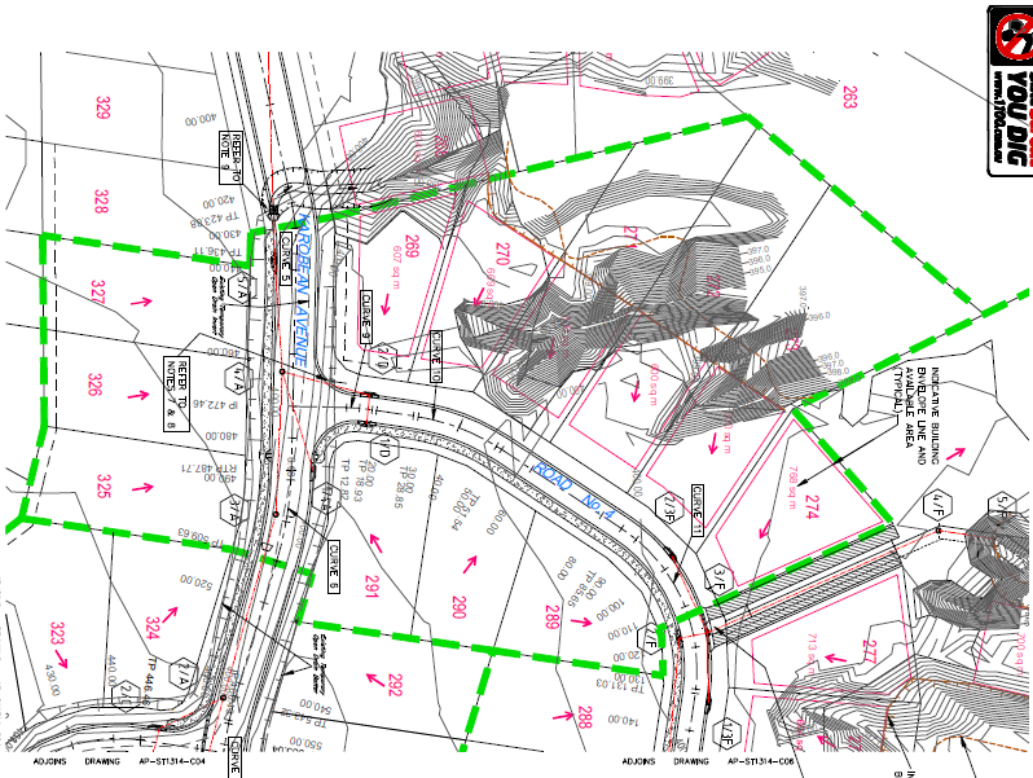
NO.	REVISION	DATE
1	ISSUE FOR APPROVAL	11/25/22
2	ISSUE FOR APPROVAL	08/22/22

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

DRAWING: ROADWORKS AND DRAINAGE
LAYOUT PLAN - STAGE 14A

ISSUE FOR APPROVAL

DATE	BY	REVISION
08/22/22		



INDICATE THE TOP OF FILL BATTER LINE (TYPICAL)

INDICATE THE TOP OF FILL BATTER LINE (TYPICAL)

INDICATE THE TOP OF FILL BATTER LINE (TYPICAL)

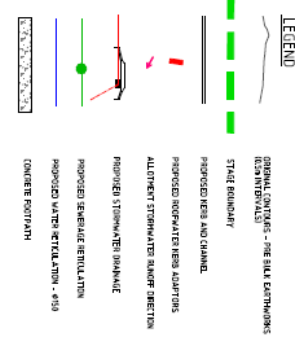
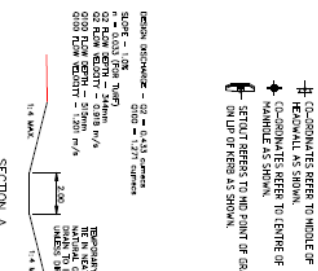
REFER CROSSFALL TO GROUND AND TO STREET OVERLAND FLOW TO BE CHECKED. THRESHOLD WITH AS MUCH AS POSSIBLE. INDICATE TEMPORARY OUTLET DRAIN FROM EXISTING OF STAGE 1A

CONTROL STATIONS

NO.	DATE	NO.	NO.	NO.
1000000	10/01/2022	1000000	1000000	1000000
1000000	10/01/2022	1000000	1000000	1000000
1000000	10/01/2022	1000000	1000000	1000000
1000000	10/01/2022	1000000	1000000	1000000

STORMWATER STRUCTURE TABLE

NO.	TYPE	EASTING	NORTHING
3/A	9000 MANHOLE	338000.539	878000.286
3/B	9000 MANHOLE	338000.539	878000.286
3/C	9000 MANHOLE	338000.539	878000.286
3/D	9000 MANHOLE	338000.539	878000.286
3/E	9000 MANHOLE	338000.539	878000.286
3/F	9000 MANHOLE	338000.539	878000.286
3/G	9000 MANHOLE	338000.539	878000.286
3/H	9000 MANHOLE	338000.539	878000.286
3/I	9000 MANHOLE	338000.539	878000.286
3/J	9000 MANHOLE	338000.539	878000.286
3/K	9000 MANHOLE	338000.539	878000.286
3/L	9000 MANHOLE	338000.539	878000.286
3/M	9000 MANHOLE	338000.539	878000.286
3/N	9000 MANHOLE	338000.539	878000.286
3/O	9000 MANHOLE	338000.539	878000.286
3/P	9000 MANHOLE	338000.539	878000.286
3/Q	9000 MANHOLE	338000.539	878000.286
3/R	9000 MANHOLE	338000.539	878000.286
3/S	9000 MANHOLE	338000.539	878000.286
3/T	9000 MANHOLE	338000.539	878000.286
3/U	9000 MANHOLE	338000.539	878000.286
3/V	9000 MANHOLE	338000.539	878000.286
3/W	9000 MANHOLE	338000.539	878000.286
3/X	9000 MANHOLE	338000.539	878000.286
3/Y	9000 MANHOLE	338000.539	878000.286
3/Z	9000 MANHOLE	338000.539	878000.286



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

CURVE TABLE

LINE/NO.	ROAD NO.	RADIUS	ARC	TANGENT	SECANT
1	KARROO AVENUE	5100	0.278	6.43	0.89
2	KARROO AVENUE	4100	0.278	10.03	0.74
3	KARROO AVENUE	5400	0.278	6.89	1.08
4	ROAD NO. 4	5200	22.485	15.58	1.92
5	ROAD NO. 4	4900	65.579	25.82	7.87

- NOTES
- LEVEL DATUM: AHD
 - ORIGIN OF LENSES: PAVEMENT, RL 402.411 ON HASTE ROAD AND CEILING DOME
 - MINIMUM SURFACE COURSE INTERVAL: 0.20m INDEXED: 1:00m
 - MINIMUM SURFACE CONTOURS DERIVED FROM THREE FIELD SURVEY WITH ADDITIONAL DATA DERIVED FROM LIDAR INFORMATION.
 - DETAILS OF EXISTING SERVICES NOT PROVIDED FOR INFORMATION ONLY AND THE DESIGNER IS TO CHECK ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
 - REFER TO ENGINE SPECIFICATIONS AND DRAWINGS FOR EXISTING ROADWORKS, SEWERAGE, WATER AND STORMWATER DRAINAGE FOR INTERSECTION AND COLL. SEE SAC DETAILS REFER TO DRAWING AP-ST1314-C08.
 - PROVIDE TWO STANDARD FINICOR SINGLE PLATE STREET NAME SIGNS ON SAME STANDARDS - 'MOONDIWI AVENUE' AND 'ROAD NO. 3'
 - APPROVED ROAD NAME TO BE VERIFIED.
 - REFER TO FINICOR STANDARDS DRAWING S1040 FOR FURTHER DETAILS. PROVIDE TEMPORARY OUTLET REMOVAL TO 6000 CULVERT DRAINAGE SINCE 4A EXISTING AND CONSTRUCT TEMPORARY OUTLET DRAIN TO DIRECT RUNOFF TO EXISTING NATURAL GULLY.
 - MINIMUM COVER OF DRAIN IS: 100 (75%)
 - REFER TO DETAILS OF TEMPORARY OUTLET DRAIN REFER TO SECTION A ON THIS DRAWING.

KAROBAN AVENUE

CHAINAGE	EASTING	NORTHING	RADIUS	BEARING	DESIGN RL
400.000	331804.236	8120908.931		77°38'55"	400.267
420.000	331823.773	8120913.209		77°38'55"	400.219
TP423.878	331827.561	8120914.039		77°38'55"	401.133
430.000	331833.606	8120914.987	51.000	84°31'43"	399.660
TP436.106	331839.704	8120915.284	51.000	91°23'10"	399.665
440.000	331843.597	8120915.110		91°23'10"	399.715
460.000	331863.591	8120914.626		91°23'10"	399.715
TP472.463	331876.051	8120914.325		91°23'10"	399.716
480.000	331883.585	8120914.142		91°23'10"	399.727
TP481.714	331891.297	8120913.956		91°23'10"	399.728
490.000	331893.451	8120913.868	81.000	93°00'12"	399.742
500.000	331903.510	8120912.730	81.000	100°02'47"	399.723
TP509.626	331912.865	8120910.487		106°05'10"	399.692
520.000	331922.792	8120907.434		106°05'10"	399.711
540.000	331941.929	8120901.644		106°05'10"	399.711
TP542.319	331945.105	8120900.700		106°05'10"	399.796
550.000	331951.973	8120899.032	79.000	102°02'26"	399.802
TP555.039	331956.531	8120898.139		98°23'10"	399.887
TP556.962	331958.433	8120897.858		98°23'10"	399.921
560.000	331961.439	8120897.415		98°23'10"	400.089
580.000	331981.225	8120894.499		98°23'10"	400.837
600.000	334001.011	8120891.582		98°23'10"	401.009
620.000	334020.797	8120888.665		98°23'10"	401.103
TP641.526	334042.093	8120885.429		98°23'10"	401.154
650.000	334050.527	8120884.741	79.000	92°14'25"	401.059
660.000	334060.517	8120884.983	79.000	84°59'16"	400.990
670.000	334070.397	8120886.484	79.000	77°44'06"	400.940
680.000	334080.009	8120889.220	79.000	70°21'25"	400.653
TP680.173	334080.172	8120889.219		70°21'25"	400.652
700.000	334098.845	8120895.943		70°21'25"	400.509
720.000	334117.461	8120902.666		70°21'25"	400.509
TP722.249	334119.739	8120903.422		70°21'25"	400.581

ROAD No. 3

CHAINAGE	EASTING	NORTHING	RADIUS	BEARING	DESIGN RL
100.000	334010.817	8120168.304		90°23'10"	400.294
20.000	334030.817	8120168.163		90°23'10"	401.482
40.000	334050.816	8120168.034		90°23'10"	401.414
60.000	334070.816	8120161.900		90°23'10"	401.227
80.000	334090.815	8120161.765		90°23'10"	400.977
TP93.463	334104.278	8120161.674		90°23'10"	400.779
100.000	334110.706	8120168.690	20.000	91°39'10"	400.680
TP105.034	334115.236	8120170.855		57°14'13"	400.508
CP111.422	334120.607	8120174.312		57°14'13"	400.508
120.000	334127.821	8120178.954		57°14'13"	400.342
140.000	334144.639	8120189.778		57°14'13"	400.105
156.210	334158.271	8120198.550		57°14'13"	400.029

ISSUE FOR APPROVAL

Robin Mansinger
Civil Design Consultant
19 Tullaroona
Bulimba QLD 4055
email: robin@robinm.com.au
Ph: 07 4677 9867
Fax: 07 4677 9871

Approved Consultant
158 Main Street
P.O. Box 200
Brisbane QLD 4000
Email: robin@robinm.com

8	8	8	8
REVISION	REVISION	REVISION	REVISION
DATE	DATE	DATE	DATE

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

DRAWING ROAD CENTRE LINE
SETOUT TABLES

DATE 08/22
SCALE
PROJECT AP-ST1314-007
NO. B

MOONDANI AVENUE

CHAINAGE	EASTING	NORTHING	RADIUS	BEARING	DESIGN RL
240.000	334014.778	8120690.197		8°20'35"	401.600
260.000	334017.660	8120709.985		8°20'35"	401.500
TP263.322	334018.162	8120713.272		8°20'35"	401.183
270.000	334018.577	8120719.929	40.000	358°46'39"	401.456
TP275.858	334018.024	8120725.756	40.000	350°23'10"	401.266
280.000	334017.332	8120729.840		350°23'10"	399.987
300.000	334013.992	8120749.559		350°23'10"	400.294
TP319.012	334010.817	8120768.304		350°23'10"	400.311
320.000	334010.652	8120769.278		350°23'10"	400.160
340.000	334017.312	8120788.997		350°23'10"	400.047
TP342.285	334006.930	8120791.252		348°54'25"	399.991
350.000	334004.891	8120798.677	38.500	324°01'29"	399.997
360.000	334000.128	8120807.390	38.500	318°23'10"	400.144
TP363.789	333997.755	8120810.390		318°23'10"	400.443
380.000	333986.989	8120822.510		318°23'10"	400.294
400.000	333975.707	8120831.463		318°23'10"	400.023
TP413.736	333964.584	8120847.732		318°23'10"	400.023
420.000	333960.834	8120852.740	37.500	327°57'22"	399.989
430.000	333956.714	8120861.820	37.500	343°34'06"	399.987
440.000	333955.133	8120871.664	37.500	8°23'10"	400.032
TP446.461	333955.522	8120878.106		8°23'10"	399.930
460.000	333957.496	8120891.500		8°23'10"	399.991
TP466.428	333958.433	8120897.858		8°23'10"	399.921

ALLAMBEE CLOSE

CHAINAGE	EASTING	NORTHING	RADIUS	BEARING	DESIGN RL
0.000	333876.051	8120914.325		1°23'10"	399.716
TP12.820	333876.361	8120927.141		1°23'10"	400.310
TP18.929	333877.881	8120933.224		8°23'10"	400.318
20.000	333877.037	8120934.284	50.000	8°23'10"	400.318
TP28.852	333878.328	8120945.041		8°23'10"	400.354
30.000	333878.508	8120944.175	52.000	9°39'04"	400.358
40.000	333881.119	8120955.812	52.000	20°40'10"	400.354
50.000	333885.524	8120962.772	52.000	31°41'16"	400.178
TP51.541	333886.353	8120964.071	52.000	33°02'31"	400.170
60.000	333891.008	8120971.134		33°02'31"	400.134
80.000	333902.013	8120987.834		33°02'31"	400.051
TP85.649	333905.122	8120992.551		33°02'31"	400.026
90.000	333907.709	8120996.047	40.000	39°07'06"	400.007
100.000	333914.977	8121002.877	40.000	53°06'23"	399.976
110.000	333923.709	8121007.696	40.000	68°05'59"	399.921
120.000	333933.363	8121010.206	40.000	82°03'25"	399.886
130.000	333944.336	8121010.249	40.000	96°04'51"	399.911
TP131.028	333944.335	8121010.112		96°04'51"	399.911
140.000	333955.231	8121008.803		98°23'10"	399.979
160.000	333973.018	8121005.887		98°23'10"	400.037
180.000	333992.804	8121002.970		98°23'10"	400.095
200.000	334012.590	8121000.053		98°23'10"	400.035
TP207.389	334010.900	8120998.975		98°23'10"	400.119
210.000	334022.500	8120998.764	20.000	91°04'22"	400.112
TP216.596	334022.994	8120999.739		72°00'35"	400.088
220.000	334032.231	8121000.790		72°00'35"	400.063
CP227.103	334038.987	8121002.984		72°00'35"	400.063
240.000	334051.253	8121006.968		72°00'35"	400.009
260.000	334076.276	8121013.145		72°00'35"	399.791
269.448	334079.262	8121016.063		72°00'35"	399.981

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Robin Mansinger
 Civil Design Consultant
 19 Tully Lane
 Buderim QLD 4556
 email: robin@robinm.com.au
 MOB: 0424 037 310
 ABN: 77 998 712 728

Approved Consultant:
 75 Ashcroft Road
 58 Mulgrave Hwy MAREEBA QLD 4880
 Ph: 07 4780 0400
 Email: hannah@hpl.com.au

REVISION	DATE
1. ORIGINAL DESIGN FOR APPROVAL	11/23
2. DESIGNAL REVISIONS FOR APPROVAL	08/22
3. DESIGNAL REVISIONS FOR APPROVAL	08/22
4. DESIGNAL REVISIONS FOR APPROVAL	08/22

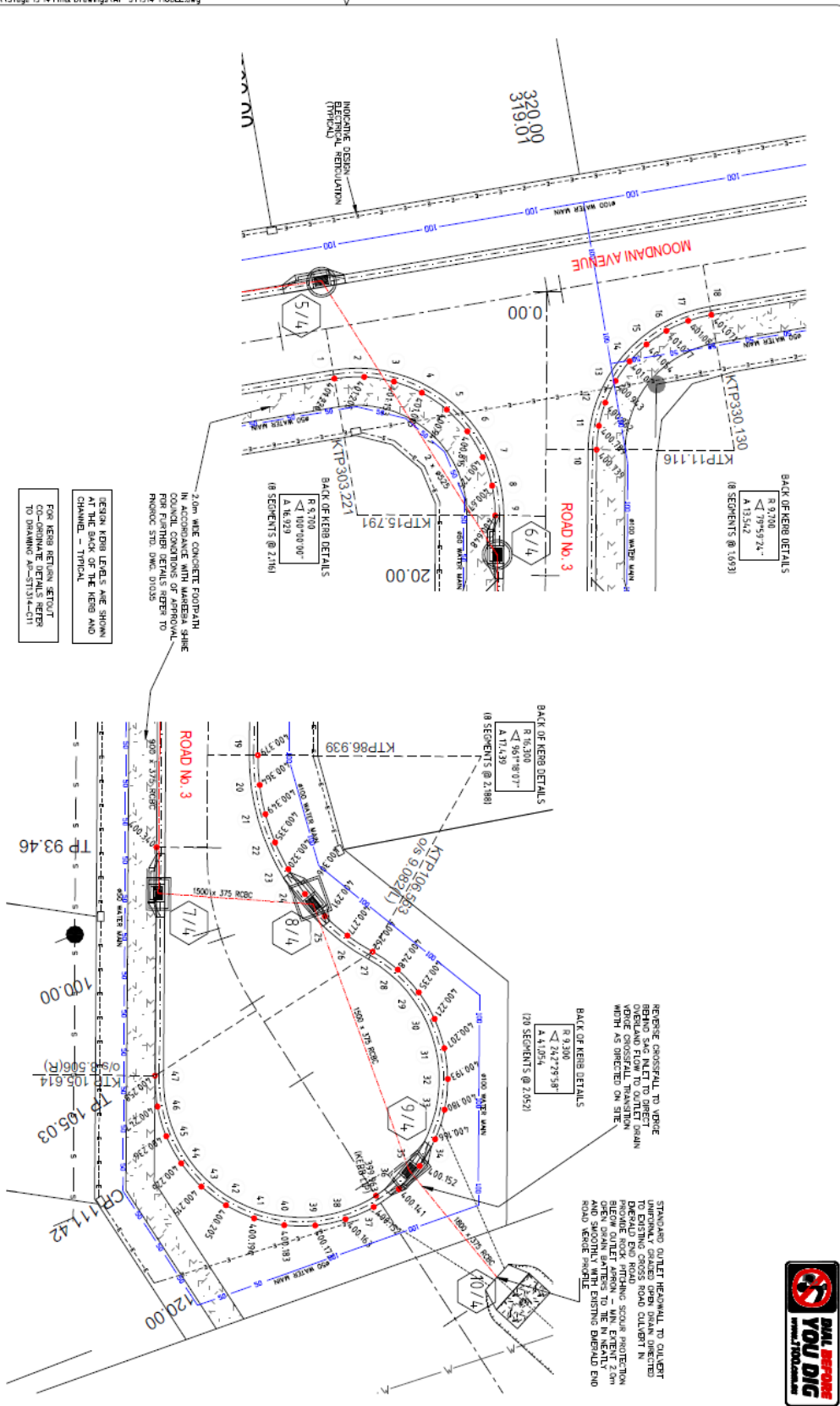
CLIENT: BT, M & S STANNKOVICH PTY LTD
PROJECT: ANAAROO RESIDENTIAL DEVELOPMENT
 STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

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

DATE	BY	CHKD BY
08/22	RMM	

AP-ST1314-C08

Document Set ID: 4166878



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Robin Mansinger
 Civil Design Consultant
 19 Tully Drive
 Buderim QLD 4556
 email: robin@robinmns.com.au
 MOB: 0424 037 310
 A/NZ: 77 990 71 73

Approved Consultant
 T/S. Andrew Mackenzie
 58 Mulgrave Way, MAREEBA QLD 4088
 Ph: 0427 801000
 Email: tsm@andrewm.com

REVISION	DATE
1. ORIGINAL DESIGN FOR APPROVAL	11/25/22
2. ORIGINAL DESIGN FOR APPROVAL	08/22/22
3. ORIGINAL DESIGN FOR APPROVAL	08/22/22
4. ORIGINAL DESIGN FOR APPROVAL	08/22/22
5. ORIGINAL DESIGN FOR APPROVAL	08/22/22

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

DRAWING: INTERSECTION DETAILS
 SHEET 2 of 3

DATE	BY	APPROVED	DATE
08/22	R/M		
		AP-ST1314-C09	B

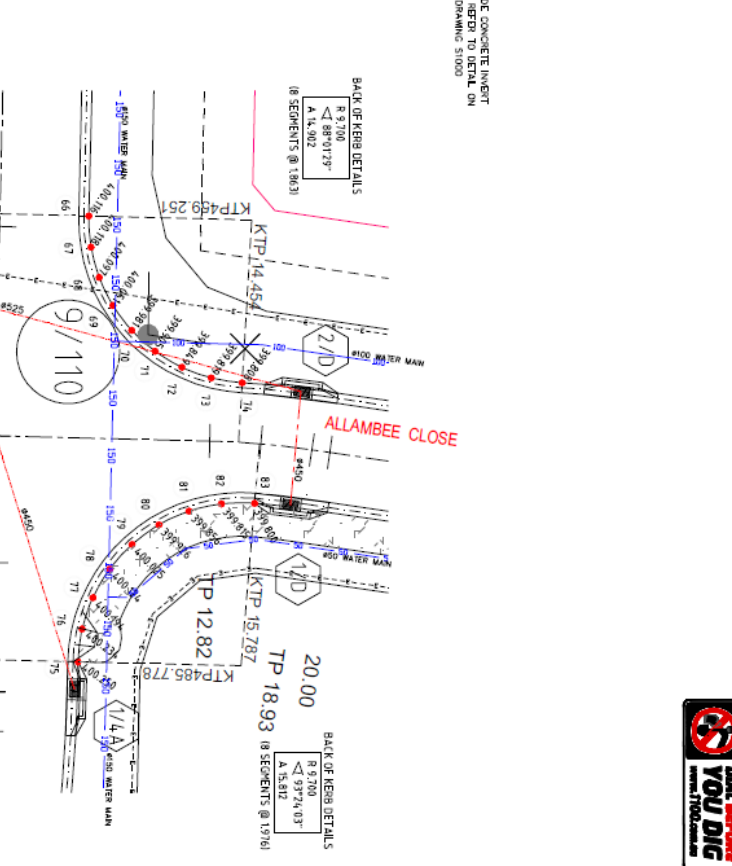
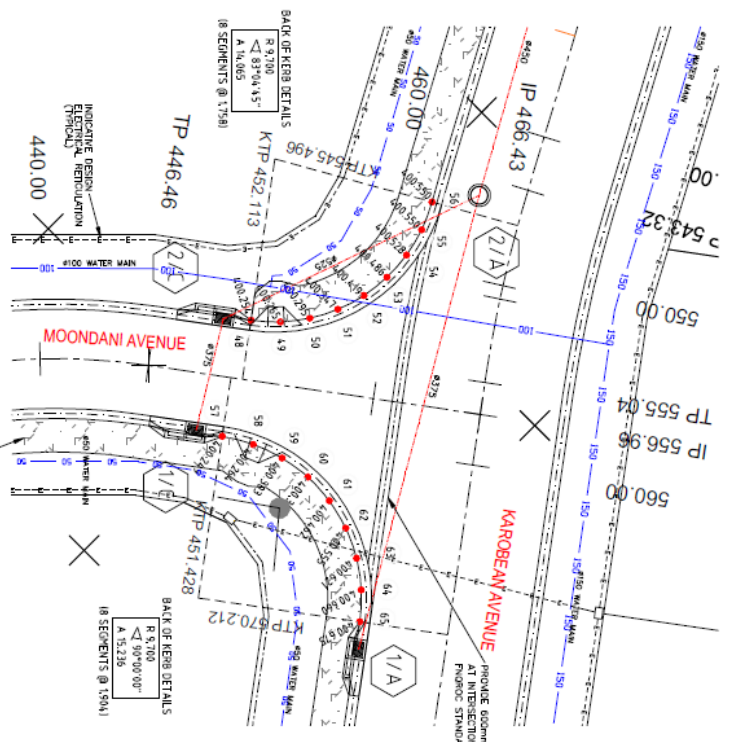


FOR GENERAL ROADWORKS AND DRAINAGE NOTES REFER TO DRAWING AP-ST1314-C03

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 THE LOCAL COUNCIL CONDITIONS OF APPROVAL FOR FINISHED DETAILS REFER TO PAVED STD. DIM. 07035



Robin Mensinger
Civil Design Consultant
10 Tully Lane
Buderim QLD 4556
email: robin@robinmensinger.com.au
Mob: 0424 037 310
ASN77 989 732 730

Approved Consultant
TS. Andrew Associates
88 Main Street, WAREEBA QLD 4680
P.O. BOX 801040
Email: tsa@tsa.com.au

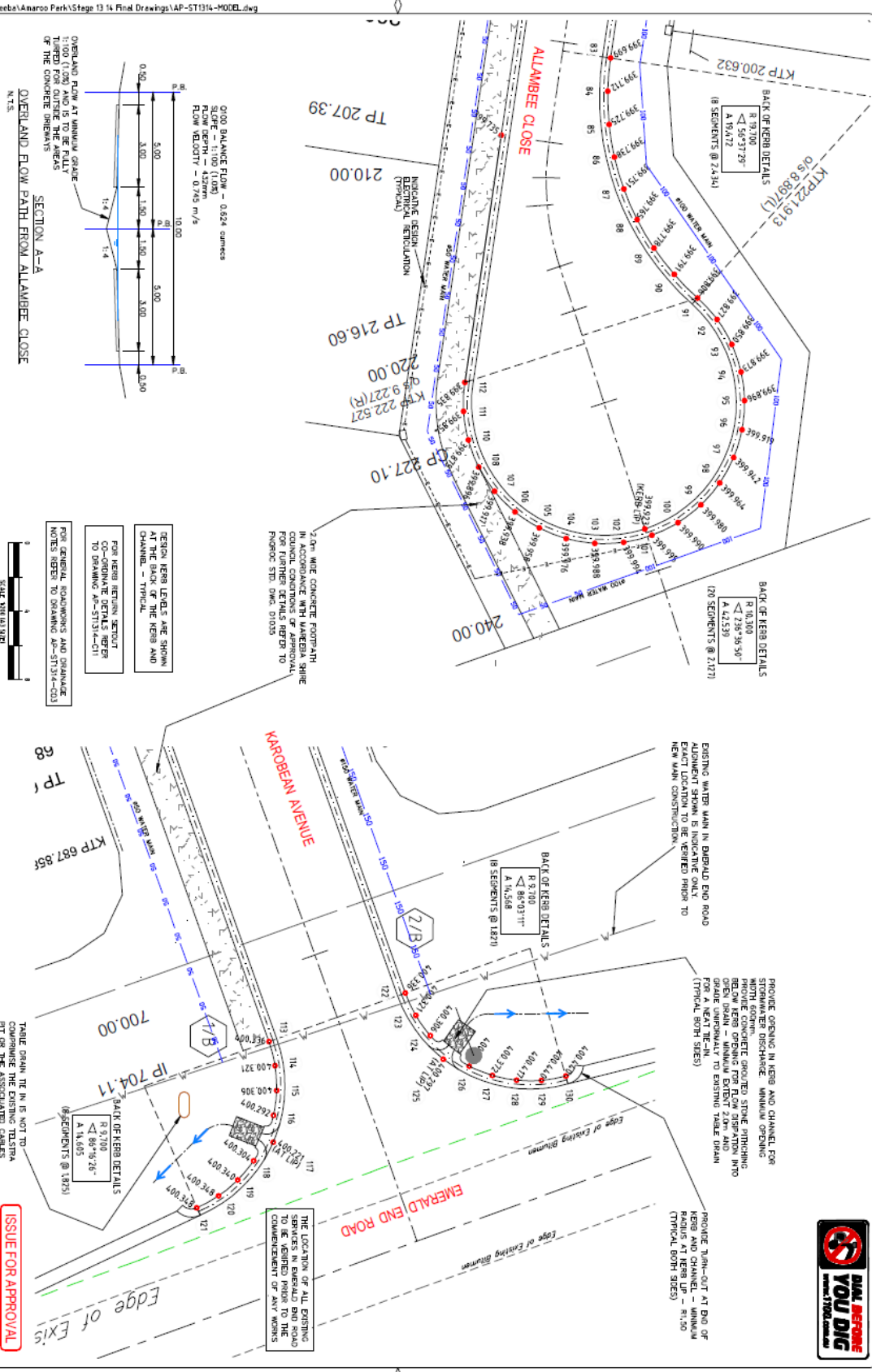
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5	REVISED FOR COMMENTS	01/22
6	REVISED FOR COMMENTS	01/22
7	REVISED FOR COMMENTS	01/22
8	REVISED FOR COMMENTS	01/22
9	REVISED FOR COMMENTS	01/22
10	REVISED FOR COMMENTS	01/22

CLIENT: BT, M & S STANKOVICH PTY LTD
PROJECT: AMAROO RESIDENTIAL DEVELOPMENT
MOONDIANI AVENUE, WAREEBA

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

NO.	DATE	BY	CHKD BY
1	08/22	RHM	
2			
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AP-ST1314-C10
B



Pt. No.	EASTING	NORTHING
1	334016.2543	8120773.5279
2	334016.8303	8120755.4363
3	334017.1657	8120759.5215
4	334017.9444	8120759.4847
5	334019.0655	8120761.2228
6	334020.655	8120762.683
7	334021.478	8120763.7655
8	334024.4824	8120764.4319
9	334026.5834	8120764.6476

Pt. No.	EASTING	NORTHING
19	334029.7792	8120771.2549
20	334099.8716	8120771.3806
21	334101.9152	8120771.7845
22	334103.9152	8120772.4593
23	334105.7982	8120773.3930
24	334107.5359	8120774.6589
25	334109.1012	8120775.9659
26	334110.4663	8120777.5593
27	334111.0068	8120779.3204
28	334112.8533	8120781.0990
29	334114.4575	8120782.5747
30	334116.3299	8120783.6820
31	334118.3931	8120784.3713
32	334120.5550	8120784.612
33	334122.7193	8120784.9392
34	334124.7894	8120783.7248
35	334126.6729	8120782.1866
36	334128.2859	8120781.1770
37	334129.5844	8120779.4113
38	334130.4277	8120777.4181
39	334130.8610	8120775.2864
40	334130.8389	8120773.1112
41	334130.3566	8120770.9896
42	334128.4414	8120769.0182
43	334128.1312	8120767.2290
44	334126.4872	8120765.8555
45	334124.5801	8120764.8092
46	334122.4957	8120764.1867
47	334120.3271	8120764.0159

Pt. No.	EASTING	NORTHING
48	333987.7978	812084.9873
49	333947.4426	812084.5069
50	333948.9444	812084.4087
51	333950.2931	812082.3106
52	333951.8583	812080.9316
53	333952.1815	812080.3819
54	333952.7117	812080.7091
55	333952.9315	812080.9672
56	333952.8314	812084.2167

Pt. No.	EASTING	NORTHING
66	333861.9704	812092.9428
67	333864.8256	812092.0783
68	333866.6211	812092.5614
69	333869.2911	812092.3803
70	333869.7740	812092.5028
71	333871.0155	812092.8878
72	333871.9698	812092.4842
73	333872.6018	812092.2335
74	333872.8884	812092.0772

Pt. No.	EASTING	NORTHING
84	334015.7334	812100.4726
85	334016.1571	812100.2671
86	334018.5878	812100.3619
87	334020.9882	812100.7544
88	334023.3228	812100.4419
89	334025.5530	812100.4106
90	334027.6478	812100.6470
91	334029.5743	812100.1321
92	334031.3031	812100.8433
93	334032.8727	812101.2731
94	334034.7021	812102.3507
95	334036.7138	812103.0303
96	334038.8217	812103.288
97	334040.9368	812103.0981
98	334042.9691	812102.4855
99	334044.8322	812101.4652
100	334046.4469	812101.0866
101	334047.7446	812100.4061
102	334048.6702	812100.4953
103	334049.1844	812100.4354
104	334049.2553	812100.3137
105	334048.5094	812100.2206
106	334048.1319	812099.2448
107	334048.9659	812098.4705
108	334048.4608	812098.9710
109	334048.6800	812099.8158
110	334041.7011	812099.0483
111	334039.6051	812099.7029
112	334037.4849	812099.7344

Pt. No.	EASTING	NORTHING
113	334105.1507	812082.5807
114	334106.9377	812083.0295
115	334108.7774	812083.1387
116	334110.5886	812082.9075
117	334112.5576	812082.4913
118	334113.9146	812082.8913
119	334115.3179	812083.2966
120	334116.4786	812083.8908
121	334117.3558	812084.2927

Pt. No.	EASTING	NORTHING
10	334021.937	8120771.7792
11	334022.238	8120771.9381
12	334028.6439	8120772.3899
13	334017.1166	8120773.1119
14	334015.7384	8120774.0010
15	334014.5311	8120775.2946
16	334013.9299	8120776.6860
17	334012.8868	8120778.2280
18	334012.4603	8120779.8590

Pt. No.	EASTING	NORTHING
57	333959.2425	812082.5070
58	333960.2183	812084.3461
59	333961.0297	812086.0658
60	333962.1611	812087.5941
61	333963.5689	812088.8724
62	333965.2990	812089.8514
63	333966.9888	812090.4366
64	333968.8695	812090.7743
65	333970.7068	812090.6827

Pt. No.	EASTING	NORTHING
75	333889.4862	8120919.3016
76	333887.5423	8120919.5492
77	333885.6656	812092.1883
78	333883.9667	812092.1919
79	333882.5062	812092.5186
80	333881.3443	812092.1133
81	333880.5291	812092.9102
82	333880.0945	812092.8849
83	333880.0607	812093.8082

Pt. No.	EASTING	NORTHING
122	334101.6275	812092.2638
123	334103.2752	812093.3339
124	334104.7504	812094.2960
125	334106.4736	812095.3457
126	334108.5839	812097.2458
127	334107.6637	812098.9324
128	334108.0188	812091.0762
129	334108.0307	812091.5345
130	334107.7950	812091.8335

INTERSECTION MOONDANI AVENUE AND ROAD No. 3

INTERSECTION MOONDANI AVENUE AND KAROREAN AVENUE

INTERSECTION KAROREAN AVENUE AND ALLAMBER GLOUSE

INTERSECTION KAROREAN AVENUE AND EMERALD END ROAD

CUL DE SAC - ROAD No. 3

CUL DE SAC - ALLAMBER GLOUSE

Robin Mansinger
Civil Design Consultant
19 Tule Lane
Bakersfield, CA 93309
email: robin@robinmns.com
Tel: (805) 837-310
Fax: (805) 837-310
www.robinmns.com

Associated Consultant
T.S. McCallister
650 Millerton Way
Bakersfield, CA 93309
Tel: (805) 837-310
Fax: (805) 837-310
www.mccallister.com

REVISION	DATE	DESCRIPTION
A	08/22	ISSUE FOR APPROVAL

CLIENT BT, M & S STANKOVICH PTV LTD
PROJECT AMARCO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDANI AVENUE, MAREBA

DRAWING
INTERSECTION AND CUL DE SAC SETOUT TABLES

DATE	REVISION	BY	CHKD
08/22			

AP-ST1314-C11

ISSUE FOR APPROVAL

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Robin Mansinger
Civil Design Consultant
19 Tully Lane
Buderim QLD 4556
email: robb@robinm.com.au
MOB: 0424 037 310
ABN: 77 998 712 728

Approved Consultant
75 Andromeda
59A Mulgrave Hwy MAREEBA QLD 4880
Ph: 0427 981000
Email: robb@robinm.com

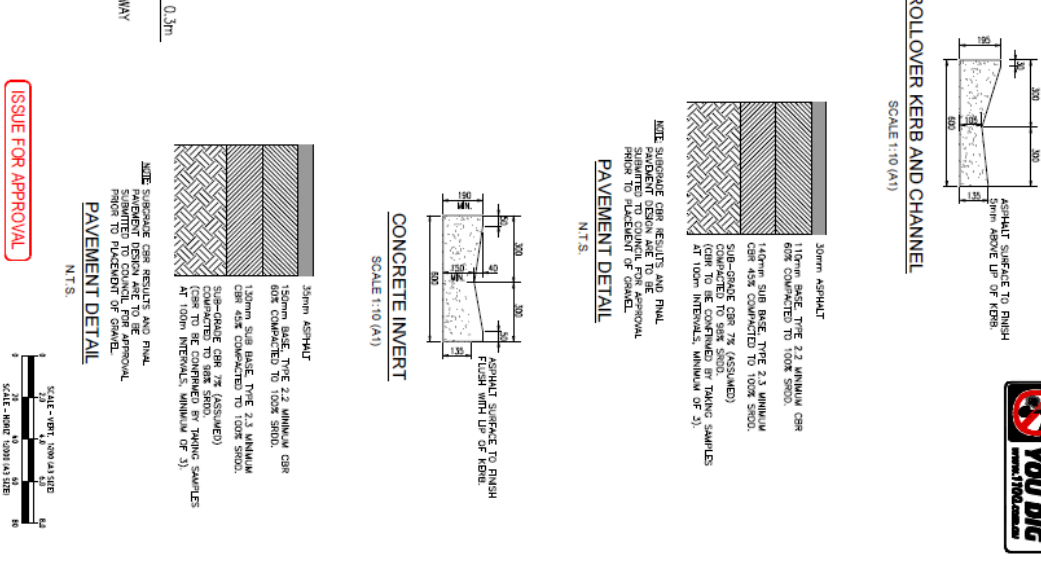
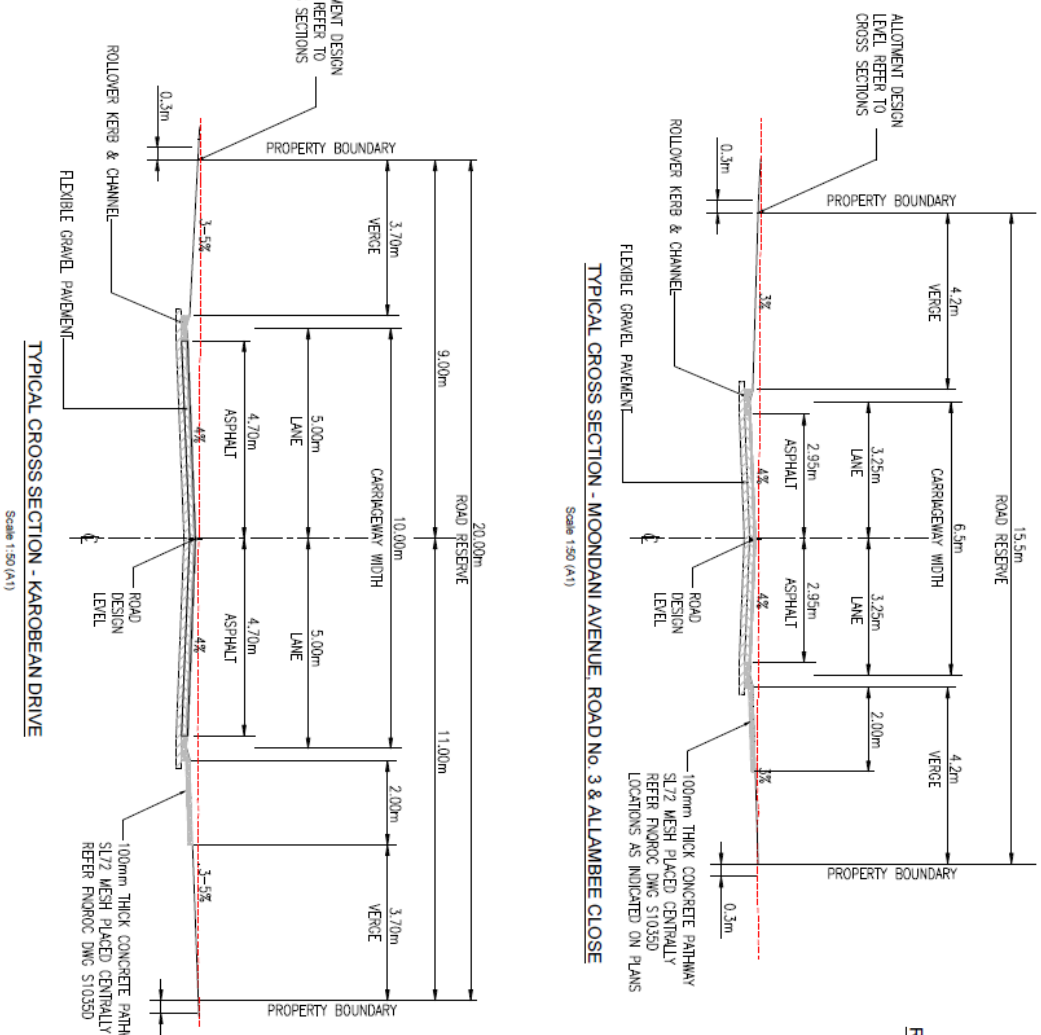
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2	08/23	DESIGN DEVELOPMENT
3	08/23	DESIGN DEVELOPMENT
4	08/23	DESIGN DEVELOPMENT

CLIENT: BT, M8 STYANKOVICH PTY LTD
PROJECT: AMAROO DEVELOPMENT
STAGES 13 & 14
MOONDANI AVENUE, MAREEBA

DRAWING: TYPICAL CROSS SECTIONS AND DETAILS
ISSUE FOR APPROVAL

DATE	BY	CHECKED	DATE
18/2/23	RHM		

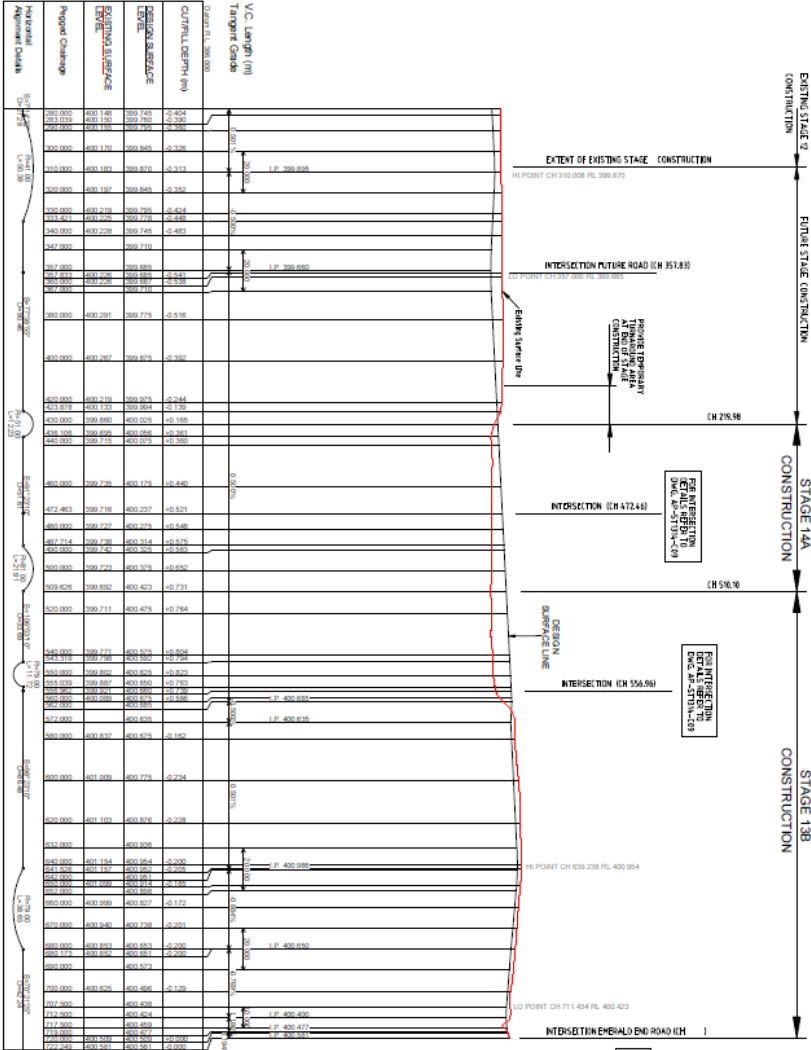
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APPROVED PAVEMENT - KAROBEAN AVENUE

URBAN ACCESS STREET
 150mm SUB BASE CLASS 1B - CR1 @ 50mm
 150mm SUB BASE CLASS 2 - CR1 @ 50mm

DESIGN SURFACE OF CARBON CONCRETE TO BE COMPLETED BY ROAD DESIGN AND LEVEL MANAGEMENT AT THE TIME OF JOINT SUBMITTAL INSPECTION DURING THE CONSTRUCTION PHASE



LONGITUDINAL SECTION - KAROBEAN AVENUE

SCALE: HORIZ. 1:100 VERT. 1:10

Robin Mansinger
 Civil Design Consultant
 10 Tully Lane
 Buderim QLD 4556
 Email: robin@robinm.com.au
 MOB: 0424 007 310
 ABN: 77 998 712 730

Approved Consultant
 75 KAYRAT AVENUE
 130 MALDEN WAY, MAREEBA QLD 4800
 Ph: 07 467 80100
 Email: info@wsp.com.au

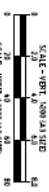
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4	FOR APPROVAL	08/22

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

DRAWING: ROAD LONGITUDINAL SECTION
 KAROBEAN AVENUE

DATE	BY	CHKD BY
08/22	RMM	

AP-ST1314-C13



ISSUE FOR APPROVAL

FOR APPROVAL ROAD CROSS SECTION REFER TO DRAWING AP-ST1314-C13

FOR APPROVAL DETAILS REFER TO DRAWING AP-ST1314-C13



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Robin Mansinger
 Civil Design Consultant
 10 Tully Lane
 Bulwer QLD 4556
 Email: robin@robinsinger.com.au
 Mob: 0424 007 310
 ABN: 77 989 712 730

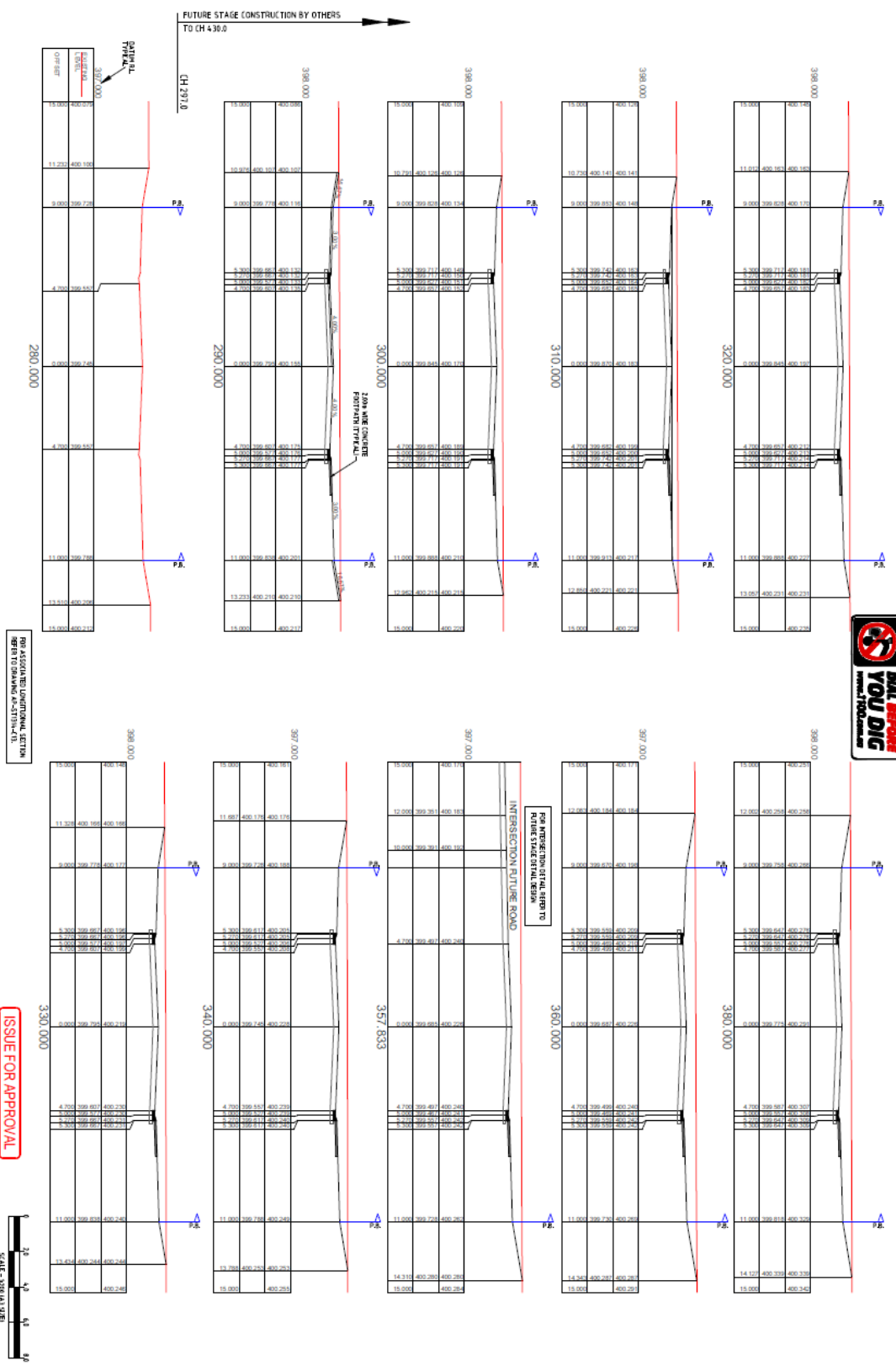
Approved Consultant
 T.S. Aisling Associates
 158 Malpas Hwy, MAREEBA, QLD 4860
 Ph: 4 87 861 040
 Email: tsaisling@tsa.com.au

NO.	REVISION / COMMENTS	DATE
1	ISSUE FOR APPROVAL	08/22
2	FOR APPROVAL	08/22
3	FOR APPROVAL	08/22
4	FOR APPROVAL	08/22

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

DRAWING ROAD CROSS SECTIONS
 KAROEBAN AVENUE
 SHEET 1 OF 4

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Robyn Mansinger
Civil Design Consultant
19 Tully Lane
Buderim QLD 4556
email: robyn@mansinger.com.au
Ph: 07 5477 9877
Fax: 07 5477 9878

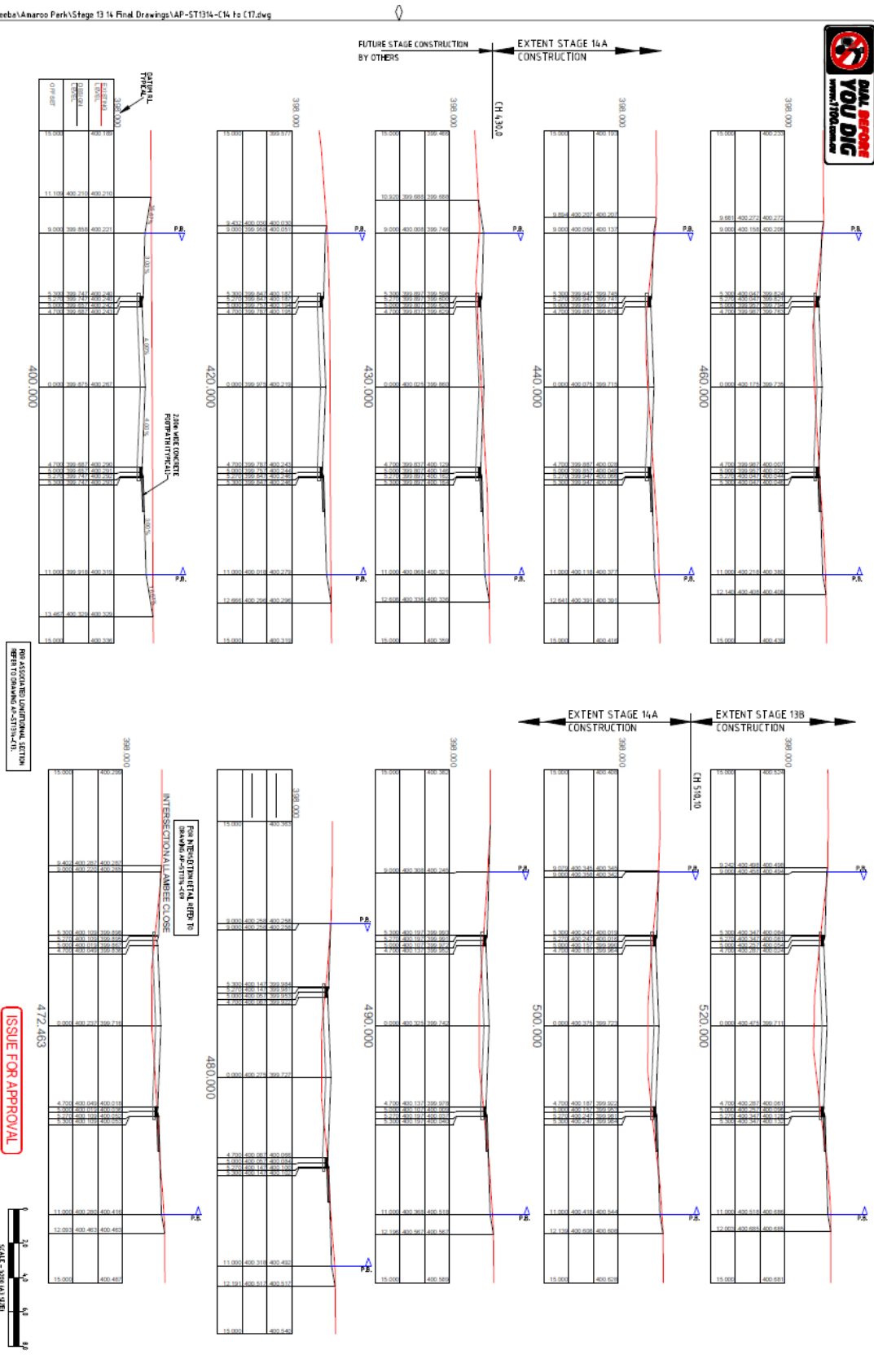
Approved Consultant
75A Ashurst Avenue
Brisbane QLD 4000
Ph: 07 3251 8800
Email: hannah.walsh@qld.gov.au

REVISION	DESCRIPTION	DATE
1	ISSUE FOR APPROVAL	08/22

CLIENT BT, M & S STANCOVICH PTY LTD
PROJECT AMAROO DEVELOPMENT
MOONDIAN AVENUE, MARREEBA

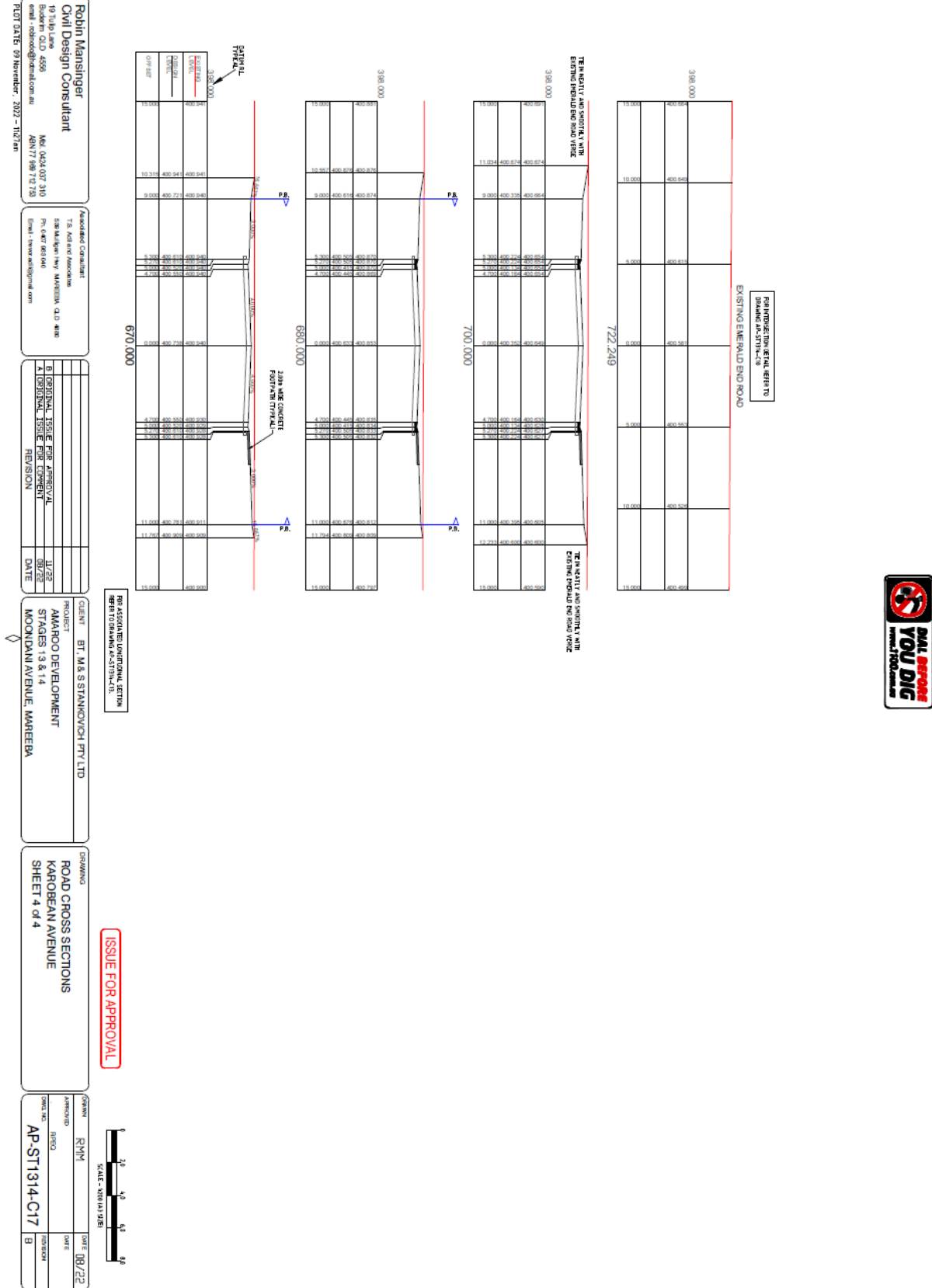
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KARROOAN AVENUE
SHEET 2 of 4

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CHECKED RMM
DATE 08/22
PROJECT AP-ST1314-C15
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Robin Mansinger
Civil Design Consultant
10 Talbot Lane
Buderim QLD 4556
email: robin@robinm.com.au
Mob: 0424 007 310
ABN 77 989 78 798

Approved Consultant
7/5 Ashford Avenue
338 Malvern Way, MAREEBA QLD 4800
Ph: 0477 893 000
Email: r.mansinger@robinm.com

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	11/25/23
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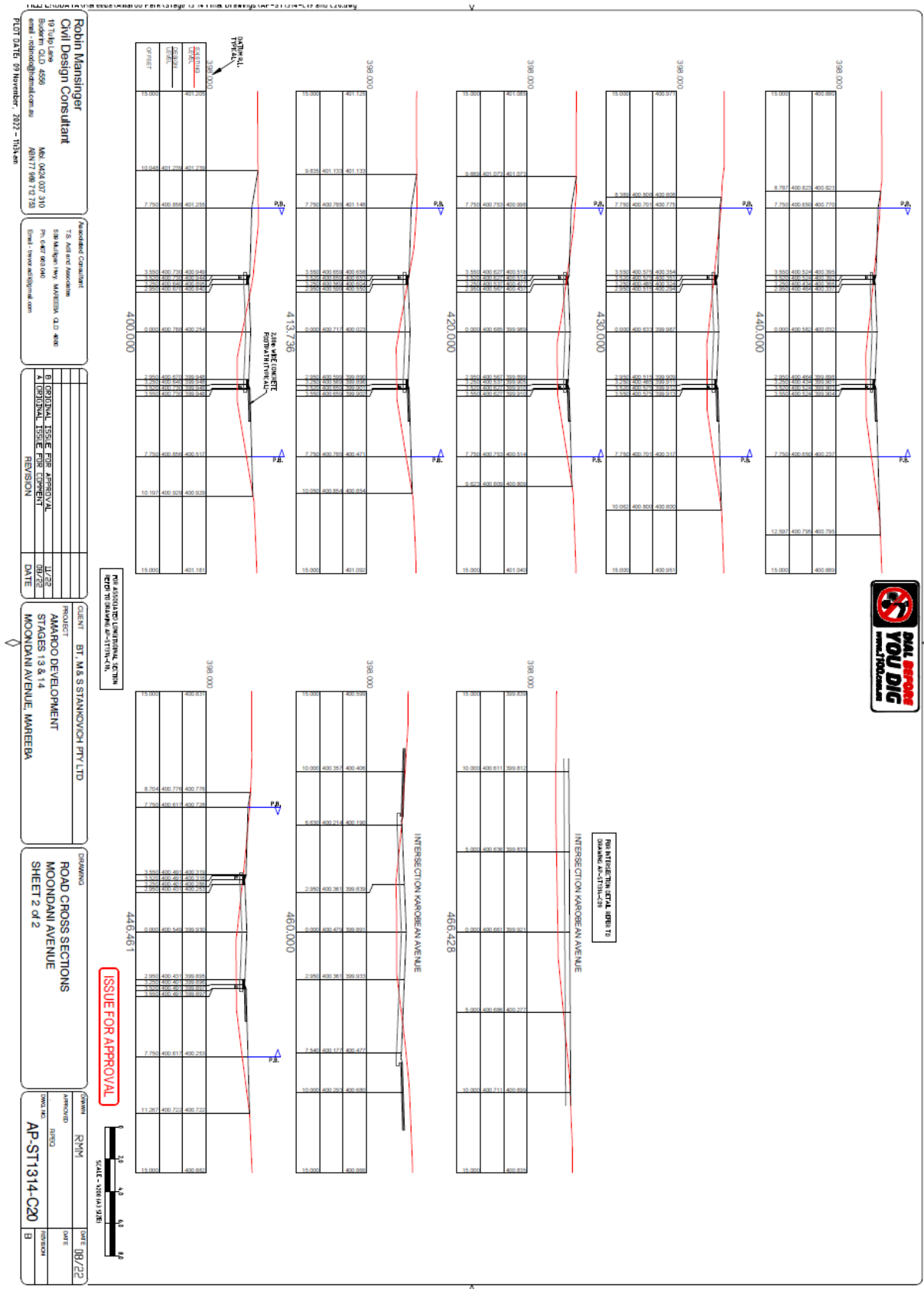
CLIENT: BT, M & S STANKOVICH PTY LTD
PROJECT: AMAROO DEVELOPMENT
STAGES 13 & 14
MOONDIAMI AVENUE, MAREEBA

DRAWING: ROAD CROSS SECTIONS
KAROBAN AVENUE
SHEET 4 OF 4

ISSUE FOR APPROVAL

APPROVED: RMM
DATE: 08/22
AP-ST1314-C17





Robin Mansinger
 Civil Design Consultant
 10 Tudor Place
 Buderim QLD 4556
 email: robb@robinm.com.au
 MOB: 0424 037 310
 ABN: 77 981 712 735

Approved Consultant
 T/S Andrew Mackenzie
 838 Mulgrave Hwy, MAREEBA QLD 4808
 Ph: 0427 801040
 Email: andrew@androg.com

REVISION	DATE
1. ORIGINAL DESIGN	11/2/22
2. REVISED DESIGN	18/2/22
3. REVISED DESIGN	18/2/22
4. REVISED DESIGN	18/2/22

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

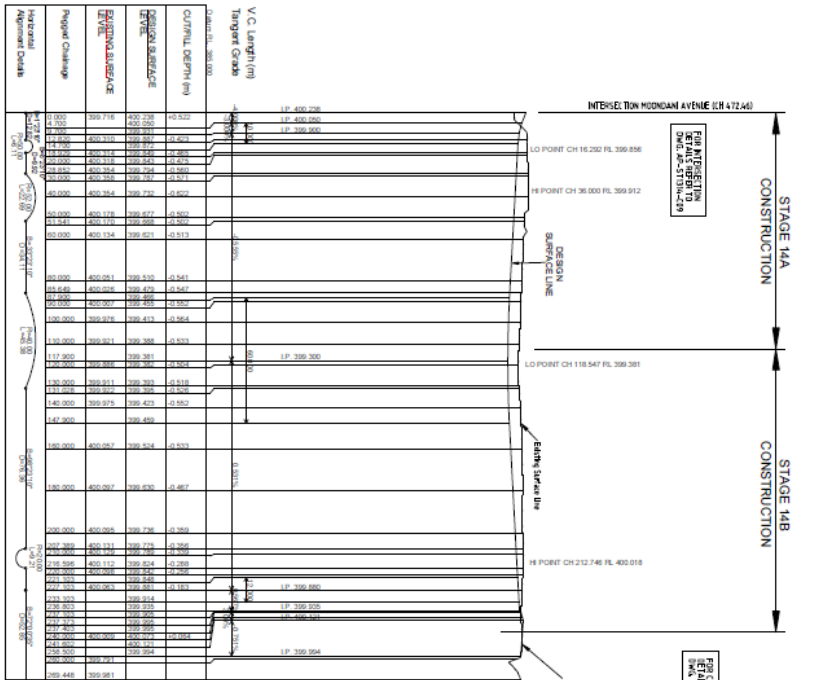
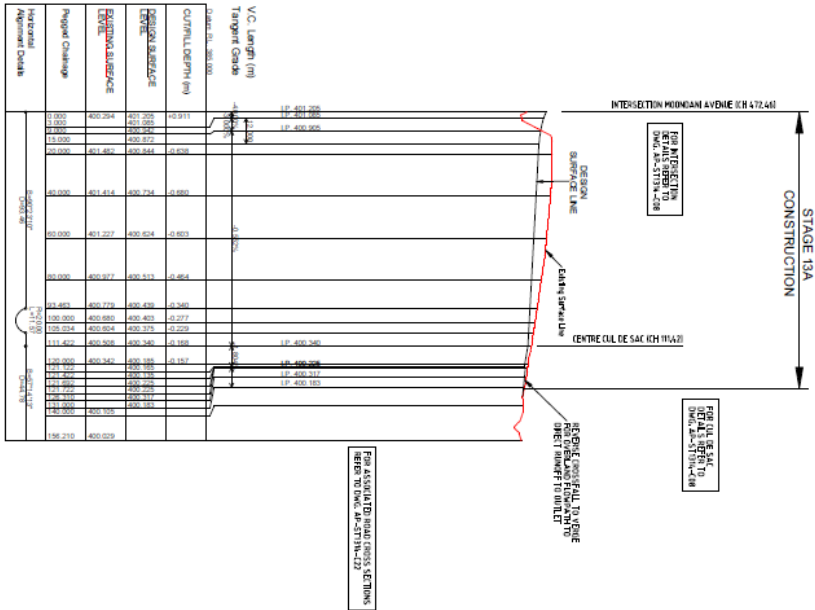
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 MOONDANI AVENUE
 SHEET 2 of 2

DATE: 18/2/22
 DRAWN BY: RYM
 APPROVED BY: RYM
 DRAWING NO: AP-ST1314-C20
 SCALE: 1:100 (HORIZONTAL)
 DATE: 18/2/22

Document Set ID: 4166678
 Version: 1, Version Date: 08/12/2022

APPROVED PAVEMENT - ROAD 3
 URBAN ACCESS STREET
 FROM INTERSECTION WITH
 FROM INTERSECTION CLASS 1B - CBR 60
 FROM SUBGRADE CLASS 2 - CBR 45
 TOTAL PAVEMENT THICKNESS OF 280mm INCLUDING AC ON
 DESIGN SUBGRADE OF CBR 6
 DESIGN SUBGRADE OF CBR 45
 LEVEL MEASUREMENT AT THE TIME OF JOINT SURFACE (90%)
 INSPECTION DURING THE CONSTRUCTION PHASE

APPROVED PAVEMENT - ROAD 3
 URBAN ACCESS STREET
 FROM INTERSECTION WITH
 FROM INTERSECTION CLASS 1B - CBR 60
 FROM SUBGRADE CLASS 2 - CBR 45
 TOTAL PAVEMENT THICKNESS OF 280mm INCLUDING AC ON
 DESIGN SUBGRADE OF CBR 6
 DESIGN SUBGRADE OF CBR 45
 LEVEL MEASUREMENT AT THE TIME OF JOINT SURFACE (90%)
 INSPECTION DURING THE CONSTRUCTION PHASE



LONGITUDINAL SECTION - ROAD 3

LONGITUDINAL SECTION - ALLAMBEE CLOSE

SCALE - VERT. 1:500 AS SHOWN
 SCALE - HORIZ. 1:500 AS SHOWN

ISSUE FOR APPROVAL

John Mansinger
 Jvill Design Consultant
 17, Tully Lane
 Adam QLD 4059
 tel - john@jvill.com.au
 207 DATE: 09 November, 2022 - 11:55am

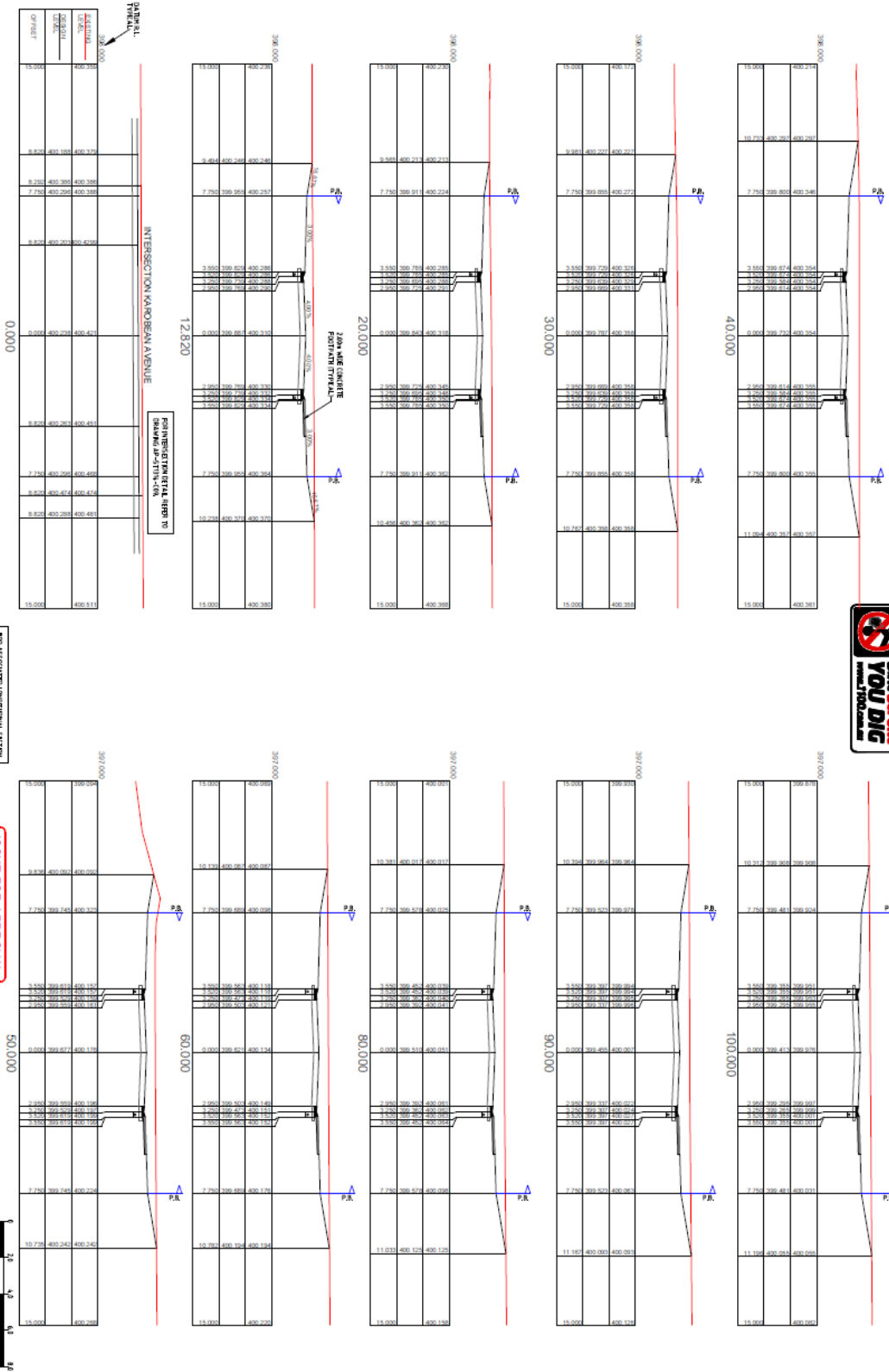
Approved Consultant
 T.S. KENNEDY ASSOCIATES
 158 Malvern Way, MANDALAY QLD 4800
 Ph: 07 487 80100
 Email: ts.kennedy@tsa.com

NO.	DESCRIPTION	DATE
1	FOR ASSOCIATED ROAD CROSS SECTIONS REFER TO DMC AP-ST114-C21	08/22
2	FOR ASSOCIATED ROAD CROSS SECTIONS REFER TO DMC AP-ST114-C21	08/22
3	FOR ASSOCIATED ROAD CROSS SECTIONS REFER TO DMC AP-ST114-C21	08/22

CLIENT BIT M & STANKOVICH PTY LTD
PROJECT AMARCO DEVELOPMENT
STAGES 13 & 14
MOONDAWI AVENUE, MANERBA

DRAWING ROAD LONGITUDINAL SECTIONS
ROAD 3 & ALLAMBEE CLOSE

NO.	DATE	BY	CHKD BY
1	08/22	JM	TSK
2			
3			



Robin Mansinger
 Civil Design Consultant
 19 Tullio Lane
 Bidean QLD 4556
 mobile - 0800681611
 email - robin@robinm.com.au
 5/07/2016 09 November, 2022 - Tilsam

Approved Consultant
 175 Andover Avenue
 508 Malvern Hwy MAREEBA QLD 4880
 Ph: 08 947 28100
 Email: tilsam@tilsam.com

NO.	REVISION	DATE
1	ISSUE FOR APPROVAL	12/23
2	FOR INFORMATIONAL PURPOSE TO DRAWING AP-ST1314-C23	08/22

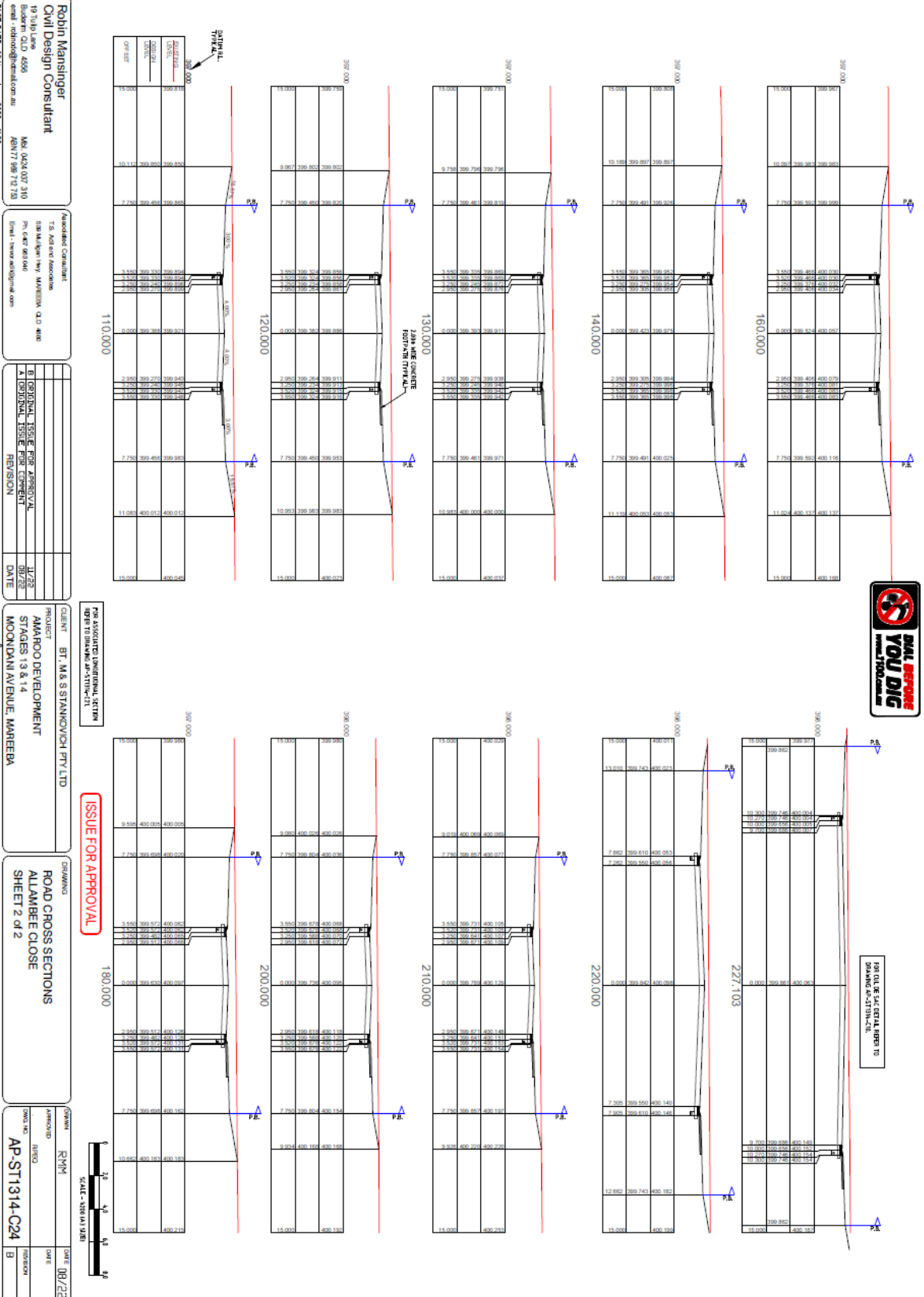
CLIENT: BT, M & S STANHOUGH PTY LTD
 PROJECT: AMARHO DEVELOPMENT STAGES 13 & 14
 MOONDANI AVENUE, MAREEBA

DRAWING: ROAD CROSS SECTIONS ALL AMBE CLOSE SHEET 1 of 2

APPROVED: RHM
 DATE: 08/22
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 DATE: [Blank]
 PROJECT: AP-ST1314-C23
 SHEET: B

Document Set ID: 4166878
 Version: 1, Version Date: 08/12/2022

FILE: E:\DATA\Mareeba\Amaroo Park\Stage 13 & 14 Final Drawings\AP-ST1314-C23 end C24.dwg



FOR ALL SET OUT/LINE TO BE SHOWN IN 2D/3D/4D

Robin Mansinger
 Civil Design Consultant
 19 Tully Lane
 Brisbane QLD 4059
 email: robins@robins.com.au
 MOB: 0424 037 310
 ABN: 77 990 712 728

Associated Consultant:
 T.S. Koffler Associates
 58 Mulgrave Hwy, MAREEBA QLD 4880
 Ph: 0427 881046
 Email: ts.koffler@tskoffler.com

REVISION	DATE
1. ORIGINAL DESIGN	11/23
2. DESIGN	08/22
3. DESIGN	08/22
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CLIENT: BT, M & S STANKOVICH PTY LTD
PROJECT: AMAROO DEVELOPMENT STAGES 13 & 14
ADDRESS: MOONDAWI AVENUE, MAREEBA

DRAWING: ROAD CROSS SECTIONS ALL AMBE CLOSE SHEET 2 of 2

APPROVED: RYM
DATE: 08/22
AP-ST1314-C24

Document Set ID: 4166878

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Robin Mensinger
Civil Design Consultant
10 Tully Lane
Buderim QLD 4556
Email: robin@robinmensinger.com.au
Mob: 0424 037 310
ABN: 77 989 712 733

Approved Consultant
TS. Asher Associates
158 Malvern Way, MAREEBA, QLD 4880
Ph: 07 481 0400
Email: www.ashers.com

NO.	REVISION	DATE
1	ISSUE FOR APPROVAL	08/22
2	FOR ORIGINAL SITE CUT / FILL STATING REFER TO DRAWING AP-ST1314-C25	

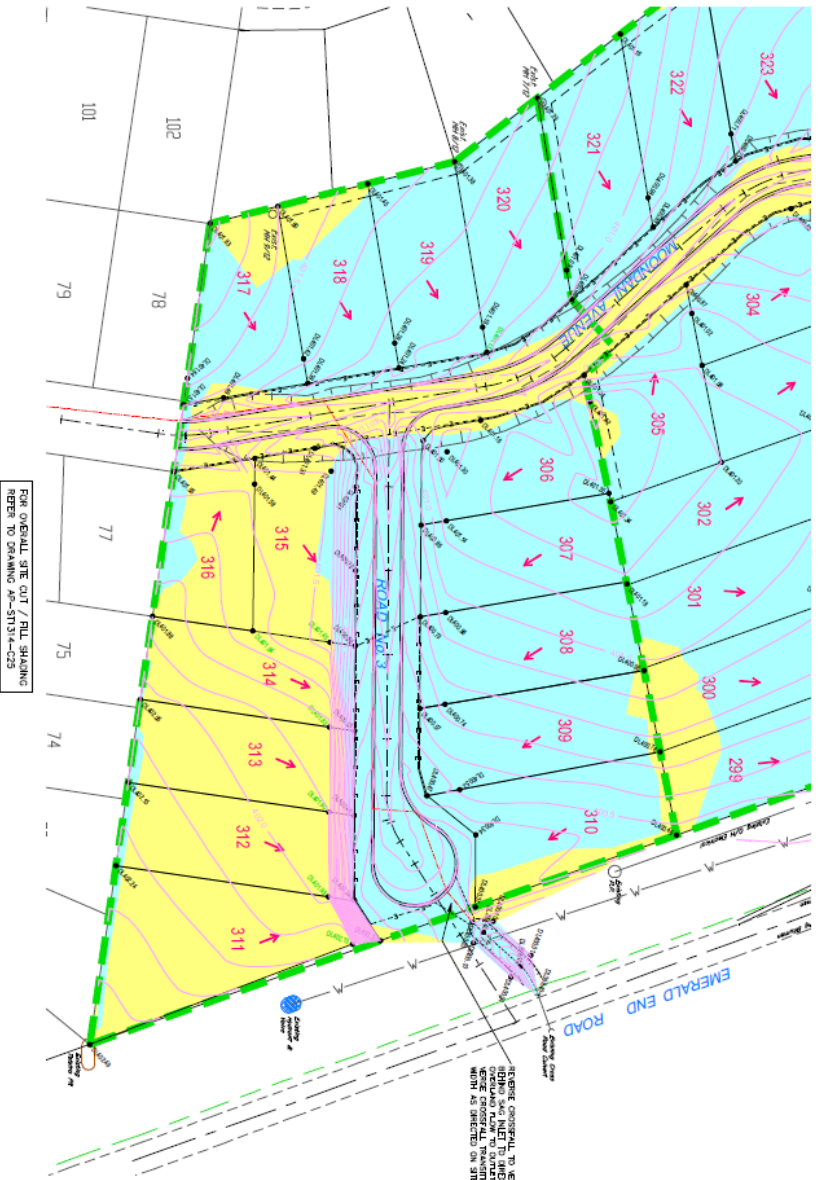
CLIENT: BT M & S STANKOVICH PTY LTD
PROJECT: ANAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MOONDAINI AVENUE, MAREEBA

DRAWING: EARTHWORKS PLAN
STAGE 13A

ISSUE FOR APPROVAL

APPROVED	DATE
RMN	08/22
INTD	

AP-ST1314-C26



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

- LEGEND**
- Existing Lot A/B
 - Earthworks Fill Area
 - Earthworks Excavation
 - Existing Contour (1:100 Vertical)
 - Existing Lot
 - Lot Number & Lot Full Section
- GENERAL NOTES**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS OR SPECIFICATIONS FOR CONSTRUCTION AND SPECIAL CONSTRUCTION METHODS AND SPECIAL SPECIFICATIONS.
 - CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE CONSTRUCTION PROGRAM OF WORK. THE ORDER OF CONSTRUCTION SHALL BE AS SHOWN ON THE DRAWINGS. ALL WORK SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER. ALL WORK SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER.
 - ALL EXISTING UTILITIES ARE TO BE PROTECTED AND DEPTHS OF EXISTING SERVICES SHALL BE AS SHOWN ON THE DRAWINGS AND SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.
 - EXISTING SERVICES SHALL BE PROTECTED AND DEPTHS OF EXISTING SERVICES SHALL BE AS SHOWN ON THE DRAWINGS AND SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.
 - ALL CONSTRUCTION SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER.
 - ALL CONSTRUCTION SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER.
- GENERAL NOTES**
- LOT 348 AND
 - EXISTING UTILITIES ARE TO BE PROTECTED AND DEPTHS OF EXISTING SERVICES SHALL BE AS SHOWN ON THE DRAWINGS AND SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.
 - EXISTING SERVICES SHALL BE PROTECTED AND DEPTHS OF EXISTING SERVICES SHALL BE AS SHOWN ON THE DRAWINGS AND SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.
 - CONSTRUCTION TO BE DONE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS OR SPECIFICATIONS FOR CONSTRUCTION AND SPECIAL CONSTRUCTION METHODS AND SPECIAL SPECIFICATIONS.
 - CONSTRUCTION TO BE DONE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS OR SPECIFICATIONS FOR CONSTRUCTION AND SPECIAL CONSTRUCTION METHODS AND SPECIAL SPECIFICATIONS.



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Robin Mansinger
Civil Design Consultant
10 Tully Lane
Buderim QLD 4556
Email: robin@rman.com.au
Mobile: 0424 007 310
Fax: 07559 732 730
Web: www.rman.com.au

Approved Consultant
T.S. Koster Associates
158 Malvern Way, MANTON, QLD 4860
Ph: 0870 091 040
Email: tsa@tsa.com.au
Web: www.tsa.com.au

NO.	REVISION	DATE
1	ISSUE FOR APPROVAL	08/22
2	REVISED PER COMMENTS	08/22
3	REVISED PER COMMENTS	08/22
4	REVISED PER COMMENTS	08/22
5	REVISED PER COMMENTS	08/22
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10	REVISED PER COMMENTS	08/22

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

DRAWING STORMWATER DRAINAGE
CATCHMENT PLAN

APPROVED	DATE
RMM	08/22
AP-ST1314-C90	B



NOTE: DESIGN NETWORK INDICATIVE FOR NETWORK A ROW 2/4 TO OUTLET 10/4 - FULL DETAILS TO BE SHOWN WITH EXISTING STREET DETAILS DESIGN.

REFER TO SECTION 4-4 ON DRAWING AP-ST1314-C01 FOR DETAILS OF ALL EXISTING AND PROPOSED STORMWATER INFRASTRUCTURE.

EXISTING TRANSITION OUTLET DRAIN TO BE CLOSED PER USE/INSTRUMENTATIONAL FLAT VERTICAL WITH NEW ROAD PARALLEL AND TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL GOVERNMENT'S STANDARD SPECIFICATIONS FOR ROADWORKS. EXISTING LEVEL SHALL BE TO PROVIDE SUFFICIENT FALL AND PROTECTION.

FOR REBAR STORMWATER CATCHMENT TRAIL REFER TO DRAWING AP-ST1314-C07

± GROUND LEVEL TO MOBILE OF FORMER AS SHOWN
± GROUND LEVEL TO CENTRE OF MANHOLE AS SHOWN
± SETOUT REFERS TO MID POINT OF CURVE ON UP OF KERN AS SHOWN

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

- STORMWATER NOTES**
- DESIGN OF LIDED - 500x1000x30, RL 400.887 CUR MARK CLOSE AND CELEB MARK
 - DESIGN SURFACE CONTINUOUS INTERVAL: 5.10m
 - DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
 - PER SPECIFICATIONS OF STORMWATER DRAINAGE REFER TO ENDOUR STANDARD SPECIFICATIONS.
 - PER STANDARD STORMWATER DRAINAGE DETAILS REFER PROLOG STD DWS 51045 - 51100
 - STORMWATER PIPES TO BE BLACK BRUTE FOR PIPES UP TO 300mm DIAMETER AND REINFORCED CONCRETE FOR PIPES OVER 300mm DIAMETER TO AS WORK.
 - PIPE 3, 4 & 5 TO HAVE ROCK PROTECTION AT DOWNSTREAM INVERT TO PREVENT OVERTOP.

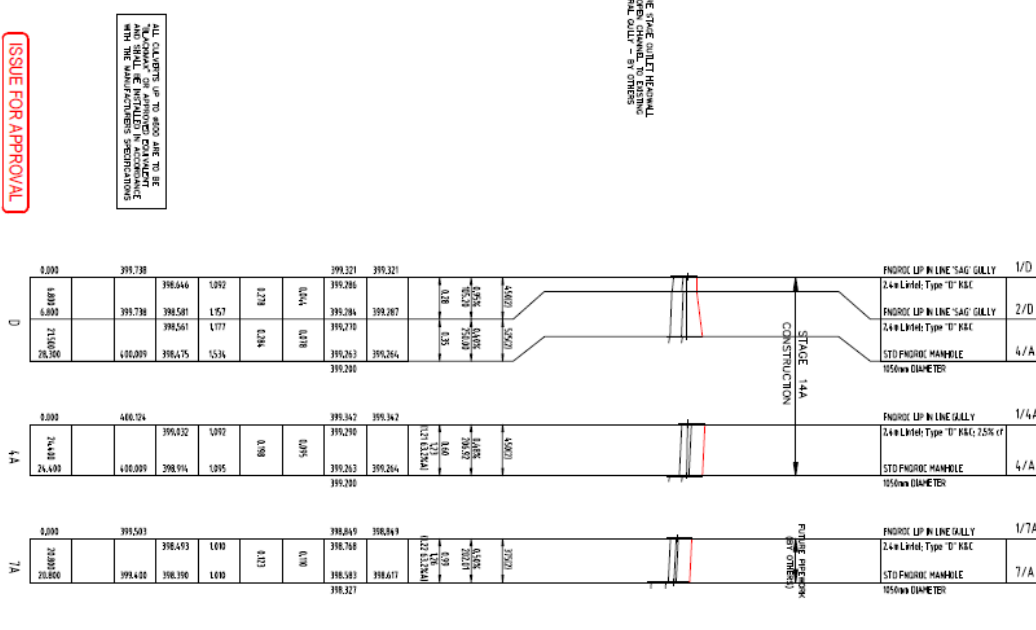
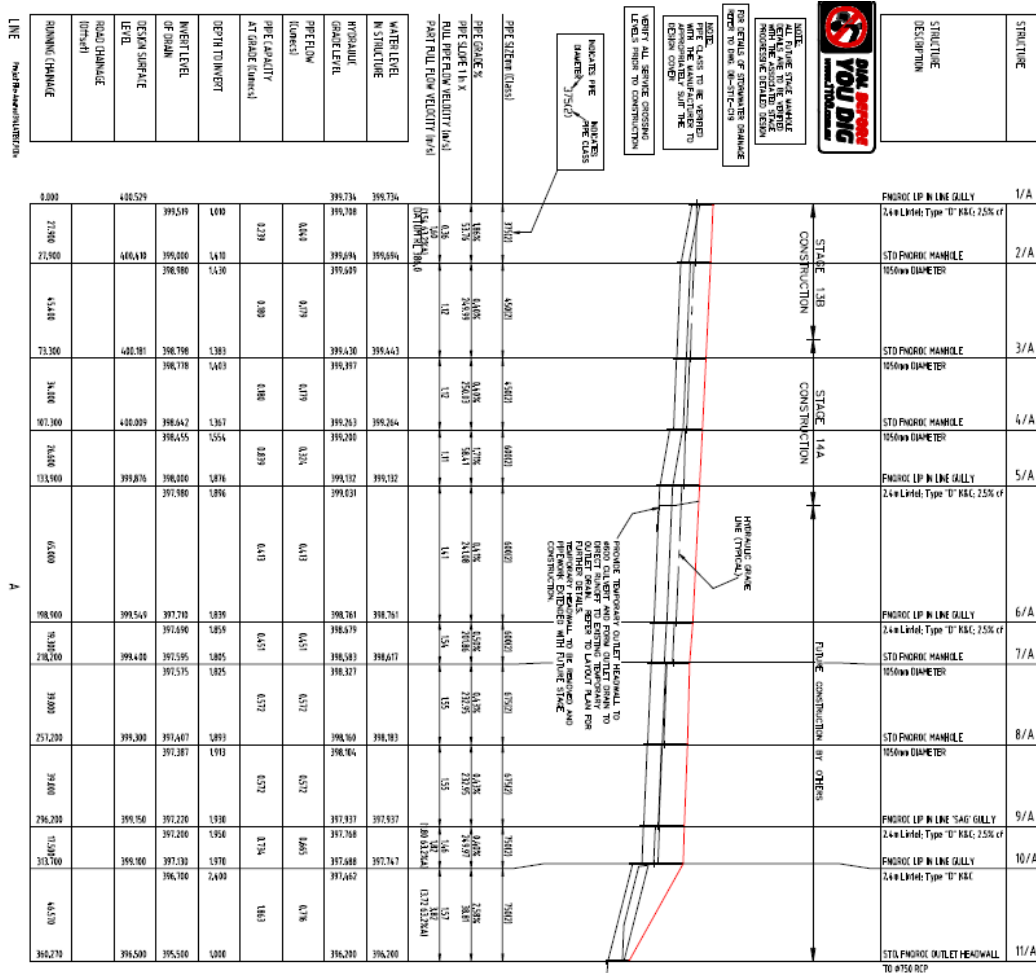
NOTE: STORMWATER NETWORK FROM 4/4 TO BE DESIGN TO BRIBE & MECHANICAL OUTLET TO BELVEDUE BND ROAD TRAFFIC DRAIN AND CROSS ROAD DRAINAGE

EXISTING OUTLET DRAIN IMPROVINGLY ROAD DRAINAGE RECONSTRUCT

REFER GENERAL TO NOTE 6 AND SEE DETAIL 7/4 TO PREPARE CONCRETE PIPES TO EXISTING GROUND LEVEL WITH AS DIRECTED ON SITE

ISSUE FOR APPROVAL





Robn Mansinger
Civil Design Consultant

To: Tully Design
Bidders C.D. 4559
email: robn@tullydesign.com.au
MOB: 0424 037 310
ABN: 77 998 73 738

Approved Consultant:
T.S. Adair
7/5 Adelaide Avenue
Bassendean WA 6107
email: tsadair@tullydesign.com

REVISION	DATE	BY	DESCRIPTION
1	12/25/22	RM	ISSUE FOR APPROVAL

CLIENT: BT, M & S STANKOVICH PTY LTD
PROJECT: AAMARO DEVELOPMENT
STAGES 1 & 14
MOONMAY AVENUE, MAREEBA

DRAWING: STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 2 OF 3

DATE: 08/27/22
AP-ST-314-C32

Document Set ID: 4166678
Version: 1, Version Date: 08/12/2022

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Robt Mansinger
Civil Design Consultant
10/10/10 Lane
Buckden QLD 4669
email - robtdesign@optusnet.au
Mob 0424 007 310
ABN 77 998 78 798

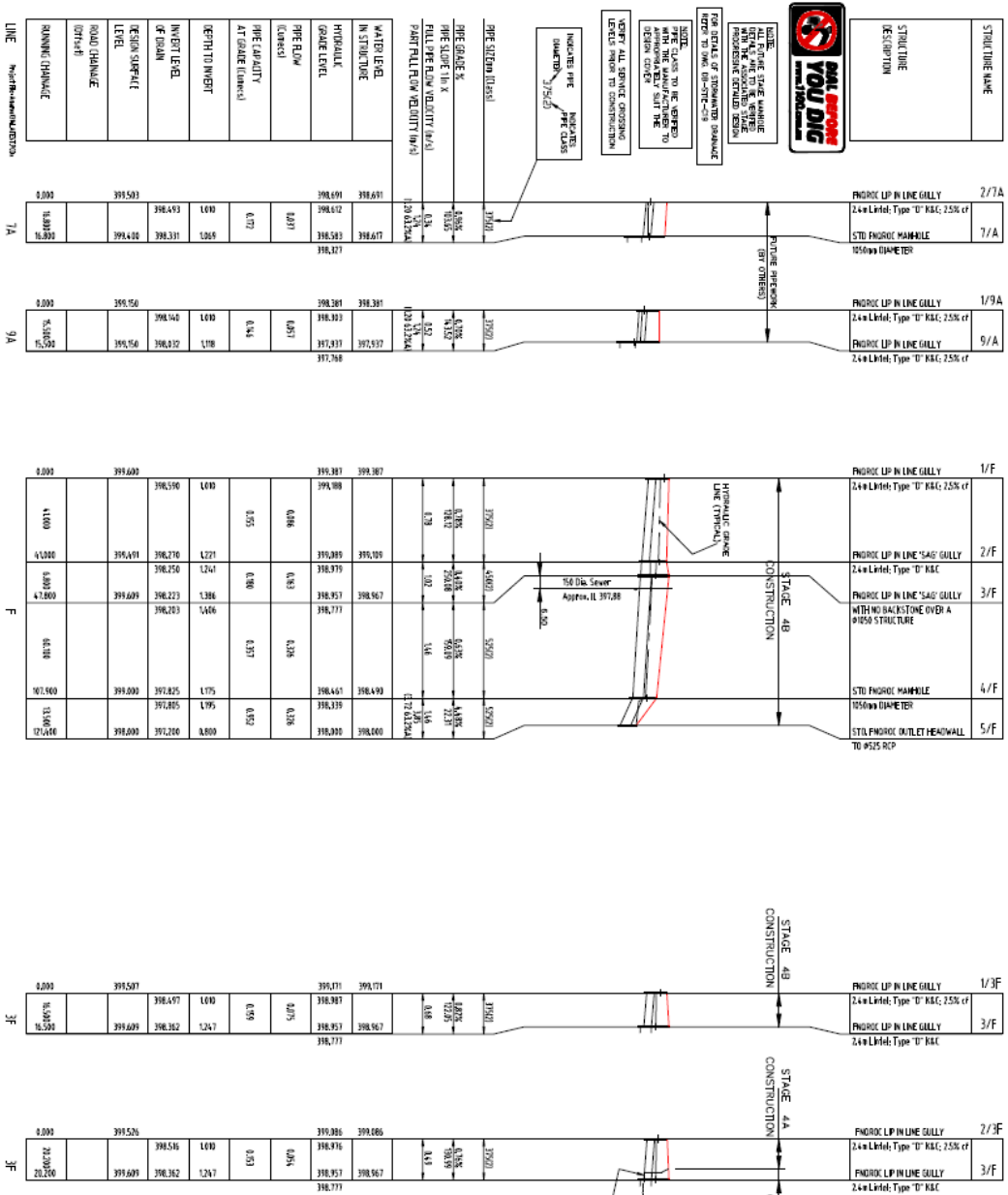
Associated Consultant
7/5 Kestrel Avenue
130 Malvern Way, MAREEBA QLD 4800
Ph: 07 4678 8800
Email: info@wspgroup.com

NO.	DESCRIPTION	DATE
1	ISSUE FOR APPROVAL	11/25/22
2	REVISION	08/22/22

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

DRAWING: STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 3 OF 3

DATE: 08/22/22
DRAWN: RMM
CHECKED: [Signature]
AP-ST1314-C33
DATE: [Signature]



YOU DIG
FOR DETAILS OF STORMWATER DRAINAGE REFER TO DWG DR-212-C19

NOTE: ALL POINTS SHOWN ARE APPROXIMATELY SITUATED TO DESIGN LEVELS.

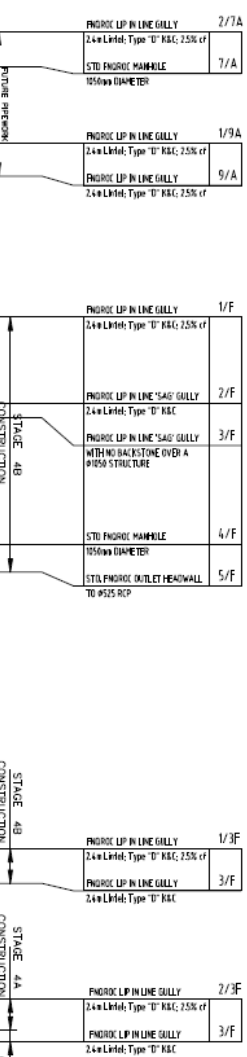
VERIFY ALL SERVICE ENGINEERING LEVELS REFER TO CONSTRUCTION LEVELS SHOWN TO CONSTRUCTION.

INDICATES PIPE INVERT CLASS (METERS).

INDICATES PIPE DIAMETER (MM).

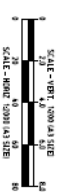
NOTE: ALL POINTS SHOWN ARE APPROXIMATELY SITUATED TO DESIGN LEVELS.

VERIFY ALL SERVICE ENGINEERING LEVELS REFER TO CONSTRUCTION LEVELS SHOWN TO CONSTRUCTION.



ALL COLLECTORS UP TO 8000 ARE TO BE SUBMITTED FOR APPROVED EXHAUST MANHOLE MANUFACTURER'S SPECIFICATIONS WITH THE MANUFACTURER'S SPECIFICATIONS.

ISSUE FOR APPROVAL



DESIGN DISCHARGE - Q₂ = 0.233 cumecs
SLOPE = 1:100
n = 0.013 (per ASP) (per ASP)
DESIGN VELOCITY = 0.855 m/s
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DESIGN FLOW VELOCITY = 0.855 m/s

TEMPORARY OUTLET DRAIN TO NATURAL GULLY TO BE FULLY COVERED WITH 1500mm x 1500mm MANHOLE WITH 1500mm x 1500mm GULLY.

SECTION 3E
TEMPORARY OUTLET DRAIN

FILE: E:\00DATA\Mareeba\Amaroo Park\Stage 13 14 Final Drawings\AP-ST1314-MODEL.dwg

Robin Mansinger
Civil Design Consultant
19 Tully Lane
Buderim QLD 4556
Email: robin@robinsinger.com.au
Phone: 07 5497 7330
Mobile: 0428 037 310
ABN: 77 598 732 735

Associated Consultant
T.S. Koster Associates
538 Main Rd, MAREEBA QLD 4880
Phone: 07 923 040
Email: tska@tska.com.au

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	08/22
2	REVISION	
3	REVISION	
4	REVISION	
5	REVISION	

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

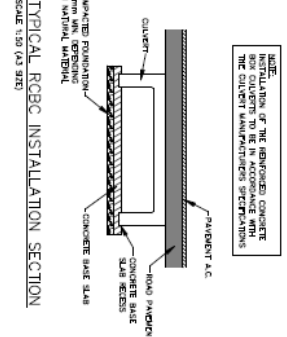
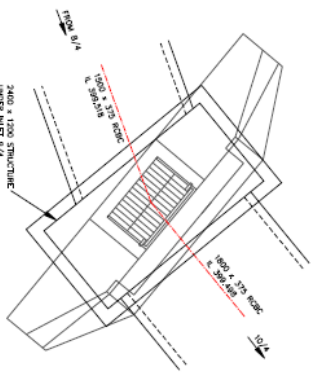
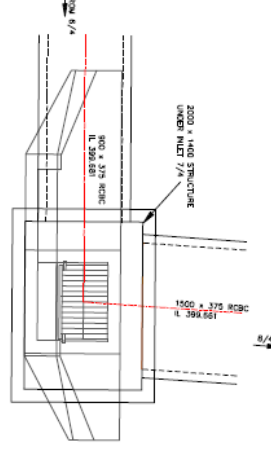
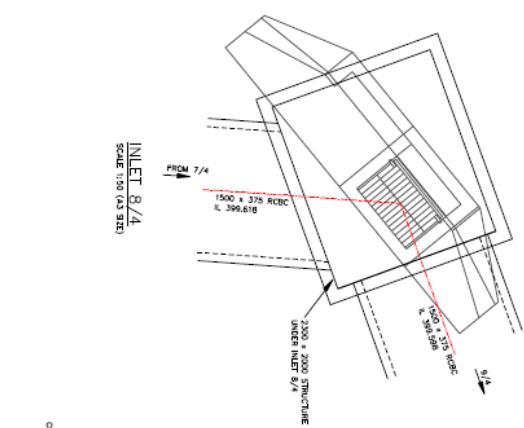
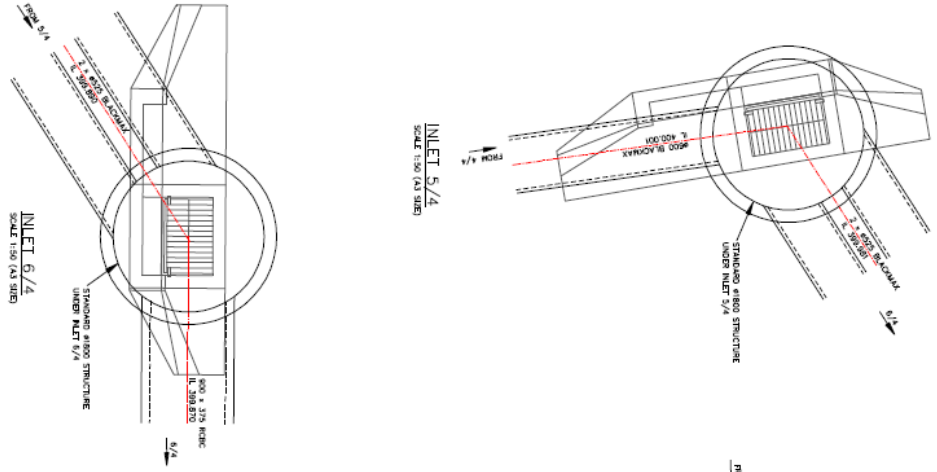
DRAWING STORMWATER DRAINAGE
STRUCTURE DETAILS PLAN

DATE	BY	CHKD BY	APP'D BY
08/22	RMM		

AP-ST1314-C38

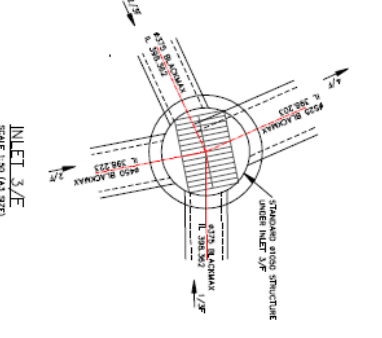
Document Set ID: 4166078

ISSUE FOR APPROVAL



NOTE: INSTALLATION OF THE EMPLOYED CONCRETE BOX CULVERTS TO BE IN ACCORDANCE WITH THE CULVERT MANUFACTURER'S SPECIFICATIONS

FOR TYPICAL TYP. SLAB DIMENSIONS FOR THE TYPICAL STORMWATER STRUCTURE TO BE USED FOR THE PROJECT, REFER TO THE TYPICAL STORMWATER STRUCTURE DRAWING.



Document Set ID: 4166078

FILE: E:\DDATA\Merreeba\Amaroo Park\Stage 13 Final Drawings\AP-ST1314-MODEL.dwg

Robin Mensinger
Civil Design Consultant
10 Tully Lane
Buderim QLD 4556
Email - robin@robinmessenger.com.au
Mob: 0424 027 310
RNST 799 732 733

Approved Consultant
15 Adelaide Avenue
358 Malvern Vic, MAMERBA QLD 4860
Ph: 07 552 9140
Email: robin@robinmessenger.com

NO.	REVISION	DATE
1	ISSUE FOR APPROVAL	08/22

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

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

DESIGNER	CHECKER	DATE
RMM <td></td> <td>08/22</td>		08/22

ISSUE FOR APPROVAL

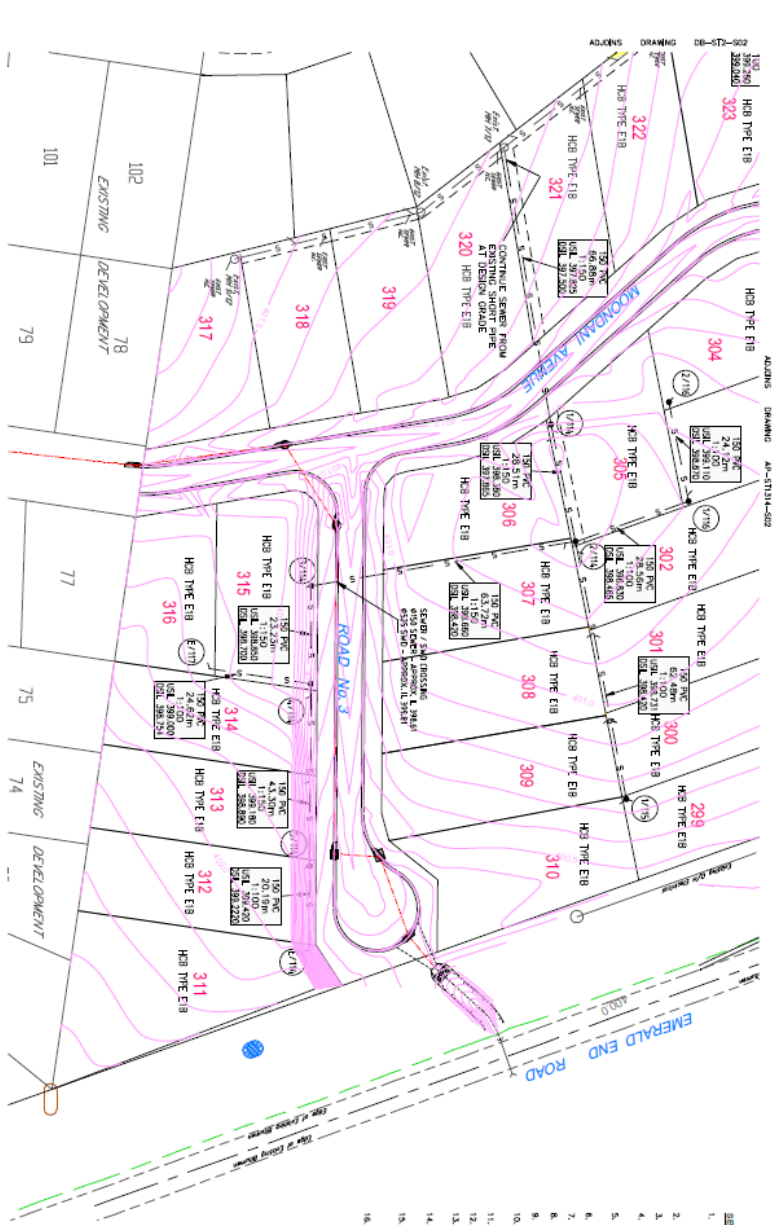
LEGEND
DESIGN SURFACE CONTOURS AND LAGB
PROPOSED NEWS AND GRENSEL
PROPOSED STORMWATER DRAINAGE
PROPOSED SEWERAGE RETICULATION

CONTROL STATIONS

ROAD	DATE	NOTING	STATUS
SPW 85546	21/05/2017	PROV. 1/18	PROV.
SPW 86641	13/12/2015	PROV. 1/18	PROV.
SPW 88289	12/06/2016	PROV. 1/18	PROV.
SPW 92929	11/06/2018	PROV. 1/18	PROV.
SPW 95178	23/09/2018	PROV. 1/18	PROV.
SPW 98525	11/07/2019	PROV. 1/18	PROV.
SPW 99549	04/08/2019	PROV. 1/18	PROV.
SPW 100000	04/08/2019	PROV. 1/18	PROV.
SPW 100000	04/08/2019	PROV. 1/18	PROV.

SEWER STRUCTURE SETOUT

NO.	EASTING	NORTHING	LEVEL	DESCRIPTION
9114	324008.279	6122815.809	Top RL: 401.30	MANHOLE 071050
9115	324038.111	6122815.800	Top RL: 401.30	MANHOLE 071050
9116	324108.691	6122815.790	Top RL: 401.30	MANHOLE 071050
9117	324178.691	6122815.780	Top RL: 401.30	MANHOLE 071050
9118	324248.691	6122815.770	Top RL: 401.30	MANHOLE 071050
9119	324318.691	6122815.760	Top RL: 401.30	MANHOLE 071050
9120	324388.691	6122815.750	Top RL: 401.30	MANHOLE 071050
9121	324458.691	6122815.740	Top RL: 401.30	MANHOLE 071050
9122	324528.691	6122815.730	Top RL: 401.30	MANHOLE 071050
9123	324598.691	6122815.720	Top RL: 401.30	MANHOLE 071050
9124	324668.691	6122815.710	Top RL: 401.30	MANHOLE 071050
9125	324738.691	6122815.700	Top RL: 401.30	MANHOLE 071050
9126	324808.691	6122815.690	Top RL: 401.30	MANHOLE 071050
9127	324878.691	6122815.680	Top RL: 401.30	MANHOLE 071050
9128	324948.691	6122815.670	Top RL: 401.30	MANHOLE 071050
9129	325018.691	6122815.660	Top RL: 401.30	MANHOLE 071050
9130	325088.691	6122815.650	Top RL: 401.30	MANHOLE 071050
9131	325158.691	6122815.640	Top RL: 401.30	MANHOLE 071050
9132	325228.691	6122815.630	Top RL: 401.30	MANHOLE 071050
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9134	325368.691	6122815.610	Top RL: 401.30	MANHOLE 071050
9135	325438.691	6122815.600	Top RL: 401.30	MANHOLE 071050
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9144	326068.691	6122815.510	Top RL: 401.30	MANHOLE 071050
9145	326138.691	6122815.500	Top RL: 401.30	MANHOLE 071050
9146	326208.691	6122815.490	Top RL: 401.30	MANHOLE 071050
9147	326278.691	6122815.480	Top RL: 401.30	MANHOLE 071050
9148	326348.691	6122815.470	Top RL: 401.30	MANHOLE 071050
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9155	326838.691	6122815.400	Top RL: 401.30	MANHOLE 071050
9156	326908.691	6122815.390	Top RL: 401.30	MANHOLE 071050
9157	326978.691	6122815.380	Top RL: 401.30	MANHOLE 071050
9158	327048.691	6122815.370	Top RL: 401.30	MANHOLE 071050
9159	327118.691	6122815.360	Top RL: 401.30	MANHOLE 071050
9160	327188.691	6122815.350	Top RL: 401.30	MANHOLE 071050
9161	327258.691	6122815.340	Top RL: 401.30	MANHOLE 071050
9162	327328.691	6122815.330	Top RL: 401.30	MANHOLE 071050
9163	327398.691	6122815.320	Top RL: 401.30	MANHOLE 071050
9164	327468.691	6122815.310	Top RL: 401.30	MANHOLE 071050
9165	327538.691	6122815.300	Top RL: 401.30	MANHOLE 071050
9166	327608.691	6122815.290	Top RL: 401.30	MANHOLE 071050
9167	327678.691	6122815.280	Top RL: 401.30	MANHOLE 071050
9168	327748.691	6122815.270	Top RL: 401.30	MANHOLE 071050
9169	327818.691	6122815.260	Top RL: 401.30	MANHOLE 071050
9170	327888.691	6122815.250	Top RL: 401.30	MANHOLE 071050
9171	327958.691	6122815.240	Top RL: 401.30	MANHOLE 071050
9172	328028.691	6122815.230	Top RL: 401.30	MANHOLE 071050
9173	328098.691	6122815.220	Top RL: 401.30	MANHOLE 071050
9174	328168.691	6122815.210	Top RL: 401.30	MANHOLE 071050
9175	328238.691	6122815.200	Top RL: 401.30	MANHOLE 071050
9176	328308.691	6122815.190	Top RL: 401.30	MANHOLE 071050
9177	328378.691	6122815.180	Top RL: 401.30	MANHOLE 071050
9178	328448.691	6122815.170	Top RL: 401.30	MANHOLE 071050
9179	328518.691	6122815.160	Top RL: 401.30	MANHOLE 071050
9180	328588.691	6122815.150	Top RL: 401.30	MANHOLE 071050
9181	328658.691	6122815.140	Top RL: 401.30	MANHOLE 071050
9182	328728.691	6122815.130	Top RL: 401.30	MANHOLE 071050
9183	328798.691	6122815.120	Top RL: 401.30	MANHOLE 071050
9184	328868.691	6122815.110	Top RL: 401.30	MANHOLE 071050
9185	328938.691	6122815.100	Top RL: 401.30	MANHOLE 071050
9186	329008.691	6122815.090	Top RL: 401.30	MANHOLE 071050
9187	329078.691	6122815.080	Top RL: 401.30	MANHOLE 071050
9188	329148.691	6122815.070	Top RL: 401.30	MANHOLE 071050
9189	329218.691	6122815.060	Top RL: 401.30	MANHOLE 071050
9190	329288.691	6122815.050	Top RL: 401.30	MANHOLE 071050
9191	329358.691	6122815.040	Top RL: 401.30	MANHOLE 071050
9192	329428.691	6122815.030	Top RL: 401.30	MANHOLE 071050
9193	329498.691	6122815.020	Top RL: 401.30	MANHOLE 071050
9194	329568.691	6122815.010	Top RL: 401.30	MANHOLE 071050
9195	329638.691	6122815.000	Top RL: 401.30	MANHOLE 071050



- GENERAL NOTES:**
- All sewers are 450 mm Class III U/LD, series manholes are to be located 1.5m from property boundaries to centre of manhole and 0.5m from site and road. Sewer to be placed between manholes 3000 to 3015 for sewer construction details.
 - Refer to AP-ST1314-S01 for sewer construction details.
 - Stormwater to be placed on the outside of the road and under the pavement. Connections to existing water & sewer lines to be underground or supervised by AMESB share council.
 - Ensure min. 300mm clearance between all overhead and stormwater structures. Sewer to have minimal depth cover under roads and down bearing.
 - All manholes are to have 300mm above finished design surface level.
 - All pipe lifts to be provided preslabs, lower duty, deep series covers.
 - Ensure all lifts to be supported with a vertical steel rafter with a spaced top series & concrete suspension.
 - Manhole & bed paved with stone adjacent to road, 1m high.
 - Manhole covers are to be located such that the position of the access is directly over the cover pipe.
 - The installation of precast manhole covers shall be in accordance with the manufacturer's recommended procedures and specifications.
 - Ensure minimum cover of 300mm for open lifts. The stop for the bed level shall be 300mm below the top of the manhole. The stop for the manhole shall be 300mm below the top of the manhole.
 - Decision contours are 0.1m intervals.

EXHIBIT DRAWINGS

- EXHIBIT 1: SEWERAGE MANHOLES
- EXHIBIT 2: PRECAST CONNECTION MANHOLES
- EXHIBIT 3: SEWER BEDS AND TRENCH DETAILS
- EXHIBIT 4: W/3 TRENCH BENCH DETAILS
- EXHIBIT 5: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 6: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 7: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 8: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 9: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 10: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 11: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 12: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 13: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 14: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 15: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 16: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 17: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 18: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 19: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 20: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 21: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 22: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 23: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 24: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 25: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 26: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 27: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 28: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 29: SEWERAGE PIPE STRONG DETAILS
- EXHIBIT 30: SEWERAGE PIPE STRONG DETAILS



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Robin Mansinger
 Civil Design Consultant
 19 Tully Drive
 Buderim QLD 4556
 email: robin@robinmnsinger.com.au
 phone: 07 5497 7123

Approved Consultant
 T.S. Andric Associates
 58 Mulgrave Way, MAREEBA, QLD 4580
 Ph: 07 5497 8000
 Email: tsava@tsa.com.au

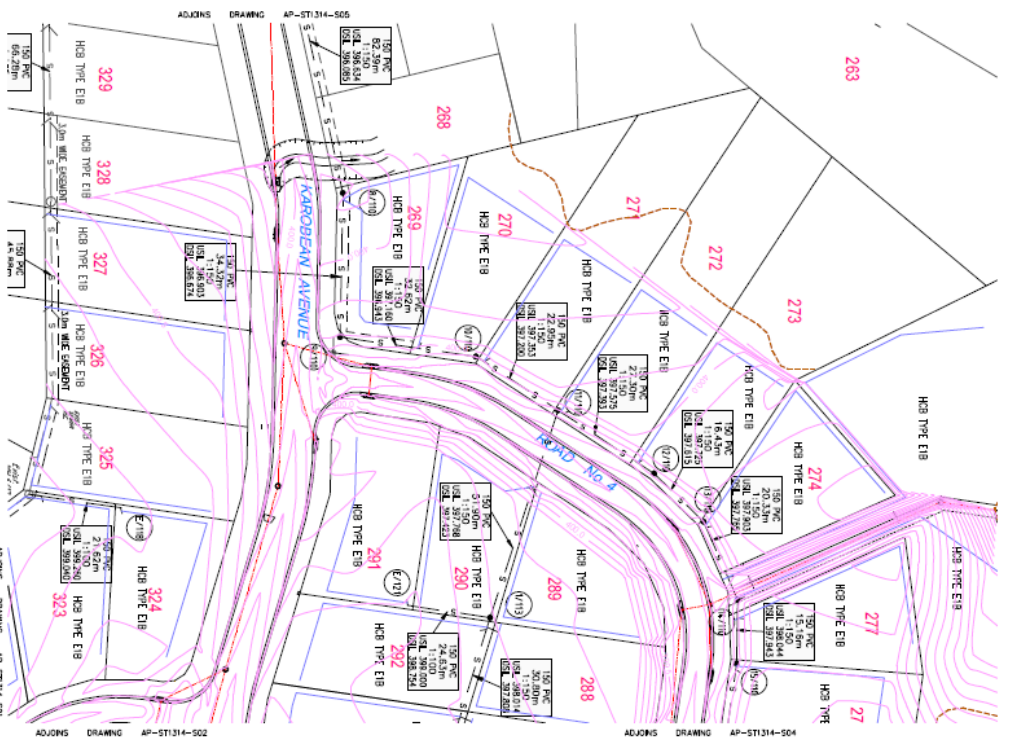
NO.	REVISION	DATE
1	ISSUE FOR APPROVAL	18/2/22

CLIENT: **BT, M.S STANKOVICH PTY LTD**
 PROJECT: **ANAROO RESIDENTIAL DEVELOPMENT**
 STAGES 13 & 14
 MOODJANI AVENUE, MAREEBA

DRAWING: **SEWERAGE RETICULATION LAYOUT PLAN**
 SHEET 14A
 OF 15

DATE: 18/2/22
 DRAWN BY: RYM
 CHECKED BY: [Blank]
 APPROVED BY: [Blank]
 DRAWING NO: **AP-ST1314-S03**
 SHEET: B

ISSUE FOR APPROVAL

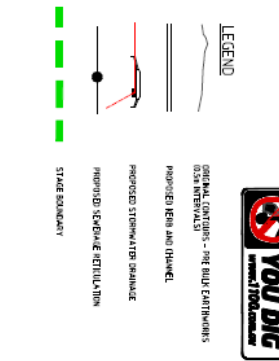


No.	EASTING	NORTHING	LEVEL	DESCRIPTION
8010	333822.000	8192925.704	TORN RL: 402.29	MANHOLE 01/00
8011	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8012	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8013	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8014	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8015	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8016	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8017	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8018	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8019	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8020	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8021	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8022	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8023	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8024	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8025	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8026	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8027	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8028	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8029	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00
8030	333822.300	8192925.004	TORN RL: 401.10	MANHOLE 01/00

SYMBOL	DESCRIPTION
S200C	SEWERAGE MANHOLE
S300C	PROPOSED CONNECTION BRANCH
S300D	SEWER BRANCH AND TRENCH DETAILS
S300A	W/C TRINCH SLOPE DETAILS
S300B	SEWERAGE PUMP STATION DETAILS
S300E	SEWERAGE PUMP STATION DETAILS
S300F	SEWERAGE PUMP STATION DETAILS
S300G	SEWERAGE PUMP STATION DETAILS
S300H	SEWERAGE PUMP STATION DETAILS
S300I	SEWERAGE PUMP STATION DETAILS
S300J	SEWERAGE PUMP STATION DETAILS
S300K	SEWERAGE PUMP STATION DETAILS
S300L	SEWERAGE PUMP STATION DETAILS
S300M	SEWERAGE PUMP STATION DETAILS
S300N	SEWERAGE PUMP STATION DETAILS
S300O	SEWERAGE PUMP STATION DETAILS
S300P	SEWERAGE PUMP STATION DETAILS
S300Q	SEWERAGE PUMP STATION DETAILS
S300R	SEWERAGE PUMP STATION DETAILS
S300S	SEWERAGE PUMP STATION DETAILS
S300T	SEWERAGE PUMP STATION DETAILS
S300U	SEWERAGE PUMP STATION DETAILS
S300V	SEWERAGE PUMP STATION DETAILS
S300W	SEWERAGE PUMP STATION DETAILS
S300X	SEWERAGE PUMP STATION DETAILS
S300Y	SEWERAGE PUMP STATION DETAILS
S300Z	SEWERAGE PUMP STATION DETAILS

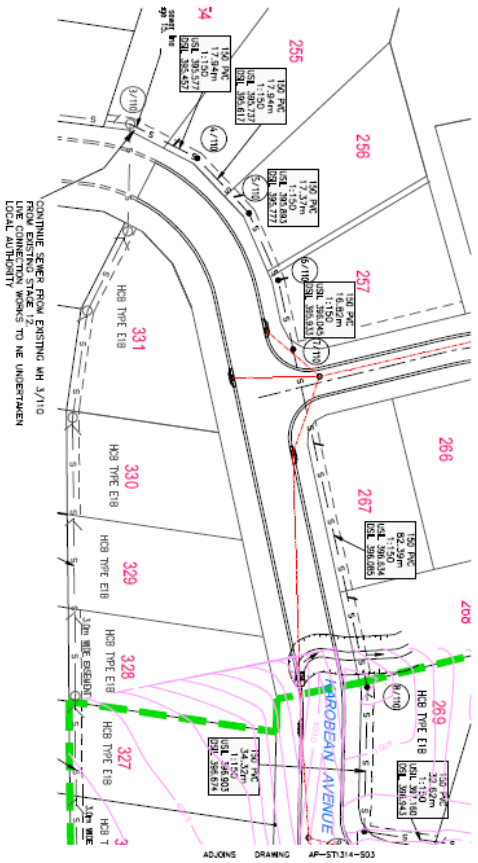
PIPER	Starting	Ending	Structure
PSM 02065	333545.697	8192763.78	391435
PSM 04066	333545.697	8192763.78	451443
PSM 04067	333545.697	8192763.78	391435
PSM 04068	333545.697	8192763.78	451443
PSM 04069	333545.697	8192763.78	391435
PSM 04070	333545.697	8192763.78	451443
PSM 04071	333545.697	8192763.78	391435
PSM 04072	333545.697	8192763.78	451443
PSM 04073	333545.697	8192763.78	391435
PSM 04074	333545.697	8192763.78	451443
PSM 04075	333545.697	8192763.78	391435
PSM 04076	333545.697	8192763.78	451443
PSM 04077	333545.697	8192763.78	391435
PSM 04078	333545.697	8192763.78	451443
PSM 04079	333545.697	8192763.78	391435
PSM 04080	333545.697	8192763.78	451443
PSM 04081	333545.697	8192763.78	391435
PSM 04082	333545.697	8192763.78	451443
PSM 04083	333545.697	8192763.78	391435
PSM 04084	333545.697	8192763.78	451443
PSM 04085	333545.697	8192763.78	391435
PSM 04086	333545.697	8192763.78	451443
PSM 04087	333545.697	8192763.78	391435
PSM 04088	333545.697	8192763.78	451443
PSM 04089	333545.697	8192763.78	391435
PSM 04090	333545.697	8192763.78	451443
PSM 04091	333545.697	8192763.78	391435
PSM 04092	333545.697	8192763.78	451443
PSM 04093	333545.697	8192763.78	391435
PSM 04094	333545.697	8192763.78	451443
PSM 04095	333545.697	8192763.78	391435
PSM 04096	333545.697	8192763.78	451443
PSM 04097	333545.697	8192763.78	391435
PSM 04098	333545.697	8192763.78	451443
PSM 04099	333545.697	8192763.78	391435
PSM 04100	333545.697	8192763.78	451443

- GENERAL NOTES**
- ALL SEWERAGE PIPES ARE CLASSIFIED AS 1500mm UNLESS OTHERWISE SPECIFIED. ALL SEWERAGE PIPES SHALL BE INSTALLED AT A MINIMUM OF 1.5m FROM PROPERTY BOUNDARIES TO CENTER OF MANHOLE AND OTHER FROM SITE AND ROAD BOUNDARIES TO CENTER OF MANHOLE ONLY.
 - REFER TO PROPOSED STORMWATER DRAINAGE S3000 FOR SEWER CONSTRUCTION DETAILS.
 - REFER DWG AP-ST-1314-S02 FOR SEWER CONSTRUCTION DETAILS.
 - THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL COUNCIL AND STATE DEPARTMENTS.
 - ALL SEWERAGE PIPES SHALL BE INSTALLED AT A MINIMUM OF 1.5m FROM PROPERTY BOUNDARIES TO CENTER OF MANHOLE AND OTHER FROM SITE AND ROAD BOUNDARIES TO CENTER OF MANHOLE ONLY.
 - ALL SEWERAGE PIPES SHALL BE INSTALLED AT A MINIMUM OF 1.5m FROM PROPERTY BOUNDARIES TO CENTER OF MANHOLE AND OTHER FROM SITE AND ROAD BOUNDARIES TO CENTER OF MANHOLE ONLY.
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FOR ASSOCIATED LONGITUDINAL SECTIONS REFER TO DRAWINGS AP-ST-1314-S02 TO S08





NO.	EASTING	NORTHING	LEVEL	DESCRIPTION
410	313721.02	8120814.62	109.91	MANHOLE 01/09
411	313721.17	8120816.08	109.91	MANHOLE 01/09
412	313721.02	8120814.62	109.91	MANHOLE 01/09
413	313721.59	8120814.41	109.91	MANHOLE 01/09
414	313721.59	8120814.41	109.91	MANHOLE 01/09
415	313721.02	8120814.62	109.91	MANHOLE 01/09

- REMARKS:**
- ALL SEWER LINES AND GULLY RUN LINES SHALL BE LOCATED 1.5M FROM FRONT BOUNDARY TO CENTER OF MANHOLE BANKS BOUNDARY TO CENTER OF MANHOLE BANKS.
 - REFER TO PREVIOUS STAGES DRAWINGS 3000 TO 3015 FOR SEWER CONSTRUCTION DETAILS.
 - REFER TO AP-114-314-500 FOR SEWER LONGITUDINAL SECTIONS.
 - THE CONSTRUCTION IS TO COMPLY THE LOCATIONS AND LEVELS OF EXISTING SERVICES FROM THE CONSTRUCTION CONTRACT DRAWINGS.
 - CONNECTIONS TO EXISTING MAINS & SEWER LINES TO BE UNDERGOWN OR SURFACE BY UNDERGOWN PIPE CONDUIT.
 - EXPOSED MAINS, TRENCH DEPTH SHALL BE 1.5M AND 1.5M MINIMUM.
 - SEWER TO HAVE MINIMUM COVER UNDER ROAD AND OTHER SURFACE.
 - ALL MANHOLES ARE TO BE FINISHED PRECAST, REINFORCED CONCRETE WITH 1.5M DIA. RINGS.
 - ALL TYPE EMBANKMENTS TO BE FINISHED PRECAST, REINFORCED CONCRETE WITH 1.5M DIA. RINGS.
 - CONCRETE SHALL BE FINISHED WITH 1.5M DIA. RINGS.
 - INSTALL A 600mm DIA. MANHOLE ADJACENT TO MAINS, 1.5M DIA.
 - MANHOLE COVERS ARE TO BE 600mm DIA.
 - MANHOLE COVERS ARE TO BE LOCATED SUCH THAT THE POSITION OF THE ACCESS IS DIRECTLY OVER THE CONDUIT PIPE.
 - THE INSTALLATION OF PRECAST MANHOLE COVERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES AND REQUIREMENTS.
 - WHERE MANHOLES OCCUR AT THE CORNER OF SEWER LINES, THE SIZE FOR THAT END STATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES AND REQUIREMENTS.
 - SEWER CONDUIT SHALL BE FINISHED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES AND REQUIREMENTS.

Robin Mansinger
 Civil Design Consultant
 9 Tully Lane
 Unit 10, QLD 4556
 mel_rns@robinm.com.au
 0755 424 007 310
 0755 424 007 310
 0755 424 007 310
 0755 424 007 310

NO.	DESCRIPTION	DATE
1	ISSUE FOR APPROVAL	08/22

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

DRAWING SEWERAGE RETICULATION LAYOUT PLAN
 SHEET 5 of 5

DATE 08/22
BY RMM
CHECKED RMM
DATE 08/22
APPROVED RMM
DATE 08/22
PROJECT NO. AP-ST1314-S05
SCALE B

ISSUE FOR APPROVAL

CONTROL STATIONS

DATE	CONTROL	STATION	REMARKS
08/22	08/22	08/22	08/22
08/22	08/22	08/22	08/22
08/22	08/22	08/22	08/22
08/22	08/22	08/22	08/22

ENDNOTES:

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

ENDNOTES:

- 30000 SEWER MAINS
- 30000 PRECAST CONCRETE BRICKS
- 30000 SEWER BEDDING AND TRENCH DETAILS
- 30000 USE THREAT BLOCK DETAILS
- 30000 SEWERAGE PUMP STATION DETAILS
- 30000 SEWERAGE PUMP STATION PRECAST UNITS
- 30000 SEWERAGE PUMP STATION DETAILS
- 30000 PUMP STATION OVERFLOW

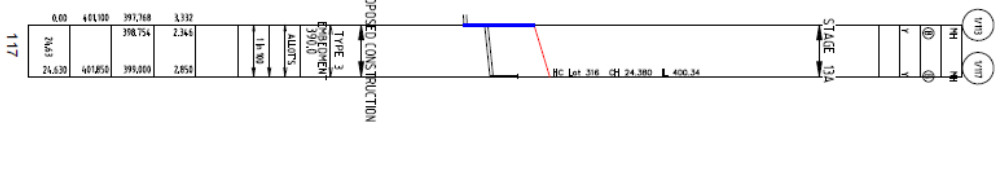
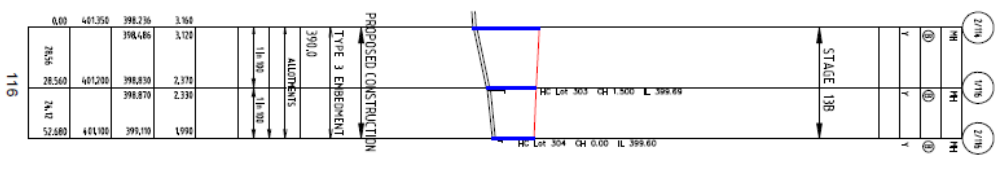
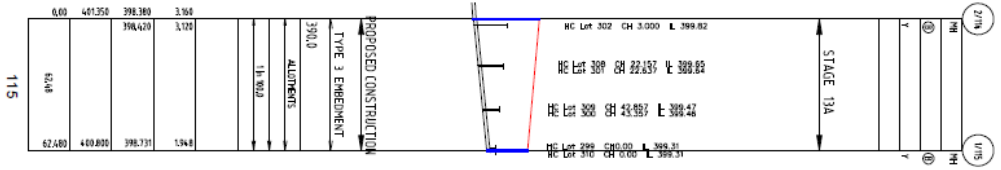
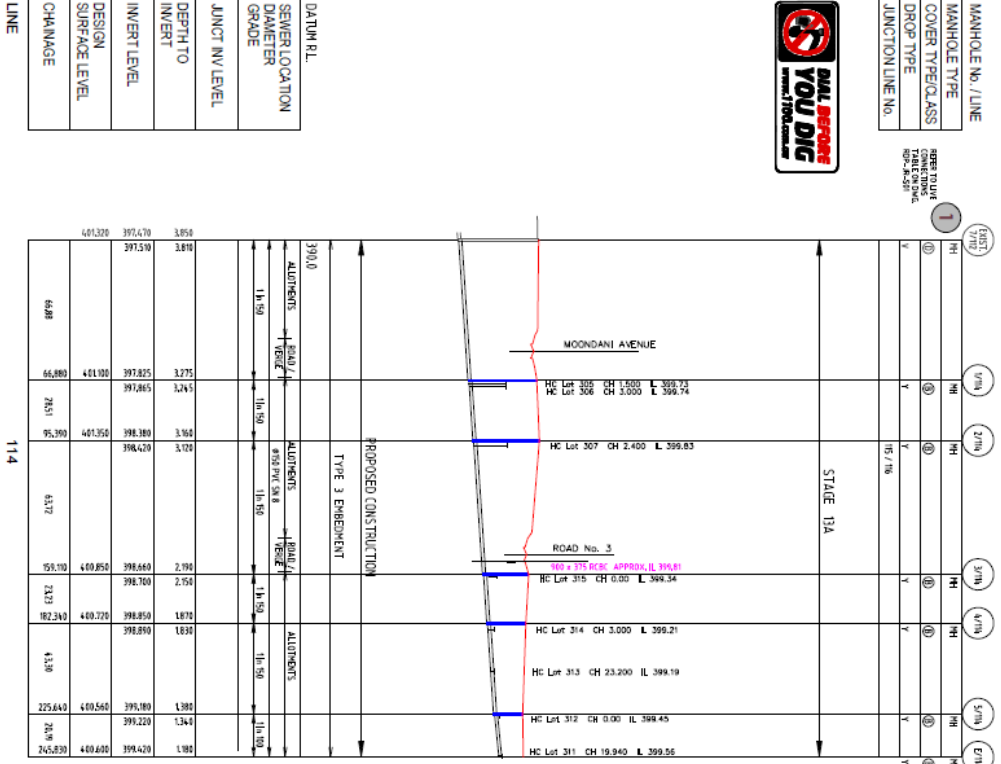
LEGEND

- ORIGINAL CONTROLS - PRE-BUILT EXISTING
- PROPOSED EMBANKMENT
- PROPOSED STORMWATER CHANNEL
- PROPOSED VEGETATION RETICULATION
- STAKE BOUNDARY





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



DATUM RL	
SEWER LOCATION	
DIAMETER	
GRADE	
JUNCT INV LEVEL	
DEPTH TO INVERT	
INVERT LEVEL	
DESIGN SURFACE LEVEL	
CHANGAGE	

Robin Mansinger
 Civil Design Consultant
 10 Tully Drive
 Buderim QLD 4556
 Email: robins@robinm.com.au
 Mob: 0424 037 310
 Mob: 0424 037 310
 Mob: 0424 037 310

Approved Consultant
 T/S Andrew Macdonald
 528 Malvern Hwy, MAREEBA QLD 4880
 Ph: 0427 803040
 Email: andrew@andson.com

REVISION	DATE
1. ORIGINAL DESIGN	12/22
2. MODIFIED DESIGN	12/22
3. REVISED DESIGN	12/22

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

DRAWING: SEWERAGE RETICULATION
 LONGITUDINAL SECTIONS
 SHEET 1 OF 3

AP-ST-1314-S07
 DATE: 08/22
 DRAWN: RMM
 CHECKED: [blank]
 APPROVED: [blank]

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Robyn Mansinger
Civil Design Consultant
19 Tully Lane
Buderim QLD 4556
email: robyn@mansinger.com.au
MO: 0424 007 310
AS/NZS 7807:2022 - 7/23

Approved Consultant
7/8 Ackerly Terrace
808 Malvern Hwy, MARREEBA QLD 4810
Ph: 08 927 88100
Email: ryan@malvern.com

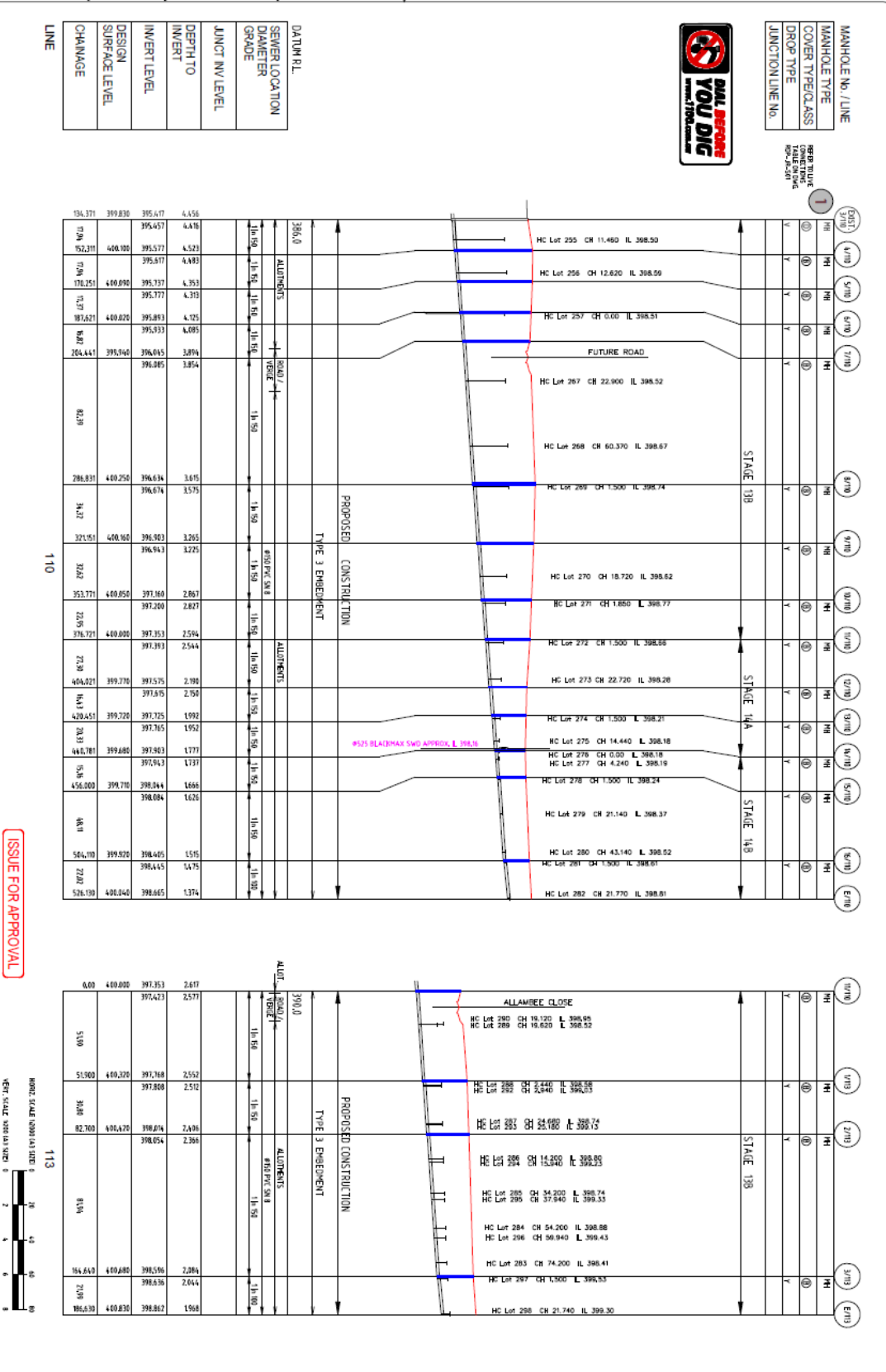
NO.	REVISION	DATE
1	ISSUE FOR APPROVAL	08/22

CLIENT BT, M & S STANCOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT
MONDINI AVENUE, MARREEBA

DRAWING SEWERAGE RETICULATION
LONGITUDINAL SECTIONS
SHEET 2 of 3

DATE 08/22
SCALE 1:100
PROJECT NO. AP-ST1314-S06
REVISION B

Document Set ID: 4168878



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Robit Mansinger
Civil Design Consultant
10 Tully Lane
Bulwer QLD 4699
email: rob@robdesign.com.au
Mob: 0424 007 310
ABN: 77 989 78 798

Approved Consultant
7/3 Ashford Meadows
338 Malvern Way, MERRIBEA QLD 4690
Ph: 0427 891000
Email: info@robdesign.com

NO.	DESCRIPTION	DATE
1	ISSUE FOR APPROVAL	08/22
2	FOR PRELIMINARY REVIEW	08/22
3	FOR PRELIMINARY REVIEW	08/22
4	FOR PRELIMINARY REVIEW	08/22
5	FOR PRELIMINARY REVIEW	08/22

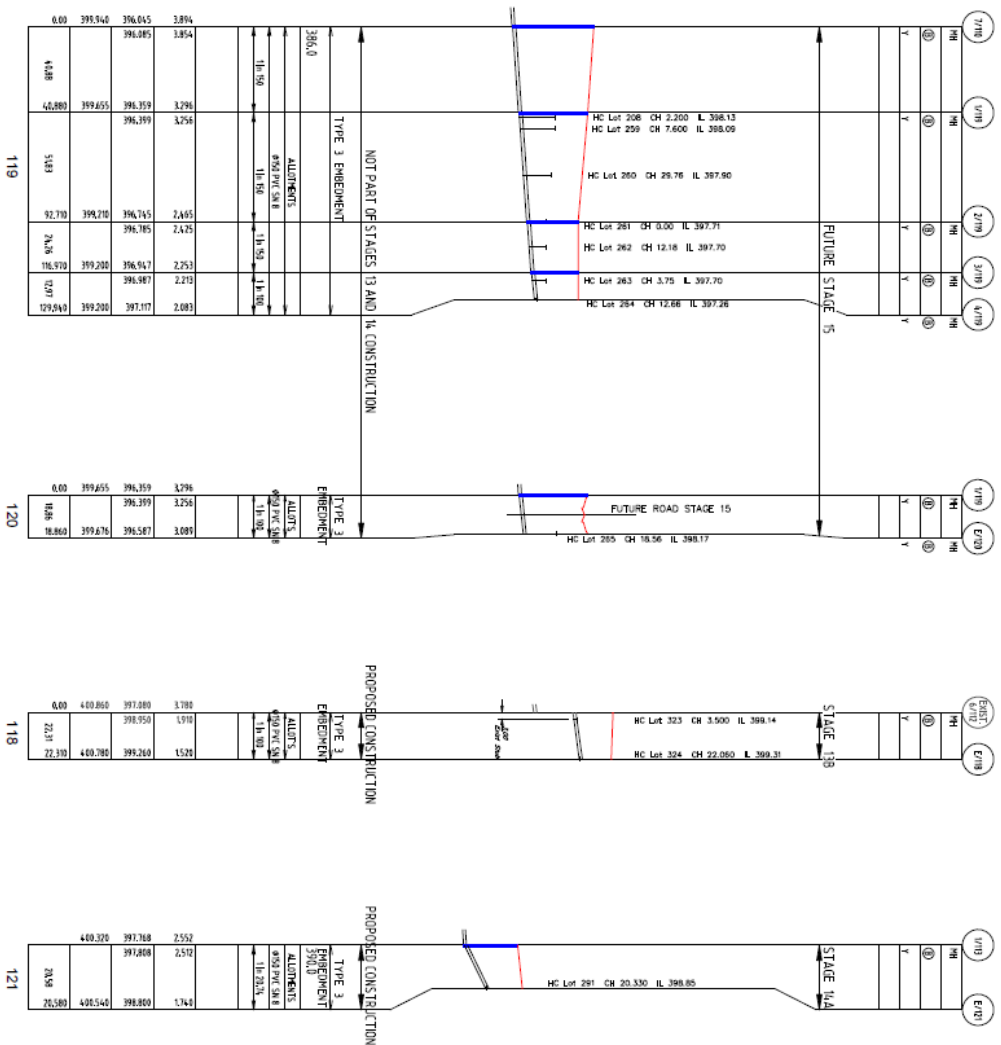
CLIENT BT, M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
MONDANI AVENUE, MAREEBA

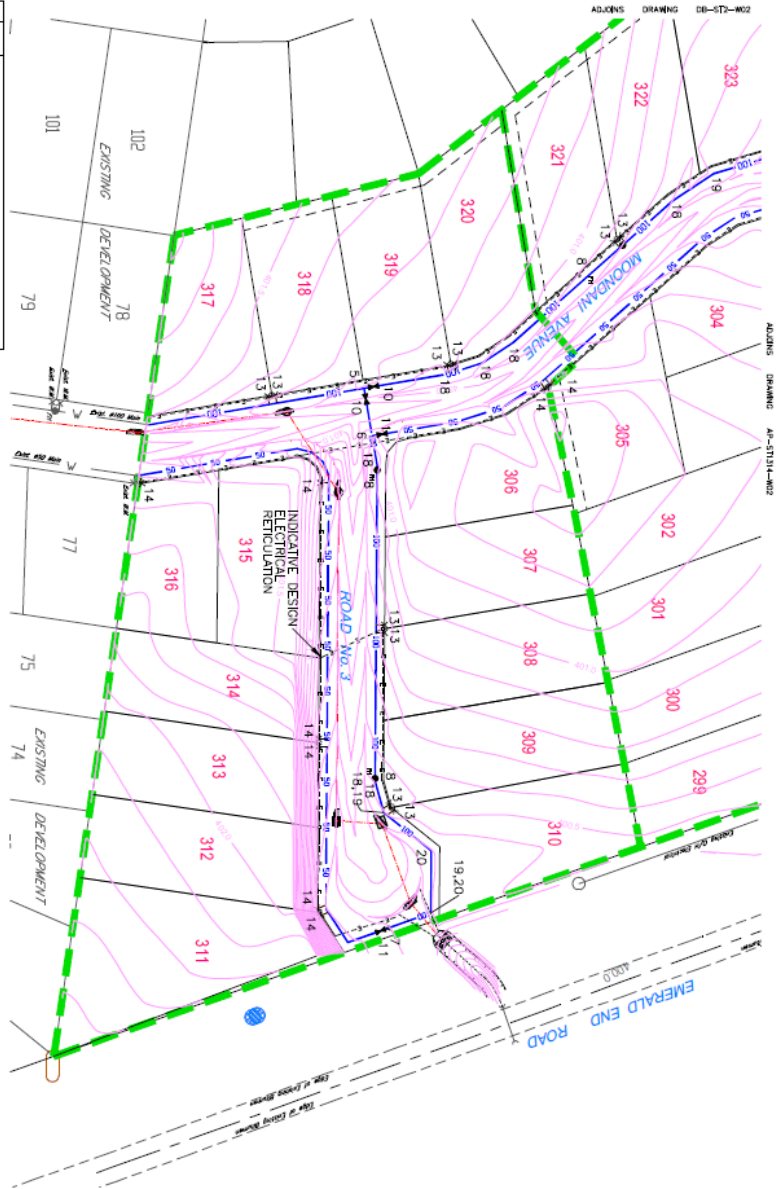
DRAWING SEWERAGE RETICULATION LONGITUDINAL SECTIONS SHEET 3 OF 3

APPROVED RMM
DATE 08/22
AP-ST1314-S08



MANHOLE NO./LINE	MANHOLE TYPE	COVER TYPE/CLASS	DROP TYPE	JUNCTION LINE NO.
7119	HH	③	Y	
7119	HH	③	Y	
2119	HH	③	Y	
3119	HH	③	Y	
4119	HH	③	Y	
5119	HH	③	Y	
6119	HH	③	Y	
7119	HH	③	Y	
8119	HH	③	Y	
9119	HH	③	Y	
10119	HH	③	Y	
1119	HH	③	Y	
1219	HH	③	Y	
1319	HH	③	Y	
1419	HH	③	Y	





- WATER RETICULATION NOTES**
1. WATER SUPPLY PRESSURE (100) TO COMPLY WITH AS1477.
 2. WATER RETICULATION TO BE INSTALLED AT PRESSURE RATED TO 1250 KPA.
 3. AFTER LAYING THE 200mm PIPE, THE EXISTING CONDUIT SHALL BE REINSTALLED TO THE EXISTING GRADE. MINIMUM COVER TO ALL UNPEELED PORT OF THE TO PHASED SURFACE LEVEL SHALL BE 500mm IN NON-TURFED AREAS AND 600mm IN TURFED AREAS.
 4. WATER RETICULATION ALLOWED FOR ALL LOTS SHALL BE 200mm.
 5. PROPERTY BOUNDARY: MINIMUM COVER OF 500mm SHALL BE 400mm ABOVE GRADE. MINIMUM COVER OF 500mm SHALL BE 400mm ABOVE GRADE. MINIMUM COVER OF 500mm SHALL BE 400mm ABOVE GRADE.
 6. FOR UNLAWFUL WORKING SHALL BE 50mm IN POLYPROPYLENE.
 7. REFER TO MANUFACTURER'S SPECIFICATIONS.
 8. REFER TO MANUFACTURER'S SPECIFICATIONS.
 9. PROPERTY LOCATED ON THE CORNER SITE OF THE ROAD TO THE RETICULATION SHALL BE SERVED BY A 200mm DIA (100) POLYPROPYLENE LAYED WITH 0.1% RETICULATION SHALL BE 150mm OR 100mm DIA WITH 0.1%.

- ENDROCK DRAWINGS**
- S20101 - Kerb/Road Markers
 - S20102 - Water Reticulation Bedding Details <300
 - S20103 - Water Service Road Coverings Low Density Residential
- MAREEBBA SHIRE STANDARD DRAWINGS**
- S20204 - WSC Valve Box Installation
 - S20205 - WSC Hydrant Box Installation
 - S20206 - WSC Hydrant Box Details
 - S20207 - WSC Main Connection Details
 - S20208 - WSC Domestic Water Service Connection Details

ITEM CODE	DESCRIPTION
1	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
2	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
3	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
4	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
5	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
6	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
7	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
8	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
9	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
10	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
11	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
12	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
13	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
14	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.
15	150 x 150 x 150 O.D.I.C.L. The silt concrete thrust block.

ITEM CODE	DESCRIPTION
16	150 dia O.D.I.C.L. 200' bend with concrete thrust block.
17	150 dia O.D.I.C.L. 45° bend with concrete thrust block.
18	150 dia O.D.I.C.L. 110° bend with concrete thrust block.
19	150 dia O.D.I.C.L. 110° bend with concrete thrust block.
20	150 dia O.D.I.C.L. 45° bend with concrete thrust block.
21	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
22	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
23	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
24	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
25	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
26	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
27	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
28	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
29	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
30	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
31	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
32	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
33	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
34	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
35	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
36	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
37	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
38	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
39	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
40	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
41	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
42	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
43	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
44	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
45	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
46	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
47	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
48	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
49	150 dia O.D.I.C.L. 90° bend with concrete thrust block.
50	150 dia O.D.I.C.L. 90° bend with concrete thrust block.

Robin Mensinger
 Civil Design Consultant
 19 Tully Lane
 Boulder QLD 4556
 Email: robin@robinsinger.com.au
 Phone: 07 4677 7123

Associated Consultant
 75. Ashby Avenue
 Brisbane QLD 4000
 Phone: 07 4677 7123
 Email: robin@robinsinger.com

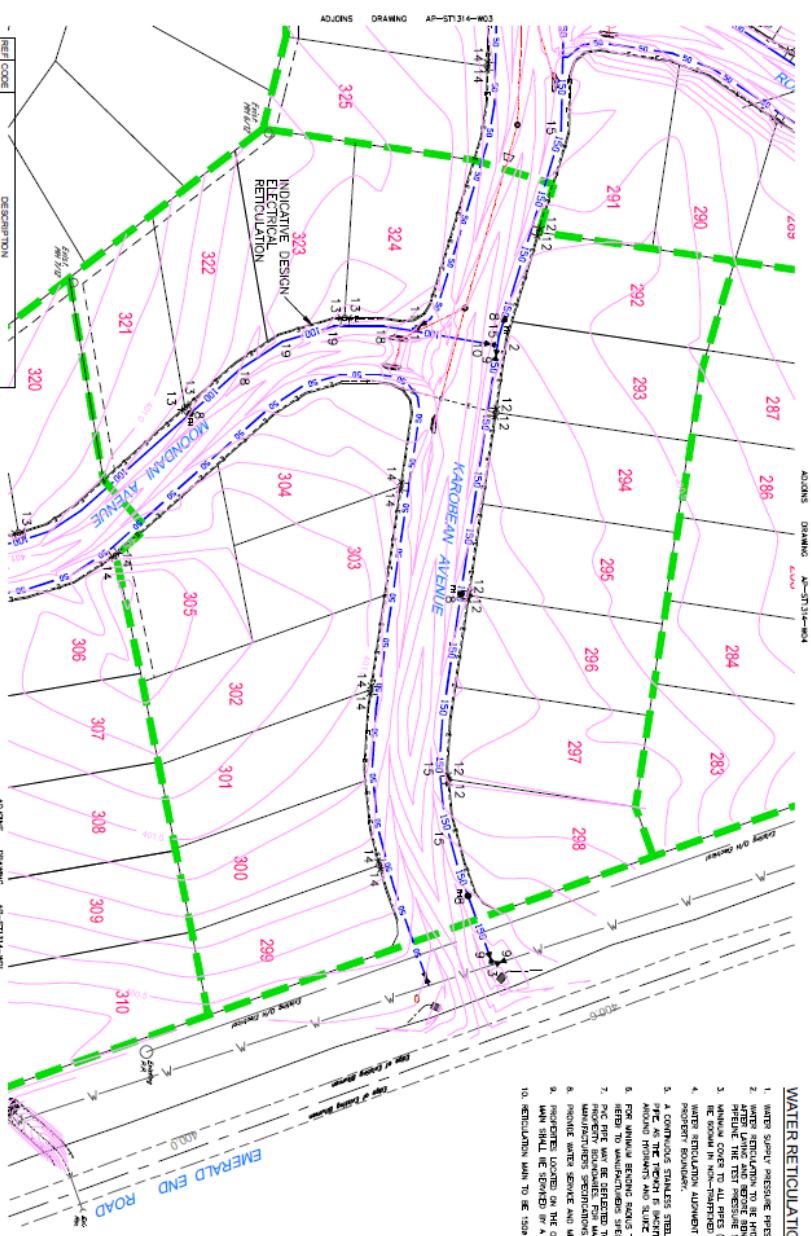
REVISION	DATE
1	08/22
2	08/22
3	08/22
4	08/22
5	08/22
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CLIENT BT M & S STANKOVICH PTY LTD
PROJECT AMAROO RESIDENTIAL DEVELOPMENT STAGES 13 & 14
DRAWING WATER RETICULATION LAYOUT PLAN
STAGE 13A

APPROVED BY	DATE
RHM	08/22
AP-ST1314-W01	B

ISSUE FOR APPROVAL

FILE: E:\DATA\Mareeba\Amaroo Park\Stage 13 Final Drawings\AP-ST1314-MODEL.dwg



REF CODE	DESCRIPTION
1	100 x 100 x 90 D.I.C.L. 90° bend with concrete thrust block.
2	150 x 150 x 100 D.I.C.L. 90° bend with concrete thrust block.
3	150 x 150 x 100 D.I.C.L. Tee with concrete thrust block.
4	100 x 100 x 100 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	80 x 80 x 50 D.I.C.L. Tee with concrete thrust block.
7	100 x 50 Tee with concrete thrust block.
8	90° Tee with concrete thrust block.
9	100 x 100 Tee with concrete thrust block.
10	100 x 100 Tee with concrete thrust block.
11	100 x 100 Tee with concrete thrust block.
12	100 x 100 Tee with concrete thrust block.
13	100 x 100 Tee with concrete thrust block.
14	90° Tee with concrete thrust block.
15	100 x 100 Tee with concrete thrust block.

REF CODE	DESCRIPTION
16	100 dia D.I.C.L. Tee bend with concrete thrust block.
17	100 dia D.I.C.L. Tee bend with concrete thrust block.
18	100 dia D.I.C.L. Tee bend with concrete thrust block.
19	100 dia D.I.C.L. Tee bend with concrete thrust block.
20	100 dia D.I.C.L. Tee bend with concrete thrust block.
21	100 dia D.I.C.L. Tee bend with concrete thrust block.
22	100 dia D.I.C.L. Tee bend with concrete thrust block.
23	100 dia D.I.C.L. Tee bend with concrete thrust block.
24	100 dia D.I.C.L. Tee bend with concrete thrust block.
25	100 dia D.I.C.L. Tee bend with concrete thrust block.
26	100 dia D.I.C.L. Tee bend with concrete thrust block.
27	100 dia D.I.C.L. Tee bend with concrete thrust block.
28	100 dia D.I.C.L. Tee bend with concrete thrust block.
29	100 dia D.I.C.L. Tee bend with concrete thrust block.
30	100 dia D.I.C.L. Tee bend with concrete thrust block.

Robin Mansinger
Civil Design Consultant
19 Tullaro Lane
Bulimba QLD 4055
email: robin@robinsinger.com.au
Phone: 07 3416 7123

Approved Consultant
75 Koolba Avenue
158 Maroochy Way, MAREEBA, QLD 4075
Phone: 07 467 88100
Email: raven@redsign.com

REVISION	DATE
1	11/23
2	08/22

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

DRAWING: WATER RETICULATION LAYOUT PLAN
STAGE 13B

NO	DATE	BY	CHECKED
1	08/22	RMM	
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ISSUE FOR APPROVAL

- WATER RETICULATION NOTES**
1. WATER SERVICE PRESSURE PIPES TO COMPLY WITH AS/NZS 4777.
 2. WATER SERVICE PIPES TO BE CONDUCTED TO THE STREET CURB AND LATER LAPPED ABOVE GROUND TO THE STREET CURB.
 3. ALL WATER SERVICE PIPES SHALL BE HED FOR 15 MINUTES MIN WITHOUT LOSS.
 4. ALL WATER SERVICE PIPES SHALL BE HED FOR 15 MINUTES MIN WITHOUT LOSS.
 5. WATER RETICULATION ALIGNMENT FOR ALL ROADS SHALL BE 2.0M FROM PROPERTY BOUNDARY.
 6. A CONTINUOUS STAINLESS STEEL OR COPPER WIRE SHALL BE LAD 150MM ABOVE THE WATER SERVICE PIPES.
 7. PIPES AS THE TRENCH IS INSTALLED THIS WIRE SHALL BE WELDED ONCE.
 8. FOR MANUAL STOPPING SHALL BE 20.0M SPACING.
 9. PIPES SHALL BE INSTALLED TO ADHERE WITHIN MADE CHANGES IN MANHOLES/INSPECTION POINTS.
 10. PIPES SHALL BE INSTALLED TO ADHERE WITHIN MADE CHANGES IN MANHOLES/INSPECTION POINTS.
 11. PIPES SHALL BE INSTALLED TO ADHERE WITHIN MADE CHANGES IN MANHOLES/INSPECTION POINTS.
 12. PIPES SHALL BE INSTALLED TO ADHERE WITHIN MADE CHANGES IN MANHOLES/INSPECTION POINTS.
 13. PIPES SHALL BE INSTALLED TO ADHERE WITHIN MADE CHANGES IN MANHOLES/INSPECTION POINTS.
 14. PIPES SHALL BE INSTALLED TO ADHERE WITHIN MADE CHANGES IN MANHOLES/INSPECTION POINTS.
 15. PIPES SHALL BE INSTALLED TO ADHERE WITHIN MADE CHANGES IN MANHOLES/INSPECTION POINTS.

LEGEND

- INDICATIVE ELECTRICAL RETICULATION
- PROPOSED WATER RETICULATION - 450
- STAKE BOUNDARY

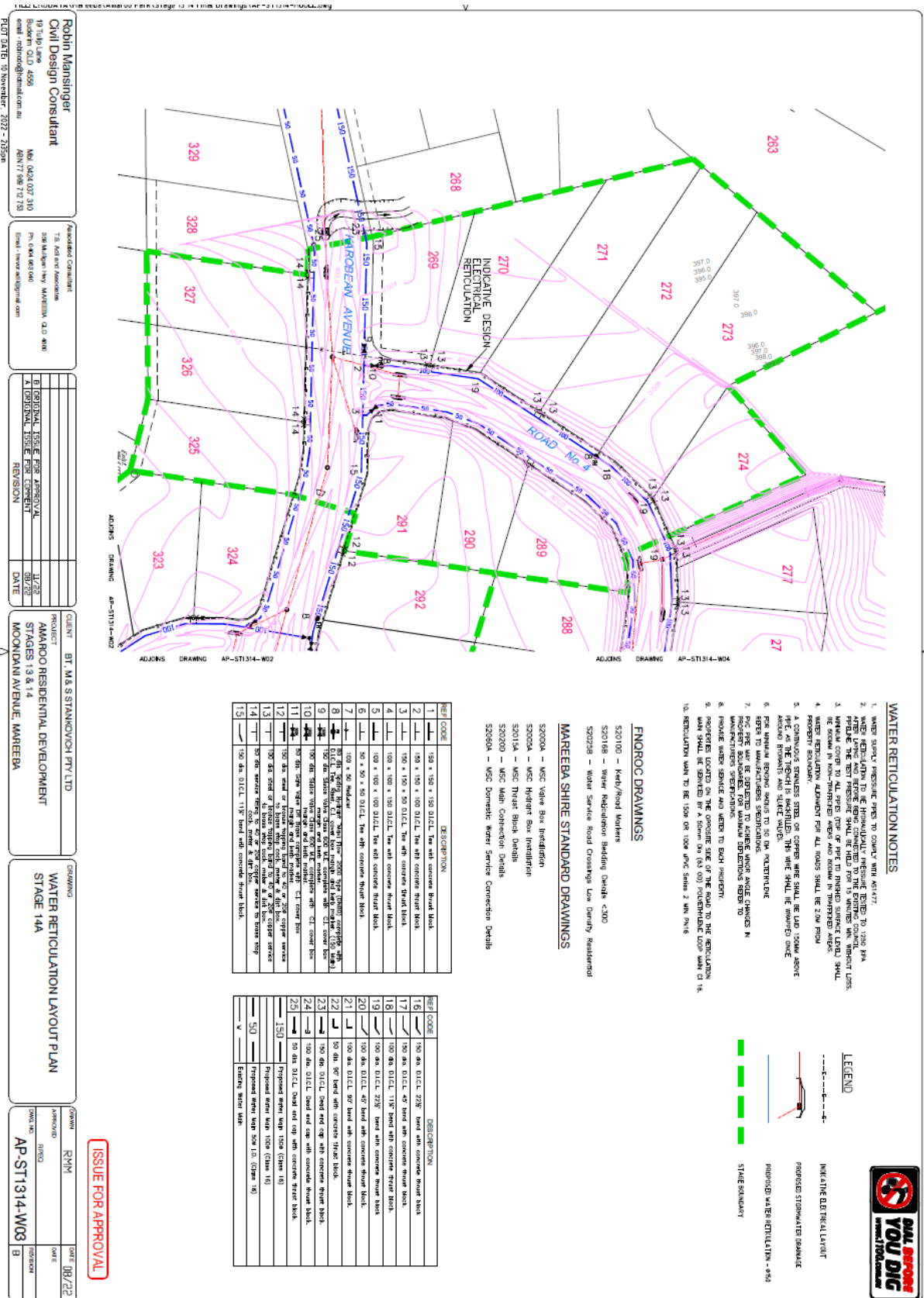
FNOROC DRAWINGS

- S20100 - Kerb/Road Markers
- S20108 - Water Reticulation Bedding Details <300
- S20208 - Water Service Road Crossing Low Density Residential

MAREEBA SHIRE STANDARD DRAWINGS

- S20004 - WSC Valve Box Installation
- S20004 - WSC Hydrant Box Installation
- S20154 - WSC Thrust Block Details
- S20200 - WSC Man Connection Details
- S20604 - WSC Domestic Water Service Connection Details





WATER RETICULATION NOTES

1. WATER SUPPLY REQUIREMENTS TO BE CHECKED WITH AUSTRIAN WATER SUPPLY AUTHORITY.
2. WATER RETICULATION TO BE RETICULATED/RESIZED PERIOD TO 1500 PA. AFTER LAYOUT HAS BEEN CHECKED TO THE DESIGN CONSULTANT. PROVIDE THE BEST POSSIBLE SIZES OF PIPES TO BE INSTALLED WITHIN LINES.
3. ALL PIPES TO BE INSTALLED WITHIN LINES TO BE INSTALLED WITHIN LINES. ALL PIPES TO BE INSTALLED WITHIN LINES TO BE INSTALLED WITHIN LINES.
4. WATER RETICULATION ALIGNED PER ALL NOTES SHALL BE 200 PA. PROPERTY BOUNDARY.
5. A CONTINUOUS SPACED STEEL OR COPPER PIPE SHALL BE LAD 100MM ABOVE GROUND SURFACE TO BE INSTALLED WITHIN LINES TO BE INSTALLED WITHIN LINES.
6. PER MINIMUM BENDING RADIUS TO BE ON MICROFILM.
7. ALL PIPES TO BE INSTALLED WITHIN LINES TO BE INSTALLED WITHIN LINES.
8. PROVIDE WATER SERVICE AND WATER TO EACH PROPERTY.
9. PROPERTIES LOCATED ON THE OPPOSITE SIDE OF THE ROAD TO THE RETICULATION MAIN SHALL BE SERVED BY A DOWN DR (S) (S) POLYETHYLENE GLASS MAIN OF 150mm.
10. RETICULATION MAIN TO BE 1500 OR 1000 JMC SIZES 2 MM PA. 6

FNOROC DRAWINGS

- S20100 - Poly/Pipe/duct
- S20108 - Water Reticulation Building Details <300
- S20228 - Water Service Road Crossings Low Density Residential
- S20300 - MSC Valve Box Installation
- S20324 - MSC Hydrant Box Installation
- S20328 - MSC Tripart Block Details
- S20304 - MSC Main Connection Details
- S20304A - MSC Domestic Water Service Connection Details

MAREEBA SHIRE STANDARD DRAWINGS

REF CODE	DESCRIPTION
1	150 dia. 150 x 150 O.D.I.C.L. Tee with concrete thrust block
2	150 x 150 x 150 O.D.I.C.L. Tee with concrete thrust block
3	150 x 150 x 50 O.D.I.C.L. Tee with concrete thrust block
4	100 x 100 x 50 O.D.I.C.L. Tee with concrete thrust block
5	100 x 100 x 100 O.D.I.C.L. Tee with concrete thrust block
6	50 x 50 x 50 O.D.I.C.L. Tee with concrete thrust block
7	100 x 50 reducer
8	100 dia. 90° bend with concrete thrust block
9	100 dia. 45° bend with concrete thrust block
10	100 dia. Tee with 90° bend with concrete thrust block
11	100 dia. Tee with 45° bend with concrete thrust block
12	100 dia. Tee with 90° bend with concrete thrust block
13	100 dia. Tee with 45° bend with concrete thrust block
14	100 dia. Tee with 90° bend with concrete thrust block
15	150 dia. O.D.I.C.L. 110° bend with concrete thrust block

REF CODE	DESCRIPTION
16	150 dia. O.D.I.C.L. 225° bend with concrete thrust block
17	100 dia. O.D.I.C.L. 45° bend with concrete thrust block
18	100 dia. O.D.I.C.L. 110° bend with concrete thrust block
19	100 dia. O.D.I.C.L. 225° bend with concrete thrust block
20	100 dia. O.D.I.C.L. 45° bend with concrete thrust block
21	100 dia. O.D.I.C.L. 90° bend with concrete thrust block
22	150 dia. 90° bend with concrete thrust block
23	150 dia. O.D.I.C.L. bend and tee with concrete thrust block
24	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
25	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
26	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
27	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
28	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
29	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
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45	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
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88	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
89	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
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93	100 dia. O.D.I.C.L. bend and tee with concrete thrust block
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100	100 dia. O.D.I.C.L. bend and tee with concrete thrust block

Robin Mansinger
 Civil Design Consultant
 10 Tully Lane
 Boderin QLD 4659
 email: robin@robinm.com.au
 Mob: 0424 037 310
 ABN: 77 998 712 738

REVISION	DATE
1	11/23
2	08/22
3	08/22
4	08/22

CLIENT: **BT, M & S STANKOVICH PTY LTD**
 PRODUCT: **MAREEBA RESIDENTIAL DEVELOPMENT**
 STAGES: 13 & 14
 MOODINI AVENUE, MAREEBA

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

APPROVED	DRAWN	DATE
RMM	AP-ST1314-W03	18/2/22

ISSUE FOR APPROVAL



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 ADJUSTMENT'S PERFORMED PRIOR TO PLANTING.
3. APPLY SOIL CONDITIONS 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 PLOUGHEN 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 HARPANS 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 CLOUSE SEEDER, DROP TYPE SPREADER, DRILL, HYDROSEEDER, HYDROMULCHER, OR OTHER SUITABLE EQUIPMENT AS SPECIFIED.
7. WHEN USING BROADCAST SEEDING METHODS, SUBSIDIZE THE AREA INTO WORKABLE PORTIONS AND APPLY THE SEED AT AN ANGLE TO THE SLOPE. THE SECOND HALF OF THE SAME WAY BUT MUCKING AT RIGHT ANGLES TO THE FIRST PASS. COVER BROADCAST SEED BY RAKING OR CHAIN DRAGGING, THEN RIN THE SURFACE WITH A ROLLER TO PROVIDE GOOD SEED CONTACT.
8. APPLY SEED AT THE RECOMMENDED RATE AND OSC 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 FORTWIGHTLY 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 WATERINGS;
 - (ii) 25mm TWICE A WEEK FOR THE NEXT THREE WEEKS;
 - (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-CLIMBING 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 AREAS SHOULD BE OVERSEEDED AND FERTILISED USING HALF THE ORIGINAL SPECIFIED RATES, OR AS DIRECTED.
10. MONITOR GRASS BLADE LENGTH IN A MAINTENANCE HEIGHT WITHIN A MINIMUM TO HIGH MAINTENANCE GRASS BLADE LENGTH TO MAINTAIN A MAINTENANCE HEIGHT ROWS.
11. WHERE NECESSARY, GRASS DIRECTED BY THE SITE SUPERVISOR, SLASH THE TEMPORARY VEGETATION 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 LOOSED BY WINDROCK, 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 WATER COURSE OR ON A FLOODPLAIN WHERE IT COULD BE REMOVED BY FLOODWATERS. VEGETATION SHOULD NOT BE BURIED 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, SRRREAD MOIST TO P SOIL OVER EXPOSED ROOTS

Classification	Minimum particle size	Typical trapped particles
Type 1	< 0.045mm	Clay, Silt & Sand
Type 2	0.045mm to 0.1mm	Silt & Sand
Type 3	< 4.75mm	Sand
Supplementary	< 0.42mm	Coarse Sand

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

FOR GENERAL SEDIMENT AND EROSION CONTROL DETAILS REFER TO DRAWING AP-ST-1314-ECO2.

Robyn Mansinger
Civil Design Consultant

10 Tully Lane
Buderim QLD 4556
email: robins@robins.com.au
ABN 77 091 78 78

MOB: 0424 037 310
TEL: 0424 037 310
FAX: 07 5577 991

Approved Consultant

78, Kildare Avenue
28, Malabar Way, MAREEBA QLD 4800
Ph: 07 5577 9910
Email: info@approved.com

REVISION	DATE	BY	DESCRIPTION
1			ISSUE FOR APPROVAL

CLIENT BT, M & S STANOVICH PTY LTD

PROJECT AMARHO RESIDENTIAL DEVELOPMENT STAGES 1, 3 & 14

ADDRESS MOONDAINI AVENUE, MAREEBA

DRAWING EROSION & SEDIMENT CONTROL GENERAL NOTES PLAN

ISSUE FOR APPROVAL

DATE	18/2/22
BY	RM
DATE	
BY	

AP-ST-1314-ECO2



FILE: E:\00DATA\Mereeba\Anaroo Park\Stage 13 14 Final Drawings\AP-ST1314-MODEL.dwg

Robin Mansinger
Civil Design Consultant
10 Tully Lane
Bulimba QLD 4066
Email: robin@robinm.com.au
Phone: 7979 7293

Approved Consultant
175 Adelaide Avenue
Strombeil QLD 4008
Phone: 7979 8800
Email: robin@robinm.com

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

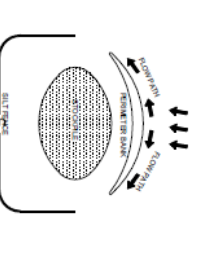
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REVISION	
DATE	08/22/23

FOR GENERAL SEDIMENT AND EROSION CONTROL NOTES
REFER TO DRAWINGS AP-ST1314-DC01 AND DC02.

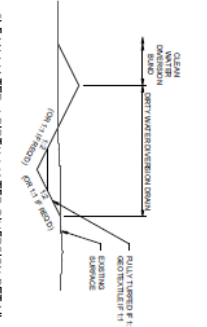
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APPROVED	
DATE	

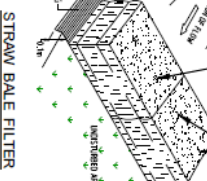
STOCKPILE EROSION PREVENTION DETAIL
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CLEAN WATER / DIRTY WATER DIVERSION DETAIL
N.T.S.



STRAW BALE FILTER
N.T.S.

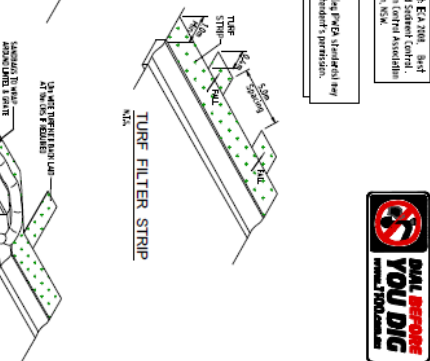
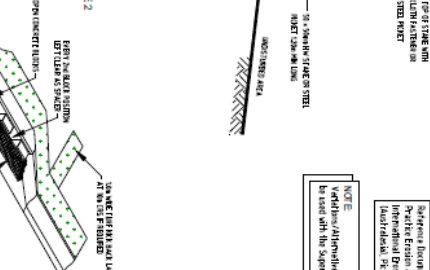
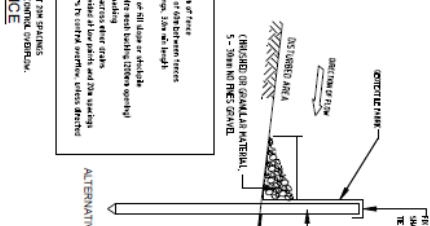
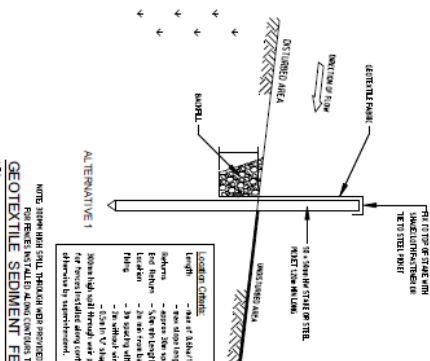
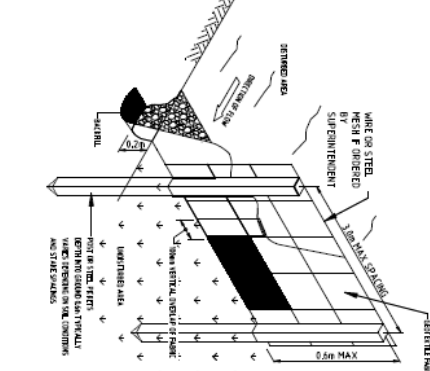
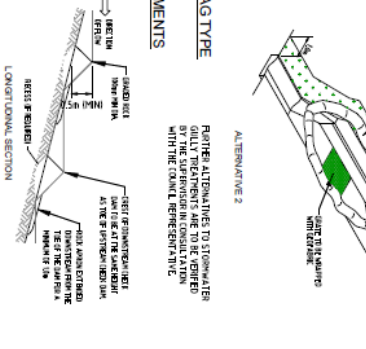
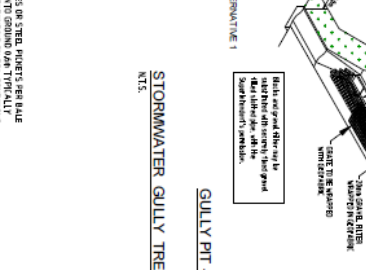
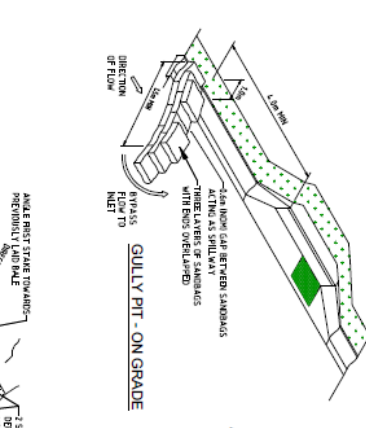
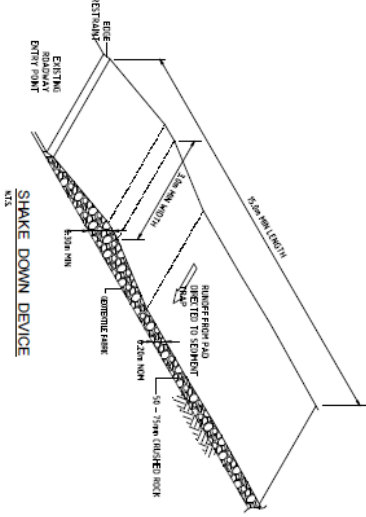


FOR GENERAL SEDIMENT AND EROSION CONTROL NOTES
REFER TO DRAWINGS AP-ST1314-DC01 AND DC02.

LOADABLE
This area is intended for use by heavy machinery and vehicles. It is designed to support a load of up to 10 tonnes per square metre.

NOT LOADABLE
This area is intended for use by light vehicles and pedestrians. It is designed to support a load of up to 2 tonnes per square metre.

CHECK DAM
N.T.S.



NOTE:
Variations/Alternatives to the standard design may be used with the Supervisor's permission.

Geotextile Sediment Fence
N.T.S.

