



TAIHS GORDEN STREET MASTER PLANNING

**TOWNSVILLE ABORIGINAL & ISLANDER
HEALTH SERVICE (TAIHS)
57-59 GORDEN STREET, GARBUTT**

WATER SUPPLY & SEWERAGE PLANNING REPORT



**Date: 4 December 2025
(Revision B)**

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REPORT AUTHORISATION				
Revision	Revision Date	Details	Prepared by	Signature
A	02/12/2025	Original Report	Desmond Moseley (RPEQ 7565)	
B	04/12/2025	Updated Report (Minor Adjustments)	Desmond Moseley (RPEQ 7565)	

1 INTRODUCTION

A holistic health centre development is proposed on the Townsville Aboriginal & Islander Health Service (TAIHS) site at 57 - 59 Gorden St, Garbutt. The site is to be re-developed to include a range of health services and administration services.

The proposed re-development of the site will involve a number of buildings with the location of the proposed development and multiple buildings being illustrated on the overall site development plan below.

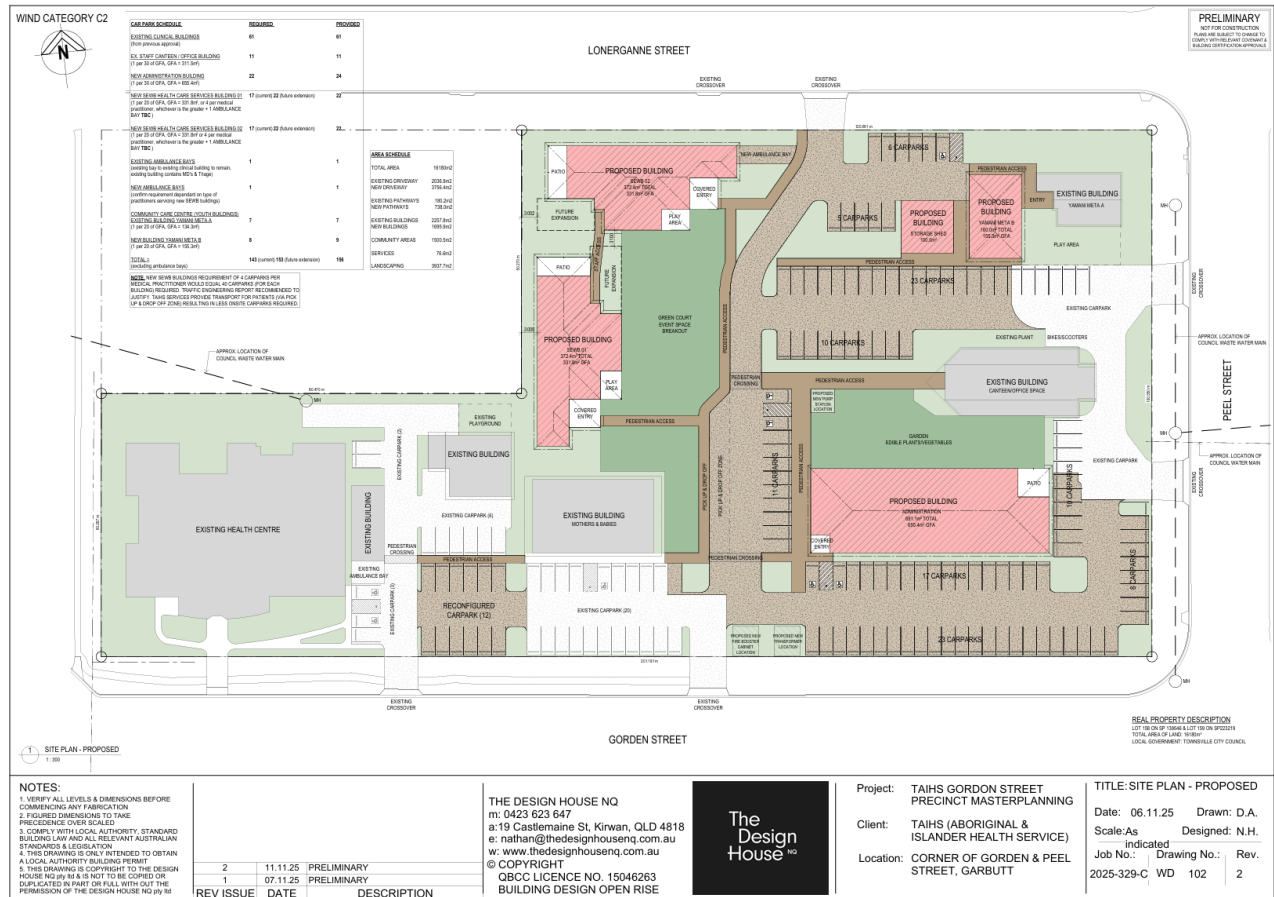


Figure 1.1 - Townsville Aboriginal & Islander Health Service Redevelopment Plan

The various buildings are to be single storey that will house multiple clinic/consultation rooms along with staff offices. The development plans are included in Appendix A.

To ensure the proposed health centre development can be adequately serviced with a potable water supply and sewage system in accordance with Council standards, an assessment of the system capacities have been undertaken. This report summarises the assessment of the existing water and sewerage network with this illustrating:

- The water network modelling shows the existing DN100 reticulation water mains along Gorden St is adequately sized to service the development in accordance with Townsville Council standards.
- A new water service and meter is to be connected off the existing DN100 PVC water main on the frontage of the existing TAIHS medical centre with a new “private” water main and fire service to be extended within the development site to a new fire booster assembly located adjacent to the driveway to the new health service facility carpark. The sizing and design of the new water and fire service is to be undertaken as part of the new building

hydraulic and fire services design to meet any specific building/fire code requirements for the various development buildings.

- A new private package sewage pump station will need to be constructed to service the re-development of the site as the existing Council gravity sewer system is not deep enough to service all the new buildings. Sewage from the package pump station will be directed via a private DN63 PE pressure main to discharge into new sewer maintenance hole within the development site. A DN150 gravity sewer will extend to the east from the new discharge MH into existing MH 6/11C4A near the intersection of Peel St and Lonerganne St. The proposed location of the private package pump station is illustrated on the development figures in Appendix C. The alignment of the private DN63 PE sewer pressure main and the design of the discharge gravity sewer will be determined as part of the hydraulic services design of the new buildings.

The water network modelling and sewer system capacity assessment undertaken for this development is summarised in the following report sections. The figure below from the Townsville City Council GIS illustrates the location of the proposed redevelopment of the TAIHS site with the existing water & sewer infrastructure.

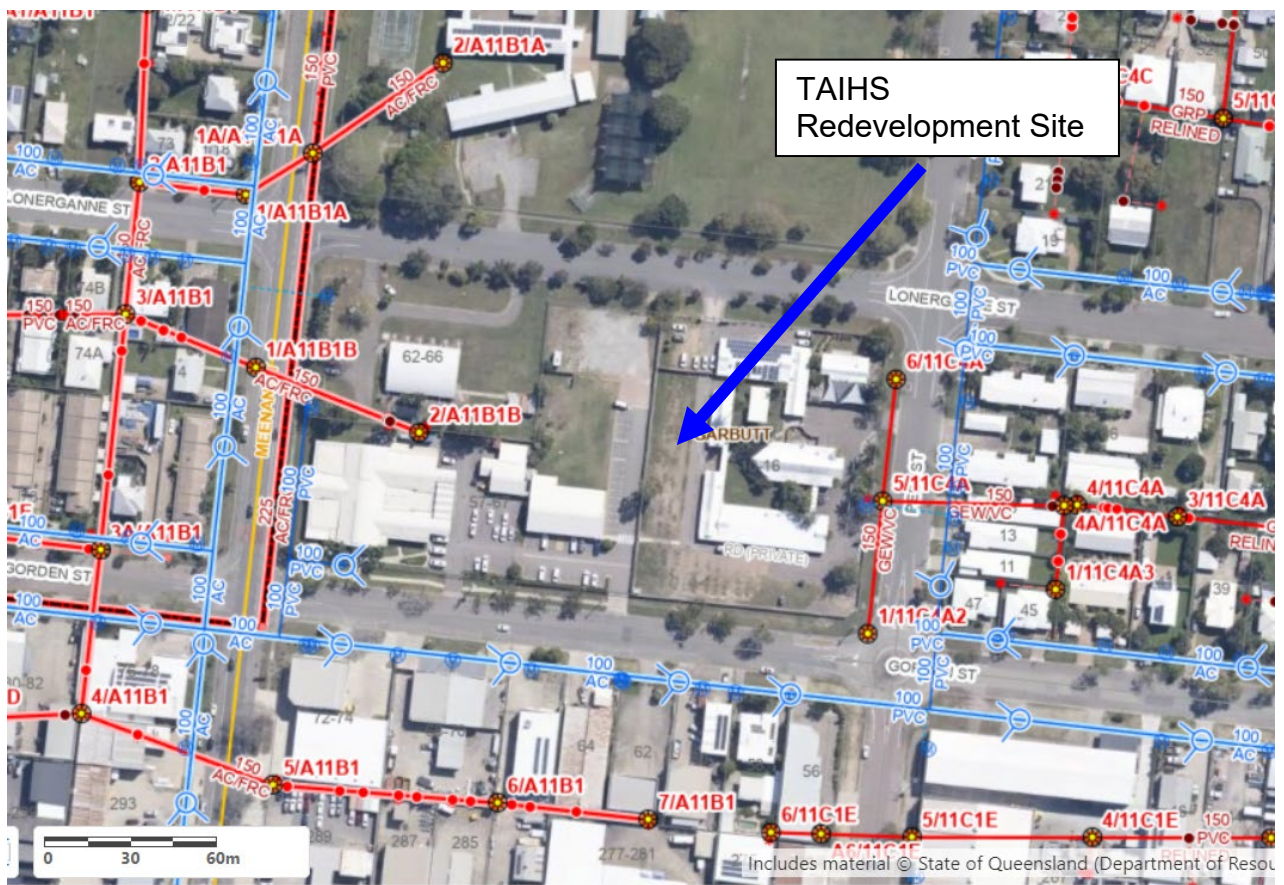


Figure 1.2 – Development Site Location

2 POPULATION ASSESSMENT

The following section provides the population assessment for the proposed TAIHS site in Garbutt.

Two methods have been used to estimate the equivalent population of the TAIHS site redevelopment with these summarised below.

Method 1 – Infrastructure Demand Unit Rates

The equivalent population assessment has been developed based on the unit rates detailed in “Table 8.1 – Infrastructure Demand Unit Rates” of the Local Government Infrastructure Plan – DSS, Definitions & Demands (April 2017) that is extrinsic referenced material to the Townsville CityPlan. The specific details of the equivalent population estimate for the development is provided in the following tables.

The proposed development has a Gross Floor Area (GFA) of 1,574 m² as detailed on the development plans in Appendix A. The remainder of the site is carparking and landscaping. This GFA has been used to determine the equivalent population loading from the site.

Table 2.1 – Water Equivalent Population Assessment

	Area	Loading Rate	EP
Health Centre (Services)	1,574 m ² GFA	1.35 EP/100m ²	21.3 EP

Table 2.2 – Sewage Equivalent Population Assessment

	Area	Rate	EP
Health Centre (Services)	1,574 m ² GFA	1.88 EP/100m ²	29.6 EP

The above equivalent population assessment has been used in the water supply and sewer system capacity assessment for the proposed development.

Method 2 – Fixture Units

This method compares the number of plumbing fixture units within the proposed redevelopment facilities to the number of plumbing fixture units in an average residential house. This is then above to be converted to an equivalent population.

The proposed development plans in Appendix A illustrate the proposed internal development layout of the various redevelopment buildings. The plumbing fixtures have been converted to fixture units based on the plumbing & drainage code (AS3500). The summary of the fixture units for the proposed development is provided in Table 2.2 below.

Table 2.2 Fixture Unit Assessment

Fixture Unit Type	Fixture Unit Rating	Number	Total Fixture Units
Toilets (WC)	6 units	15	90 units
Hand basins	1 unit	15	15 units
Showers	2 units	2	4 units
Tub (Cleaners Sink)	1 unit	3	3 units
Kitchen	5 units	2	10 units
Total			122 units

A standard house generally contains 24 fixture units so the TAIHS site redevelopment would be equivalent to $122 / 24 = 5.08$ houses. Based on Townsville City Council occupancy rate of 2.8 EP/lot this would give $5.08 \times 2.8 = 14.2$ EP.

The above assessment shows that the adoption of the infrastructure demand unit rates gives the higher equivalent population and have been used for this assessment. The adopted equivalent population is:

- Water EP = 21.3 EP
- Sewer EP = 29.6 EP

3 WATER SUPPLY PLANNING

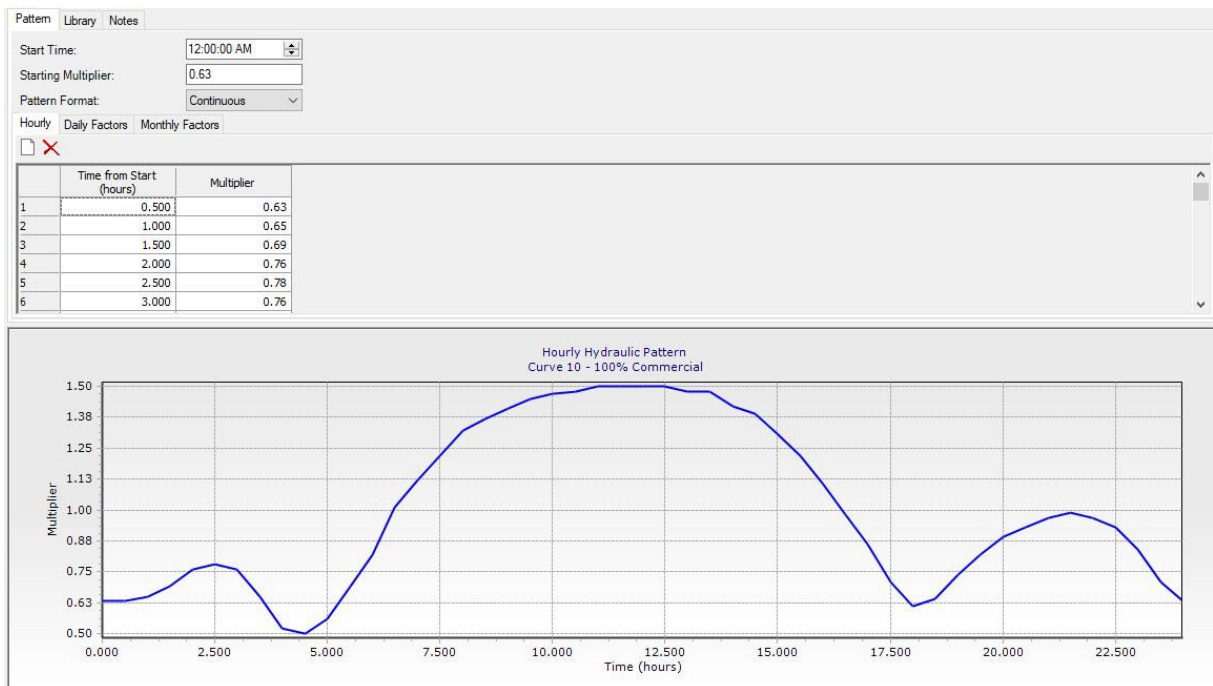
3.1 Water Demand

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

Townsville Council also have diurnal water demand patterns that are applied to the various water uses. As the proposed development is commercial, the commercial demand diurnal pattern will be applied. The commercial demand diurnal pattern has a peaking factor of 1.5, instead of the 2.56 peaking factor provided in the above table for residential water demands. The commercial diurnal pattern is illustrated below.



Based on an equivalent population of 21.3 EP, the peak water demand for the development is:

$$\begin{aligned}
 &= 21.3 \text{ EP} \times 1125 \text{ L/day/EP} \times 1.5 \text{ (commercial peaking factor)} \\
 &= 21.3 \times (1125 / (24 \times 3600)) \times 1.5 \\
 &= 0.42 \text{ l/s}
 \end{aligned}$$

The water network modelling includes the existing equivalent population and water demands for the existing facilities on the TAIHS site that are being retained.

In addition to the above, as the development is commercial a 30 l/s fire flow is required in accordance with Council’s design standards.

It is noted that the Building Code may require a different fire flow standard depending on the actual building classification. This assessment has not specifically assessed the performance against the building code requirements.

3.2 Water Supply Assessment & Network Modelling

The site for the proposed health services redevelopment site is located on the southern side of Lonerganne St in Garbutt. The TAIHS overall site covers the majority of the commercial land parcel that is bounded by Meenan St, Lonerganne St, Peel St and Gorden St in Garbutt. The existing water infrastructure that services the TAIHS site includes:

- A DN475 MSCL trunk main runs parallel to Ingham Rd (southern side of QR line) and to the south of the development site. There are existing offtakes from this trunk water main into the Garbutt area. A DN375 CI trunk water main runs along Percy St to the east of the Garbutt area. There are existing offtakes from this trunk water main into the Garbutt area.
- Both the above two trunk water mains are supplied from the Mt Louisa reservoir site and provide the potable water supply to the Garbutt area.
- The Garbutt area is serviced with a network of DN150 AC/PVC and DN100 AC/PVC reticulation mains that are generally located along both sides of the residential streets.
- There are existing DN100 reticulation mains located on the southern side of Gorden St, western side of Meenan St and eastern side of Peel St. There is also an existing DN100 PVC main that is located on the northern side of Gorden St that services the existing TAIHS Medical Centre at the intersection of Meenan St and Gorden St.
- The following extract from the Council GIS illustrates the existing water infrastructure that services the development site.

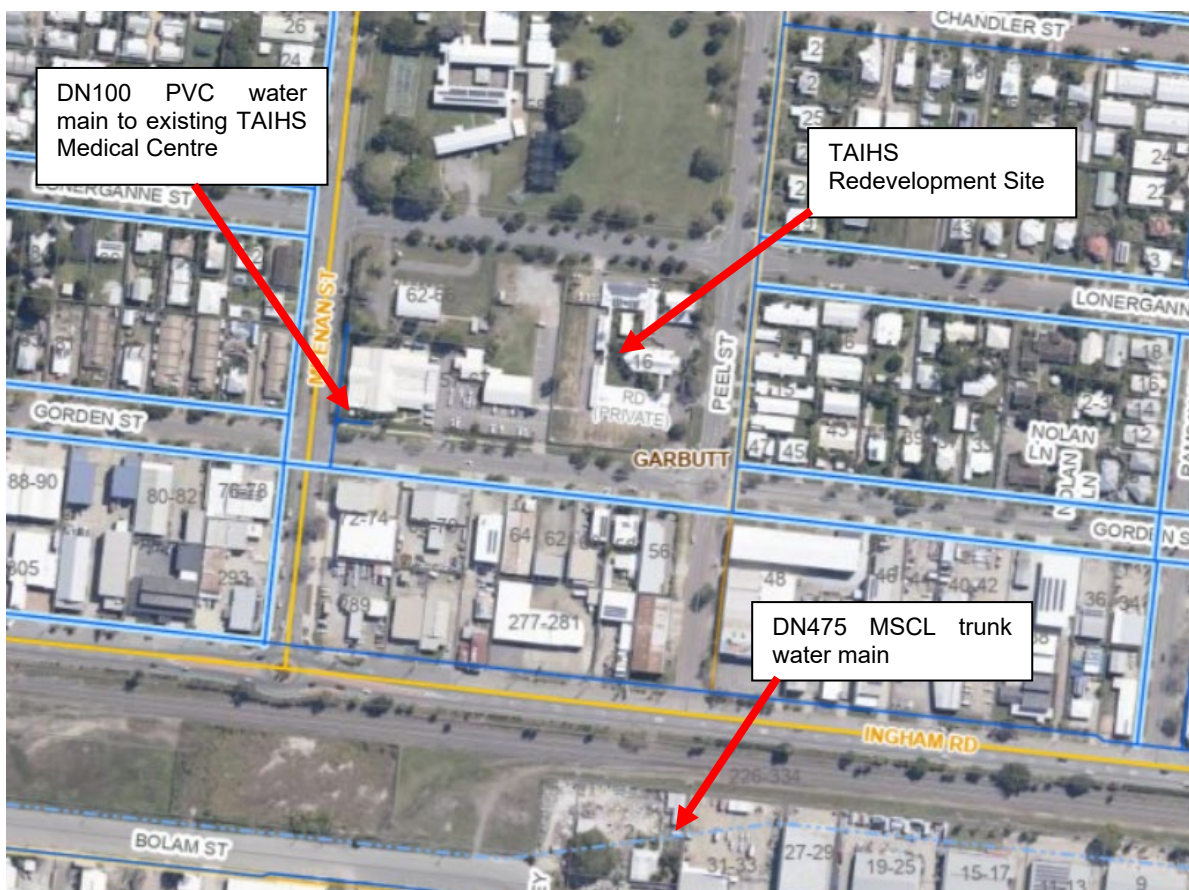


Figure 3.1 – Council GIS Plot

The water supply to the new TAIHS redevelopment area will be as follows, and illustrated on the extract of the site layout plan:

- New water service connection to the end of the existing DN100 PVC water main on the northern side of Gorden St (near the Meenan St intersection). This is the location of the existing water service and water meter to the existing TAIHS medical centre.
- A new water meter and fire service offtake (including RPZD and detector check valve) to be connected to this existing DN100 water main. The size of the water meter and fire service offtake will be confirmed as part of the building hydraulic and fire system design but is expected to be a DN100 offtake and service.
- A new “private” water and fire service will be constructed within the TAIHS site and will run parallel to Gorden St to the east. A new fire booster assembly will be installed on the Gorden St frontage of the development and adjacent to the new driveway to the health services facility. The new private water/fire main is expected to be DN100 to provide the required fire flows.
- New fire mains will extend from the booster assembly to service the various redevelopment buildings.
- The final location and sizing of the private potable water main and fire service and associated booster assembly will be confirmed as part of the building hydraulic design and certification.

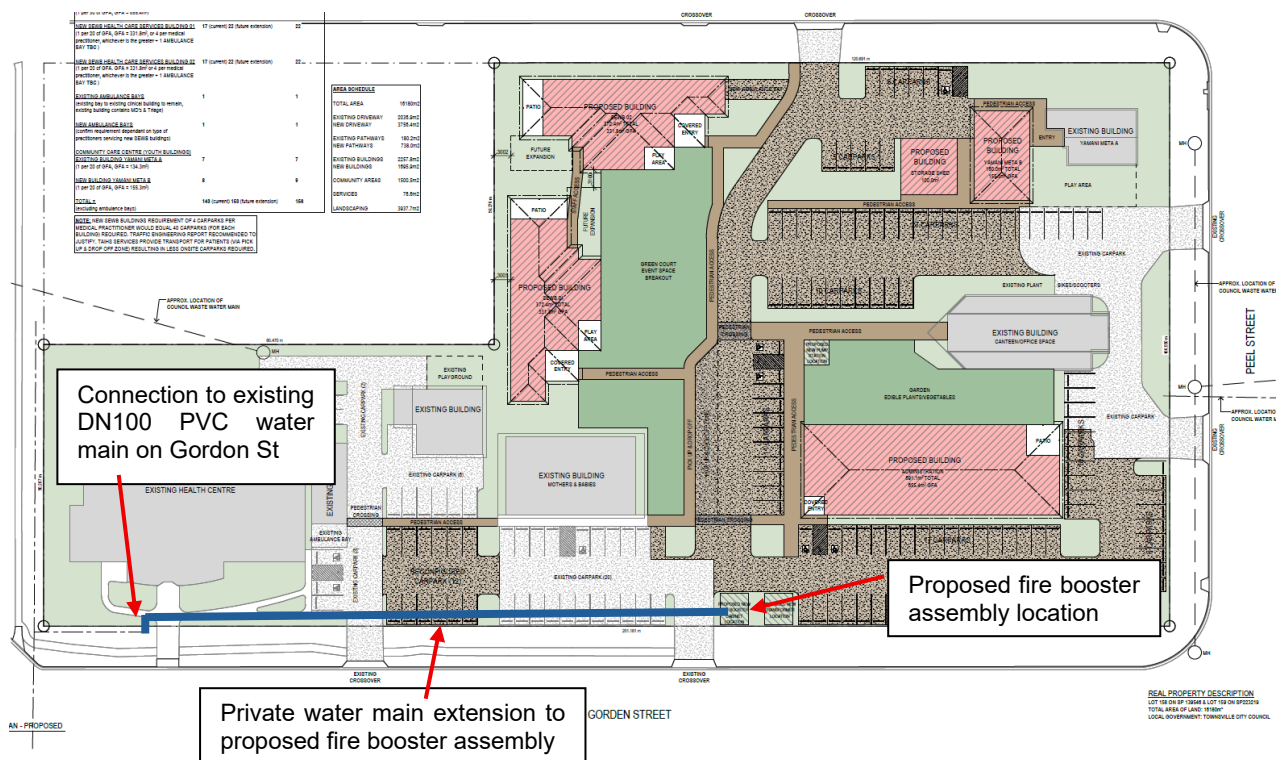


Figure 3.2 – Private Water Supply Concept

Theoretical water network modelling has been performed to assess the capacity of the existing water network. The modelling was undertaken using the Council’s WaterGems network model for both the peak hour demands and fire flows.

The theoretical WaterGems network modelling results with the inclusion of the water demands from the proposed development shows:

- The peak hour pressures at 12 noon (ie the peak commercial demand period) are reduced to 531 kPa. This meets the minimum pressure requirement of 220 kPa.
- The peak hour pressure at 7pm (ie the peak residential demand period) are reduced to 387 kPa. This is a lower pressure and is due to the large areas of residential development in the nearby suburbs. This meets the minimum pressure requirement of 220 kPa.
- The headloss gradient along the existing DN100 PVC water main crossing of Gorden St and along Gordan St to the proposed new water meter offtake is less than 0.001 m/m with the pipe velocities up to 0.05 m/s. These both meet Council design standards. Some of the other reticulation water mains in the Garbutt area have headloss gradients of greater than 0.005 m/m with this being the existing performance of these pipes. The velocities are all less than 1.0 m/s so meet Council standards.
- The fire flow assessment applied 30 l/s fire flow to the end of the existing DN100 PVC water main on Gorden St (where the water service offtake will be located). This is a conservative assessment as the TCC standard allows for the 30 l/s fire flow from up to three hydrants so the full 30 l/s commercial fire flow would not all be drawn off the end of the single DN100 water main on the frontage of the existing TAIHS medical centre.
- With the inclusion of the 30 l/s fire flow, the water pressures are reduced to 146 kPa within the water mains. This is the pressure at 7pm and is concurrent with the peak residential demand period and meets the Council minimum pressure requirement of 120 kPa. The velocity along the DN100 water mains is 3.86 m/s and meets the Council design standards of being less than 4.0 m/s for fire flows.
- The WaterGems figure and results table are provided in Appendix B.

The above theoretical water network modelling shows that the proposed TAIHS redevelopment site in Garbutt is able to be serviced with a potable water supply that meets Council's standards with no upgrades required. The following figure illustrates the peak hour demands and water pressure at the proposed offtake on the end of the existing DN100 PVC main on Gorden St.

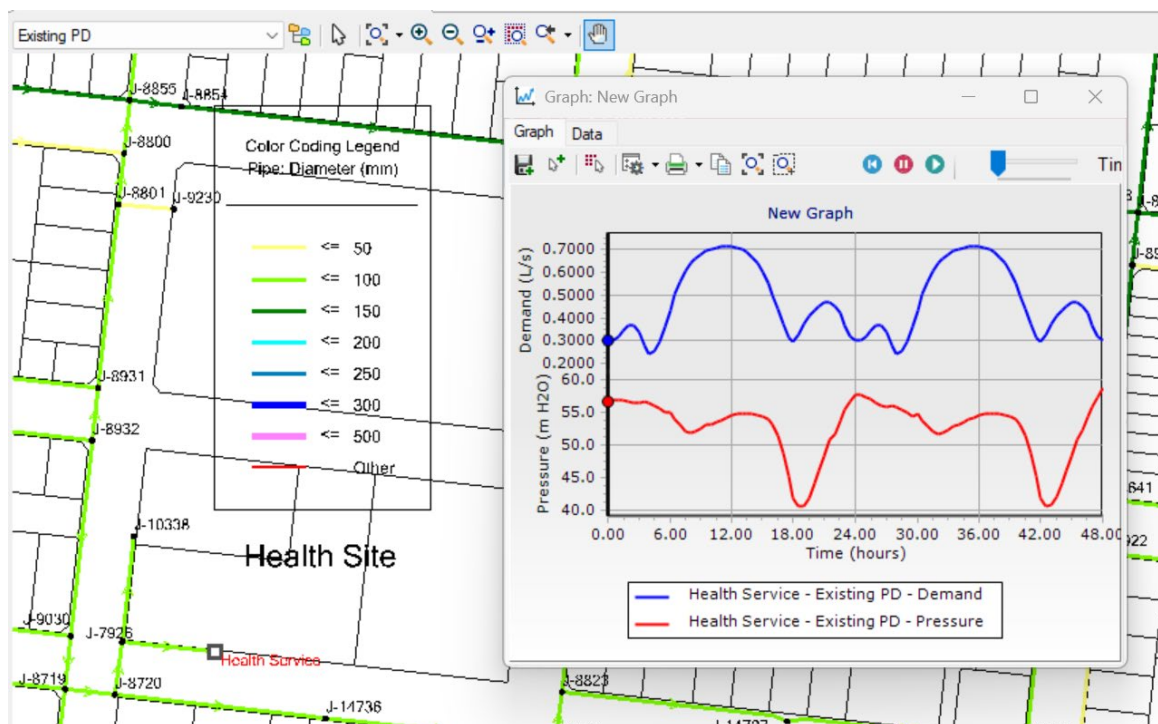


Figure 3.2 – Peak Hour Water Demand & Pressures

It is noted that the fire flow WaterGEMS network modelling is to assess the proposed developments performance against Townsville Council planning standards. Based on the type/classification of the health services site redevelopment, the Building Code may require different fire flow and pressure standards.

The sizing of the “private” water supply and fire booster assembly and the water system performance against the building code requirements has not been considered as part of this assessment.

The following extract from the Council’s GIS illustrates the existing gravity sewer system that would have the sewage from the proposed TAIHS redevelopment pumped into it.

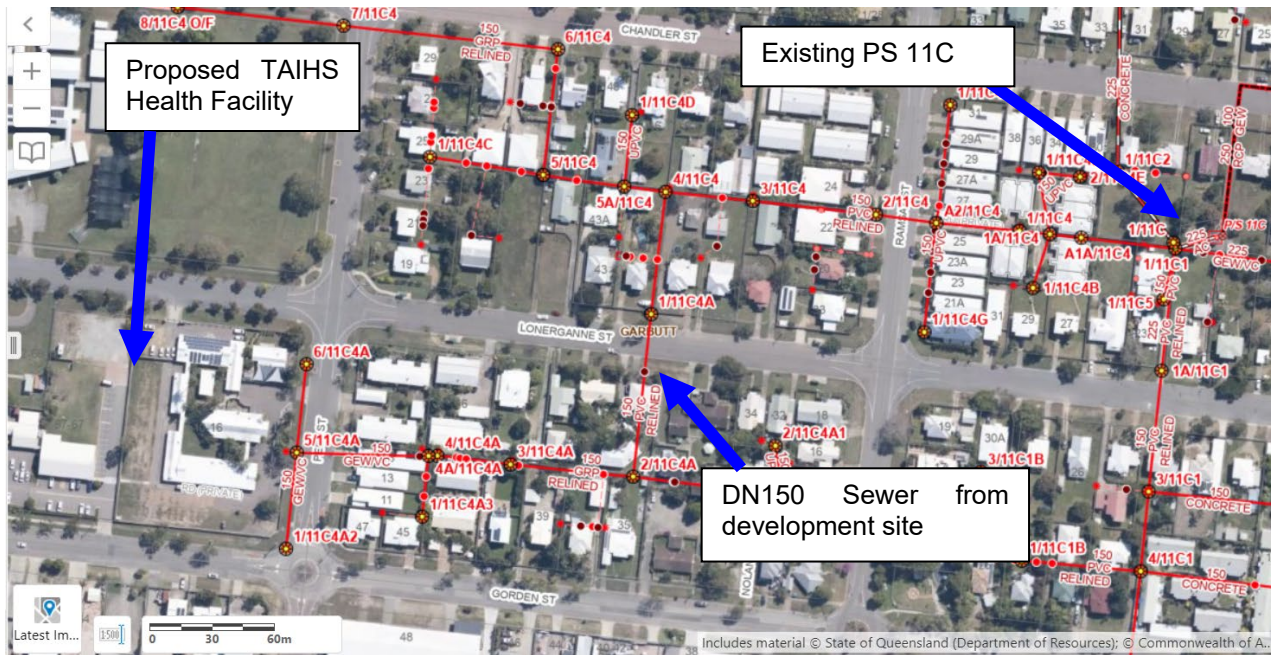


Figure 4.2 – GIS Plot of Existing Sewer System

4.1 Sewage Infrastructure Capacity

The capacity of the existing gravity sewer system to cater for the proposed TAIHS Health facility redevelopment site sewage flows has been assessed using the SewerGEMS model developed for the Eastern & Western Suburbs sewer system, which PS 11C and its gravity sewer system is part of.

The SewerGEMS model was updated to include the following:

- A preliminary package sewage pump station at the development site.
- DN63 PE pressure main (internal diameter of 50mm) from the pump station to the proposed discharge MH near the Peel St & Lonerganne St.
- DN150 gravity sewer from the discharge MH to existing MH 6/11C4A.
- The peak wet weather flow (PWWF) from the TAIHS redevelopment would be:

$$\text{PWWF} = \text{EP} \times 230 \text{ l/EP/Day} \times \text{C1}$$

$$\text{C1 (Peaking Factor)} = 15 \times \text{EP}^{-0.1587}$$

$$\text{PWWF} = 29.6 \times 230 \times 15 \times 29.6^{-0.1587}$$

$$= 59650.87 \text{ l/Day}$$

$$= 0.69 \text{ l/s}$$

- The pump rate was set at a higher flow compared to the above PWWF. The pump rate was set as 1.5 l/s which is required to achieve the minimum velocity of 0.75 m/s in the proposed DN63 PE pressure main.

The extract from the SewerGEMS model is provided on Figure 4.3 below.

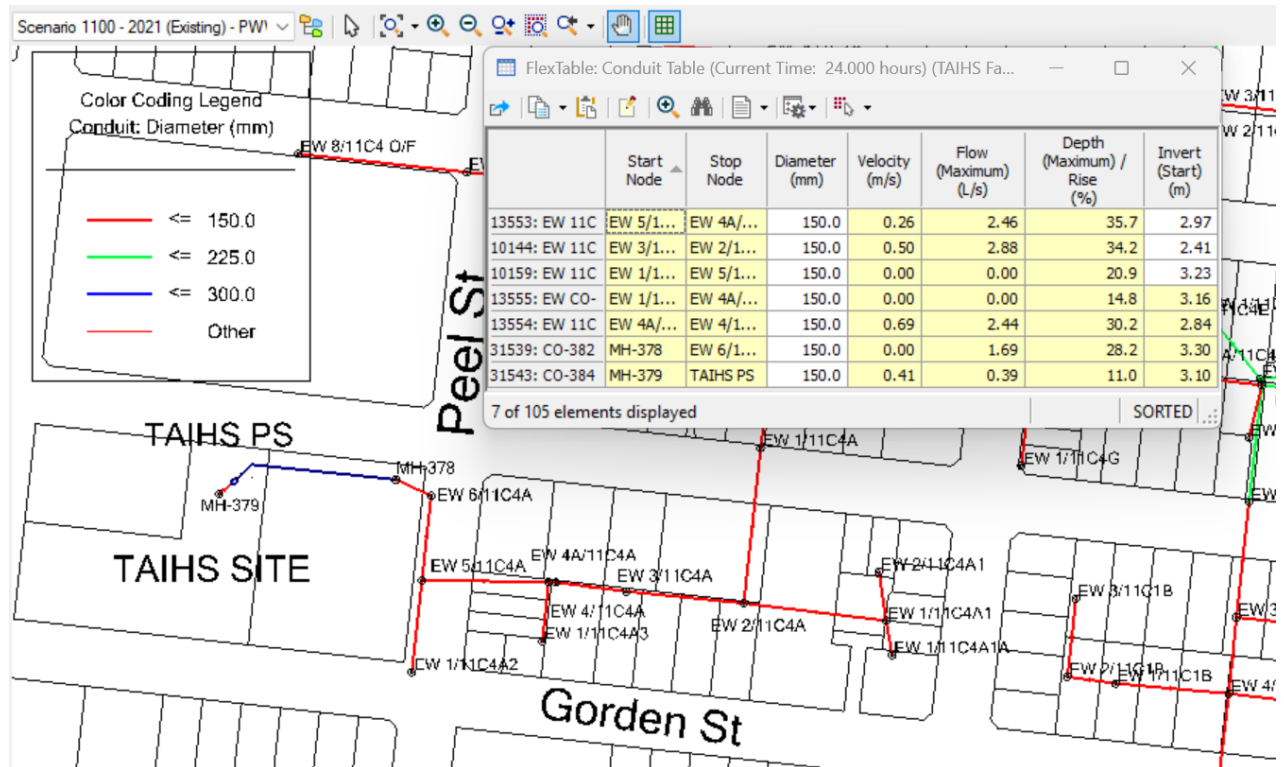


Figure 4.3 – SewerGEMS Modelling Results

With the inclusion of the additional equivalent population loading and the preliminary package sewage pump station, the SewerGEMS model has illustrated:

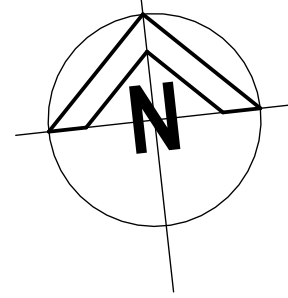
- The preliminary package PS would be able to discharge the 1.5 l/s along the DN63 PE pressure main with a pump head of around 5 m.
- The existing DN150 sewer from MH 6/11C4A (the proposed discharge MH on Peel St) to existing PS 11C (Chandler St) flows up to 36% full for the peak wet weather flows.
- All the existing sewers flow less than 75% full which is the maximum value allowable in the CTM code.

The above Figure 4.3 provides the flows and performance of the existing gravity sewer system with the inclusion of the additional loading from the proposed development. A larger version of the modelling results is provided in Appendix C.

The above assessment illustrates the existing gravity sewer system has sufficient capacity to cater for the pumped flows from the proposed private package sewage pump station that will be required to service the TAIHS redevelopment site on Gordan St, Garbutt.

APPENDIX A TAIHS HEALTH CENTRE PLANS

WIND CATEGORY C2



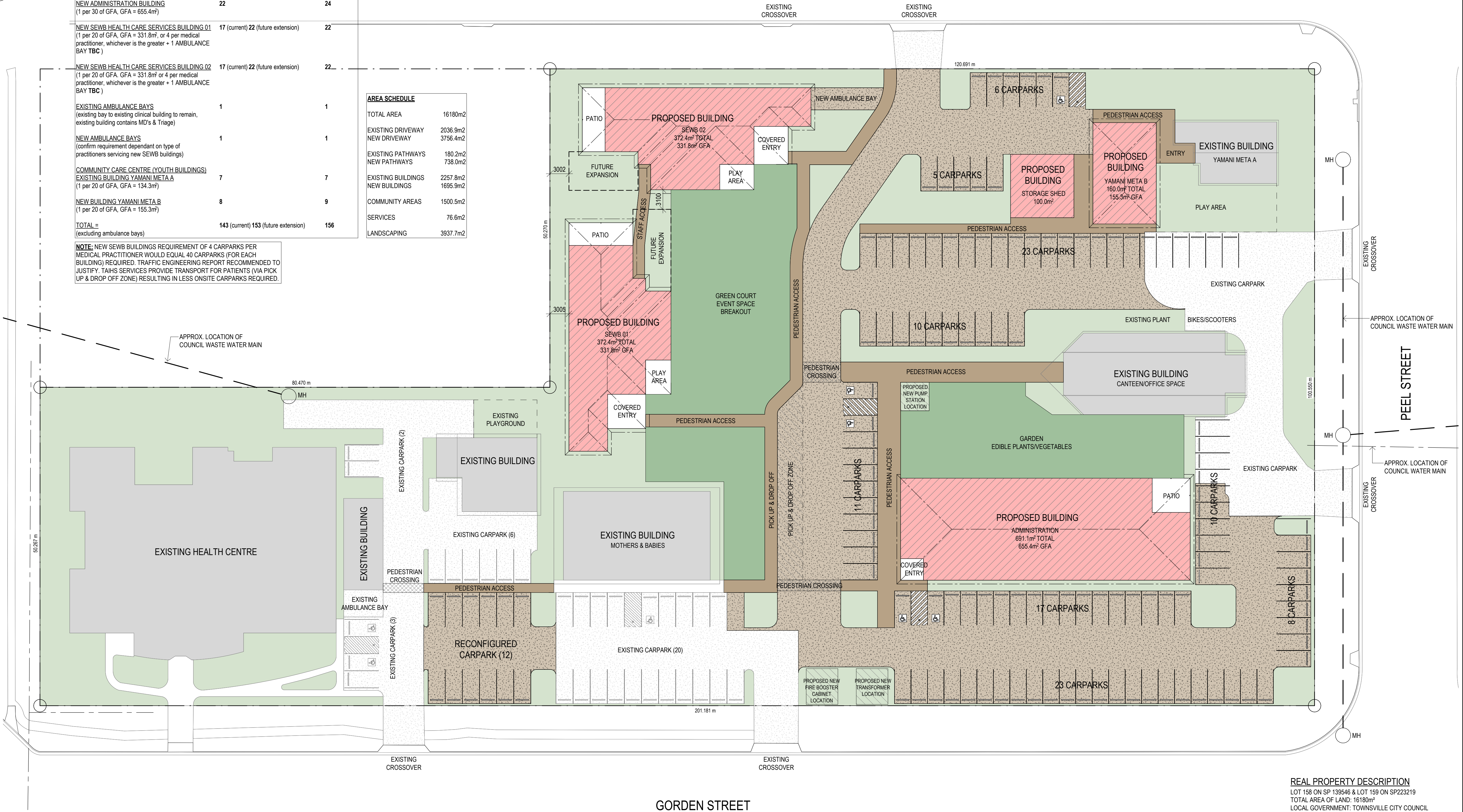
PRELIMINARY
NOT FOR CONSTRUCTION
PLANS ARE SUBJECT TO CHANGE TO
COMPLY WITH RELEVANT COVENANT &
BUILDING CERTIFICATION APPROVALS

CAR PARK SCHEDULE	REQUIRED	PROVIDED
EXISTING CLINICAL BUILDINGS (from previous approval)	61	61
EX. STAFF CANTEEN / OFFICE BUILDING (1 per 30 of GFA, GFA = 311.5m ²)	11	11
NEW ADMINISTRATION BUILDING (1 per 30 of GFA, GFA = 655.4m ²)	22	24
NEW SEWB HEALTH CARE SERVICES BUILDING 01 (1 per 20 of GFA, GFA = 331.8m ² , or 4 per medical practitioner, whichever is the greater + 1 AMBULANCE BAY TBC)	17 (current) 22 (future extension)	22
NEW SEWB HEALTH CARE SERVICES BUILDING 02 (1 per 20 of GFA, GFA = 331.8m ² , or 4 per medical practitioner, whichever is the greater + 1 AMBULANCE BAY TBC)	17 (current) 22 (future extension)	22
EXISTING AMBULANCE BAYS (existing bay to existing clinical building to remain, existing building contains MD's & Triage)	1	1
NEW AMBULANCE BAYS (confirm requirement dependant on type of practitioners servicing new SEWB buildings)	1	1
COMMUNITY CARE CENTRE (YOUTH BUILDINGS) EXISTING BUILDING YAMANI META A (1 per 20 of GFA, GFA = 134.3m ²)	7	7
NEW BUILDING YAMANI META B (1 per 20 of GFA, GFA = 155.3m ²)	8	9
TOTAL = (excluding ambulance bays)	143 (current) 153 (future extension)	156

AREA SCHEDULE	
TOTAL AREA	16180m ²
EXISTING DRIVEWAY	2036.9m ²
NEW DRIVEWAY	3756.4m ²
EXISTING PATHWAYS	180.2m ²
NEW PATHWAYS	738.0m ²
EXISTING BUILDINGS	2257.8m ²
NEW BUILDINGS	1695.9m ²
COMMUNITY AREAS	1500.5m ²
SERVICES	76.6m ²
LANDSCAPING	3937.7m ²

NOTE: NEW SEWB BUILDINGS REQUIREMENT OF 4 CARPARKS PER MEDICAL PRACTITIONER WOULD EQUAL 40 CARPARKS (FOR EACH BUILDING) REQUIRED. TRAFFIC ENGINEERING REPORT RECOMMENDED TO JUSTIFY. TAIHS SERVICES PROVIDE TRANSPORT FOR PATIENTS (VIA PICK UP & DROP OFF ZONE) RESULTING IN LESS ONSITE CARPARKS REQUIRED.

LONERGANNE STREET



1 SITE PLAN - PROPOSED
1:300

REAL PROPERTY DESCRIPTION
LOT 158 ON SP 139546 & LOT 159 ON SP223219
TOTAL AREA OF LAND: 16180m²
LOCAL GOVERNMENT: TOWNSVILLE CITY COUNCIL

NOTES:
1. VERIFY ALL LEVELS & DIMENSIONS BEFORE COMMENCING ANY FABRICATION
2. FIGURED DIMENSIONS TO TAKE PRECEDENCE OVER SCALED
3. COMPLY WITH LOCAL AUTHORITY, STANDARD BUILDING LAW AND ALL RELEVANT AUSTRALIAN STANDARDS & LEGISLATION
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1		07.11.25	PRELIMINARY

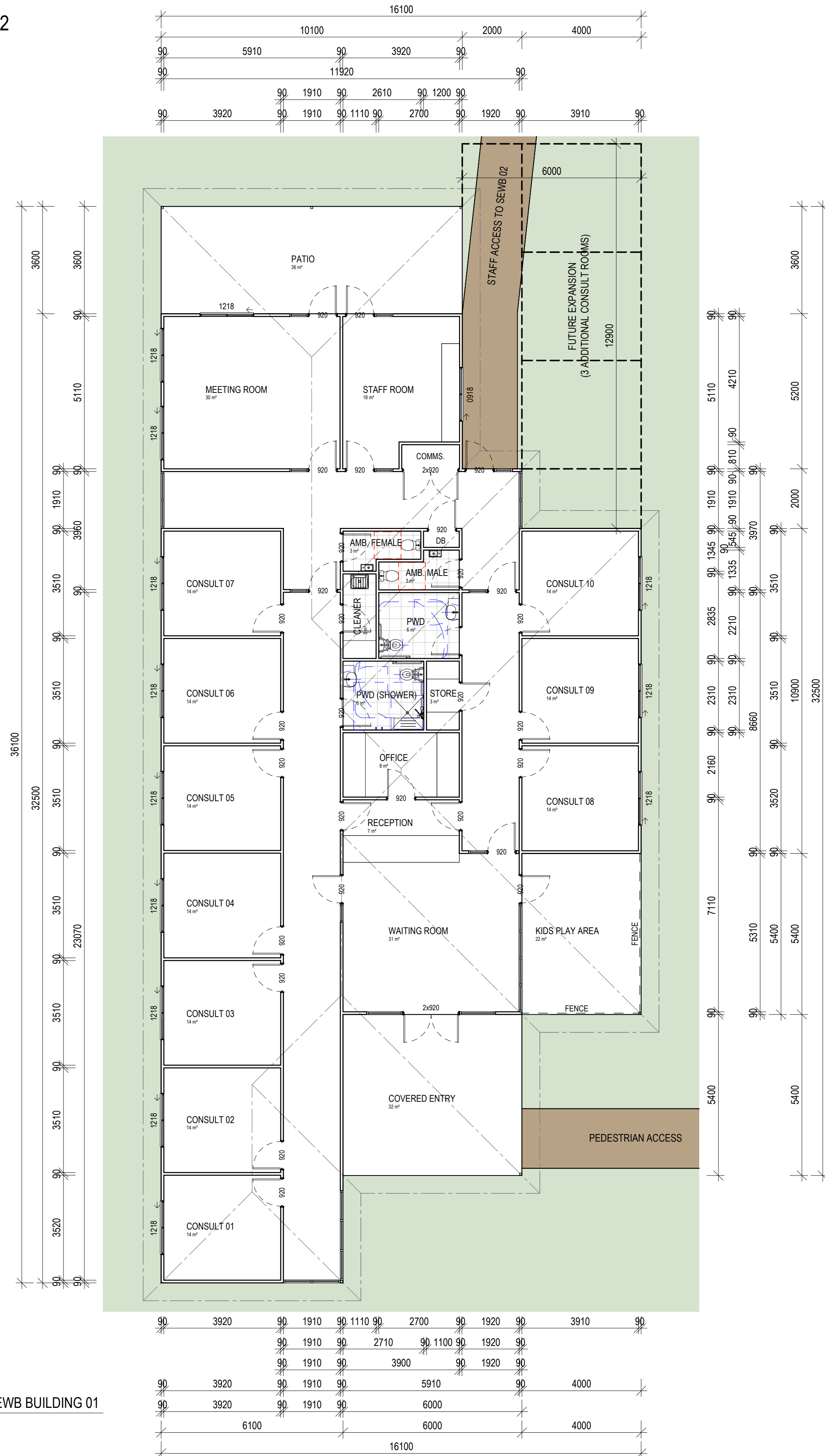
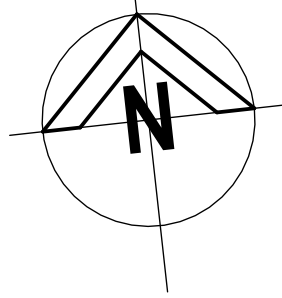
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BUILDING DESIGN OPEN RISE



Project: TAIHS GORDON STREET
PRECINCT MASTERPLANNING
Client: TAIHS (ABORIGINAL &
ISLANDER HEALTH SERVICE)
Location: CORNER OF GORDEN & PEEL
STREET, GARBUTT

TITLE: SITE PLAN - PROPOSED
Date: 06.11.25 Drawn: D.A.
Scale: As indicated Designed: N.H.
Job No.: 2025-329-C Drawing No.: WD 102 Rev. 2

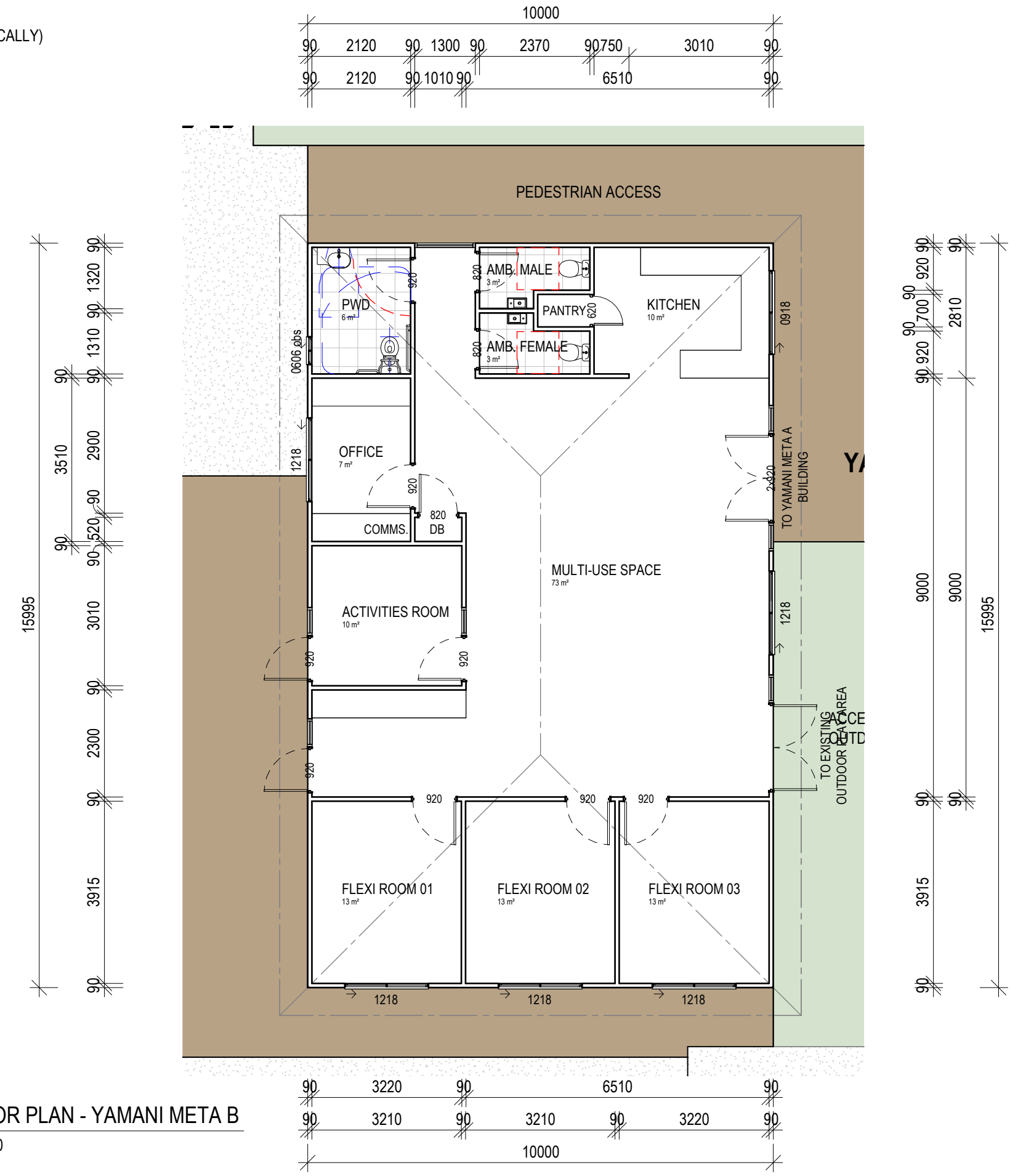
WIND CATEGORY C2



1 FLOOR PLAN - SEWB BUILDING 01
1:100



2 FLOOR PLAN - SEWB BUILDING 02
1:100
(SIMILAR TO SEWB BUILDING 01, ROTATED & MIRRORRED VERTICALLY)



3 FLOOR PLAN - YAMANI META B
1:100

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BUILDING CERTIFICATION APPROVALS

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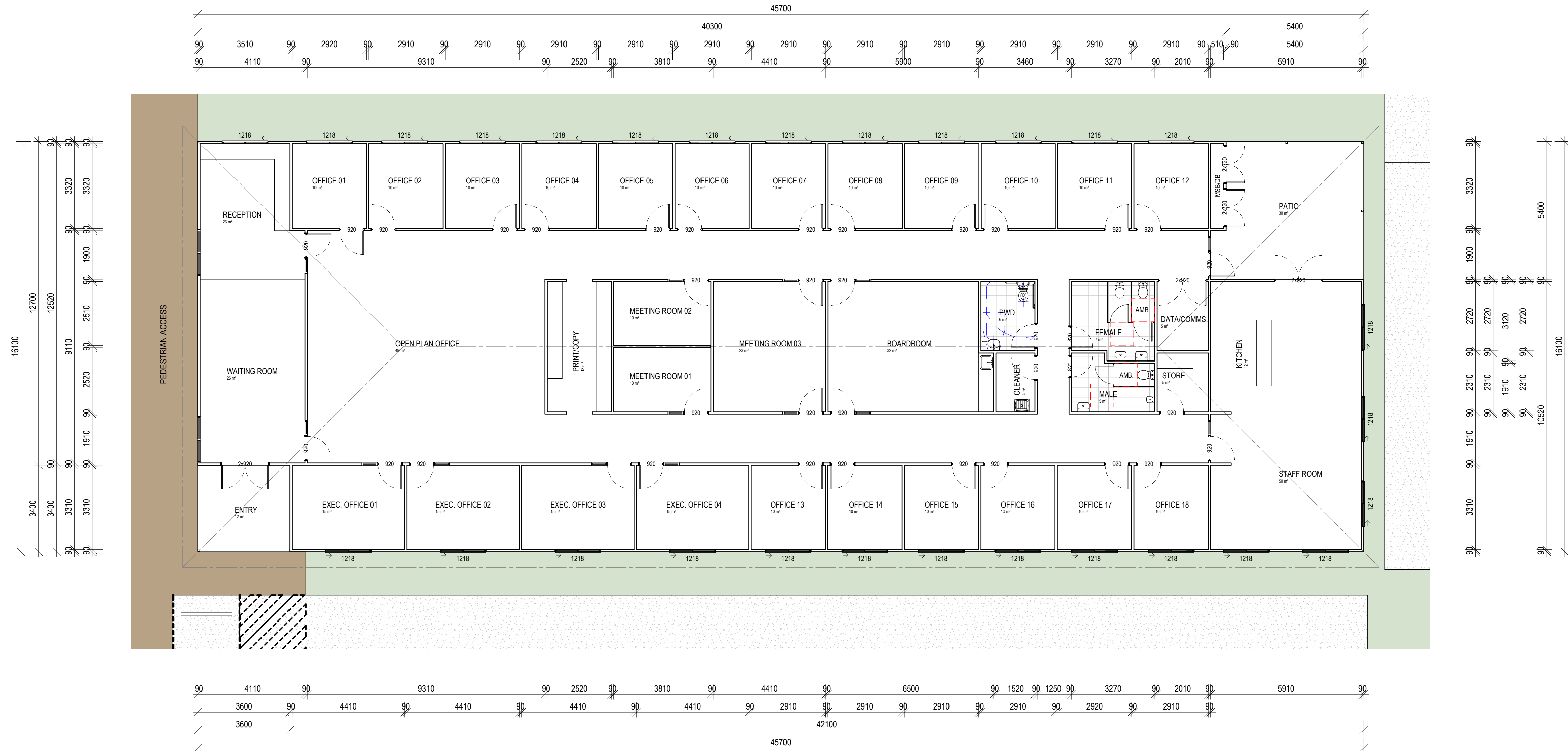
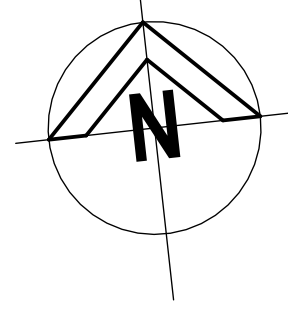
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2		11.11.25	PRELIMINARY

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BUILDING DESIGN OPEN RISE



Project: TAIHS GORDON STREET
PRECINCT MASTERPLANNING
Client: TAIHS (ABORIGINAL &
ISLANDER HEALTH SERVICE)
Location: CORNER OF GORDEN & PEEL
STREET, GARBUTT

TITLE: FLOOR PLANS
Date: 06.11.25 Drawn: D.A.
Scale: 1 : 100 Designed: N.H.
Job No.: Drawing No.: Rev.
2025-329-C WD 200 2



1 FLOOR PLAN - ADMINISTRATION BUILDING
1:100

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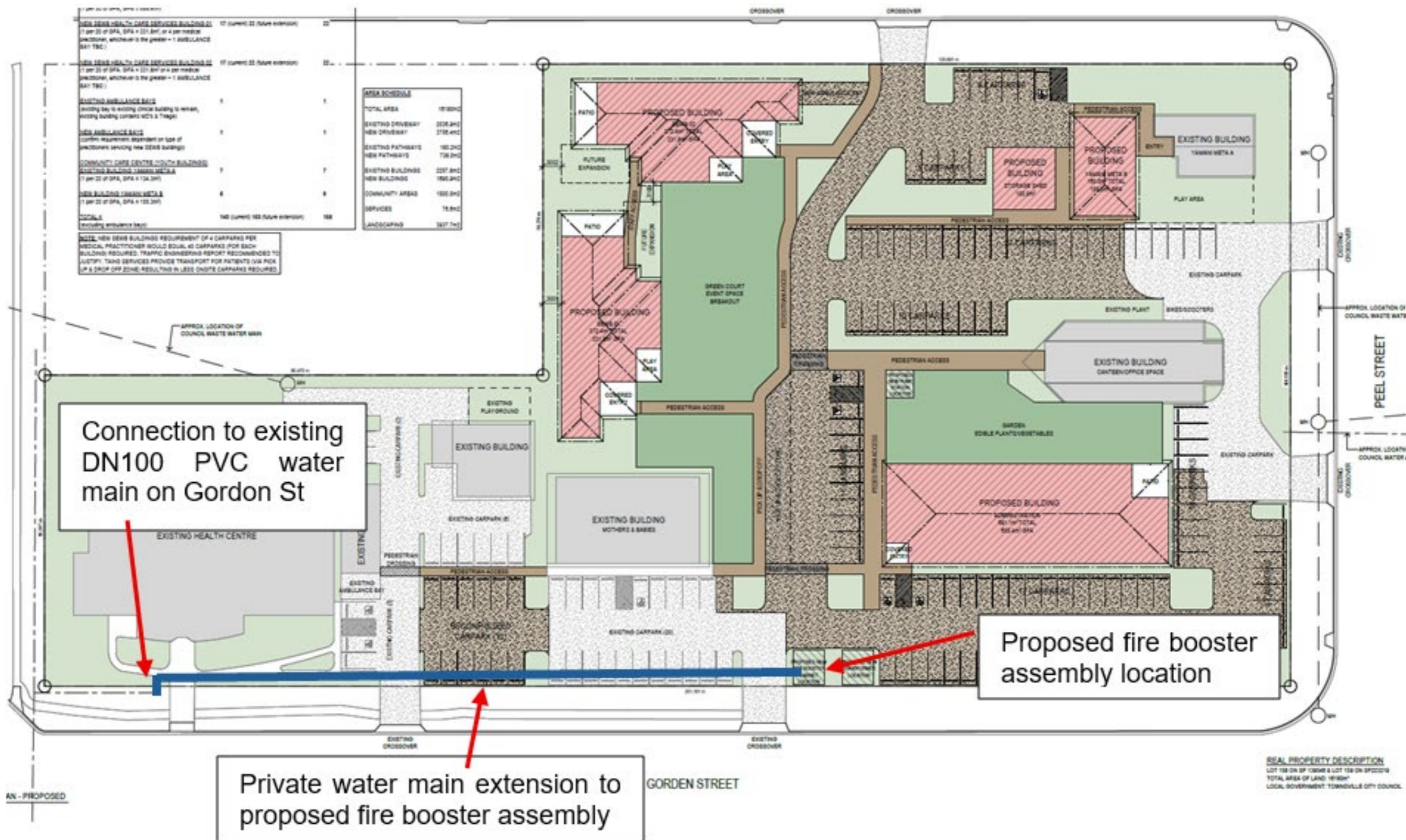
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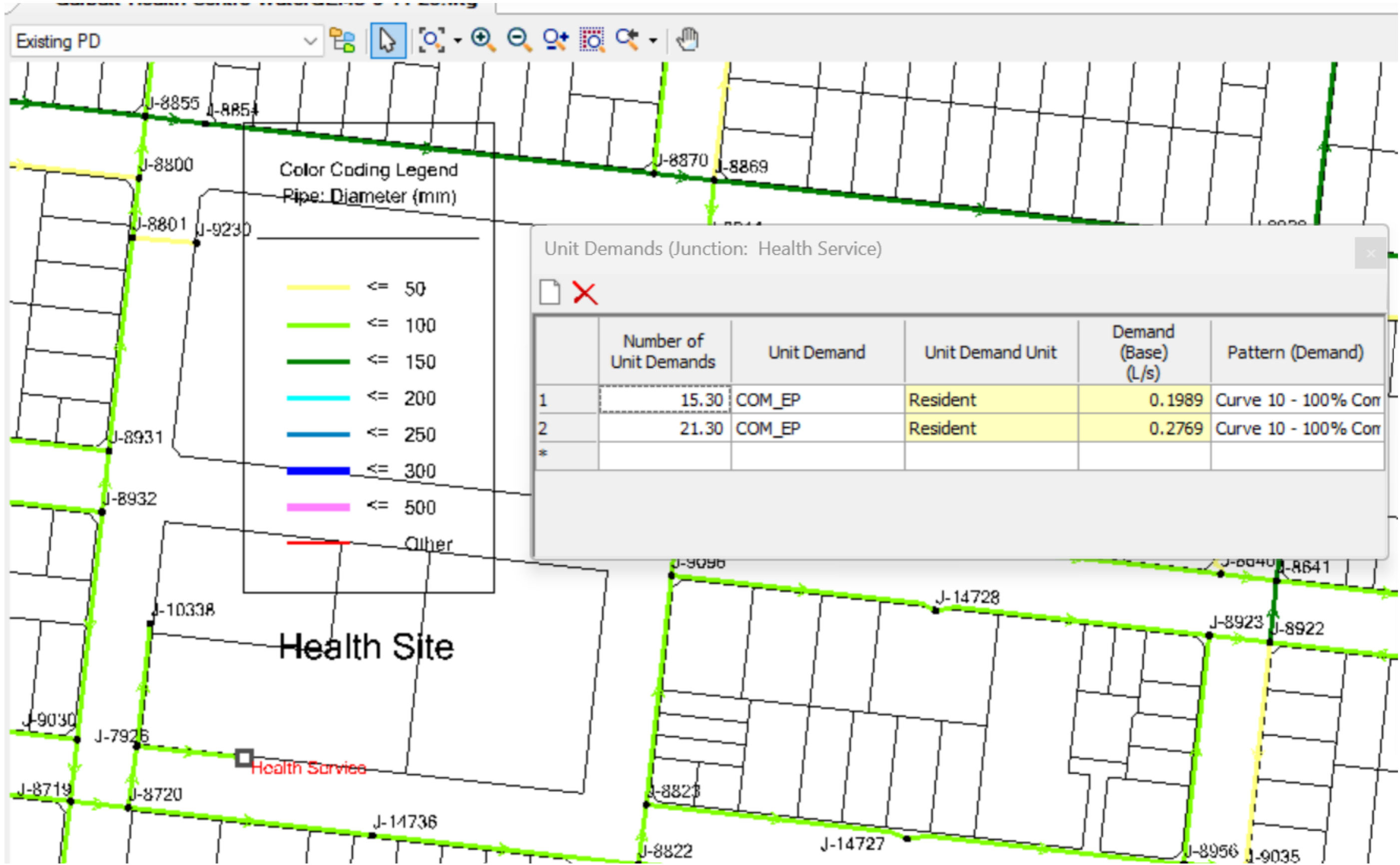
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PRECINCT MASTERPLANNING
Client: TAIHS (ABORIGINAL &
ISLANDER HEALTH SERVICE)
Location: CORNER OF GORDEN & PEEL
STREET, GARBUTT

TITLE: FLOOR PLANS
Date: 06.11.25 Drawn: D.A.
Scale: 1 : 100 Designed: N.H.
Job No.: 2025-329-C Drawing No.: WD 201 Rev. 2

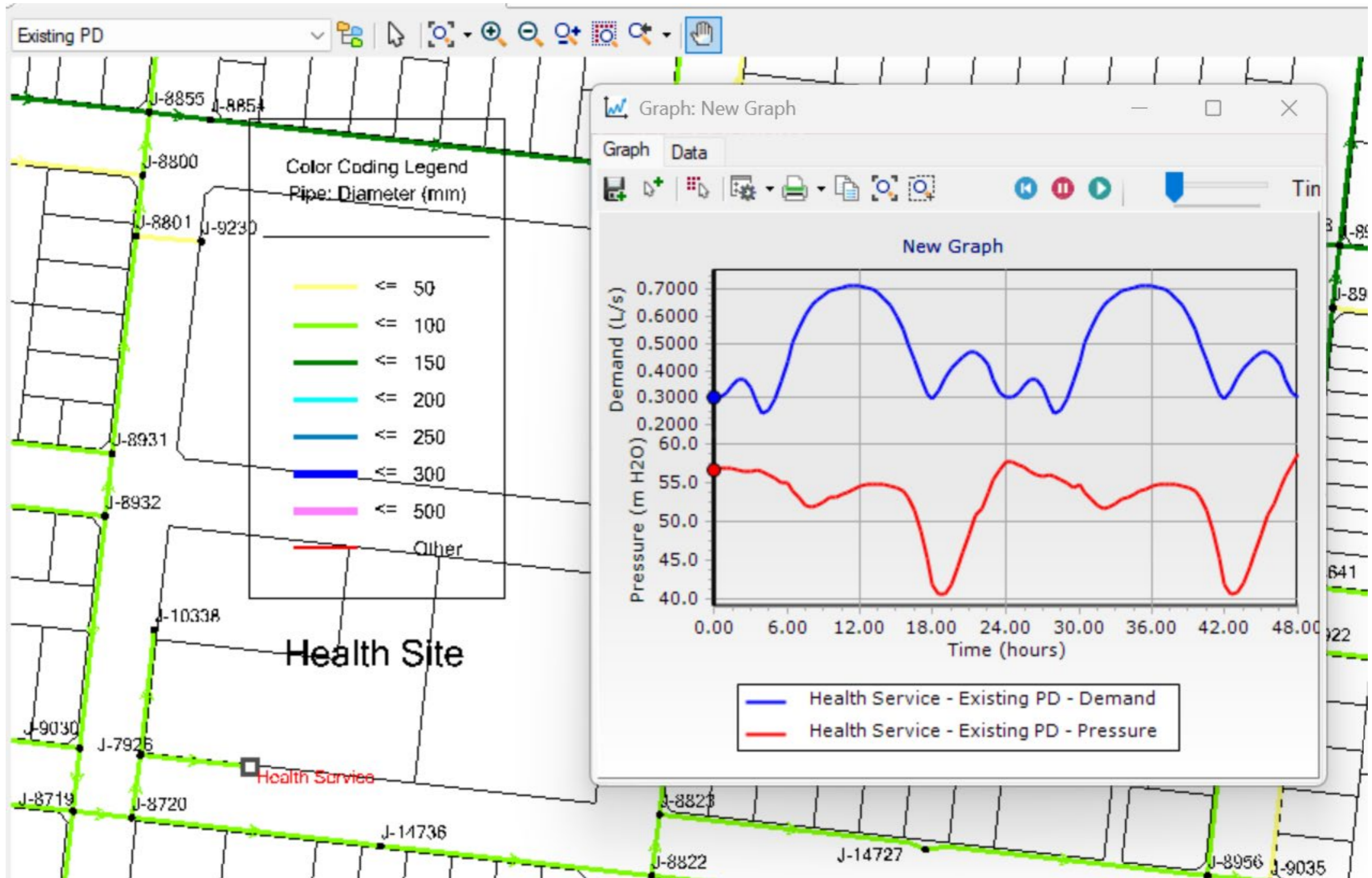
APPENDIX B WATERGEMS MODELLING RESULTS



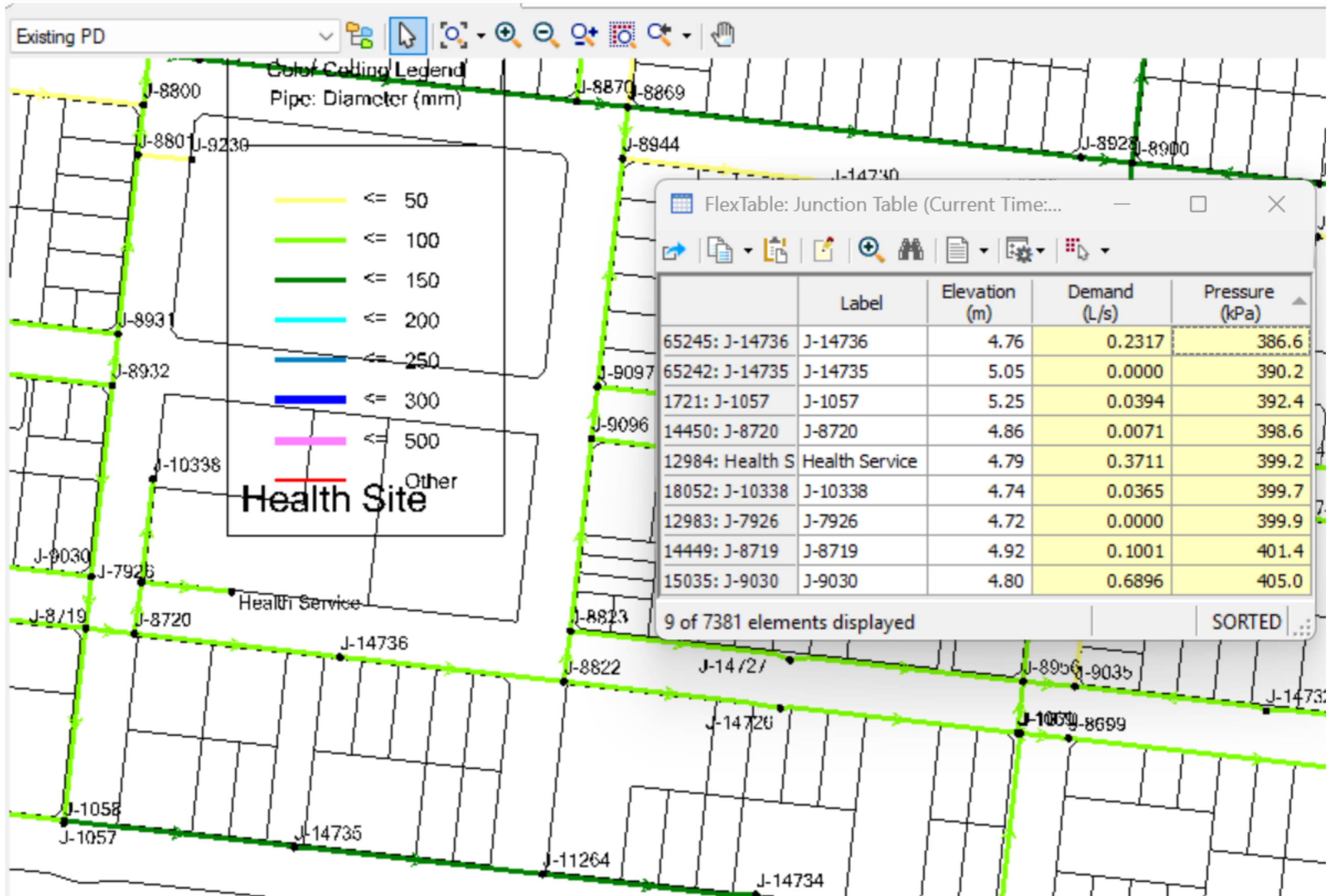
PRIVATE WATER SUPPLY CONCEPT – CONNECTION OFF EXISTING GORDEN ST DN100 PVC MAIN



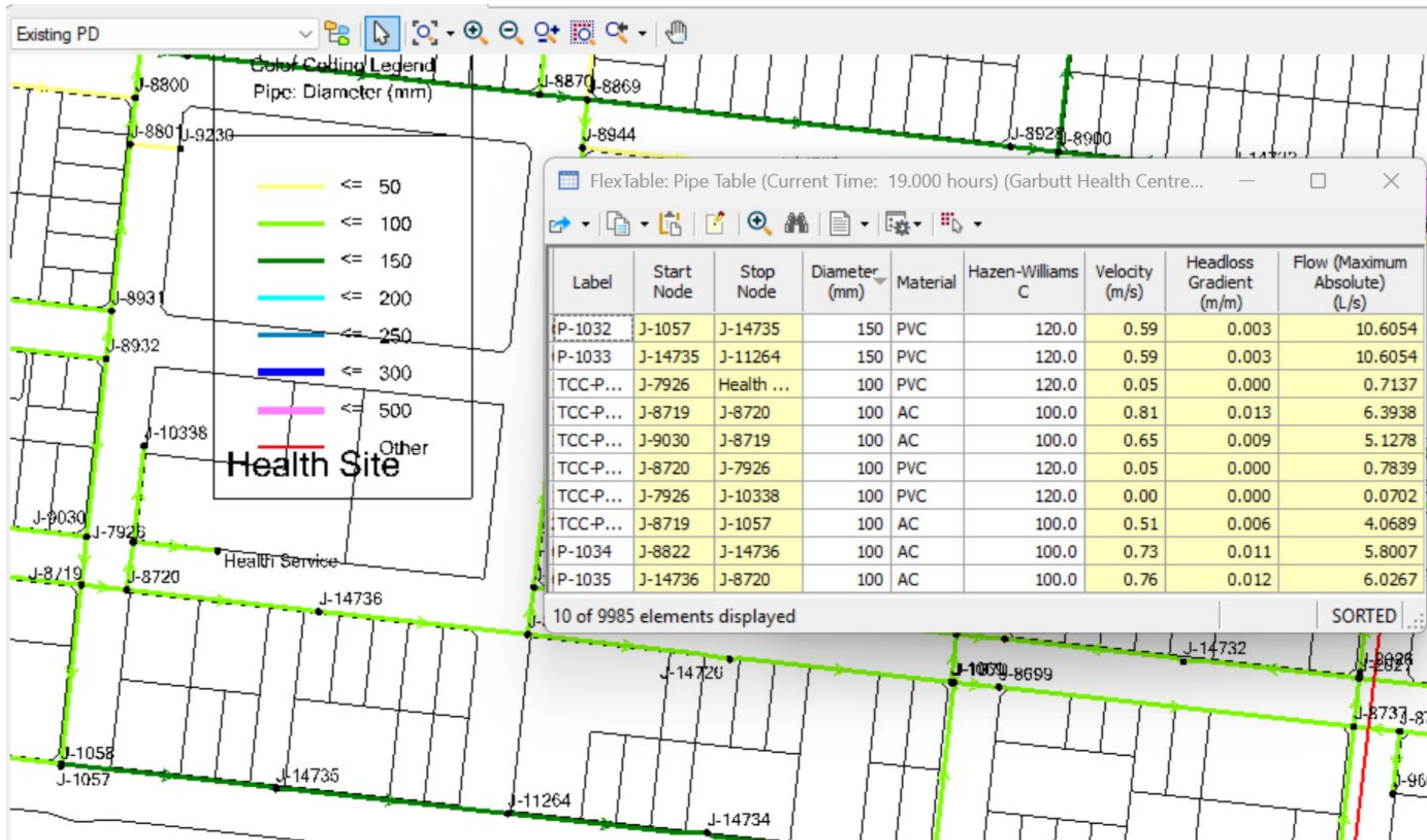
WATERGEMS Model - Health Service Commercial Water Demand Added



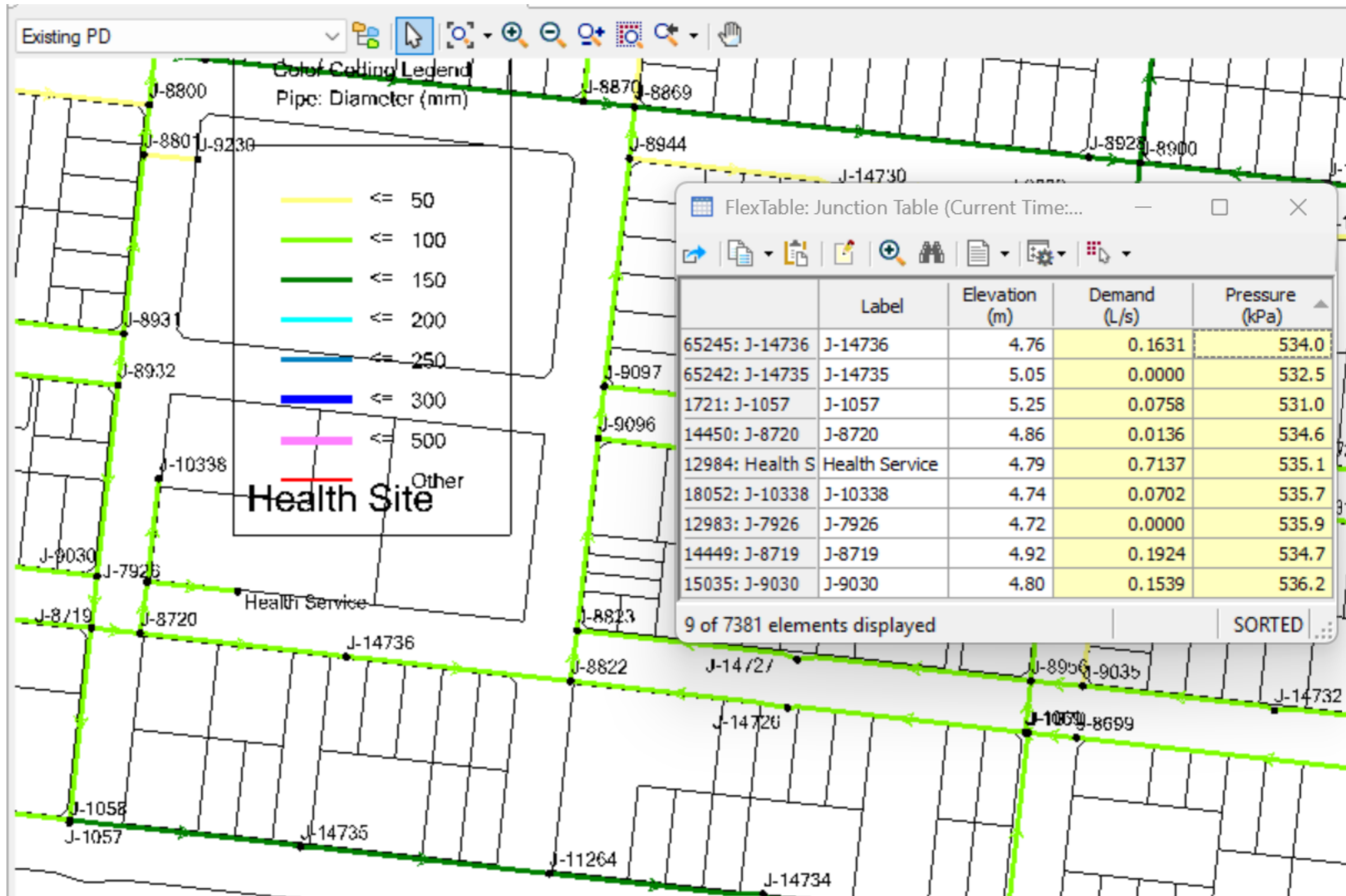
Peak Hour Pressure Chart



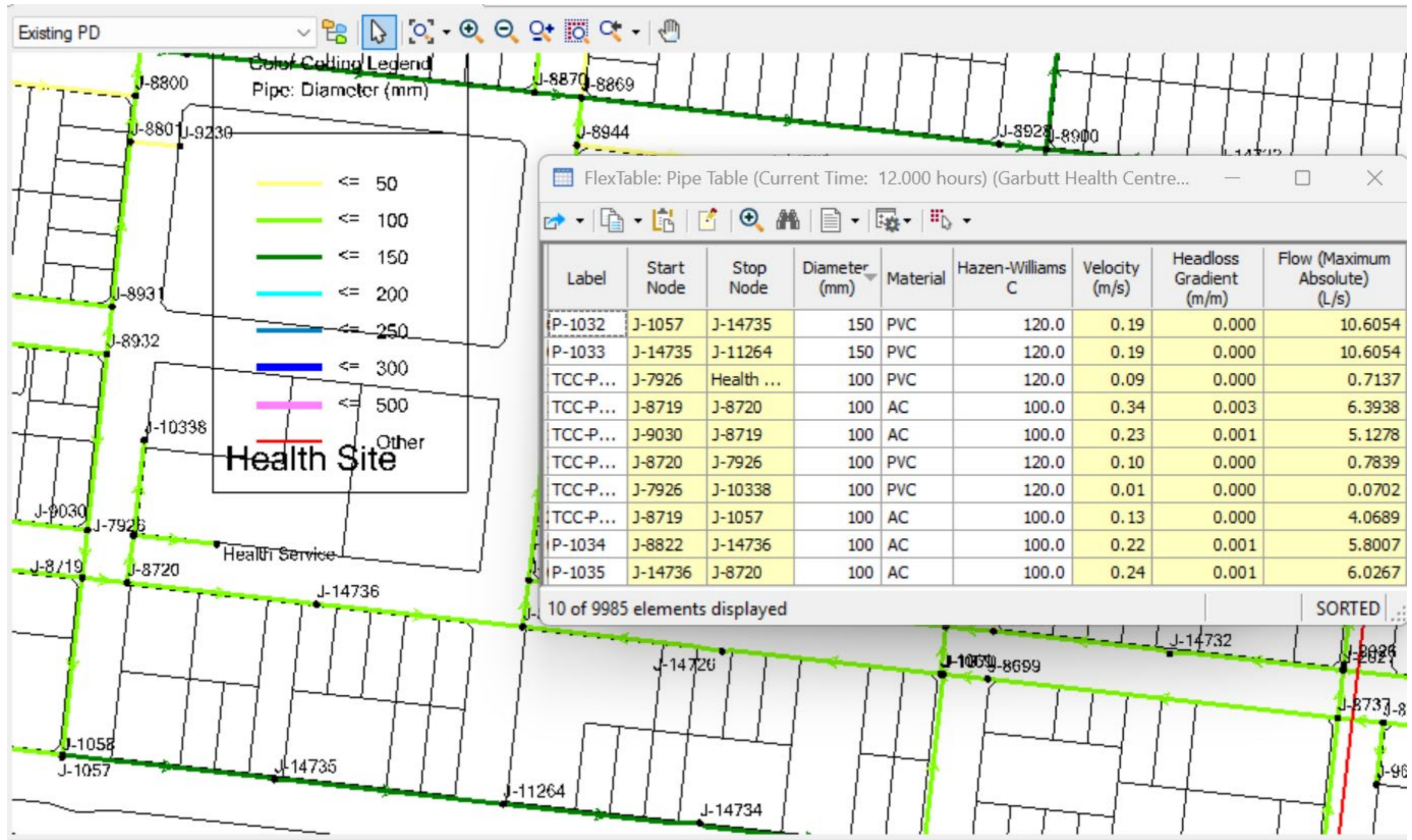
Peak Hour Node Modelling Results – 7 pm



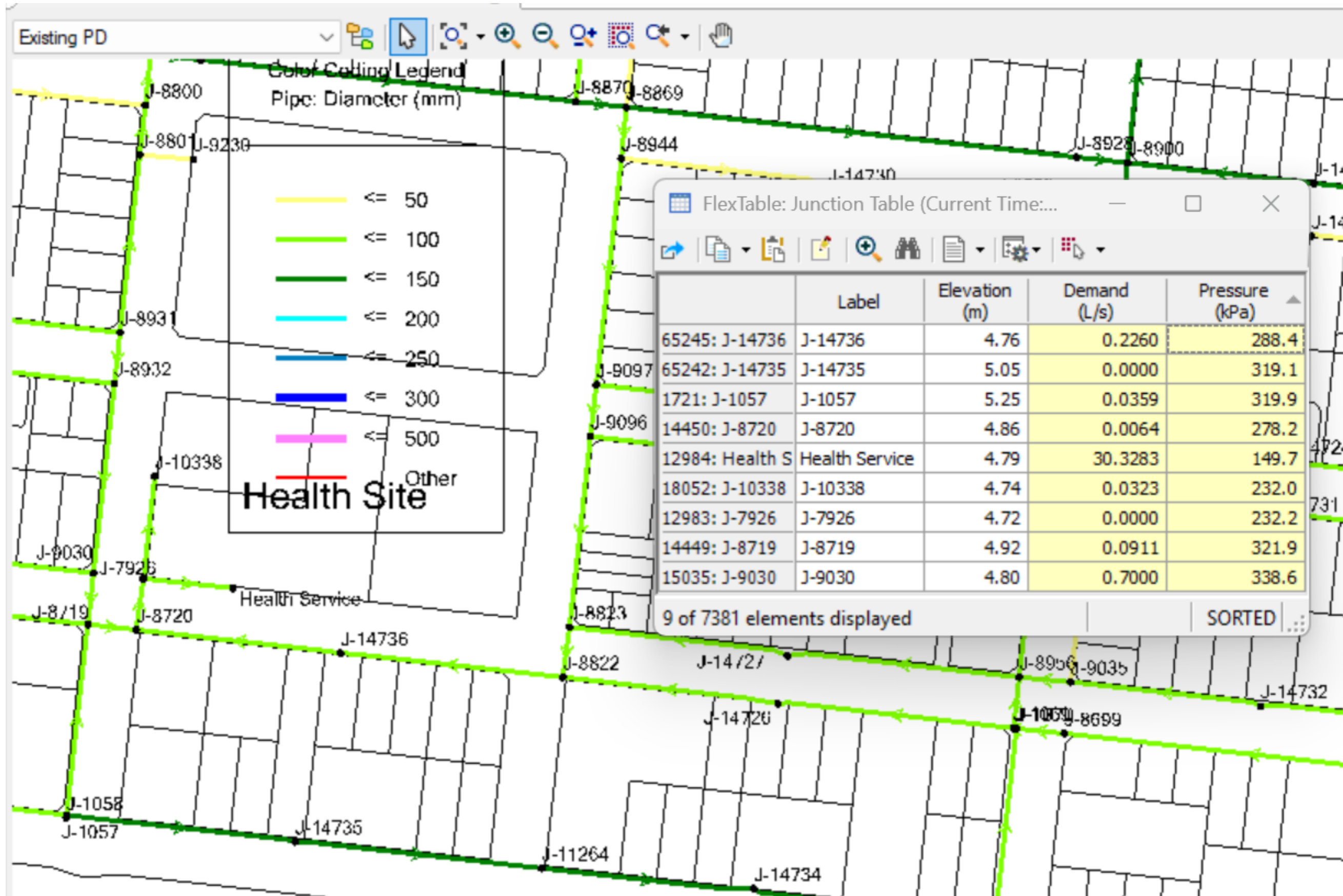
Peak Hour Pipes Modelling Results – 7 pm



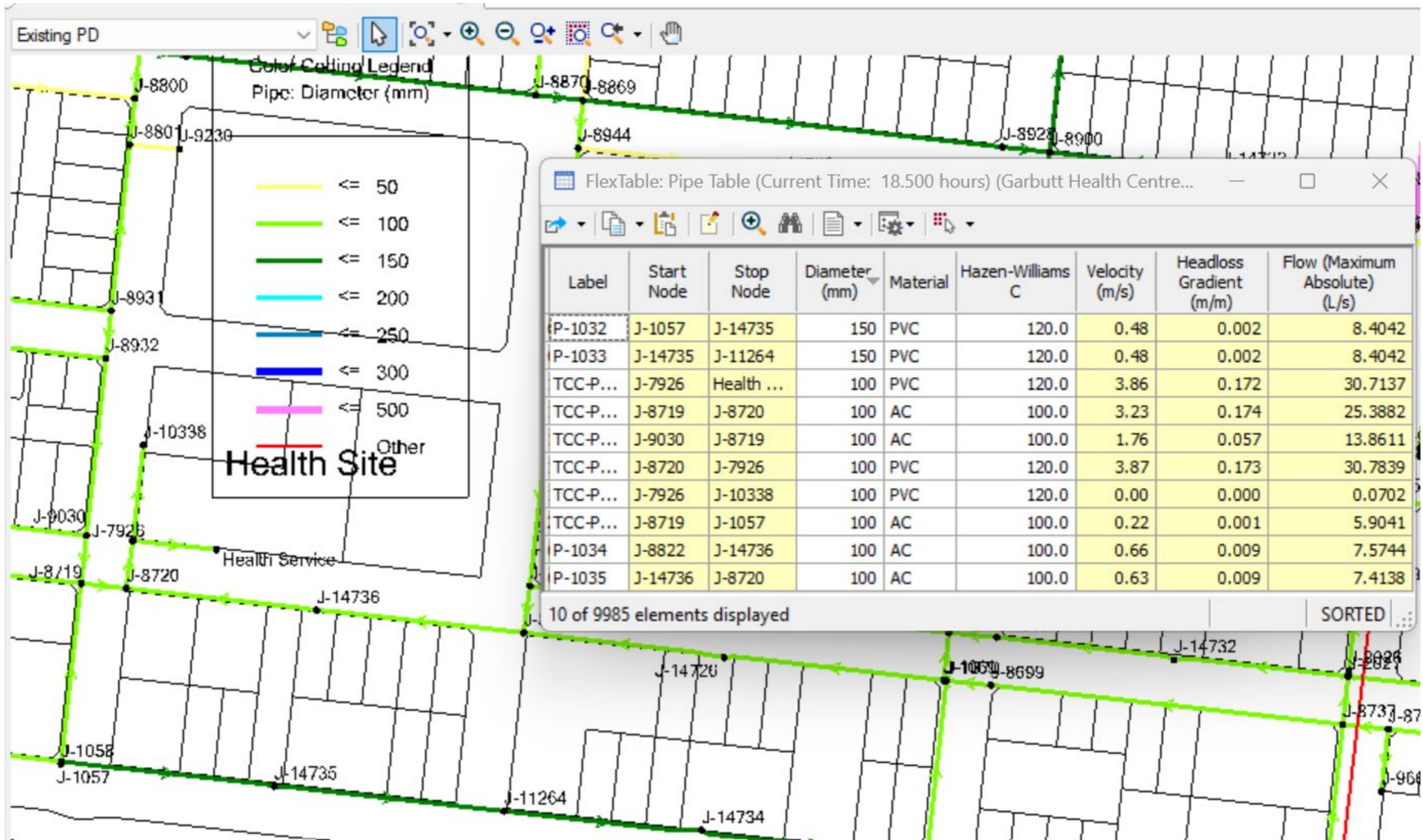
Peak Hour Node Modelling Results – 12 Noon



Peak Hour Pipes Modelling Results – 12 Noon



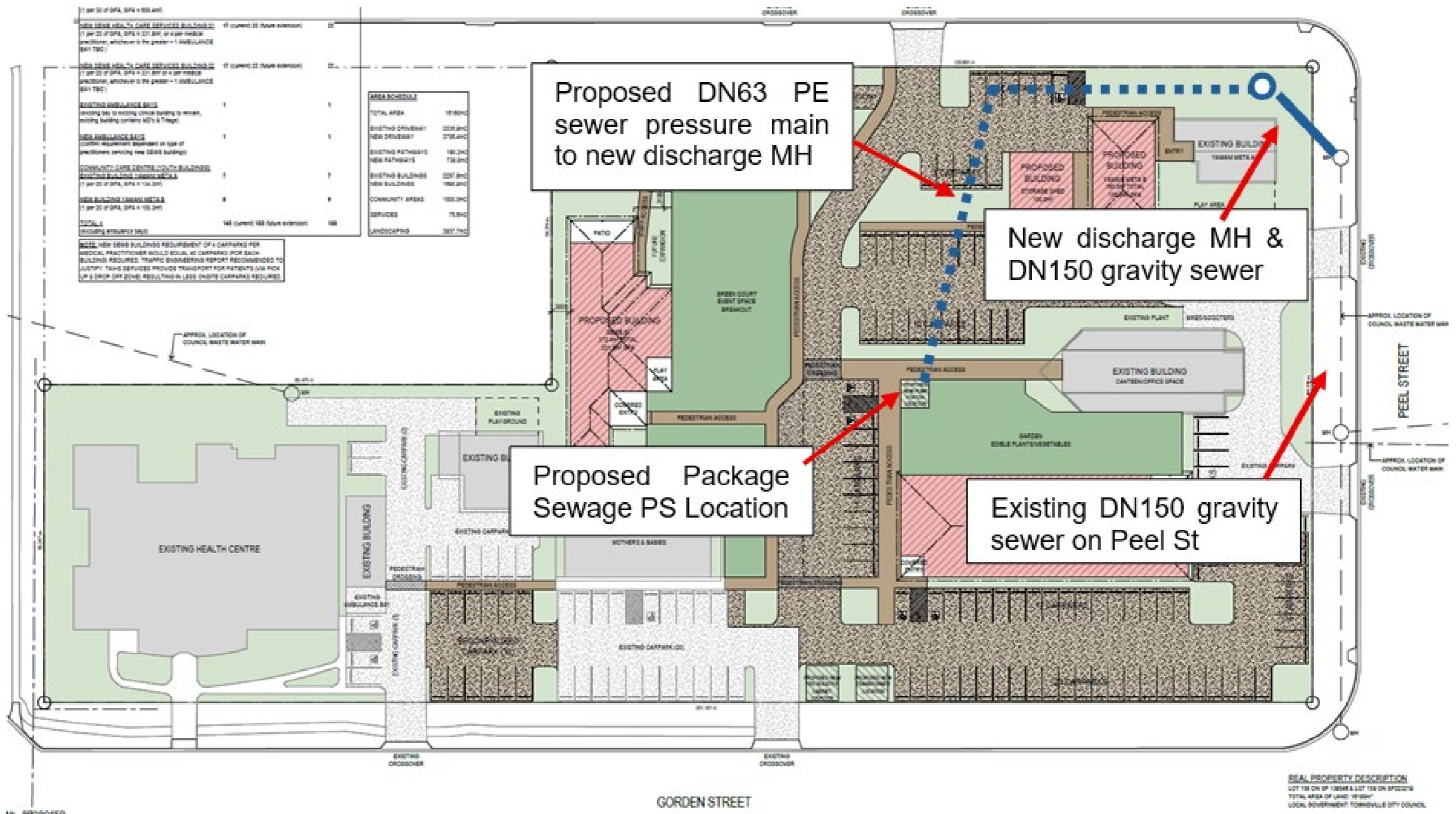
Peak Hour Node + 30 l/s Fire Flow Results – 7 pm



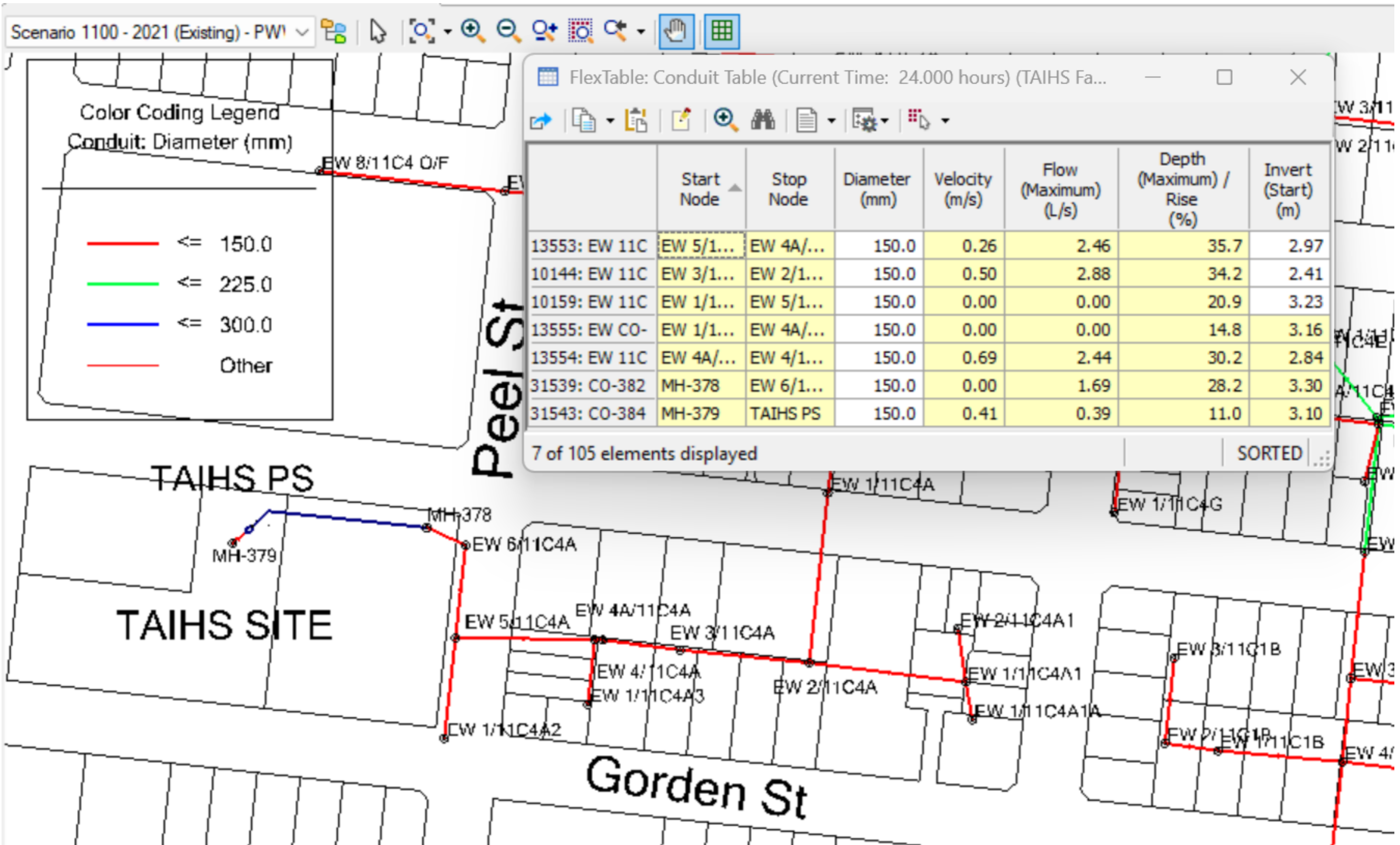
Peak Hour Pipes + 30 l/s Fire Flow Modelling Results – 7 pm

APPENDIX C

SEWERGEMS MODELLING RESULTS & FIGURES



PRELIMINARY SEWER STRATEGY FIGURE



PWWF Sewer Capacity Assessment Results

APPENDIX E

Traffic Impact Assessment prepared by LCJ

brazier motti



TRAFFIC IMPACT ASSESSMENT REPORT

TAIHS GORDEN STREET PRECINCT MASTERPLANNING

at


**57-67 GORDEN STREET AND 10-16 PEEL STREET,
GARBUTT**

for

**TOWNSVILLE ABORIGINAL & ISLANDER HEALTH SERVICE (TAIHS)
C/- ROSEL SHERWOOD**



Job No ROSE015 November 2025

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**TRAFFIC IMPACT ASSESSMENT REPORT
TAIHS GORDEN STREET PRECINCT MASTERPLANNING
57-67 GORDEN STREET AND 10-16 PEEL STREET, GARBUTT**

Executive Summary

LCJ Engineers was engaged by Townsville Aboriginal & Islander Health Service (TAIHS) (C/- Rosel Sherwood) to undertake a Traffic Impact Assessment (TIA) for the proposed development at 57-67 Gorden Street (Lot 158 on SP139546) and 10-16 Peel Street (Lot 159 on SP223219), Garbutt. The TIA is to include sufficient detail for pre-lodgement to Townsville City Council (TCC).

The proposed development consists of the amalgamation of two (2) lots, demolition of existing buildings on 10-16 Peel Street, and construction a new building and associated carpark facilities.

The proposed development will have access from Lonerganne Street at the north, Peel Street at the east, and Gorden Street at the south. It is anticipated that the development will be completed at the of year 2026.

A summary of findings from this TIA for the proposed development includes:

- The anticipated traffic generation volumes of 893vpd for daily traffic and 89vph peak hour traffic;
- The existing road network will not be significantly affected by the proposed development; and
- The developed scenarios will not exceed the acceptable levels of Level of Service (LoS) and Degree of Saturation (DoS) on the existing intersections, as specified in the Townsville City Council City Plan.

1. INTRODUCTION AND SUMMARY

1.1 Justification for Moderate or High Impact Assessment

The proposed development has been assessed against Townsville City Council’s (TCC) City Plan Table SC6.4.5.2 - *Urban Area TIA Impact Level Assessment Criteria*. It is expected that the proposed development will fall within the criteria of “Moderate Impact” development.

1.2 Study Objectives and Scope

The development site is bounded by Council controlled roads – Lonerganne Street to the north, Peel Street to the east, Gorden Street to the south and Meenan Street to the west. The proposed development consists of the amalgamation of two (2) lots, demolition of existing buildings on 10-16 Peel Street, and construction new buildings and associated carpark facilities.

The subject site is currently zoned as both “Community Facilities” (at 57-67 Gorden Street) and “Low Density Residential” (at 10-16 Peel Street). The client advised their intention to amalgamate the lots. Therefore, for the purposes of traffic impact assessment, the whole site will be classified as “Community Facilities”.



Figure 1 – Study area

2. PROPOSED DEVELOPMENT

2.1 Site Plan / Layout

The proposed development site plan by The Design House is attached in Appendix A. As shown on the drawings, the development site is to be accessed from Lonerganne Street, Peel Street at the east, and Gorden Street.

2.2 Land Use and Intensity

As noted above, the development site is to be zoned as “Community Facilities”.

2.3 Phasing and Timing

At this stage, the exact phasing and timing of the proposed development is unknown as this will depend on design and construction staging. However, our assumption is that the opening year for the proposed development is expected to be 2026. The impact mitigation period for access intersections is ten (10) years after the opening year, resulting in a design year of 2036.

3. EXISTING CONDITIONS

3.1 Study Area Land Use

The subject site is currently zoned as both “Community Facilities” (at 57-67 Gorden Street) and “Low Density Residential” (at 10-16 Peel Street) as shown in sketch **SK02**. The client advised their intention to amalgamate the lots. It is assumed that future use of the “Future Developments” is consistent with the “Community Facilities” zoning.

Land use surrounding the development site is generally “Low Density Residential” to the east and west, “Community Facilities” to the north where Garbutt State School is located and “Low Impact Industry” to the south.

Immediately to the west of subject site is St Teresa’s Catholic Church and Community Centre which is accessed from Lonerganne Street.

Photographs of roads adjacent to the site are provided in Appendix B.

3.2 Existing Traffic Analysis

The development site has frontage to Lonerganne Street to the north and Gorden Street to the south. The “Future Development” area will have frontage to Lonerganne Street, Peel Street and Gorden Street.

The development site is located in a part of the Garbutt suburb that has a grid-pattern street network layout. The streets that are arranged north-south typically have shorter mid-block lengths (approximately 100m long) and are generally priority through-roads. The streets that are arranged east-west typically have longer mid-block lengths (approximately 200m long) and are controlled by a give way or stop sign at the intersections. Occasionally, the intersections are controlled by a roundabout. Figure 1 provides a general view of the streets surrounding the subject site.

The site is flat and generally has good visibility.

3.2.1 Lonerganne Street

Lonerganne Street is a local government road under the governing authority of TCC with a posted speed limit of 50km/h. It is an undivided 15m wide pavement (kerb to kerb), providing one (1) lane in each direction in a 30m wide reserve. The road shoulders have street trees in kerbed planters and unmarked on-street car parking between the planters.

Fronting the subject site, Lonerganne Street is also a school zone road with a posted speed limit of 40km/h during school drop-off (8:00am to 9:00am) and pick-up (2:30pm to 3:30pm) hours. Lonerganne Street has a stop controlled intersection with Meenan Street and a give way controlled intersection with Peel Street.

3.2.2 Peel Street

Peel Street is a local government road under the governing authority of TCC with a posted speed limit of 50km/h. It is an undivided 15m wide pavement (kerb to kerb), providing one (1) lane in each direction in a 30m wide reserve. The road shoulders have street trees in kerbed planters and unmarked on-street car parking between the planters.

Peel Street has priority at the intersection with Lonerganne Street and a roundabout intersection with Gorden Street.

3.2.3 Gorden Street

Gorden Street is a local government road under the governing authority of TCC with a posted speed limit of 50km/h. It is an undivided 15m wide pavement (kerb to kerb), providing one (1) lane in each direction in a 30m wide reserve. The road shoulders have marked and signed on-street car parking.

Gorden Street has a “stop” controlled intersection with Meenan Street and a roundabout intersection with Peel Street.

3.2.4 Meenan Street

Meenan Street is a local government road under the governing authority of TCC with a posted speed limit of 60km/h. It is an undivided 15m wide pavement (kerb to kerb), providing one (1) lane in each direction in a 30m wide reserve. The road shoulders have on-street car parking behind the marked edge line.

Meenan Street has priority at the intersection with Lonerganne Street and Gorden Street, and is the most trafficked street in the vicinity. It also has ‘school zone’ pavement marking towards the Gorden Street end with a flashing ‘school zone’ sign and posted speed limit of 40km/h during school drop-off (8:00am to 9:00am) and pick-up (2:30pm to 3:30pm) hours.

3.2.5 Public transport

Local public transport operating in Garbutt consists of bus, taxi and ride sharing services (e.g. Uber). Taxi and ride sharing services operate from a passenger specified origin to a destination and are ordered by phone or website booking.

Townsville bus services are operated by Sunbus with two (2) scheduled routes operating along the streets associated with the development site (Routes 205 and 215). Services operate every 30 minutes on weekdays and 90 minutes on Saturdays. There are no services on Sunday or public holidays. The full bus timetable can be obtained from the Queensland Translink website.

3.3 Traffic Volumes

Townsville City Council has traffic models, Townsville Aimsun Integrated Model (TAIM) that can be accessed using TownsvilleMAPS. Traffic data was obtained for the years 2026 and 2036. For simplicity, year 2026 data will be used as the year of development and year 2036 will be used as the 10-year design horizon.

Council advised in an email dated 19 October 2023, that the models only provide traffic volumes for trunk roads, i.e. arterial, sub-arterial and major collector roads. Lesser order roads do not have validated traffic volumes. In most instances, traffic volumes taken from the model on local streets should not be considered reliable. A copy of the email and the TAIM information factsheet is attached in Appendix C.

3.3.1 Meenan Street

Meenan Street is the only street with available traffic data. Table 1 lists the traffic volumes for Meenan Street for the three (3) mid-block sections between Chandler Street to the north and Ingham Road to the south. These traffic volumes were obtained from TownsvilleMAPS on the 3rd November 2025.

Table 1 – TAIM Census Meenan Street Traffic Volumes

Year	AADT (%HV)		AM peak (vph)		PM peak (vph)	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
North (Chandler Street to Lonerganne Street)						
2026	2425 (4.6%)	2836 (5.6%)	112	221	136	88
2036	2921 (5.2%)	3361 (5.0%)	143	207	204	113
Site frontage (Lonerganne Street to Gorden Street)						
2026	2203 (5.5%)	2858 (5.7%)	107	273	151	111
2036	2638 (6.2%)	3387 (5.2%)	107	266	221	119
South (Gorden Street to Ingham Road)						
2026	3061 (6.7%)	3729 (7.7%)	210	264	148	244
2036	3450 (7.1%)	4228 (7.1%)	196	219	218	237

This equates to an approximate northbound : southbound directional split on Meenan Street of:

- 37% : 63% in the morning peak hour; and
- 56% : 44% in the evening peak hour.

With regard to the heavy vehicles, generally the percentages are consistent for the three (3) mid-block sections and for the subject years, i.e. 6.0% for both northbound and southbound.

3.3.2 Local Minor Streets

As previously discussed, there are no available traffic data for the local minor streets – Lonerganne Street, Peel Street and Gorden Street. As such, the existing traffic volumes will be estimated based on *LGIP - DSS, definitions and demand Table 8.1 Infrastructure demand unit rates* for the relevant category and sub-category of surrounding land uses. Refer Figure 2.

With regard to the mid-block directional split, we have assumed the following:

- 35% northbound : 65% southbound, both morning and evening peak hours; and
- 50% eastbound : 50% westbound, both morning and evening peak hours.

For the directional split at the intersections, we have assumed that the majority of the traffic will turn south (towards Ingham Road) and that motorists will prefer to travel along the through roads (north-south orientation) instead of traveling east-west orientation which will require to stop and/or give way at each intersection. For this reason, we assume the following intersection directional split:

- 30% northbound : 60% southbound : 10% eastbound/westbound, both morning and evening peak hours.

With regard to the heavy vehicles, it is assumed to be 3.0%.

It is to be noted that this area of Garbutt is generally a built-up area and is not expected to have significant growth in traffic volumes. As such, the assumed traffic volumes for the local minor streets will remain throughout the years.

Category	Sub-category	Unit	Water ⁴ (EP)	Water ⁵ (EP)	Sewer (EP)	Roads (trip ends/day)	Pathways (trip ends/day)
Employment	Retail	100m2 GFA	2.11	2.11	2.74	18.7	0.22
	Services	100m2 GFA	1.35	1.35	1.88	41.5	0.54
	Professional	100m2 GFA	1.11	1.11	1.00	33.4	0.34
	Industrial	100m2 GFA	0.18	0.18	0.18	10.0	0.10
	Other	100m2 GFA	-	-	-	30.0	0.30
	Retail	job	0.74	0.74	0.96	6.5	0.01
	Services	job	0.23	0.23	0.32	7.1	0.03
	Professional	job	0.20	0.20	0.18	6.0	0.02
	Industrial	job	0.11	0.11	0.11	6.0	0.002
	Other	job	-	-	-	6.0	0.02
Housing	Single (rural)	dwelling	-	2.80	-	7.3	-
	Single (rural res.)	dwelling	2.80	2.80	-	7.3	-
	Single (urban)	dwelling	2.80	2.80	2.80	7.3	0.43
	Units	dwelling	1.80	1.80	1.80	4.8	0.41
	Other	dwelling	1.80	1.80	1.80	4.8	0.41
Students	Primary	students	0.14	0.14	0.22	1.2	0.69
	Secondary	students	0.28	0.28	0.43	0.5	0.38
	Tertiary	students	0.28	0.28	0.43	0.6	0.16

Figure 2 – Prescribed infrastructure demand unit rates. Source: *LGIP - DSS, definitions and demand* (TCC, April 2017)

3.3.2.1 Lonerganne Street

Table 2 details the estimated traffic volumes for Lonerganne Street for the three (3) mid-block sections between Crowder Street to the west and Ramsay Street to the east.

It is to be noted that St Teresa’s Catholic Church is not expected to generate significant traffic volumes during weekdays, as generally, church activities occur on weekends and after hours. Therefore, it will be excluded from the estimation of traffic volume.

Garbutt State School (Garbutt SS) is a primary school with 110 students. The attached email in Appendix D (dated 26 October 2023) from the Garbutt SS’s Principal advised the number of enrolled students. Garbutt SS does not appear to have a dedicated drop-off/pick-up zone and is therefore assumed to have 50% of the traffic generated along Lonerganne Street. Furthermore, due to the nature of school traffic, it is assumed that 50% of the generated traffic volume will coincide with the morning peak hour traffic and before the evening peak hour traffic.

Table 2 – Lonerganne Street Estimated Traffic Volumes

Year	AADT		AM peak (10% of AADT-UNO) (vph)		PM peak (10% of AADT) (vph)	
	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
West (Crowder Street to Meenan Street)						
13 single (urban) and 27 units = total 224.5vpd (say, 226vpd)						
All	113	113	11	11	11	11
Site frontage (Meenan Street to Peel Street)						
Garbutt SS (110 primary students) = total 132 vpd Assumed 50% access on Lonerganne St = 66 vpd						
All	33	33	16*	17*	0	0
East (Peel Street to Ramsay Street)						
16 single (urban) and 17 units = total 198.4vpd (say, 198vpd)						
All	99	99	10	10	10	10

*Denotes these values are based on school traffic all being generated in the morning peak and a 50% directional split.

3.3.2.2 Peel Street

Table 3 details the estimated traffic volumes for Peel Street for the three (3) mid-block sections between Chandler Street to the north and Ingham Road to the south.

It is to be noted that the existing buildings on 10-16 Peel Street are to be demolished as part of the proposed development. As such, it will be excluded from the estimation of traffic volume.

Table 3 – Peel Street Estimated Traffic Volumes

Year	AADT		AM peak (10% of AADT) (vph)		PM peak (10% of AADT) (vph)	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
North (Chandler Street to Lonerganne Street)						
5 single (urban) = total 36.5vpd (say, 36vpd)						
All	13	23	1	2	1	2

Year	AADT		AM peak (10% of AADT) (vph)		PM peak (10% of AADT) (vph)	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Site frontage (Lonerganne Street to Gorden Street) 3 single (urban), 10 units = 69.9vpd (say, 70vpd)						
All	25	45	3	5	3	5
South (Gorden Street to Ingham Road) 4720m ² GFA industrial = 472vpd						
All	165	307	17	31	17	31

3.3.2.3 Gorden Street

Table 4 outlines the estimated traffic volumes for Gorden Street for the three (3) mid-block sections between Crowder Street to the west and Ramsay Street to the east.

Table 4 – Gorden Street Estimated Traffic Volumes

Year	AADT		AM peak (10% of AADT) (vph)		PM peak (10% of AADT) (vph)	
	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
West (Crowder Street to Meenan Street) 5 single (urban), 19 units and 3550m ² GFA industrial = total 482.7vpd (say, 484vpd)						
All	242	242	24	24	24	24
Site frontage (Meenan Street to Peel Street) 1 single (urban) and 3385m ² GFA industrial = total 345.8vpd (say 346vpd)						
All	173	173	17	17	17	17
East (Peel Street to Ramsay Street) 10 single (urban), 11 units and 2525m ² GFA = total 378.3vpd (say, 378vpd)						
All	189	189	19	19	19	19

3.4 Road Safety Issues

Traffic crash data recorded for the last five (5) years adjacent to the subject site is shown in Table 5. The data was obtained from Queensland Government Open Data Portal.

The crash data suggests there were three (3) crashes that occurred near the subject site. The crashes appeared to be isolated incidents with no specific reason relating to the existing road network.

Table 5 – Crash data

Crash Ref No.	Crash DCA Code	Crash Year	Crash Severity	Crash Nature	Crash Location
354942	303	2019	Hospitalisation	Rear-end	Meenan St / Lonerganne St intersection
349986	104	2019	Minor injury	Angle	Meenan St / Gorden St
333687	301	2021	Minor injury	Rear-end	Meenan St, 30m south of Gorden St intersection

4. TRAFFIC FORECASTING AND ANALYSIS

4.1 Method of Projection

As discussed in Section 3.3 of this report, traffic data provided by TCC TAIM will be used for the SIDRA intersection analysis.

4.2 Background Traffic (Each horizon year)

4.2.1 Traffic model calibration or validation if applicable

SIDRA Intersection 10.0 was used to model the intersections surrounding the subject site. Default parameters predetermined in the original program were unaltered.

It is to be noted that in SIDRA software, a zero “0” traffic movement is not possible to be modelled. Thus, a minimum of one (1) movement is applied.

4.2.2 Forecasting and analysis

As discussed in Section 3.3 of this report, traffic data provided by TCC TAIM will be used for the SIDRA intersection analysis.

4.3 Development Traffic Generation

Traffic generation for the development was estimated from the total GFA and applying the prescribed infrastructure demand unit rate as specified in Table 8.1 of *LGIP - DSS, definitions and demand*.

From the drawings, the proposed building will have a GFA of 2,151m². The prescribed rate for “Services” employment is 41.5vpd per 100m² GFA. Thus, the estimated traffic generated from the proposed development is as follows:

- Total daily traffic = 893vpd; and
- Total peak hour traffic (taken as 10% of daily traffic) = 89vph.

From the TAIHS website (<https://www.taihs.net.au/>) it was identified that generally the clinic offers three (3) types of patient appointments:

- Short 20-minute appointments;
- Standard 40-minute appointments; and
- Long 60-minute appointments.

The clinic also offers walk-in and emergency services for patients presenting with non-urgent issues, who are advised of the expected wait time and/or to book an appointment for the next available time.

4.3.1 Trip distribution

The proposed development will be accessed from Lonerganne Street, Peel Street, and also be connected to an existing driveway/carpark access on Gorden Street. The access from Peel Street will be via two (2) driveways, however, for the purpose of this assessment it will be treated as a single point of access.

Therefore, it is assumed that the access split will be equally divided between the three access points, i.e. 33.3% x 89vph = 30vph.

Assumptions to the directional split are consistent with Section 3.3.2 of this report:

- Lonerganne Street access peak hour traffic = 30vph.
- Gorden Street access peak hour traffic = 30vph.
- Peel Street access peak hour traffic = 30vph.

Furthermore, it is assumed that the inbound/outbound split is also 50% : 50%.

4.3.2 Development traffic volumes on the network

Table 6 summarises the assumed peak hour development traffic directional split and distribution. Appendix E provides diagrammatic representation of the development traffic movements.

Table 6 - Proposed development peak hour traffic directional split

Total (vph)	Peak hour traffic generation			
	Morning		Evening	
	Inbound (vph)	Outbound (vph)	Inbound (vph)	Outbound (vph)
Lonerganne Street access				
30	15	15	15	15
Gorden Street access				
30	15	15	15	15
Peel Street access				
30	15	15	15	15

Note: Inbound/outbound splits have been rounded to the next highest round number.

4.4 Method of Analysis

In Section 3.3 of this report, it is shown that the evening (PM) peak hour traffic volumes appear to be generally lower than the morning (AM) peak hour traffic volumes. It can be assumed that this is due to the start of working hours coinciding with the school morning peak hour, and thus the AM peak hour traffic is the more critical period to be analysed. Therefore, our traffic analyses were undertaken for the morning peak hour traffic only.

The following traffic scenarios have been considered within this traffic impact assessment:

- Morning peak hour, Background Cases 2026 and 2036, without subject development; and
- Morning peak hour, Design Cases 2026 and 2036, with subject development.

SIDRA Intersection 10.0 was used to analyse the intersection performance in terms of the following parameters:

Level of Services (LoS)

LoS is a qualitative measure describing operating conditions as perceived by motorists. LoS varies from ideal conditions 'LoS A' to virtual gridlock 'LoS F'. TCC City Plan Table SC6.4.5.6 *Desirable Service Standard for Intersection / Access Operation* specifies the Acceptable LoS for urban Roundabout Intersection, Priority Intersection or Give-Way/Stop Controlled Intersection to be 'LoS D'.

Degree of Saturation (DoS)

DoS is the mean difference between the uninterrupted travel time and the interrupted travel time for all vehicles making that particular movement which arrive at the intersection during the peak hour. TCC City Plan Table SC6.4.5.6 *Desirable Service Standard for Intersection / Access Operation* specifies the Acceptable DoS for urban Roundabout Intersection to be less than 0.85, and for Priority Intersection or Give-Way/Stop Controlled Intersection to be less than 0.8.

4.5 Summary of Analysis (With/without development scenario)

SIDRA analyses reports are attached in Appendix F and summarised in Tables 7 to 10. Based on information within this report, the results of our SIDRA analysis indicate that the proposed development will not have any significant impact on the existing road network.

Table 7 – Summary of SIDRA analysis – AM peak hour, background case 2026

Intersection	Approach	DoS	Avg. delay (sec)	LoS	Queue (m)
Meenan St / Lonerganne St	Meenan St (S)	0.066	0.8	NA ^Δ	0.5
	Lonerganne St (E)	0.018	8.8	A	0.4
	Meenan St (N)	0.126	0.3	NA ^Δ	0.4
	Lonerganne St (W)	0.014	9.0	A	0.3
	INTERSECTION	0.126	1.1	NA^Δ	0.5
Peel St / Lonerganne St	Peel St (S)	0.003	1.8	NA ^Δ	0.0
	Lonerganne St (E)	0.007	4.5	A	0.2
	Peel St (N)	0.002	2.3	NA ^Δ	0.0
	Lonerganne St (W)	0.014	4.4	A	0.3
	INTERSECTION	0.014	3.8	NA^Δ	0.3
Peel St / Gorden St	Peel St (S)	0.014	3.7	A	0.5
	Gorden St (E)	0.014	4.5	A	0.5
	Peel St (N)	0.004	4.1	A	0.1
	Gorden St (W)	0.013	5.6	A	0.4
	INTERSECTION	0.014	4.5	A	0.5
Meenan St / Gorden St	Meenan St (S)	0.124	0.5	NA ^Δ	0.6
	Gorden St (E)	0.022	9.6	A	0.6
	Meenan St (N)	0.158	0.4	NA ^Δ	0.8
	Gorden St (W)	0.038	10.3	B	0.9
	INTERSECTION	0.158	1.2	NA^Δ	0.9

Table 8 – Summary of SIDRA analysis – AM peak hour, developed case 2026

Intersection	Approach	DoS	Avg. delay (sec)	LoS	Queue (m)
Meenan St / Lonerganne St	Meenan St (S)	0.066	0.8	NA ^Δ	0.5
	Lonerganne St (E)	0.036	8.9	A	0.9
	Meenan St (N)	0.135	0.7	NA ^Δ	0.4
	Lonerganne St (W)	0.014	9.1	A	0.3
	INTERSECTION	0.135	1.5	NA^Δ	0.9
Peel St / Lonerganne St	Peel St (S)	0.010	0.7	NA ^Δ	0.1
	Lonerganne St (E)	0.018	4.2	A	0.5
	Peel St (N)	0.010	2.3	NA ^Δ	0.3
	Lonerganne St (W)	0.024	4.5	A	0.6
	INTERSECTION	0.024	3.3	NA^Δ	0.6
Peel St / Gorden St	Peel St (S)	0.026	3.6	A	0.9
	Gorden St (E)	0.026	5.0	A	0.9
	Peel St (N)	0.015	3.6	A	0.5
	Gorden St (W)	0.025	6.2	A	0.8
	INTERSECTION	0.026	4.7	A	0.9
Meenan St / Gorden St	Meenan St (S)	0.143	1.3	NA ^Δ	2.2
	Gorden St (E)	0.044	9.9	A	1.1
	Meenan St (N)	0.158	0.4	NA ^Δ	0.8
	Gorden St (W)	0.039	10.6	B	0.9
	INTERSECTION	0.158	1.7	NA^Δ	2.2

Table 9 – Summary of SIDRA analysis – AM peak hour, background case 2036

Intersection	Approach	DoS	Avg. delay (sec)	LoS	Queue (m)
Meenan St / Lonerganne St	Meenan St (S)	0.066	0.7	NA ^Δ	0.5
	Lonerganne St (E)	0.017	8.7	A	0.4
	Meenan St (N)	0.119	0.4	NA ^Δ	0.4
	Lonerganne St (W)	0.014	8.9	A	0.3
	INTERSECTION	0.119	1.1	NA^Δ	0.5
Peel St / Lonerganne St	Peel St (S)	0.003	1.8	NA ^Δ	0.0
	Lonerganne St (E)	0.007	4.5	A	0.2
	Peel St (N)	0.002	2.3	NA ^Δ	0.0
	Lonerganne St (W)	0.014	4.4	A	0.3
	INTERSECTION	0.014	3.8	NA^Δ	0.3
Peel St / Gorden St	Peel St (S)	0.014	3.7	A	0.5
	Gorden St (E)	0.014	4.5	A	0.5
	Peel St (N)	0.004	4.1	A	0.1
	Gorden St (W)	0.013	5.6	A	0.4
	INTERSECTION	0.014	4.5	A	0.5
Meenan St / Gorden St	Meenan St (S)	0.116	0.6	NA ^Δ	0.5
	Gorden St (E)	0.022	9.5	A	0.5
	Meenan St (N)	0.154	0.4	NA ^Δ	0.8
	Gorden St (W)	0.037	10.1	B	0.9
	INTERSECTION	0.154	1.2	NA^Δ	0.9

Table 10 – Summary of SIDRA analysis – AM peak hour, developed case 2036

Intersection	Approach	DoS	Avg. delay (sec)	LoS	Queue (m)
Meenan St / Lonerganne St	Meenan St (S)	0.066	0.8	NA ^Δ	0.5
	Lonerganne St (E)	0.035	8.8	A	0.9
	Meenan St (N)	0.127	0.7	NA ^Δ	0.4
	Lonerganne St (W)	0.014	9.0	A	0.3
	INTERSECTION	0.127	1.6	NA^Δ	0.9
Peel St / Lonerganne St	Peel St (S)	0.010	0.7	NA ^Δ	0.1
	Lonerganne St (E)	0.018	4.2	A	0.5
	Peel St (N)	0.010	2.3	NA ^Δ	0.3
	Lonerganne St (W)	0.024	4.5	A	0.6
	INTERSECTION	0.024	3.3	NA^Δ	0.6
Peel St / Gorden St	Peel St (S)	0.026	3.6	A	0.9
	Gorden St (E)	0.026	5.0	A	0.9
	Peel St (N)	0.015	3.6	A	0.5
	Gorden St (W)	0.025	6.2	A	0.8
	INTERSECTION	0.026	4.7	A	0.9
Meenan St / Gorden St	Meenan St (S)	0.135	1.4	NA ^Δ	2.1
	Gorden St (E)	0.043	9.7	A	1.1
	Meenan St (N)	0.154	0.4	NA ^Δ	0.8
	Gorden St (W)	0.038	10.4	B	0.9
	INTERSECTION	0.154	1.8	NA^Δ	2.1

Notes from SIDRA Intersection 10.0:

^Δ NA: Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule)

4.6 Accesses and Carparking

The drawings show the proposed alteration of carparking at the existing facility, as well as new carparking associated with the new development.

Drawing WD 102 (rev 2) provides the carpark schedule outlining the required number of bays and the number of bays provided.

5. CONCLUSION

5.1 Summary of Impacts

Based on information within this report, the results of our SIDRA analysis indicate that the proposed development will not have any significant impact on the existing road network for the developed year and the 10-year design horizon.

5.2 Certification Statement and Authorisation

This report was prepared by Arry Charrismanagara (RPEQ 34266) under the direct supervision of Daniel Eric Johnstone (RPEQ 5892).

APPENDIX A
Building Designer's plans

TAIHS GORDON STREET PRECINCT MASTERPLANNING TAIHS (ABORIGINAL & ISLANDER HEALTH SERVICE) CORNER OF GORDEN & PEEL STREET, GARBUTT

SHEET LIST						
SHEET No.	SHEET NAME	Project Issue DATE	Project Revision	Current Revision	Revision Date	Current Revision Description
000	COVER PAGE	06.11.25	2	2	11.11.25	PRELIMINARY
100	SITE PLAN - EXISTING	06.11.25	2	2	11.11.25	PRELIMINARY
101	SITE PLAN - DEMOLITION	06.11.25	2	2	11.11.25	PRELIMINARY
102	SITE PLAN - PROPOSED	06.11.25	2	2	11.11.25	PRELIMINARY
200	FLOOR PLANS	06.11.25	2	2	11.11.25	PRELIMINARY
201	FLOOR PLANS	06.11.25	2	2	11.11.25	PRELIMINARY
300	ELEVATIONS	06.11.25	2	2	11.11.25	PRELIMINARY
301	ELEVATIONS	06.11.25	2	2	11.11.25	PRELIMINARY

GENERAL:

- IF IN DOUBT, JUST ASK.
- USE FIGURED DIMENSIONS, **DO NOT** SCALE FROM DRAWINGS.
- CONFIRM ALL RELEVANT DIMENSIONS, LEVELS AND DETAILS ON SITE PRIOR TO COMMENCEMENT OF ALL WORK. CONFIRM SETBACKS TO ALL ALIGNMENTS.
- THESE ARCHITECTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ENGINEERING AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REFERRED TO THE BUILDING DESIGNER FOR DISCUSSION BEFORE PROCEEDING WITH THE WORK.
- DESIGN AND CONSTRUCTION TO COMPLY WITH CURRENT STANDARD BUILDING BY-LAWS, BUILDING ACT, BUILDING AMENDMENT ACT, BUILDING AND OTHER LEGISLATION AMENDMENT ACT, QUEENSLAND DEVELOPMENT CODE, BUILDING CODE OF AUSTRALIA, CURRENT AUSTRALIAN STANDARDS, STATUTORY REQUIREMENTS, ORDINANCES, LOCAL GOVERNMENT REQUIREMENTS, RELEVANT BUILDING AUTHORITIES AND ALL CONTRACT DOCUMENTATION.
- CARRY OUT ALL WORK IN A SAFE MANNER IN ACCORDANCE WITH APPLICABLE STATUTORY REGULATIONS, BY-LAWS OR RULES. COMPLY WITH RELEVANT STATE OCCUPATIONAL HEALTH AND SAFETY ACTS INCLUDING ASSOCIATED REGULATIONS AND CODES OF PRACTISE. CONTRACTOR IS RESPONSIBLE FOR OCCUPATIONAL HEALTH AND SAFETY OF SITE PERSONNEL AND GENERAL PUBLIC IN ACCORDANCE WITH LEGISLATIVE REQUIREMENTS, INDUSTRIAL AGREEMENTS AND ACCEPTED INDUSTRY PRACTISE.
- TIMBER CONSTRUCTION TO COMPLY WITH AS1720. DOMESTIC TIMBER CONSTRUCTION IN NON-CYCLONIC LOCATIONS SHALL BE IN ACCORDANCE WITH AS1684.
- ALL BRICKWORK AND BLOCKWORK SHALL BE IN ACCORDANCE WITH AS3700.
- ALL PROPRIETARY PRODUCTS AND SYSTEMS TO BE INSTALLED TO MANUFACTURER'S SPECIFICATION AND INSTRUCTIONS.
- GARAGE DOORS TO COMPLY WITH THE ABCB HOUSING PROVISION PART 2.2. - GARAGE DOORS AND OTHER LARGE ACCESS DOORS IN OPENINGS NOT MORE THAN 3M IN HEIGHT IN EXTERNAL WALLS OF BUILDINGS DETERMINED AS BEING LOCATED IN WIND REGION C OR D IN ACCORDANCE WITH FIGURE 2.2.3 ; AS/NZS 4505.
- WHEN BUILDING IN A CORROSIVE ENVIRONMENT, CORROSION PROTECTION IS TO COMPLY WITH SECTION 6.3.9 OF THE ABCB HOUSING PROVISIONS
- THESE DRAWINGS ARE THE COPYRIGHT OF THE DESIGN HOUSE NQ AND MAY NOT BE USED, RETAINED OR REPRODUCED WITHOUT WRITTEN AUTHORITY.
- THESE DRAWINGS ARE FOR THE PURPOSE OF GAINING A BUILDING APPROVAL ONLY.

CLASS 1 & 2 BUILDINGS OR ASSESSABLE AND SELF-ASSESSABLE RENOVATIONS

LIGHTING - ENERGY EFFICIENT LIGHTING - WHICH IS A GLOBE WITH A MINIMUM OUTPUT OF 30 LUMENS/WATT INSTALLED TO A MINIMUM OF 80% OF THE TOTAL FIXED INTERNAL LIGHTING. EXCLUDING LAMPS RADIATING HEAT IN BATHROOMS.

NEW AND REPLACEMENT AIR-CONDITIONING TO HAVE ENERGY EFFICIENCY RATING TO MINIMUM 2.9

IN AREAS SERVICED BY A WATER SERVICE PROVIDER:-

- * **SHOWER ROSES IN A AREA WITH A RETICULATED WATER SERVICE MUST BE MIN 3 STAR WELS RATED.**
- * **ALL TOILET CISTERNS MUST HAVE A DUAL FLUSH FUNCTION AND HAVE A MIN. OF 4 STAR WELS RATING WHICH MUST BE COMPATIBLE WITH THE SIZE OF THE TOILET BOWL.**
- * **ALL TAPS SERVING LAUNDRY TUBS, KITCHEN SINKS AND BATHROOM BASINS MUST HAVE A 3 STAR WELS RATING.**

(WELS - WATER EFFICIENCY LABELLING AND STANDARDS)

(QDC - QUEENSLAND DEVELOPEMENT CODE)

(MP - MANDATORY PART)

SUSTAINABLE BUILDING REQUIREMENTS @ 1 MARCH 2009 - CLASS 1 BUILDINGS

NEW WORK - HOT WATER SYSTEMS MUST BE SUPPLIED BY A-

- SOLAR HOT WATER SYSTEM, OR HEAT PUMP HOT WATER SYSTEM OR GAS HOT WATER SYSTEM.

TANKS IF REQUIRED BY LOCAL AUTHORITY:

- 5000LTR FOR DETACHED CLASS 1, 3000LTR FOR OTHER THAN CLASS 1 DETACHED AS PER QDC MP 4.2 WATER SAVINGS TARGETS:-
- TO RECEIVE A MINIMUM ROOF AREA AT LEAST 100SQM OR ONE HALF OF THE TOTAL ROOF AREA WHICHEVER IS THE LESSER.
- BE CONNECTED TO TOILET CISTERNS, WASHING MACHINE COLD WATER TAPS (OTHER THAN GREY WATER CONNS.) AND EXTERNAL USE TAPS, REFER QDC MP 4.2 FOR VARIATIONS. PLUMBER TO REFER TO QDC MP 4.2 FOR COMPLETE TANK REQUIREMENTS

NOTES:

- VERIFY ALL LEVELS & DIMENSIONS BEFORE COMMENCING ANY FABRICATION
- FIGURED DIMENSIONS TO TAKE PRECEDENCE OVER SCALED
- COMPLY WITH LOCAL AUTHORITY, STANDARD BUILDING LAW AND ALL RELEVANT AUSTRALIAN STANDARDS & LEGISLATION
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1		07.11.25	PRELIMINARY

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Project: TAIHS GORDON STREET
PRECINCT MASTERPLANNING

Client: TAIHS (ABORIGINAL &
ISLANDER HEALTH SERVICE)

Location: CORNER OF GORDEN &
PEEL STREET,
GARBUTT

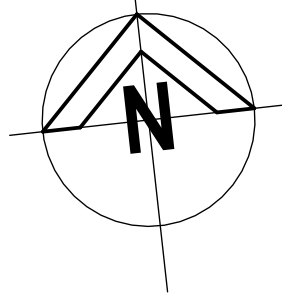
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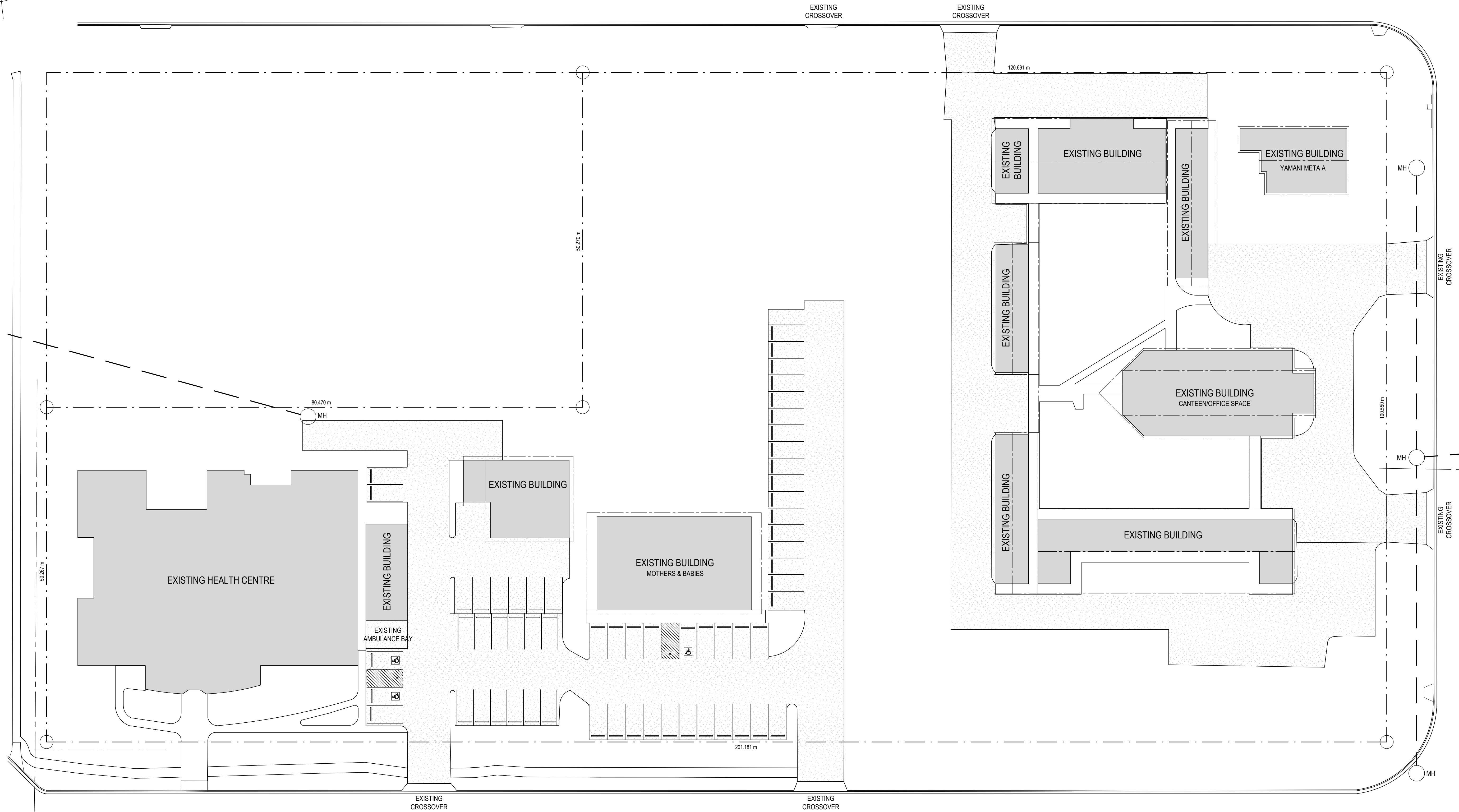
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2025-329-C	DD 000	2

WIND CATEGORY C2



PRELIMINARY
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 COMPLY WITH RELEVANT COVENANT &
 BUILDING CERTIFICATION APPROVALS

LONERGANNE STREET



PEEL STREET

GORDEN STREET

REAL PROPERTY DESCRIPTION
 LOT 158 ON SP 139546 & LOT 159 ON SP223219
 TOTAL AREA OF LAND: 16180m²
 LOCAL GOVERNMENT: TOWNSVILLE CITY COUNCIL

1 SITE PLAN - EXISTING
 1:300

NOTES:

1. VERIFY ALL LEVELS & DIMENSIONS BEFORE COMMENCING ANY FABRICATION
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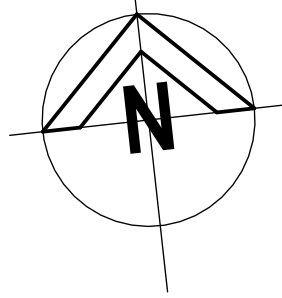
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Project: TAIHS GORDON STREET
 PRECINCT MASTERPLANNING
Client: TAIHS (ABORIGINAL &
 ISLANDER HEALTH SERVICE)
Location: CORNER OF GORDEN & PEEL
 STREET, GARBUTT

TITLE: SITE PLAN - EXISTING
Date: 06.11.25 **Drawn:** D.A.
Scale: As indicated **Designed:** N.H.
Job No.: 2025-329-C **Drawing No.:** WD 100 **Rev.:** 2

WIND CATEGORY C2



PRELIMINARY
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BUILDING CERTIFICATION APPROVALS

LONERGANNE STREET

EXISTING CROSSOVER

EXISTING CROSSOVER

120.691 m

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING
YAMANI META A

MH

EXISTING CROSSOVER

PEEL STREET

100.550 m

MH

EXISTING CROSSOVER

MH

EXISTING HEALTH CENTRE

EXISTING BUILDING

EXISTING AMBULANCE BAY

EXISTING BUILDING

EXISTING BUILDING
MOTHERS & BABIES

201.181 m

EXISTING CROSSOVER

EXISTING CROSSOVER

GORDEN STREET

REAL PROPERTY DESCRIPTION
LOT 158 ON SP 139546 & LOT 159 ON SP223219
TOTAL AREA OF LAND: 16180m²
LOCAL GOVERNMENT: TOWNSVILLE CITY COUNCIL

1 SITE PLAN - DEMOLITION
1:300

NOTES:

1. VERIFY ALL LEVELS & DIMENSIONS BEFORE COMMENCING ANY FABRICATION
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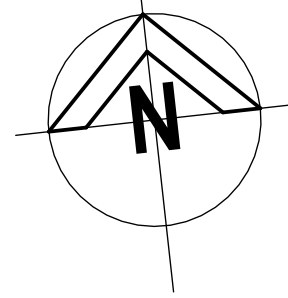
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PRECINCT MASTERPLANNING
Client: TAIHS (ABORIGINAL &
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Location: CORNER OF GORDEN & PEEL
STREET, GARBUTT

TITLE: SITE PLAN - DEMOLITION
Date: 06.11.25 Drawn: D.A.
Scale: As Designed: N.H.
indicated
Job No.: Drawing No.: Rev.
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WIND CATEGORY C2



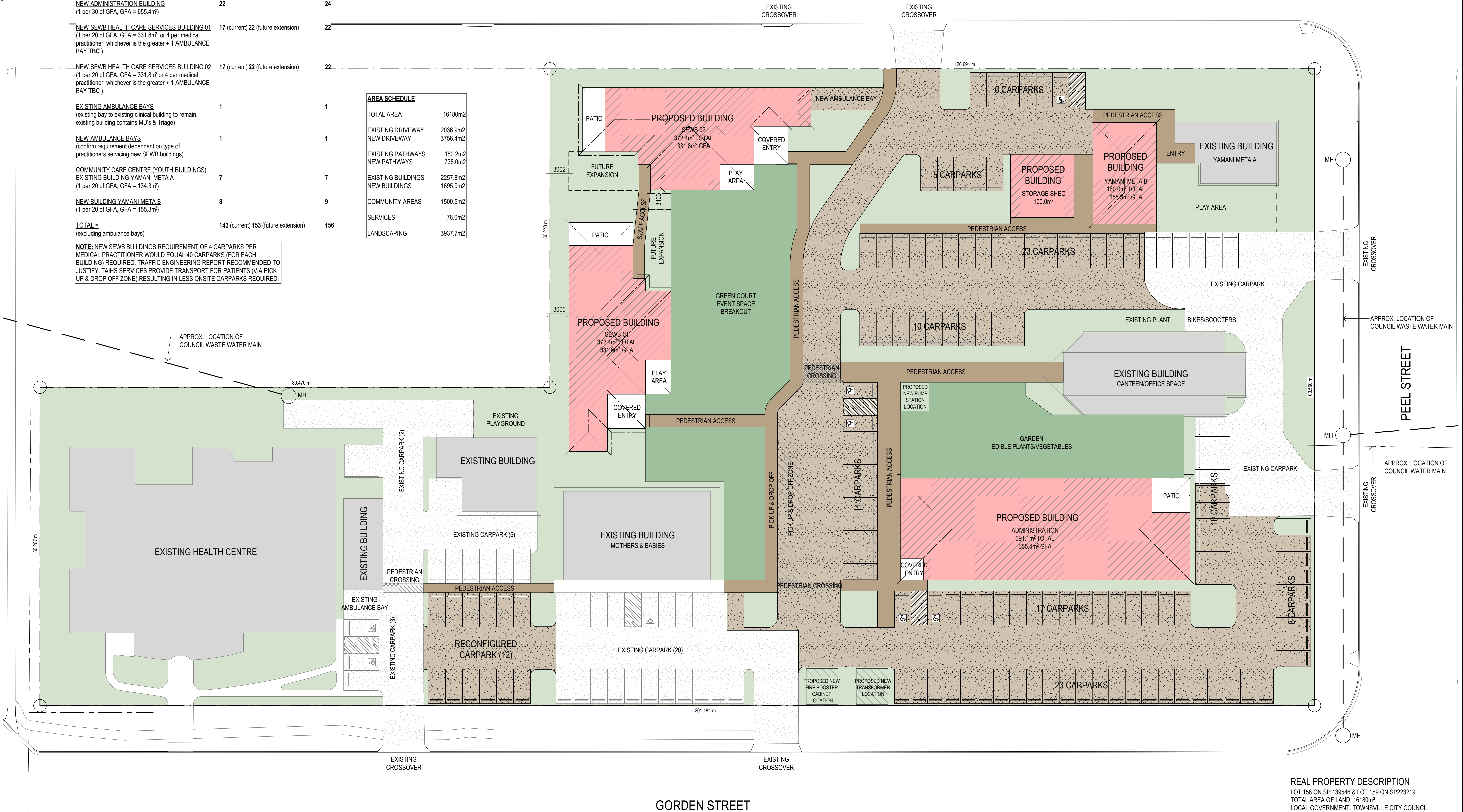
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BUILDING CERTIFICATION APPROVALS

CAR PARK SCHEDULE	REQUIRED	PROVIDED
EXISTING CLINICAL BUILDINGS (from previous approval)	61	61
EX. STAFF CANTEEN / OFFICE BUILDING (1 per 30 of GFA, GFA = 311.5m ²)	11	11
NEW ADMINISTRATION BUILDING (1 per 30 of GFA, GFA = 655.4m ²)	22	24
NEW SEWB HEALTH CARE SERVICES BUILDING 01 (1 per 20 of GFA, GFA = 331.8m ² , or 4 per medical practitioner, whichever is the greater + 1 AMBULANCE BAY TBC)	17 (current) 22 (future extension)	22
NEW SEWB HEALTH CARE SERVICES BUILDING 02 (1 per 20 of GFA, GFA = 331.8m ² , or 4 per medical practitioner, whichever is the greater + 1 AMBULANCE BAY TBC)	17 (current) 22 (future extension)	22
EXISTING AMBULANCE BAYS (existing bay to existing clinical building to remain, existing building contains MD's & Triage)	1	1
NEW AMBULANCE BAYS (confirm requirement dependant on type of practitioners servicing new SEWB buildings)	1	1
COMMUNITY CARE CENTRE (YOUTH BUILDINGS) EXISTING BUILDING YAMANI META A (1 per 20 of GFA, GFA = 134.3m ²)	7	7
NEW BUILDING YAMANI META B (1 per 20 of GFA, GFA = 155.3m ²)	8	9
TOTAL = (excluding ambulance bays)	143 (current) 153 (future extension)	156

AREA SCHEDULE	
TOTAL AREA	16180m ²
EXISTING DRIVEWAY	2036.9m ²
NEW DRIVEWAY	3756.4m ²
EXISTING PATHWAYS	180.2m ²
NEW PATHWAYS	738.0m ²
EXISTING BUILDINGS	2257.8m ²
NEW BUILDINGS	1695.9m ²
COMMUNITY AREAS	1500.5m ²
SERVICES	76.6m ²
LANDSCAPING	3937.7m ²

NOTE: NEW SEWB BUILDINGS REQUIREMENT OF 4 CARPARKS PER MEDICAL PRACTITIONER WOULD EQUAL 40 CARPARKS (FOR EACH BUILDING) REQUIRED. TRAFFIC ENGINEERING REPORT RECOMMENDED TO JUSTIFY. TAIHS SERVICES PROVIDE TRANSPORT FOR PATIENTS (VIA PICK UP & DROP OFF ZONE) RESULTING IN LESS ONSITE CARPARKS REQUIRED.

LONERGANNE STREET



1 SITE PLAN - PROPOSED
1:300

REAL PROPERTY DESCRIPTION
LOT 158 ON SP 139546 & LOT 159 ON SP223219
TOTAL AREA OF LAND: 16180m²
LOCAL GOVERNMENT: TOWNSVILLE CITY COUNCIL

- NOTES:**
1. VERIFY ALL LEVELS & DIMENSIONS BEFORE COMMENCING ANY FABRICATION
 2. FIGURED DIMENSIONS TO TAKE PRECEDENCE OVER SCALED
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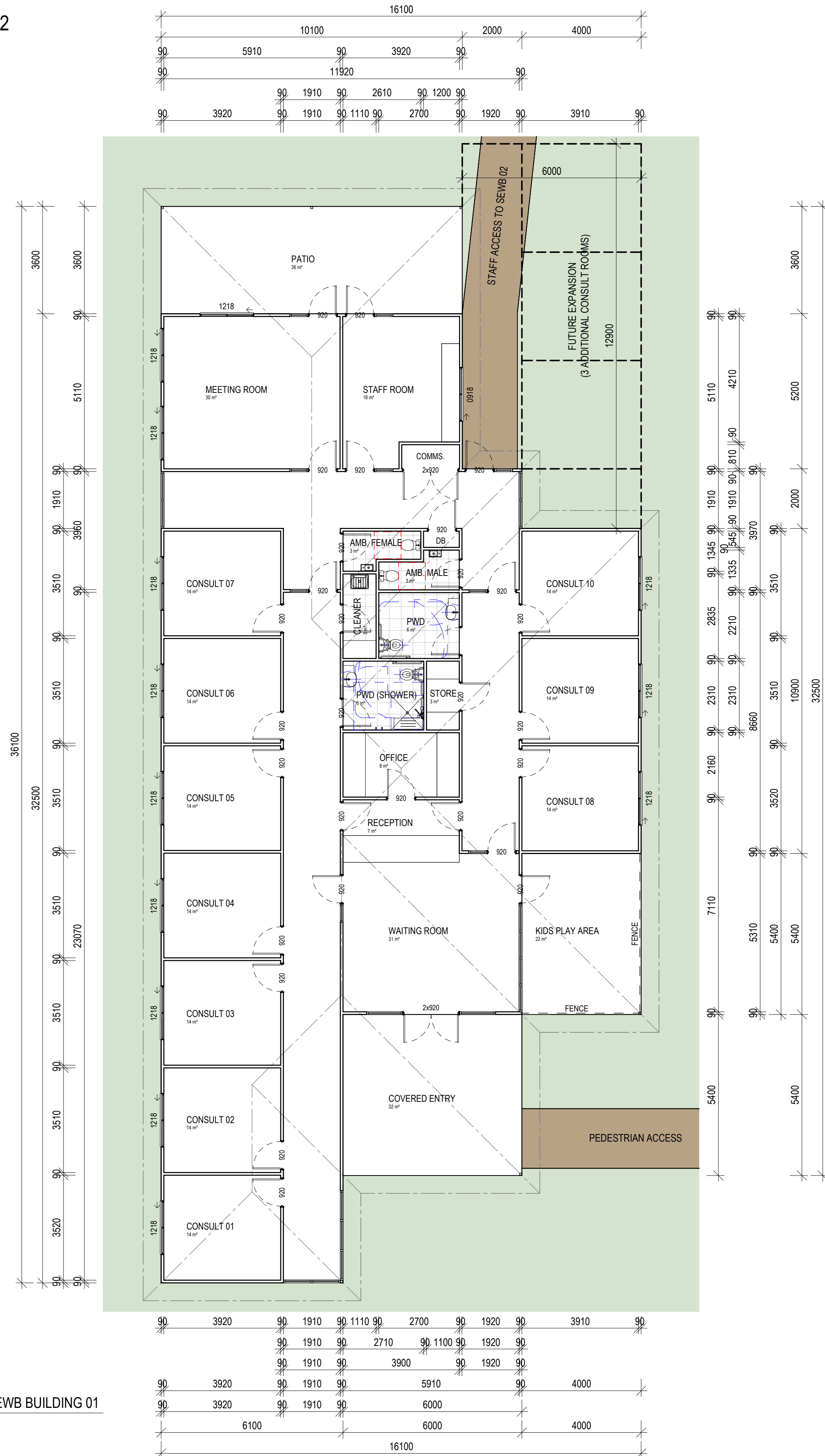
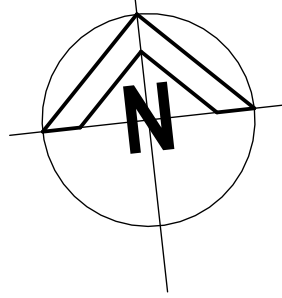
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Project: TAIHS GORDON STREET
PRECINCT MASTERPLANNING
Client: TAIHS (ABORIGINAL &
ISLANDER HEALTH SERVICE)
Location: CORNER OF GORDEN & PEEL
STREET, GARBUTT

TITLE: SITE PLAN - PROPOSED
Date: 06.11.25 Drawn: D.A.
Scale: As Designed: N.H.
indicated
Job No.: Drawing No.: Rev.
2025-329-C WD 102 2

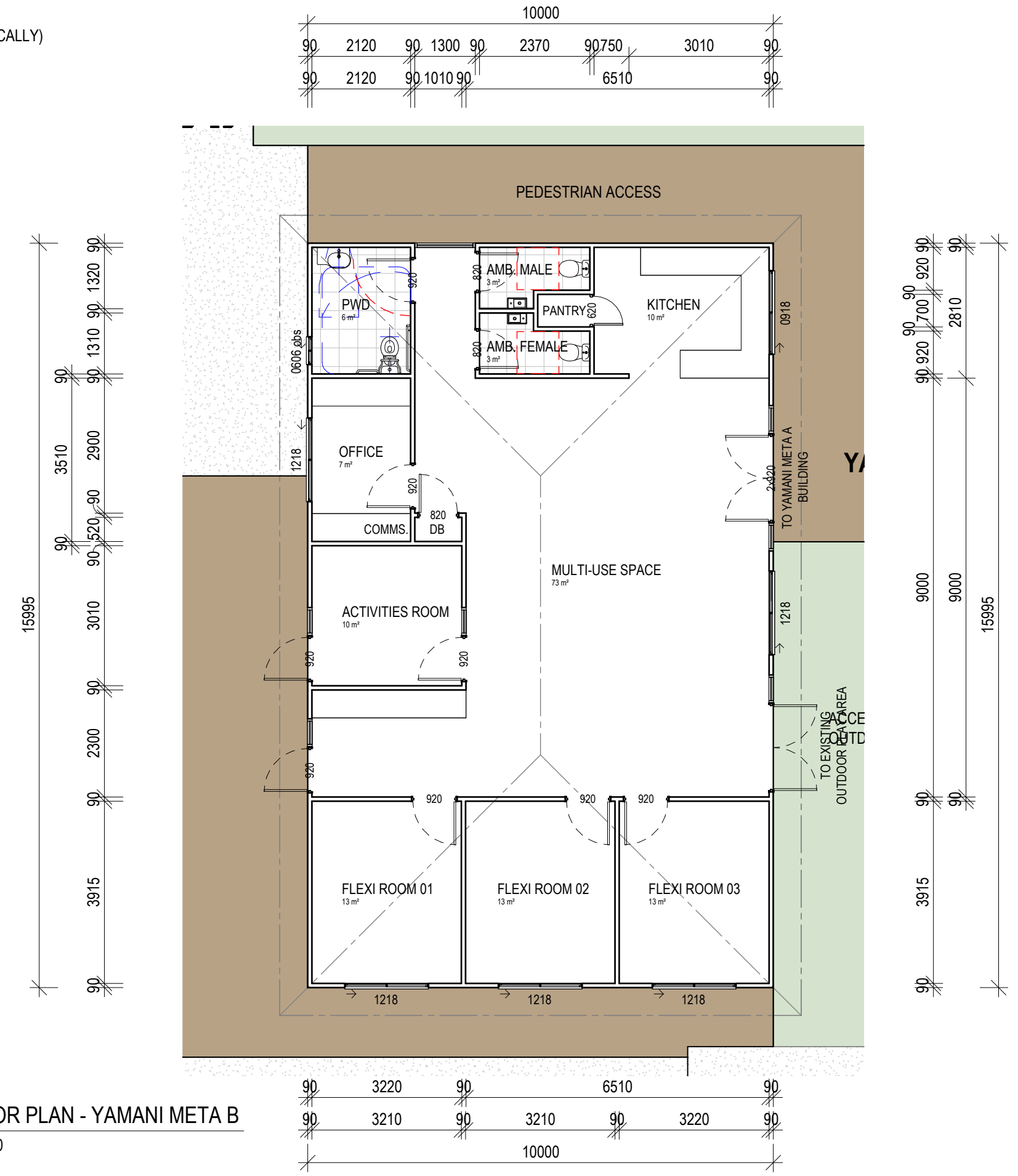
WIND CATEGORY C2



1 FLOOR PLAN - SEWB BUILDING 01
1:100



2 FLOOR PLAN - SEWB BUILDING 02
1:100
(SIMILAR TO SEWB BUILDING 01, ROTATED & MIRRORRED VERTICALLY)



3 FLOOR PLAN - YAMANI META B
1:100

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BUILDING CERTIFICATION APPROVALS

NOTES:

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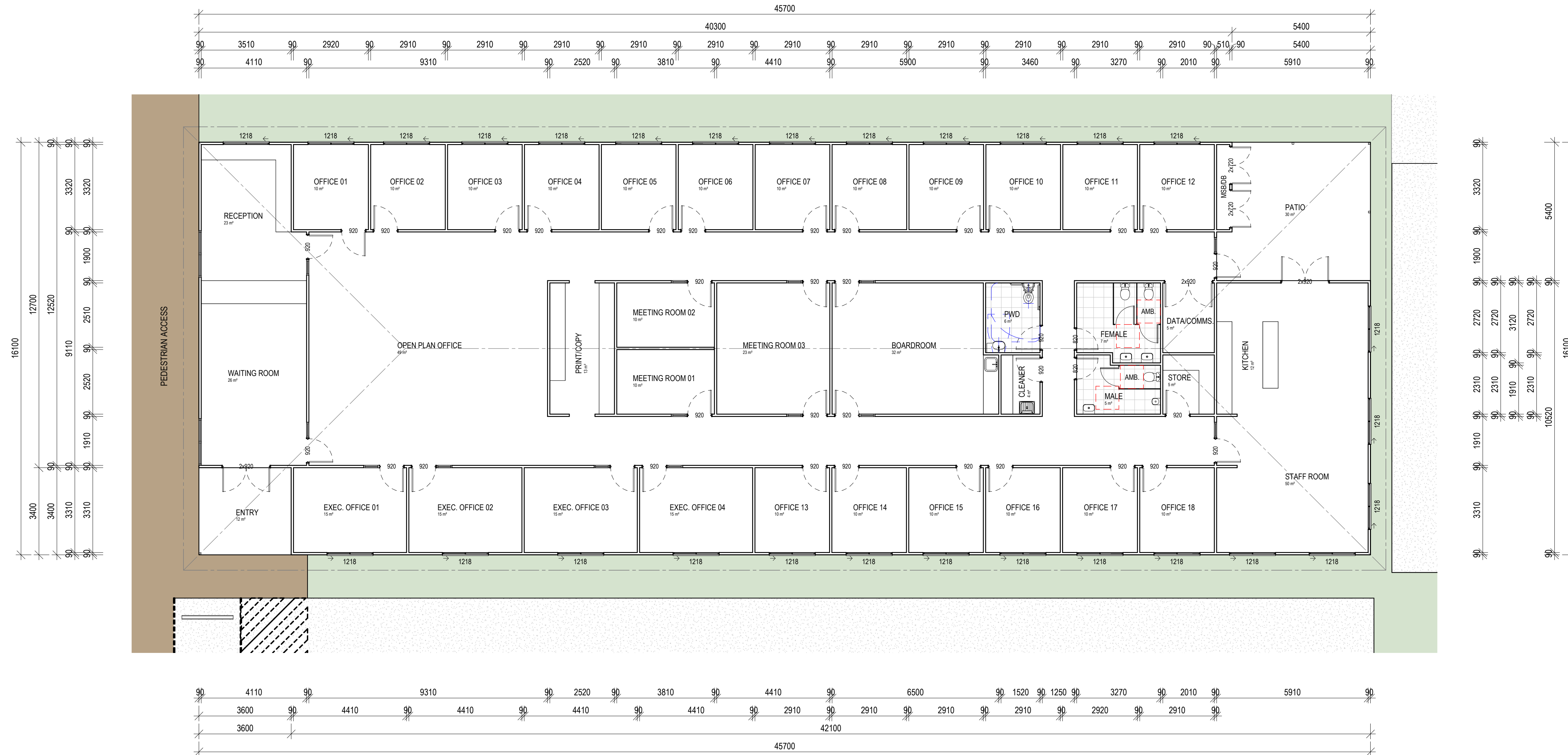
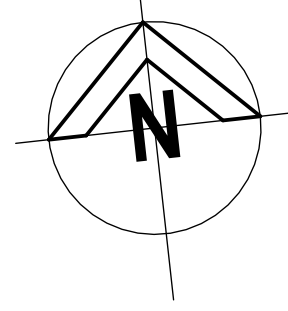
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Location: CORNER OF GORDEN & PEEL
STREET, GARBUTT

TITLE: FLOOR PLANS
Date: 06.11.25 Drawn: D.A.
Scale: 1 : 100 Designed: N.H.
Job No.: Drawing No.: Rev.
2025-329-C WD 200 2



1 FLOOR PLAN - ADMINISTRATION BUILDING
1:100

NOTES:

1. VERIFY ALL LEVELS & DIMENSIONS BEFORE COMMENCING ANY FABRICATION
2. FIGURED DIMENSIONS TO TAKE PRECEDENCE OVER SCALED
3. COMPLY WITH LOCAL AUTHORITY, STANDARD BUILDING LAW AND ALL RELEVANT AUSTRALIAN STANDARDS & LEGISLATION
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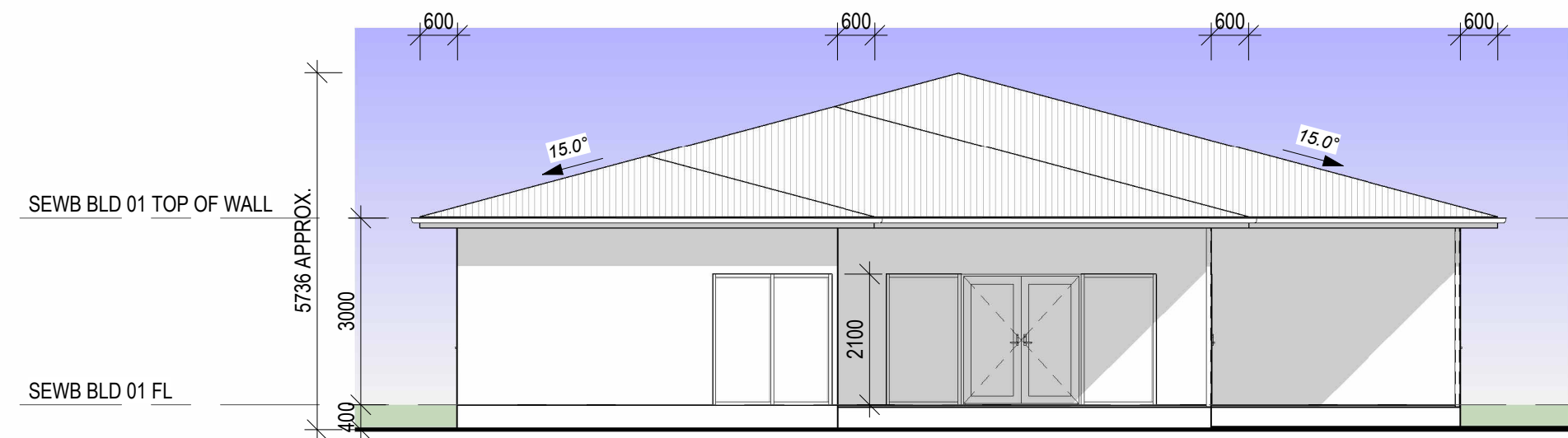
REV	ISSUE	DATE	DESCRIPTION
2		11.11.25	PRELIMINARY

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a: 19 Castlemaine St, Kirwan, QLD 4818
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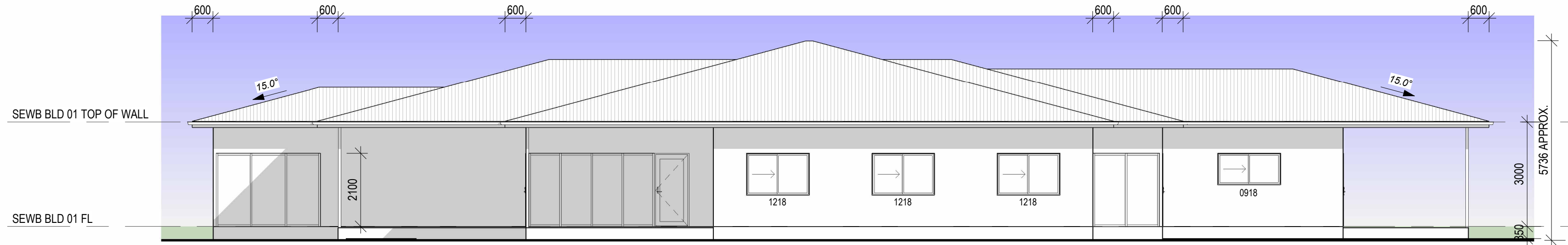


Project: TAIHS GORDON STREET
PRECINCT MASTERPLANNING
Client: TAIHS (ABORIGINAL &
ISLANDER HEALTH SERVICE)
Location: CORNER OF GORDEN & PEEL
STREET, GARBUTT

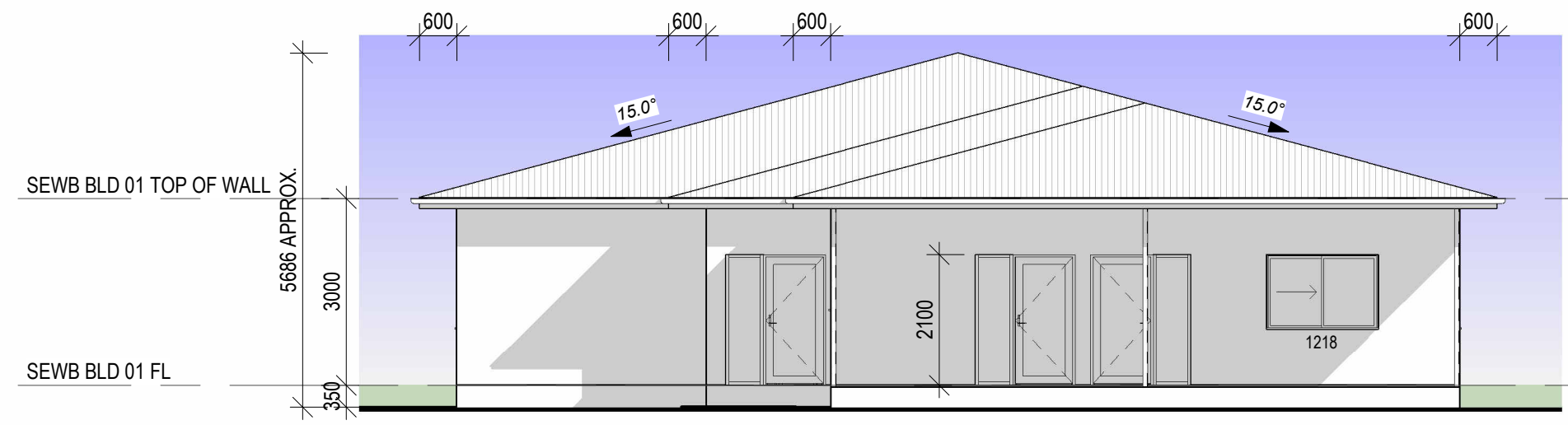
TITLE: FLOOR PLANS
Date: 06.11.25 Drawn: D.A.
Scale: 1 : 100 Designed: N.H.
Job No.: 2025-329-C Drawing No.: WD 201 Rev.: 2



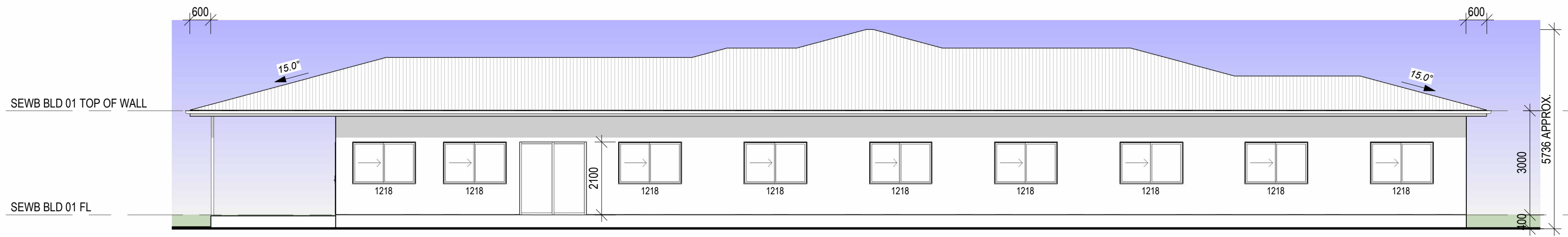
01 ELEVATION 01 - SEWB BUILDING 01
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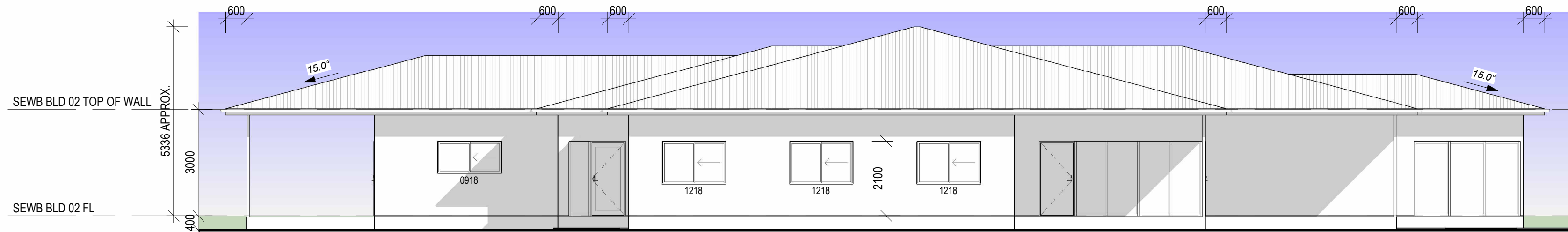
02 ELEVATION 02 - SEWB BUILDING 01
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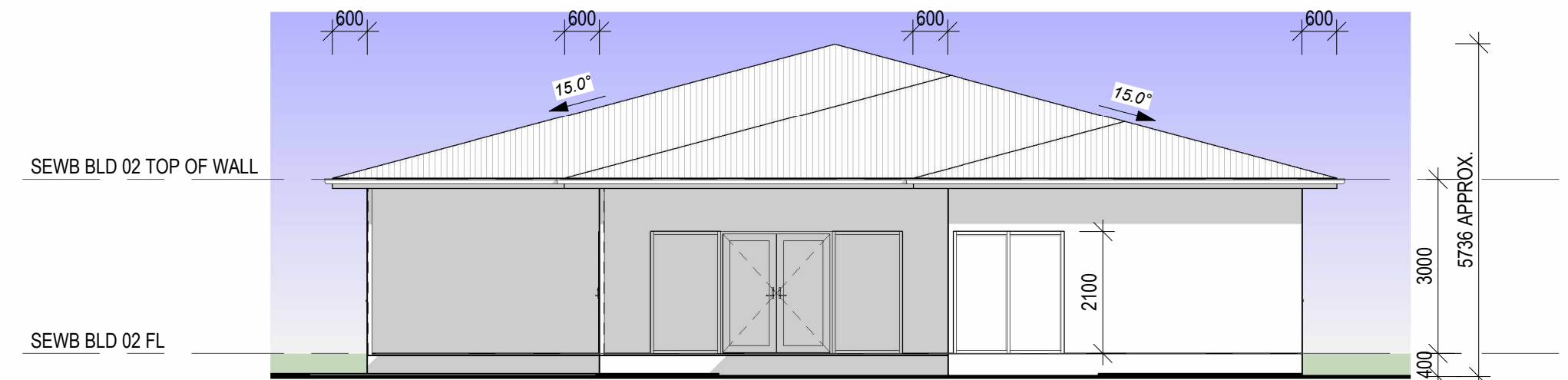
03 ELEVATION 03 - SEWB BUILDING 01
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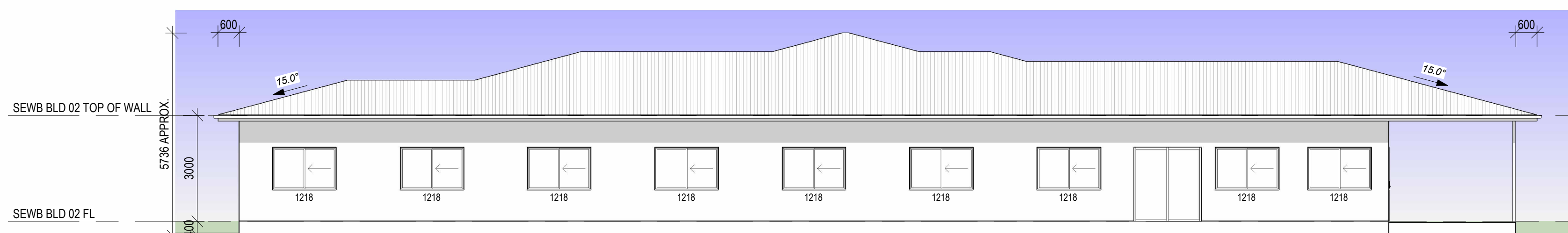
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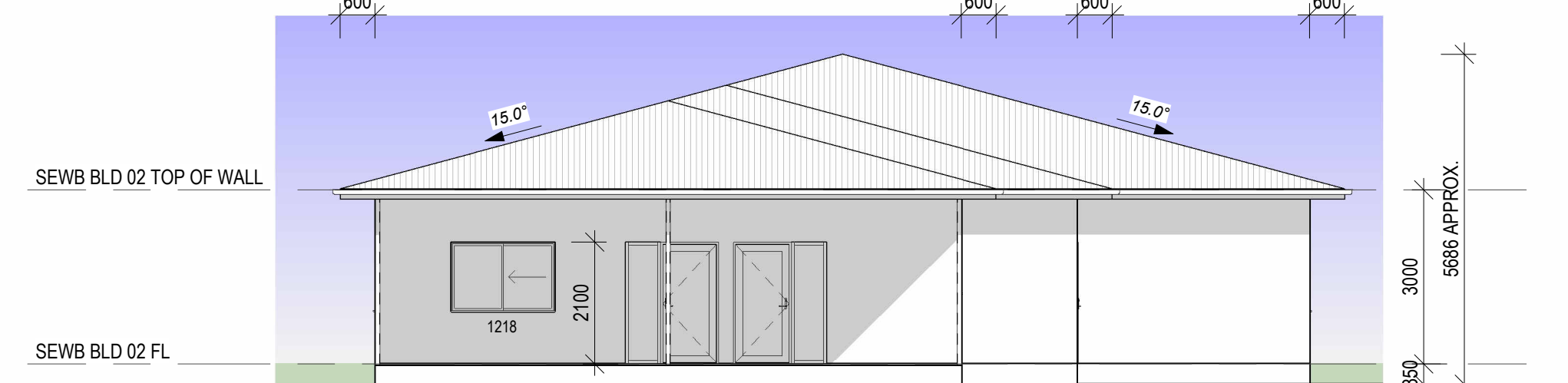
05 ELEVATION 05 - SEWB BUILDING 02
 1:100



06 ELEVATION 06 - SEWB BUILDING 02
 1:100



07 ELEVATION 07 - SEWB BUILDING 02
 1:100



08 ELEVATION 08 - SEWB BUILDING 02
 1:100

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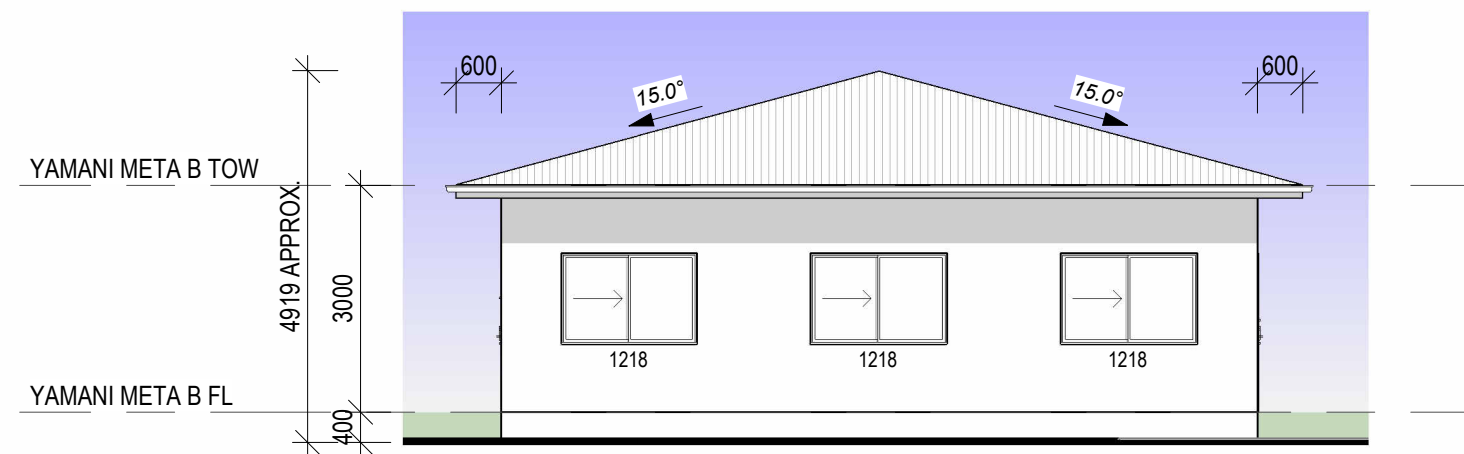
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Project: TAIHS GORDON STREET
 PRECINCT MASTERPLANNING
 Client: TAIHS (ABORIGINAL &
 ISLANDER HEALTH SERVICE)
 Location: CORNER OF GORDEN & PEEL
 STREET, GARBUTT

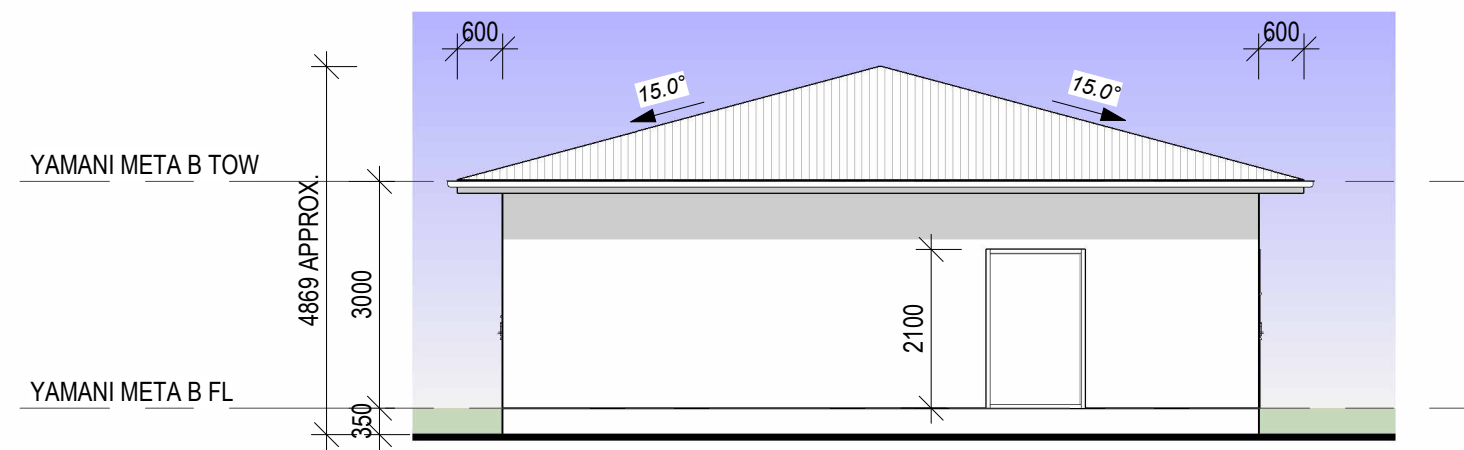
TITLE: ELEVATIONS
 Date: 06.11.25 Drawn: D.A.
 Scale: 1 : 100 Designed: N.H.
 Job No.: 2025-329-C Drawing No.: WD 300 Rev. 2



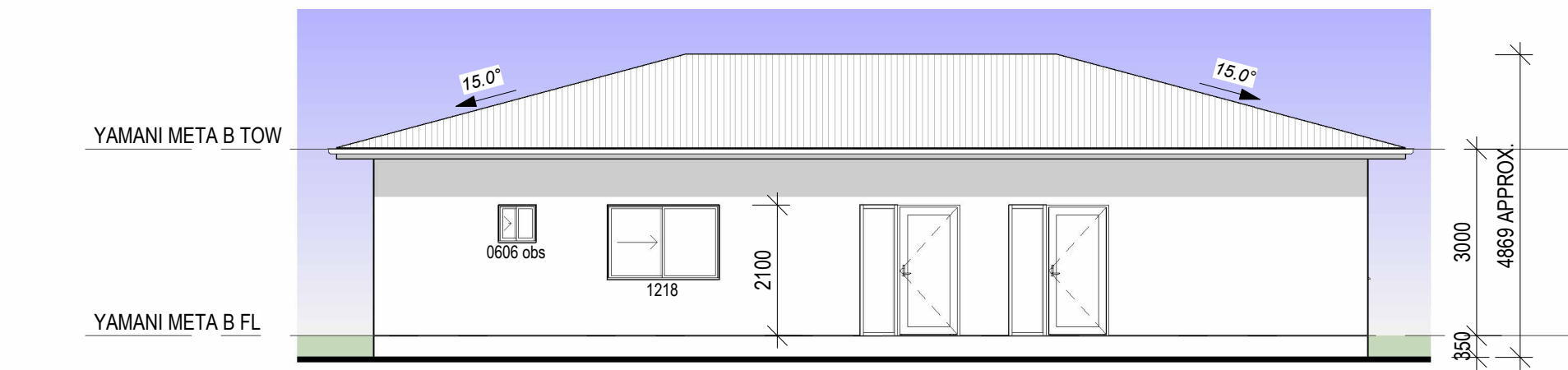
09 ELEVATION 09 - YAMANI META B
1:100



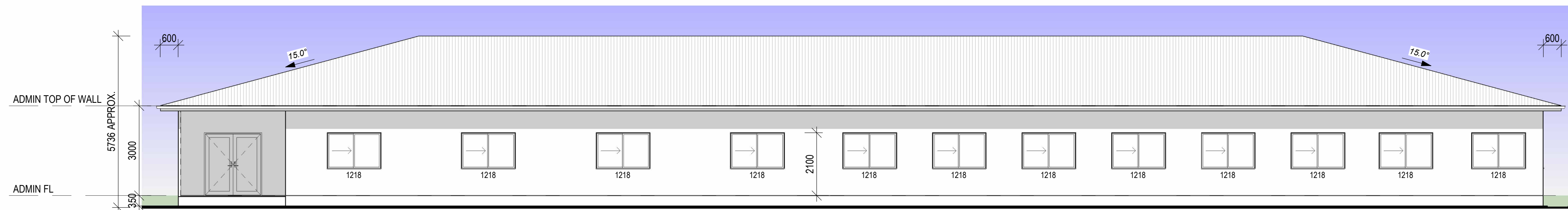
10 ELEVATION 10 - YAMANI META B
1:100



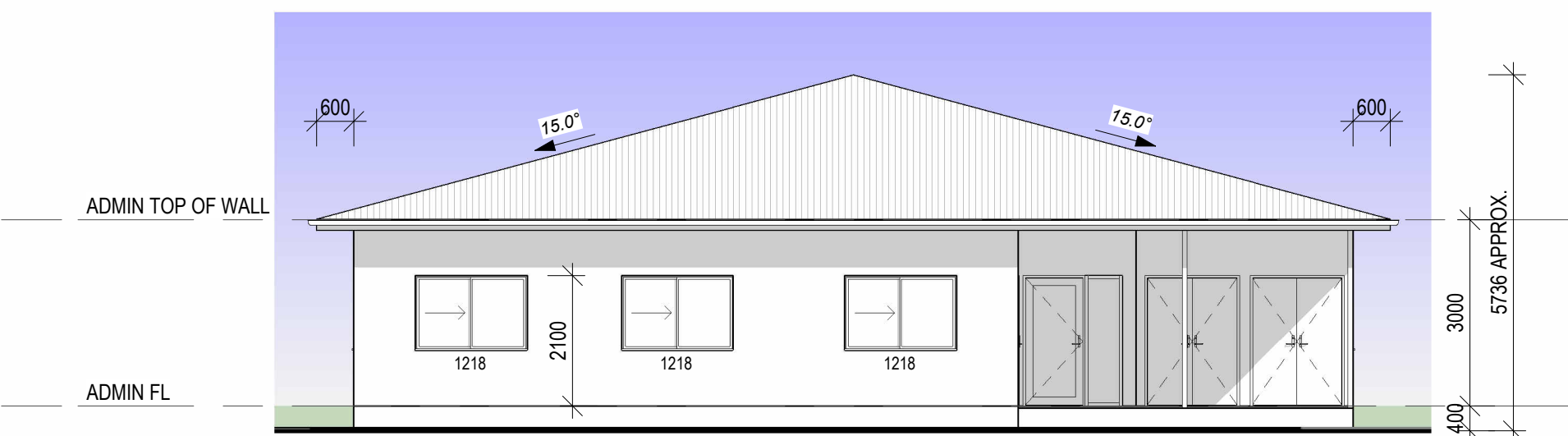
11 ELEVATION 11 - YAMANI META B
1:100



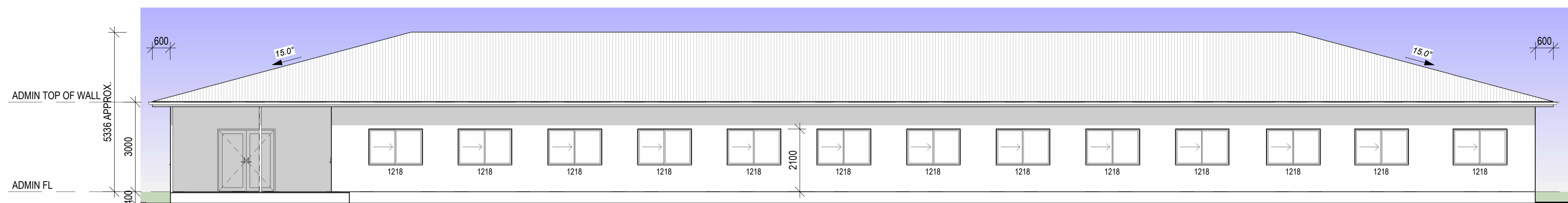
12 ELEVATION 12 - YAMANI META B
1:100



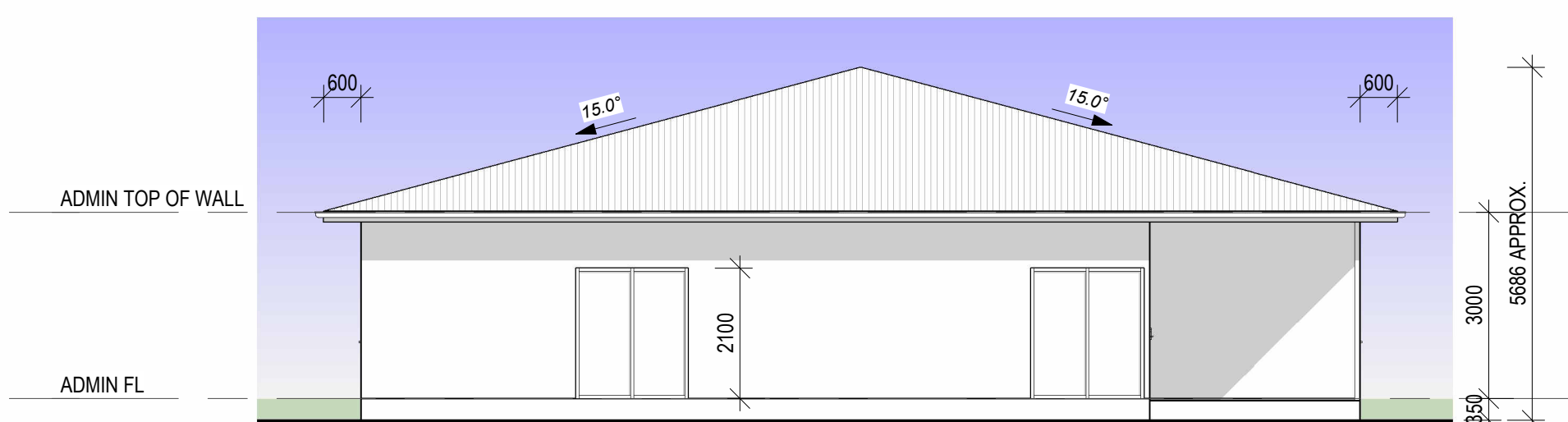
13 ELEVATION 13 - ADMIN. BUILDING
1:100



14 ELEVATION 14 - ADMIN. BUILDING
1:100



15 ELEVATION 15 - ADMIN. BUILDING
1:100



16 ELEVATION 16 - ADMIN. BUILDING
1:100

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Project: TAIHS GORDON STREET
 PRECINCT MASTERPLANNING
 Client: TAIHS (ABORIGINAL &
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 Location: CORNER OF GORDEN & PEEL
 STREET, GARBUTT

TITLE: ELEVATIONS
 Date: 06.11.25 Drawn: D.A.
 Scale: 1 : 100 Designed: N.H.
 Job No.: 2025-329-C Drawing No.: WD 301 Rev. 2

APPENDIX B
Site photographs



Photograph 1 – Lonerganne Street looking west towards Meenan Street intersection



Photograph 2 – Lonerganne Street looking east



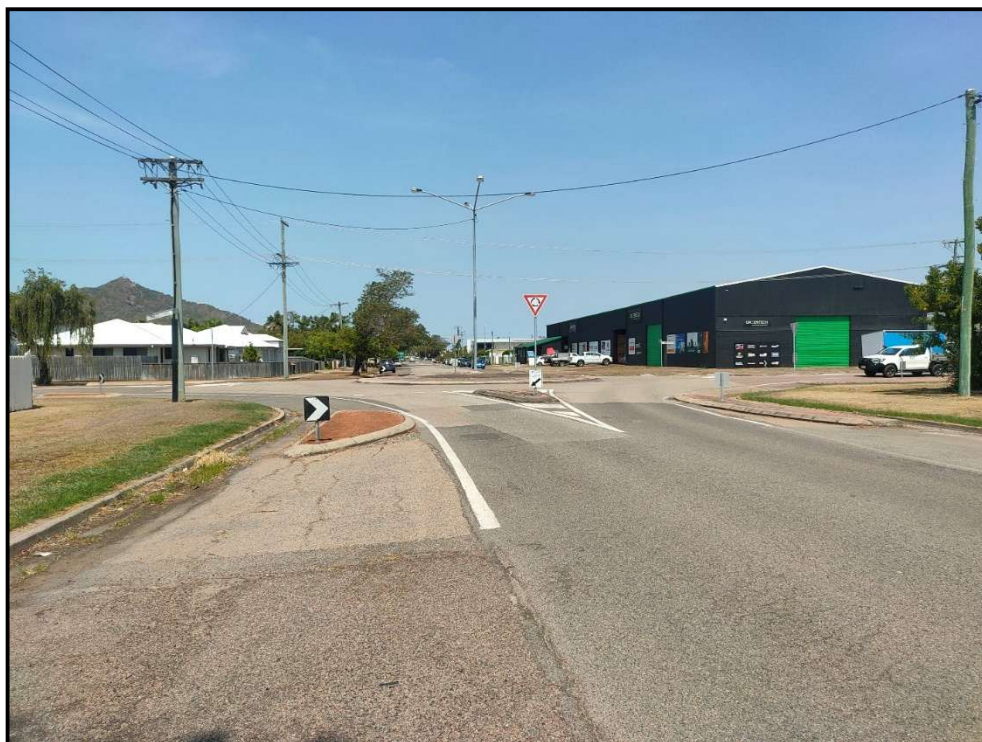
Photograph 3 – Lonerganne Street looking south towards subject site



Photograph 4 – Lonerganne Street looking west



Photograph 5 – Lonerganne Street looking east towards Peel Street intersection



Photograph 6 – Gordon Street looking east towards Peel Street intersection



Photograph 7 – Gorden Street looking west



Photograph 8 – Gorden Street looking north towards subject site



Photograph 9 – Gorden Street looking east



Photograph 10 – Gorden Street looking west towards Meenan Street intersection

APPENDIX C
Email – TCC traffic data

Arry Charrismanagara

From: Michael Kaye <Michael.Kaye@townsville.qld.gov.au>
Sent: Thursday, 19 October 2023 12:55 PM
To: Arry Charrismanagara; Paul Viero
Cc: Records.Out; Danny Johnstone
Subject: RE: ROSE004 - TCC Traffic Data
Attachments: Factsheets_TrafficModelData_InfoSheets_2023.pdf

Hello Arry

The TAIM models trunk roads, i.e., Arterial, Sub-Arterial & Major Collector Roads, lesser order roads (Minor Collector Streets, Access Streets and Access Places) , although occasionally included in the model network, do not have validated traffic volumes.

Minor streets have only been included in the model to simulate locations where traffic flow on the trunk network maybe interrupted by a minor street intersection. The modelling process may in some instances assign volumes to these minor street links to achieve calibration with signals data or traffic counts used in the model. In most instances traffic volumes taken from the model on local streets should not be considered reliable.

For further information about the model, I have included the attached Information Sheet.

Kind Regards,

Michael Kaye RPEQ, MIEAust, CPEng, NER, APEC Engineer, IntPE(Aus)
Coordinator – Strategic Infrastructure Planning
Strategic Infrastructure Planning
Asset Strategy & Compliance
Infrastructure and Operations

P (07) 4727 9355 **M** 0427 248 357 **E** michael.kaye@townsville.qld.gov.au

143 Walker Street, Townsville QLD 4810 | PO Box 1268, Townsville QLD 4810



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WINNER QLD TRAINING AWARDS NQ REGION LARGE EMPLOYER OF THE YEAR 2022 & 2023

Townsville City Council acknowledges the Wulgurukaba of Gurambilbarra and Yunbenun, Bindal, Gugu Badhun and Nywaigi as the Traditional Owners of this land. We pay our respects to their cultures, their ancestors and their Elders, past, present, and all future generations.



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From: Arry Charrismanagara <acharrismanagara@lcjengineers.com.au>
Sent: Thursday, October 19, 2023 11:56 AM
To: Paul Viero <Paul.Viero@townsville.qld.gov.au>; Michael Kaye <Michael.Kaye@townsville.qld.gov.au>

Cc: Records.Out <records.out@lcjengineers.com.au>; Danny Johnstone <djohnstone@lcjengineers.com.au>
Subject: RE: ROSE004 - TCC Traffic Data

This Message Is From an External Sender

This message came from outside Townsville City Council. Please think carefully before clicking links or responding if you weren't expecting this email.

Hi Paul/Michael,

Can you please assist with the below request?

Kind regards,

Arry Charrismanagara

Civil Engineer

Email: acharrismanagara@lcjengineers.com.au

Mobile: 0493 558 938



LCJ Engineers Pty Ltd Consulting Engineers

601 Flinders Street PO Box 1498
Townsville QLD 4810 Aitkenvale QLD 4814
Tel: (07) 4721 5800
townsville@lcjengineers.com.au
www.lcjengineers.com.au

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From: Arry Charrismanagara

Sent: Monday, October 9, 2023 11:07 AM

To: Michael Kaye <Michael.Kaye@townsville.qld.gov.au>

Cc: Records.Out <records.out@lcjengineers.com.au>; Danny Johnstone <djohnstone@lcjengineers.com.au>

Subject: FW: ROSE004 - TCC Traffic Data

Hi Michael,

The below email was sent to Paul last week and we received an out of office reply.

Are you able to assist/provide guidance?

Kind regards,

Arry Charrismanagara

Civil Engineer

Email: acharrismanagara@lcjengineers.com.au

Mobile: 0493 558 938



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Consulting Engineers
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From: Arry Charrismanagara
Sent: Friday, October 6, 2023 1:26 PM
To: Paul Viero <Paul.Viero@townsville.qld.gov.au>
Cc: Records.Out <records.out@lcjengineers.com.au>; Danny Johnstone <djohnstone@lcjengineers.com.au>
Subject: ROSE004 - TCC Traffic Data

Hi Paul,

We note that we can now obtain traffic data using TownsvilleMAPS, particularly on higher trafficked roads/streets. However, for smaller local streets it appears that either there is no data available, or the traffic data seem incorrect (e.g. Lonerganne St adjacent to Garbutt State school is showing only 24vpd and 2vph AM peak traffic).

Can Council advise on what would be acceptable method for traffic estimation on local streets where it's a through road?

Kind regards,

Arry Charrismanagara

Civil Engineer

Email: acharrismanagara@lcjengineers.com.au

Mobile: 0493 558 938



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