From: "Anne Zareh" <Anne.Zareh@braziermotti.com.au>
Sent: Wed, 22 Apr 2026 10:10:57 +1000
To: "Development Assessment" <developmentassessment@townsville.qld.gov.au>
Cc: "Estelle Trueman" <estelle.trueman@townsville.qld.gov.au>
Subject: MCU26/0011 - Information Request Response BOUNCE MAGNETIC ISLAND
Attachments: 43214-002-01 Response to RFI compiled.pdf

Your reference: MCU26/0011
Our reference: 43214-002-01

Good morning Development Assessment,

Reference is made to the above development application for which Council issued an information request on 18 March 2026.

The applicant has considered the request and provides a full response. Please refer to the attached compiled document.

We will provide details regarding commencement of public notification in due course.

Kind regards
Anne

Anne Zareh
Associate/Senior Town Planner

P 07 4772 1144
M 0416 486 309

595 Flinders St
Townsville Q 4810

braziermotti.com.au

Our Ref: 43214-002-01
Your Ref: MCU26/0011

22 April 2026

Chief Executive Officer
Townsville City Council
PO Box 1268
Townsville QLD 4810

Attention: Development Assessment – Mrs. Estelle Trueman

Dear Estelle,

RESPONSE TO INFORMATION REQUEST
DEVELOPMENT APPLICATION FOR MATERIAL CHANGE OF USE (MCU26/0011)
26-40 HORSESHOE BAY ROAD, HORSESHOE BAY (LOT 3 ON SP226268)

Brazier Motti act on behalf of the applicant, Bounce Magnetic Island, with respect to the abovementioned development proposal, and refer to the Information Request (IR) issued by Townsville City Council ('the Council') on the 18th March 2026. The information and supporting documentation herein represent the applicant's full response to the IR.

Supporting information

This information request response has addressed the three (3) request items and is supported by the following additional information:

- **Appendix A:** Water and Sewer Assessment dated 9 April 2026 prepared by DPM Water; and
- **Appendix B:** Bushfire Assessment Report dated 7 April 2026 prepared by Ecosystems Management.

Request item 1 – Traffic Information

The applicant is requested to provide the daily traffic generation and peak-hour trip generation associated with the proposed development. Based on the traffic generations, a traffic impact level assessment must be provided in accordance with Table SC6.4.5.2 - Urban Area TIA Impact Level Assessment Criteria of Townsville City Plan.

Response to RFI Item 1

Currently, approximately 90% of visitors arrive by bus. This is mainly because they are backpackers without a car, and the vehicle ferry costs are too great. The remaining 10% of visitors typically arrive in camper vans. However, the redevelopment includes the removal of camping sites which will be replaced by only 5 Family Villas. Hence, it is expected that the overall vehicular movement will remain the same. An increase in vehicular traffic to the site is not expected.

Request item 2 – Water and Sewer Assessment

The applicant is requested to provide an infrastructure assessment to confirm that the sewer and water network has capacity to cater for the increase in demand due to the development and whether any upgrade or augmentation works is required.

Response to RFI Item 2

A Water and Sewer Assessment has been undertaken by DPM Water which is attached in ***Appendix A***. The assessment report concludes that the existing water and sewer system is able to cater for the redevelopment.

Request item 3 – Bushfire Safety and Protection of Ecological Values

The applicant is requested to provide more information about the location of the family cabins in relation to the identified Medium hazard - Bushfire hazard overlay and Very high environmental importance – Natural assets overlay. Council holds concerns that the location of an increased number of cabins in this area may represent a conflict with the two identified overlays. The applicant is requested to demonstrate that there is no increased risk to people and property as a result of the location of the cabins along the southern boundary. The applicant is requested to demonstrate that the Purpose of the Natural assets overlay code is able to be achieved when considering any bushfire risk reduction measures that may need to be employed. If it is determined that clearing vegetation mapped as Very high environmental importance is necessary to achieve compliance with the Bushfire hazard overlay code, the cabins must be relocated to a more suitable area.

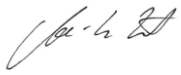
Response to RFI Item 3

A Bushfire Assessment Report has been undertaken by Ecosystems Management which is attached in ***Appendix B***. The report concludes that the low bushfire hazard negates the need for specific bushfire mitigation measures to achieve the objectives of the state planning policy or Townsville City Plan bushfire prone land overlay. In the absence of any specific measures, this implies that no vegetation clearing is required to achieve bushfire hazard reduction outcomes, and thus the objectives of the Townsville City Plan natural assets overlay code are also met.

Proceeding

We trust the above response provides Council sufficient information to satisfactorily proceed with the assessment of the application. We welcome the opportunity to work through any queries Council may have in order to expedite the assessment. In the meantime, we will commence public notification.

Yours faithfully



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ANNE ZAREH
Associate/Senior Planner
Brazier Motti Pty Ltd

APPENDIX A

Water and Sewer Assessment prepared by DPM Water

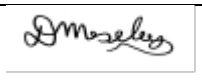
26-40 HORSESHOE BAY ROAD
BOUNCE MAGNETIC ISLAND
HORSESHOE BAY, MAGNETIC ISLAND

WATER & SEWER ASSESSMENT

Date: 9 April 2026 (Rev A)

TABLE OF CONTENTS

APPENDICES

REPORT AUTHORISATION				
Revision	**Revision Date**	**Details**	**Prepared by**	**Signature**
A	09/04/2026	Original Report	Desmond Moseley (RPEQ 7565)	

1 INTRODUCTION & BACKGROUND

A 2.31 ha lot is located at 26-40 Horseshoe Bay Rd, Horseshoe Bay (Magnetic Island). This site is the current Bounce Magnetic Island tourist park which contains multiple short term accommodation sites. The tourist park is to be re-developed with the existing camping sites being converted to small accommodation cabins. The redevelopment will also include some additional accommodation sites, staff accommodation along with upgraded/additional amenities.

The location of Bounce Magnetic Island tourist park at No 26-40 Horseshoe Bay Rd is illustrated on Figure 1.1 below from Council's GIS.

Figure 1.1 – Bounce Magnetic Island Location

The existing Bounce Magnetic Island tourist park site is currently serviced with a reticulated water supply off the existing DN100 water main on Horseshoe Bay Rd. The site is also serviced with a reticulated sewer system that directs flows to PS M4A (Corica Cres) which pumps the flows to the Horseshoe Bay STP.

To assess the capacity of the existing water and sewer networks to service the redevelopment of the Bounce Magnetic Island tourist park, hydraulic analysis has been performed. The analysis and results are provided in the following sections of this report and have shown:

- The existing DN100 AC water main along Horseshoe Bay Rd has sufficient capacity to service the proposed redevelopment of the tourist park.
- The existing DN150 gravity sewer from existing 2/M4A2A (located on the Horseshoe Bay Rd frontage of the site) through to MH 5/M4A (on Corica Cres) and the DN225/300 sewer from MH 5/M4A to PS M4A have capacity to service the additional sewage flows from the tourist park redevelopment.

The proposed redevelopment layout plan is provided on Figure 1.2 below, with additional redevelopment layout plans provided in Appendix A.

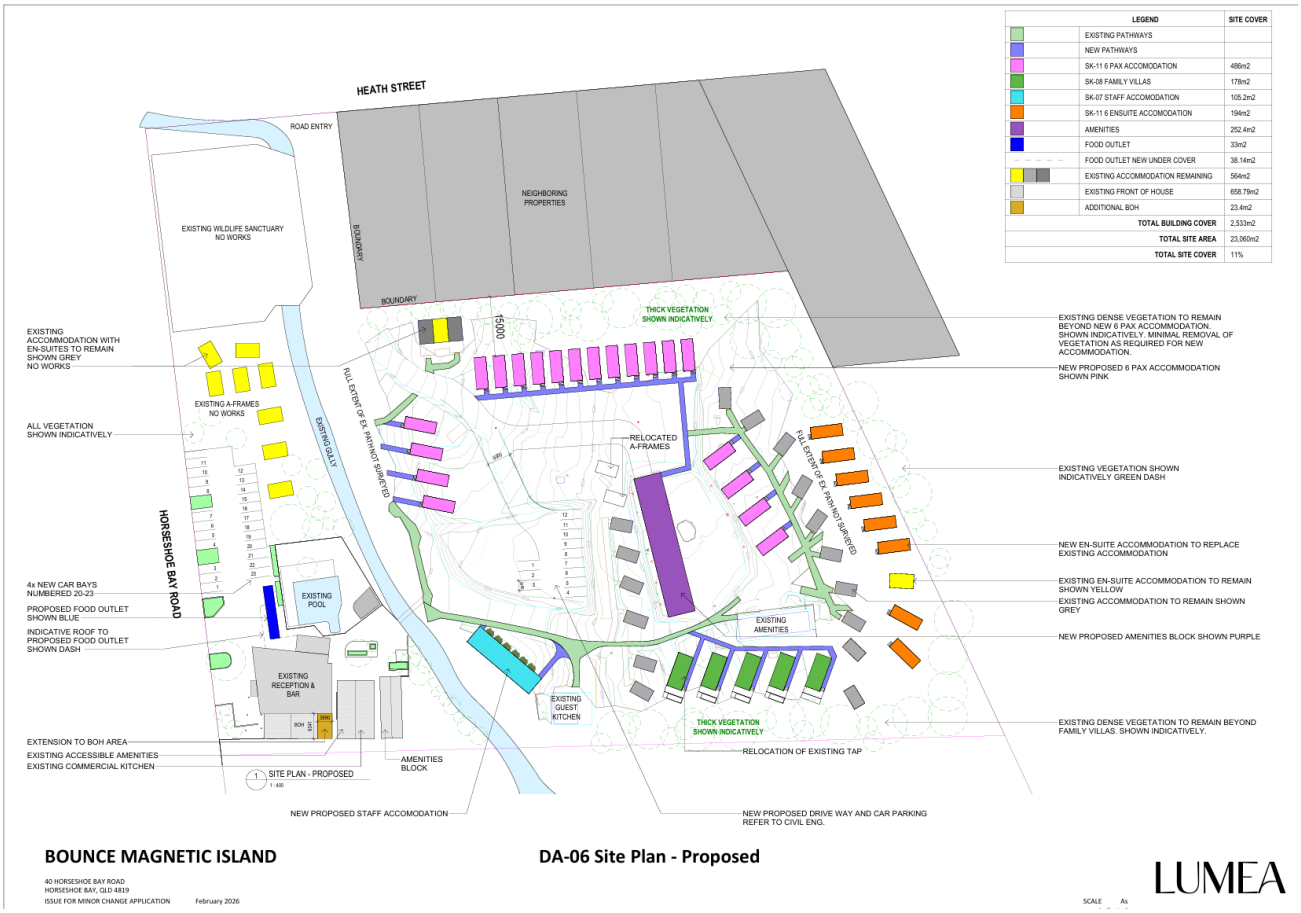


Figure 1.2 – Bounce Magnetic Island – Redevelopment Layout Plan

2 POPULATION ASSESSMENT

The following table provides the equivalent population assessment for the proposed redevelopment of the Bounce Magnetic Island tourist park.

The equivalent population has been based on the full occupancy of the tourist park. The assessment has assumed that all of the existing and proposed beds in the various accommodation types are fully occupied. Each of the existing remaining beds and new proposed beds is one equivalent person.

As a number of the accommodation types (specifically the 108 beds in the Pax Accommodation) do not have their own toilet/showers or kitchens etc, the existing/proposed site amenity areas provide the water & sewer services for these accommodation types.

Table 2.1 – Bounce Magnetic Island - Equivalent Population Assessment

Development Site	Number of Beds	Rate	EP
6 x Pax Accommodation	108	1 EP/bed	108.0 EP
Staff Accommodation	5	1 EP/bed	5.0 EP
Family Villas (5)	20	1 EP/bed	20.0 EP
Ensuite Sites (26)	52	1 EP/bed	52.0 EP
Totals			**185.0 EP**

The above equivalent population has been used to assess the capacity of the existing water and sewer infrastructure to service the redevelopment of the Bounce Magnetic Island tourist park.

3 WATER SUPPLY PLANNING

3.1 Water System Operation

The water network that services the Bounce Magnetic Island site is summarised below:

- Water is delivered to Magnetic Island via a submarine pipeline from Townsville.
- Water is then directed to the Horseshoe Bay Reservoir via a number of trunk water mains. The Horseshoe Bay reservoir is located to the south east of Somerset Crt but is accessed from the “Forts Walk” road, off Horseshoe Bay Rd.
- A DN200 CI/AC outlet main directs water from the Horseshoe Bay reservoir to the west and then along Horseshoe Bay Rd to the intersection with Gifford St.
- A DN150 AC/PVC water main continues to the north along Horseshoe Bay Rd to the intersection with Apjohn St.
- A DN100 AC water main continues to the north along Horseshoe Bay Rd (on its western footpath). This DN100 AC water main service the Bounce Magnetic Island tourist park via a DN50 water service under Horseshoe Bay Rd.

The image below from the Council’s GIS illustrates the existing water mains that service the Bounce Magnetic Island tourist park site.

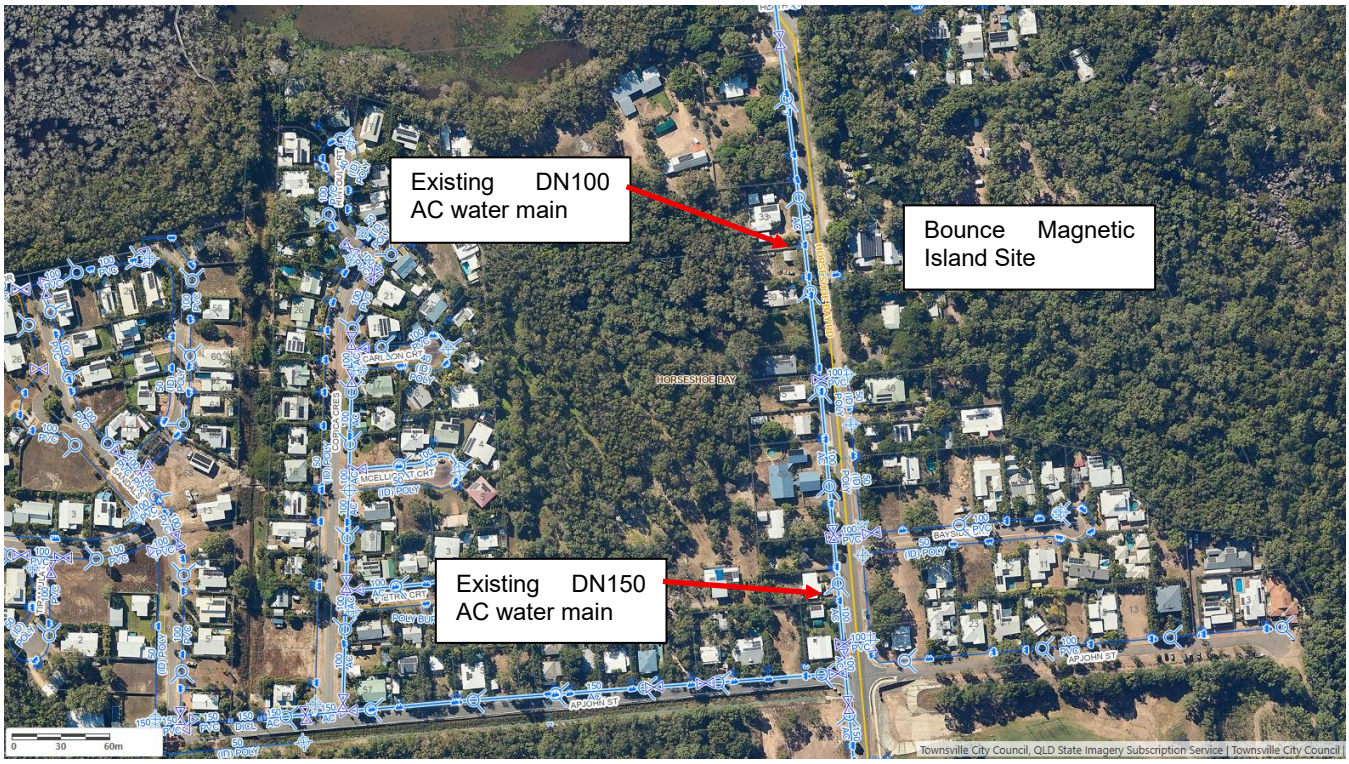


Figure 2.1 – Existing Water Infrastructure

3.2 Water Demands

Water demands have been calculated in accordance with Townsville City Council planning scheme and the CTM Code. The following table provides the residential water demand parameters from the CTM Code for each equivalent person (EP).

Table 3.1 – Water Demand Parameters

Parameter	Unit Demand	Peaking Factor
Average Day (AD)	600 L/day/EP	
Mean Day Max Month (MDMM)	900 L/day/EP	1.5 AD
Peak Day (PD)	1125 L/day/EP	1.25 MDMM
Peak Hour (PH)	0.0333 L/s/EP	2.56 PD

The peak hour water demand is used to determine the hydraulic performance of a water network. The diurnal water demand pattern for residential water demands has a peaking factor of 2.56 as per the following diurnal water pattern from Council's WaterGEMS network model.

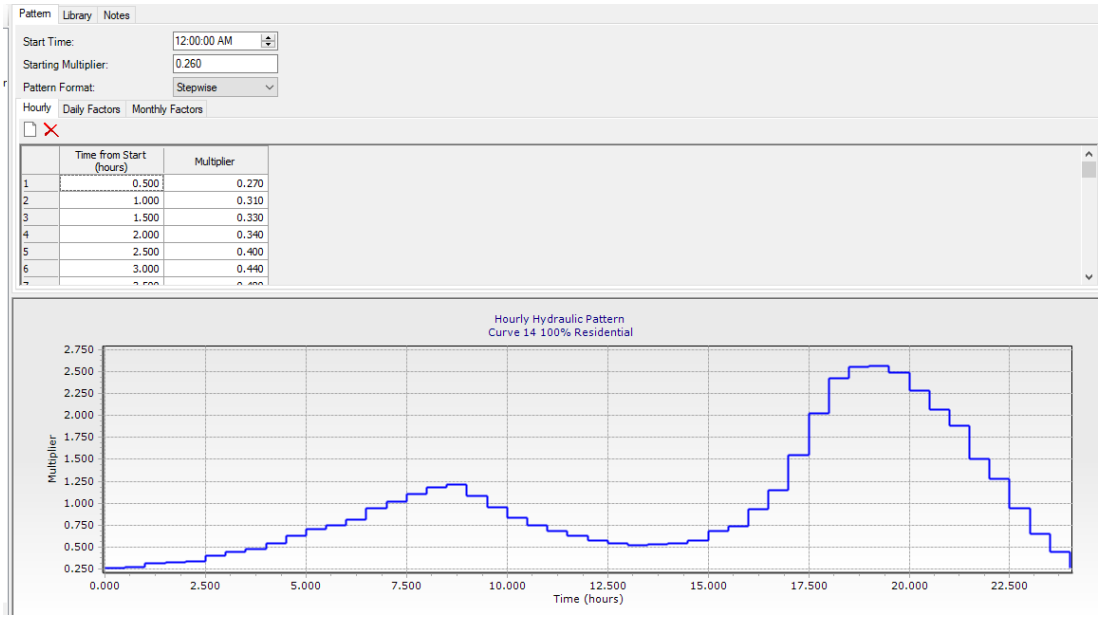


Figure 2.2 – Residential Diurnal Water Pattern (Peaking Factor of 2.56)

The peak hour water demand from the Bounce Magnetic Island tourist park on Horseshoe Bay Rd is 185.0 EP x 0.033 l/s/EP = 6.1 l/s.

A fire flow assessment has also been performed. The fire flow assessment was based on a 15 l/s residential fire flow in accordance with the CTM Code standards.

3.3 Water System Performance Assessment

WaterGEMS network modelling has been undertaken to assess the performance of the existing water network that services the Horseshoe Bay water supply area. This assessment is based on the current level of development in Horseshoe Bay and the peak water demand for the Bounce Magnetic Island tourist park redevelopment based on its full occupancy of 185 EP and associated peak water demand of 6.1 l/s.

With the inclusion of the additional equivalent population and water demands on the existing DN100 AC water main on Horseshoe Bay Rd that services the site, the water network performance is summarised below:

- The existing trunk and reticulation water mains that service Horseshoe Bay (as noted in Section 3.1 above) area adequately sized to service the existing water supply area along with the redevelopment of the Bounce Magnetic Island tourist park.

- The minimum water pressure on the existing DN100 AC water main at the frontage of the tourist park site on Horseshoe Bay Rd is reduced to 612 kPa. This “high” water pressure is due to the elevation of the Horseshoe Bay reservoir being 81 to 88 mAHD and the tourist park site having ground elevations of around 7.5 mAHD to 14 mAHD. This water pressure achieves the minimum allowable 220 kPa pressure.
- The maximum velocities and headloss gradients along the Horseshoe Bay Rd water mains that services the tourist park site and Horseshoe Bay are up to 1.50 m/s and 0.035 m/m respectively. The velocities are well within the TCC standards of 2.5 m/s.

  The headloss gradient along the existing section of DN100 AC water main on Horseshoe Bay Rd is above the recommended value of 0.005 m/m. The headloss gradient along the existing DN100 AC water main without the increased EP from the redevelopment site was already well above the recommended minimum value. This higher headloss gradient is not considered an issue as the velocities are well within the required standards and the water pressures easily achieve the minimum requirements.
- With the inclusion of the 15 l/s fire flows concurrent with the TCC standard maximum hour demands, the water pressure in the DN100 AC main on Horseshoe Bay Rd is 208 kPa. This water pressure is above the minimum allowable 120 kPa pressure.
- The velocities along the existing water mains with the inclusion of the 15 l/s fire flows are up to 3.41 m/s. This velocity is below the maximum allowable fire flow velocity of 4.0 m/s.

The WaterGEMS modelling results for the peak hour and fire flow are provided in Appendix B.

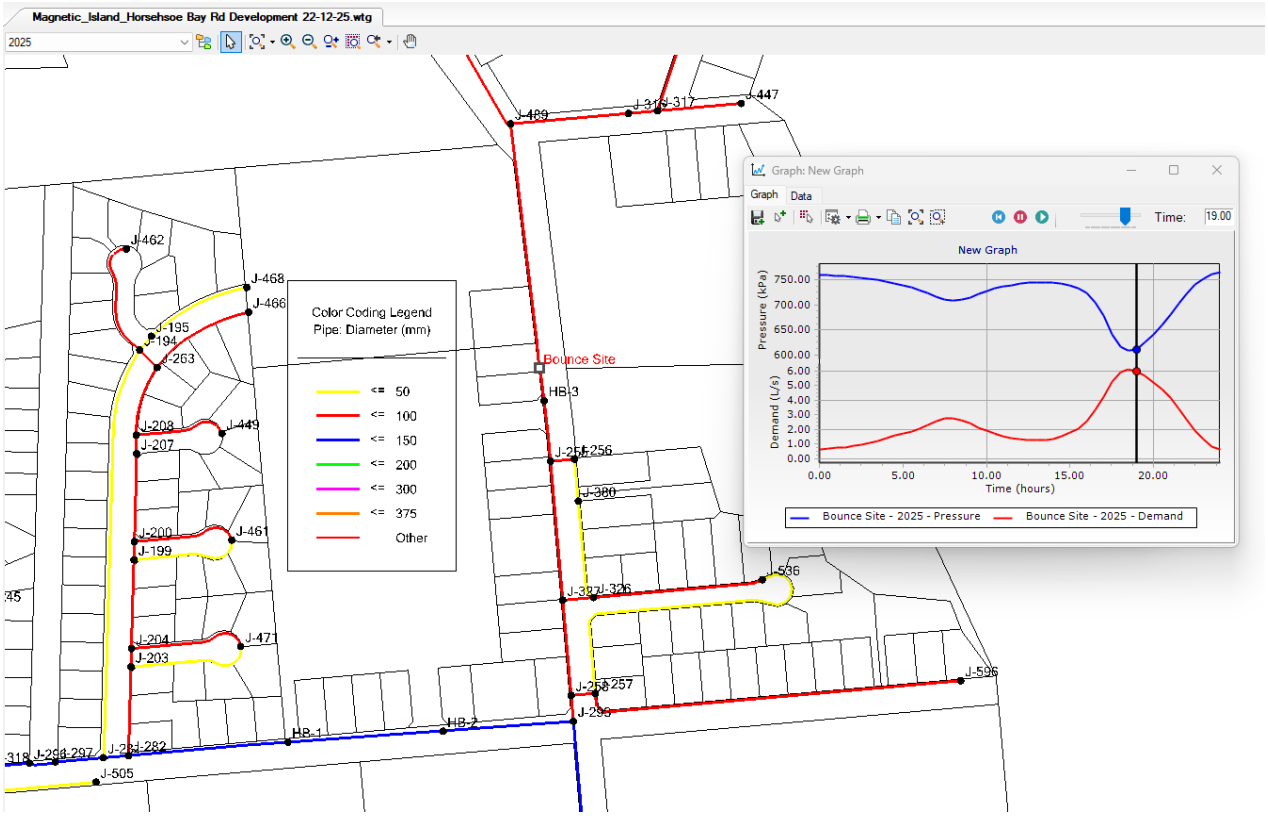


Figure 2.3 – Horseshoe Bay Rd Redevelopment – WaterGEMS Figure

This assessment illustrates that the proposed redevelopment of the Bounce Magnetic Island tourist park at No 26-40 Horseshoe Bay Rd is able to be serviced with a reticulated water supply off the existing water mains on Horseshoe Bay Rd.

Document Set ID: 28296587
Version: 1, Version Date: 23/04/2026

4 SEWER SYSTEM ASSESSMENT

4.1 Sewer System Operation

The existing sewer system that will service the Bounce Magnetic Island tourist park on No 26-40 Horseshoe Bay Rd is summarised below:

- Existing DN150 gravity sewers are located along the eastern side of Horseshoe Bay Rd, including the frontage of the tourist park site. Sewage from the tourist park site is directed to the existing DN150 sewer between MH 2/M4A2A and MH 1/M4A2A on Horseshoe Bay Rd.
- The existing DN150 sewer extends to the north to MH 4/M4A2 at the intersection of Heath St and Horseshoe Bay Rd. The DN150 sewer then extends to the west under Horseshoe Bay Rd and through No 23 Horseshoe Bay Rd (large land parcel) to MH 5/M4A on Corica Cres.
- The gravity sewer increases to a DN225 pipe at existing MH 5/M4A that is located on Corica Cres (near the intersection with Rintoul Court). The DN225 sewer continues to the north and west and through to MH 3/M4A that is located in the south west corner of No 5 Rintoul Court. This is the zero MH for existing PS M4A (Corica).
- The final short section of sewer from MH 3/M4A to PS M4A is a DN300 pipe.
- Existing PS M4A pumps sewage via a DN200 PVC pressure main to the south along Corica Cres to Apjohn St and then to the west along Apjohn St to the Horseshoe Bay STP.

The existing sewer system that services the Bounce Magnetic Island site is illustrated on Figure 4.1 below.

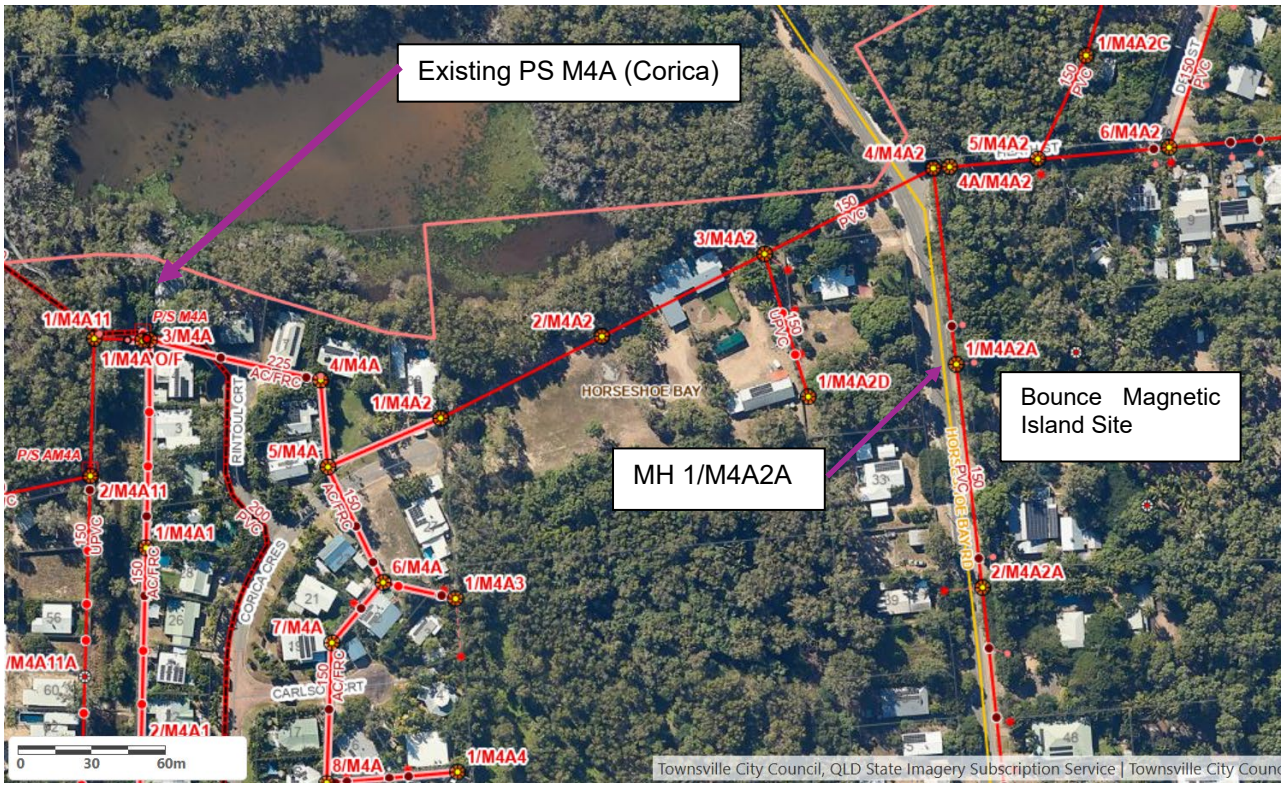


Figure 4.1 – Existing Gravity Sewer System

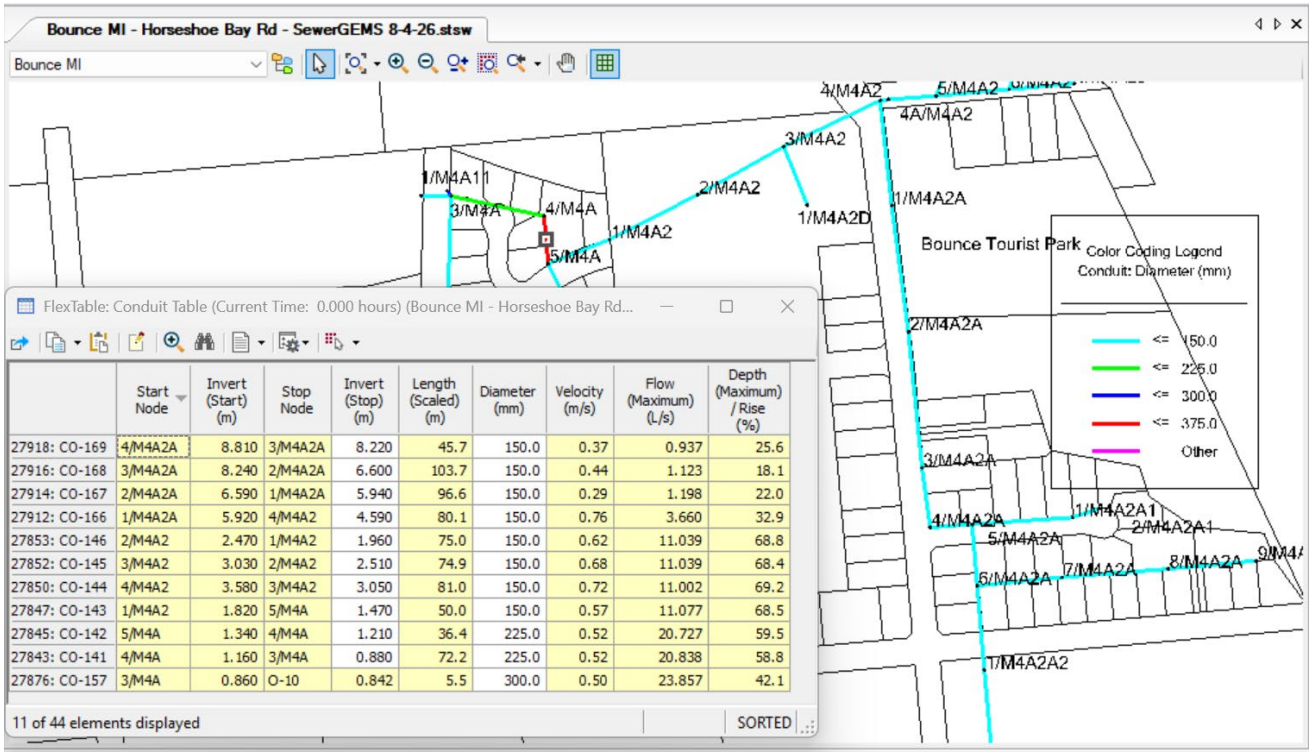
The following section details the SewerGEMS modelling and results for the existing Council gravity sewer system that services the proposed redevelopment of the Bounce Magnetic Island site at No 26-40 Horseshoe Bay Rd.

4.2 Sewer System Performance Assessment

With the inclusion of the additional equivalent population loading on the existing gravity sewer system, the SewerGEMS model has illustrated:

- The existing DN150 sewer from MH 3/M4A2A to MH 4/M4A2 along Horseshoe Bay Rd frontage of the Bounce Magnetic Island tourist park site flows up to 33% full. This is the existing DN150 sewer that services the tourist park site.
- The existing DN150 sewer from MH 4/M4A2 to MH 5/M4A flows up to 69% full for the peak wet weather flows. This section of gravity sewer services the Bounce Magnetic Island tourist park and other residential lots on the eastern side of Horseshoe Bay Rd. This existing gravity sewer also receives pumped flows from existing PS MA4A (Pacific Drv) which services the existing properties along Pacific Drv at Horseshoe Bay.
- The existing DN225 sewer from MH 5/M4A to MH 3/M4A at the northern end of Corica Cres and Rintoul Crt flows up to 60% full.
- The final section of DN300 trunk sewer from MH 3/M4A to PS M4A on Rintoul Crt flows up to 42% full.
- The assessment shows that the existing reticulation sewer system that will service the redevelopment of the Bounce Magnetic Island tourist park all within the CTM Code standard of flowing up to 75% full for the peak wet weather flows.

The following Figure 4.2 provides the flows and performance of the existing gravity sewer system with the inclusion of the additional loading from the redevelopment of the Bounce Magnetic Island site. A larger version of the modelling results is provided in Appendix C.

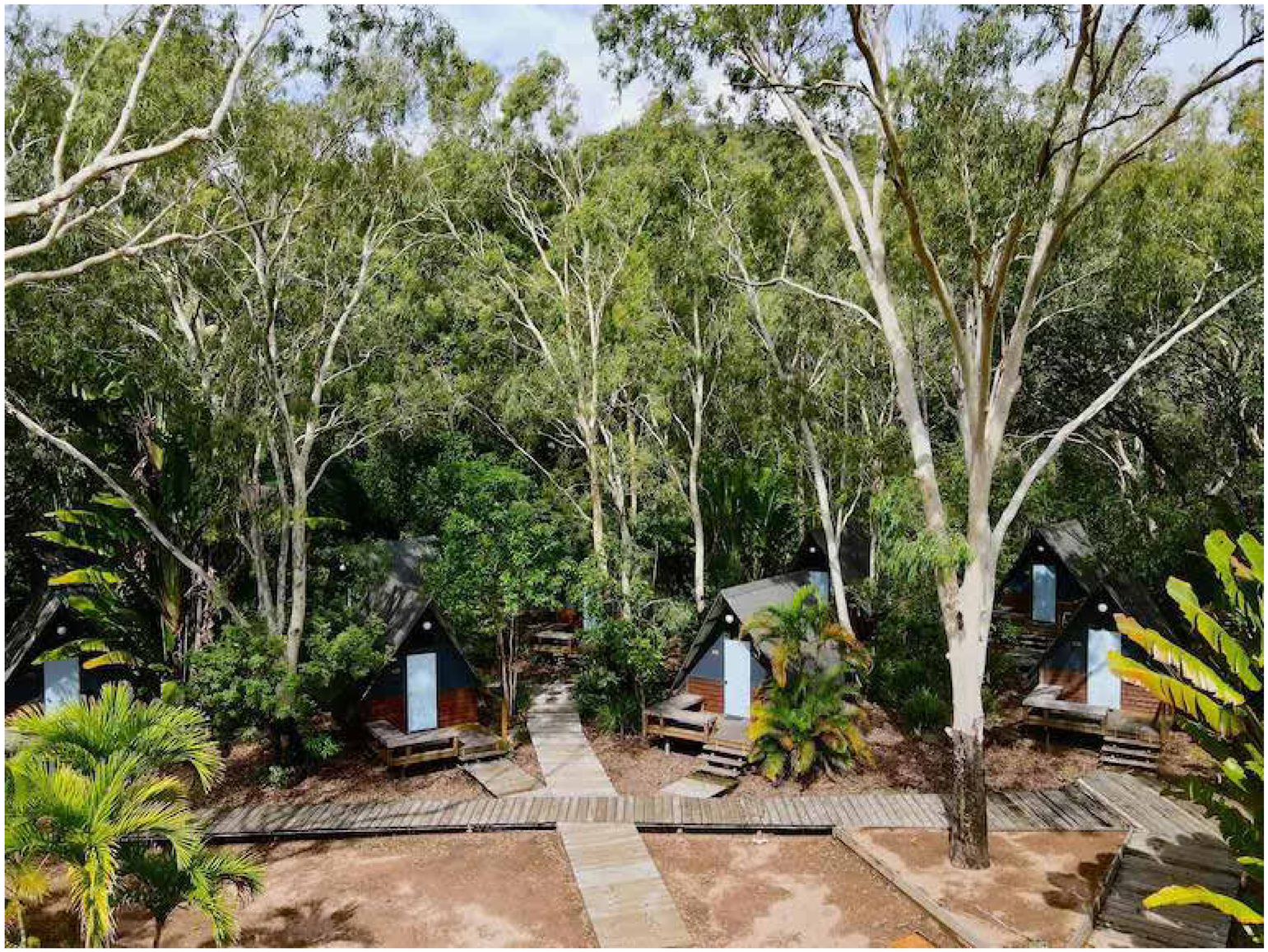


	Start Node	Invert (Start) (m)	Stop Node	Invert (Stop) (m)	Length (Scaled) (m)	Diameter (mm)	Velocity (m/s)	Flow (Maximum) (L/s)	Depth (Maximum) / Rise (%)
27918: CO-169	4/M4A2A	8.810	3/M4A2A	8.220	45.7	150.0	0.37	0.937	25.6
27916: CO-168	3/M4A2A	8.240	2/M4A2A	6.600	103.7	150.0	0.44	1.123	18.1
27914: CO-167	2/M4A2A	6.590	1/M4A2A	5.940	96.6	150.0	0.29	1.198	22.0
27912: CO-166	1/M4A2A	5.920	4/M4A2	4.590	80.1	150.0	0.76	3.660	32.9
27853: CO-146	2/M4A2	2.470	1/M4A2	1.960	75.0	150.0	0.62	11.039	68.8
27852: CO-145	3/M4A2	3.030	2/M4A2	2.510	74.9	150.0	0.68	11.039	68.4
27850: CO-144	4/M4A2	3.580	3/M4A2	3.050	81.0	150.0	0.72	11.002	69.2
27847: CO-143	1/M4A2	1.820	5/M4A	1.470	50.0	150.0	0.57	11.077	68.5
27845: CO-142	5/M4A	1.340	4/M4A	1.210	36.4	225.0	0.52	20.727	59.5
27843: CO-141	4/M4A	1.160	3/M4A	0.880	72.2	225.0	0.52	20.838	58.8
27876: CO-157	3/M4A	0.860	O-10	0.842	5.5	300.0	0.50	23.857	42.1

Figure 4.2 – SewerGEMS Modelling Results

The sewer system modelling has illustrated that the existing sewer system is able to service the proposed tourist park redevelopment.

APPENDIX A
DEVELOPMENT LOCATION PLANS



Bounce Magnetic Island

Application for

Change to Development Application

Tourist Park

26-40 Horseshoe Bay Rd,
Horseshoe Bay
QLD 4819

Rev C

BOUNCE MAGNETIC ISLAND

40 HORSESHOE BAY ROAD
HORSESHOE BAY, QLD 4819
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DA-01 Cover Page

SCALE

LUMEA

Location Plan NTS

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BOUNCE MAGNETIC ISLAND

40 HORSESHOE BAY ROAD
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DA-02 Location Plan & Drawing List

SCALE

LUMEA

Project Overview

Current Site
• Hostel Accommodation
• Wildlife Sanctuary
• Bar & Commercial Kitchen
• Staff Accommodation
• Laundry, amenities, and facilities required for operations

Architectural Focus Areas
• Integration of additional accommodation and accommodation typologies in accordance with the relevant local planning code
• Additional Amenities to support increased accommodation
• Additional laundry and storage to support housekeeping requirements for increased accommodation
• No amendments to two existing grease traps
• Enhance current F&B options on site
• Integration of new luxury tank and spa experience - Stage 2

Council Requirements (Summary)
• 1.5m setbacks to side boundaries
• No building exclusion zone evident on site

Existing Services
Water
Connected to town / main water / sewer

Fire
• Current FHR on site as per survey (full survey not undertaken)

Electrical
• Additional AC will be required for each extension
• Currently facilitates powered campsites

PROPOSED FACILITIES:	
Existing camping to be removed = 100 beds	
Beds	**Description**
108 new beds	6 Pax Accomodation
5 new beds	Staff Accommodation
20 new beds	Family Villas
16x En-Suites added to existing accommodation	En-Suite Accommodation
Total Additional Beds = 33 (133 new construction - 100 camping)	

PROPOSED CAR PARKING:	
Car Parking	
Qty	**Location**
4 new bays	Front Carpark
12 new bays	Central Carpark

PROPOSED ADDITIONAL FACILITIES:

Amenities = 29x new WC's
= 4x new Urinals
= 8x new Hand Basins
= 20x new showers

Qty	**Location**	**Description**
5 new WC's	Family Villas	5x new units, 1 WC in each
8 new WC's	En-Suite Accommodation	8x new units, 1 WC in each
16 new WC's	Amenities Block	5x male, 10x female
4 new urinals	Amenities Block	4x male
8 new hand basins	Amenities Block	4x male, 4x female
20 new showers	Amenities Block	10x male, 10x female

OTHER AMENITIES ON SITE

Qty	**Location**	**Description**
1x PWD 1x Male Urinal 1x Male WC 2x Male Basins 3x Female Toilets 1x Female Shower 4x Female Basins 4x Unisex Basins	FOH Amenities Block	Remain as Existing
2x Male Urinals 4x Male WC 4x Male Showers 6x Female WC 5x Female Showers 4x Female Basins	Existing Camping Amenities	To be Demolished
10x Rooms with Ensuites	Refer site plan Coded Yellow	Remain as Existing
2x Rooms with Ensuites	Refer site plan Coded Red	To be Demolished

BOUNCE MAGNETIC ISLAND

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HORSESHOE BAY, QLD 4819
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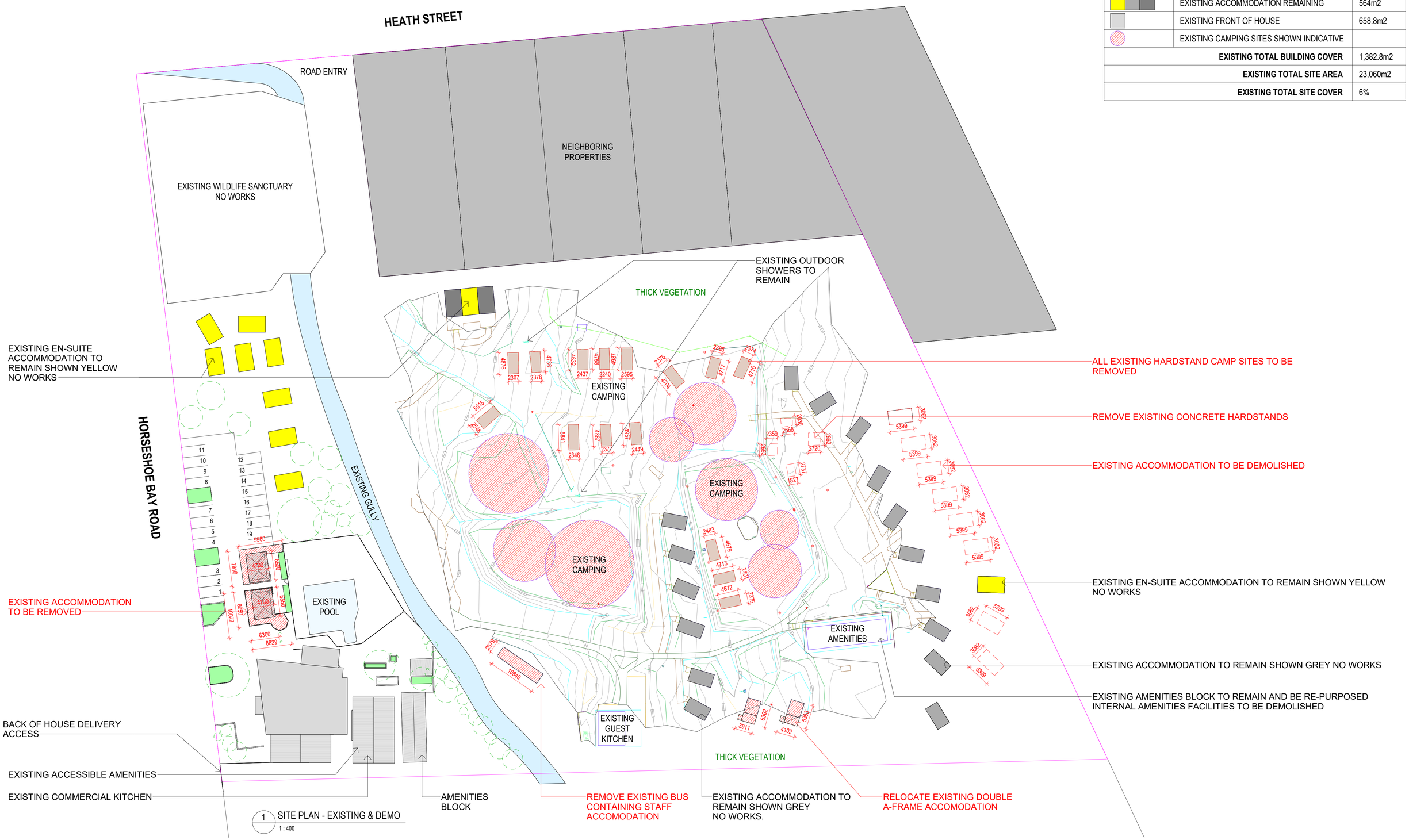
DA-04 Project Overview

SCALE

LUMEA

LEGEND		SITE COVER
	STAFF ACCOMMODATION DEMOLISHED	28m2
	EXISTING ACCOMMODATION DEMOLISHED	132m2
	EXISTING ACCOMMODATION REMAINING	564m2
	EXISTING FRONT OF HOUSE	658.8m2
	EXISTING CAMPING SITES SHOWN INDICATIVE	
EXISTING TOTAL BUILDING COVER		1,382.8m2
EXISTING TOTAL SITE AREA		23,060m2
EXISTING TOTAL SITE COVER		6%



BOUNCE MAGNETIC ISLAND

40 HORSESHOE BAY ROAD
HORSESHOE BAY, QLD 4819

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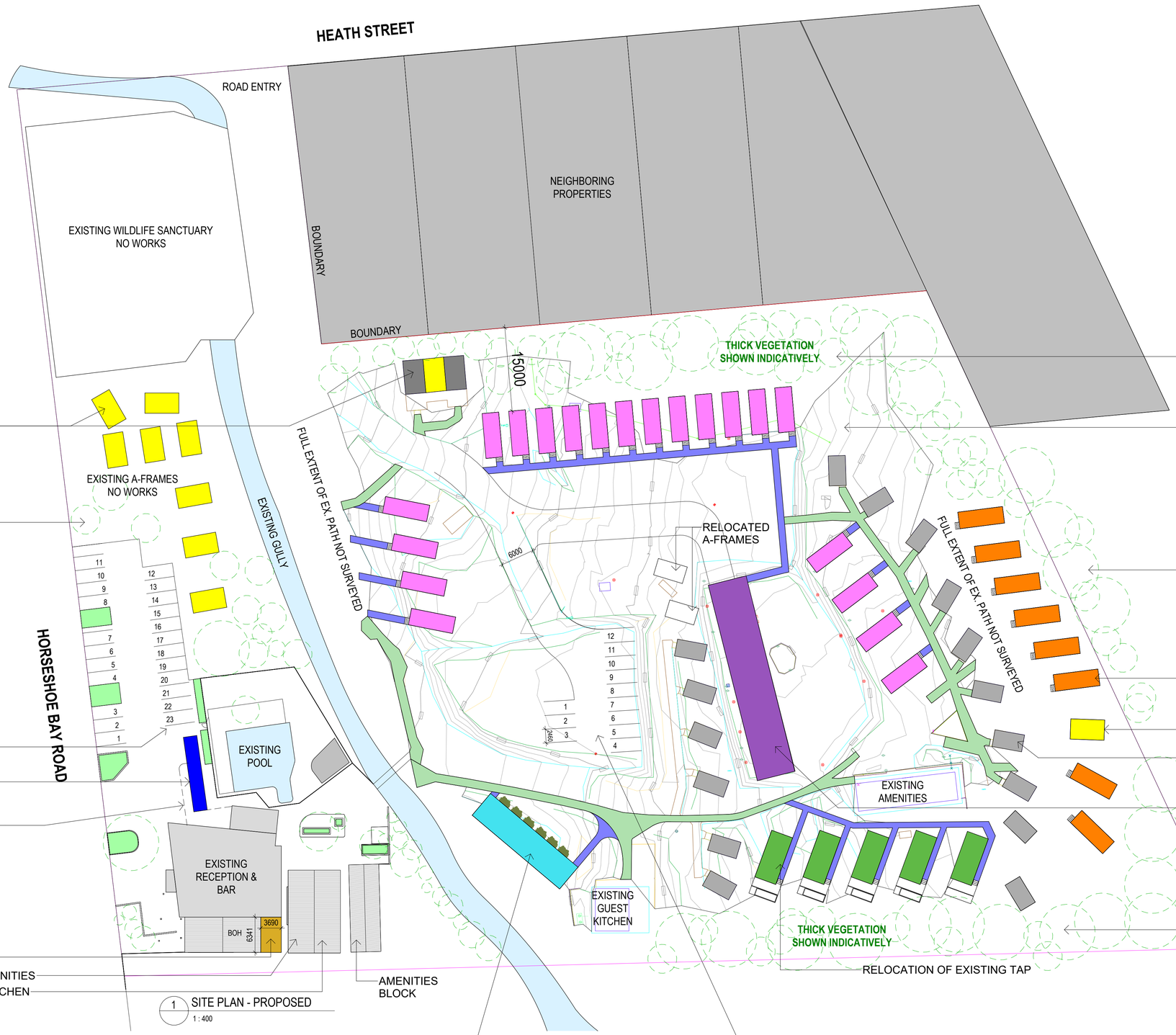
DA-05 Site Plan - Existing & Demo

LUMEA

SCALE As indicated

LEGEND		SITE COVER
	EXISTING PATHWAYS	
	NEW PATHWAYS	
	SK-11 6 PAX ACCOMODATION	486m2
	SK-08 FAMILY VILLAS	178m2
	SK-07 STAFF ACCOMODATION	105.2m2
	SK-11 6 ENSUITE ACCOMODATION	194m2
	AMENITIES	252.4m2
	FOOD OUTLET	33m2
	FOOD OUTLET NEW UNDER COVER	38.14m2
	EXISTING ACCOMMODATION REMAINING	564m2
	EXISTING FRONT OF HOUSE	658.79m2
	ADDITIONAL BOH	23.4m2
TOTAL BUILDING COVER		2,533m2
TOTAL SITE AREA		23,060m2
TOTAL SITE COVER		11%



EXISTING DENSE VEGETATION TO REMAIN BEYOND NEW 6 PAX ACCOMMODATION. SHOWN INDICATIVELY. MINIMAL REMOVAL OF VEGETATION AS REQUIRED FOR NEW ACCOMMODATION.

NEW PROPOSED 6 PAX ACCOMMODATION SHOWN PINK

EXISTING VEGETATION SHOWN INDICATIVELY GREEN DASH

NEW EN-SUITE ACCOMMODATION TO REPLACE EXISTING ACCOMMODATION

EXISTING EN-SUITE ACCOMMODATION TO REMAIN SHOWN YELLOW

EXISTING ACCOMMODATION TO REMAIN SHOWN GREY

NEW PROPOSED AMENITIES BLOCK SHOWN PURPLE

EXISTING DENSE VEGETATION TO REMAIN BEYOND FAMILY VILLAS. SHOWN INDICATIVELY.

BOUNCE MAGNETIC ISLAND

40 HORSESHOE BAY ROAD
HORSESHOE BAY, QLD 4819

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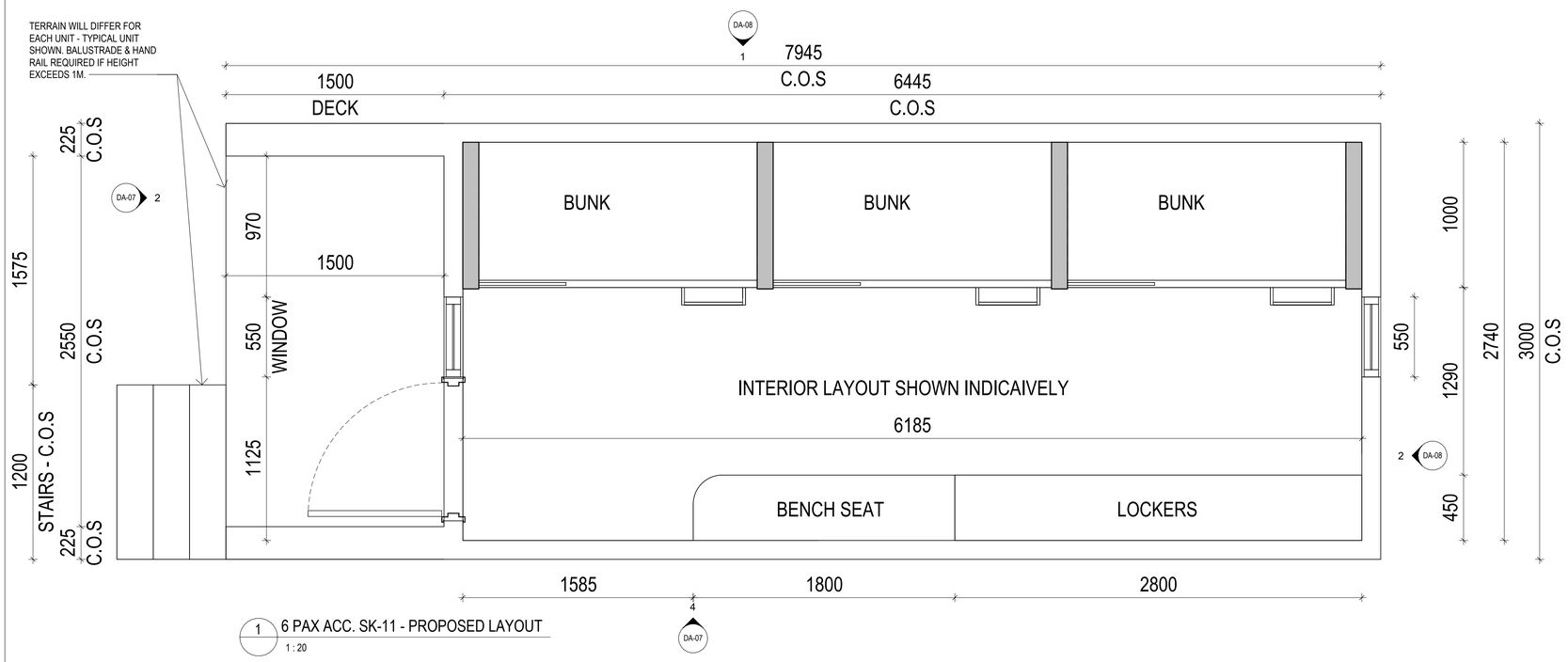
DA-06 Site Plan - Proposed

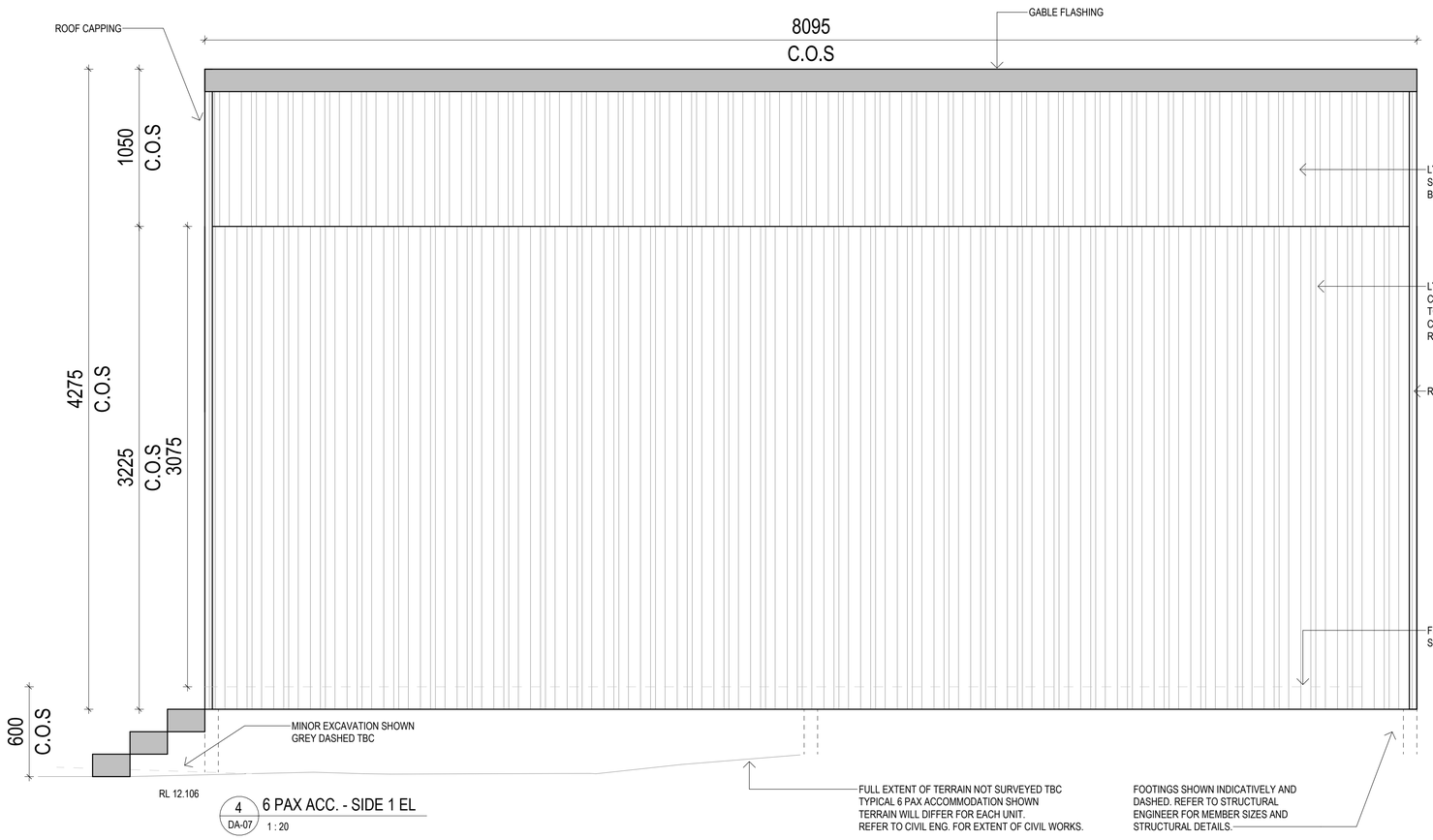
LUMEA

SCALE As indicated

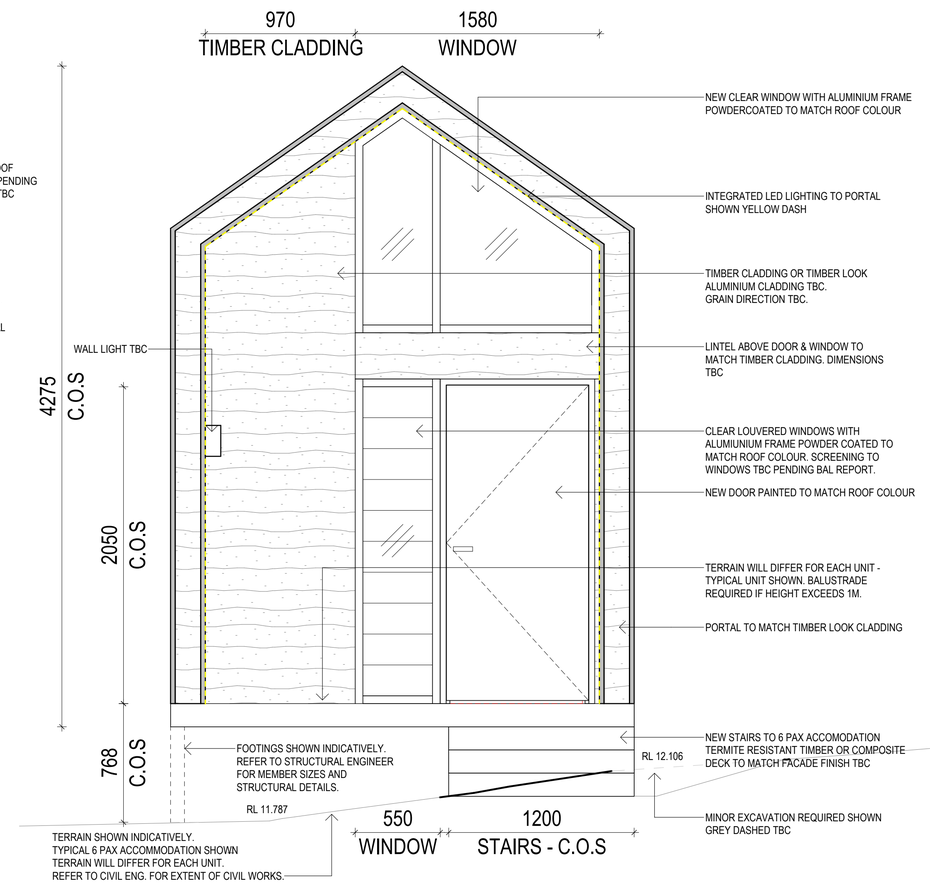
GFA CALCULATION	
GFA	16.95m2
QTY UNITS	20
TOTAL GFA	339m2



1 6 PAX ACC. SK-11 - PROPOSED LAYOUT
1 : 20



4 DA-07 6 PAX ACC. - SIDE 1 EL
1 : 20



2 DA-07 6 PAX ACC. - FRONT EL
1 : 20

BOUNCE MAGNETIC ISLAND

40 HORSESHOE BAY ROAD
HORSESHOE BAY, QLD 4819

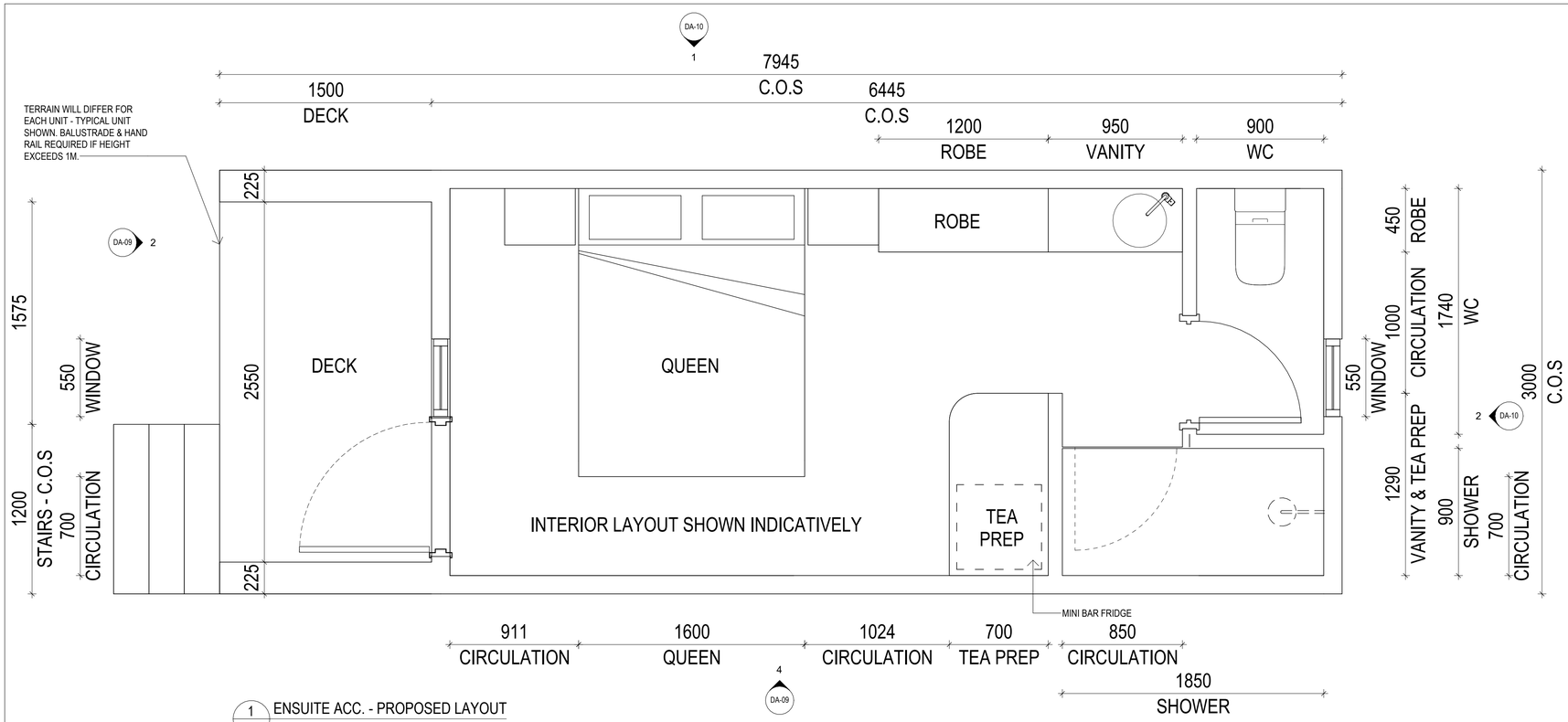
ISSUE FOR MINOR CHANGE APPLICATION February 2026

DA-07 Typical 6-Pax Accomodation

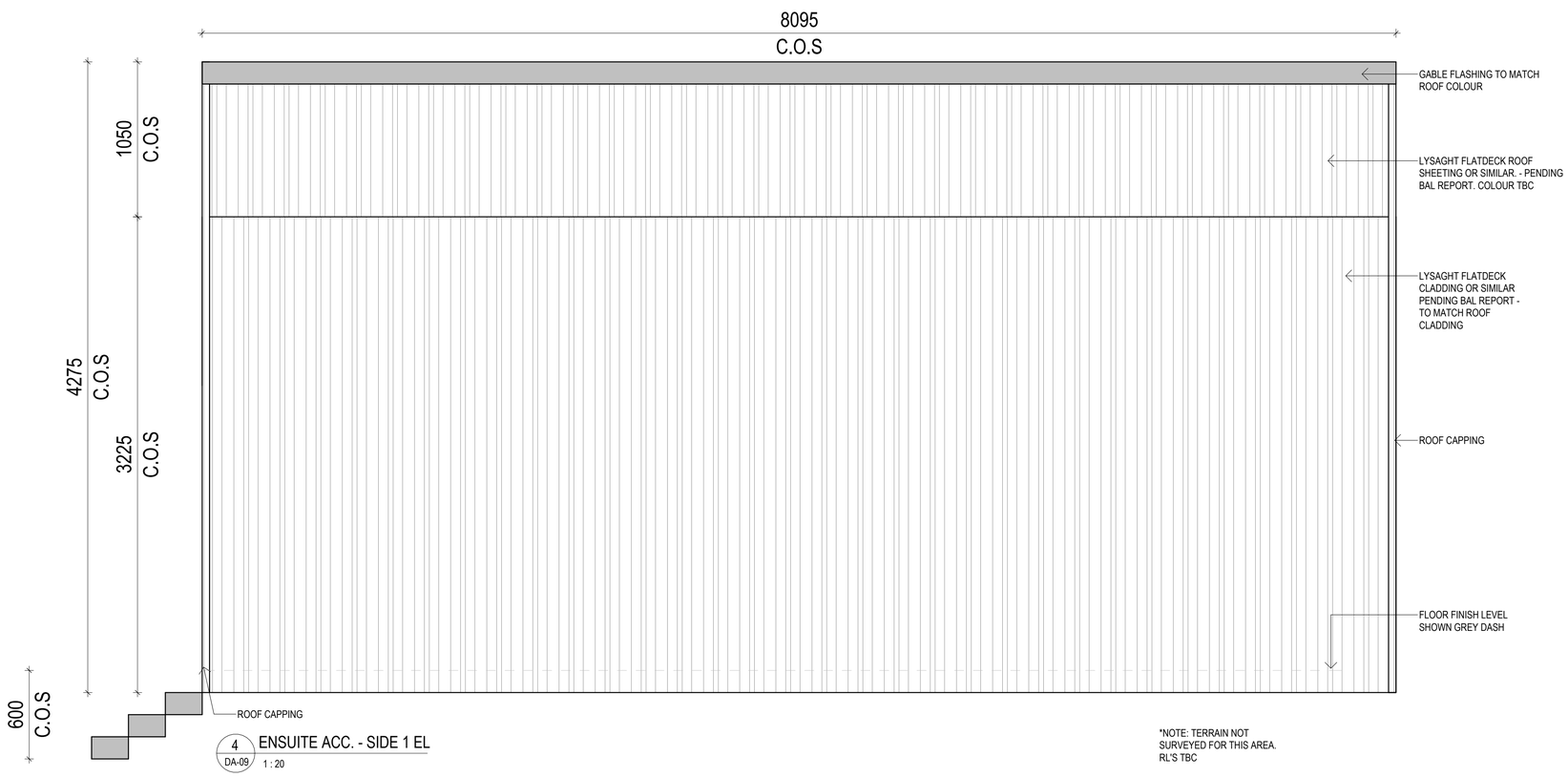
LUMEA

SCALE As indicated

GFA CALCULATION	
GFA	16.95m2
QTY UNITS	8
TOTAL GFA	135.6m2

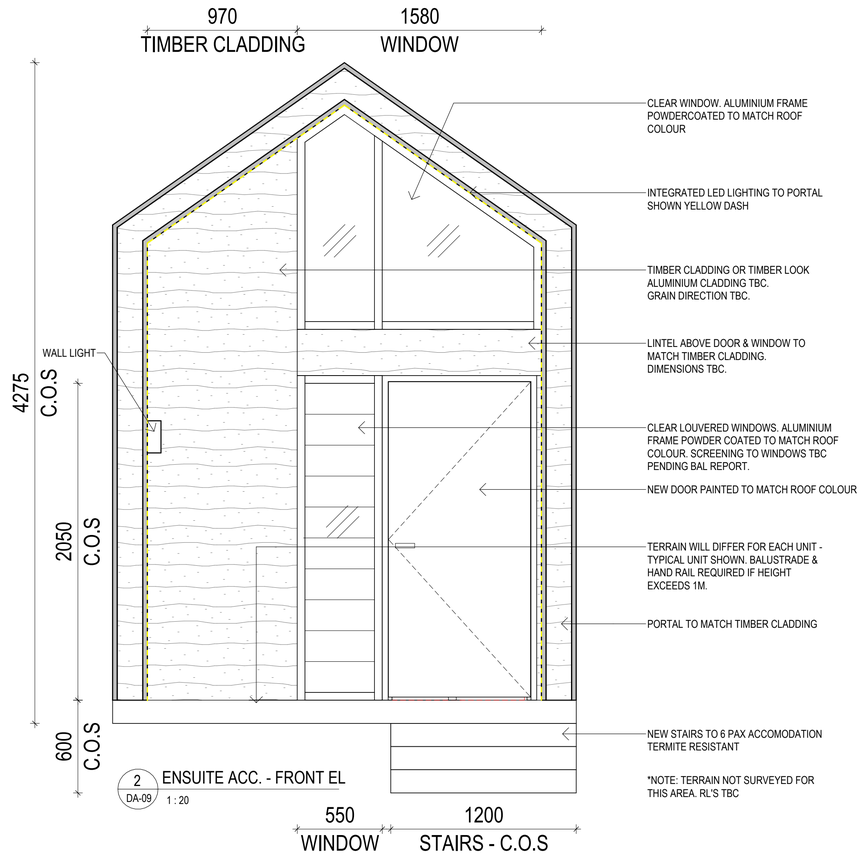


1 ENSUITE ACC. - PROPOSED LAYOUT
1 : 20



4 DA-09 ENSUITE ACC. - SIDE 1 EL
1 : 20

*NOTE: TERRAIN NOT SURVEYED FOR THIS AREA. RL'S TBC



2 DA-09 ENSUITE ACC. - FRONT EL
1 : 20

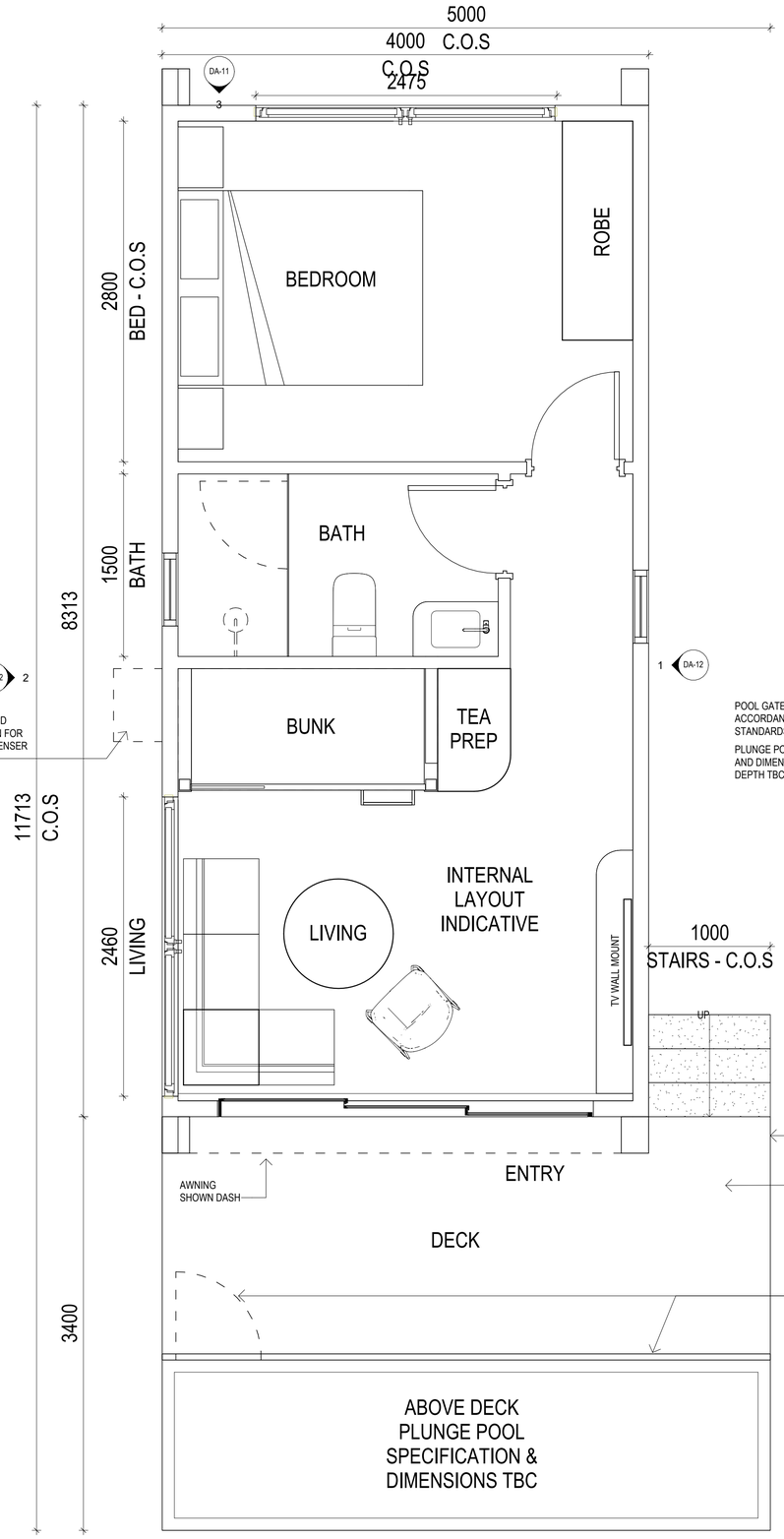
BOUNCE MAGNETIC ISLAND

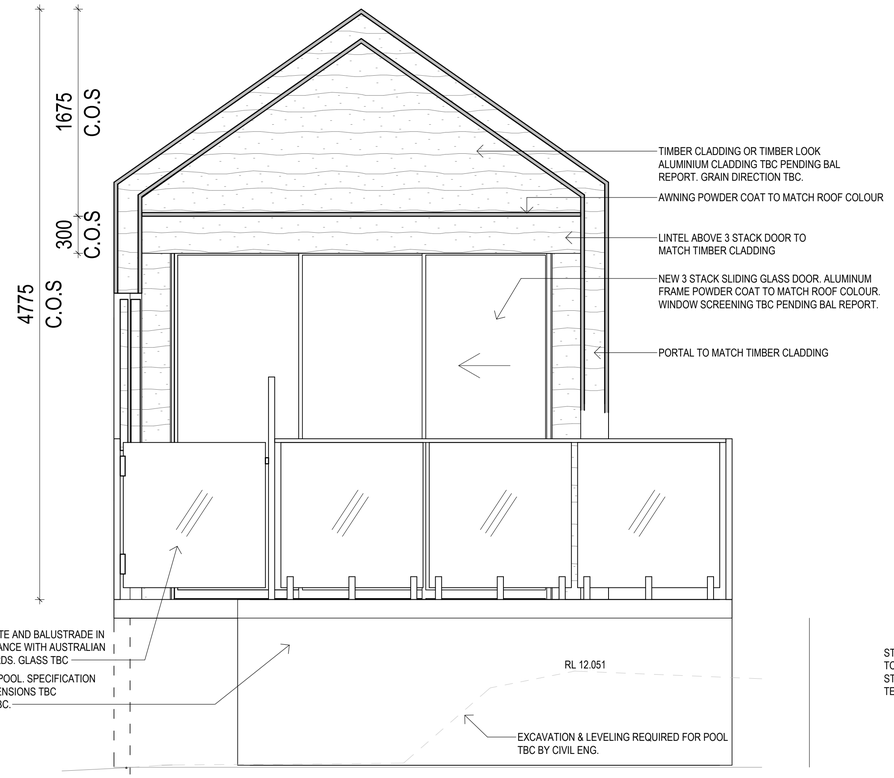
40 HORSESHOE BAY ROAD
HORSESHOE BAY, QLD 4819
ISSUE FOR MINOR CHANGE APPLICATION February 2026

DA-09 Typical En-Suite Accomodation

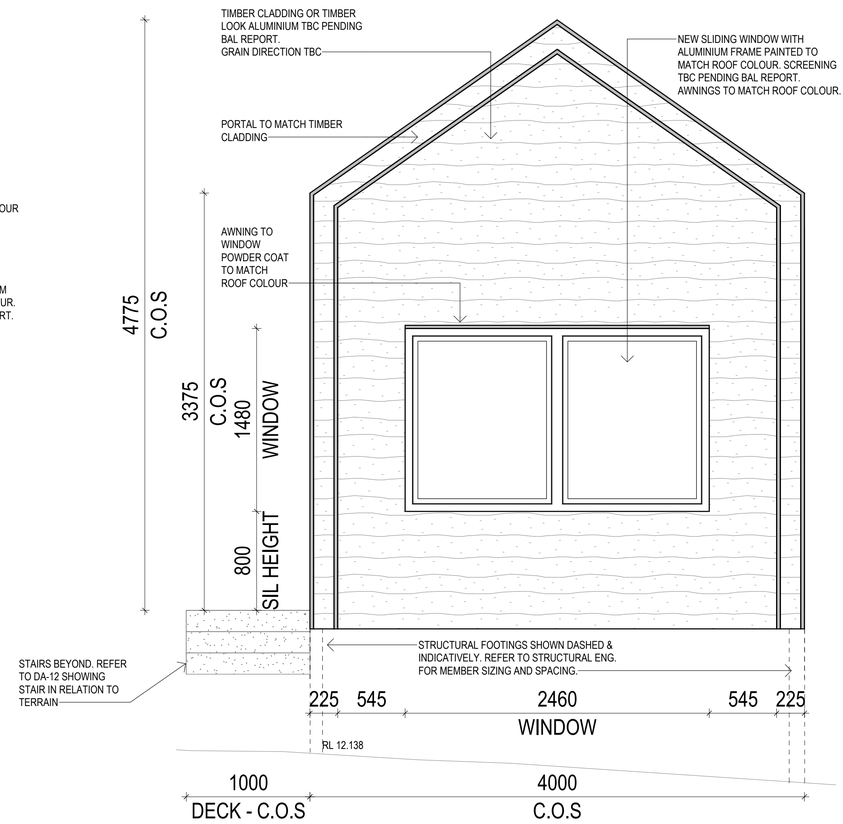
LUMEA

SCALE As indicated





2 DW-04 FAMILY VILLA FRONT EL 3
1 : 25



3 DA-11 FAMILY VILLA BACK EL 4
1 : 25

GFA CALCULATION	
GFA	29.9m2
QTY UNITS	5
TOTAL GFA	149.5m2

1 FAMILY VILLA SK-08
1 : 25

BOUNCE MAGNETIC ISLAND

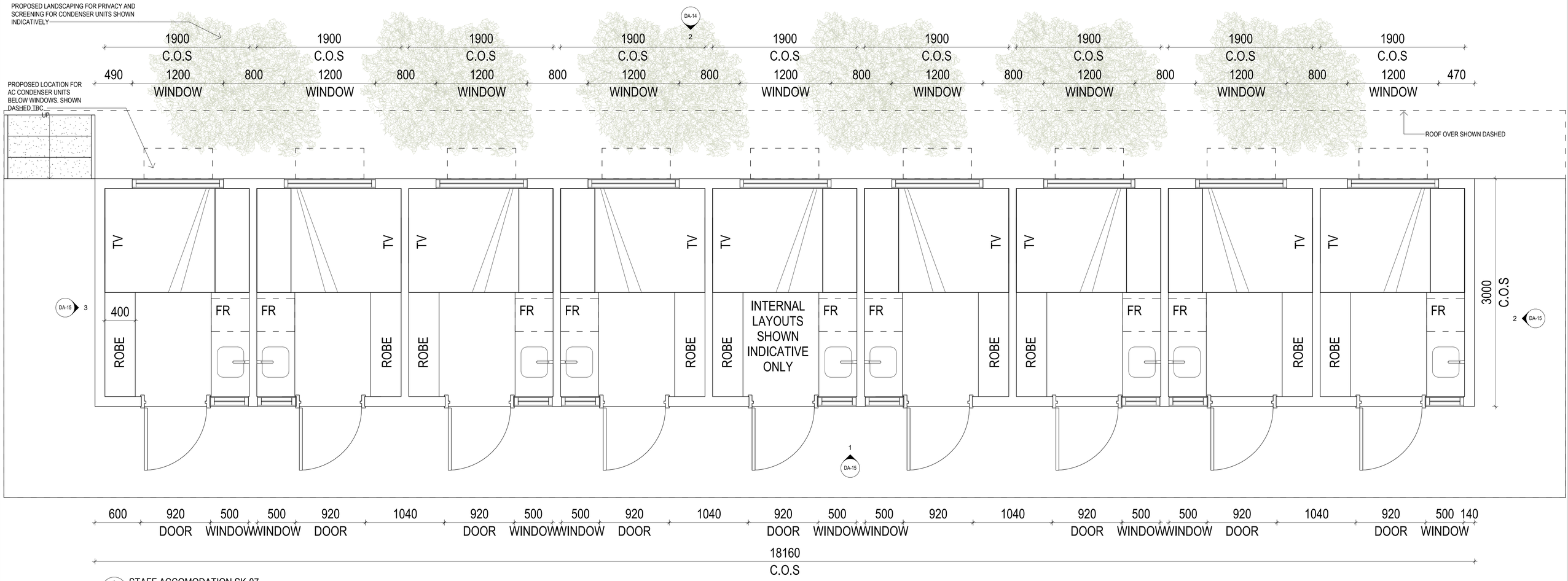
40 HORSESHOE BAY ROAD
HORSESHOE BAY, QLD 4819

ISSUE FOR MINOR CHANGE APPLICATION February 2026

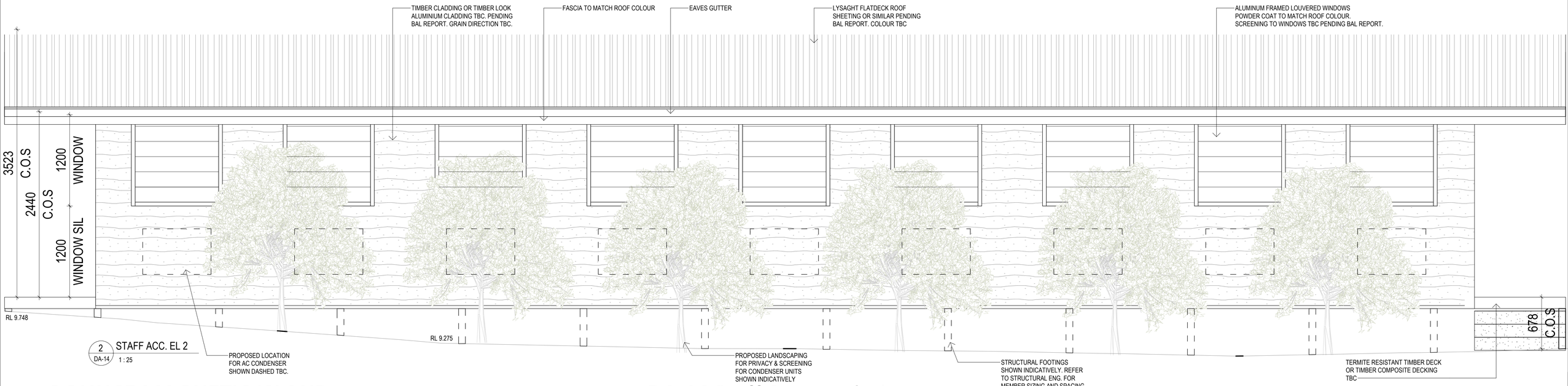
DA-11 Typical Family Villa

LUMEA

SCALE As indicated



1 STAFF ACCOMODATION SK-07
1 : 25



2 DA-14 STAFF ACC. EL 2
1 : 25

BOUNCE MAGNETIC ISLAND

40 HORSESHOE BAY ROAD
HORSESHOE BAY, QLD 4819

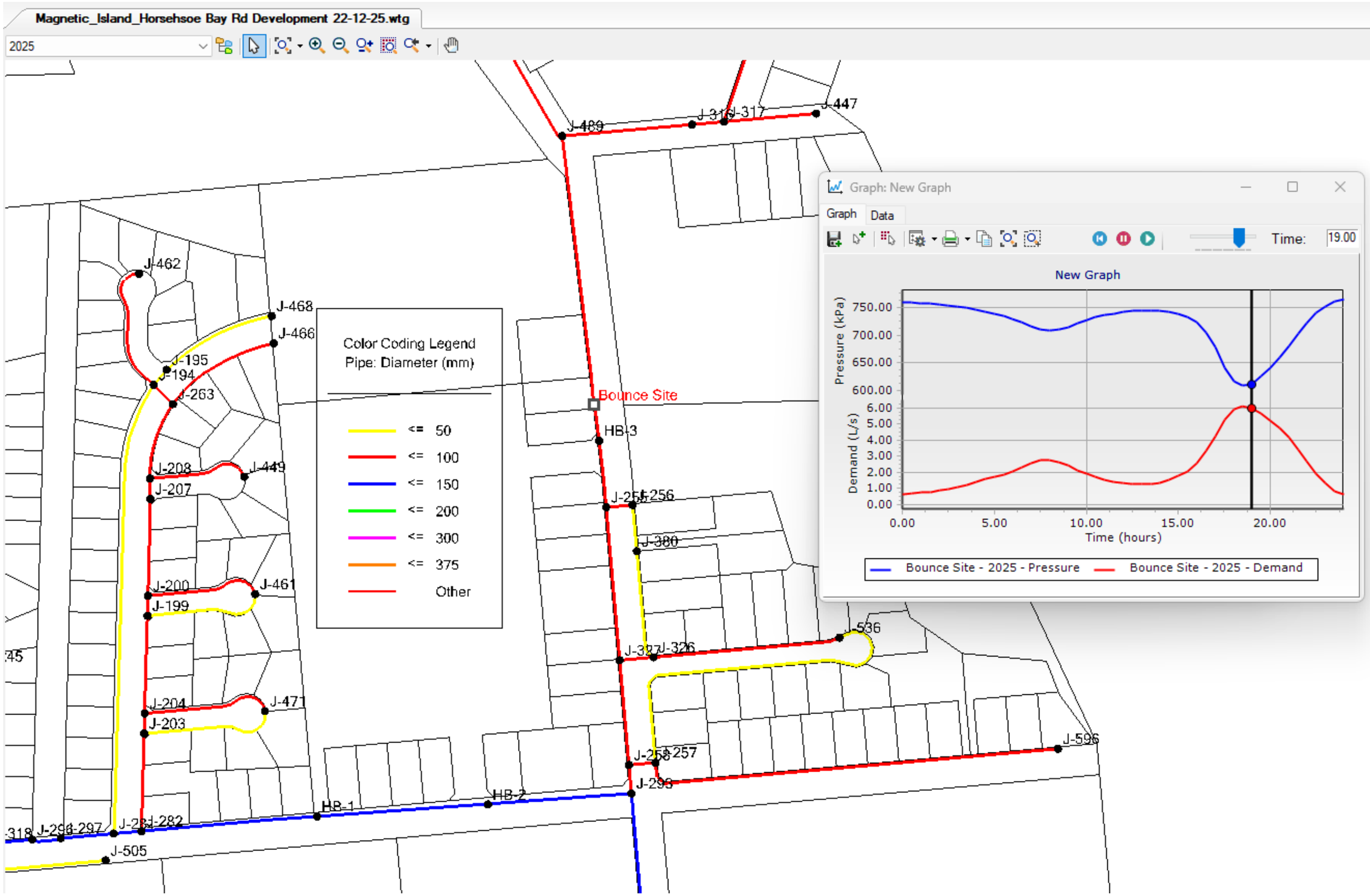
ISSUE FOR REVIEW February 2026

DA-14 Staff Accomodation

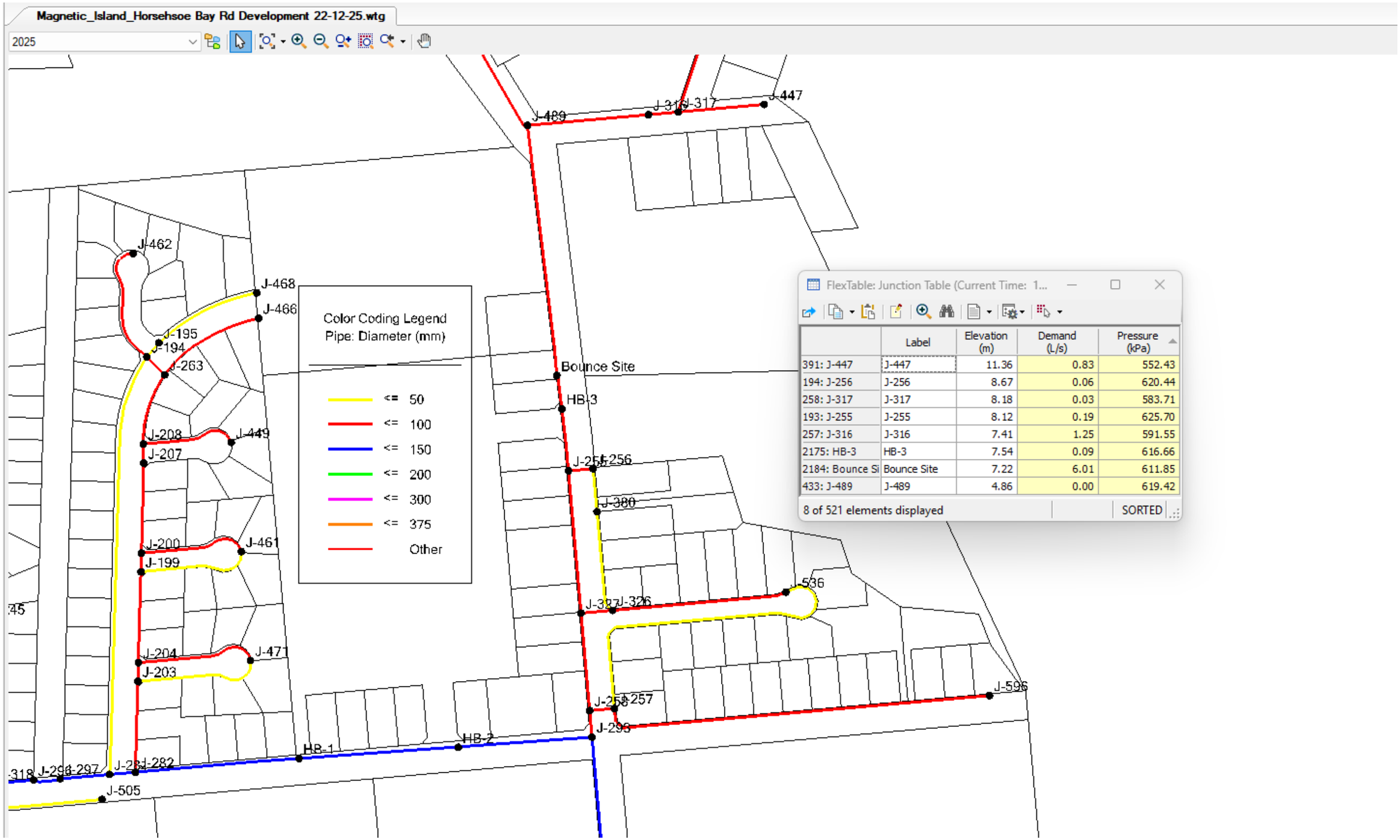
LUMEA

SCALE As indicated

APPENDIX B
WATERGEMS MODEL FIGURE & RESULTS

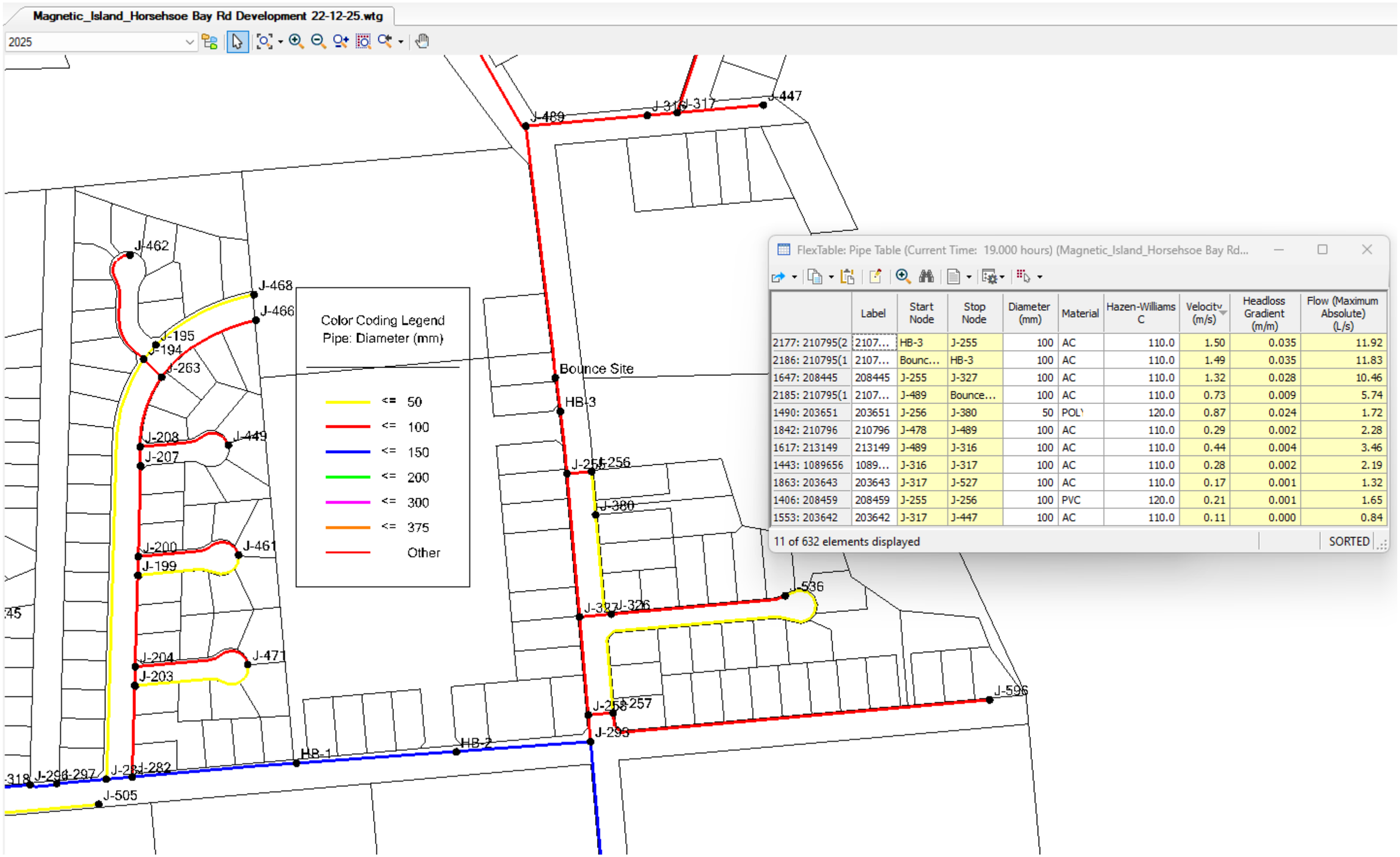


HORSESHOE BAY RD TOURIST PARK REDEVELOPMENT – WATERGEMS FIGURE



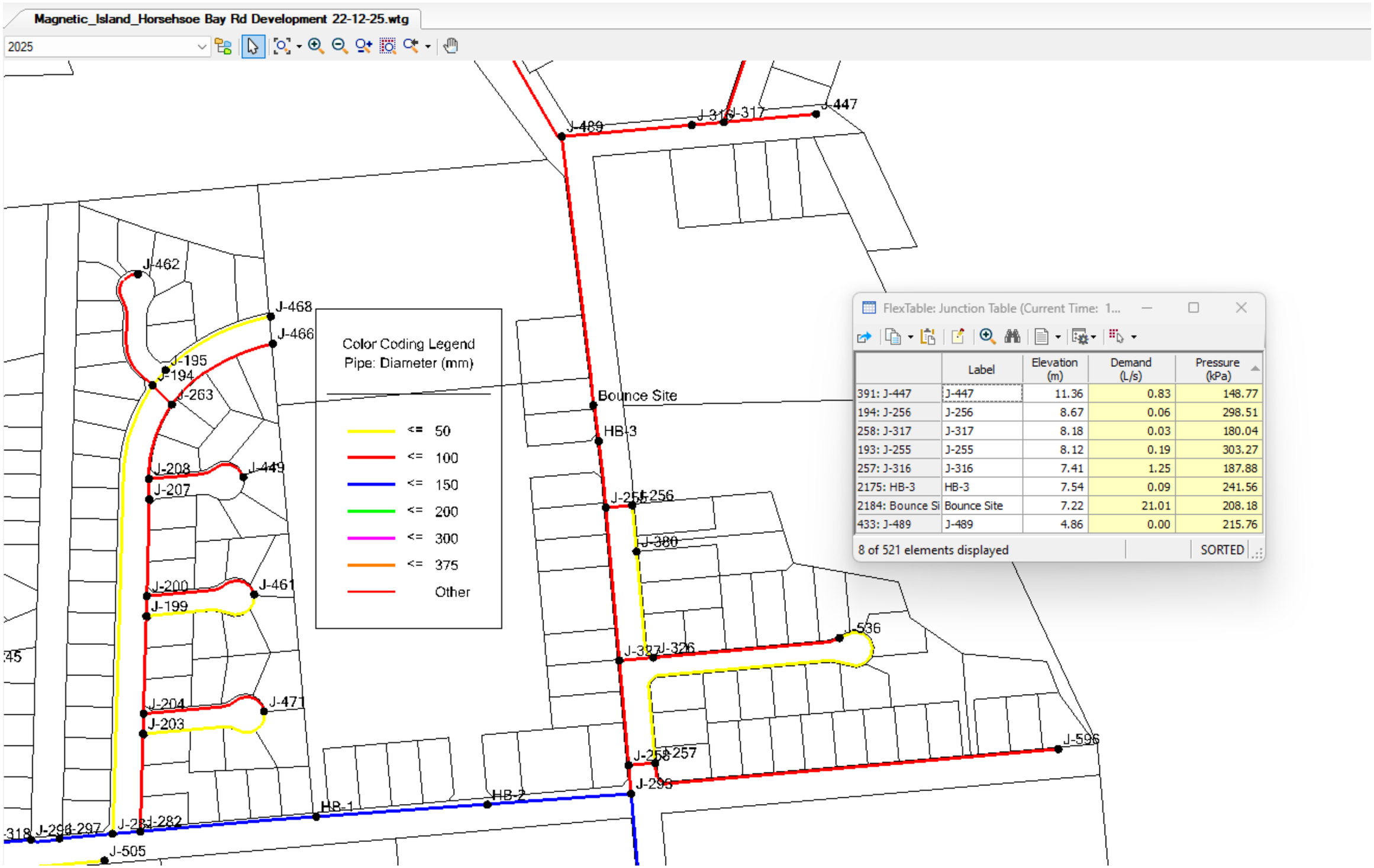
	Label	Elevation (m)	Demand (L/s)	Pressure (kPa)
391: J-447	J-447	11.36	0.83	552.43
194: J-256	J-256	8.67	0.06	620.44
258: J-317	J-317	8.18	0.03	583.71
193: J-255	J-255	8.12	0.19	625.70
257: J-316	J-316	7.41	1.25	591.55
2175: HB-3	HB-3	7.54	0.09	616.66
2184: Bounce Si	Bounce Site	7.22	6.01	611.85
433: J-489	J-489	4.86	0.00	619.42

HORSESHOE BAY RD – PEAK HOUR NODE RESULTS



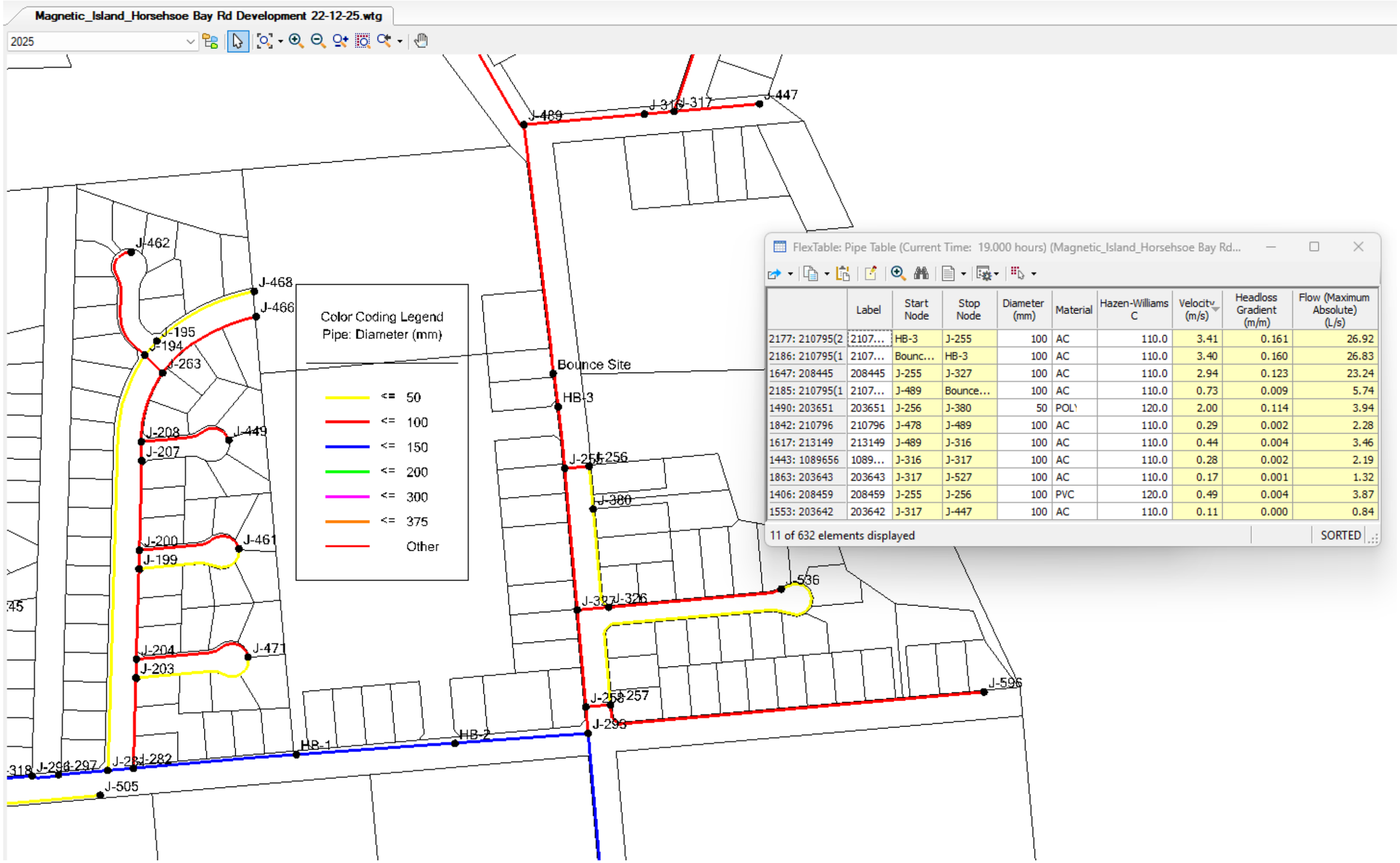
	Label	Start Node	Stop Node	Diameter (mm)	Material	Hazen-Williams C	Velocity (m/s)	Headloss Gradient (m/m)	Flow (Maximum Absolute) (L/s)
2177: 210795(2	2107...	HB-3	J-255	100	AC	110.0	1.50	0.035	11.92
2186: 210795(1	2107...	Bounc...	HB-3	100	AC	110.0	1.49	0.035	11.83
1647: 208445	208445	J-255	J-327	100	AC	110.0	1.32	0.028	10.46
2185: 210795(1	2107...	J-489	Bounce...	100	AC	110.0	0.73	0.009	5.74
1490: 203651	203651	J-256	J-380	50	POL'	120.0	0.87	0.024	1.72
1842: 210796	210796	J-478	J-489	100	AC	110.0	0.29	0.002	2.28
1617: 213149	213149	J-489	J-316	100	AC	110.0	0.44	0.004	3.46
1443: 1089656	1089...	J-316	J-317	100	AC	110.0	0.28	0.002	2.19
1863: 203643	203643	J-317	J-527	100	AC	110.0	0.17	0.001	1.32
1406: 208459	208459	J-255	J-256	100	PVC	120.0	0.21	0.001	1.65
1553: 203642	203642	J-317	J-447	100	AC	110.0	0.11	0.000	0.84

HORSESHOE BAY RD – PEAK HOUR WATER MAIN RESULTS



	Label	Elevation (m)	Demand (L/s)	Pressure (kPa)
391: J-447	J-447	11.36	0.83	148.77
194: J-256	J-256	8.67	0.06	298.51
258: J-317	J-317	8.18	0.03	180.04
193: J-255	J-255	8.12	0.19	303.27
257: J-316	J-316	7.41	1.25	187.88
2175: HB-3	HB-3	7.54	0.09	241.56
2184: Bounce Si	Bounce Site	7.22	21.01	208.18
433: J-489	J-489	4.86	0.00	215.76

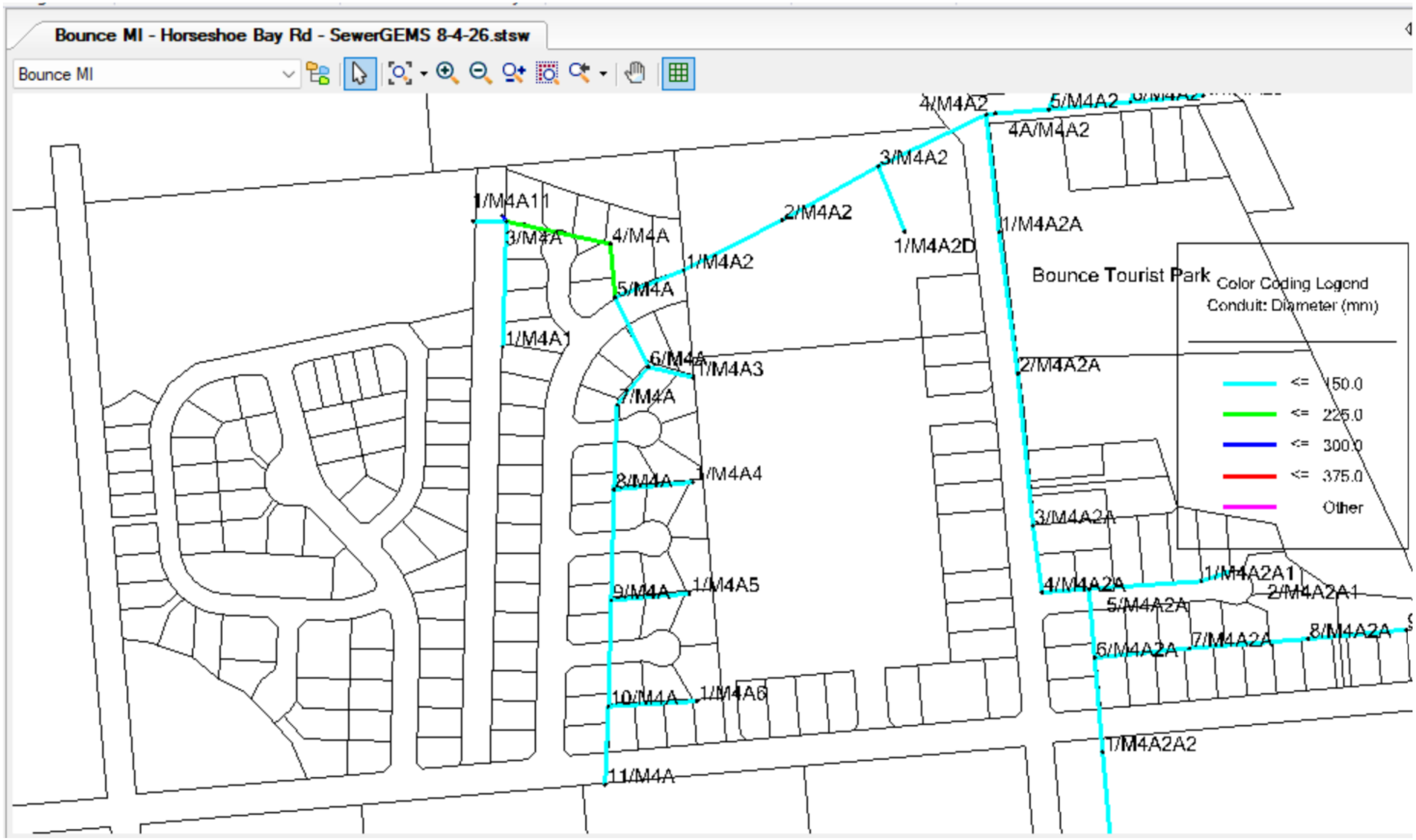
HORSESHOE BAY RD – PEAK HOUR & 15 l/s FIRE FLOW NODE RESULTS



	Label	Start Node	Stop Node	Diameter (mm)	Material	Hazen-Williams C	Velocity (m/s)	Headloss Gradient (m/m)	Flow (Maximum Absolute) (L/s)
2177: 210795(2	2107...	HB-3	J-255	100	AC	110.0	3.41	0.161	26.92
2186: 210795(1	2107...	Bounc...	HB-3	100	AC	110.0	3.40	0.160	26.83
1647: 208445	208445	J-255	J-327	100	AC	110.0	2.94	0.123	23.24
2185: 210795(1	2107...	J-489	Bounce...	100	AC	110.0	0.73	0.009	5.74
1490: 203651	203651	J-256	J-380	50	POL'	120.0	2.00	0.114	3.94
1842: 210796	210796	J-478	J-489	100	AC	110.0	0.29	0.002	2.28
1617: 213149	213149	J-489	J-316	100	AC	110.0	0.44	0.004	3.46
1443: 1089656	1089...	J-316	J-317	100	AC	110.0	0.28	0.002	2.19
1863: 203643	203643	J-317	J-527	100	AC	110.0	0.17	0.001	1.32
1406: 208459	208459	J-255	J-256	100	PVC	120.0	0.49	0.004	3.87
1553: 203642	203642	J-317	J-447	100	AC	110.0	0.11	0.000	0.84

HORSESHOE BAY RD – PEAK HOUR & 15 l/s FIRE FLOW WATER MAIN RESULTS

APPENDIX C
SEWERGEMS MODELLING RESULTS



BOUNCE MAGNETIC ISLAND TOURIST PARK – SEWERGEMS MODEL

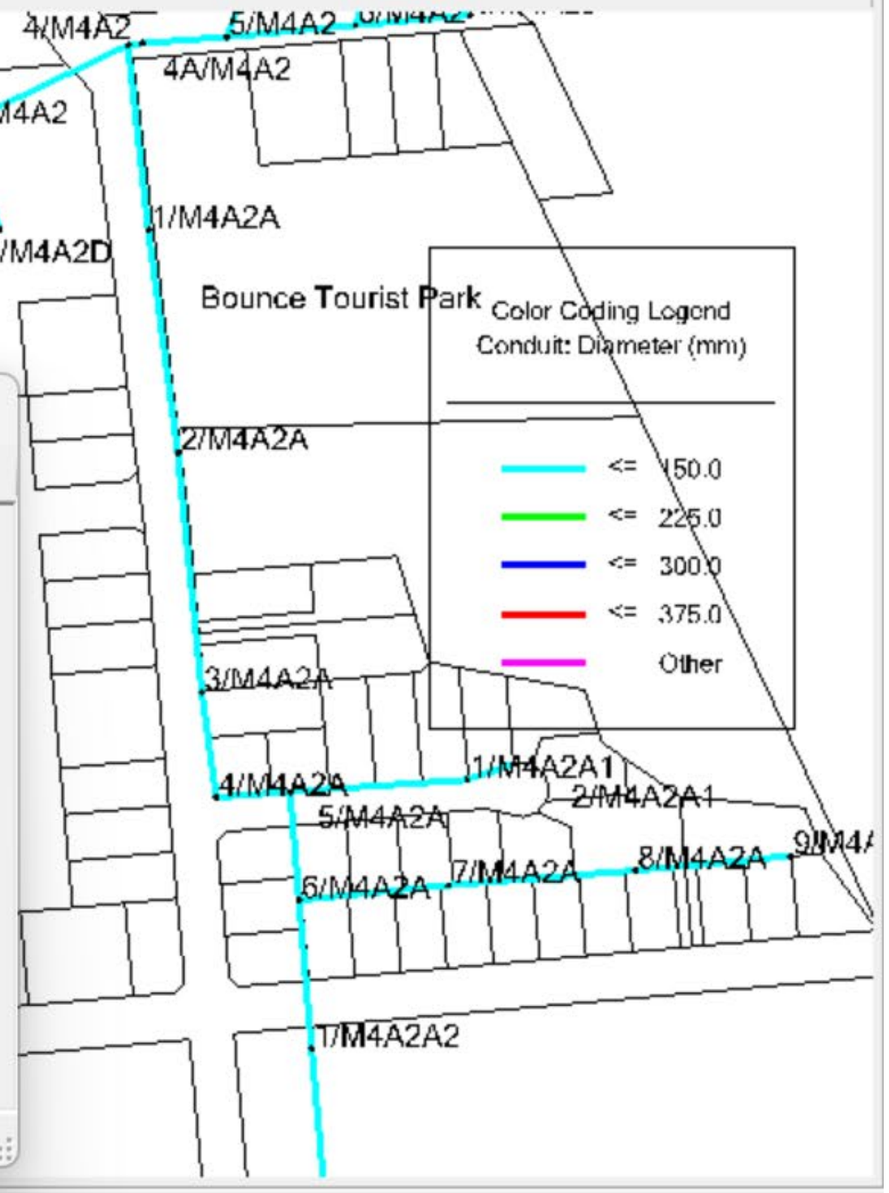
Bounce MI - Horseshoe Bay Rd - SewerGEMS 8-4-26.stsw

Bounce MI

FlexTable: Conduit Table (Current Time: 0.000 hours) (Bounce MI - Horseshoe Bay Rd...

	Start Node	Invert (Start) (m)	Stop Node	Invert (Stop) (m)	Length (Scaled) (m)	Diameter (mm)	Velocity (m/s)	Flow (Maximum) (L/s)	Depth (Maximum) / Rise (%)
27918: CO-169	4/M4A2A	8.810	3/M4A2A	8.220	45.7	150.0	0.37	0.937	25.6
27916: CO-168	3/M4A2A	8.240	2/M4A2A	6.600	103.7	150.0	0.44	1.123	18.1
27914: CO-167	2/M4A2A	6.590	1/M4A2A	5.940	96.6	150.0	0.29	1.198	22.0
27912: CO-166	1/M4A2A	5.920	4/M4A2	4.590	80.1	150.0	0.76	3.660	32.9
27853: CO-146	2/M4A2	2.470	1/M4A2	1.960	75.0	150.0	0.62	11.039	68.8
27852: CO-145	3/M4A2	3.030	2/M4A2	2.510	74.9	150.0	0.68	11.039	68.4
27850: CO-144	4/M4A2	3.580	3/M4A2	3.050	81.0	150.0	0.72	11.002	69.2
27847: CO-143	1/M4A2	1.820	5/M4A	1.470	50.0	150.0	0.57	11.077	68.5
27845: CO-142	5/M4A	1.340	4/M4A	1.210	36.4	225.0	0.52	20.727	59.5
27843: CO-141	4/M4A	1.160	3/M4A	0.880	72.2	225.0	0.52	20.838	58.8
27876: CO-157	3/M4A	0.860	O-10	0.842	5.5	300.0	0.50	23.857	42.1

11 of 44 elements displayed SORTED

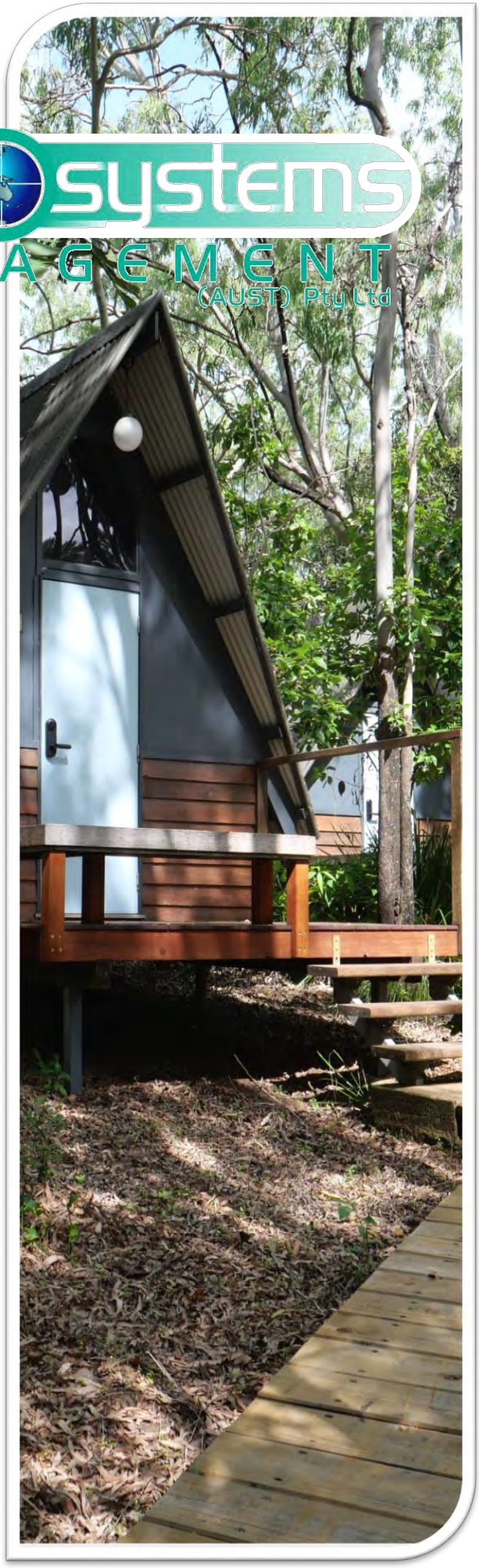


BOUNCE MAGNETIC ISLAND TOURIST PARK – SEWERGEMS MODELLING RESULTS

APPENDIX B

Bushfire Assessment Report prepared by Ecosystems Managment

brazier motti



BUSHFIRE ASSESSMENT REPORT

26 - 40 HORSESHOE BAY ROAD, HORSESHOE BAY (3SP226268)

TECHNICAL REPORT 7-39-113

Technological Solutions for Sustainable Natural Resource Management

Ecosystems Management (Aust) Pty Ltd
ACN: 665 541 953
38 Darling Road
Jensen
QLD 4818

STATEMENT OF QUALIFICATION

This BAL Assessment Report has been prepared by Marcia Griebenow. I have over 20 years' experience in bushfire management and environmental management, practicing in Victoria, New South Wales and Queensland. I have a Bachelor of Environmental Science (Management) from Charles Sturt University, and the Postgraduate Diploma in Bushfire Protection from the University of Western Sydney.
I am suitably qualified and experienced to undertake a BAL Assessment and prepare recommendations for construction requirements in bushfire prone areas.

Marcia Griebenow BEnvSc GradDip (Bushfire Protection) MEIANZ

LIMITATION AND DISCLAIMER.

This report has been prepared by Ecosystems Management (Aust) Pty Ltd (EMA) with all reasonable skill, care and diligence. This report is for the exclusive use of **The Tourism Co** or their agent. It is the responsibility of the client to implement this plan, and its associated recommendations. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from EMA. EMA accepts no responsibility to any party in respect of any matters outside the agreed scope of the work and accepts no liability for implementation of recommended management actions using management plans prepared by other parties.

DOCUMENT CONTROL

Reference	Rev	Date	Prepared	Authorised	Approved
7-39-113_BOUNCE_40_HorseshoeBayRd_HorseshoeBay_v1.0	1.0	7/04/2026	Ally Genson	Marcia Griebenow	

DISTRIBUTION

Recipient	Organisation	Version	Copies	Date
Mark Baldwin	The Tourism Co	1.0	1 (PDF)	08/04/2026
Jordan Bews	The Tourism Co	1.0	1 (PDF)	08/04/2026

TABLE OF CONTENTS

1. INTRODUCTION

Ecosystems Management (Aust) Pty Ltd (EMA) has been engaged by **The Tourism Co** to undertake a Bushfire Assessment for the purposes of supporting an application for expansion of accommodation and amenities facilities at 'Bounce' (**26 - 40 HORSESHOE BAY ROAD, HORSESHOE BAY (3SP226268)).** The development involves the addition of new facilities, including:

- 5 Family Villas;
- 20 x 6-Person Accommodations Units;
- 1 Amenities Building;
- 8 Ensuite Accommodation;
- 1 Staff Accommodation (replacement of existing accommodation);
- Food Outlet; and
- 35 Car Parks.

The development application constitutes a change application to Townsville City Council to the existing development approval for the site (TCC reference: MCU26/0011). The planning scheme overlay code has not be explicitly addressed with the initial development application, Condition 3 of the RFI requires further information to *demonstrate that there is no increased risk to people and property as a result of the location of the cabins along the southern boundary*, and *to demonstrate that the purpose of the natural assets overlay code is able to be achieved when considering any bushfire risk reduction measures that may need to be employed.*

Townsville City Council has made it clear that permission will not be granted to undertake any clearing of vegetation to provide bushfire protection to the family cabins proposed on the southern side of the site.

In addition to addressing the requirements of Townsville City Council, the new accommodation buildings are also required to comply with the National Construction Code (NCC). The site is considered bushfire prone by Townsville City Council planning scheme mapping (Figure 1) and subsequently triggers the requirement for compliance with AS3959 (Construction of buildings in bushfire prone areas (SAL, 2011)), under the provisions of the NCC.

The site location is detailed in the Site Location map in Appendix A.

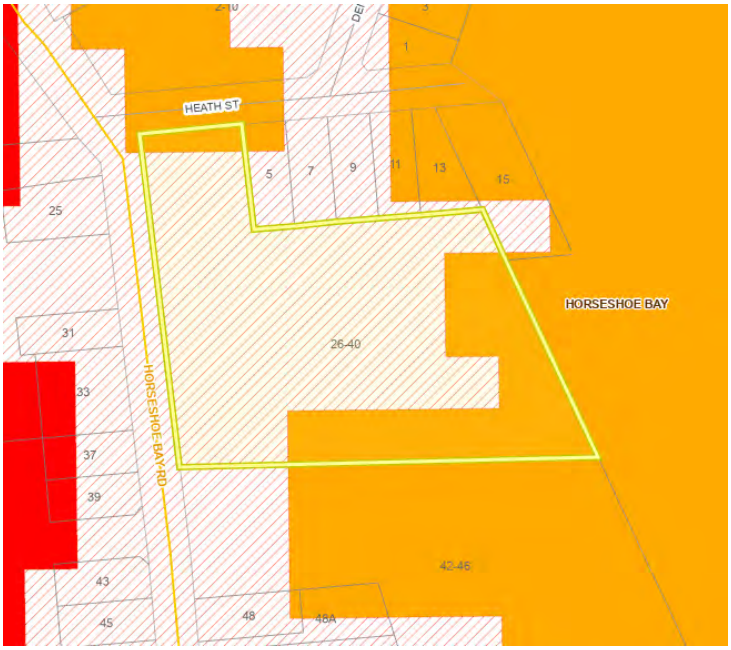


FIGURE 1 BUSHFIRE HAZARD OVERLAY 26 - 40 HORSESHOE BAY ROAD, HORSESHOE BAY (TOWNSVILLE CITY COUNCIL PLANNING SCHEME OVERLAY OM02.0)

2. SITE DESCRIPTION

The property is located in the Horseshoe Bay (Magnetic Island) area, directly accessible from Horseshoe Bay Road, which forms part of the main transport route across the island (Magnetic Island Road). All connecting roads are sealed, single lane, and in good maintenance The site is currently operated as a tourist accommodation and entertainment venue, and hosts a wildlife encounter attraction. The site can be described as nature tourism site, with high amenity values attributed to retained native vegetation across the site and landscaping sympathetic to the natural features of the site. A site inspection was undertaken on 19th March 2026.

2.1. CLIMATE

The area is located in the dry tropics region of north Queensland, typically experiencing a summer wet season and a winter dry season. The nearest weather station is at Townsville Airport, approximately 15km to the east. The mean maximum temperature is 31.6°C in December and mean minimum temperature is 13.8 °C in July. Average maximum monthly rainfall is 301.9mm in February and average minimum monthly rainfall is 10.1mm in September. Average 3pm humidity at greatest in February (67%) and lowest in July (51%) (BOM, 2026). Whilst there is no weather station on Magnetic Island, the nature of the island's topography and nearshore location lead to more frequent rainfall, including through the dry season, and higher accumulation of annual rainfall totals that that recorded on the mainland.

2.1.1. FIRE DANGER INDEX

The Fire Danger Index (FDI) was developed to provide an indicator to fire managers of the probability of being able to contain and extinguish a fire once it started in a forest environment. FDI is calculated using inputs including recent rainfall, soil dryness, temperature, humidity and windspeed. The higher the FDI, the lower the probability of containment or extinguishment within 24 hours of the fire starting.

AS3959-2018 identifies an applicable FDI of 40 for Queensland, which falls into the classification of High fire danger under the new Australian Fire Danger Rating System (AFDRS), effective from September 2022. Fire hazard modelling in Queensland by CSIRO (Leonard et al, 2014) has mapped FDI across the state. FDI varies across the Townsville LGA, from 48 in the north, to 59 in the south. An FDI of 51 applies to the subject site in Horseshoe Bay.

2.2. TOPOGRAPHY

The property and the surrounding area are located on generally flat ground, at approximately 5m elevation above sea level (AHD). The site increases gently in elevation to the south east (slope between 0 and 5 degrees). To the east of the site, steep slopes rise away from the site, forming part of the Magnetic Island National Park. These slopes exceed 20 degrees in slope, significantly influenced by boulder fields extending from the base of the slopes uphill. To the north, east and south west of the site, the landscape is also generally flat, and characterised by urban / residential development.

An unnamed creek bisects the site from the southern boundary to the northeastern corner of the site, and is characterised by steep banks and a flat sandy bed. Within the site, the creek has been reinforced with rocks and vegetation lining the banks. The creek bisecting the site is connected to a more complex network of deeply incised drainage gullies originating from the steep slopes to the east and south east of the subject site. outside the site, the creek banks are sparsely vegetated and large rocks form part of the bank structure in numerous places. These drainage features are poorly mapped in the statewide hydrology datasets. These drainage features have been mapped manually from LiDAR data to support this project. The updated mapping is shown in the Topography map in Appendix A.

2.3. VEGETATION AND BUSHFIRE FUELS

Vegetation classification for development assessment (bushfire hazard modelling according to Bushfire Resilient Communities) and for BAL assessment (AS3959) are different. While bushfire vegetation assessment according to Busfhire Resilient Communities considers the statewide vegetation mapping in the context of structure, continuity and connectivity, excluding vegetation types that do not occur within Queensland, AS3959 uses a simplified assessment of basic structural arrangement which can be applied in any Australian landscape.

2.3.1. VEGETATION HAZARD CLASSIFICATION

Vegetation hazard classification is derived from Regional Ecosystem mapping, simplified through Broad Vegetation Group aggregation at the 1:2million scale. Vegetation mapping across the subject site and in the immediate environs is

considered generally consistent with remnant vegetation classification, however this is dictated by the remnant overstory species composition (Neldner, 2025). The emergent understory and subsequent alteration of vegetation community structure and species composition results in a significantly different bushfire fuel hazard and potential fire behaviour potential.

Regional Ecosystem mapping is shown in the Regional Ecosystem map in Appendix A. Regional ecosystems are described in detail in Table 1.

TABLE 1 REGIONAL ECOSYSTEMS LOCATED IN PROXIMITY TO THE SUBJECT SITE

Regional Ecosystem	Broad Vegetation Group	RE Description
RE11.3.9	9e	Eucalyptus platyphylla with occasional trees of Corymbia clarksoniana, C. intermedia, E. tereticornis or Lophostemon suaveolens woodland to open woodland. A lower tree layer of Melaleuca viridiflora is occasionally present. This association has a grassy ground layer, with species including Heteropogon contortus, Sorghum nitidum, Chrysopogon fallax, Alloteropsis semialata and Aristida holathera, or in some situations with short grasses such as Chloris spp., Fimbristylis dichotoma, Cyperus spp., Schizachyrium fragile and Ectrosia leporina
RE11.3.35	9e	Eucalyptus platyphylla, Corymbia clarksoniana woodland, occasionally with Corymbia tessellaris. A secondary tree layer commonly occurs, including Planchonia careya, Pandanus spiralis, Melaleuca viridiflora or M. nervosa and Petalostigma pubescens. The ground layer is usually tussock grasses, including Themeda triandra, Heteropogon contortus, Mnesithea rottboellioides and Bothriochloa decipiens, together with herbs or forbs such as Glycine tabacina, Galactia tenuiflora or Sida hackettiana
RE11.12.4	7a	Araucaria cunninghamii is a common emergent from the general canopy layer. Canopy species include Falcataria toona, Ficus virens, Canarium australianum, Alstonia scholaris, Planchonella pohlmaniana, Cleistanthus dallachyanus and Backhousia citriodora. Common shrub or understorey species are Mackinlaya macrosciadea, Baloghia inophylla, Polyalthia nitidissima, Bosistoa medicinalis and Aglaia sapindina. The sparse ground layer includes species such as Scleria sphacelata and Adiantum hispidulum. Vines and epiphytes are common and include Microsorum punctatum, Cissus oblonga, Smilax australis and Pisonia aculeata.
11.12.13	10a	Eucalyptus crebra, Corymbia erythrophloia, C. dallachiana and C. tessellaris +/- C. intermedia +/- E. acmenoides +/- Canarium australianum mixed woodland or open forest.
11.3.12	22c	Melaleuca viridiflora woodland to open woodland, occasionally with M. argentea and M. dealbata. Occasional midstratum of Grevillea pteridifolia and Acacia leptocarpa. Ground layer of perennial grasses such as Themeda triandra, Elionurus citreus, Ectrosia leporina, Eriachne rara, Eremochloa bimaculata, Thaumastochloa pubescens, Eragrostis brownii and Ischaemum australe.
11.3.27	34c/34a	Freshwater wetlands. Vegetation is variable including open water with or without aquatic species and fringing sedgelands and eucalypt woodlands. Occurs in a variety of situations including lakes, billabongs, oxbows and depressions on floodplains. Palustrine.

Vegetation structure and arrangement are significant drivers of fire behaviour. Fuel hazard is described as the combined effect of fine surface fuels, elevated fuels and bark hazard in the ignition and propagation of fire. Traditional methods of fuel assessment require the individual assessment of all three fuel types to determine the Potential Fuel Load (PFL), described in tonnes per hectare (tph). This fuel weight can then be used to determine the potential fireline intensity (PFI) in terms of kW/m.

The methodology endorsed by the Queensland Government is described in the technical reference guide ***Bushfire Resilient Communities*** (QFES, 2019). This methodology builds on the state wide bushfire hazard modelling method published by CSIRO in 2014 (Leonard et al. 2014). Leonard et al identified potential total bushfire fuel loads for

Queensland Herbarium regional ecosystem vegetation classifications and aggregated these into Vegetation Hazard Classes (VHC) (which also includes the canopy fuel weight), and was subsequently refined with detailed vegetation bushfire fuel data in 2017 (Newnham et al. 2017).

Vegetation hazard class mapping considers horizontal connectivity of bushfire fuels; VHCs with a continuous fuel load generally support continuous flame spread, whereas VHCs with discontinuous fuels may interrupt or retard the progress of a fire front. In terms of crown fire development, vegetation communities with little to no elevated fuels connecting surface fuels to bark and canopy fuels will limit the potential for crown fire development, whereas significant volumes of near surface fuels (grasses >1m high) and elevated fuels promote flame advancement into the canopy. Small patches of higher fuel load VHCs within a larger landscape of lower fuel load VHCs (up to 1ha), will locally increase fire intensity and rate of spread, however, will not significantly influence the overall bushfire hazard in the wider landscape.

Broad Vegetation Groups (BVG) and Vegetation Hazard Classes (VHC) within or adjacent to the subject site are listed in Table 2**Error! Reference source not found.**. The potential fireline intensity is calculated (using flat ground) to provide context to the influence of fuel load on potential intensity.

TABLE 2 VEGETATION HAZARD CLASS BY ASSOCIATION WITH BVG (AFTER LEONARD AND NEWNHAM).

BVG	BVG Description	VHC	VHC Description	Potential Fuel Load (tph)	Potential Fireline Intensity
3	Rainforests, scrubs	3.1	Notophyll vine forest	4.5	425
9	Eastern eucalypt woodlands to open forests	9.2	Moist to dry eucalypt woodland on coastal lowlands and ranges	17.2	6,214
22	Melaleuca open woodlands on depositional plains	22.1	Melaleuca open forests on seasonally inundated lowland coastal swamps	28.4	16,941
24	Other acacia dominated open forests, woodlands and shrublands	24.2	Acacia woodlands on residuals	8.2	1,412
35	Mangroves and tidal saltmarshes	35.1	Closed to open forest mangroves	0	0
39	Very low vegetation cover to moderate tree cover	39.2	Low to moderate tree cover in built-up areas	8	1,344
41	Very low vegetation cover to moderate tree cover	41.4	Low grass or tree cover in built-up areas	3	189
42	Very low vegetation cover to moderate tree cover	42.6	Nil to very low vegetation cover	2	84
Very high (potential intensity) 40,000+kW/m	High (potential intensity) 20,000 – 40,000kW/m		3. Medium (potential intensity) 4,000 – 20,000kW/m	4. Low Hazard < 4,000 kW/m	

2.3.2. BUSHFIRE FUEL ASSESSMENT

The vegetation within the assessment area exhibits characteristics consistent with long unburnt woodland vegetation communities. These landscapes are characterised by retention of the RE defining woodland overstory species, with undergrowth more consistent with vine forest ecosystem type. Dense mid canopy increases shading of the ground and tropical grasses are replaced with a thick layer of leaf litter over the natural dirt surface. The litter layer generally exhibits a decomposition gradient, with dry whole leaf litter on top, and humus rich leaf decay at the bottom. There is a relatively high moisture content within this litter layer. The area around the subject site shows this change in vegetation structure, with little to no grassy ground cover in the assessment area, and fire sensitive species indicating a very long interval since fire.

Vegetation in the context of bushfire fuels is shown in Figure 2 through Figure 9.

FIGURE 2 VEGETATION ALON EASTERN BOUNDARY OF SUBJECT SITE

FIGURE 3 VEGETATION ON EASTERN BOUNDARY OF SUBJECT SITE

FIGURE 4 WOODLAND OVERSTORY ABOVE EMERGENCY VINE THICKET UNDERSTORY

FIGURE 5 REPRESENTATIVE AREA OF BOULDERFIELD ON EAST SIDE OF SUBJECT SITE

FIGURE 6 STEEP SIDE OF GULLY HEAD TO SOUTH EAST OF SUBJECT SITE

FIGURE 7 VEGETATION IMMEDATELY ADJACENT TO SOUTHERN BOUNDARYE

The extent of bushfire fuel is restricted on the eastern side of the subject site, with the hillslope above the site effectively a boulder field with overstory vegetation only. The drainage feature to the south of the site hosts denser vegetation along its banks, however this vegetation is consistent with the long unburnt vine thicket type. The deep leaf litter layer is contiguous on the eastern and southern sides of the subject site. There is evidence of Australian brush turkey nesting, however this also appeared to be inactive at the time of site assessment. No individuals of this species were identified during the site assessment.

Figure 10 through Figure 13 show the landscaping and vegetation within the subject site. This vegetation is consistent with the surrounding vegetation, with mature overstory species providing a high degree of shade to the site. All weather and low impact access is provided via boardwalks to cabin and bungalow accommodation. Hard landscaping is employed in higher traffic areas. Amenity plantings are a typical mix of exotic palms and native rainforest and vine thicket species, promoting a tropical ambience.

FIGURE 8 SANDY BOTTOMED DRAINAGE LINE IMMEDIATELY SOUTH OF SUBJECT SITE

FIGURE 9 REMNANT VEGETATION TO THE NORTH OF THE SUBJECT SITE

FIGURE 10 VIEW OF THE FRONT OF AN EXISTING DWELLING ON SITE, ALONGSIDE DECKED PATHWAY AND STAIRWAY TO ACCOMODATION.

FIGURE 11 VIEW OF REAR OF AN EXISTING ACCOMOTATION WITH DECKING PATHWAY ON SUBJECT SITE.

FIGURE 12 VIEW OF CREEK THROUGH SITE

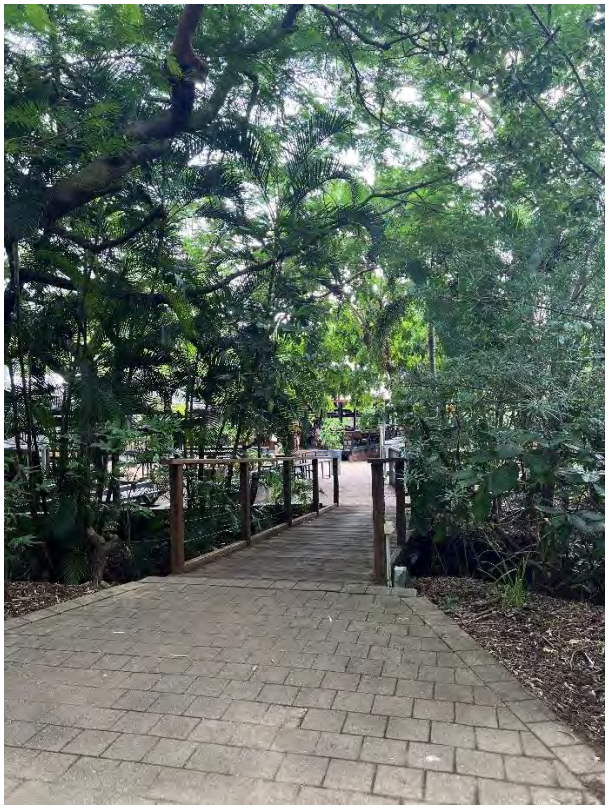


FIGURE 13 HARD LANDSCAPING AND TROPICAL PLANTINGS NEAR ENTERTAINMENT AND RECEPTION AREA

3. BUSHFIRE SCENARIO

Likely direction of attack for bushfire approaching the subject site is either from the national park estate to the east, or from undeveloped land to the west of Horseshoe Bay Road.

EASTERLY /SOUTHERLY SCENARIO

In the context of the vegetation types found within the assessment area, and considering the topography within the national park and immediately surrounding the subject site, the potential fireline intensity is likely to be less than the calculated potential due to both the downslope factor (fire travels slower downhill), limited fuel availability and fuel discontinuity due to presence of boulders and large rocks. Where the litter layer is dense and decomposing leaf litter, fireline intensity is still unlikely to present at the potential for this VHC, as decomposing leaf litter does not burn readily, it is the surface litter layer which is only thin that will burn readily and quickly. Fireline intensity could be reduced to 330kW/m which is well below the threshold for being considered bushfire prone. In this context the eastern aspect of the site is not considered bushfire prone.

WESTERLY SCENARIO

The vegetation within the undeveloped land to the west of Horseshoe Bay Road is generally considered a bushfire prone vegetation type (VHC 22.1), associated with high fuel loads and high potential fireline intensity. The patch of vegetation subject to this evaluation is approximately 2.5 ha (126m wide and 247m long). As an isolated patch of vegetation surrounded by other residential development, even with a point of ignition, there is a limitation on the potential fireline intensity simply due to the small size of this patch of vegetation. This distance of this vegetation from the subject site (70m), and the discontinuity of bushfire fuels between this patch of vegetation and the subject site, while within a potential impact zone (specifcally smoke), the hazard associated with this patch of vegeteation with respect to the subject site is low.

4. BUSHFIRE MITIGATION MEASURES AND ENVIRONMENTAL VALUES

The bushfire hazard has been evaluated in the context of the vegetation within 100m of the subject site. The subject site, while exhibiting remnant woodland vegetation, is dominated by vine thicket understory and does not carry the bushfire risk associated with the mapped vegetation communities.

As a commercial accommodation and entertainment venue, the site is subject to compliance with the National Construction Code, which addresses construction in bushfire prone areas, and essential safety measures with respect to building and structure fire. The site is located within the reticulated water network on Magnetic Island, and within the response area for the Rural Fire Brigade and QFES on the island. Bushfire risk within the National Park estate is well managed by Queensland Parks and Wildlife Service and Partnerships. Horseshoe Bay Rural Fire Service is also active within the community assisting in the management of large undeveloped land parcels and actively working towards mitigating bushfire risk in the community.

There are no specific bushfire mitigation measures required to support the expanded development of the site. There is no requirement to clear vegetation for the purposes of bushfire protection for the Family Villas along the southern boundary of the site

5. BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT

The requirements for construction of buildings in bushfire prone areas are specified in AS3959 (Construction of buildings in bushfire-prone areas (SAL, 2011)). The construction standards identified in the standard are aimed at achieving resilience against the mechanisms of bushfire attack, relevant to the specific site, to provide a place of refuge during the passage of a fire front and enable occupants to then actively protect the building from the residual impact from the passage of a bushfire front.

The Bushfire Attack Levels and description of predicted bushfire attack is described in Table 3.

TABLE 3 BAL AND DESCRIPTION OF LEVELS OF EXPOSURE (FROM AS3959-2018, (SAL, 2011))

BAL	Heat flux exposure thresholds	Description of predicted bushfire attack and levels of exposure
BAL – 12.5	≤ 12.5 kW/m^2	Ember Attack
BAL – 19	> 12.5 kW/m^2 ≤ 19 kW/m^2	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux.
BAL – 29	>19 kW/m^2 ≤ 29 kW/m^2	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux.
BAL – 40	>29 kW/m^2 ≤ 40 kW/m^2	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux with the increased likelihood of exposure to flames.
BAL – FZ	> 40 kW/m^2	Direct exposure to flames from fire front in addition to heat flux and ember attack.

5.1. BAL ASSESSMENT METHODOLOGY

The BAL Assessment methodology uses quantified factors contributing to bushfire behaviour to apply a classification of bushfire behaviour to a defined location (such as a house site or property boundary). The assessment considers vegetation and slope within a 100m radius from the subject site.

Factors considered in the assessment of the BAL include:

- Identification of FFDI (Forest Fire Danger Index),
- Vegetation Classification

- Configuration of the site in relation to bushfire prone vegetation,
- Effective slope under bushfire prone vegetation,

The determined BAL is then used to identify the appropriate construction requirements.

5.2. BAL ASSESSMENT PARAMETERS

The simplified procedure (Method 1) for BAL assessment is fully described in Section 2.2 of AS3959. It utilises a number of quantitative factors based on site characteristics.

5.2.1. FIRE DANGER INDEX

The Fire Danger Index (FDI) identified for Queensland is 40 (Table 2.1 of AS3959).

5.2.2. VEGETATION CLASSIFICATION

Vegetation within 100m of the subject site shall be classified in accordance with Table 2.3 and Figures 2.4(A) to 2.4(G) of AS3959. Where there is more than one vegetation type, each type shall be classified and assessed separately. The bushfire attack level will be determined to be BAL-LOW where vegetation is a low threat.

5.2.3. DISTANCE FROM CLASSIFIED VEGETATION

The distance to classified vegetation is taken in the horizontal plane to the nearest external wall of the proposed building or for parts that do not have filled walls (e.g., carport or verandah), to the supporting structure.

5.2.4. EFFECTIVE SLOPE

The effective slope is taken as the slope of the land underneath the subject bushfire prone vegetation, disregarding the slope of the land between the building and the vegetation.

5.2.5. BUSHFIRE ATTACK LEVEL

BAL is based on the distance from classified vegetation and effective slope, Table 2.4.5 from AS3959-2018 will define the BAL appropriate to the site.

5.3. BAL ASSESSMENT – 26 – 40 HORSESHOE BAY DRIVE, HORSESHOE BAY

5.3.1. FIRE DANGER INDEX

The Fire Danger Index (FDI) identified for Queensland is 40 (Table 2.1 of AS3959).

5.3.2. VEGETATION CLASSIFICATION

There are three vegetation classes assessed for this site, shown in the attached map (Vegetation Classification – AS3959):

- *Non-vegetated area – Roadway*
- *Low Threat Undeveloped Urban Land*
- *Low Threat Vegetation*
- *Low Threat Suburban Lots*
- *Low Threat Boulder Field*

5.3.3. DISTANCE FROM CLASSIFIED VEGETATION

All vegetation within the assessment area has been classified as low threat. Distance to classified vegetation exceeds the 100m assessment area.

5.3.4. EFFECTIVE SLOPE

The effective slope is flat or upslope for the purposes of BAL Assessment.

5.4. BUSHFIRE ATTACK LEVEL (BAL)

The indicated development area at **26 - 40 HORSESHOE BAY ROAD, HORSESHOE BAY** is subject to **BAL LOW** due to no classified vegetation within 100m of the proposed structures..

TABLE 4 WOODLAND BAL LEVELS WHERE FDI = 40 (EXTRACT FROM TABLE 2.4.5 FROM AS3959-2018).

	Bushfire Attack Levels (BALs)				
	BAL - FZ	BAL - 40	BAL - 29	BAL - 19	BAL - 12.5
Vegetation Classification	Distance (m) of the site from the predominant vegetation class				
	All upslopes and flat land (0 degrees)				
Woodland	<6	6 - <9	9 - <13	13 - <19	19 - <100

5.5. CONSTRUCTION REQUIREMENTS.

The proposed construction at **26 - 40 HORSESHOE BAY ROAD, HORSESHOE BAY** is subject to **BAL LOW** due to the absence of classified bushfire prone vegetation within 100m proximity of the proposed structure, as shown in the **BAL Assessment** map in Appendix 1.

6. CONCLUSIONS

Assessment of the site confirms vegetation community dynamics typical of long unburnt tropical woodlands. This produces a much less fire prone landscape than benchmark characteristics would indicate. The absence of fire in this landscape is attributable to the expansion of suburban landuse, and the desire to reduce the impacts of frequent burning in close proximity to island communities. It is expected that this exclusion of fire will continue, and thus the increased shade, cooler temperatures and higher moisture content within these areas will continue to promote the development of vine thicket communities, and in turn limit the likelihood for unplanned fire.

The site is not considered to be bushfire prone, the likely fire scenarios do not present a potential fireline intensity or mode of impact that has potential to create a hazard at the site.

The low bushfire hazard negates the need for specific bushfire mitigation measures to achieve the objectives of the state planning policy or Townsville City Plan bushfire prone land overlay. In the absence of any specific measures, this implies that no vegetation clearing is required to achieve bushfire hazard reduction outcomes, and thus the objectives of the Townsville City Plan natural assets overlay code are also met.

6.1. RECOMMENDATIONS

Regardless of the outcome of the bushfire hazard and BAL assessment, it is important that bushfire mitigation measures be considered in the context of temporary and rooming accommodation properties.

ANNUAL MAINTENANCE

Annual maintenance should be completed by the commencement of the fire season (June), and monitored for the duration of the fire season (until set in of the wet season) includes:

- Building maintenance to ensure building standards are maintained (fixing torn or broken window screens, external doors function correctly and close properly, screens to vents and weepholes are functional as designed etc).
- removal of leafy debris and twigs accumulated on low pitched roofs and in gutters (where applicable) and removal of garden rubbish including lawn clippings away from buildings.
- Appropriate storage of combustible materials (lawn mower fuel, chemicals etc) so they are not vulnerable to ember attack.
- Irrigation may be employed to maintain high moisture content in gardens close to buildings.

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APPENDIX A – MAPS

BAL Assessment
40 HORSESHOE BAY ROAD, HORSESHOE BAY, QLD 4819 (3SP226268)
Site Location

- 3SP226268
- Property Boundaries
- AssessmentArea
- Roads
- 5m Contour
- Watercourse

Existing Infrastructure
- Accomodation
- Amenities
- Wildlife Sanctuary

New Infrastructure
- Accomodation
- Amenities
- Decking

Paths
- Existing
- New
- Roadway

0 40 80 m

GDA2020 MGA Zone 55

N

Notes:
Roads from Queensland_roads_and_tracks© Queensland Government
Property Boundaries and Development Properties from DP_QLD_DCDB_WOS_CUR© Queensland Government
QLD 5m contours from Queensland Government
Aerial Ortho Time Series (All Users) from State of Queensland

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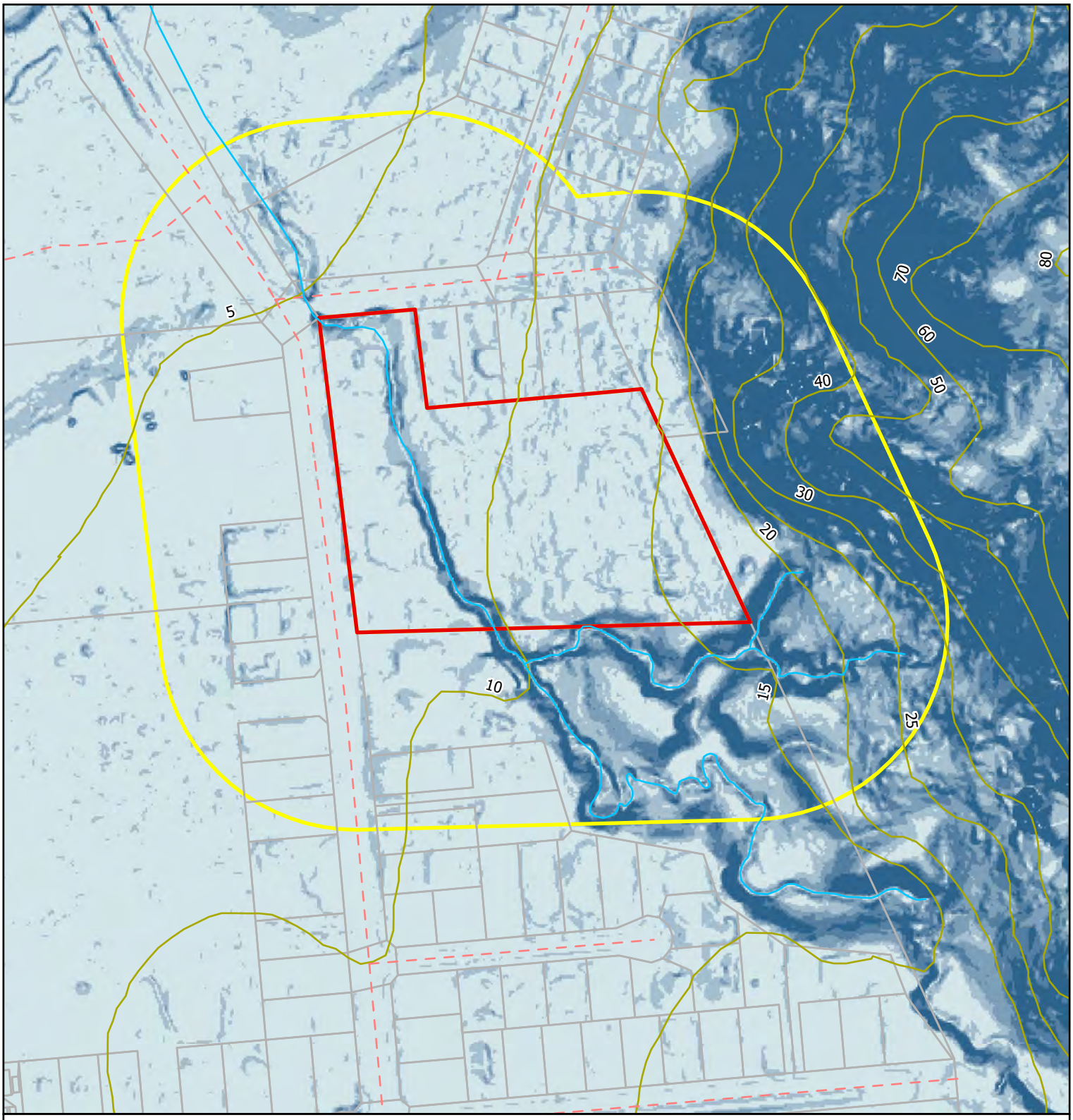

BAL Assessment
40 HORSESHOE BAY ROAD, HORSESHOE BAY, QLD 4819 (3SP226268)
Topography

- 3SP226268
- Property Boundaries
- AssessmentArea
- Roads
- 5m Contour
- Watercourse

Slope (Degrees)

- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- >20 degrees

Notes:
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0 50 100 m

GDA2020 MGA Zone 55

N

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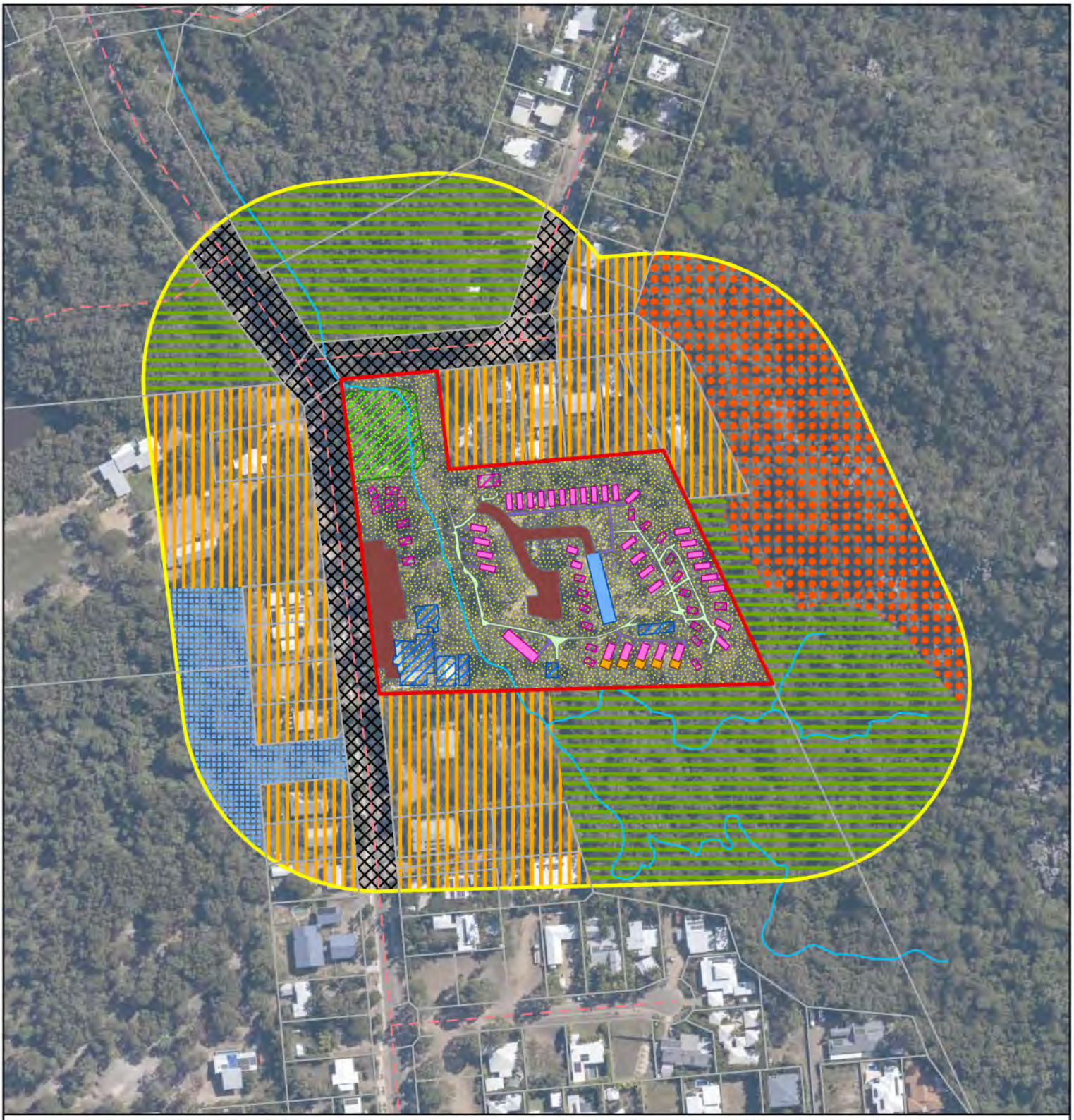

Bushfire Hazard Assessment
40 HORSESHOE BAY ROAD, HORSESHOE BAY, QLD 4819 (3SP226268)
Vegetation Classification- AS3959

0 30 60 m
GDA2020 MGA Zone 55

N

- 3SP226268
- Property Boundaries
- AssessmentArea
- Roads
- Watercourse

Existing Infrastructure
- Accomodation
- Amenities
- Wildlife Sanctuary

New Infrastructure
- Accomodation
- Amenities
- Decking

Paths
- Existing
- New
- Roadway

Vegetation
- Low Threat Vegetation - Not Bushfire Prone
- Low Threat Vegetation - Undeveloped Urban Land
- Low Threat Vegetation - Boulder Field
- Low Threat Vegetation - Suburban Lots
- Non-vegetated Area - Roadway
- Low Threat Vegetation - Minimal Fuel

Notes:
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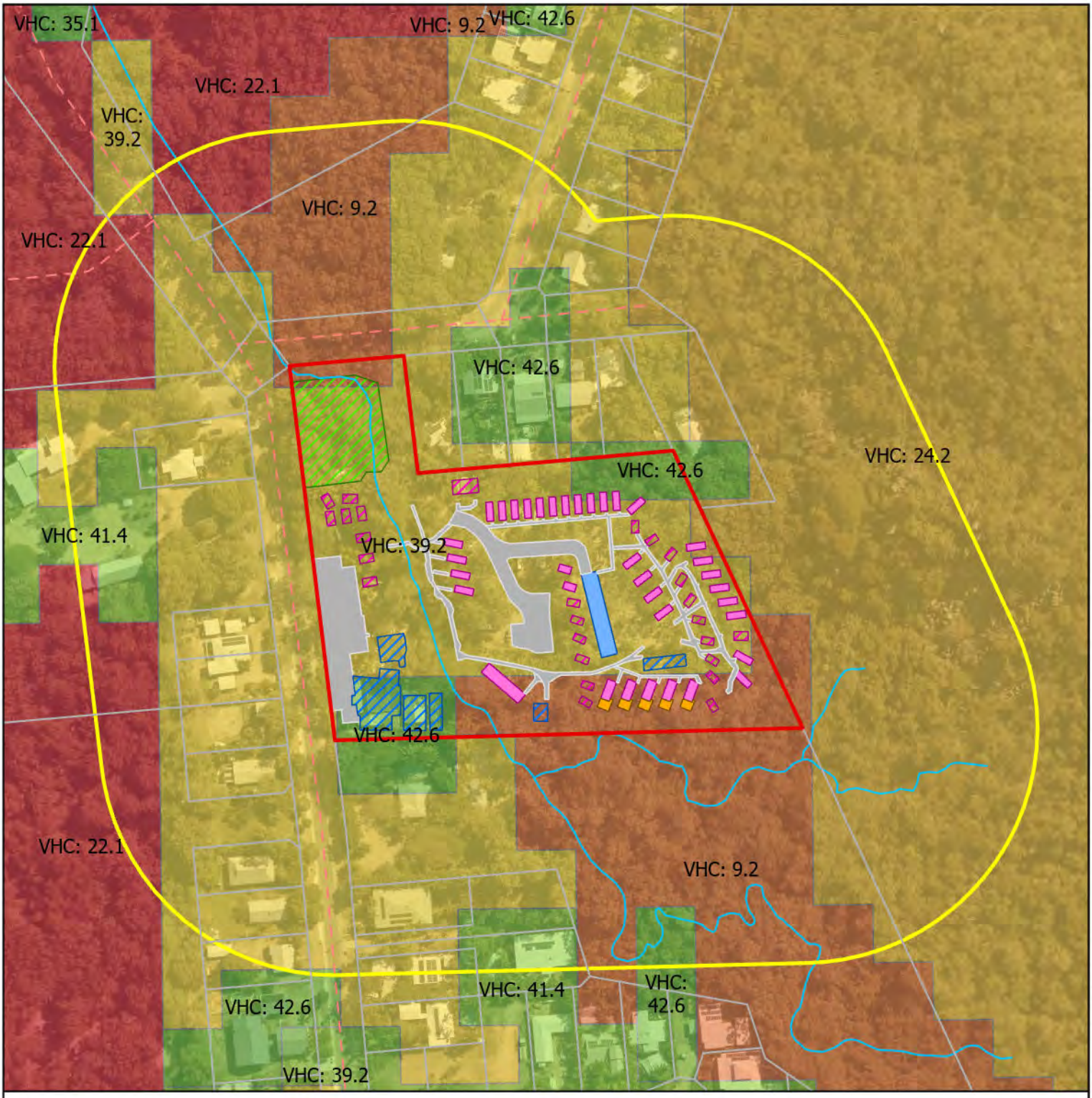

Bushfire Hazard Assessment
40 HORSESHOE BAY ROAD, HORSESHOE BAY, QLD 4819 (3SP226268)
Vegetation Hazard Class (State Planning Policy)

0 30 60 m
GDA2020 MGA Zone 55

N

- 3SP226268
- Property Boundaries
- Assessment Area
- Roads
- Watercourse

Existing Infrastructure
- Accomodation

- Amenities
- Wildlife Sanctuary

New Infrastructure
- Accomodation
- Amenities
- Decking
- Driveways, Paths and Carparking

Vegetation Hazard Class (Fuel Weight [tonnes per hectare])
- 35.1 Closed to open forest mangroves (0 tph)
- 42.6 Nil to very low vegetation cover (2 tph)
- 41.4 Low grass or tree cover in built-up areas (3 tph)
- 39.2 Low to moderate tree cover in built-up areas (8 tph)
- 2,24.2 Acacia woodlands on residuals (8 tph)
- 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges (17.2 tph)
- 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps (28.4 tph)

Notes:
Roads from Queensland_roads_and_tracks© Queensland Government
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