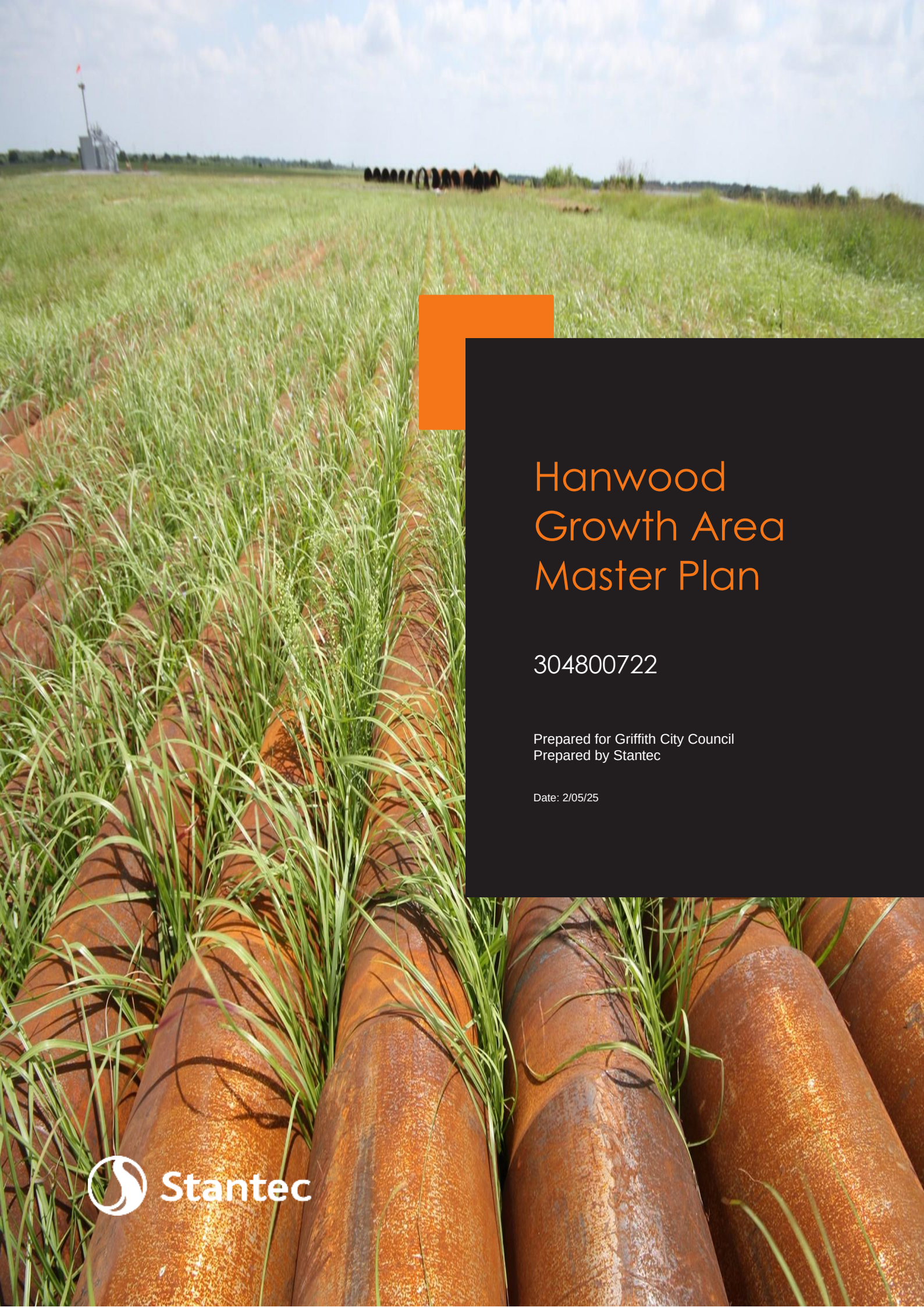


Hanwood Growth Area Master Plan

304800722

Prepared for Griffith City Council
Prepared by Stantec

Date: 2/05/25

Stantec

Community

A thoughtfully created environment that enhances the physical, social, and spiritual well-being of the inhabitants.

Collaboration

Relationships based on trust, contribution, and a shared commitment to building sustainable communities.

Creativity

A people-centered working environment generating thoughtful design to shape the urban landscape.

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Prepared by: **Jessica Don**



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1. INTRODUCTION

Griffith City Council (Council) have engaged Stantec to prepare a Master Plan for the Hanwood Growth Area.

1.1. BACKGROUND

Hanwood is located in the central Riverina region of New South Wales and consists largely of undeveloped land with high amounts of vegetation. The drainage infrastructure of the Hanwood area composes of overland flow channels and concrete lined channels which carry stormwater runoff ultimately to Mirrool Creek.

1.2. STUDY AREA

Council originally intended to release the Hanwood Growth Area through two (2) stages:

- Stage 1 consisting of 50 large residential lots and 150 standard lots over the next 10 years; and
- Stage 2 which consists of 200 residential lots, to be developed once 80% of Stage 1 has been developed.

The development will be serviced with road, drainage, water and sewer, electrical, telecommunication and gas infrastructure. Refer to **Figure 1-1** for an overview of development location and intended plans.



Figure 1-1 Hanwood Growth Area (GCC RFQ, 2021)

Stantec have divided the release are into three (3) stages to better identify Council's staging of the release area.

- Stage 1 - 125 residential lots
- Stage 2 - 282 residential lots
- Stage 3 – 55 rural residential lots

2. CIVIL DESIGN

2.1. CONCEPT LOT YIELD

Stantec's concept civil design displayed in **Figure 2-1** makes use of existing road networks, caters to existing dwellings, accounts for open space and onsite detention areas and ensures all lots are larger than the 700m^2 requested by Council. This layout is designed to maximise the lot yield of the development whilst incorporating large lots in Stage 1, as identified by Council. The preliminary layout has yielded 125 Standard Lots in Stage 1, 276 Lots in Stage 2, and 55 Large Residential Lots in Stage 3. Five (5) of these lots were created for use as onsite detention basins and contribute to the lot count for each stage.

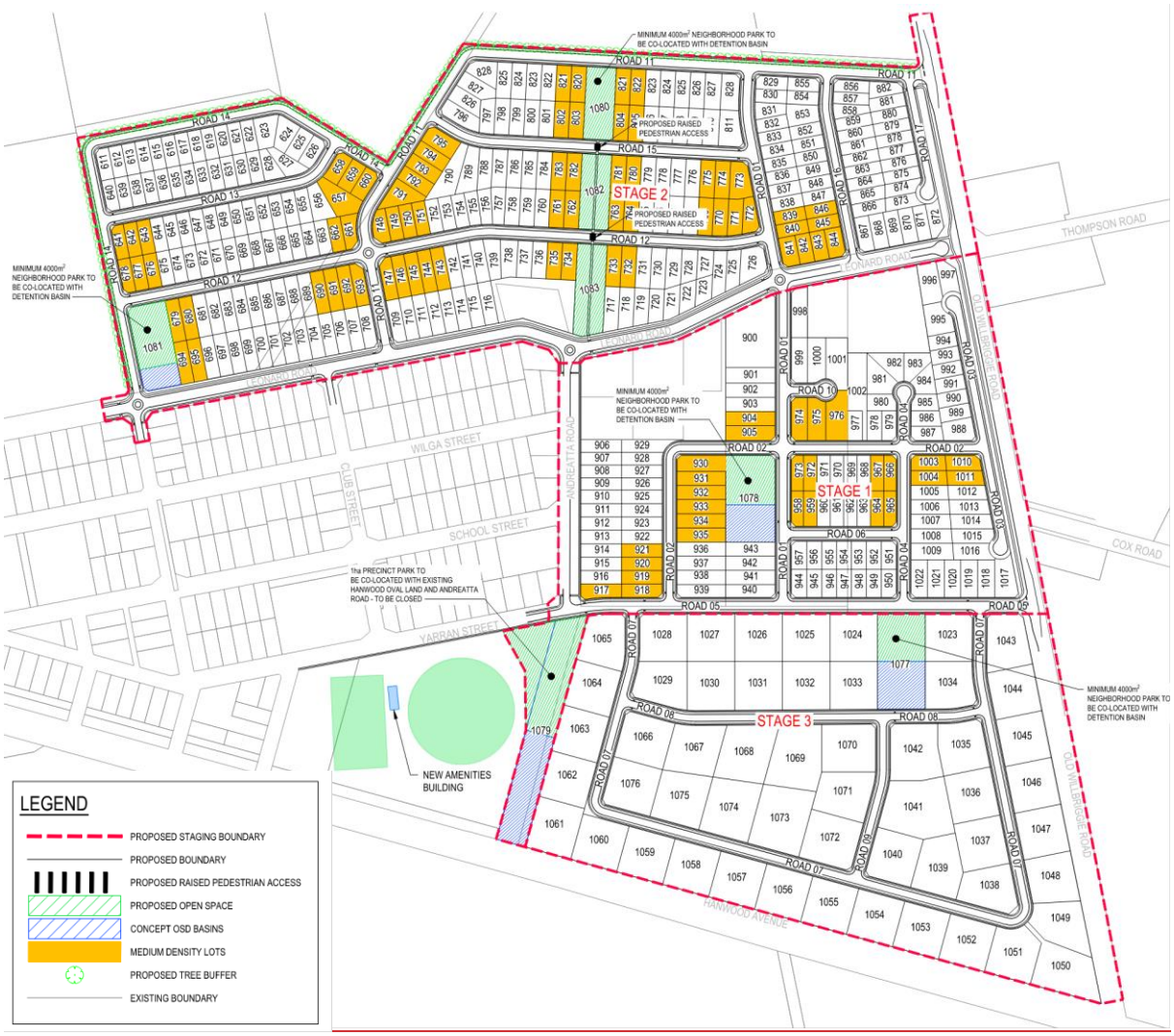


Figure 2-1 Concept Lot Layout

Recently, the Griffith Worker and Housing Shortage Task Force recommended that 50% of lots in growth areas be reserved for medium density development. In response, the layout has been updated to reflect medium density lots in 25% of the Stages 1 and 2 of the growth area in the nodes nominated by Council. The remaining 25% medium density development allocation across the growth area will be at the discretion of the developer to nominate.

2.2. TRAFFIC GENERATION

Stantec notes that the addition of the dwellings proposed will alter traffic generation in this area.

Stantec's preliminary design indicates there may be a total of approximately 450 lots upon the completion of the works. By assuming the following trips per residential lot, the number of AM and PM trips for the new lot count have been estimated in **Table 2-1**.

- 0.85 Trips are generated by each residential lot (low-density dwelling) in the AM Peak.
- 0.90 Trips are generated by each residential lot (low-density dwelling) in the PM Peak.

Table 2-1 Estimated Traffic Generation rates for new lot counts.

Land Use Classification	Additional Traffic Generation (vehicles per hour)			
	Zone	Lot Count*	2030 AM	2030 PM
Residential Lot (~700m2)	1	123	105	111
	2	280	237	251
	3	54	46	49
Total	-	457	388	410

*The lot count noted above excludes the OSD basins within each stage as these lots do not contribute to the traffic generation for the precinct.

Recently, the Griffith Worker and Housing Shortage Task force recommended that 50 per cent of lots in growth areas be reserved for medium density development. This has increased the maximum dwelling yield to 660 dwellings (50 per cent increase from previous 450 lots). The increased number of dwellings has been assumed to be proportionate across the growth area.

Stantec has prepared a Traffic Impact Statement (TIS), dated 1 May 2025, (refer to **Appendix H**) which outlines the potential impact of the increased development yield on the surrounding road network. Utilising the same assumptions as well as a 15% internal trip rate, Stantec have revised the additional traffic generated to reflect the increased dwelling yield identified as part of the TIS.

Table 2-2 Estimated Traffic Generation rates for 50% Medium Density Lift Uplift

Land Use Classification	Additional Traffic Generation (vehicles per hour)			
	Zone	Lot Count*	2030 AM	2030 PM
Residential Lot (~700m2)	1	178	151	160
	2	404	344	364
	3	78	66	70
Total	-	660	561	505

The types of traffic combined with the intersections' geometries and the proposed lot layout have been considered and resulted in intersection treatments being identified and incorporated into the concept road network design. The proposed road network upgrades and considerations determined through the design process and identified as part of the TIS have been summarised in Section 2.3 of this report.

2.3. EXISTING ROAD ALTERATIONS

The preliminary layout compiled as a part of the concept design includes a number of alterations to existing roads. These alterations are intended to improve the safety of the existing roads with consideration of the additional traffic generated by both stages.

Leonard Road

Stantec propose the following changes to Leonard Road:

- Upgrade of Leonard Road to a Local Distributor:

Stantec propose the upgrade of Leonard Road to a Local Distributor Road in order to accommodate increased traffic flows. The complete road hierarchy plan is discussed further in Section 2.4 of this report.

- Closure of Leonard Road at Old Willbriggie Road:

Stantec's site investigation revealed that the traffic generated by the development may not adversely impact the intersections level of service. However, there are concerns that given the geometry and the type of traffic primarily found along Old Willbriggie Road, the safety of the intersection may be adversely impacted and treatment is recommended.

The current geometry of this intersection, with Thomson Street offset to Leonard Road, creates an undesirable four-way intersection with less-than-ideal sight distances and traffic pathways for vehicles exiting Thomson Street or Leonard Road. Further, there is existing service infrastructure present adjacent to the intersection, such as power poles, and the Murrumbidgee Irrigation owned water supply infrastructure located to the north of Leonard Road. This existing infrastructure means any intersection upgrade, to realign Thomson Road or Leonard Road and improve vehicle safety, will significantly increase the cost of any upgrade works to the intersection.

Through discussion with Council, the closure of Leonard Road as shown in **Figure 2-2** was identified as the best solution to treat the intersection. This closure is recommended upon completion of Proposed Road 05 and the treatment of the intersection with Old Willbriggie Road. The construction of Proposed Road 05 and the Old Willbriggie Road intersection are to be completed as a part of the Stage 1 works to allow for the closure of Leonard Road and is also to be completed as a part of Stage 1. This staging will ensure that there is ongoing access to Old Willbriggie Road via Proposed Road 05 and local traffic will not be adversely impacted.



Figure 2-2 Proposed change to the Leonard Road and Old Willbriggie Road intersection

- Inclusion of a three-way roundabout at the intersection of Leonard Road and Andreatta Road:

The current alignment of this intersection presents some challenges and safety concerns due to poor intersection geometry and sight distances. With the additional Traffic Generation estimated to arise from the development of the proposed stages, treatment of this intersection is advised.

Council have requested that Stantec limit any impact to the existing farm lot on the northern side of this intersection, as much as possible. As changes to the northern lot are not desired, the treatment options for this intersection are limited. Stantec propose the installation of a three-way roundabout (shown in **Figure 2-3**), as it is considered the most suitable option to improve the safety of the intersection and limit the impact on the adjacent properties.

In addition to the construction of the roundabout, the concept design proposes minor realignments to the Leonard Road intersection approaches. This will further improve the alignment of Leonard Road through the intersection.



Figure 2-3 Proposed treatment for Leonard Road and Andreatta Road intersection

- Inclusion of four-way roundabout at the intersection of Leonard Road and Ash Street/Road 14:

The inclusion of this roundabout is intended to provide connectivity to Stage 2 whilst ensuring that the traffic flows smoothly. A roundabout was considered the most appropriate treatment as it is considered to be a safer intersection control in comparison to a four-way intersection (Austroads, 2023).

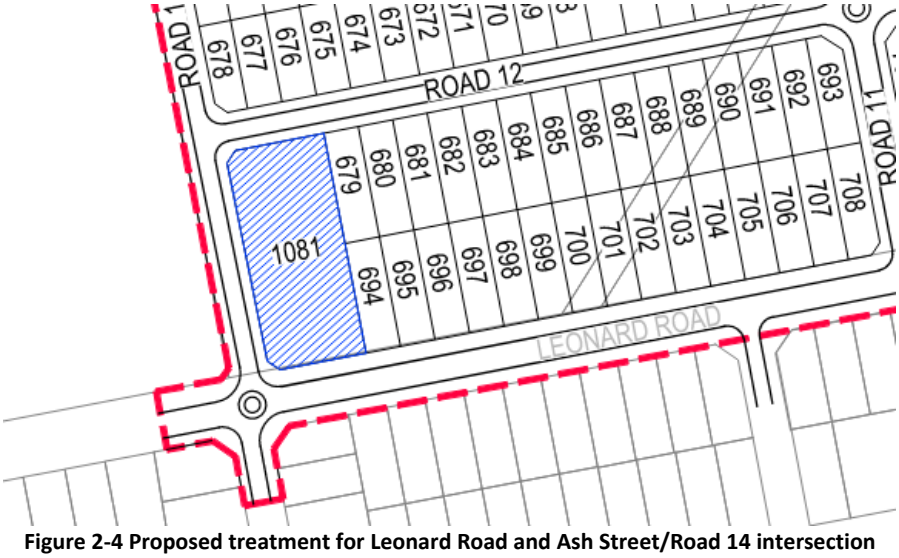


Figure 2-4 Proposed treatment for Leonard Road and Ash Street/Road 14 intersection

- Inclusion of four-way roundabout on Leonard Road and Road 1 to provide access to Stages 1 and 2:

The inclusion of this roundabout is intended provide connectivity to both Stages 1 and 2 whilst ensuring that the traffic flows smoothly. A roundabout was considered the most appropriate treatment as it is a safer intersection control in comparison to a four-way intersection (Austroads, 2023).



Figure 2-5 Proposed treatment of Leonard Road and Road 1 intersection.

Andreatta Road

Stantec propose the following changes to Andreatta Road:

- Upgrade of Andreatta Road to a Collector Road:

Stantec propose the upgrade of Andreatta Road to a Collector Road in order to accommodate increased traffic flows. The complete road hierarchy plan is discussed further in Section 2.4 of this report.

- Conversion of the portion of Andreatta Road adjacent to Stage 3 into OSD Basin 3:

In order to assist with the management of traffic through Hanwood, Stantec propose the closure of the southern portion of Andreatta Road, between Yarran Street and Hanwood Avenue. This alteration is supported by Council and is intended to provide connectivity to Hanwood Oval in the future. Stantec have considered alternative usage of this section in the form of an onsite detention (OSD) basin for the management and treatment of stormwater runoff. The details of this OSD basin will be determined in the detailed design stage.

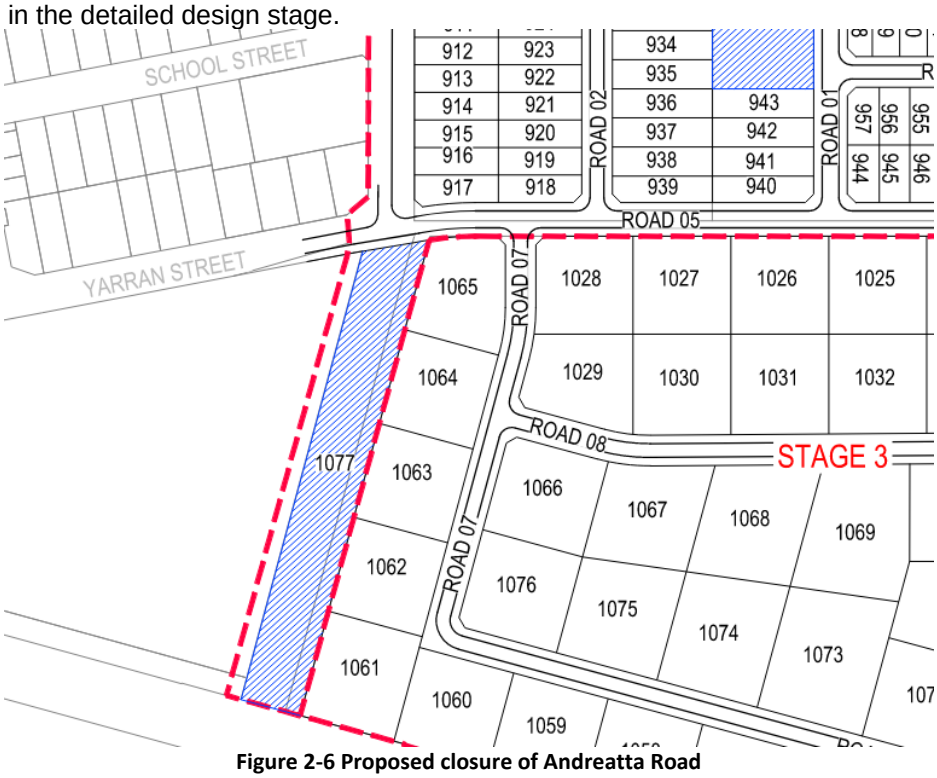


Figure 2-6 Proposed closure of Andreatta Road

Old Willbriggie Road

Stantec propose the following changes to Old Willbriggie Road:

- Speed Limit Reduction:

Upgrades to Old Willbriggie Road have not been identified outside of the intersection treatments identified below. There may be consideration to upgrade Old Willbriggie Road to a Local Distributor, however given that there is no direct access from the proposed growth area to the road and service roads have been proposed it has not been included as part of the development of the Hanwood Growth Area.

Old Willbriggie Road currently has a speed limit of 80km/h, which given its current setting is suitable for the road function and surrounding land use. Upon development of the growth area there will be an increase to traffic volumes entering Old Willbriggie Road from the Hanwood Village and the land use of the area will change from agricultural to urban. It is recommended that the speed limit of Old Willbriggie Road is reduced to 60km/h for the full frontage of the growth area upon development. This will improve safety and amenity of the road network, the Hanwood Growth Area and the surrounding properties.

- Two new intersections with Old Willbriggie Road proposed to service the development following the closure of Leonard Road:

The intersections, as shown in **Figure 2-8** and **Figure 2-9**, will service the new stages of development, with the Road 05 intersection providing access to Stages 1 and 3 and the Road 11 intersection providing access to Stage 2. These intersections will allow residents of Hanwood access to Old Willbriggie Road following the closure of the Leonard Road intersection. Turning paths for the intersections of Roads 05 and 11 with Old Willbriggie Road are also illustrated in **Figure 2-8** and **Figure 2-9**.

Stantec's original design considered the traffic generated by 440 proposed lots and an even split of Leonard Road traffic between Road 5 and Road 11. Based upon Austroads *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management* (2020) it was determined that Basic (BA) intersection treatments are warranted for both intersections. Therefore, Basic Left and Basic Right (BAL/BAR) intersection treatments had been designed for these intersections.

However, due to the recent proposed medium density uplift identified by the Griffith Worker and Housing Shortage Task Force, Stantec have revisited the impacts of the release area on the Old Willbriggie Road intersections in the TIS.

Based upon the above assessment and Austroads *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management* (2020) it was determined that channelised (CH) intersection treatments are warranted for the right turn at both intersections (CHR). It was also determined that Basic (BA) intersection treatments are warranted for the left turns at both intersections (BAL).

Stantec have not updated the masterplan design to incorporate the channelised right turn treatments at the Old Wallbridge Road intersections. An example of this arrangement is shown below in Figure 2-7 Example Channelised Right Turn TreatmentFigure 2-7.



Figure 2-7 Example Channelised Right Turn Treatment



Figure 2-8 Proposed intersection of Old Willbriggie Road and Road 05 in Stage 1

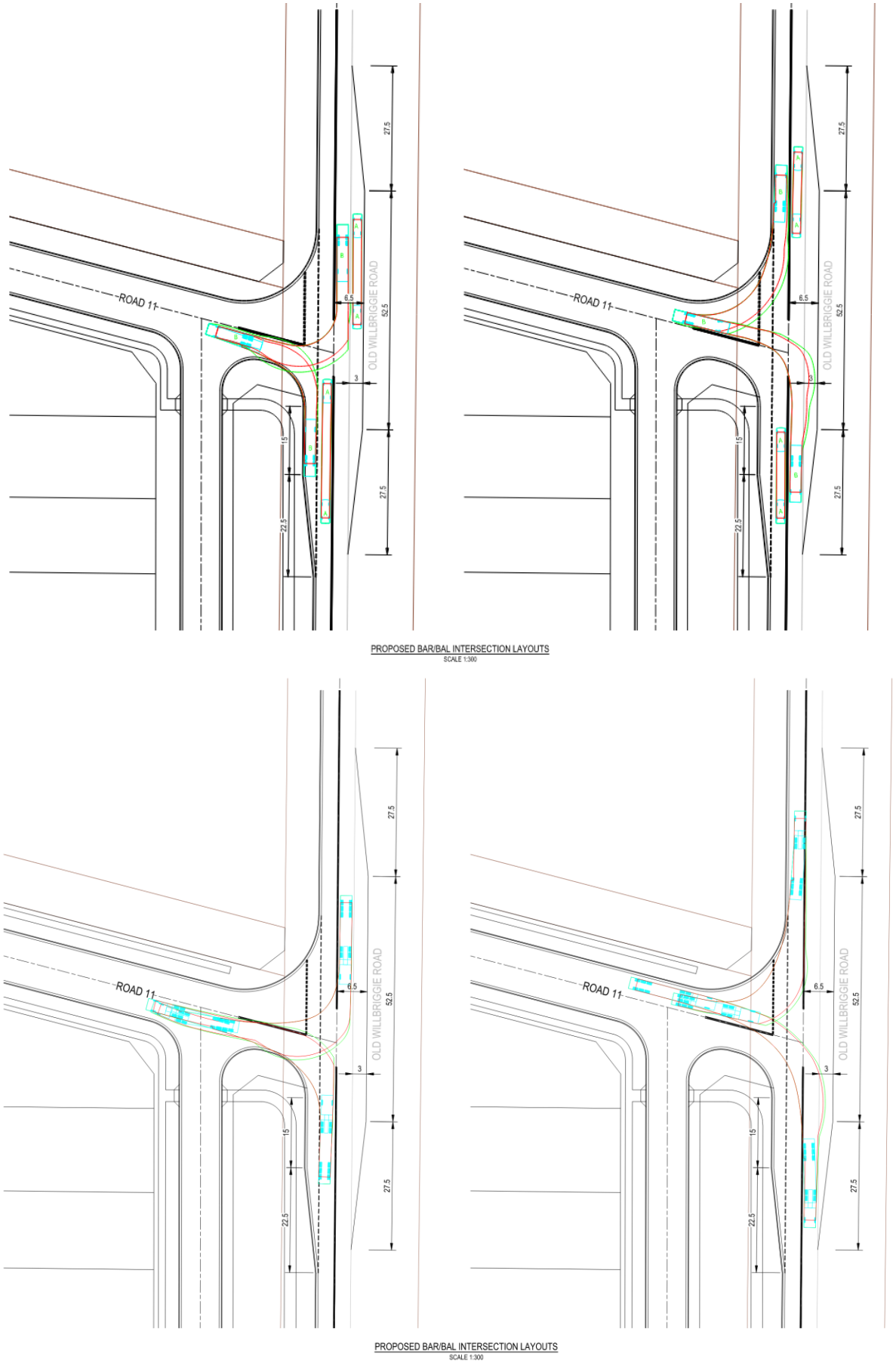


Figure 2-9 Proposed intersection of Old Willbriggie Road and Road 11 in Stage 2

Kidman Way

Stantec propose the following changes to Kidman Way:

- Treatment of Leonard Road Intersection

Stantec's original scope did not consider Kidman Way or any intersection treatments. However, due to the recent proposed medium density uplift identified by the Griffith Worker and Housing Shortage Task Force, Stantec have revisited the impacts of the release area on the surrounding road network specifically Old Willbriggie Road and Kidman Way in the TIS.

Based upon the above assessment and Austroads *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management* (2020) it was determined that channelised (CH) intersection treatments are warranted for the right turn at the intersection (CHR). It was also determined that Auxiliary (AU) intersection treatments are warranted for the left turn at the intersection (AUL).

Stantec have not updated the masterplan design to incorporate the proposed intersection treatment. An example of the proposed arrangement is shown above in Figure 2-7 Example Channelised Right Turn Treatment**Figure 2-7** (CHR) and below in **Figure 2-10** (AUL).

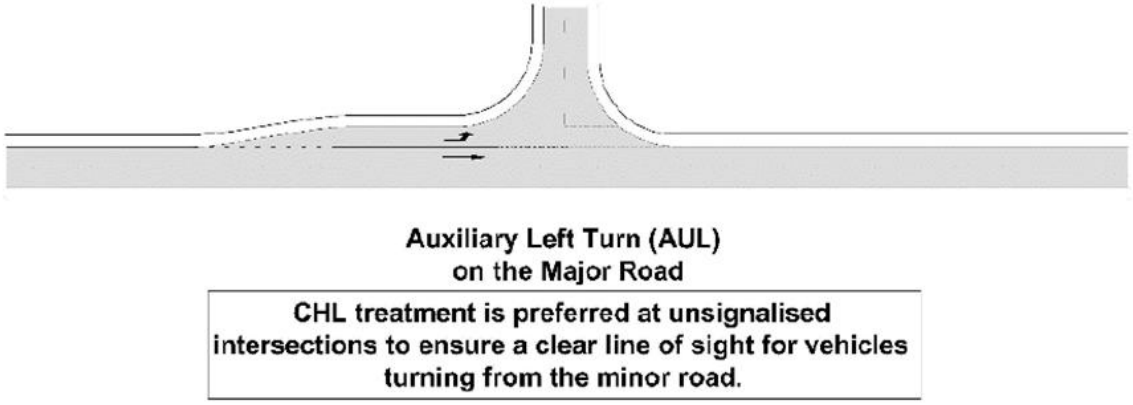


Figure 2-10 Example Auxiliary Left Turn Treatment

2.4. ROAD HIERACHY

In accordance with Austroads Road Design Guidelines and Section 2.5 of Griffith Council's *Engineering Guidelines – Subdivision and Development Standards,* Stantec have developed the Road Hierarchy Plan detailed in **Figure 2-11**. This plan consists of four road types:

- Local distributor road (red).
- Collector road (blue).
- Local access road (Green).
- Access place (Cul-de-sac) (pink).

The road types are assigned based on estimated traffic usage and the number of lots each road will be servicing. Road cross sections can be found on Sheet C1031 of the design drawings in **Appendix F** of this report.

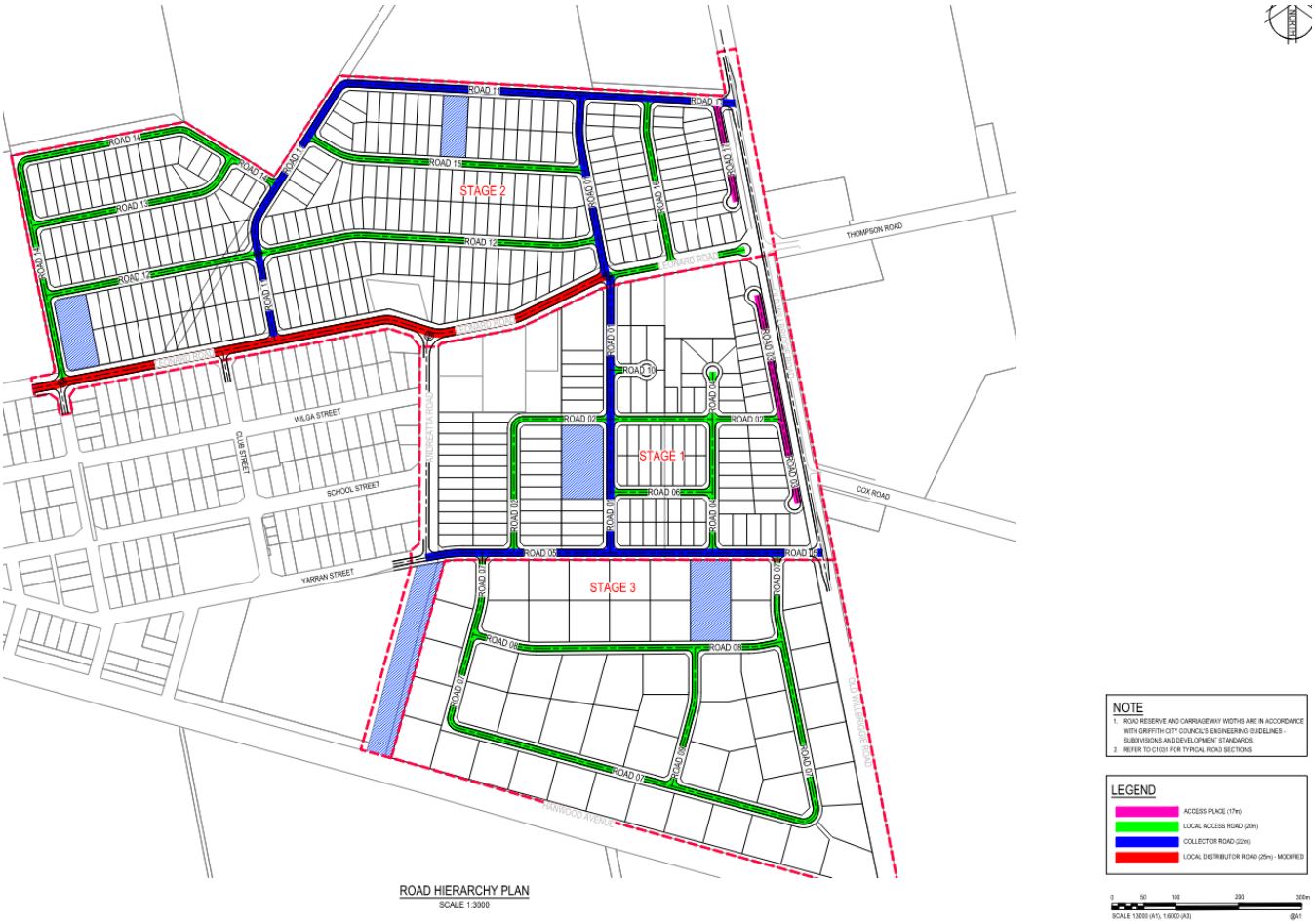


Figure 2-11 Proposed Road Hierarchy Plan

3. STORMWATER QUANTITY MANAGEMENT

3.1. INTRODUCTION

Hanwood is located in the central Riverina region of New South Wales and consists largely of undeveloped land with high amounts of vegetation. The drainage infrastructure of the Hanwood area composes of overland flow channels and concrete lined channels which carry stormwater runoff ultimately to Mirrool Creek.

Purpose of The Study

The purpose of this stormwater quantity management report is to present the development of the concept stormwater drainage strategy to service the Hanwood Growth Area. The study will detail assumptions, modelling approaches, parameters, available data and recommendations for design development.

Design Guideline

The concept stormwater quantity management strategy was developed with reference to GCC's Subdivision and Development Standards adopted December 2008.

3.2. STORMWATER QUANTITY MANAGEMENT

Available Data

The concept stormwater quantity management strategy was developed using the following available data:

- GCC's infrastructure survey around Stage 1. This survey in this area contains data such as spot levels, existing infrastructure, existing lots and associated buildings and existing drainage channels around the following areas:
    - Andreatta Road.
    - Leonard Road.
    - Old Willbriggie Road.

Extent of the survey can be seen in **Appendix A.**

- To gain an understanding of the overall topographic conditions, LIDAR data was used as an estimate to obtain an initial understanding of site levels and grading. The LIDAR data was then combined with the survey provided in which a triangular irregular network (TIN) was created. Extent of this data can be seen in **Appendix B.**
- Rainfall data was obtained from ARR Data Hub using the coordinates of:
    - Latitude: -34.334.
    - Longitude: 146.051.

This report should be read in conjunction with the concept masterplan prepared by Stantec for the Hanwood Growth Area.

Site Catchment Area

Review of the design surface created demonstrates that the site is quite flat ranging from 0.2% to 0.3%. Conversations with Council have raised the following preferences:

- The proposed development is to have conventional pit and pipe inlet system composing of lintels and roads formed with kerb and gutter.
- Major bulk earthworks to change site grading is not preferred, however some minor earthworks could be done on individual lots to grade towards desired locations.

Based on this, it is not expected that the catchment boundaries will vary significantly from the pre-developed to post-developed state. **Table 3-1** shows the catchments area in existing and developed conditions. The site was topographically separated into five (5) separate catchments using ridgelines as defining boundaries and local low points as potential location for OSD basins. Refer to **Appendix C** for a catchment overview and potential locations of OSD basins.

Table 3-1 Comparison of Pre-Developed and Post-Developed Catchments

Catchment Name and Area (Ha)	Pre-Development Impervious %	Post-Development Impervious %
Catchment 1: 16.39	**3**	**60 (Refer to Section 2.5 GCC Engineering Guideline)**
Catchment 2: 17.09	**1**	
Catchment 3: 26.92	**1**	
Catchment 4: 13.82	**1**	
Catchment 5: 21.56	**1**	

On-Site Detention Strategy

As mentioned above the existing drainage strategy drains run off ultimately into Mirool Creek through various channels. The proposed staged developments will replicate this with conventional pit and pipe systems. However, the existing conditions largely consists of undeveloped vegetated land, zoning this area as residential will substantially increase the impervious percentage of the catchment, allowing for higher run-off potential.

To control the peak flow from the proposed staged development and limit it to the pre-development peak flow:

- Detention basins are proposed at local low points, see **Appendix C** for locations.
- As the site is relatively flat, the proposed lots and roads will be able to gravity drain to the basins, however, will not be able to drain out of the basins through gravitational means.
- Each basin will need to have a pump out system that will need to be maintained by GCC, the pump will need to be sized and designed to meet certain flow rates in order to match the pre-development flows.
- Basins 1 and 2 will pump out into the stormwater pit and pipe system and drain into Basin 3 which will pump out to the nearby open unlined channel on Hanwood Avenue. Similarly, Basin 4 will pump out into the stormwater pit and pipe system and drain into Basin 5 which will pump out to the nearby open unlined channel on Leonard Road.
- Areas where the staged development will be constructed over existing open unlined channels such as the channel that traverses through Stage 2 and the channel on Leonard Road, on the opposite side to the existing development will need to be re-aligned/modified to prevent external catchment flows from entering the proposed Staged Hanwood development. Existing drainage infrastructure fronting the lots on Leonard Road will also need be amended in a similar manner.

Hydrology Modelling

To conceptually determine the pre-development and post development flows and as well as to obtain an approx. volume estimate for the OSD basins, DRAINS modelling was conducted using the Horton-ILSAX model using ARR2019 methodologies. Rainfall data was obtained from ARR data hub, the range of storms modelled was from 5 minutes to 3 hours.

Model Inputs and Assumptions

Table 3-2 Summary of Design Parameters and Assumptions

Parameter	Value/Description
Hydrological Model	Horton-ILSAX
Paved Area Depression Storage	1mm
Grassed Area Depression Storage	5mm
Soil Type	3
Overland Flow Calculation Method	Kinematic Wave Equation
Existing Conditions Retardance Coefficient (4)	n* = 0.3 (Lawns)
Minimum Pipe Grade (1)	0.33%
Minimum Pipe Cover (Under Roads) (1)	600mm
Basin Starting Water Level	Assume Dry
Freeboard (2)	500mm
Assumed Pipe Flow Speed for Developed Catchments	2m/s
Percent Impervious (3)	42% for Houses and 85% for Roads. Adopted a 60% Impervious for lumped catchment analysis

1 - Section 4.16.1 of GCC's Subdivision and Development Standards
2 - Section 4.6.1 of GCC's Subdivision and Development Standards
3 - Section 4.14 of GCC's Subdivision and Development Standards
4 - n* represents the retardance factor of a surface and is not equivalent to Manning's N

On-Site Detention Model Results

The permissible site discharge (PSD) for the existing conditions were calculated for various storm events. **Appendix C** provides detail on where the value has been calculated. The site has been split into two (2) segments. Catchments 1, 2 and 3 falls towards Andreatta Road and Catchments 4 and 5 fall towards Leonard Road, thus there will be two (2) points of PSD measurements. **Table 3-3** summarises these results.

Table 3-3 PSD (m^3/s) at The Catchment Outlets for Range of Scenarios

Storm Event (AEP)						
Scenario	**1EY**	**0.5EY**	**0.2EY**	**10%**	**2%**	**1%**
Pre-Development Catchments (Stage 1 & 3)	0.114	0.152	0.291	0.514	1.3	1.74
Post-Development Catchments (Stage 1 & 3) – No Basin	4.0	5.22	7.32	9.22	14.3	16.6
Post-Development Catchments (Stage 1 & 3) With Basin	0.1	0.138	0.244	0.25	0.25	0.25
Pre-Development Catchments (Stage 2)	0.048	0.063	0.143	0.267	0.724	0.994
Post-Development Catchments (Stage 2) – No Basin	2.05	2.66	3.80	4.87	7.69	8.96
Post-Development Catchments (Stage 2) With Basin	0.045	0.045	0.112	0.224	0.3	0.3

To meet pre-development flows each basin was modelled with a pump system. It should be noted that these pumps out rates were determined based on the needs of meeting the pre-development flows. Actual pump out flow rates may vary and differ depending on available products and manufactures. **Table 3-4** summarises the desired pump-out flow rates for the five (5) basins at various water levels, the pump system will not engage until the desired water level is attained.

Table 3-4 Summary of Pump-Out Flow Rates at Various Water Levels

Basin 1 Pump		Basin 2 Pump		Basin 3 Pump		Basin 4 Pump		Basin 5 Pump	
Head Water Level	**Flow Rate**	**Head Water Level**	**Flow Rate**	**Head Water Level**	**Flow Rate**	**Head Water Level**	**Flow Rate**	**Head Water Level**	**Flow Rate**
(m)	(m^3/s)	(m)	(m^3/s)	(m)	(m^3/s)	(m)	(m^3/s)	(m)	(m^3/s)
0.3	0.05	0.25	0.1	0.1	0.1	0.2	0.05	0.1	0.045
0.35	0.1	0.35	0.15	0.3	0.1	0.3	0.1	0.5	0.045
0.4	0.15	0.4	0.2	0.4	0.15	0.4	0.15	0.6	0.1
0.45	0.2	0.45	0.25	0.5	0.2	0.5	0.2	0.7	0.2
0.5	0.3			0.6	0.25			0.8	0.3

As the pumps act as the only form of out-flow from each basin, they will be solely the control of the flow rate leaving the basins. The performance of each basin is summarised in **Table 3-5**.

Table 3-5 Summary of Basin Performances

Basin	D.T.I of Highest Pipe[1] (m)	Base Footprint Area[2] (m^2)	1% AEP Storage Volume (m^3)	1% Water Depth (m)	Freeboard[3] (m)
Basin 1	1.95	7,230	6,900	0.95	1.0
Basin 2	2.2	4,920	6,900	1.4	0.8
Basin 3	2	12,000	17,750	1.47	0.53
Basin 4	2.4	3,876	5,450	1.4	1.0
Basin 5	2.2	9,115	11,400	1.24	0.96

1 – D.T.I : Depth to Invert, measured from the existing surface to the invert of the pipe inletting into the basin
2 – See Section 3.3: Design Assumptions, for calculation of basin area footprint
3 – Freeboard is measured by taking the difference between the D.T.I of highest pipe and the 1% AEP water depth as a conservative measure.

3.3. DESIGN ASSUMPTIONS

This study was conducted based on the available information and the assumptions made. Further study/more detailed information will be required at a more detailed design stage.

The following are to be noted but not limited to:

- Detailed survey of the entire proposed staging development as there may be discrepancies between LIDAR data and actual site conditions.
- Modelling assumes that each basin will start dry.
- Detailed modelling of the road network as road grading will exert some influence on the drainage design in regard to pit placement and basin depth as well as placement of diversions swales to prevent additional stormwater from entering the development site.
- The study was conducted using lumped catchments with assumed pipe flow speed, more detailed modelling will be required to determine the pipe size of the network as well as pit placement to meet overflow requirements from pits, this may also have some effect on the storage volume of each basin.
- Detailed modelling of drainage network as some lots may require inter-allotment drainage systems to achieve drainage to the desired basin, this may involve some minor earthwork to achieve this.
- The basin storage volume was calculated based on a simplistic rectangular basin and any size on drawings are indicative only, the represented 1% AEP storage volume is measured up to the water level for the 1% AEP storm and does not account the additional capacity for freeboard. Detailed modelling will be required to determine the footprint required including modelling of batters, this is to provide a more accurate stage-storage relationship and may be larger than what is indicatively shown.
- The existing open unlined channels mentioned in the “On-Site Detention Strategy” section of this report, will need to be modified/re-aligned and will require further investigations/data. Existing drainage infrastructure fronting the existing lots on Leonard Road will also need to be modified/re-aligned and will require further studies/data. This will prevent external flows from entering the proposed Hanwood development.
- An updated flood study to analyse if the development with its increased imperviousness will have implications downstream.

3.4. CONCULSION

Based on the available information and assumptions made for this study, the masterplan drainage strategy for the Hanwood Growth Area is feasible for the following reasons:

- The surrounding lots around the proposed five (5) basins have adequate freeboard of minimum 500mm from the 1% AEP water level.
- The net PSD for the development is less than the pre-development condition.

It should be noted that the design and conclusion were drawn from the available data and assumptions made. Additional details/information/studies as mentioned in Section 3.3 is required to conduct more detailed design and modelling and may change the findings found in this report.

3.5. REFERENCES

- Griffith City Council – Request for Quotation: Hanwood Growth Area Master Plan, 2021.
- Griffith City Council – Engineering Guidelines Subdivision and Development Standards, December 2008.

4. POTABLE WATER

Stantec have been engaged to prepare a potable water masterplan to assist with the delivery of future potable water services and assets to service the proposed development of the Hanwood Growth Area.

This Potable Water Masterplan has been updated to reflect the increase in lot yield as directed by Council. This increase in lot yield was directed by Council in December 2024 based on the findings in the Griffith Worker and Housing Shortage Taskforce Report, stating that a 50% yield increase is required for growth areas in the region.

The potable water masterplan includes:

- Reticulation sizing, to achieve Council's minimum requirements for the required design flows.
- Reticulation alignments.
- Network pressure and fire flow capacities.
- Connection locations to the existing network, with consideration to future works based on Council's DSP.

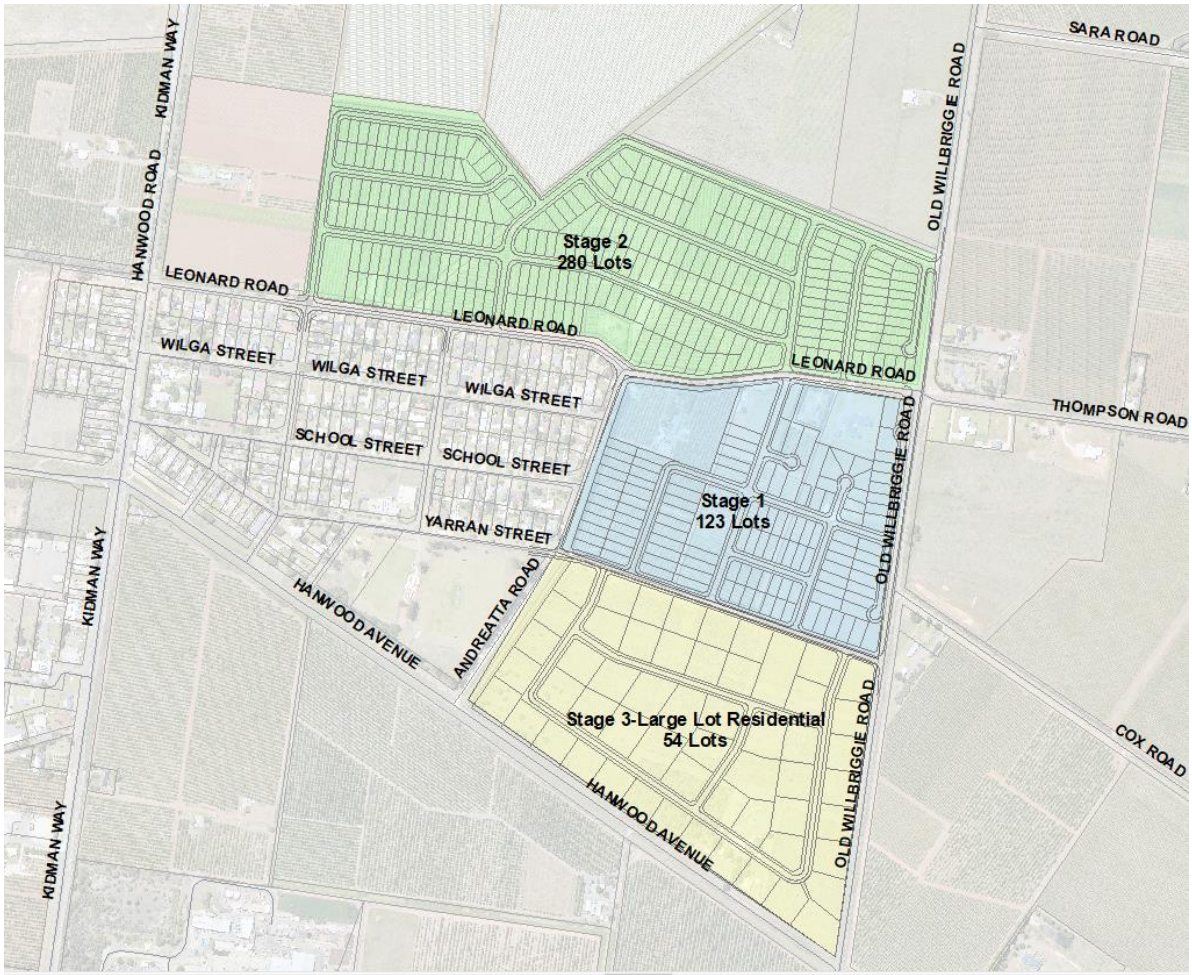


Figure 4-1 Hanwood Growth Area Development

Potable Water Infrastructure Assessment

A hydraulic assessment was undertaken using the Council provided InfoWorks WS Pro hydraulic model of the Griffith water supply network to assess the following:

- Assess the capacity of the existing water supply network to service the Hanwood Growth area prior to upgrades being triggered.

- Assess the external water supply infrastructure required to service the full development in the Hanwood Growth Area.
- Identify staging opportunities allowing for the potential deferment of infrastructure required to service the full development demands.

Proposed Potable Water Infrastructure and Reticulation Plan

The potable water mains have been sized and Section 4.4 of the Griffith City Council's Engineering Guidelines for Potable Water. The pipework size was based on a hydraulic demand estimate before the pipe sizes were modelled in Infoworks.

Pipe sizing within the Hanwood Growth Area ranges from DN100 to DN250 Series 2 oPVC PN16.

When the network was modelled, it was determined that some existing pipework had significant bottlenecks within the greater GCC network, where pipe sizes are inadequately sized and impact hydraulic performance considerably downstream. Existing pipes were upsized in the existing network to reduce the bottlenecks in the network and increase performance within the new reticulation network at services the Hanwood Growth Area. Therefore the existing network will require augmentation as detailed in the table below.

Table 4-1 Potable Water Mains to be Upgraded

Description	Reason for Upgrade	Existing Size and Type	Length	Proposed Size and Type
Leonard Road – From Kidman Way to Andretta Road	Required upsizing based on modelling report	DN100 uPVC	883m	DN250 oPVC
Leonard Road – From Andrette Road to Old Willbriggie Road	Required upsizing based on modelling report and existing AC main	DN150 AC	567m	DN250 oPVC
Andretta Road – From Leonard Road to Yarran Street	Required upsizing based on modelling report	DN150 uPVC	360m	DN250 oPVC
Andretta Road – From Yarran Street to Hanwood Avenue	Existing AC main	DN150 AC	320m	DN150 oPVC
Hanwood Avenue – From Andretta Road to Old Willbriggie Road	Existing AC main	DN150 AC	858m	DN150 oPVC
Old Willbriggie Road – From Cox Road to Leonard Road	Required upsizing based on modelling	DN80 AC	372m	DN150 oPVC

The proposed potable water network and upgrades are detailed in **Appendix D**.

Recommendations

Stantec make the following recommendations regarding the potable water network required to service the Hanwood Growth Area.

1. The network upgrade as recommended within the Hanwood Modelling Report *(304800722-R04-V04 Hanwood Potable Water Modelling Report)* shall be implemented to ensure sufficient supply is provided to the Hanwood Growth Area (considering 50% increase in lot yield).

2. As referenced in *304800722-R04-V04 Hanwood Potable Water Modelling Report*, firefighting requirements are not met in the Hanwood Growth Area, even after the proposed upgrades. The modelling report further reported that large areas of the greater Griffith area also don't meet firefighting requirements as per Council's Engineering Guidelines. This could be due to Council's Engineering Guidelines requiring greater flows and pressures than those stating in the Water Directorate's 2022 Fire Flow Design Guidelines, as summarised below. Council

may wish to implement a review of its current firefighting requirements to potentially align them with Water Directorate's 2022 Fire Flow Design Guidelines.

a. Council’s Engineering Guidelines
    i. Minimum supply head of 28m is required to be achieved by any fire hydrant within the water network when drawing 11 L/s from the individual hydrant and meeting a peak instantaneous demand of 0.10 L/second/tenement throughout the system.

b. Water Directorate's 2022 Fire Flow Design Guidelines

Minimum supply head of 15m is required to be achieved by any fire hydrant within the water network when drawing 10 L/s.

5. WASTEWATER

Stantec have been engaged to prepare a wastewater masterplan to assist with the delivery of future potable water services and assets to service the proposed development of the Hanwood Growth Area.

The wastewater masterplan includes:

- Assessment of the existing wastewater reticulation network within Hanwood.
- Reticulation network layout.
- Catchment analysis and determining design flows.
    - This includes an allowance of up to 50% lot yield increase through medium density housing.
- Preferred sewer pump station (SPS) locations and sizing.
- Rising main alignment, sizing and discharge location.

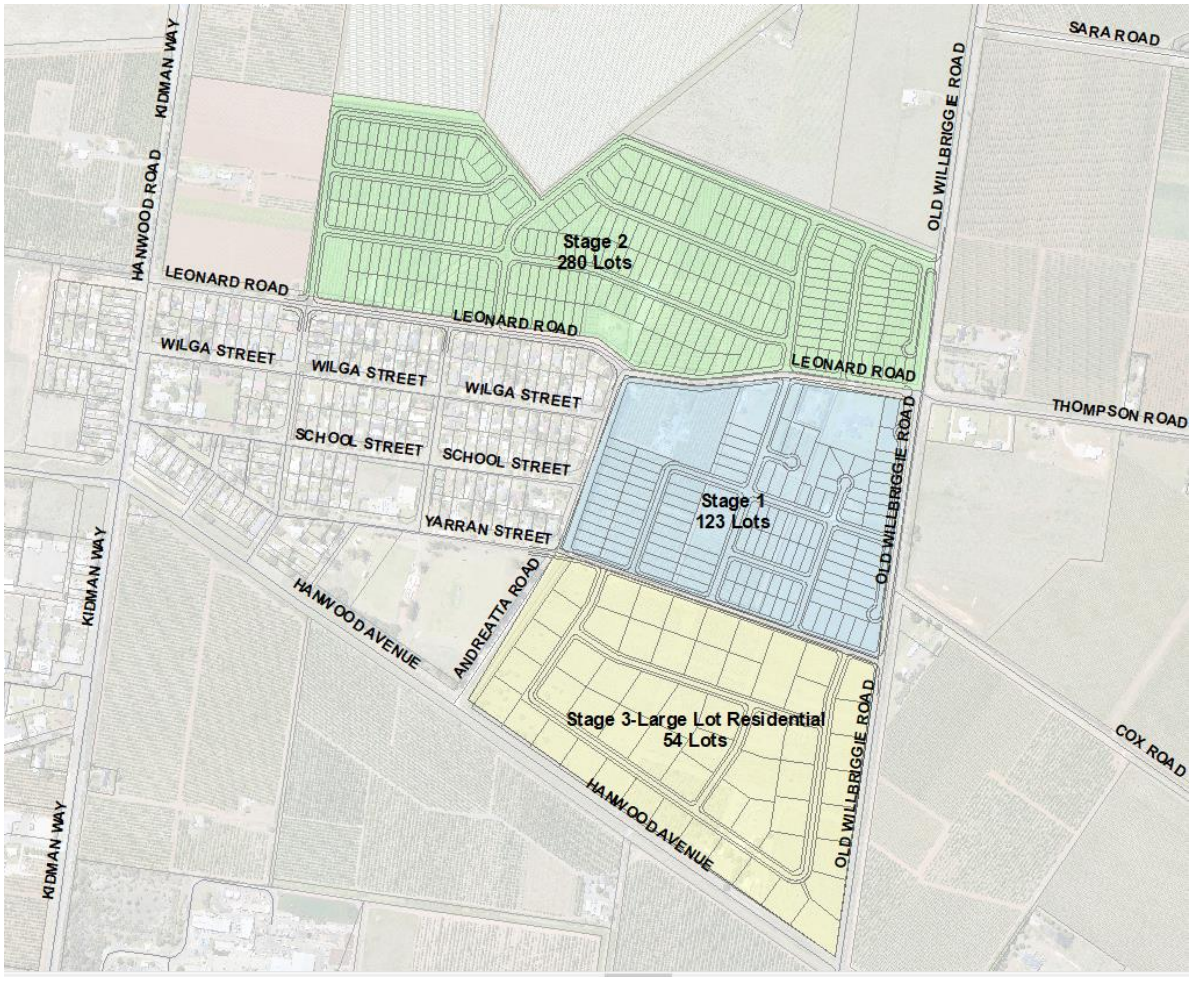


Figure 5-1 Hanwood Growth Area Development

Recommendations

Stantec's investigation determined the following recommendations for consideration during the detailed design of the Hanwood Growth Area:

- Review of existing wastewater infrastructure in Hanwood
    - Section 3 of this report details the methods in estimating the current flows in the wastewater network based on WSA Gravity Sewer Code of Australia (Regional NSW). This is usually used for undeveloped areas to calculate predicted flows during the design phase. Considering that this area is already developed, it is recommended that

flow testing is undertaken in the existing gravity network to determine accurate flow data.
    - Pump performance data should be obtained from the existing pump stations to determine the overall performance of the pumps and if they are operating at optimum efficiency. In conjunction with existing flow data, this will provide a better understanding of when to upgrade the existing infrastructure as each stage is developed.

- Wastewater Reticulation Masterplan
    - The wastewater masterplan provided assumes all grades at 1% as a guide to estimate the pump station depths. The gravity reticulation grades shall be optimised to reduce pump station depths during the design phase.
    - During detailed design, a review into the number of proposed pump stations should be conducted to reduce the need to deeper gravity lines, particularly for Stage 3.
    - Requirements for emergency storage should be reviewed as part of the detailed design for new pump stations.

- Upgrades to HA1 pump station
    - It is recommended that the line between AA/1 and HA1 be upsized to a DN300 as this exceeds the maximum PDWF and PWWF flow after Stage 1 and 3 are developed.
    - Upgrades to the HA1 pump station should be staged to suit the development staging.
    - A review of the pump station and operating volumes should be conducted when the proposed flows are confirmed. As noted in Section 12.2.1, the control volume in the wet well will need to increase to accommodate the additional flow from the development.
    - It is recommended that the impellers for the HA1 pumps are exchanged as future flows increase with the Hanwood Growth Area. Alternatively, the pump could be upgraded with a smaller motor (energy saving) and then replaced by the same model but with a larger motor and a larger diameter.
    - Requirements for emergency storage should be reviewed as part of the upgrade works for the HA1 pump station.

- Upgrades to HA1 Rising Main
    - Based on the assessment of the HA1 rising main assessment, the pump station discharge pipework will need to be upgraded before Stage 1 is developed.
    - The rising main has fatigued over time and may need to be replaced as future flows increase. Alternatives such as replacing sections of the new rising main or construction of a new rising main should be investigated as part of the detailed design.
    - If it is determined that the existing rising main is to remain operational, a condition assessment of the main should be conducted to determine the performance of the main with additional flows and pumping cycles.

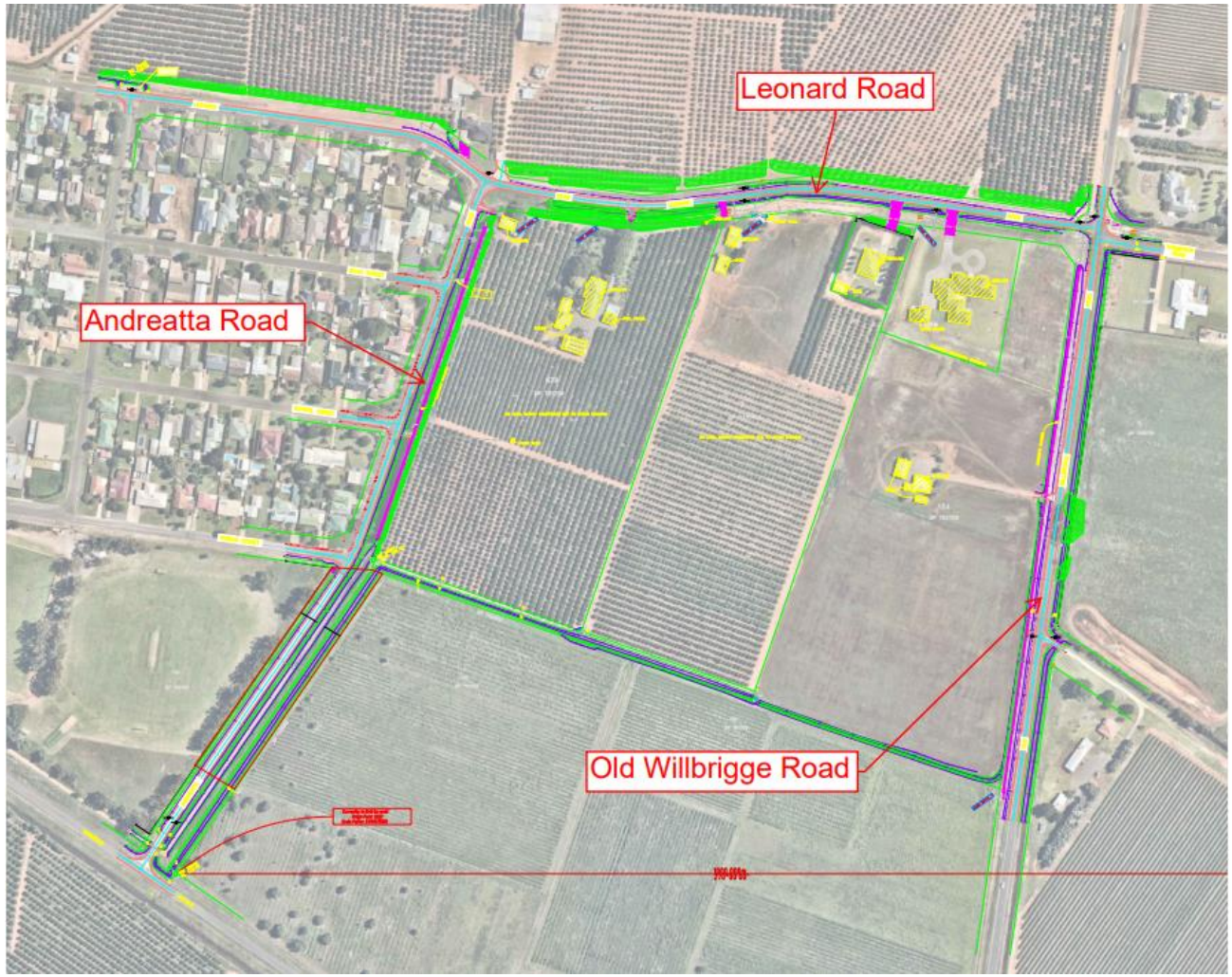
The proposed potable water network and upgrades are detailed in **Appendix E**.

6. ELECTRICAL

Delta Star's Electrical Design has been included in this report as **Appendix I.**

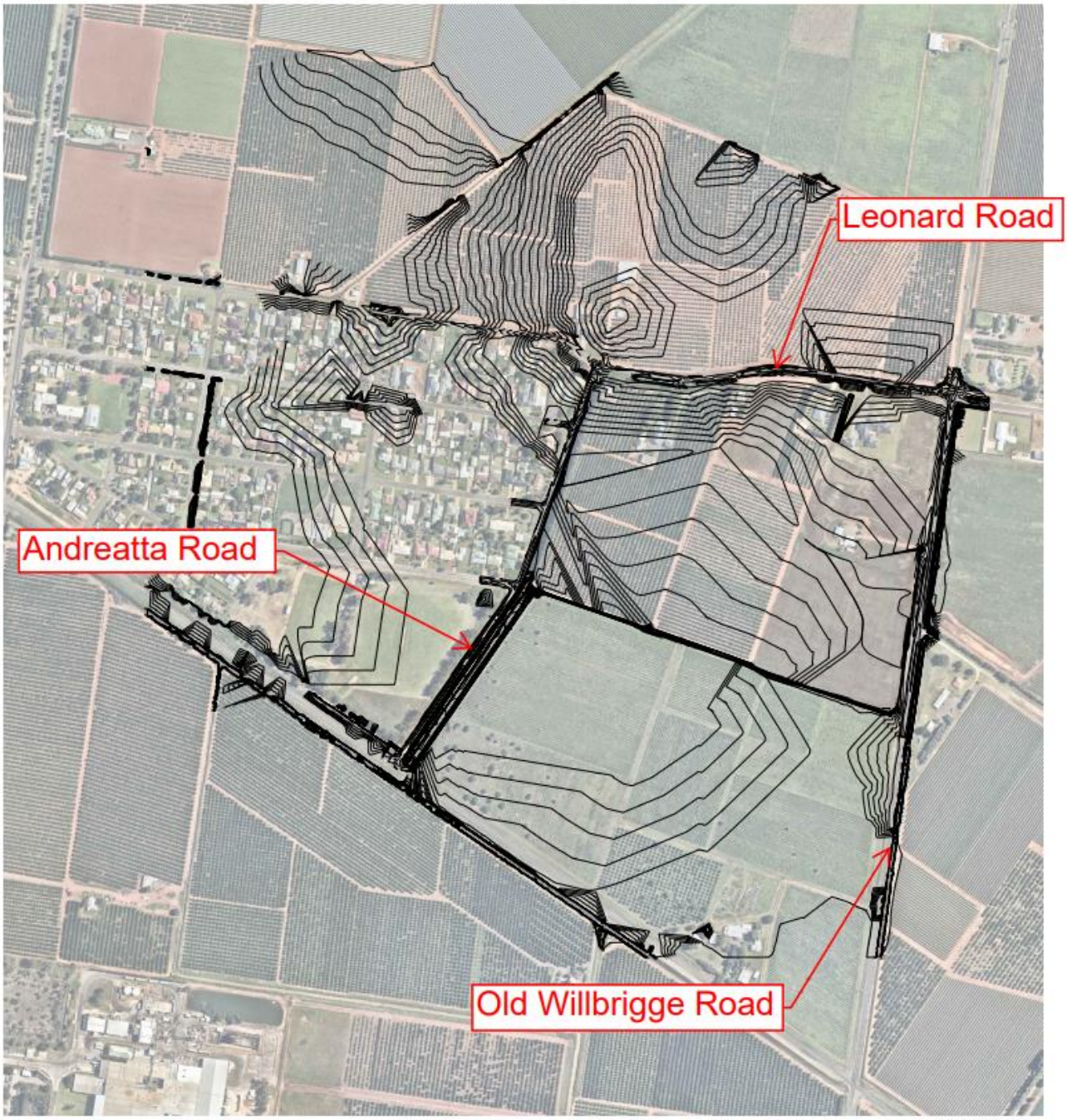
Appendix A
Survey Provided By GCC

Appendix A **Survey Provided By GCC**



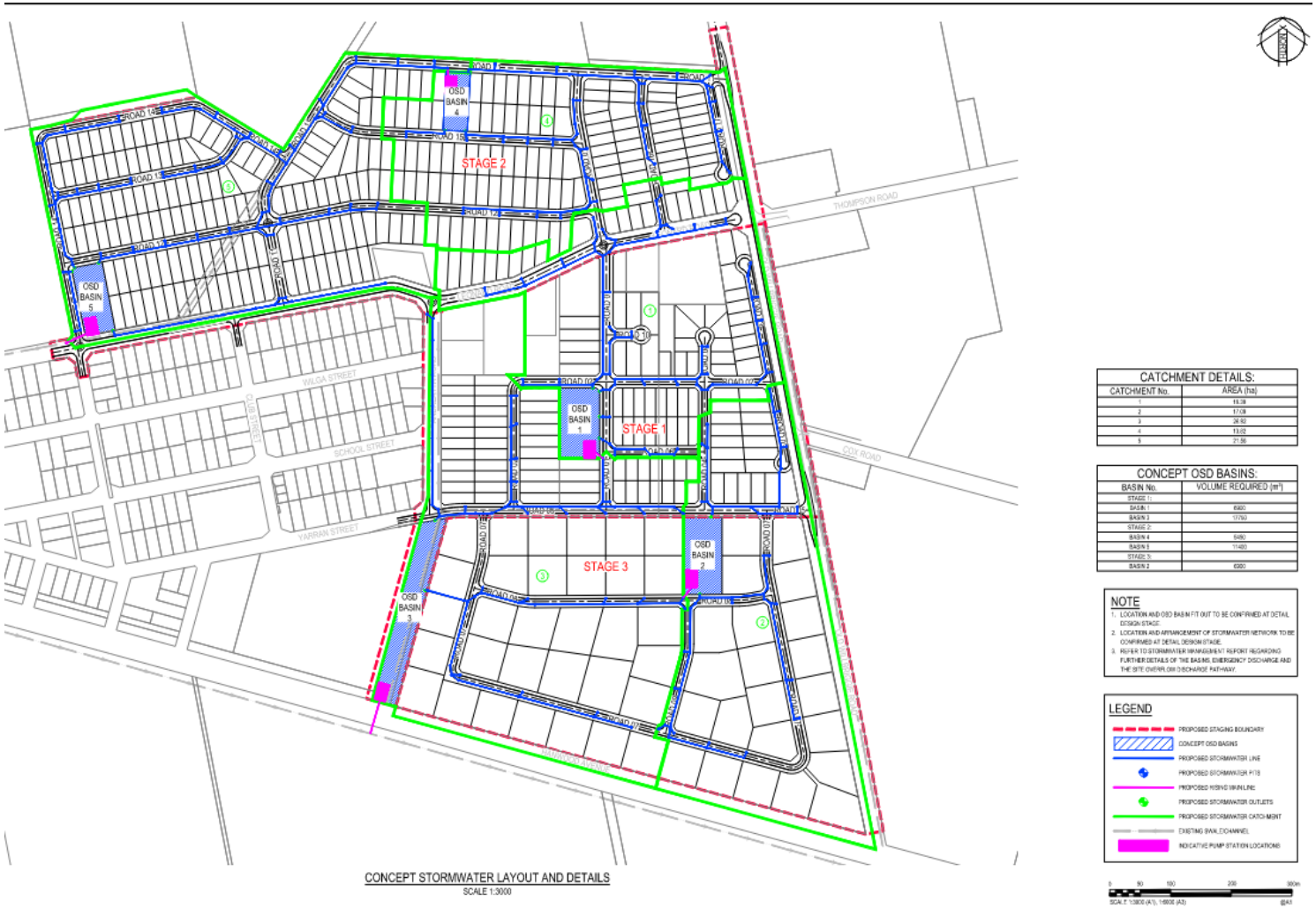
Appendix B
Surface Generated By LIDAR and Survey

Appendix B **Surface Generated By LIDAR and Survey**



Appendix C
Site Catchment Area

Appendix C **Site Catchment Area**



CONCEPT STORMWATER LAYOUT AND DETAILS
SCALE 1:3000

Appendix D
Stantec's Potable Water Design Drawings

Appendix D **Potable Water Design Drawings**

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GRIFFITH CITY COUNCIL

HANWOOD GROWTH AREA POTABLE WATER MASTER PLAN STAGE 1-3

COVER SHEET

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
2	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM
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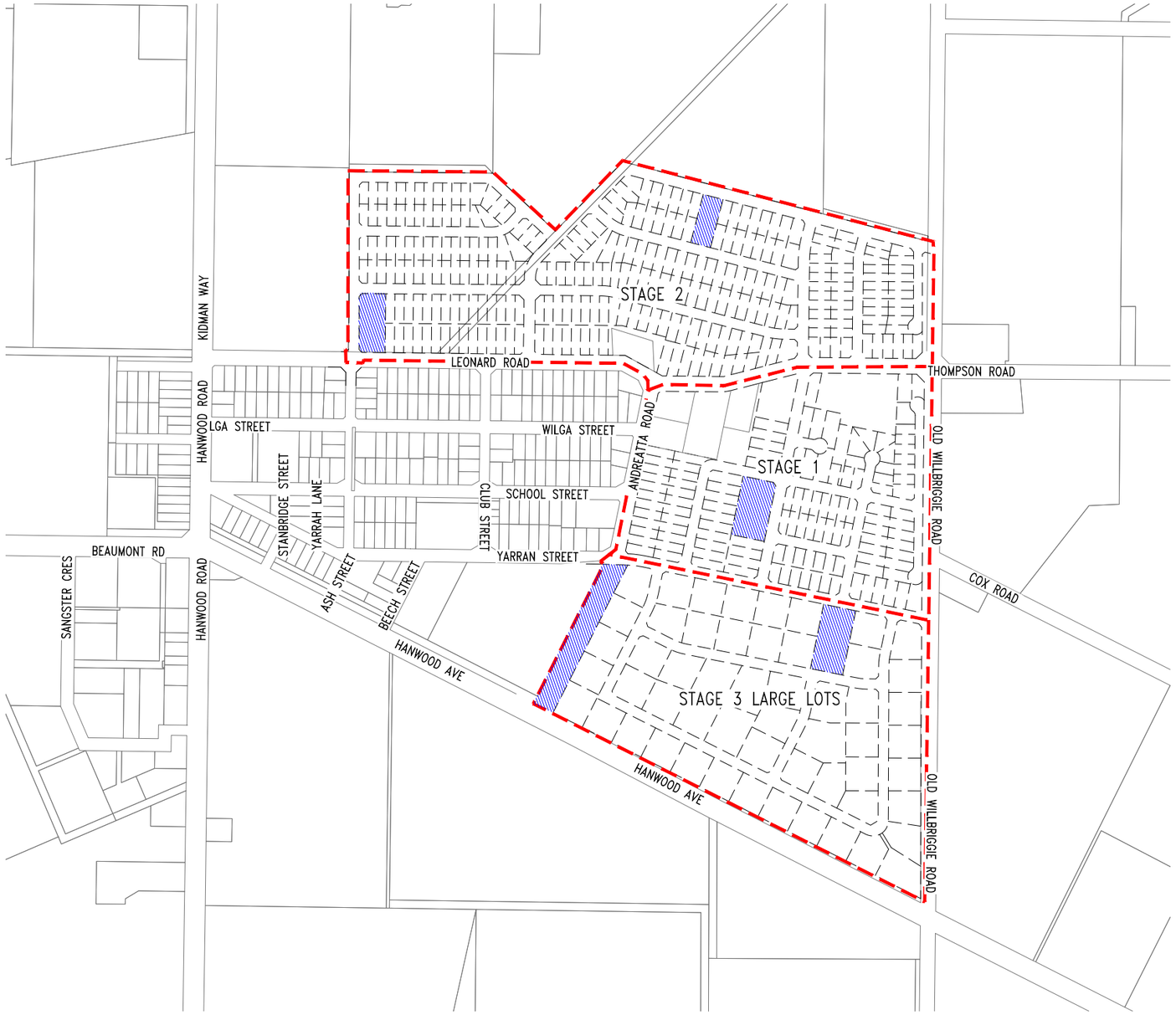
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LOCALITY PLAN
SCALE 1:5000

SCHEDULE OF DRAWINGS

DRAWING No.	DESCRIPTION
304800722-PW-001	COVER SHEET
304800722-PW-002	LOCALITY PLAN
304800722-PW-003	EXISTING POTABLE WATER - LAYOUT PLAN
304800722-PW-004	STAGE 1 AND STAGE 3 - POTABLE WATER CONCEPT PLAN - SHEET 1 OF 4
304800722-PW-005	STAGE 2 - POTABLE WATER CONCEPT PLAN - SHEET 2 OF 4
304800722-PW-006	STAGE 2 - POTABLE WATER CONCEPT PLAN - SHEET 3 OF 4
304800722-PW-007	STAGE 2 - POTABLE WATER CONCEPT PLAN - SHEET 4 OF 4

LEGEND
- PROPOSED STAGING BOUNDARY
- PROPOSED STORMWATER BASINS

0 100 200 300 400 500m
SCALE 1:5000 (A1), 1:10000 (A3)

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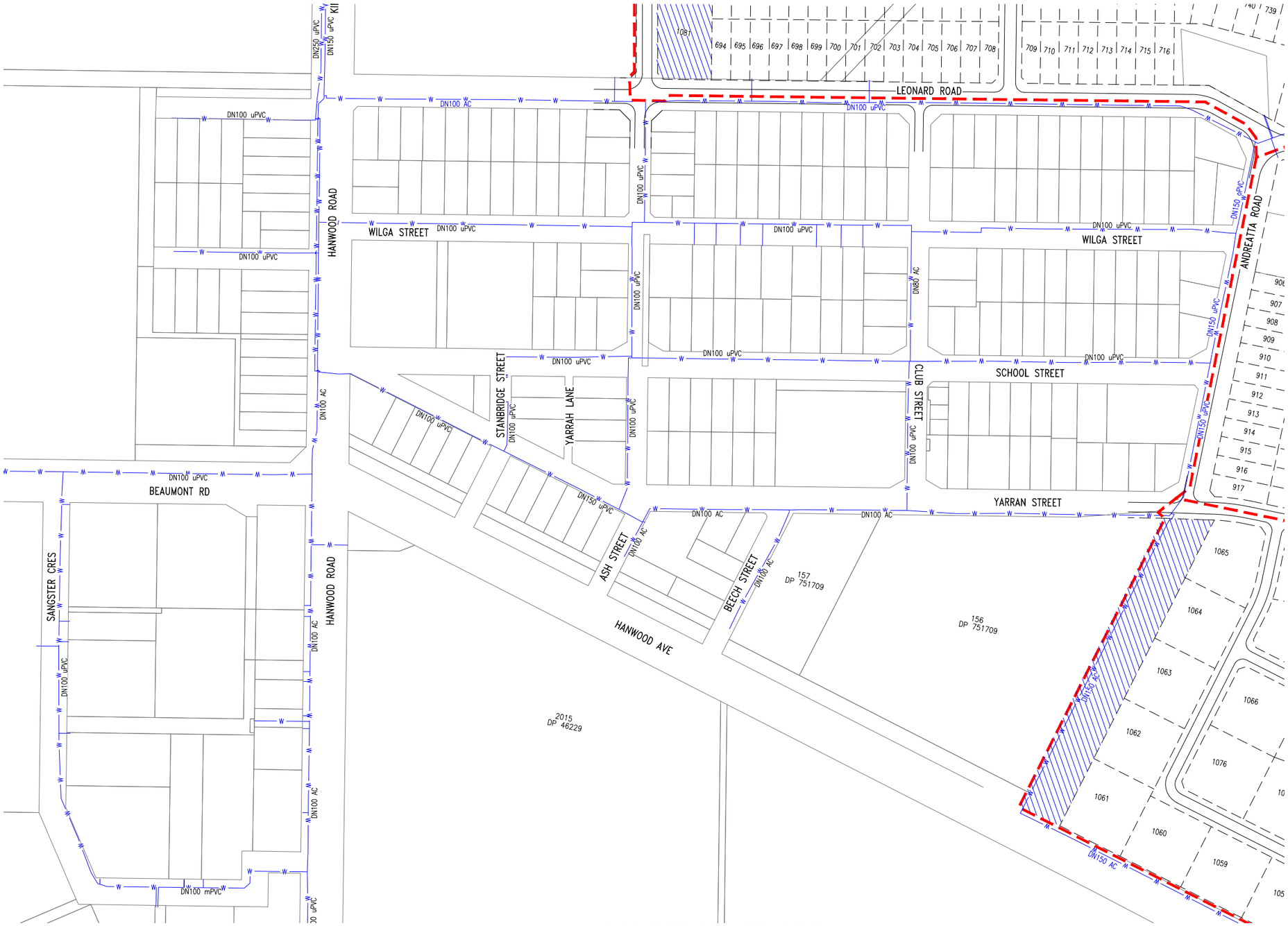
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Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3
Title: LOCALITY PLAN

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EXISTING POTABLE WATER LAYOUT

SCALE 1:2000

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED MAIN
- PROPOSED HYDRANT
- PROPOSED STOP VALVE
- UPSIZED WATER MAINS
- EXISTING BUILDINGS
- EXISTING ROAD EDGE
- EXISTING COMMUNICATIONS CONDUIT
- EXISTING ELECTRICAL CONDUIT
- EXISTING POTABLE WATER MAIN
- PROPOSED STORMWATER
- PROPOSED STORMWATER BASINS

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

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POTABLE WATER MASTER PLAN
STAGE 1-3

Title: EXISTING POTABLE WATER
LAYOUT PLAN

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CONTINUES SHEET 2

STAGE 2 RESIDENTIAL

STAGE 1 RESIDENTIAL

STAGE 3 LARGE LOT RELEASE

LEONARD ROAD

WILGA STREET

SCHOOL STREET

YARRAN STREET

YARRAH LANE

CLUB STREET

ASH STREET

BEECH STREET

ANDREATTA ROAD

HANWOOD AVE

COX ROAD

OLD WILLBRIGGIE ROAD

ROAD 01

ROAD 02

ROAD 03

ROAD 04

ROAD 05

ROAD 06

ROAD 07

ROAD 08

ROAD 09

ROAD 10

TEE CONNECTION TO UPSIZED MAIN. DN250 x DN150 TEE

LAY DN250 oPVC

REPLACE EXISTING DN100 uPVC WATERMAIN WITH DN250 oPVC POTABLE WATER MAIN

TEE CONNECTION TO UPSIZED MAIN. DN250 x DN150 TEE

RECONNECT ROAD CROSSING TO PROPOSED DN250 oPVC POTABLE WATERMAIN

RECONNECT ROAD CROSSING TO PROPOSED DN250 oPVC POTABLE WATER MAIN

DN250 x DN150 TAPER

LAY DN150 oPVC

REPLACE EXISTING DN150 uPVC POTABLE WATER MAIN WITH DN150 oPVC APPROX. 123m FROM 'D' TO 'E'

TEE CONNECTION TO UPSIZED MAIN. DN250 x DN150 TEE

LAY DN150 oPVC

OSD STORMWATER BASIN

REPLACE EXISTING DN150 AC WATERMAIN WITH DN250 oPVC POTABLE WATER MAIN APPROX 565m FROM 'B' TO 'C'

LAY DN250 oPVC

STORMWATER BASIN

LAY DN100 oPVC

LAY DN150 oPVC

OSD STORMWATER BASIN

LAY DN100 oPVC

LAY DN150 oPVC

LAY DN100 oPVC

LAY DN100 oPVC

LAY DN150 oPVC

LAY DN150 oPVC

LAY DN150 oPVC

LAY DN150 oPVC

LAY DN150 oPVC

LAY DN150 oPVC

LAY DN100 oPVC

LAY DN100 oPVC

LAY DN100 oPVC

LAY DN150 oPVC

EXISTING DN150mm WATER MAIN ON OLD WILBRIGGIE ROAD TO BE EXTENDED FROM BEVERLEY ROAD TO HANWOOD AVENUE.

CONNECT EXISTING COX ROAD MAIN TO NEW DN150 MAIN.

REPLACE EXISTING DN150 AC POTABLE WATER MAIN WITH DN150 oPVC APPROX. 1202m FROM 'E' TO 'F'

RECONNECT ROAD CROSSING TO PROPOSED DN150 oPVC POTABLE WATER MAIN

RECONNECT ROAD CROSSING TO PROPOSED DN150 oPVC POTABLE WATER MAIN

PROVIDE CONNECTION TO EXISTING DN180 HDPE POTABLE WATER MAIN

DN180 HDPE

2 DP 1068726

1780 DP 40786

1781 DP 40786

157 DP 751709

156 DP 751709

2015 DP 46229

159 DP 751709

1024 DP 751709

NOTE:

1. ALL EXISTING MAIN–TO–METERS TO BE RELOCATED TO NEW UPSIZED MAINS WHERE REQUIRED.
2. HYDRANTS TO BE INSTALLED AT A MAX SPACING OF 75m.

POTABLE WATER MASTERPLAN – SHEET 1

SCALE 1:2000

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

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Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 1 AND STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 1 OF 8

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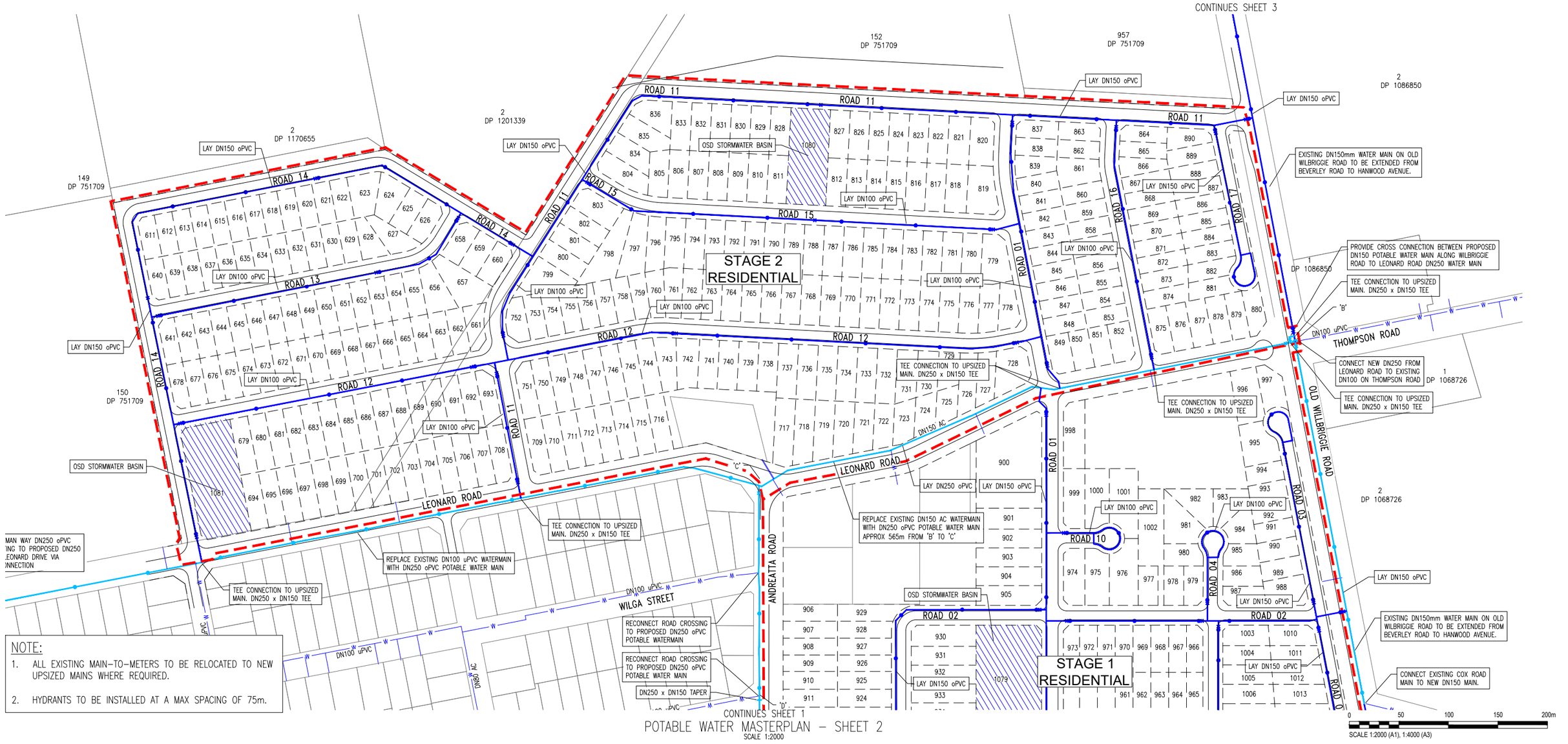
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NOTE:

1. ALL EXISTING MAIN–TO–METERS TO BE RELOCATED TO NEW UPSIZED MAINS WHERE REQUIRED.
2. HYDRANTS TO BE INSTALLED AT A MAX SPACING OF 75m.

POTABLE WATER MASTERPLAN – SHEET 2

SCALE 1:2000

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
2	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM
1	18/07/2023	ISSUED FOR INFORMATION	LBM	NSM	NMM

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Drawn	LACHLAN MOORE	Date 21/08/2024
Checked	NELSON MCLEOD	Date 21/08/2024
Designed	LACHLAN MOORE	Date 21/08/2024
Verified	NELSON MCLEOD	Date 21/08/2024
Approved	NUNO MORIERA	Date 21/08/2024

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3
Title: STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 2 OF 8

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:2000	A1

Drawing Number: 304800722-PW-005
Revision: 3

DATE PLOTTED: 6 September 2024 11:59 AM BY : MOREIRA, NUNO

NOTE:

1. ALL EXISTING MAIN–TO–METERS TO BE RELOCATED TO NEW UPSIZED MAINS WHERE REQUIRED.
2. HYDRANTS TO BE INSTALLED AT A MAX SPACING OF 75m.

NORTH

BEVERLEY ROAD

DN100 oPVC

DN150 oPVC

PROPOSED CONNECTION TO EXISTING WATERMAIN VIA STRAIGHT PIECE

LAY DN150 oPVC

EXISTING DN150mm WATER MAIN ON OLD WILBRIGGIE ROAD TO BE EXTENDED FROM BEVERLEY ROAD TO HANWOOD AVENUE.

PROVIDE CROSS CONNECTION BETWEEN PROPOSED DN150 POTABLE WATER MAIN ALONG WILBRIGGIE ROAD TO LEONARD ROAD DN250 WATER MAIN

TEE CONNECTION TO UPSIZED MAIN. DN250 x DN150 TEE

'B'

THOMPSON ROAD

CONNECT NEW DN250 FROM LEONARD ROAD TO EXISTING DN100 ON THOMPSON ROAD

TEE CONNECTION TO UPSIZED MAIN. DN250 x DN150 TEE

LAY DN100 oPVC

STAGE 2
RESIDENTIAL

OSD STORMWATER BASIN

ROAD 01
ROAD 11
ROAD 12
ROAD 13
ROAD 14
ROAD 15
ROAD 16
ROAD 17

1632 DP 257174
1037 DP 751709
2 DP 1084981
2 DP 1123771
283 DP 751709
2 DP 785399
1 DP 1097887
1 DP 1201339
247 DP 751709
152 DP 751709
957 DP 751709
2 DP 1086850
2 DP 1170655
2 DP 1201339
149 DP 751709
150
1 DP 1086850
1 DP 1068726

CONTINUES SHEET 4

CONTINUES SHEET 2

POTABLE WATER MASTERPLAN – SHEET 3

SCALE 1:2000

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
2	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM
1	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM

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Verified	NELSON MCLEOD	21/08/2024
Approved	NUNO MORIERA	21/08/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 3 OF 8

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:2000	A1

Drawing Number: 304800722-PW-006

Revision: 3

XREFs: XR-304800722-G-TITLE; LAYOUT OPTION 3; XR-304800722-E-CADASTRE; XR-304800722-G-Legend
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DATE PLOTTED: 6 September 2024 11:59 AM BY : MOREIRA, NUNO

CONTINUES SHEET 8

CONTINUES SHEET 3

198 DP 751709

289 DP 751709

197 DP 751709

288 DP 751709

196 DP 751709

149 DP 751709

150 DP 751709

2 DP 1170655

2 DP 1201339

157 DP 751709

156 DP 751709

PROPOSED 1.3KM KIDMAN WAY DN250 oPVC WATER MAIN FROM PEDLEY ROAD CONNECTION

PROPOSED 1.3KM KIDMAN WAY DN250 oPVC WATER MAIN CONNECTING TO PROPOSED DN250 oPVC WATERMAIN IN LEONARD DRIVE VIA DN250xDN250 TEE CONNECTION

PROPOSED LEONARD ROAD DN250 oPVC WATER MAIN CONNECTING TO EXISTING DN150 uPVC WATERMAIN IN KIDMAN WAY VIA DN250xDN150 TEE CONNECTION

LAY DN150 oPVC

LAY DN100 oPVC

STAGE 2 RESIDENTIAL

ROAD 11

ROAD 12

ROAD 13

ROAD 14

ROAD 15

LEONARD ROAD

TEE CONNECTION TO UPSIZED MAIN. DN250 x DN150 TEE

REPLACE EXISTING DN100 uPVC WATERMAIN WITH DN250 oPVC POTABLE WATER MAIN

REPLACE EXISTING DN150 uPVC POTABLE WATER MAIN WITH DN150 oPVC APPROX. 123m FROM 'D' TO 'E'

RECONNECT ROAD CROSSING TO PROPOSED DN250 oPVC POTABLE WATERMAIN

KIDMAN WAY

ANDREATTA ROAD

HANWOOD ROAD

WILGA STREET

SCHOOL STREET

YARRAN STREET

CLUB STREET

STANBRIDGE STREET

YARRAH LANE

ASH STREET

BEECH STREET

BEAUMONT RD

DN100 uPVC

DN150 uPVC

DN80 AC

DN100 AC

DN150 uPVC

'A' 'C' 'D' 'E'

CONTINUES SHEET 1

NORTH

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

NOTE:

1. ALL EXISTING MAIN-TO-METERS TO BE RELOCATED TO NEW UPSIZED MAINS WHERE REQUIRED.
2. HYDRANTS TO BE INSTALLED AT A MAX SPACING OF 75m.
3. THE 1.3KM KIDMAN WAY WATER MAIN CONNECTION CAN PROVIDE SUFFICIENT SUPPLY TO SERVICE THE ULTIMATE DEMAND OF STAGE 1, 2 AND 3 BUT DOES NOT PROVIDE SUFFICIENT DEMAND TO MEET FIRE FIGHTING REQUIREMENTS. IF FIREFIGHTING REQUIREMENTS ARE TO MET, THE FULL 4KM KIDMAN WAY MAIN IS REQUIRED. REFER TO STANTEC MODELING REPORT.

POTABLE WATER MASTERPLAN – SHEET 4

SCALE 1:2000

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
2	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM
1	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM

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Designed	LACHLAN MOORE	Date 21/08/2024
Verified	NELSON MCLEOD	Date 21/08/2024
Approved	NUNO MORIERA	Date 21/08/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 4 OF 8

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:2000	A1

Drawing Number: 304800722-PW-007

Revision: 3

XREFs: XR-304800722-G-TITLE; LAYOUT OPTION 3; XR-304800722-E-CADASTRE; XR-304800722-G-Legend
CAD File: \\Au2028-ppfss01\shared_projects\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2024 08 21 - PW Masterplan Stage 1 & 2\304800722-PW.dwg

DATE PLOTTED: 6 September 2024 11:59 AM BY : MOREIRA, NUNO

CONTINUES SHEET 9

THE PROPOSED FULL 4KM DN250 oPVC KIDMAN WAY MAIN EXTENSION TO CORNER OF OAKES AND OVERS ROAD IS REQUIRED IF FIRE FIGHTING REQUIREMENTS ARE REQUIRED FOR ULTIMATE STAGE OF HANWOOD DEVELOPMENT (STAGE 1, 2 AND 3)

PROPOSED CROSS-CONNECTION FROM PROPOSED DN250 oPVC KIDMAN WAY MAIN TO EXISTING DN100 AC MAIN IN PEDLEY ROAD VIA DN250 x 100 TEE CONNECTION

EXISTING DN80 AC MAIN

PROPOSED FUTURE CONNECTION POINT IF FULL KIDWAY WAY DN250 oPVC WATER MAIN IS REQUIRED TO CORNER OF OAKES AND OVERS ROAD

PEDLEY ROAD

EXISTING DN100 AC MAIN

PROPOSED DN250 oPVC WATER MAIN CONNECTING TO EXISTING DN100 AC MAIN IN PEDLEY ROAD

KIDMAN WAY

KIDMAN WAY

2
DP 1084981

2
DP 1123771

283
DP 751709

2
DP 785399

BEVERLEY ROAD

1
DP 1097887

1
DP 1201339

NORTH

NOTE:

1. HYDRANTS TO BE INSTALLED AT A MAX SPACING OF 75m.
2. THE 1.3KM KIDMAN WAY WATER MAIN CONNECTION CAN PROVIDE SUFFICIENT SUPPLY TO SERVICE THE ULTIMATE DEMAND OF STAGE 1, 2 AND 3 BUT DOES NOT PROVIDE SUFFICIENT DEMAND TO MEET FIRE FIGHTING REQUIREMENTS. IF FIREFIGHTING REQUIREMENTS ARE TO MET, THE FULL 4KM KIDMAN WAY MAIN IS REQUIRED. REFER TO STANTEC MODELING REPORT.

CONTINUES SHEET 7

POTABLE WATER MASTERPLAN – SHEET 5

SCALE 1:2000

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
2	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM
1	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM

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Verified	NELSON MCLEOD	Date 21/08/2024
Approved	NUNO MORIERA	Date 21/08/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 5 OF 8

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:2000	A1

Drawing Number: 304800722-PW-008

Revision: 3

XREFs: XR-304800722-G-TITLE, LAYOUT OPTION 3, XR-304800722-E-CADASTRE, XR-304800722-G-Legend
CAD File: \\Au2028-pcfss01\shared_projects\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2024 08 21 - PW Masterplan Stage 1 & 2\304800722-PW.dwg

DATE PLOTTED: 6 September 2024 11:59 AM BY : MOREIRA, NUNO

CONTINUES SHEET 10

THE PROPOSED FULL 4KM DN250 oPVC KIDMAN WAY MAIN EXTENSION TO CORNER OF OAKES AND OVERS ROAD IS REQUIRED IF FIRE FIGHTING REQUIREMENTS ARE REQUIRED FOR ULTIMATE STAGE OF HANWOOD DEVELOPMENT (STAGE 1, 2 AND 3)

RAE WAY

RAE WAY

KIDMAN WAY

THE PROPOSED FULL 4KM DN250 oPVC KIDMAN WAY MAIN EXTENSION TO CORNER OF OAKES AND OVERS ROAD IS REQUIRED IF FIRE FIGHTING REQUIREMENTS ARE REQUIRED FOR ULTIMATE STAGE OF HANWOOD DEVELOPMENT (STAGE 1, 2 AND 3)

NORTH

NOTE:

1. HYDRANTS TO BE INSTALLED AT A MAX SPACING OF 75m.
2. THE 1.3KM KIDMAN WAY WATER MAIN CONNECTION CAN PROVIDE SUFFICIENT SUPPLY TO SERVICE THE ULTIMATE DEMAND OF STAGE 1, 2 AND 3 BUT DOES NOT PROVIDE SUFFICIENT DEMAND TO MEET FIRE FIGHTING REQUIREMENTS. IF FIREFIGHTING REQUIREMENTS ARE TO MET, THE FULL 4KM KIDMAN WAY MAIN IS REQUIRED. REFER TO STANTEC MODELING REPORT.

CONTINUES SHEET 8

POTABLE WATER MASTERPLAN – SHEET 6

SCALE 1:2000

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
2	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM
1	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM

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Designed	LACHLAN MOORE	21/08/2024
Verified	NELSON MCLEOD	21/08/2024
Approved	NUNO MORIERA	21/08/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 6 OF 8

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:2000	A1

Drawing Number: 304800722-PW-009

Revision: 3

XREFs: XR-304800722-G-TITLE; LAYOUT OPTION 3; XR-304800722-E-CADASTRE; XR-304800722-G-Legend
CAD File: \\Au2028-pcfss01\shared_projects\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2024 08 21 - PW Masterplan Stage 1 & 2\304800722-PW.dwg

DATE PLOTTED: 6 September 2024 11:59 AM BY : MOREIRA, NUNO

CONTINUES SHEET 11

NORTH

OVERS WAY

OVERS WAY

THE PROPOSED FULL 4KM DN250 oPVC KIDMAN WAY MAIN EXTENSION TO CORNER OF OAKES AND OVERS ROAD IS REQUIRED IF FIRE FIGHTING REQUIREMENTS ARE REQUIRED FOR ULTIMATE STAGE OF HANWOOD DEVELOPMENT (STAGE 1, 2 AND 3)

OVERS WAY

WATKINS AVE

NO CROSS CONNECTIONS REQUIRED AT WATKINS AVE / OVERS WAY

WATKINS AVE

RAE WAY

THE PROPOSED FULL 4KM DN250 oPVC KIDMAN WAY MAIN EXTENSION TO CORNER OF OAKES AND OVERS ROAD IS REQUIRED IF FIRE FIGHTING REQUIREMENTS ARE REQUIRED FOR ULTIMATE STAGE OF HANWOOD DEVELOPMENT (STAGE 1, 2 AND 3)

CONTINUES SHEET 9

NOTE:

1. HYDRANTS TO BE INSTALLED AT A MAX SPACING OF 75m.
2. THE 1.3KM KIDMAN WAY WATER MAIN CONNECTION CAN PROVIDE SUFFICIENT SUPPLY TO SERVICE THE ULTIMATE DEMAND OF STAGE 1, 2 AND 3 BUT DOES NOT PROVIDE SUFFICIENT DEMAND TO MEET FIRE FIGHTING REQUIREMENTS. IF FIREFIGHTING REQUIREMENTS ARE TO MET, THE FULL 4KM KIDMAN WAY MAIN IS REQUIRED. REFER TO STANTEC MODELING REPORT.

POTABLE WATER MASTERPLAN – SHEET 7

SCALE 1:2000

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
2	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM
1	11/03/2024	FINAL PW MASTER PLAN	LBM	NSM	NMM

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Approved	NUNO MORIERA	Date 21/08/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 7 OF 8

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

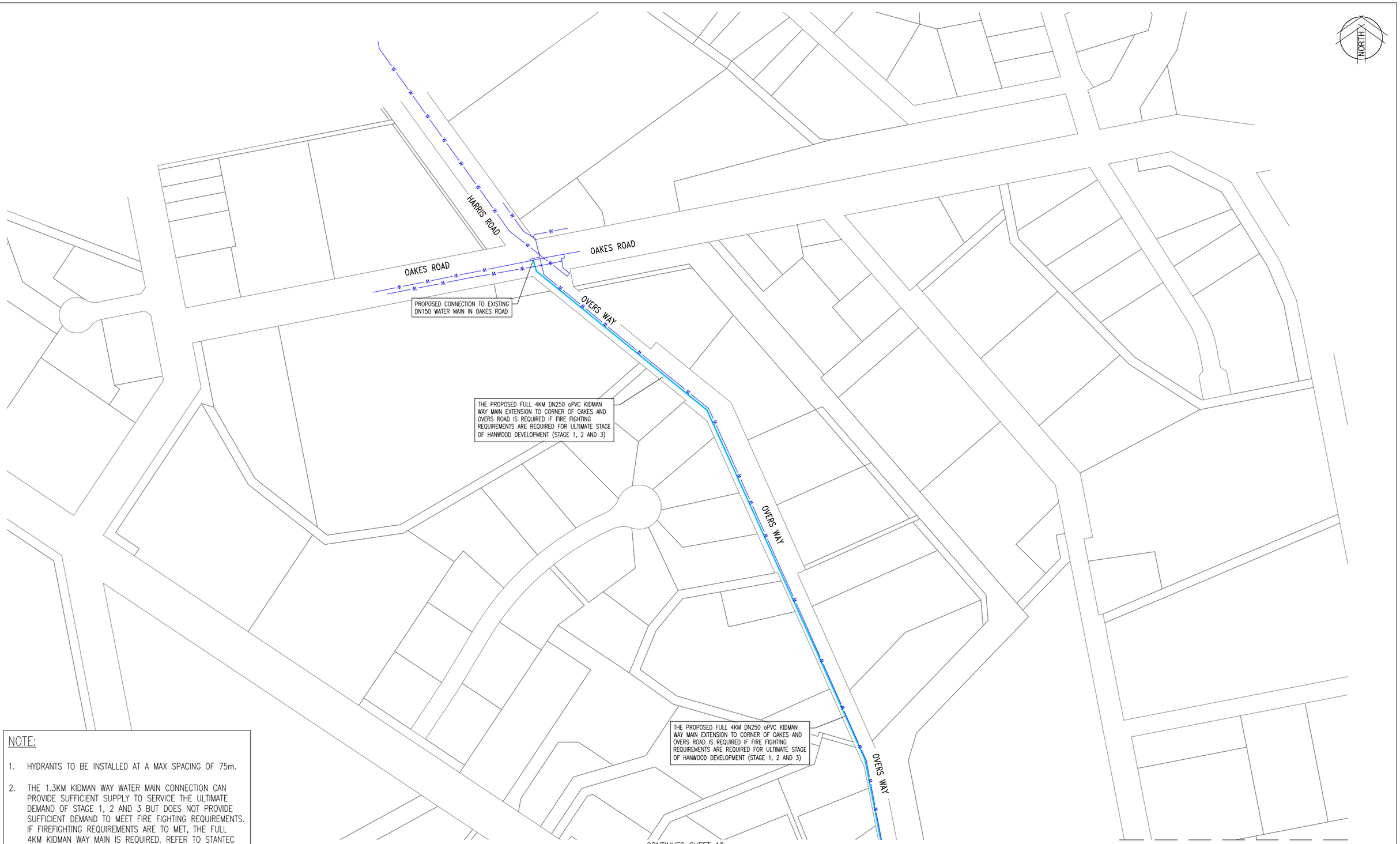
Datum		Scale	Size
A.H.D.		1:2000	A1

Drawing Number: 304800722-PW-010

Revision: 3

XREFs: XR-304800722-G-TITLE; LAYOUT OPTION 3; XR-304800722-E-CADASTRE; XR-304800722-G-Legend
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DATE PLOTTED: 6 September 2024 11:59 AM BY : MOREIRA, NUNO



NOTE:

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2. THE 1.3KM KIDMAN WAY WATER MAIN CONNECTION CAN PROVIDE SUFFICIENT SUPPLY TO SERVICE THE ULTIMATE DEMAND OF STAGE 1, 2 AND 3 BUT DOES NOT PROVIDE SUFFICIENT DEMAND TO MEET FIRE FIGHTING REQUIREMENTS. IF FIREFIGHTING REQUIREMENTS ARE TO MET, THE FULL 4KM KIDMAN WAY MAIN IS REQUIRED. REFER TO STANTEC MODELING REPORT.

POTABLE WATER MASTERPLAN – SHEET 8

SCALE 1:2000

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	21/08/2024	UPDATES POST COUNCIL REVIEW	LBM	NSM	NMM
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Approved	NUNO MORIERA	21/08/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
POTABLE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2
POTABLE WATER CONCEPT PLAN
SHEET 8 OF 8

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:2000	A1

Drawing Number: 304800722-PW-011

Revision: 3

XREFs: XR-304800722-G-TITLE LAYOUT OPTION 3, XR-304800722 E-CADASTRE, XR-304800722-G-Legend
CAD File: \\Au2028-ppfs-s01\shared_projects\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2024 08 21 - PW Masterplan Stage 1 & 2\304800722-PW.dwg

Created on 4/08/2023

- POTABLE WATER MAINS TO BE UPSIZED OR REPLACED
- SIZES AS PER STANTEC REPORT
- MATERIAL IS TO BE dPVC PN16 or DICL PN35 (road crossings).

HA1
HA2
HA3
HA4
HA5

uPVC - S1 100mm

AC - 150mm

MALLEE ST
LEONARD RD
WATTLE ST
WILGA ST
SCHOOL ST
YARRAN ST
BEECH ST
ASH ST
CLUB ST
HANWOOD RD
KIDMAN WAY
BEAUMONT RD
GULLONI RD
CROOK RD
SANGSTER
HANWOOD AVE
ANDREATTA RD
OLD WILLBRIGGIE RD
COX RD
THOMPSON RD
SARA RD

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Projection: GDA2020 / MGA zone 55

Date: 4/08/2023

Drawn By: Paul Piccoli

Map Scale: 1:7500 at A3

Created on 4/08/2023



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Projection: GDA2020 / MGA zone 55

Date: 4/08/2023

Drawn By: Paul Piccoli

Map Scale: 1:7500 at A3

Appendix E
Stantec's Wastewater Design Drawings

Appendix E Wastewater Design Drawings

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

Stantec

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GRIFFITH CITY COUNCIL

HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

COVER SHEET

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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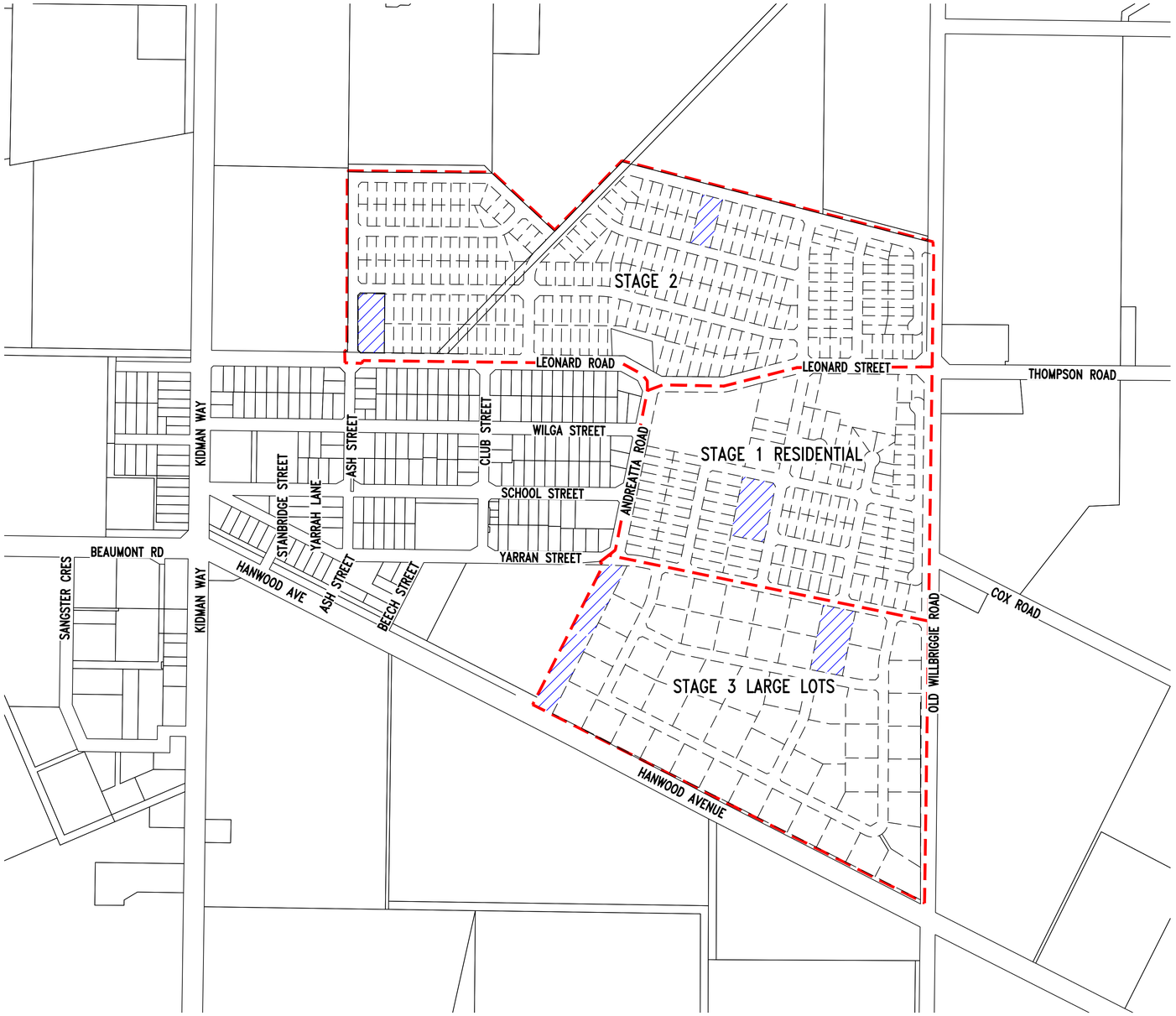
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Checked	NELSON MCLEOD	Date 6/02/2025
Designed	LACHLAN MOORE	Date 6/02/2025
Verified	NELSON MCLEOD	Date 6/02/2025
Approved	NUNO MORIERA	6/02/2025

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		NTS	A1

Drawing Number: 304800722-WW-001
Revision: 2

XREFs: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW.dwg



LOCALITY PLAN
SCALE 1:5000

NORTH

SCHEDULE OF DRAWINGS

DRAWING No.	DESCRIPTION
304800722-WW-001	COVER SHEET
304800722-WW-002	LOCALITY PLAN
304800722-WW-003	EXISTING WASTE WATER - LAYOUT PLAN
304800722-WW-004	PROPOSED WASTE WATER - LAYOUT PLAN
304800722-WW-005	STAGE 1 RESIDENTIAL SPS 1 - WASTE WATER CONCEPT PLAN
304800722-WW-006	STAGE 1 RESIDENTIAL SPS 1 - WASTE WATER LONGITUDINAL PLAN - SHEET 1 OF 3
304800722-WW-007	STAGE 1 RESIDENTIAL SPS 1 - WASTE WATER LONGITUDINAL PLAN - SHEET 2 OF 3
304800722-WW-008	STAGE 1 RESIDENTIAL SPS 1 - WASTE WATER LONGITUDINAL PLAN - SHEET 3 OF 3
304800722-WW-009	STAGE 1 RESIDENTIAL SPS 2 - WASTE WATER CONCEPT PLAN
304800722-WW-010	STAGE 1 RESIDENTIAL SPS 2 - WASTE WATER LONGITUDINAL PLAN - SHEET 1 OF 3
304800722-WW-011	STAGE 1 RESIDENTIAL SPS 2 - WASTE WATER LONGITUDINAL PLAN - SHEET 2 OF 3
304800722-WW-012	STAGE 1 RESIDENTIAL SPS 2 - WASTE WATER LONGITUDINAL PLAN - SHEET 3 OF 3
304800722-WW-013	STAGE 2 RESIDENTIAL SPS 3 - CONCEPT PLAN
304800722-WW-014	STAGE 2 RESIDENTIAL SPS 4 - CONCEPT PLAN
304800722-WW-015	STAGE 2 RESIDENTIAL SPS 3 & 4 - WASTE WATER LONGITUDINAL PLAN - SHEET 1 OF 5
304800722-WW-016	STAGE 2 RESIDENTIAL SPS 3 & 4 - WASTE WATER LONGITUDINAL PLAN - SHEET 2 OF 5
304800722-WW-017	STAGE 2 RESIDENTIAL SPS 3 & 4 - WASTE WATER LONGITUDINAL PLAN - SHEET 3 OF 5
304800722-WW-018	STAGE 2 RESIDENTIAL SPS 3 & 4 - WASTE WATER LONGITUDINAL PLAN - SHEET 4 OF 5
304800722-WW-019	STAGE 2 RESIDENTIAL SPS 3 & 4 - WASTE WATER LONGITUDINAL PLAN - SHEET 5 OF 5
304800722-WW-020	STAGE 1 AND 2 - RISING MAIN CONNECTIONS PLAN

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- CONCEPT OSD BASINS

0 100 200 300 400 500m

SCALE 1:5000 (A1), 1:10000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Designed	LACHLAN MOORE	6/02/2025
Verified	NELSON MCLEOD	6/02/2025
Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3
Title: LOCALITY PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

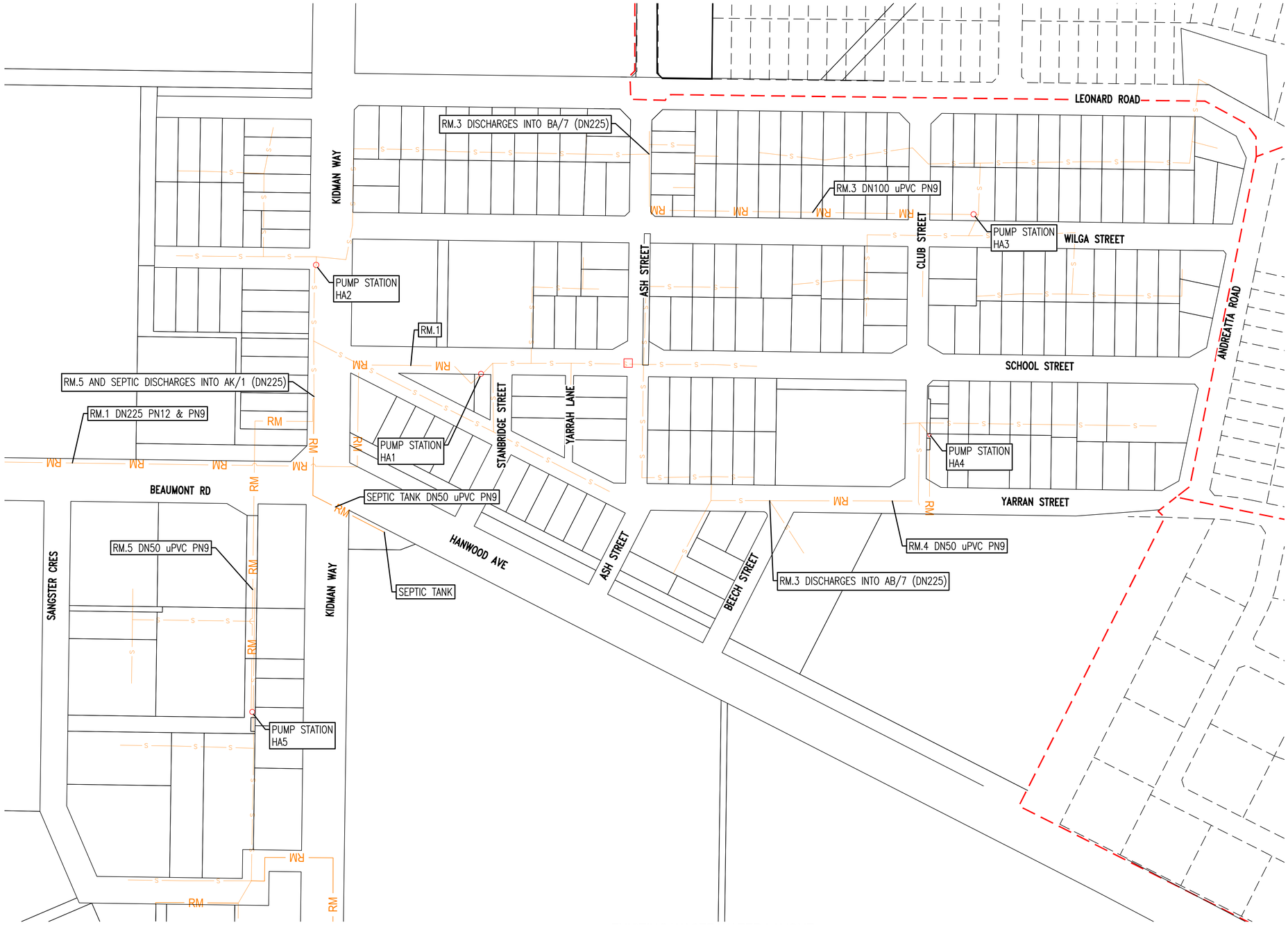
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Drawing Number: 304800722-WW-002
Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON
XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW.dwg

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

XREF's: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW.dwg



EXISTING WASTE WATER LAYOUT
SCALE 1:2000

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED GRAVITY SEWER
- PROPOSED RISING MAIN
- PROPOSED DISCHARGE MANHOLE
- EXISTING GRAVITY SEWER
- EXISTING PUMP STATION
- EXISTING ROAD EDGE

0 50 100 150 200m
SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

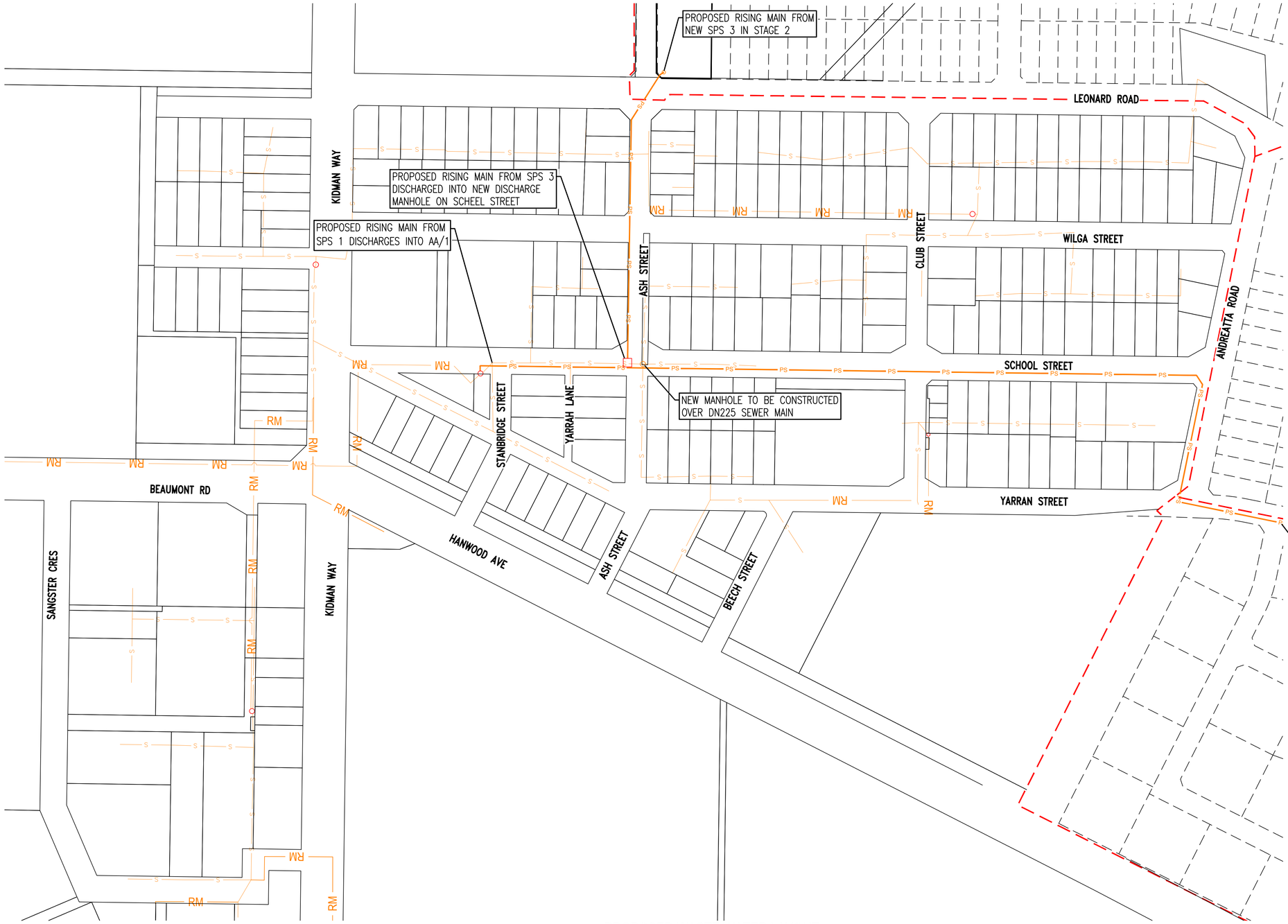
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Designed	LACHLAN MOORE	Date 6/02/2025
Verified	NELSON MCLEOD	Date 6/02/2025
Approved	NUNO MORIERA	Date 6/02/2025

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3
Title: EXISTING WASTE WATER LAYOUT PLAN
Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum: A.H.D.
Scale: 3.513888889
Size: A1
Drawing Number: 304800722-WW-003
Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON



PROPOSED WASTE WATER LAYOUT
SCALE 1:2000

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Designed	LACHLAN MOORE	6/02/2025
Verified	NELSON MCLEOD	6/02/2025
Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA WASTE WATER MASTER PLAN STAGE 1-3
Title: PROPOSED WASTE WATER LAYOUT PLAN
Status: PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum: A.H.D. | Scale: 3.513888889 | Size: A1
Drawing Number: 304800722-WW-004 | Revision: 2

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-G1-Legend; WAT SEW GIS
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DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW.dwg

LEONARD STREET
LEONARD ROAD
OLD WILLBRIGGIE ROAD
ANDREATTA ROAD
ROAD 01
ROAD 02
ROAD 03
ROAD 04
ROAD 05
ROAD 06
ROAD 10
SEWER PUMP STATION 1
STAGE 1 – RESIDENTIAL
OSD BASIN 1
1078
STORMWATER BASIN
RISING MAIN TO EXISTING
PS.1 AT SCHOOL STREET
SPS 1 OD140 PE100
PN16 RISING MAIN
RISING MAIN TO CROSS ROAD AND
CONNECT INTO MANHOLE AT
CH303.78 ON LINE 3
SPS2 OD90 PE100
PN16 RISING MAIN
SEWER PUMP STATION 2
STAGE 3
STORMWATER BASIN

STAGE 1 RESIDENTIAL WASTE WATER CONCEPT PLAN

NOT TO SCALE

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Approved	NUNO MORIERA	Date 6/02/2025

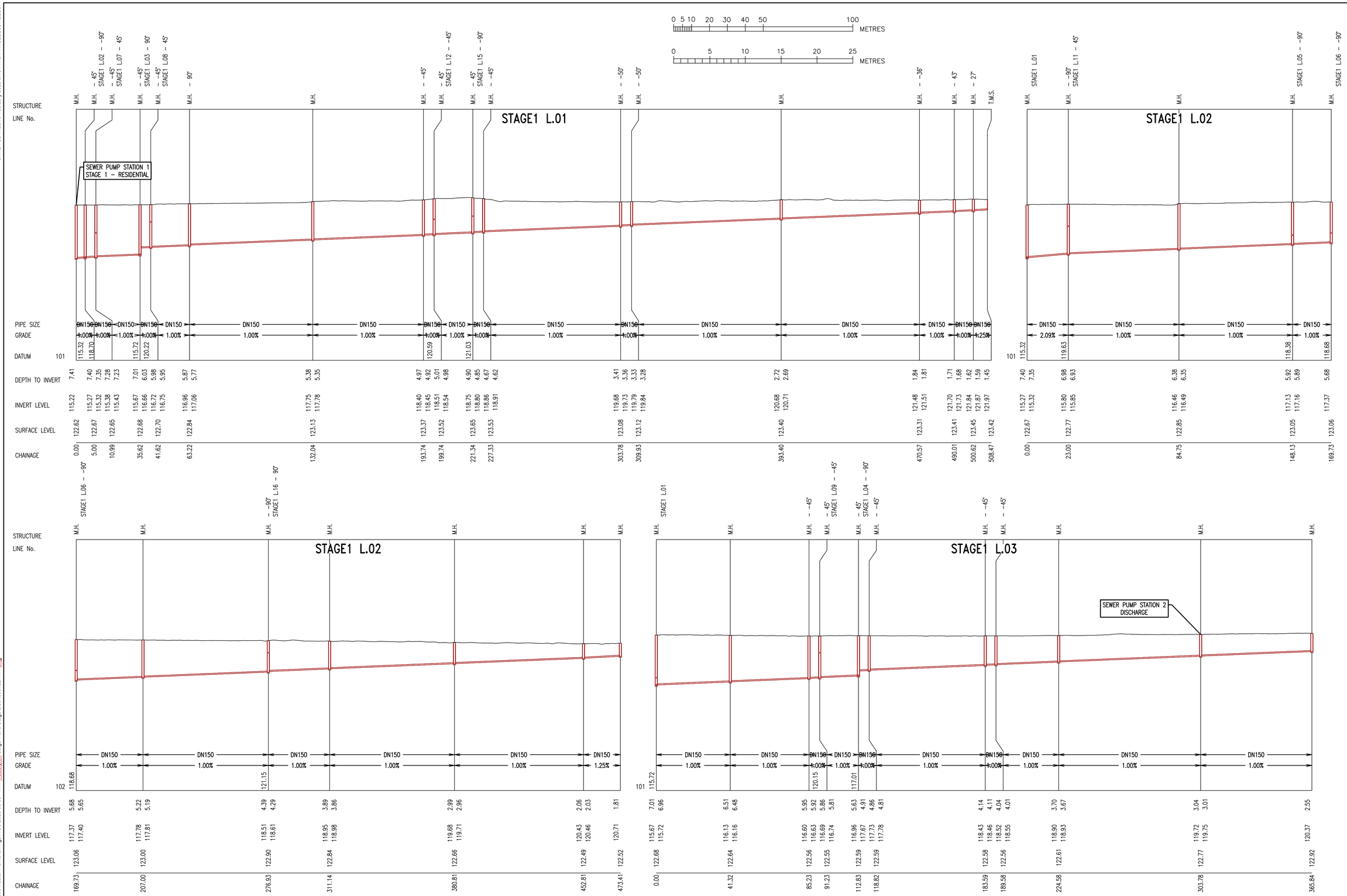
Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3
Title: STAGE 1 RESIDENTIAL SPS 1
GRAVITY SEWER RETICULATION MASTERPLAN

Status: PRELIMINARY
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Datum		Scale	Size
A.H.D.		0.736111111	A1

Drawing Number: 304800722-WW-005
Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON



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Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Verified	NELSON MCLEOD	6/02/2025
Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3
Title: STAGE 1 RESIDENTIAL SPS 1
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 1 OF 3

Status: PRELIMINARY
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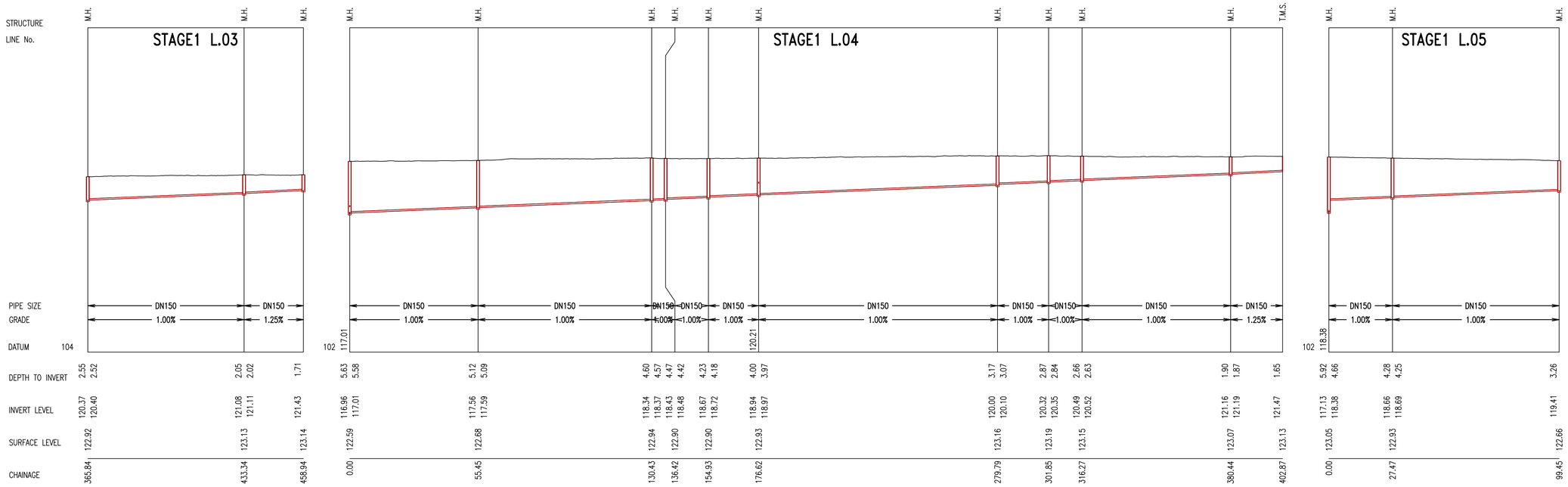
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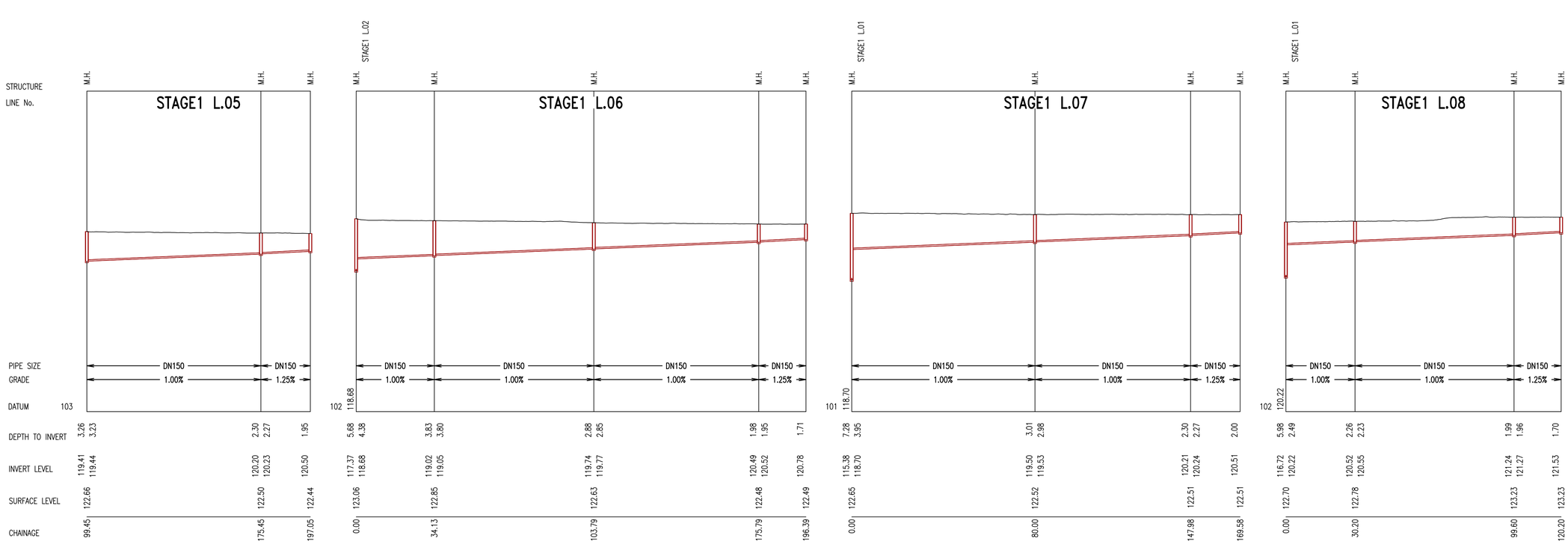
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Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

0 5 10 20 30 40 50 100 METRES

0 5 10 15 20 25 METRES





Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Designed	LACHLAN MOORE	Date 6/02/2025
Verified	NELSON MCLEOD	Date 6/02/2025
Approved	NUNO MORIERA	Date 6/02/2025

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 1 RESIDENTIAL SPS 1
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 2 OF 3

Status: PRELIMINARY
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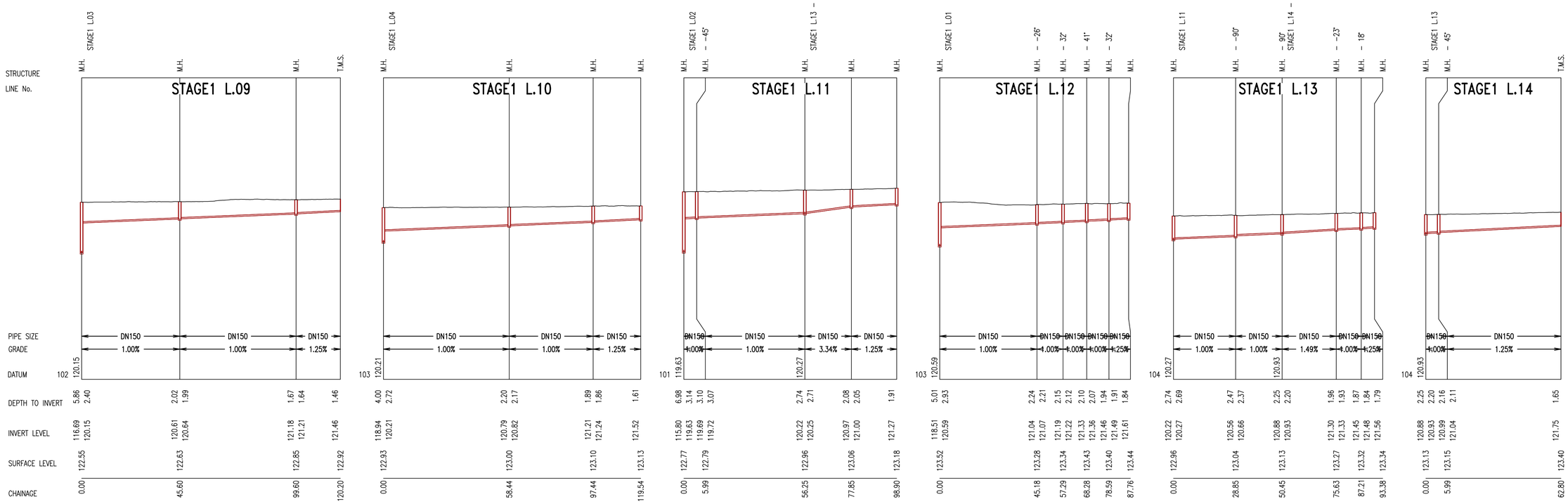
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Drawing Number: 304800722-WW-007

Revision: 2

XREFs: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
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DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON



0 5 10 20 30 40 50 100 METRES

0 5 10 15 20 25 METRES

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
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1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 1 RESIDENTIAL SPS 1
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 3 OF 3

Status: PRELIMINARY
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Datum	Scale	Size
A.H.D.	AS SHOWN	A1

Drawing Number: 304800722-WW-008

Revision: 2

XREFs: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
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CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW.dwg

STORMWATER BASIN
SPS 1 0D140 PE100 PN16 RISING MAIN
SPS 2 0D90 PE100 PN16 RISING MAIN
SEWER PUMP STATION 2 STAGE 3
OSD BASIN 2
STORMWATER BASIN
RISING MAIN TO EXISTING AA/1 AT SCHOOL STREET
OLD WILLBRIGGIE ROAD
ROAD 01
ROAD 05
ROAD 07
ROAD 08
ROAD 09
ROAD 20
ROAD 21

STAGE 3 WASTE WATER CONCEPT PLAN

NOT TO SCALE

Rev.	Date	Description	Des.	Verif.	Appd.
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2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Designed	LACHLAN MOORE	6/02/2025
Verified	NELSON MCLEOD	6/02/2025
Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3
Title: STAGE 3 RESIDENTIAL SPS 2
GRAVITY SEWER RETICULATION MASTERPLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

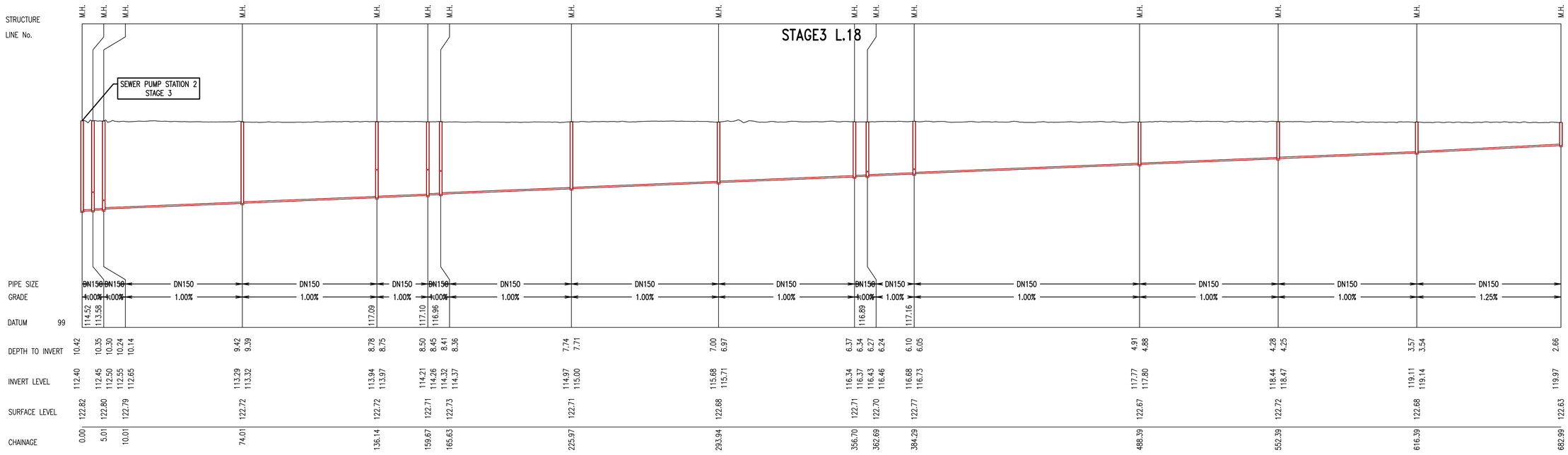
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A.H.D.	0.736111111	A1

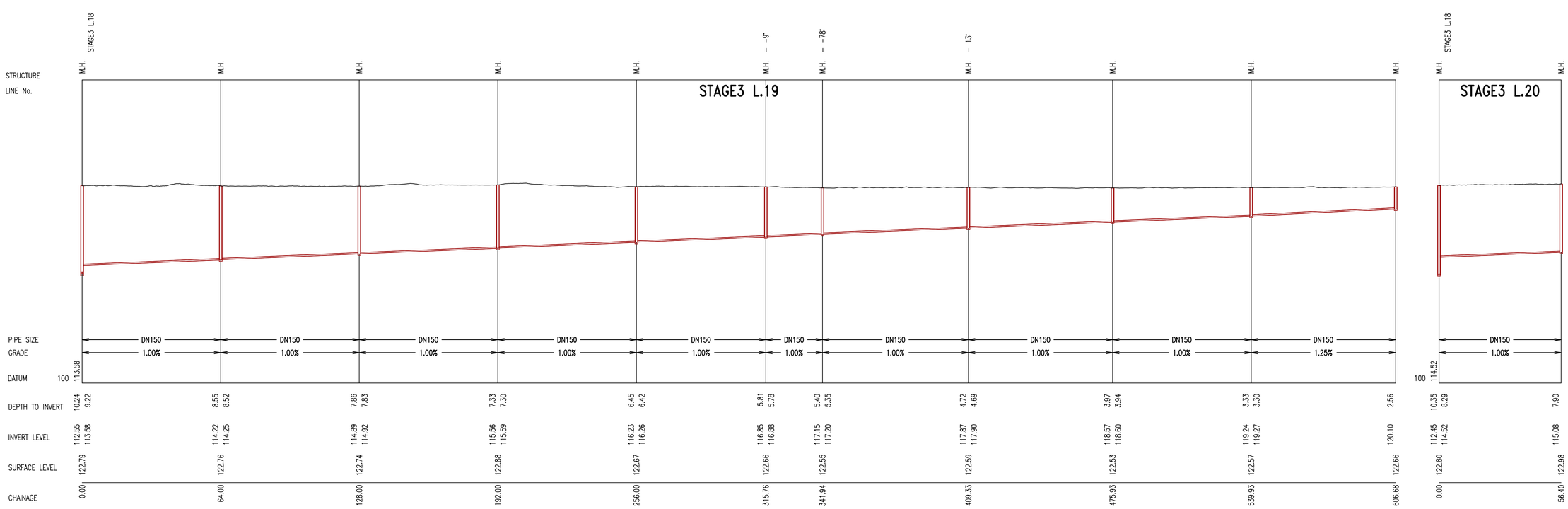
Drawing Number: 304800722-WW-009
Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

HORIZ. SCALE: 0 5 10 20 30 40 50 100 METRES

VERT. SCALE: 0 5 10 15 20 25 METRES





XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2022 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW.dwg

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Checked	NELSON MCLEOD	Date 6/02/2025
Designed	LACHLAN MOORE	Date 6/02/2025
Verified	NELSON MCLEOD	Date 6/02/2025
Approved	NUNO MORIERA	Date 6/02/2025

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 3 RESIDENTIAL SPS 2
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 1 OF 3

Status: PRELIMINARY
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Datum		Scale	Size
A.H.D.		AS SHOWN	A1

Drawing Number: 304800722-WW-010

Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

HORIZ. SCALE: 0 5 10 20 30 40 50 100 METRES

VERT. SCALE: 0 5 10 15 20 25 METRES

STAGE3 L.20

	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.
		– 45°	– 46° STAGE3 L.27 – 45°	– 90°	– 11°	– 1°				
PIPE SIZE		DN150	DN150	DN150	DN150	DN150	DN150	DN150	DN150	DN150
GRADE		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.25%
DATUM 101			119.43							
DEPTH TO INVERT	7.90	7.87	7.43 / 7.38	7.27	6.99	6.89	6.09	6.06	5.38	5.35
INVERT LEVEL	115.08	115.11	115.71 / 115.76	115.82	116.08	116.18	116.94	116.97	117.61	117.64
SURFACE LEVEL	122.98		123.14	123.08	123.07		123.02		122.99	
CHAINAGE	56.40		116.16	122.14	143.75		219.03		283.03	

	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.	M.H.
PIPE SIZE	DN150	DN150	DN150	DN150	DN150	DN150	DN150	DN150	DN150	
GRADE	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.25%		
DATUM										
DEPTH TO INVERT	4.62	4.59	3.90	3.87	3.21	3.18	2.82			
INVERT LEVEL	118.28	118.31	118.95	118.98	119.62	119.65	120.39			
SURFACE LEVEL	122.89		122.85		122.83		123.21			
CHAINAGE	347.03		411.03		475.03		534.60			

STAGE3 L.21

	STAGE3 L.18	M.H.	– 39° STAGE3 L.24 – 92°	M.H. – 40°	M.H.	M.H. – 9°	M.H.	– 43°	M.H. – 45°
PIPE SIZE		DN150	DN150	DN150	DN150	DN150	DN150	DN150	
GRADE		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	
DATUM 100		116.96	117.47						
DEPTH TO INVERT	8.41	5.77	5.55 / 5.52	5.46	5.43	4.79 / 4.76		4.51 / 4.48	4.44
INVERT LEVEL	114.32	116.96	117.18 / 117.21	117.27	117.30	118.08 / 118.11		118.44 / 118.47	118.53
SURFACE LEVEL	122.73		122.73		122.72	122.87		122.95	122.97
CHAINAGE	0.00		21.61		27.27	105.24		138.82	144.81

STAGE3 L.21

	M.H.	– 45°	M.H.	M.H.
PIPE SIZE		DN150	DN150	DN150
GRADE		1.00%	1.00%	1.25%
DATUM 103				
DEPTH TO INVERT	4.44	4.41	3.71 / 3.68	2.94 / 2.91	2.16
INVERT LEVEL	118.53	118.56	119.15 / 119.18	119.87 / 119.90	120.72
SURFACE LEVEL	122.97		122.86	122.81	122.89
CHAINAGE	144.81		203.97	272.57	338.57

STAGE3 L.22

	M.H.	STAGE3 L.18	M.H.	M.H.	M.H.	M.H.
PIPE SIZE			DN150	DN150	DN150	DN150
GRADE			1.00%	1.00%	1.00%	1.25%
DATUM 101		116.89				
DEPTH TO INVERT	6.27	5.81	5.08 / 5.05	4.41 / 4.38	3.69 / 3.66	2.78
INVERT LEVEL	116.43	116.89	117.57 / 117.60	118.32 / 118.35	119.03 / 119.06	119.91
SURFACE LEVEL	122.70		122.66	122.72	122.71	122.68
CHAINAGE	0.00		68.49	139.70	207.70	275.70

STAGE3 L.23

	M.H.	STAGE3 L.18	M.H.	M.H.
PIPE SIZE			DN150	DN150
GRADE			1.00%	1.00%
DATUM 100		117.10		
DEPTH TO INVERT	8.50	5.60	4.87 / 4.84	4.30
INVERT LEVEL	114.21	117.10	117.79 / 117.82	118.39
SURFACE LEVEL	122.71		122.66	122.69
CHAINAGE	0.00		68.63	125.54

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
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1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Verified	NELSON MCLEOD	6/02/2025
Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 3 RESIDENTIAL SPS 2
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 2 OF 3

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Scale	Size
A.H.D.	AS SHOWN	A1

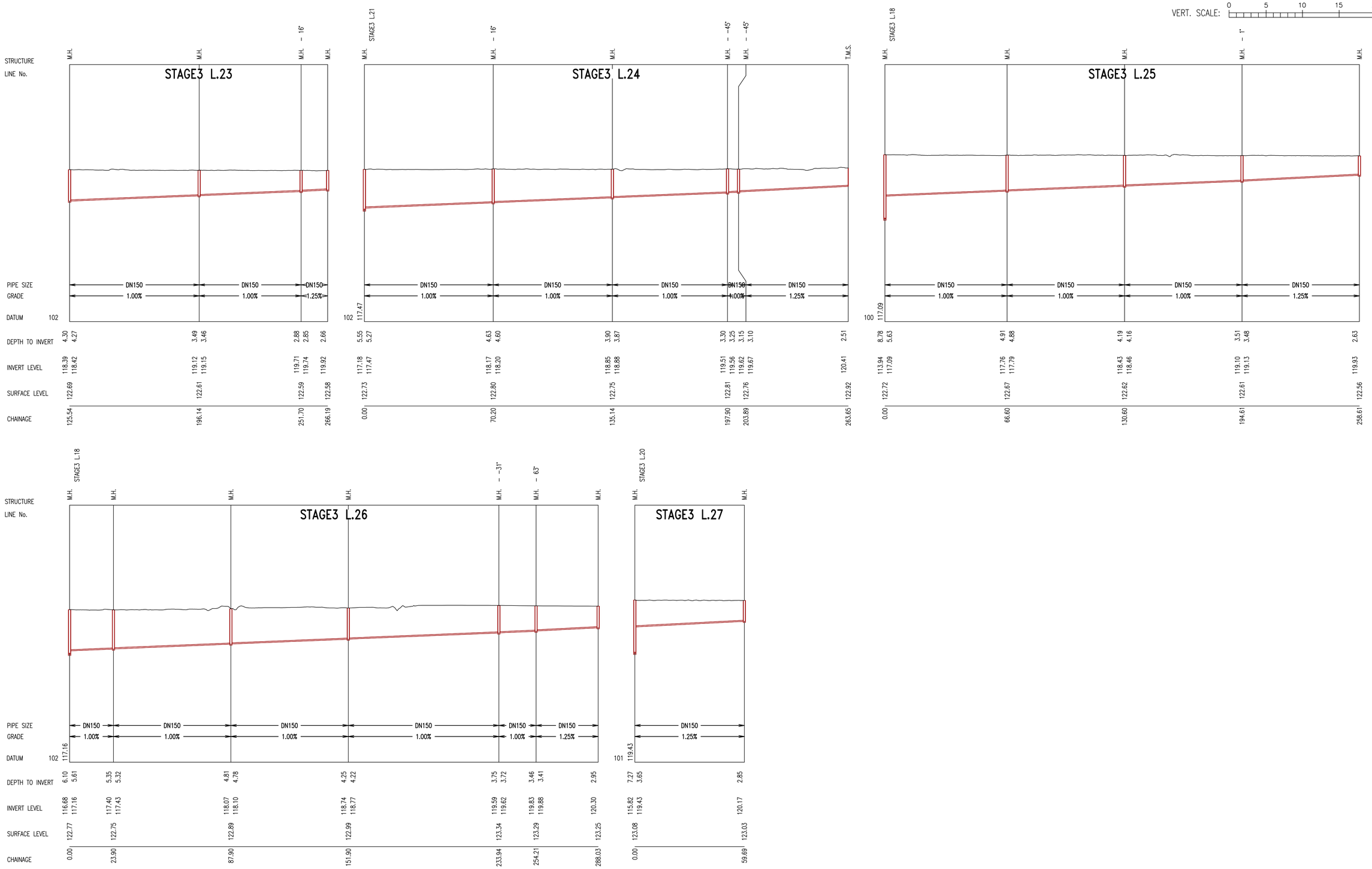
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Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

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VERT. SCALE: 0 5 10 15 20 25 METRES



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Client: GRIFFITH CITY COUNCIL

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WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 3 RESIDENTIAL SPS 2
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 3 OF 3

Status: PRELIMINARY
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Drawing Number: 304800722-WW-012 | Revision: 2

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-G-Legend; WAT SEW GIS
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ROAD 14
ROAD 13
ROAD 12
ROAD 11
ROAD 15
ROAD 14
ROAD 7
ROAD 14
LEONARD ROAD
WILGA STREET
STAGE 2
STORMWATER BASIN
OSD BASIN 5
SEWER PUMP STATION 3
STAGE 2 RESIDENTIAL
SPS 3 OD140 PE100
PN16 RISING MAIN
SPS 4 OD110 PE100
PN16 RISING MAIN

STAGE 2 RESIDENTIAL WASTE WATER CONCEPT PLAN

NOT TO SCALE

Rev.	Date	Description	Des.	Verif.	Appd.
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1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3
Title: STAGE 2 RESIDENTIAL SPS 3
GRAVITY SEWER RETICULATION MASTERPLAN

Status: PRELIMINARY
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Datum	Scale	Size
A.H.D.	0.736111111	A1

Drawing Number: 304800722-WW-013
Revision: 2

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STAGE 2 RESIDENTIAL WASTE WATER CONCEPT PLAN

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Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2 RESIDENTIAL SPS 4
GRAVITY SEWER RETICULATION MASTERPLAN

Status: PRELIMINARY
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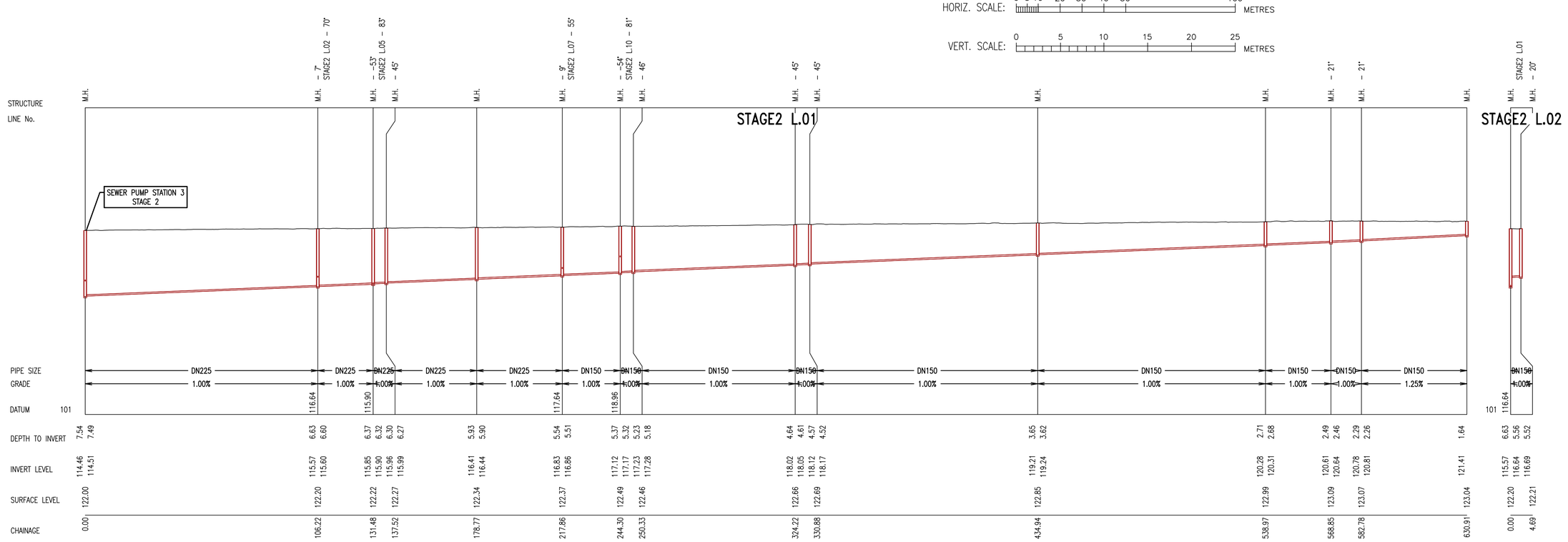
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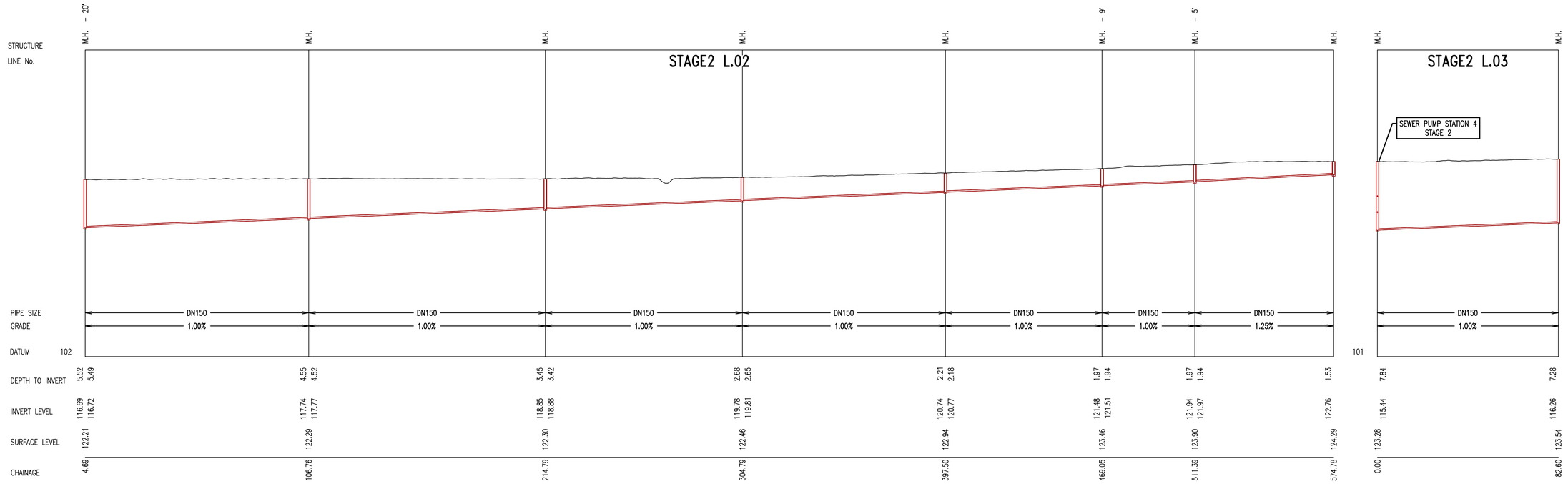
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Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2 RESIDENTIAL SPS 3 & 4
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 1 OF 5

Status: PRELIMINARY
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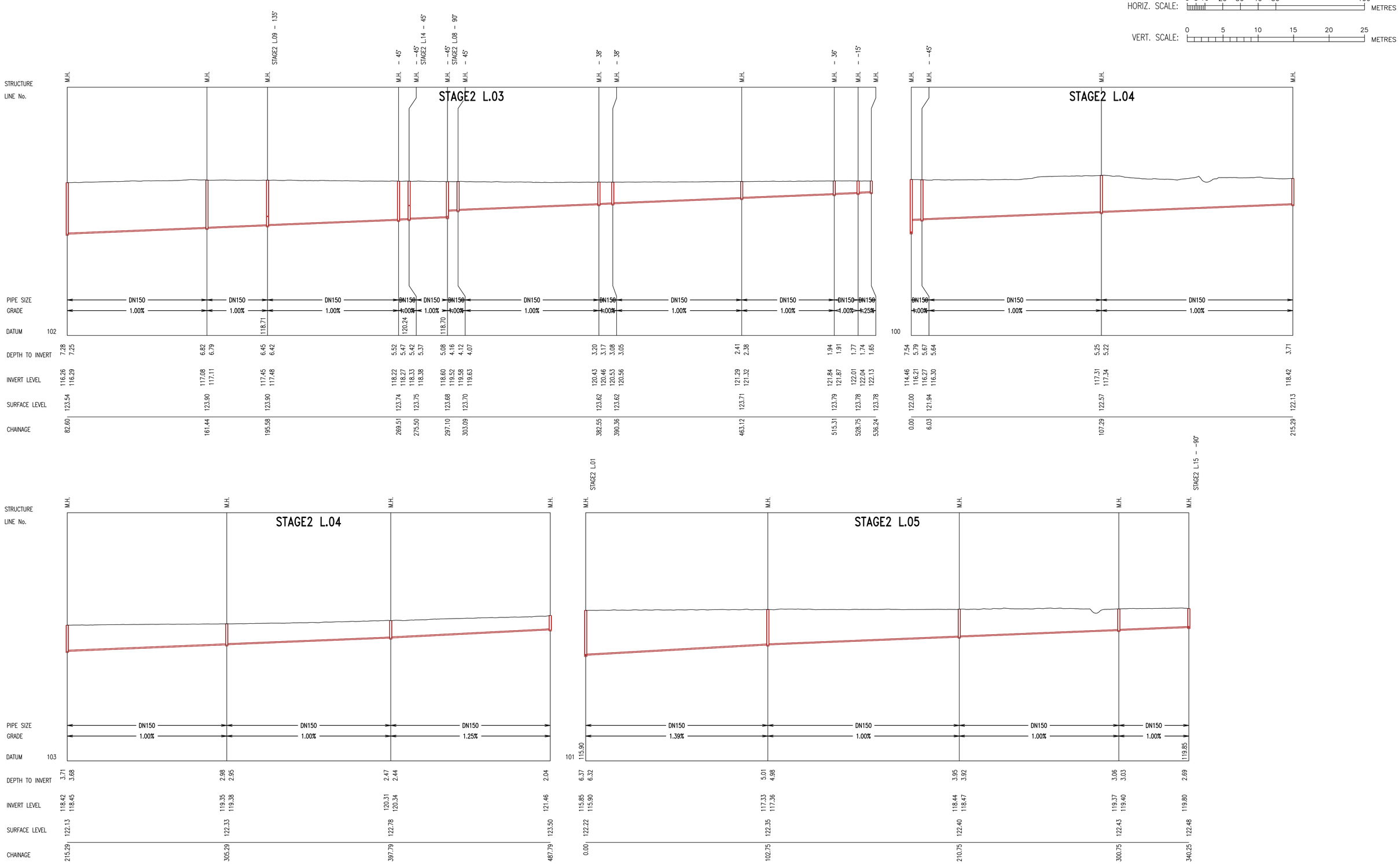
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Client: GRIFFITH CITY COUNCIL

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WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2 RESIDENTIAL SPS 3 & 4
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 2 OF 5

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Datum	Scale	Size
A.H.D.	AS SHOWN	A1

Drawing Number: 304800722-WW-016

Revision: 2

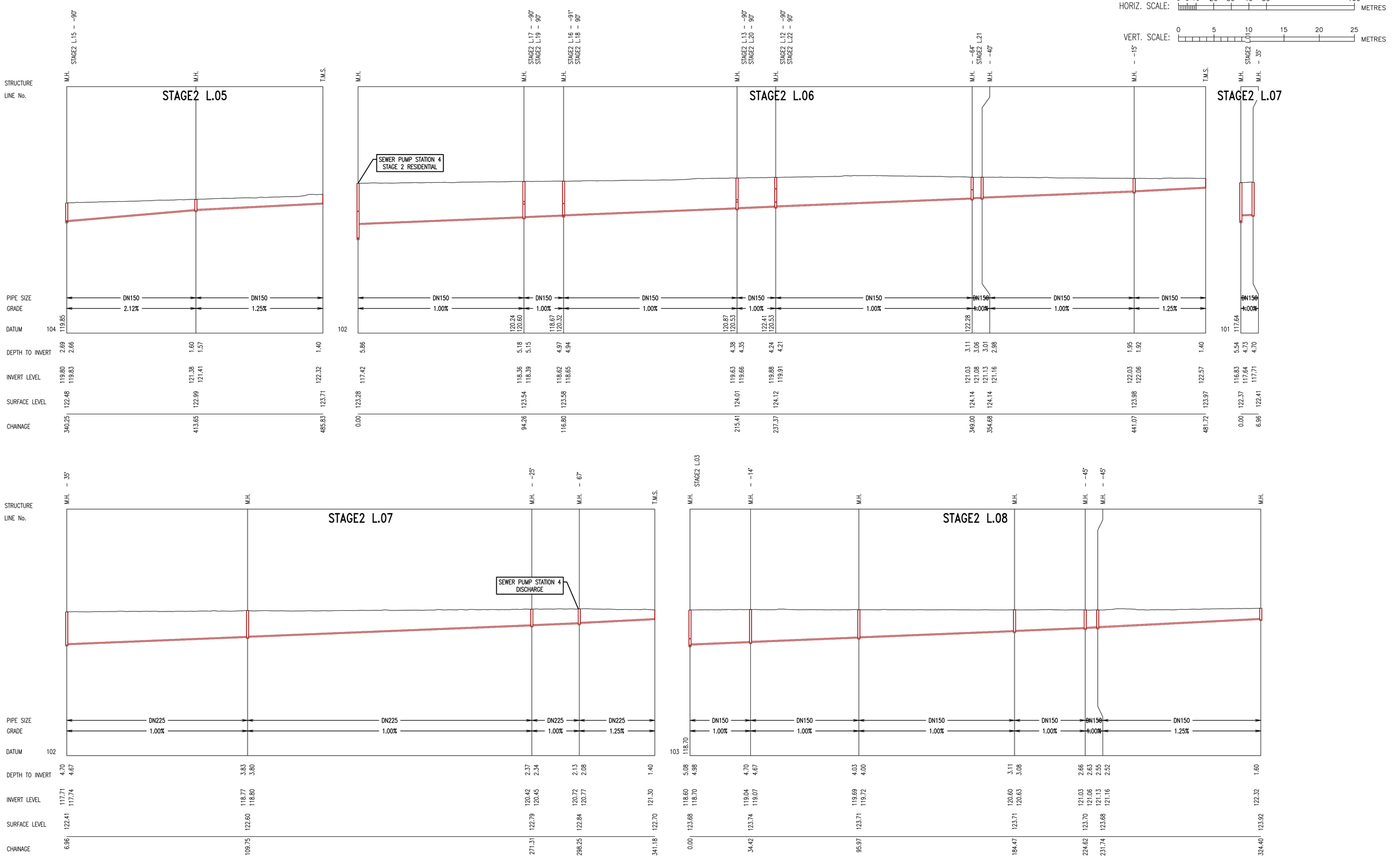
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WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2 RESIDENTIAL SPS 3 & 4
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 3 OF 5

Status: PRELIMINARY
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A.H.D.		AS SHOWN	A1

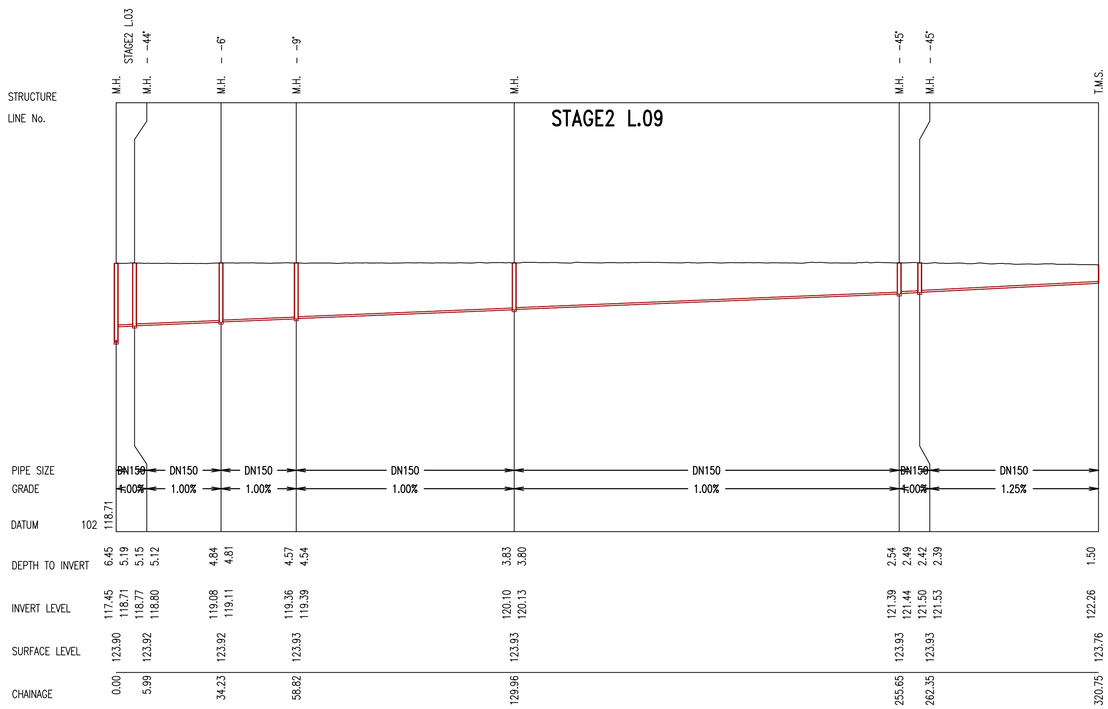
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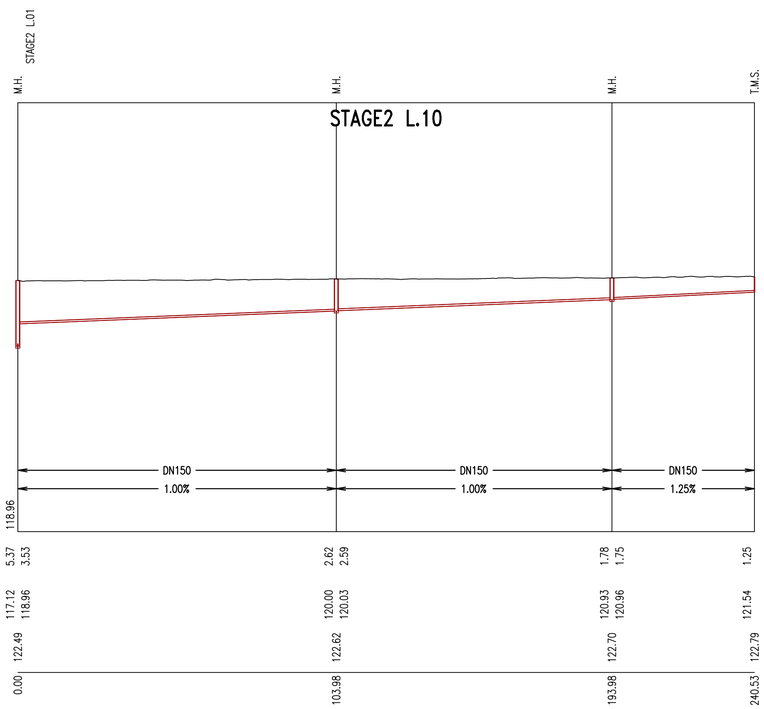
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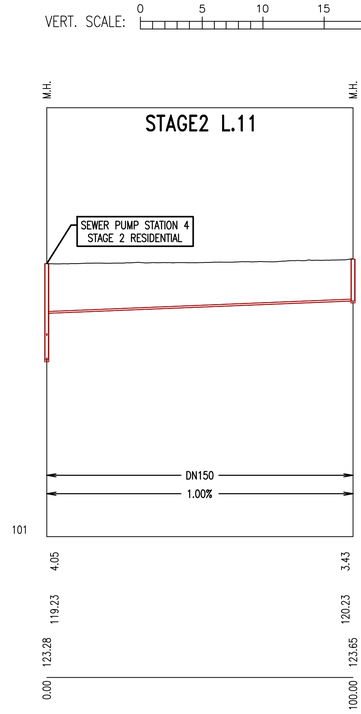
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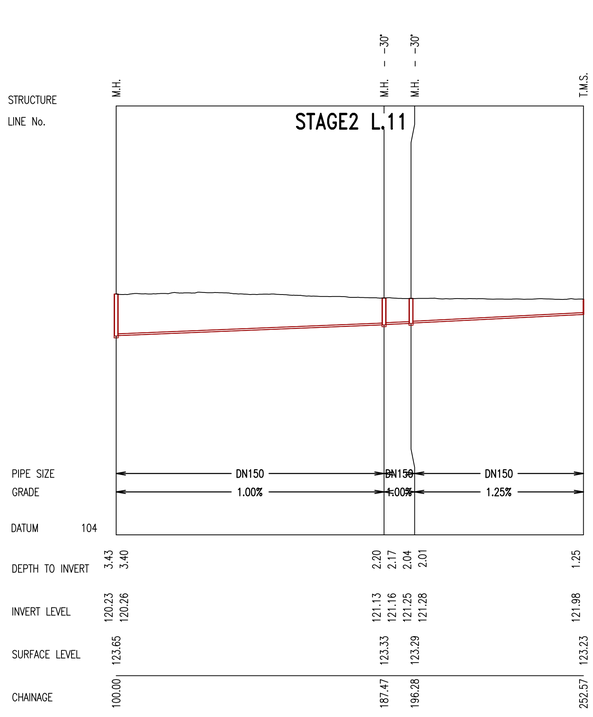
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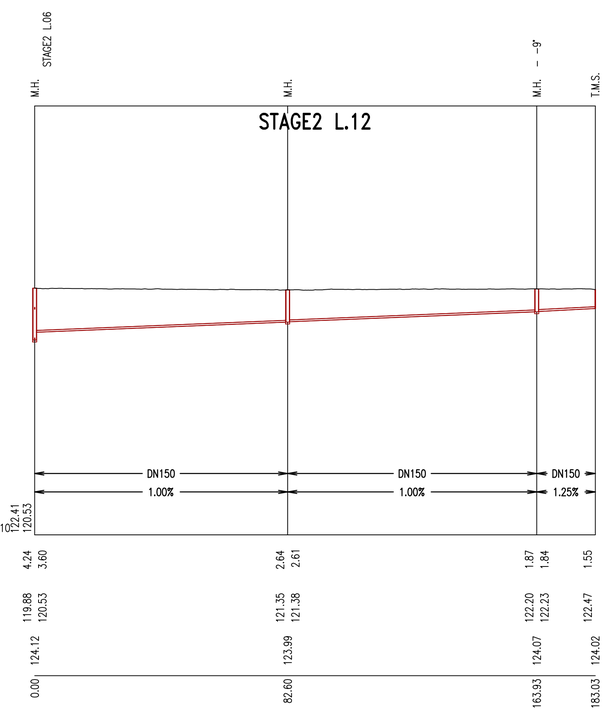
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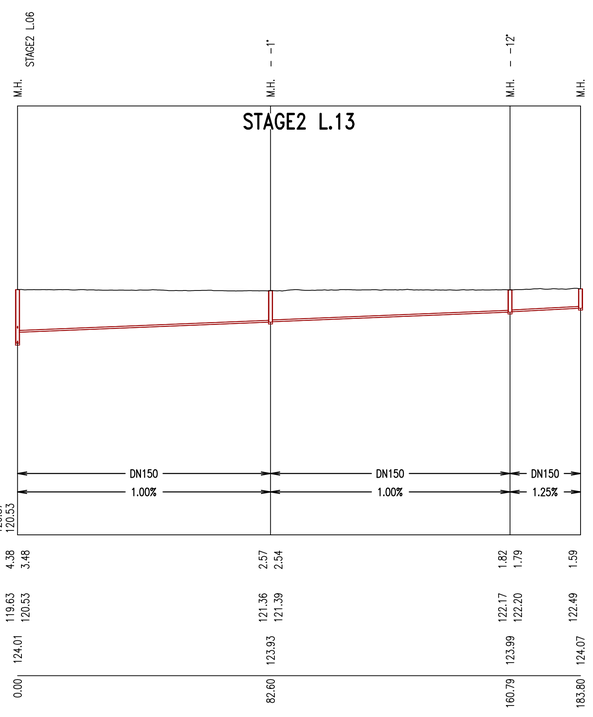


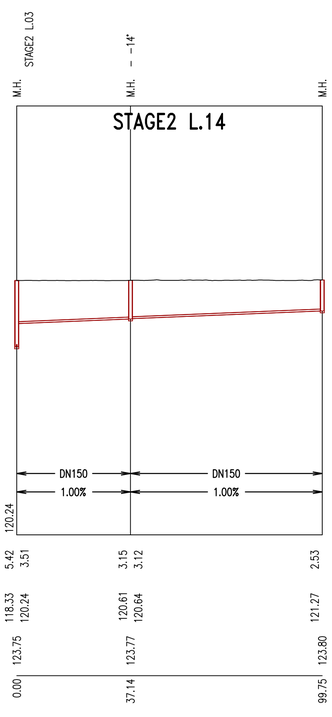












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Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Web: www.stantec.com

		Date
Drawn	LACHLAN MOORE	6/02/2025
Checked	NELSON MCLEOD	6/02/2025
Designed	LACHLAN MOORE	6/02/2025
Verified	NELSON MCLEOD	6/02/2025
Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2 RESIDENTIAL SPS 3 & 4
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 4 OF 5

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

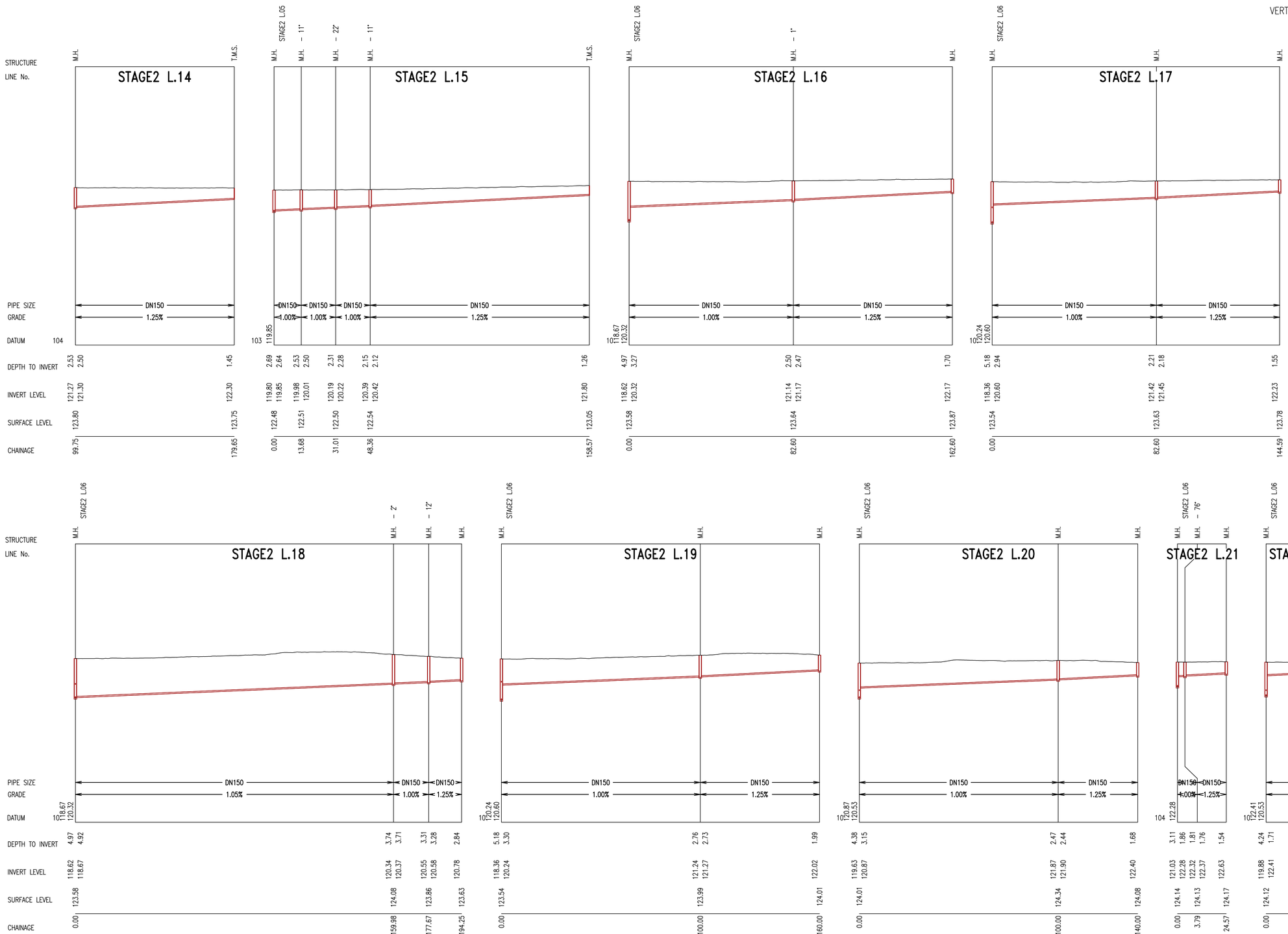
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DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON

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Rev.	Date	Description	Des.	Verif.	Appd.
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2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Drawn	LACHLAN MOORE	6/02/2025
Checked	NELSON MCLEOD	6/02/2025
Designed	LACHLAN MOORE	6/02/2025
Verified	NELSON MCLEOD	6/02/2025
Approved	NUNO MORIERA	6/02/2025

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3

Title: STAGE 2 RESIDENTIAL SPS 3 & 4
GRAVITY SEWER RETICULATION MASTERPLAN
LONGITUDINAL PLAN - SHEET 5 OF 5

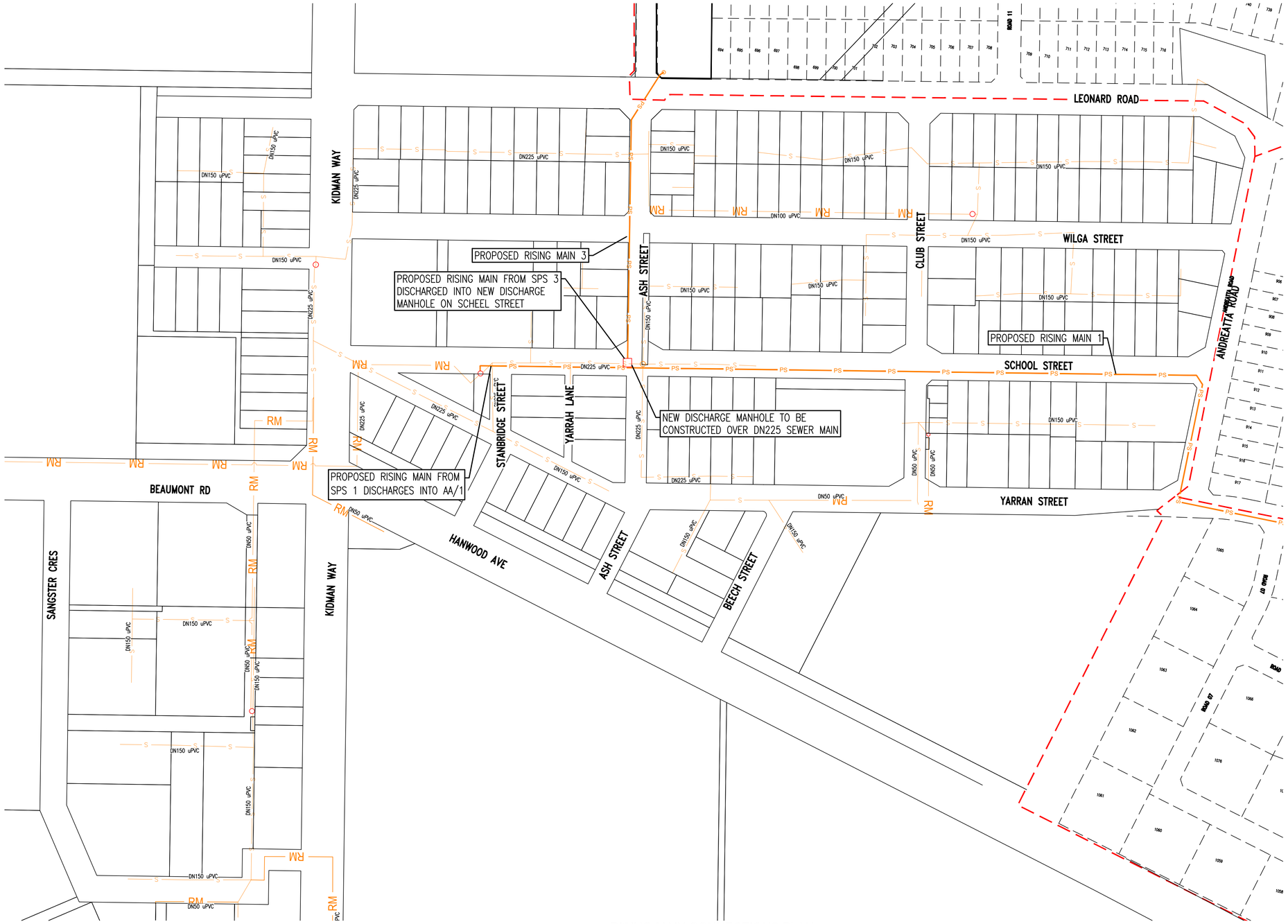
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NOT TO BE USED FOR CONSTRUCTION PURPOSES

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Drawing Number: 304800722-WW-019

Revision: 2

DATE PLOTTED: 6 February 2025 3:13 PM BY : MCLEOD, NELSON



RISING MAIN CONNECTIONS PLAN
SCALE 1:2000

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED GRAVITY SEWER
- PROPOSED RISING MAIN
- PROPOSED DISCHARGE MANHOLE
- EXISTING GRAVITY SEWER
- EXISTING PUMP STATION
- EXISTING ROAD EDGE
- EXISTING COMMUNICATIONS CONDUIT
- EXISTING ELECTRICAL CONDUIT
- EXISTING POTABLE WATER MAIN
- EXISTING RECYCLED WATER MAIN

0 50 100 150 200m
SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
3	6/02/2025	FINAL WW MASTER PLAN - 50% YIELD UPDATE	LBM	NSM	NMM
2	11/03/2024	FINAL WW MASTER PLAN	LBM	NSM	NMM
1	2/08/2023	DRAFT WW MASTER PLAN	LBM	NSM	NMM

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Drawn	LACHLAN MOORE	Date 6/02/2025
Checked	NELSON MCLEOD	Date 6/02/2025
Designed	LACHLAN MOORE	Date 6/02/2025
Verified	NELSON MCLEOD	Date 6/02/2025
Approved	NUNO MORIERA	Date 6/02/2025

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
STAGE 1-3
Title: STAGE 1 AND 2
RISING MAIN CONNECTIONS PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

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Revision: 2

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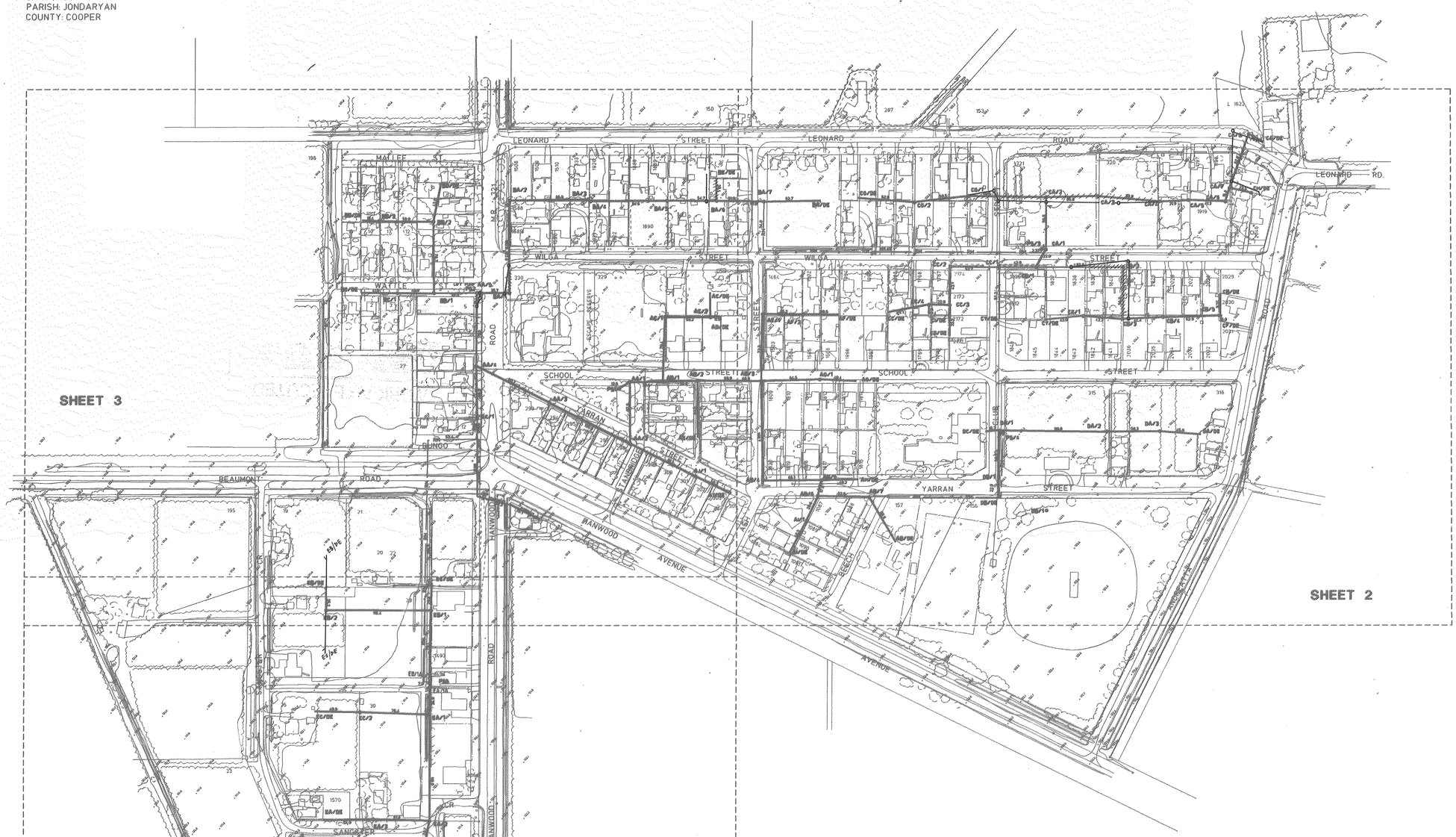
Appendix B

Hanwood Sewer WAE

SHEET 1 OF 4 SHEETS PLAN ROOM CAT.No. 8602

8901344-1

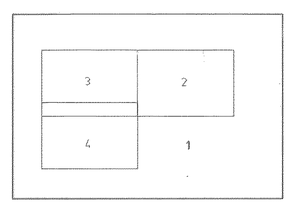
CITY: GRIFFITH
PARISH: JONDARYAN
COUNTY: COOPER



AUSTRALIAN HEIGHT DATUM

ORIGIN OF LEVELS : LANDS DEPT SSM's (VARIOUS)

SURVEY INSTRUCTION N° : 70080 DS 05
AZIMUTH OF SURVEY : ASSUMED
PLOTTED FROM : FIELD SHEETS
SURVEYED BY : W TYRRIL
DATE OF SURVEY : MARCH 1989



SHEET LAYOUT

NOTE: CADASTRAL DETAIL IN APPROXIMATE POSITION ONLY

40 20 0 40 80 120 160 200
SCALE 1:2000 METRES

WORK AS EXECUTED

"THE ORIGINAL OR LOCAL OFFICE DRAWING HAS BEEN CAREFULLY COMPARED WITH THE WORK AS CARRIED OUT AND HAS BEEN AMENDED WHERE NECESSARY, SO THAT IT IS NOW A TRUE REPRESENTATION OF THE ACTUAL WORK AS REGARDS DIMENSIONS, LEVELS, LAYOUT AND MATERIALS."

N.M.L. Barr 22/8/91

CAUTION

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MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED NAME I DEWEY	George Summers for SURVEYOR W. TYRRIL
TRACED NAME	K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER
EXAMINER NAME D PICCILO	

CHECKED	K.J. Smithie 20.9.89 REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE HANWOOD RETICULATION LAYOUT COMPILATION SHEET

FILE 10.006.377

DRAWING NO. 8901344 —1

B.15440

B.15440

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DEWEY 679

B1 0 100 200 300 960

MICROFILMED

SHEET 2 OF 4 SHEETS PLAN ROOM CAT.No. 8602

8901344-2

CITY: GRIFFITH
PARISH: JONDARYAN
COUNTY: COOPER

LEONARD ROAD

LEONARD RD.

WILGA STREET

SCHOOL STREET

YARRAN STREET

ANDREATTA ROAD

ASH STREET

BEECH STREET

ASSUMED

B.15440

WORK AS EXECUTED

"THE ORIGINAL OR LOCAL OFFICE DRAWING HAS BEEN CAREFULLY COMPARED WITH THE WORK AS CARRIED OUT AND HAS BEEN AMENDED WHERE NECESSARY, SO THAT IT IS NOW A TRUE REPRESENTATION OF THE ACTUAL WORK AS REGARDS DIMENSIONS, LEVELS, LAYOUT AND MATERIALS."

Neil Cox 22/8/91

AUSTRALIAN HEIGHT DATUM

SEE DRG 1 FOR DETAILS

20 10 0 20 40 60 80 100

SCALE 1:1000 METRES

SHEET LAYOUT

3 2 4 1

CAUTION

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MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED NAME I DEWEY	George Wennall for SURVEYOR W TYRRIL	
TRACED NAME	K.J.Quarmby PRINCIPAL SURVEYOR & PROPERTY OFFICER	29.8.89
EXAMINER NAME D PICCOLO		
CHECKED	K.J. Swillie REGIONAL ENGINEER COOTAMUNDRA	20.9.89

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE HANWOOD RETICULATION LAYOUT

DETAIL SHEET

FILE 10.006.377

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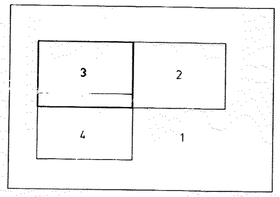
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0 960

MICROFILMED

8901344-3

CITY: GRIFFITH
PARISH: JONDARYAN
COUNTY: COOPER



SHEET LAYOUT

AUSTRALIAN HEIGHT DATUM
SEE DRG 1 FOR DETAILS

WORK AS EXECUTED

"THE ORIGINAL OR LOCAL OFFICE DRAWING HAS BEEN CAREFULLY COMPARED WITH THE WORK AS CARRIED OUT AND HAS BEEN AMENDED WHERE NECESSARY, SO THAT IT IS NOW A TRUE REPRESENTATION OF THE ACTUAL WORK AS REGARDS DIMENSIONS, LEVELS, LAYOUT AND MATERIALS."

Neil C. 22/8/90

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SCALE 1:1000 METRES

ASSUMED

B.15440

CAUTION
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MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED		
NAME I DEWEY	SURVEYOR W TYRRIL	George Winnell
TRACED	K.J.Quarmby	K.J.Quarmby 29.8.89
NAME	PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER		
NAME D PICCOLO		

CHECKED	K.J. Swillie 20.9.89
	REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE HANWOOD RETICULATION LAYOUT
DETAIL SHEET

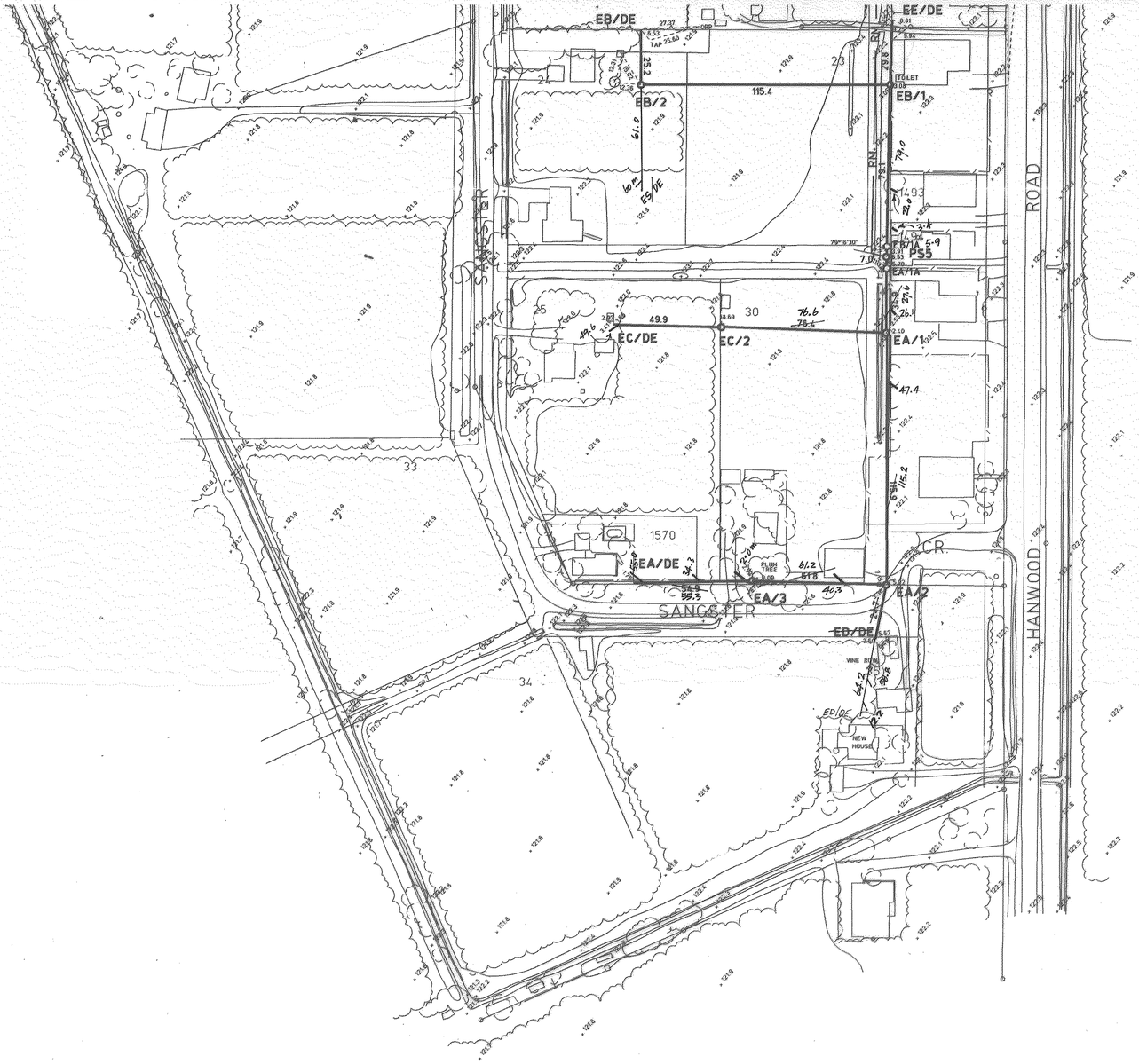
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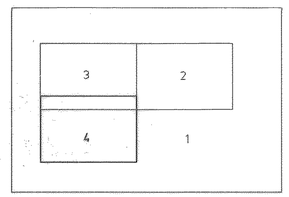
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8901344-4

CITY: GRIFFITH
PARISH: JONDARYAN
COUNTY: COOPER



ASSUMED



SHEET LAYOUT

WORK AS EXECUTED

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Neil Brown 22/8/14

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES

AUSTRALIAN HEIGHT DATUM
SEE DRG 1 FOR DETAILS

CAUTION
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MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED	NAME I DEWEY	SURVEYOR W TYRRIL
TRACED	NAME	K.J.Quarmby 29-8-89 PRINCIPAL SURVEYOR & PROPERTY OFFICER
EXAMINER	NAME D PICCOLO	

CHECKED	4/Corradio 20/9/89	K.J. Smillie 20.9.89. REGIONAL ENGINEER COOTAMUNDRA.

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE
HANWOOD
RETICULATION LAYOUT
DETAIL SHEET

FILE 10.006.377

DRAWING NO.
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B.15440

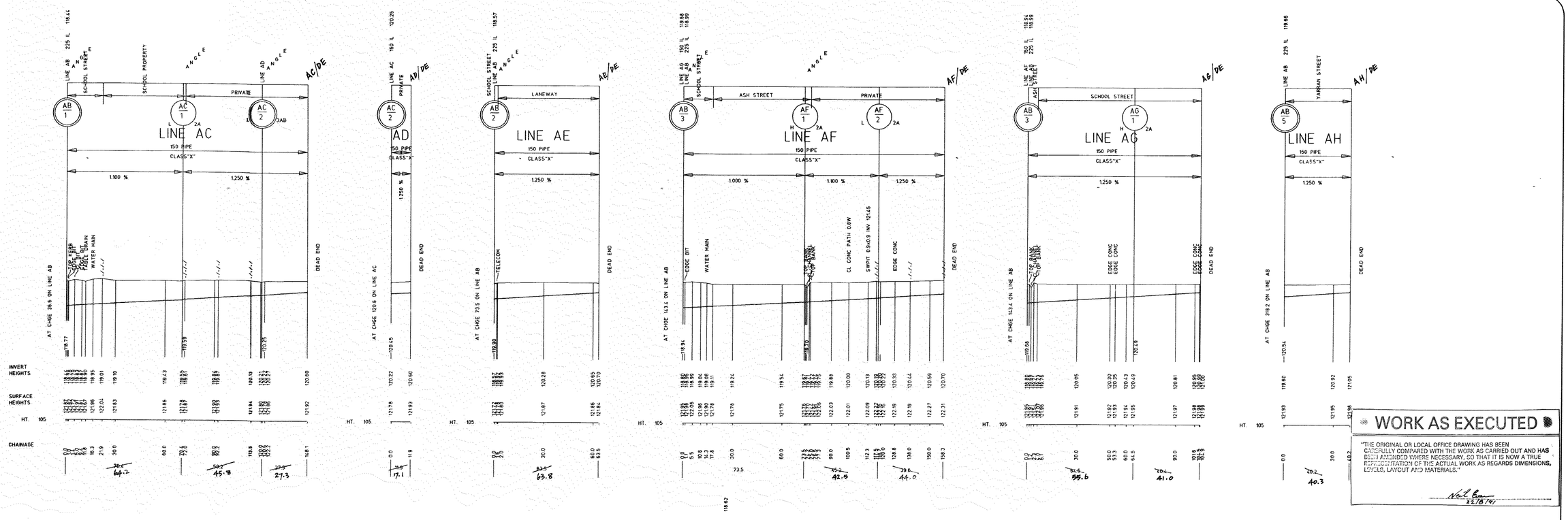
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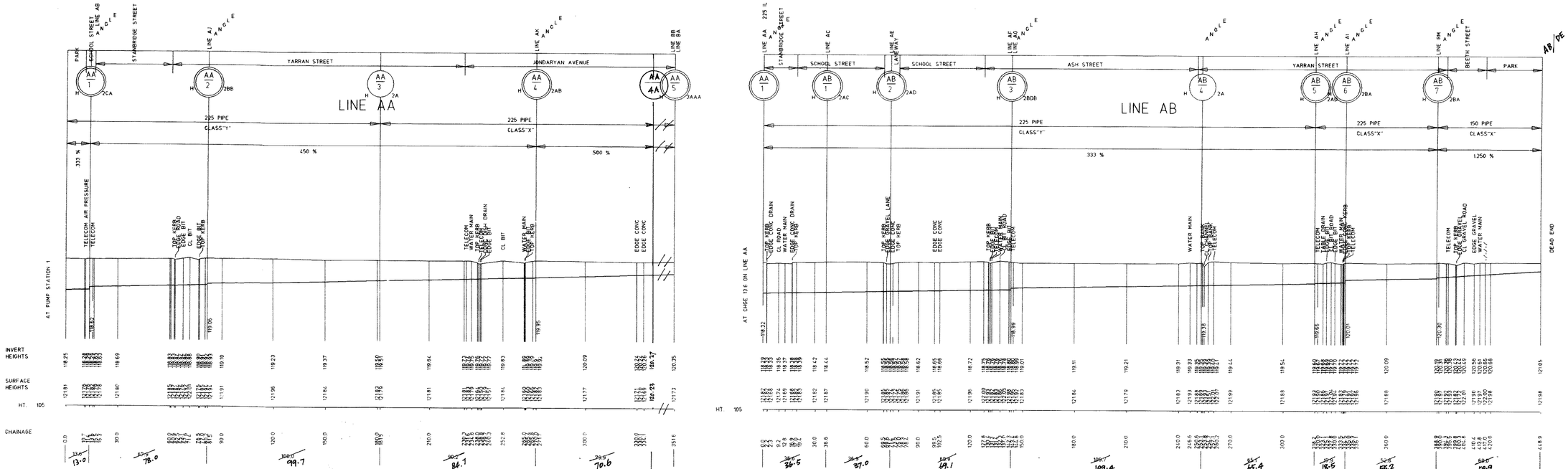
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B1

PLAN ROOM CAT.No. 8690

8901344-5





AUSTRALIAN HEIGHT DATUM

SCALE 1:1000 METRES HORIZONTAL

SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED

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Neil Evans 22/8/91

WORK AS EXECUTED

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MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED	NAME P.C.JENKINS	For SURVEYOR G.W.TYRRIL George Winnall
TRACED	NAME	K.J.Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER
EXAMINER	NAME G.WINNALL	

CHECKED		K.J. Sutlie 20.9.89 REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

CAUTION

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GRIFFITH VILLAGES SEWERAGE
HANWOOD SEWERAGE
GRAVITY MAINS LONGITUDINAL SECTIONS
LINES AA,AB,AC,AD,AE,AF,AG,AH.

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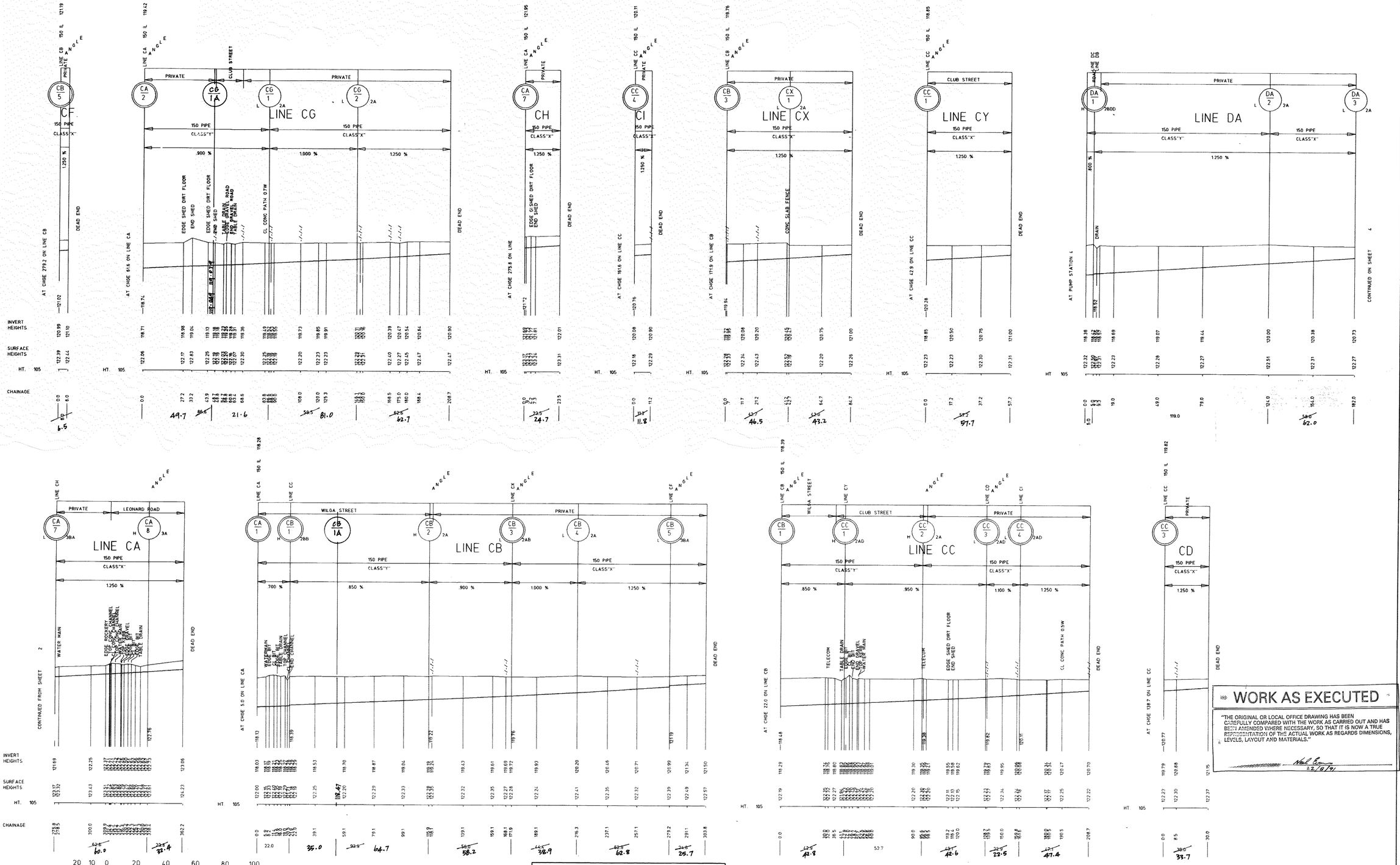
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B1

PLAN ROOM CAT.No. 8890

8901344-6



WORK AS EXECUTED

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22/8/89

CAUTION

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MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED	NAME P.C.JENKINS	SURVEYOR W.TYRRIL
TRACED	NAME K.J.Quarmby	PRINCIPAL SURVEYOR & PROPERTY OFFICER 29.8.89
EXAMINER	NAME G.WINNALL	

CHECKED 20/9/1989 — R.J. Swillie 20.9.89 REGIONAL ENGINEER TOOWOOMBA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE
HANWOOD SEWERAGE
GRAVITY MAINS LONGITUDINAL SECTIONS
LINES PT.CA,CB,CC,CD,CF,CG,CH,CI,CX,CY,PT.DA.

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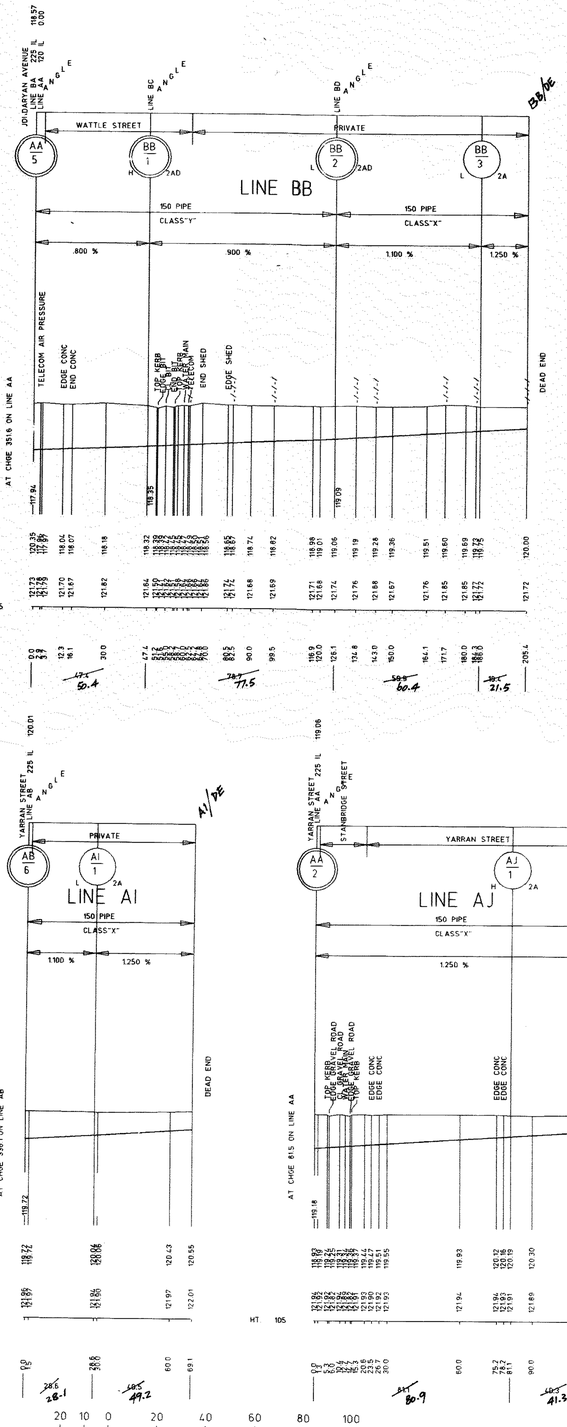
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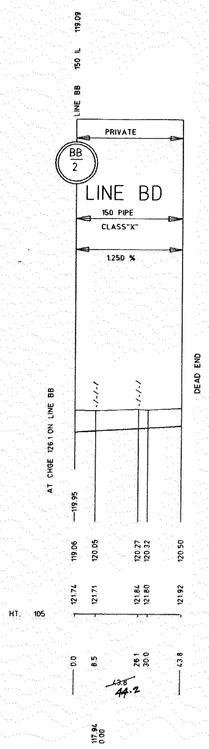
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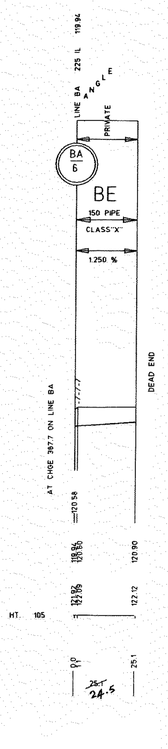
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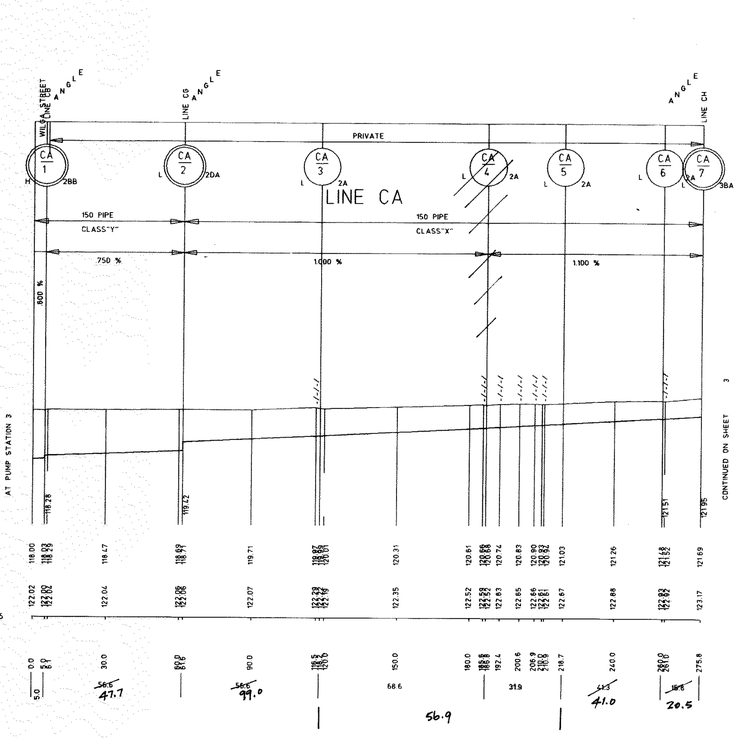
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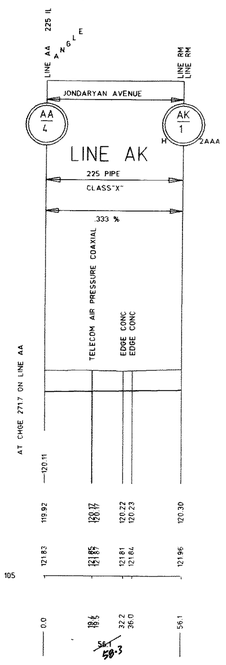
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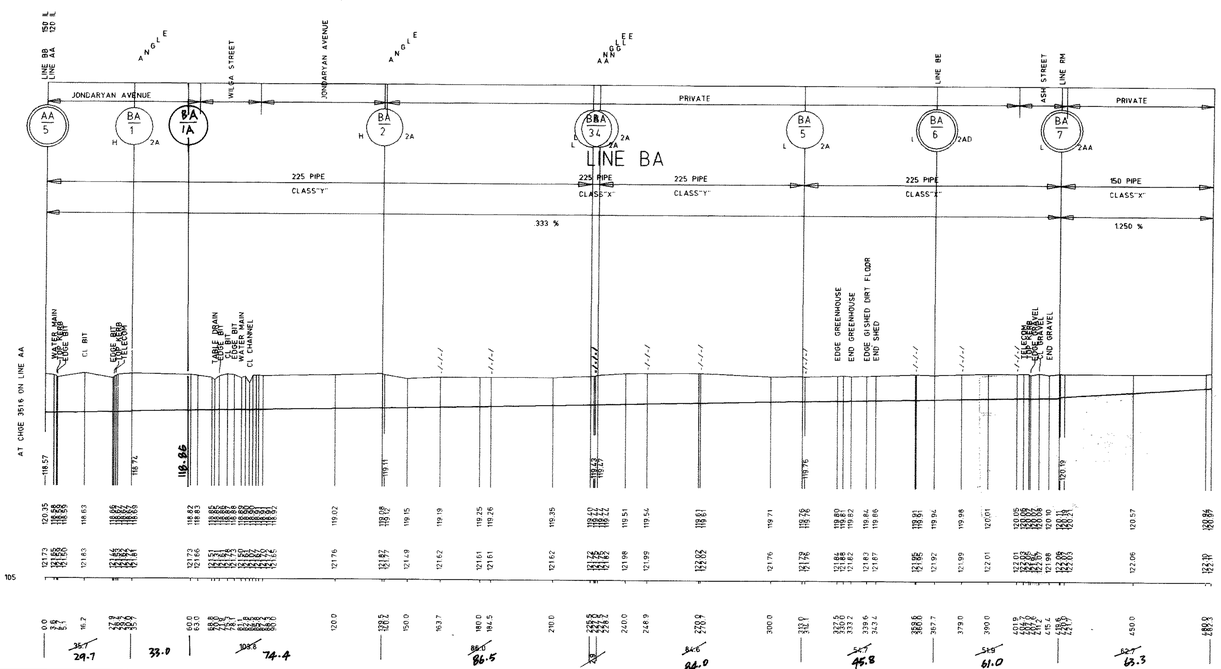












20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM

WORK AS EXECUTED

"THE ORIGINAL OR LOCAL OFFICE DRAWING HAS BEEN CAREFULLY COMPARED WITH THE WORK AS CARRIED OUT AND HAS BEEN AMENDED WHERE NECESSARY, SO THAT IT IS NOW A TRUE REPRESENTATION OF THE ACTUAL WORK AS REGARDS DIMENSIONS, LEVELS, LAYOUT AND MATERIALS."

22/8/89

MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED	NAME P.C.JENKINS	George Winnall for SURVEYOR W.T.YRRIL
TRACED	NAME K.J.Quarmby	K.J.Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER
EXAMINER	NAME G.WINNALL	

CHECKED K. Hamilton 20/9/89 — K. J. Smillie 20.9.89 REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE
HANWOOD SEWERAGE
GRAVITY MAINS LONGITUDINAL SECTIONS
LINES AI,AJ,AK,BA,BB,BC,BD,BE,PT.CA.

FILE —

DRAWING NO. 8901344—7

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000H&1:200V FOR THE PURPOSE OF SEWERAGE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

28-AUG-1989 09:46 OSA2:[130,06033]26_2X.PRF;1 JENKINS 1679

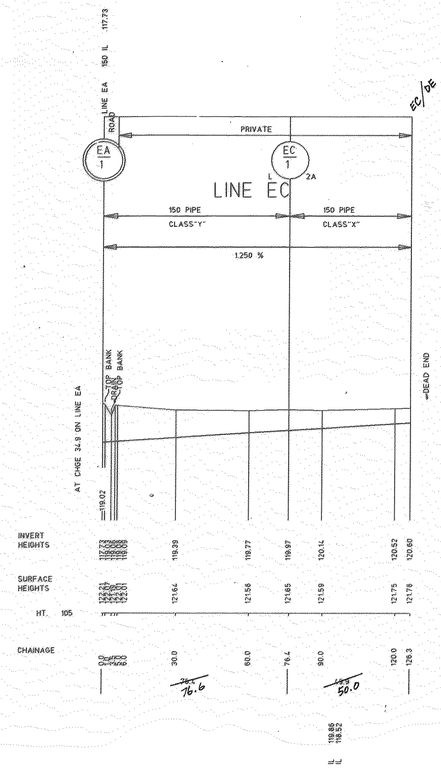
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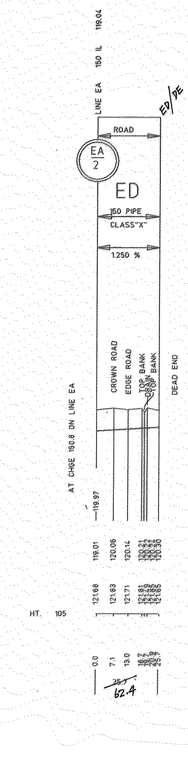
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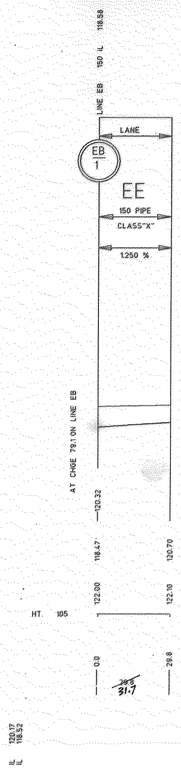
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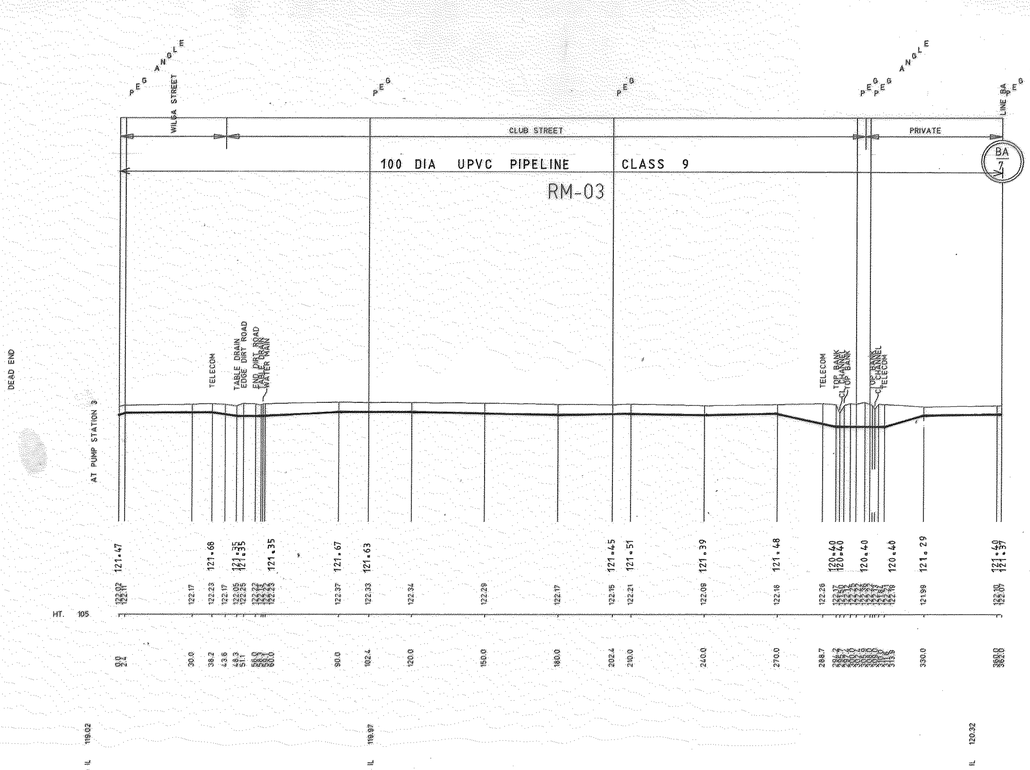
PLAN ROOM CAT.No. 8690

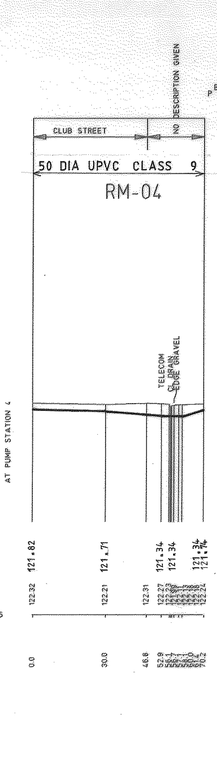
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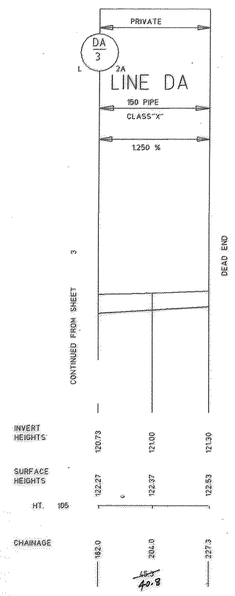


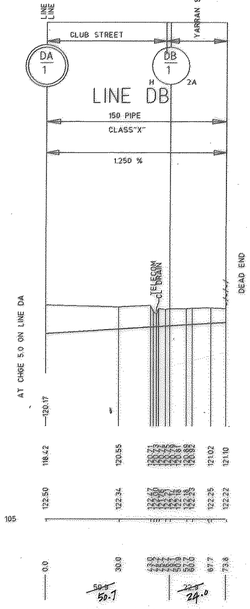


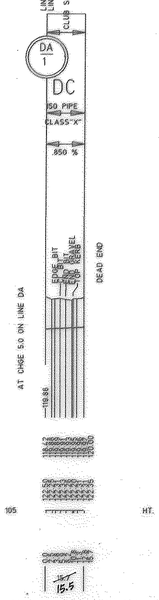


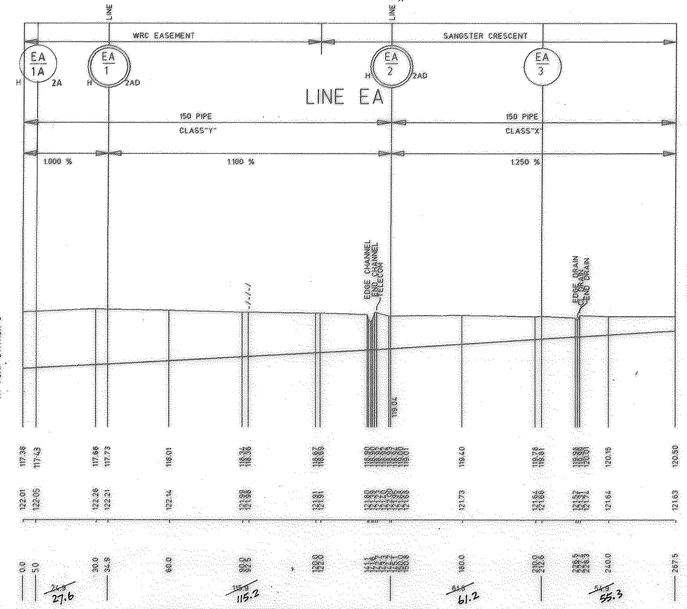


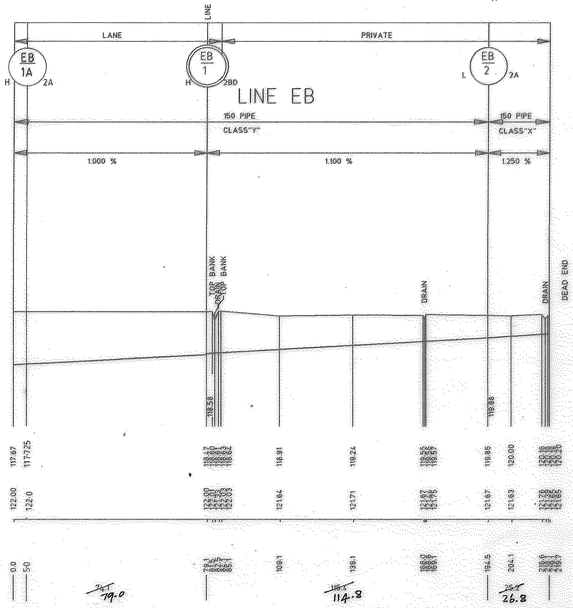












20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000H&1:200V FOR THE PURPOSE OF SEWERAGE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

WORK AS EXECUTED

"THIS ORIGINAL OR LOCAL OFFICE DRAWING HAS BEEN CAREFULLY COMPARED WITH THE WORK AS CARRIED OUT AND HAS BEEN AMENDED WHERE NECESSARY, SO THAT IT IS NOW A TRUE REPRESENTATION OF THE ACTUAL WORK AS REGARDS DIMENSIONS, LEVELS, LAYOUT AND MATERIALS."

MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED		
NAME P.C.JENKINS	SURVEYOR	George Winnall for S.T.PRIOL
TRACED		
NAME	K.J.Quarmby PRINCIPAL SURVEYOR & PROPERTY OFFICER	29.8.89
EXAMINER		
NAME G.WINNALL		

DESIGNED	S.T. PRIOL	G. WATT SUPERVISING ENGINEER
CHECKED	26/9/89	K.J. Quarmby 20.9.89 REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE
HANWOOD SEWERAGE
GRAVITY MAINS LONGITUDINAL SECTIONS
LINES PT.DA,DB,DC,EA,EB,EC,ED,EE & RM's 3 & PT.4

FILE

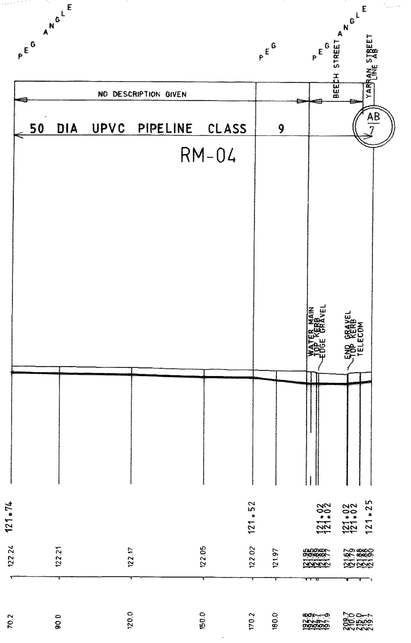
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8901344-8

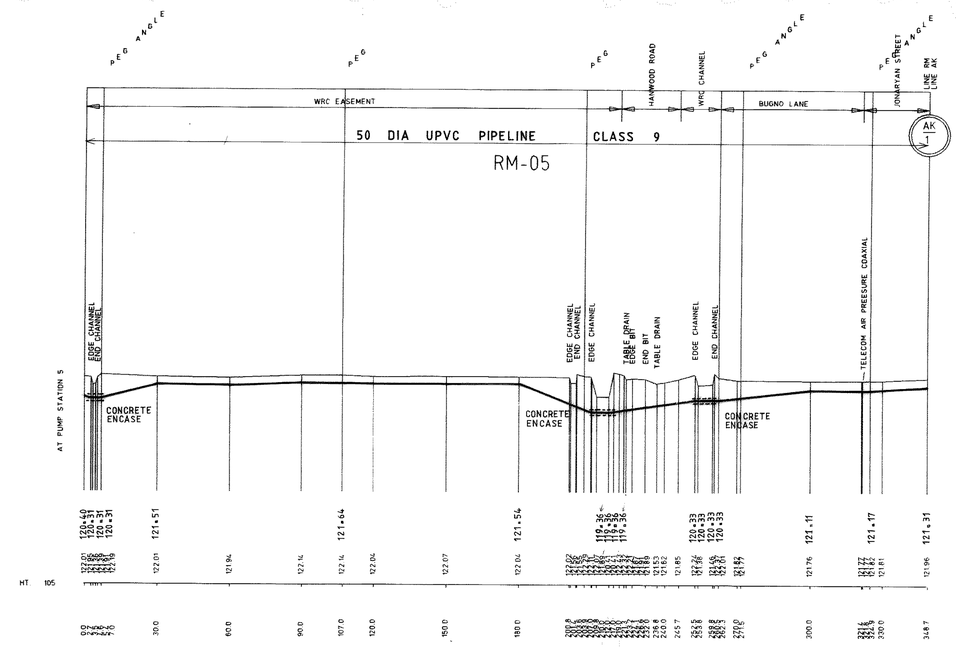
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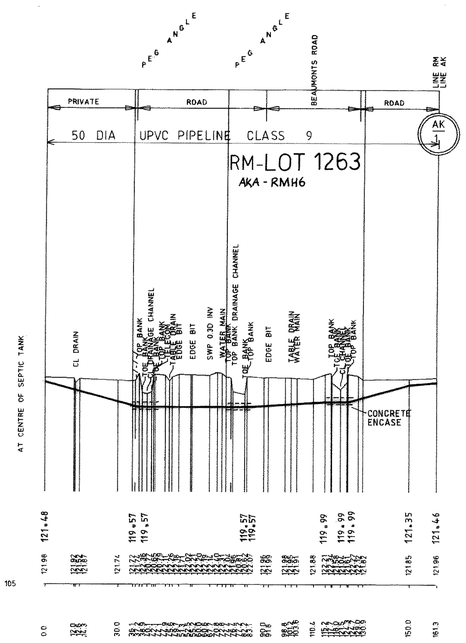
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PLAN ROOM CAT.No. 8690

8901344-9







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SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM

WORK AS EXECUTED

"THE ORIGINAL OR LOCAL OFFICE DRAWING HAS BEEN CAREFULLY COMPARED WITH THE WORK AS CARRIED OUT AND HAS BEEN AMENDED WHERE NECESSARY, SO THAT IT IS NOW A TRUE REPRESENTATION OF THE ACTUAL WORK AS REGARDS DIMENSIONS, LEVELS, LAYOUT AND MATERIALS."

Neil Co 22/8/89

MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED	NAME P.C.JENKINS	George Winnall SURVEYOR W.T.WRIL
TRACED	NAME	K.J.Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER
EXAMINER	NAME G.WINNALL	

DESIGNED S.T. DOAN

CHECKED 4 Scarano 26/9/89

A. WATT. SUPERVISING ENGINEER.

K.J. Smillie 20.9.89 REGIONAL ENGINEER GOOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE
HANWOOD SEWERAGE
RISING MAINS LONGITUDINAL SECTIONS
RM's 5,PT.4 & RM FOR SINGLE
TENEMENT PUMP OUT - LOT 1263

FILE

DRAWING NO.
8901344-9

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000mA1:200V FOR THE PURPOSE OF SEWERAGE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

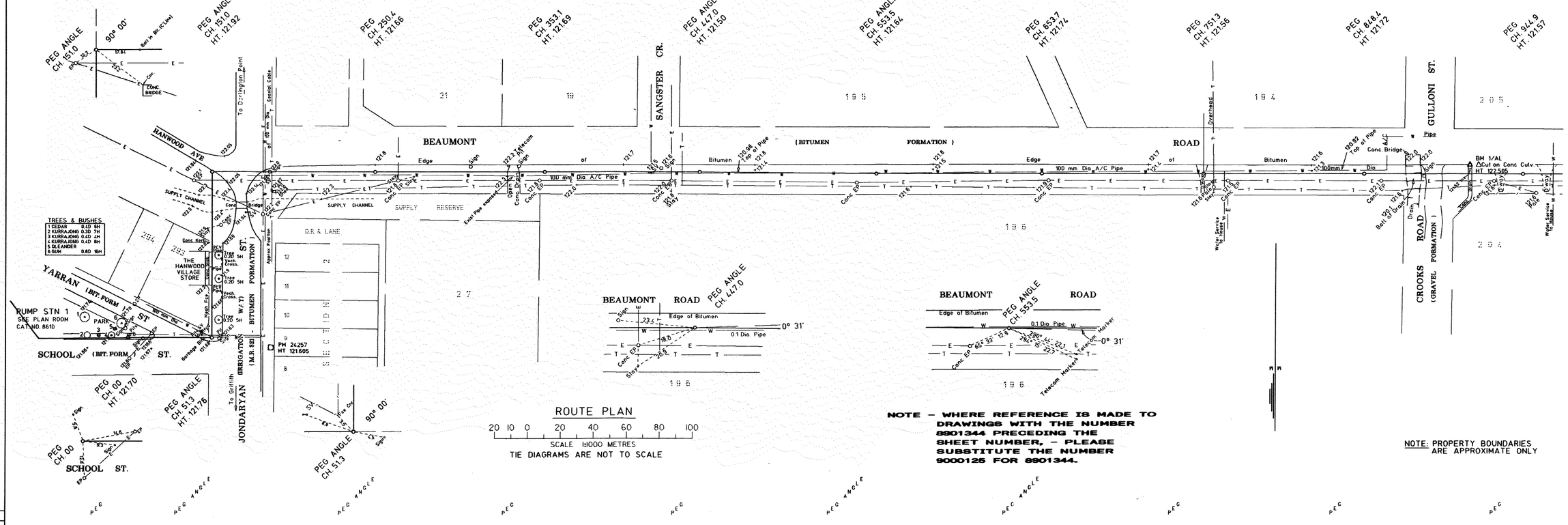
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JENKINS 679 28-AUG-1989 10:57 0542d(30,0603326,5X,PRF)

MICROFILMED

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

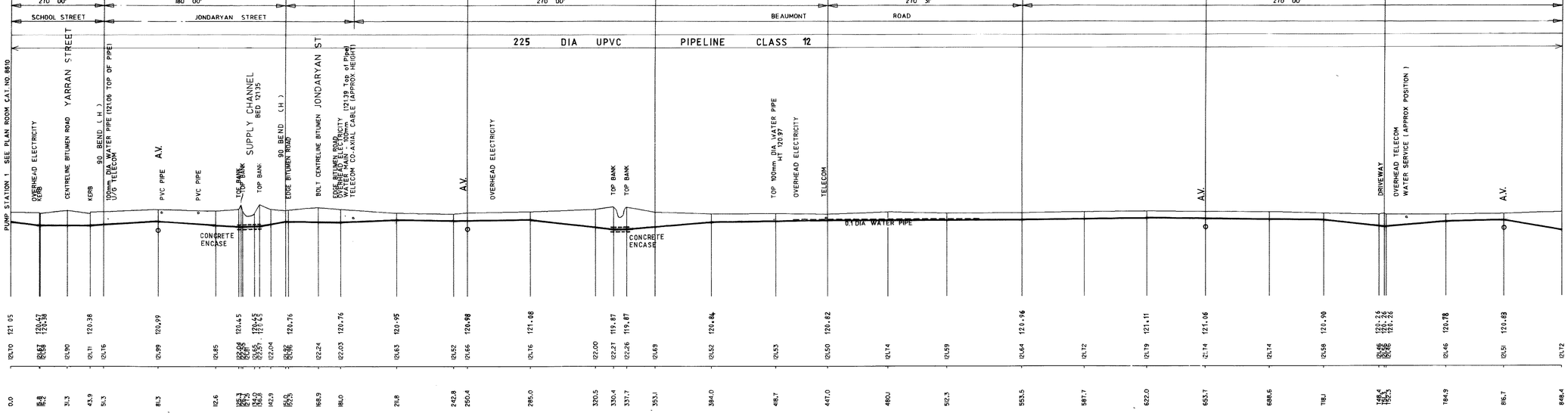


ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES
TIE DIAGRAMS ARE NOT TO SCALE

NOTE – WHERE REFERENCE IS MADE TO DRAWINGS WITH THE NUMBER 8901344 PRECEDING THE SHEET NUMBER, – PLEASE SUBSTITUTE THE NUMBER 9000125 FOR 8901344.

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM

ORIGIN OF LEVELS : PM 24257 FD. ON WEST SIDE OF M.R. 321 OPPOSITE SCHOOL STREET, HANWOOD.

SURVEY INSTRUCTION N°. : 70080.DC.03
AZIMUTH OF SURVEY : SECTION 2 HANWOOD
PLOTTED FROM : SF 3328
SURVEYED BY : A. LONGHURST
DATE OF SURVEY : MARCH, 1989

CAUTION
1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

WORK AS EXECUTED
I certify the original sheet or Layout Guides Drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is now a true representation of the completed work as regards dimensions.
Signed 24/9/92

BA	DIA & CLASS CHANGED, HENCE SOME LEVELS BENDS SHOWN (CH. 51.3) (CH. 151.0)		FEB 90 NOV 89
MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED NAME G STEVENSON	SURVEYED A. LONGHURST	
TRACED NAME	K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME D. PICCOLO		

DESIGNED S. T. DOAN	G WATT SUPERVISING ENGINEER	
CHECKED	R.J. Smillie 20.9.89 REGIONAL ENGINEER COOTAMUNDRA	

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

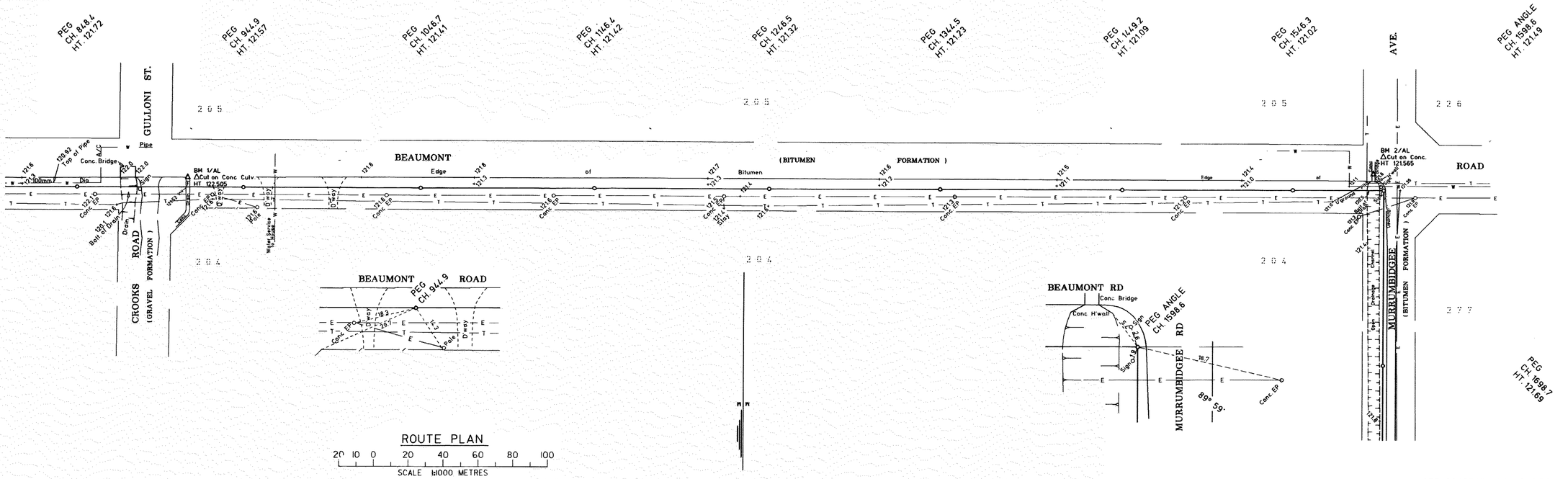
GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 00 TO CH. 848.4

FILE 10.006.377
DRAWING NO. 9000125 –10B

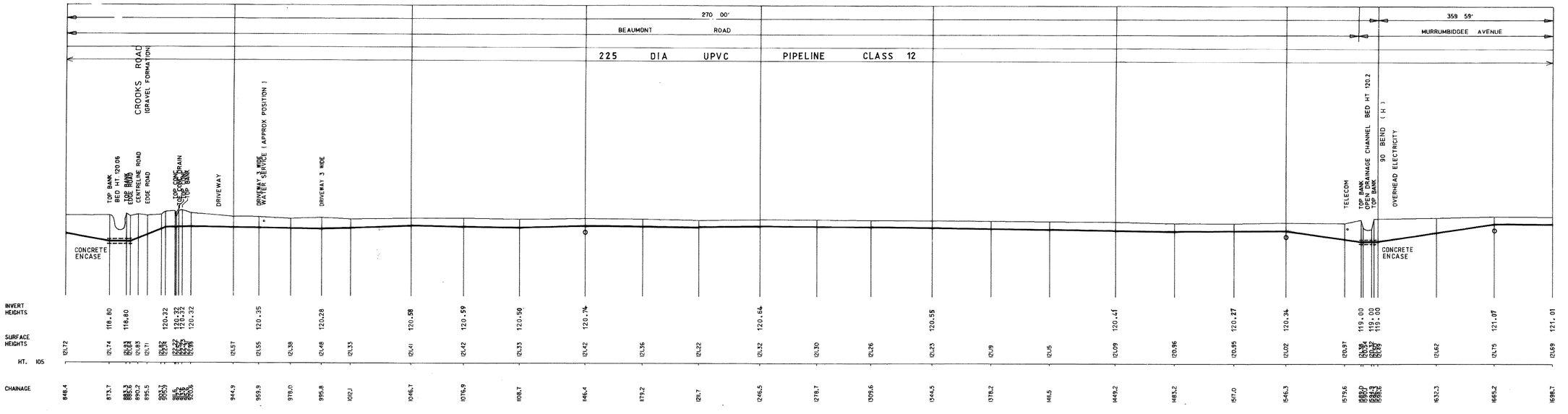
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B. 15812
STEVENSON 1979
10-AUG-1989 1742
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1960 8904I2.0I

9000125-11B

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL
4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
"The original plan or Local Office Drawing has been carefully compared with the work as carried out and has been amended where necessary to make it a true representation of the actual work as regards dimensions, levels, layout and materials."
9-9-92

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000 HOR 1:200 VER FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 90
A	BENDS SHOWN. (CH. 1598.6)		NOV 89

PREPARED NAME	G. STEVENSON	SURVEYOR	A/LONGHURST
TRACED NAME		K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. DOAN
CHECKED	G. WATT SUPERVISING ENGINEER
	K.J. Smith 20.9.89 REGIONAL ENGINEER GOOMALLING

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)

LONGITUDINAL SECTION AND ROUTE PLAN

CH. 848.4 TO CH. 1698.7

FILE 10.006.377

DRAWING NO. 9000125-11B

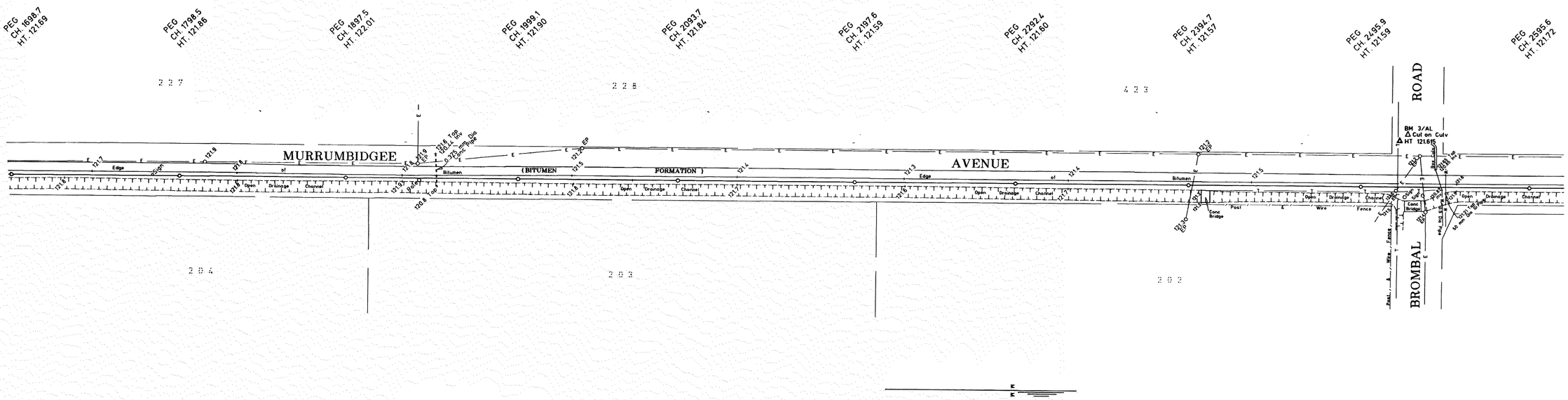
B. 15812

B. 15812
OSA2a(30)36864OSHT2.PRF.J
10-AUG-1989 17:29
STEVENSON
1979
B1
890412.02

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

9000125-12A

B. 15812



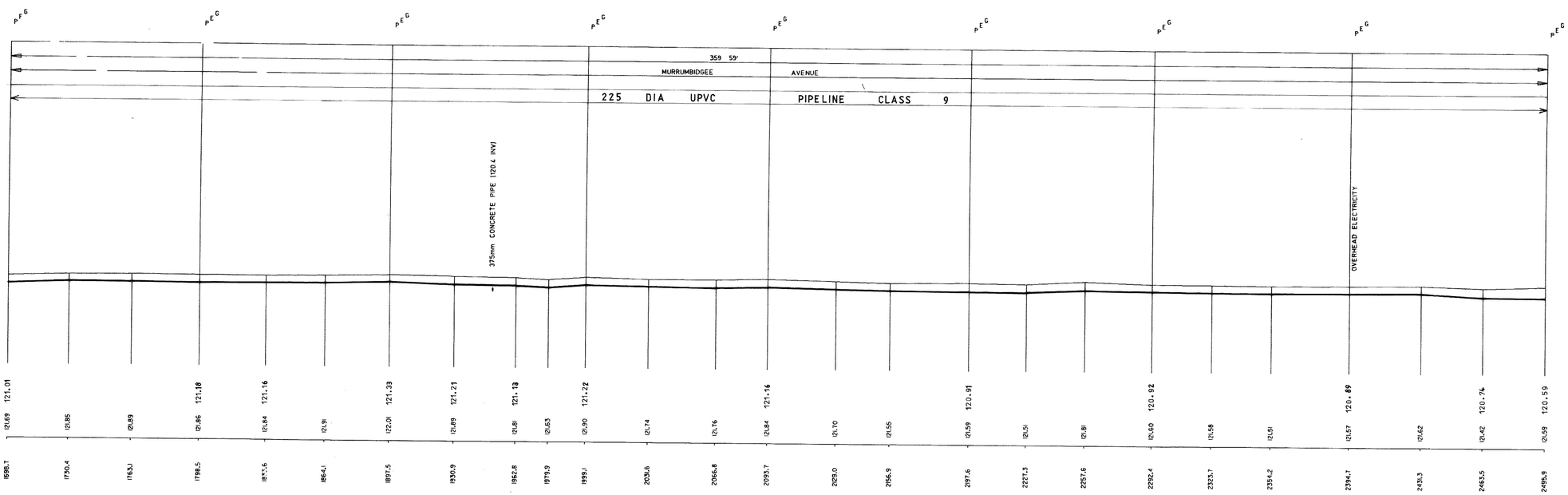
ROUTE PLAN

20 10 0 20 40 60 80 100

SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100

SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20

SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED

"The original plan or Local Office Drawing has been carefully compared with the 'as built' work and records supplied to me and I hereby now a true representation of the actual work as regards dimensions, levels, layout and materials."

Signature 28/4/92

AUSTRALIAN HEIGHT DATUM

SEE DRG FOR DETAILS

CAUTION

THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000 HOR 1:200 VER FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
A	DIA & CLASS CHANGED, HINGES SOME LEVELS		Feb 90

PREPARED			
NAME	G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME		K.J. Quarmby	29.9.89
		PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. DOAN	G. WATT	SUPERVISING ENGINEER
CHECKED	26/9/89	K.J. Smillie	20.9.89
		REGIONAL ENGINEER GOYAMUNDRA	

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)

LONGITUDINAL SECTION AND ROUTE PLAN

CH. 1698.7 TO CH. 2495.9

FILE 10.006.377

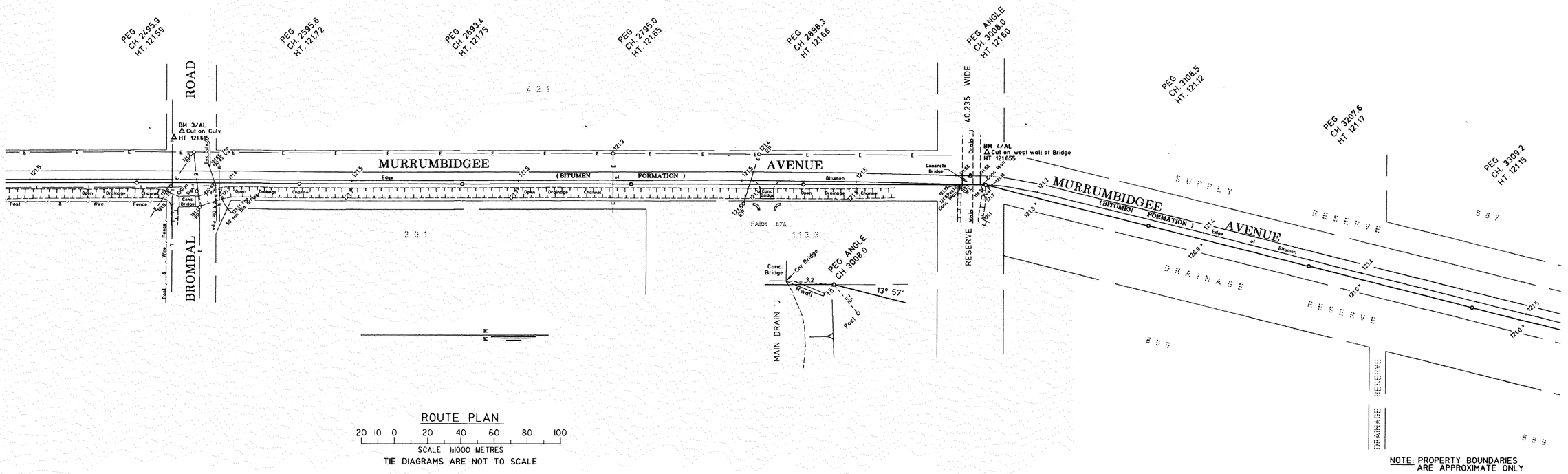
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B. 15812

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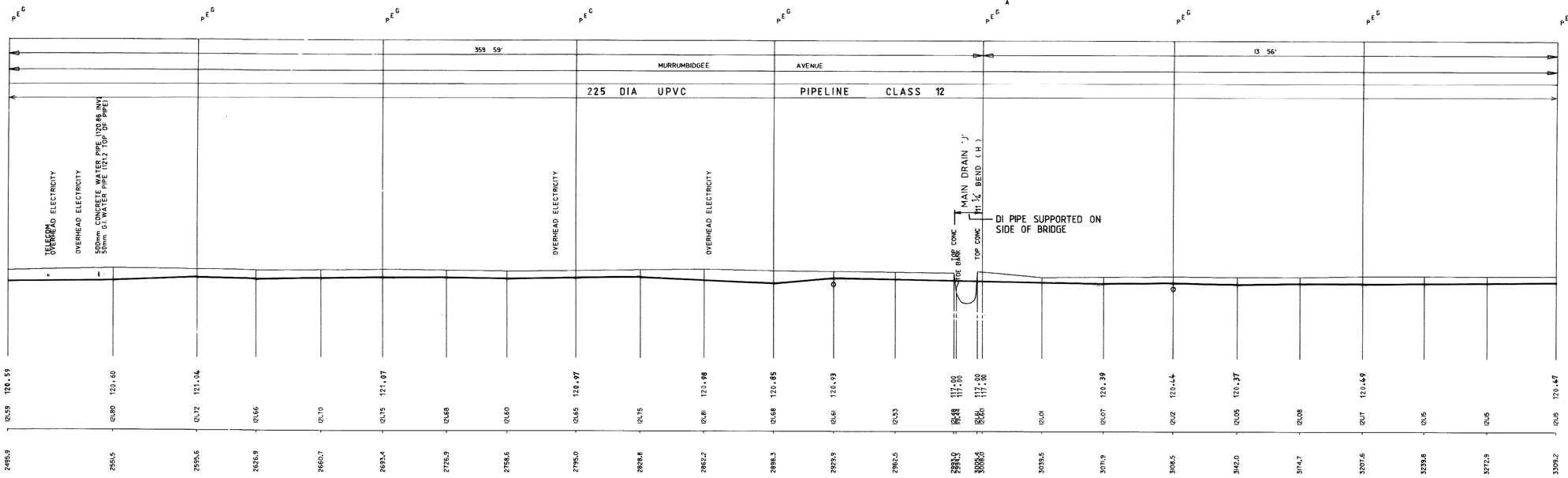
SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES
TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL
4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

WORK AS EXECUTED
The original plan or Local Office Drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is now a true representation of the actual work as regards dimensions, levels, layout and materials.
4/12/92

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000 HOR FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 92
A	BENDS SHOWN (CH. 3008.0)		NOV 91

PREPARED NAME G. STEVENSON
SURVEYOR A. WONDHURST
TRACED NAME
EXAMINER NAME D. PICCOLO
K.J. Quarmby 29.8.89
PRINCIPAL SURVEYOR & PROPERTY OFFICER

DESIGNED G.T. DOAN.
CHECKED 20/9/89
G. WATT. SUPERVISING ENGINEER
K.J. Smillie 20.9.89
REGIONAL ENGINEER GOOTAMUNDRA

PUBLIC WORKS
R.D. Christie Director of Public Works
M.N. Clarke Chief Engineer

GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 2495.9 TO CH. 3309.2

FILE 10.006.377
DRAWING NO. 9000125 -13B

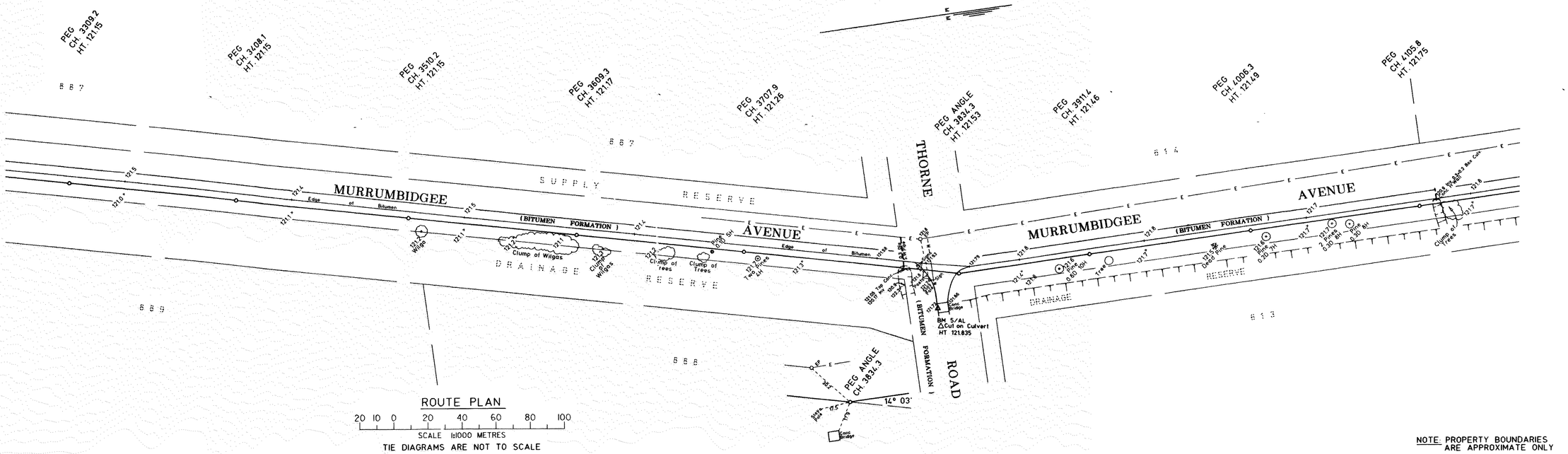
B. 15812

9000125-13B

B. 15812
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9000125-14B

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

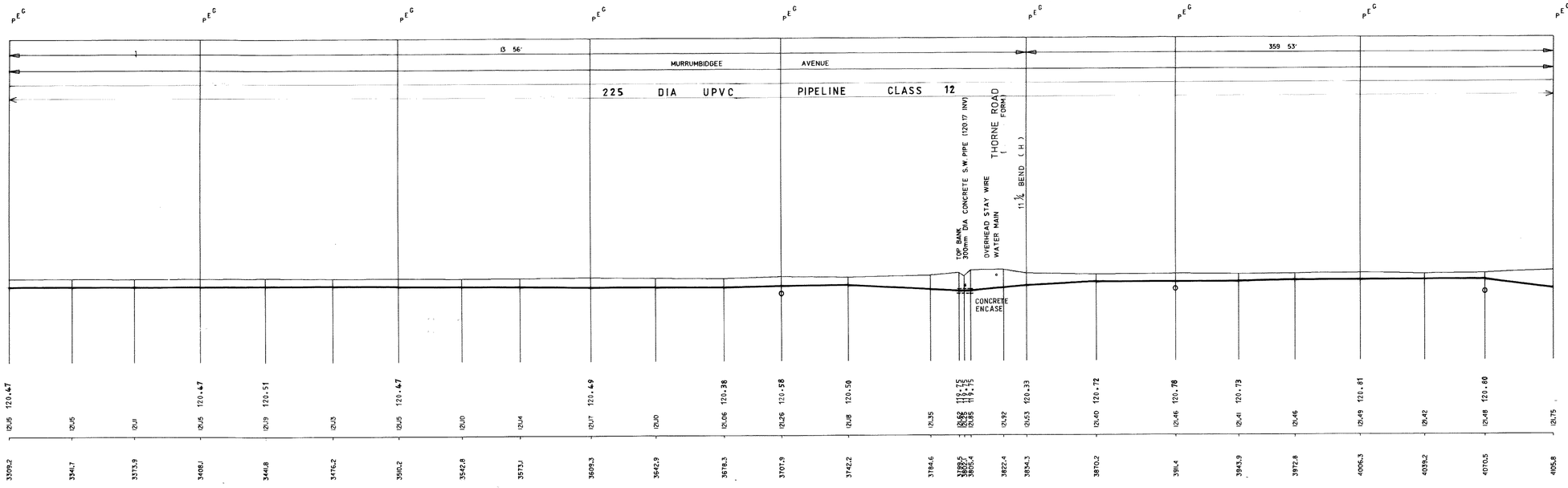


ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
"The original plan or local office drawing has been carefully corrected with all work as carried out and recorded and where necessary, on this it is drawn. It may represent, in whole or in part, the engineer's records dimensions..."
20/9/89

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

CAUTION 1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER
FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN
AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES.
THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION
MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS.		FEB 90
A	BENDS SHOWN (CH. 3834.3)		NOV. 89

PREPARED NAME	G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME		K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. PEAN.	G. WATT	SUPERVISING ENGINEER
CHECKED	20/9/89	K.J. Sullie 20.9.89	REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM
HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 3809.2 TO CH. 4105.8

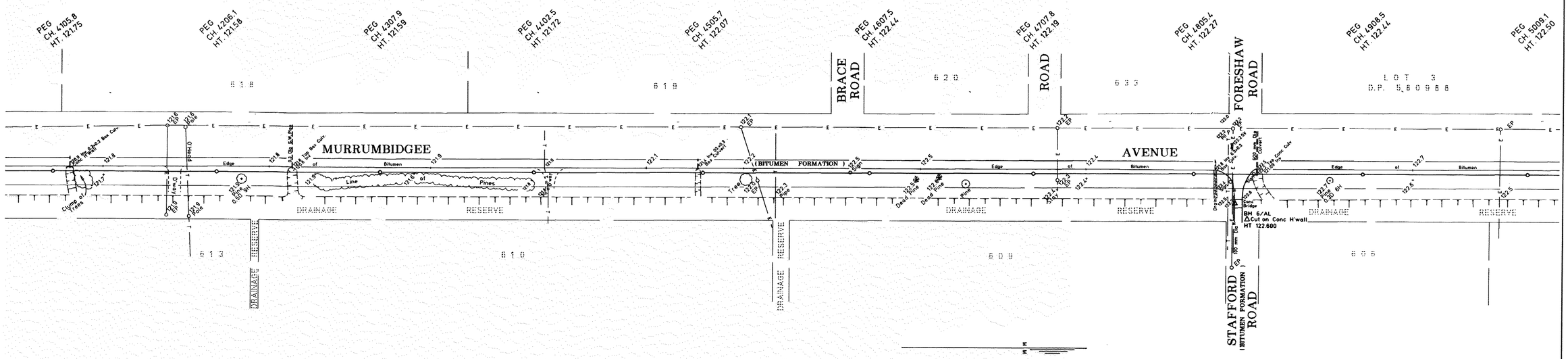
FILE 10.006.377

DRAWING NO. 9000125 –14B

B. 15812

B. 15812
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10-AUG-1989 18:05
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679
960
B1
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SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

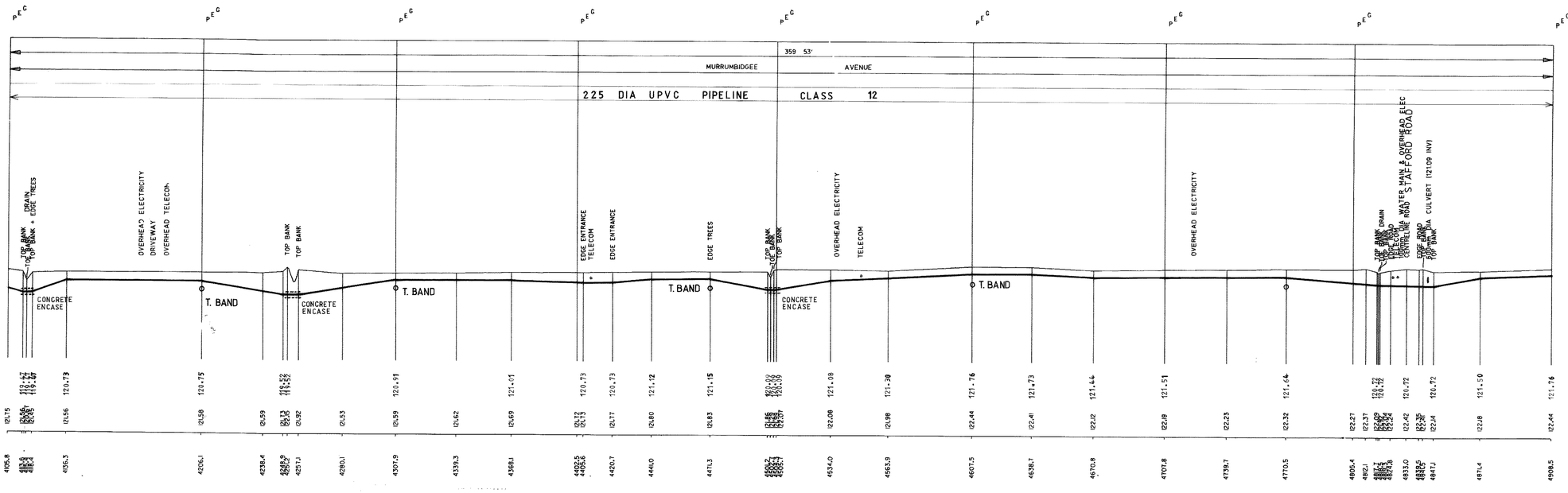


ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
...the original plans or Local Office Drawing for these ...carefully compared with the work as carried out and ...are accurate and where necessary, so that it is now a ...of the actual work as regards dimensions, levels, type and ...material.
Graeme 28/4/92

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

CAUTION
1:1000 HDR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER
FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN
AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES.
THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION
MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
A	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 90

PREPARED NAME G. STEVENSON	SURVEYOR	A. LONGHURST	
TRACED NAME	K.J. Quarmby 28.8.89	PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME D. PICCOLO			

DESIGNED S.T. DOAN		L. WATT	SUPERVISING ENGINEER
CHECKED	20/9/89	K.J. Smillie 20.9.89	REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS
R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

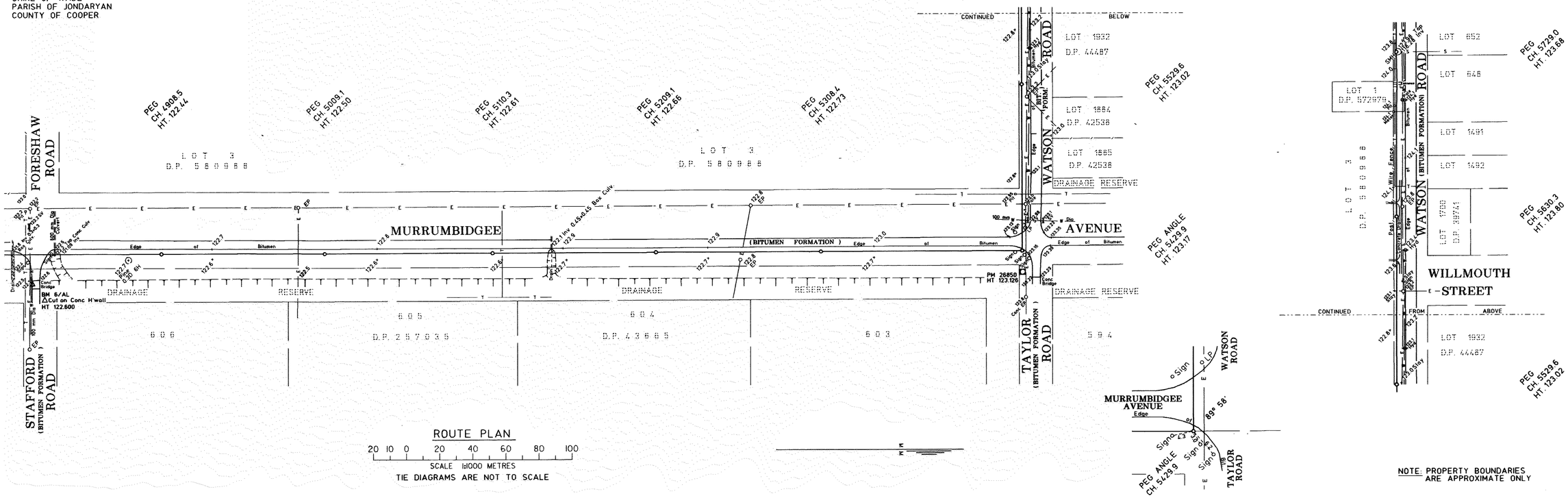
GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 4106.8 TO CH. 4908.5

FILE 10.006.377
DRAWING NO. 9000125 —15A

9000125-15A
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B1

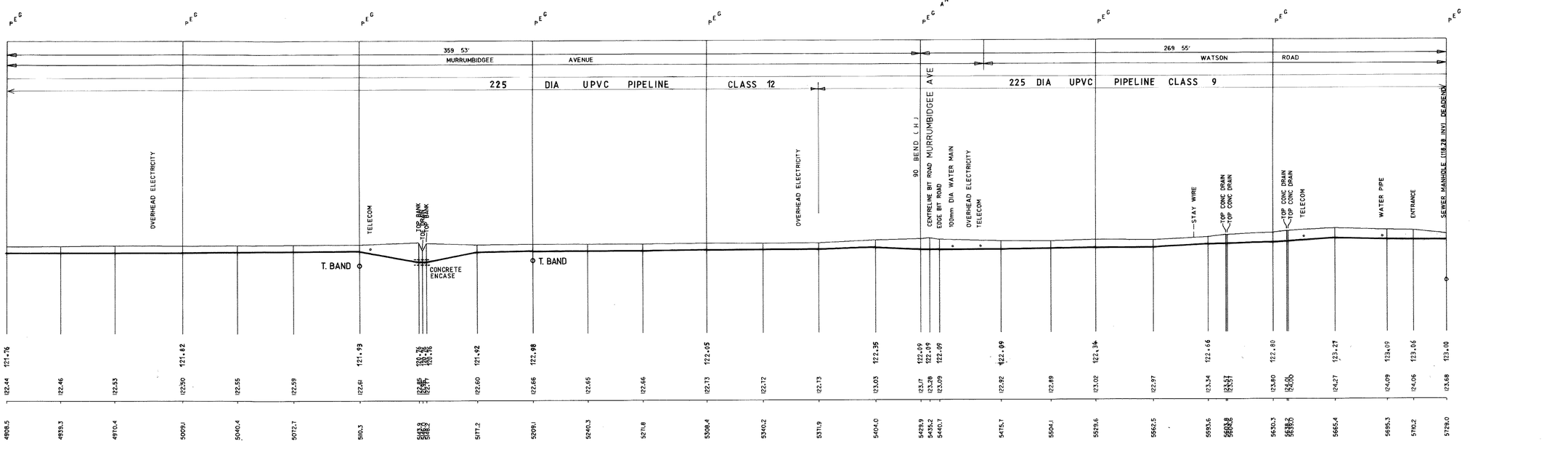
SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
I/We hereby certify that the original plan of this drawing has been carefully compared with the work as carried out and is true & correct amended where necessary so that it is now a true representation of the actual work as regards dimensions, levels, layout and materials.
28/8/92

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B A	DIA & LEVELS CHANGED, HENCE SOME LEVELS BENDS SHOWN (CH. 5429.9)		FEB 90 NOV 91

PREPARED NAME	G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME		K.J. Quarmby PRINCIPAL SURVEYOR & PROPERTY OFFICER	28.8.89
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. DOAN.	L. WATT	SUPERVISING ENGINEER
CHECKED	20/9/89	K.J. Smillie REGIONAL ENGINEER GOOTAMUNDRA	20.9.89

PUBLIC WORKS
R.D.Christie Director of Public Works
M.N.Clarke Chief Engineer

GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 4908.5 TO CH. 5729.0

FILE 10.006.377
DRAWING NO. 9000125 – 16B

CAUTION
1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VET FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MICROFILMED

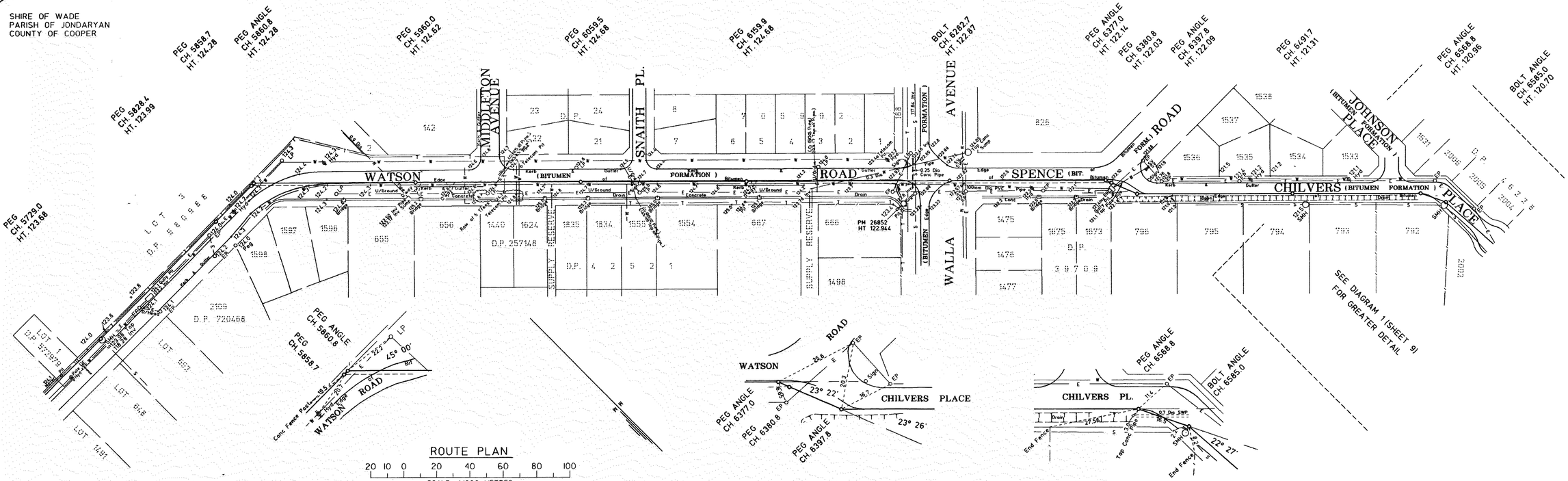
9000125-16B

B. 15812

B1 0S42(130)56/B640SHT7.PRF:j 11-AUG-1989 07:30 STEVENSON 649 0 960 100 890412.07 200 300

9000125-17B

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

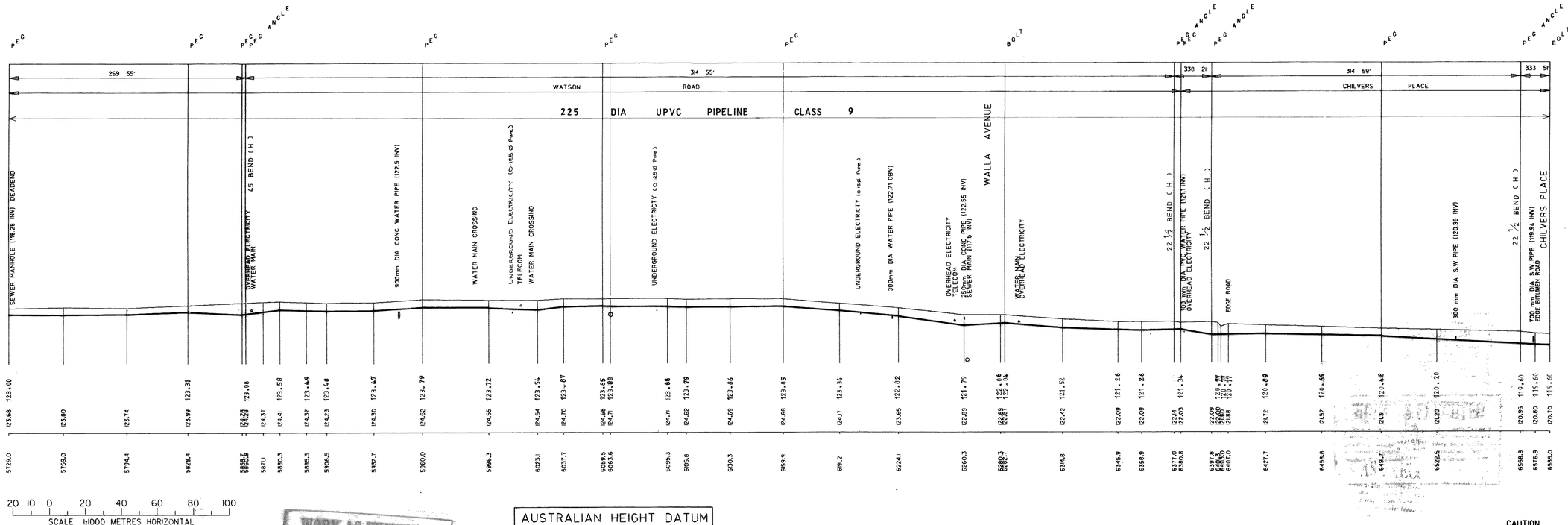


ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

WORK AS EXECUTED
"The original plan or Land Office Drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is a true representation of the finished work as regards dimensions, levels, layout and materials."
28/4/92

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000 HOR FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK.	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 90
A	BENDS SHOWN (CH. 5858.8)(CH. 6377.0)(CH. 6397.8)(CH. 6458.8)		NOV 88

PREPARED NAME G. STEVENSON	SURVEYOR	A.J. LONGHURST	
TRACED NAME	K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER		
EXAMINER NAME D. PICCOLO			

DESIGNED S.T. DOAN.	S. WATT	SUPERVISING ENGINEER
CHECKED 29/9/89	K.J. Smillie 20.9.89	REGIONAL ENGINEER GOOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 5729.0 TO CH. 6585.0

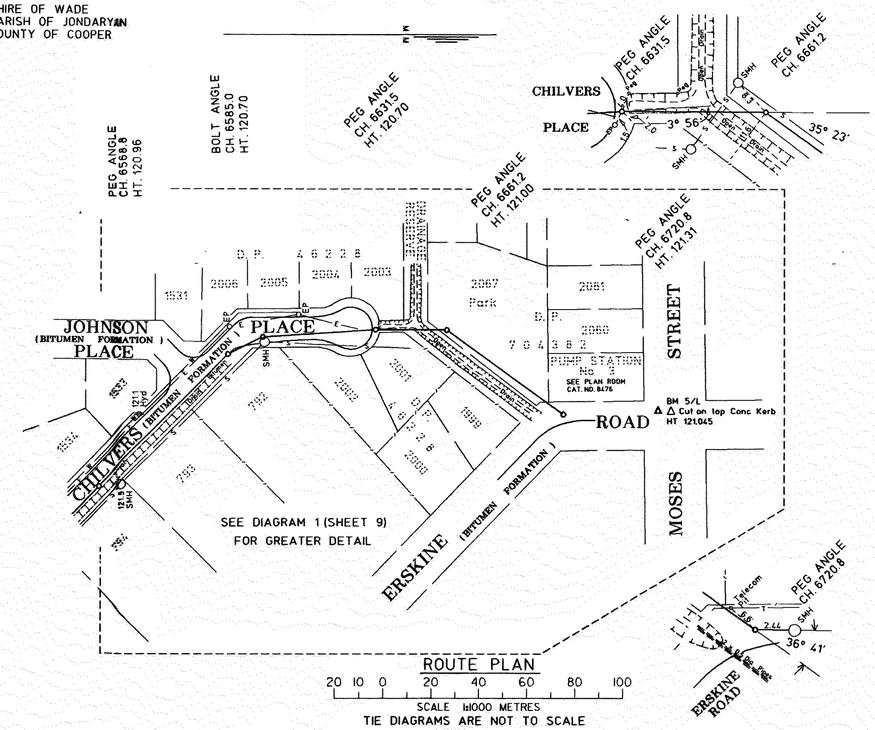
FILE 10.006.377

DRAWING NO. 9000125 — 17B

B. 15812

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619 RO 960 31
100 890412.08 200 300

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



ROUTE PLAN
20 10 0 20 40 60 80 100
SCALE 1:1000 METRES
TIE DIAGRAMS ARE NOT TO SCALE

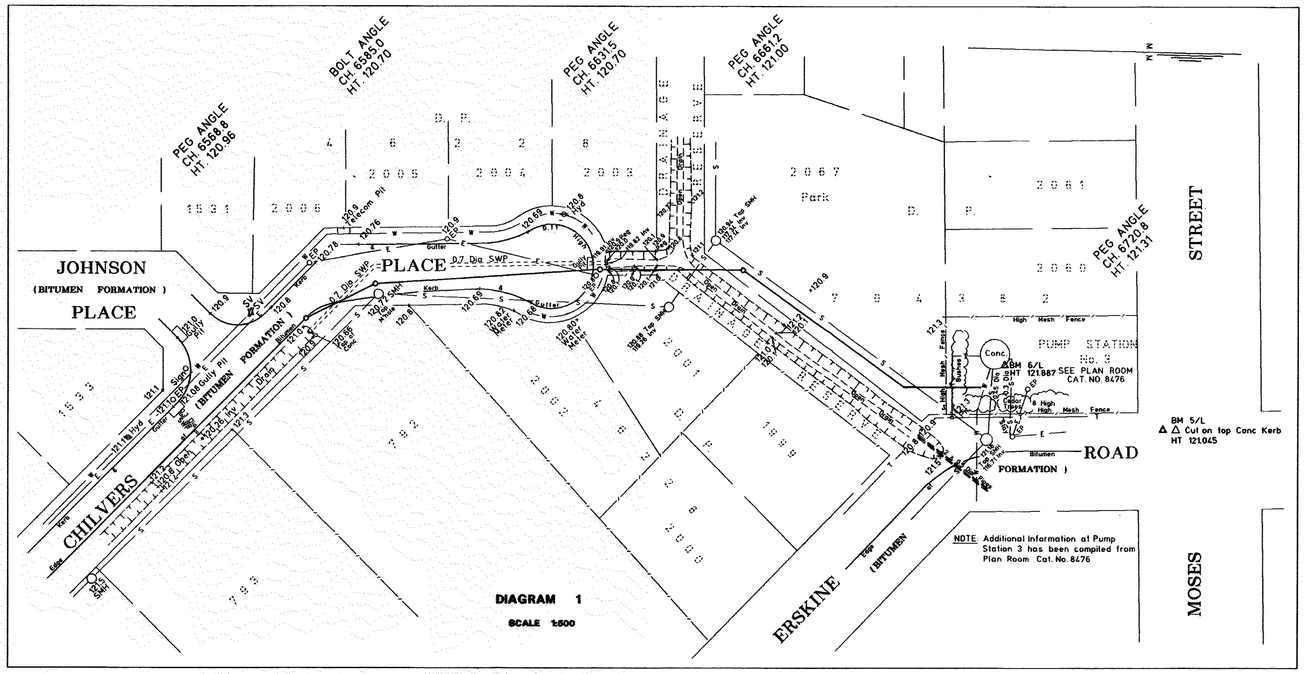
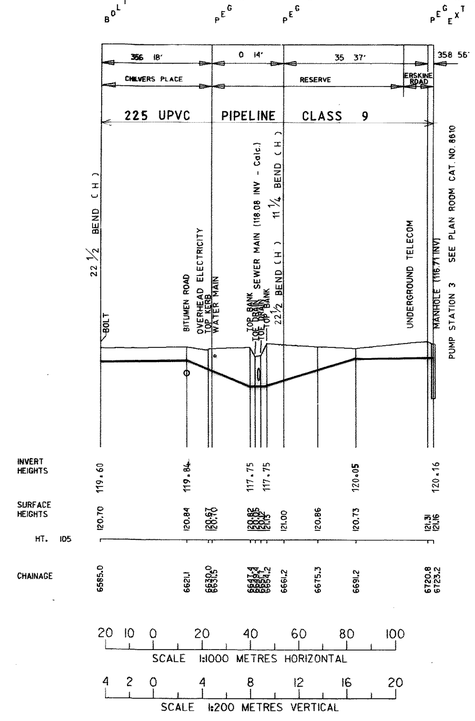


DIAGRAM 1
SCALE 1:500

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL
4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

WORK AS EXECUTED
"The original plan or Local Office Drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is now a true representation of the actual work as regards dimensions, levels, layout and materials."
24/8/92

CAUTION 1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 89
A	BENDS SHOWN (CH6585.0 CH6661.2)		NOV 88

PREPARED		
NAME G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME	K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME D. PICCOLO		

DESIGNED	G.T. DEAN.	S. WATT SUPERVISING ENGINEER
CHECKED	[signature] 20/9/89	K.J. Smithie 20.9.89 REGIONAL ENGINEER BUNBURY

PUBLIC WORKS
R.D. Christie, Director of Public Works
M.N. Clarke, Chief Engineer

GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 6585.0 TO CH. 6723.2

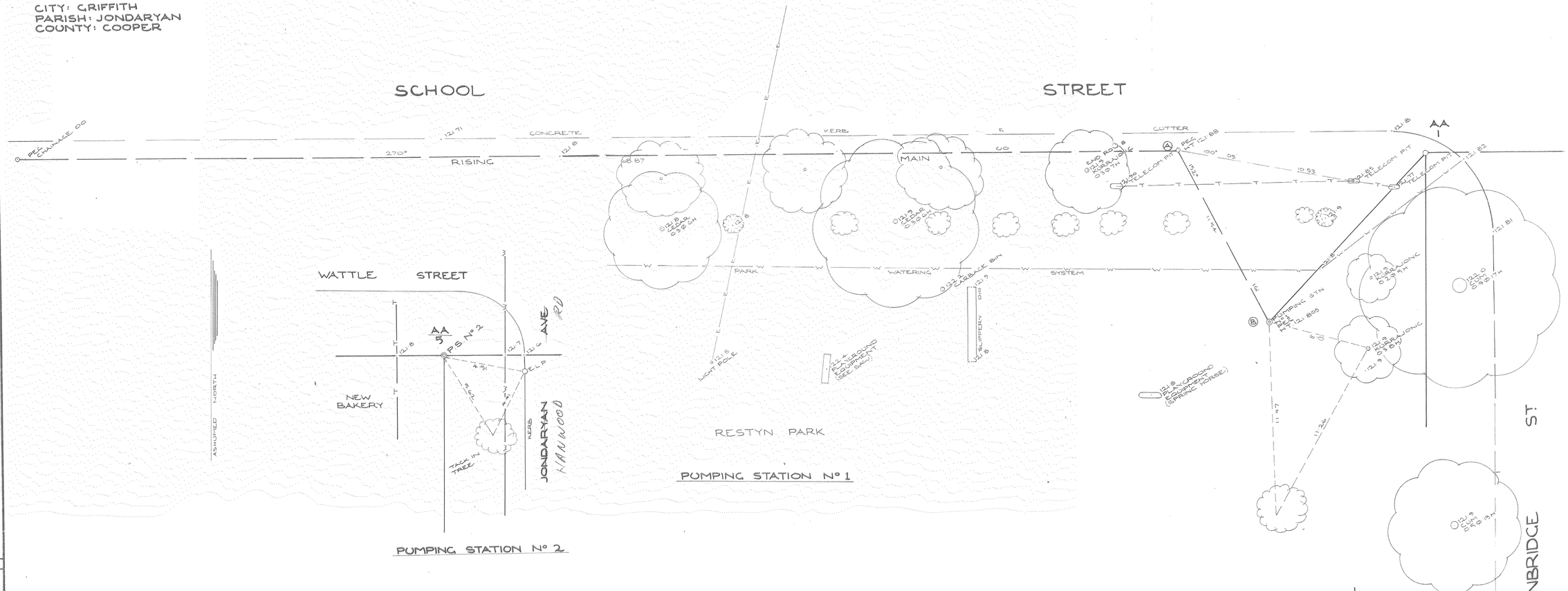
FILE 10.006.377
DRAWING NO. 9000125 - 18B

9000125-18B
B. 15812
B. 15812
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B1

PLAN ROOM CAT.No. 8610

9000125-19

CITY: GRIFFITH
PARISH: JONDARYAN
COUNTY: COOPER



WORK AS EXECUTED
"The original plan or Local Office drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is now a true representation of the actual work as regards dimensions, levels, layout and materials."
24/9/92

MICROFILMED

CAUTION
THIS PLAN WAS PREPARED AT A SCALE OF 1:100 FOR THE PURPOSE OF SEWERAGE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL

MK	DETAILS OF AMENDMENTS	APPROVED	DATE

DRAWN C. Triantafillis	FAULKS POLKINGHORNE AND BODD
NAME	SURVEYOR
TRACED NAME C. TRIANTAFILLIS	PRINCIPAL SURVEYOR & PROPERTY OFFICER 26/9/89
EXAMINER NAME J. MULLINS	PROJECT MANAGER

DESIGNED	
DRAWN	R.J. Smillie 20.9.89 REGIONAL ENGINEER COOTAMUNDRA
CHECKED 26/9/89	

PUBLIC WORKS
R.D. Christie
Director of Public Works
M.N. Clarke
Chief Engineer

GRIFFITH VILLAGES SCE HANWOOD
PUMPING STATIONS 1, 2, 3, 4 AND 5 DETAIL AND CONTOUR PLAN

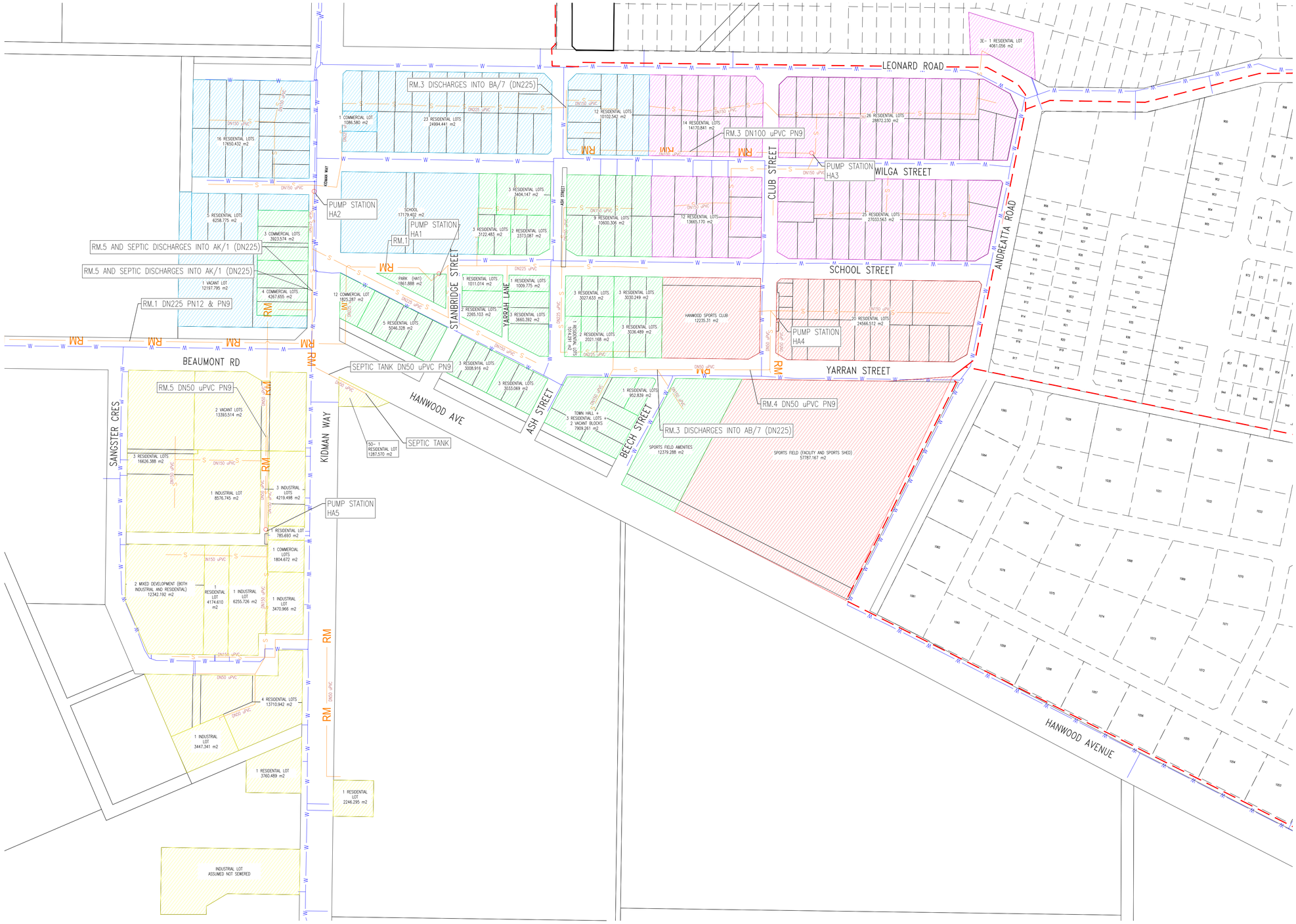
FILE 10·006·377
DRAWING
9000125—19

B 1513

B 1513

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B1

DATE PLOTTED: 26 March 2024 1:42 AM BY : MCLEOD, NELSON
XREFs: XR-304800722-G-TITLE; XR-304800722-G-Legend; WAT SEW GIS; XR-304800722-E-CADASTRE
CAD File: U:\304800722\304800722_Hanwood Master Plan\Des-An\PW & WW\4_Project material\WW Masterplan\New variation works\Variation 002 - Capacity Assessment\Hanwood Existing Lots - Catchment Plan_Rev3.dwg



PUMP STATION EXISTING CATCHMENTS

SCALE 1:2500

LEGEND

- HA1 CATCHMENT
- HA2 CATCHMENT
- HA3 CATCHMENT
- HA4 CATCHMENT
- HA5 CATCHMENT

0 50 100 150 200 250m

SCALE 1:2500 (A1), 1:5000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.

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Stantec (NSW/ACT) Pty Ltd | ABN 17 007 820 322
Ground Floor, 16 Burelli Street
Wollongong NSW 2500
Tel: 02 4231 9600 Fax: 02 4228 6811
Web: www.stantec.com

Drawn	Date
Checked	Date
	Date
Verified	Date
Approved	Date

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
WASTE WATER MASTER PLAN
HANWOOD EXISTING SEWERAGE NETWORK

Title: CATCHMENT PLAN
LAYOUT PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM		Scale	Size
A.H.D.		1:2500	A1

Drawing Number

Revision: 1

DATE PLOTTED: 23 May 2024 8:05 AM BY : MCLEOD, NELSON

Stantec

STANTEC AUSTRALIA Pty Ltd | ABN 95 001 145 035
Ground Floor, 16 Burelli Street
Wollongong NSW 2500
TEL: 02 4228 6811 Fax: 02 4228 6811
WEB: www.stantec.com

GRIFFITH CITY COUNCIL

HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

COVER SHEET

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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Drawn	LACHLAN MOORE	Date 24/05/2024
Checked	NELSON MCLEOD	Date 24/05/2024
Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

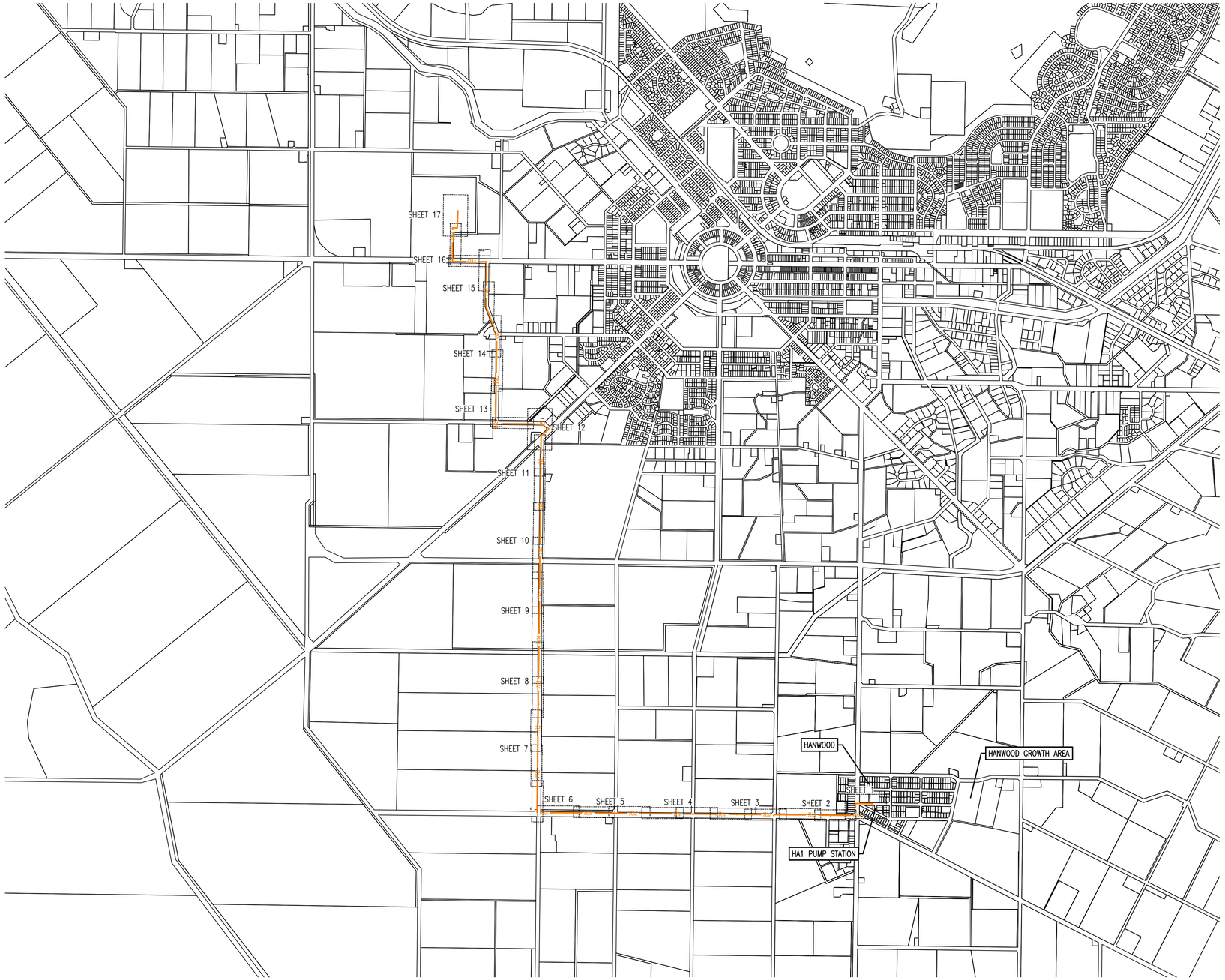
Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Scale	Size
A.H.D.		A1

Drawing Number: 304800722-WW-SRM-001
Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:05 AM BY : MCLEOD, NELSON



LOCALITY PLAN
SCALE 1:20,000

NORTH

LEGEND – NEW SERVICES

- SRM — NEW SEWER RISING MAIN
- NEW SEWER MANHOLE
- AV — NEW AIR VALVE
- GV — NEW GATE VALVE
- SCV — NEW SCOUR VALVE
- X · X · X · X · X — EXISTING SERVICES TO BE ABANDONED

LEGEND – EXISTING SERVICES

- SRM — EXISTING SEWER RISING MAIN
- S — EXISTING SEWER GRAVITY MAIN
- EXISTING SEWER MANHOLE
- D — EXISTING STORMWATER LINE
- E — EXISTING UNDERGROUND ELECTRICAL CABLE
- E — EXISTING ELECTRICAL OVERHEAD CABLE
- EP — EXISTING POWERPOLE
- T — EXISTING OPTIC FIBRE CABLE
- W — EXISTING WATER MAIN
- G — EXISTING GAS MAIN
- EDGE OF ROAD BITUMEN
- EXISTING FENCE
- CADASTRAL BOUNDARIES

0 100 200 300 400 500m
SCALE 1:5000 (A1), 1:10000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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Ground Floor, 16 Burelli Street
Wollongong NSW 2500
Tel: 02 4231 9600 Fax: 02 4228 6811
Web: www.stantec.com

		Date
Drawn	LACHLAN MOORE	24/05/2024
Checked	NELSON MCLEOD	24/05/2024
Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN
Title: LOCALITY PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum		Scale	Size
A.H.D.		1:20000	A1

Drawing Number: 304800722-WW-SRM-002
Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:05 AM BY : MCLEOD, NELSON

GENERAL

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING:
   - WSA 04–2005 SEWAGE PUMPING STATION CODE OF AUSTRALIA VERSION 2.1.
   - WSA 02–2002 SEWERAGE CODE OF AUSTRALIA VERSION 2.3
2. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF WORK, HEALTH AND SAFETY ACT 2011, WHICH REQUIRES EMPLOYERS TO ENSURE THE HEALTH, SAFETY AND WELFARE OF EMPLOYEES AND PERSONS IN THE VICINITY OF THE WORK SITE.
3. THE CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIALS AND EQUIPMENT FOR THE CONSTRUCTION OF THE ENTIRE WORK.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF RELEVANT AND CURRENT AUSTRALIAN STANDARDS, BUILDING CODE OF AUSTRALIA AND THE LOCAL LAWS AND ORDINANCES OF THE RELEVANT GOVERNMENT AUTHORITY.
5. THE CONTRACTOR SHALL PROVIDE THE SUPERINTENDENT EVIDENCE OF THEIR CURRENT PUBLIC RISK AND COMPENSATION INSURANCE POLICIES.
6. THE CONTRACTOR SHALL ACQUIRE APPROVAL UNDER SECTION 138 OF THE NSW ROADS ACT 1993 PRIOR TO COMMENCING CONSTRUCTION WITHIN ALL ROADS AND ROAD RESERVES. TRAFFIC CONTROL PLANS ARE TO BE SUBMITTED WITH SECTION 138 APPLICATION PRIOR TO COMMENCING CONSTRUCTION WORK.
7. THE CONTRACTOR SHALL OBTAIN AN APPROVED ROAD OCCUPANCY LICENSE FROM NSW ROADS AND MARITIME SERVICES FOR ANY WORKS IMPACTING STATE ROADS AND ROAD RESERVES.
8. TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH AS 1742.3 ARE TO BE IN PLACE AND MAINTAINED AT ALL TIME. TRAFFIC SHALL BE CONTROLLED BY ACCREDITED TRAFFIC CONTROLLERS ONLY.
9. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR INSPECTIONS BY COUNCIL'S AUTHORISED REPRESENTATIVE AT THE TIMING AND FOLLOWING THE PROCEDURE OUTLINED IN COUNCIL'S LETTER OF APPROVAL.
10. ANY MODIFICATIONS OR DEVIATIONS OR AMENDMENTS TO THE APPROVED DESIGN DRAWINGS ARE TO BE SUBMITTED IN WRITING TO THE SUPERINTENDENT FOR SUBMISSION TO GRIFFITH CITY COUNCIL FOR APPROVAL. APPROVAL FROM GRIFFITH CITY COUNCIL IS TO BE GRANTED BEFORE ANY SUCH ALTERATIONS ARE IMPLEMENTED BY THE CONTRACTOR.
11. THE CONTRACTOR SHALL NOTIFY THE RELEVANT SERVICE AUTHORITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION IN THE VICINITY OF THEIR EXISTING SERVICES.
12. THE CONTRACTOR SHALL SUBMIT ALL MANAGEMENT PLANS AND WORK METHOD STATEMENTS TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK. 'AS CONSTRUCTED' INFORMATION AND QA RECORDS SHALL BE SUBMITTED PROGRESSIVELY OR AT PRACTICAL COMPLETION.
13. THE CONTRACTOR TO VERIFY SETTING–OUT DIMENSIONS SHOWN ON THE DRAWINGS BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED.
14. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL SERVICES.
15. MINIMUM CLEARANCE TO EXISTING SERVICES IS TO BE AS FOLLOWS:

UTILITY (EXISTING SERVICE)	MINIMUM HORIZONTAL CLEARANCE (>DN200)	MINIMUM VERICAL CLEARANCE
WATER MAINS	1000	500
GAS MAINS	600	150
TELECOMMUNICATION CONDUITS AND CABLES	600	150
ELECTRICITY CONDUITS AND CABLES	1000	225
SEWERS AND DRAINS	600	150
KERBS	600	150

16. NOTWITHSTANDING THAT THE PRESENT AND/OR PROPOSED POSITIONS OF UNDERGROUND SERVICES MAY BE INDICATED ON THE DRAWINGS, THEIR POSITION AND DEPTH IS APPROXIMATE ONLY. PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL CONTACT ALL RELEVANT AUTHORITIES AND SHALL POT–HOLE ALL SERVICES TO OBTAIN DETAILED LOCATIONS. THE CONTRACTOR SHALL NOTIFY THE PRINCIPAL'S REPRESENTATIVE OF ANY CONFLICTS BETWEEN THE PROPOSED MAIN AND EXISTING SERVICES. THE PRINCIPAL'S REPRESENTATIVE WILL ADVISE DETAILS OF ANY REQUIRED CHANGES TO ALIGNMENT OR LEVEL, OR ARRANGE FOR CHANGES TO SERVICES.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ANY EXISTING STRUCTURES ARE NOT DAMAGED DURING CONSTRUCTION. ANY DAMAGE SHALL BE MADE GOOD BY RE–CONSTRUCTION OR REPAIR AS DIRECTED BY AND TO THE SATISFACTION OF THE SUPERINTENDENT AND/OR ASSET OWNER.
18. DAMAGED SERVICES SHALL BE REPAIRED BY THE SERVICE PROVIDER AT THE CONTRACTORS EXPENSE.
19. REFER ANY DISCREPANCY TO THE PRINCIPAL'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
20. ALL DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR ON SITE. DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
21. ALL WORK SHALL BE SET OUT BY THE SURVEYOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION UPON REQUEST. TWO (2) DAYS' NOTICE REQUIRED.
22. THE CONTRACTOR SHALL NOT DISTURB ANY SURVEY CONTROL MARKS. SHOULD ANY SURVEY MARKS BE DISTURBED OR OBLITERATED, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY. THE CONTRACTOR SHALL HAVE THE MARKS REPLACED AT THE CONTRACTOR'S EXPENSE.
23. MAINTAIN STRUCTURES AND EXISTING SERVICES IN STABLE CONDITION DURING CONSTRUCTION. NO PART SHALL BE OVERSTRESSED. PROVIDE TEMPORARY BRACING AS REQUIRED.
24. SUPPORT ALL TRENCHES IN ACCORDANCE WITH THE REQUIREMENTS OF WORK HEALTH AND SAFETY ACT. ALL TRENCHES OVER 1.20M DEEP SHALL BE SUPPORTED UNLESS CERTIFIED SAFE BY A COMPETENT PERSON WITHIN THE MEANING OF THE ACT.
25. IF PIPELINE INSTALLATION REQUIRES DEVIATION FROM THE CONSTRUCTION DRAWINGS, SEEK CONFIRMATION FROM SUPERINTENDENT'S REPRESENTATIVE BEFORE PROCEEDING.
26. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE PREVAILING GROUND CONDITIONS AND THE GEOTECHNICAL REPORTS.
27. ALL TREES ADJACENT TO THE WORKS SHALL BE PROTECTED FROM DAMAGE BY MACHINERY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLAIMS FOR LOSS AND DAMAGE RESULTING FROM UNAPPROVED REMOVAL OR DAMAGE TO TREES AND FLORA.
28. EXCAVATION NEAR POLES AND STAY WIRES IN NOT TO BE ATTEMPTED WITHIN 'DO NOT DISTURB' ZONES OF POLES PRIOR TO A CERTIFIED ENGINEERING ASSESSMENT HAVING BEEN COMPLETED BY A QUALIFIED ENGINEER, AND THEN REVIEWED AND APPROVED BY THE ELECTRICITY ENTITY BEFORE PROCEEDING WITH WORK.
29. ALL EXCESS SOIL WILL BE REMOVED FROM SITE BY THE CONTRACTOR.
30. STORAGE AND DISPOSAL OF TOPSOIL EXCAVATED MATERIAL SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE CEMP.
31. THE CONTRACTOR SHALL ADVISE THE SUPERINTENDENT IMMEDIATELY IF ROCKS ARE ENCOUNTERED SO A RECORD OF AMOUNT CAN BE MADE.

SURVEY CONTROL CO–ORDINATES DATUM:

32. EXISTING SERVICES SHOWN ON THE DRAWINGS HAVE BEEN COMPILED FROM BYDA INFORMATION AND GIS DATA PROVIDED BY COUNCIL
33. ALL LEVEL ARE IN METERS TO AHD.
34. ALL CHAINAGES ARE IN METERS.
35. ALL COORDINATES ARE IN METERS TO THE MAP GRID OF AUSTRALIA (MGA 56 –2020).
36. THE CONTRACTOR IS DIRECTLY RESPONSIBLE FOR ENSURING THE PROJECT SETOUT IS CONSISTENT WITH THE DESIGN.
37. THE CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIALS AND EQUIPMENT FOR THE ACCURATE SETTING OUT OF THE ENTIRE WORK.
38. THE CONTRACTOR SHALL ENSURE THE PIPES ARE LAID IN THE CORRECT INVERT LEVELS.
39. OFFSET FROM EXISTING SERVICES ARE FOR INFORMATION ONLY AND ARE TO BE CONFIRMED BY THE CONTRACTOR.
40. SHOULD THE ACTUAL SITE CONDITIONS CONFLICT IN ANY WAY WITH THE DOCUMENTED, THE CONTRACTOR SHALL CONTACT THE SUPERINTENDENT FOR CLARIFICATION PRIOR TO PROCEEDING.
41. THE CONTRACTOR SHALL ENGAGE AN ACCREDITED AND EXPERIENCED SURVEYOR TO UNDERTAKE THE ASSET RECORDING OF THE WORKS.

ENVIRONMENTAL

42. THE EXTENT OF CLEARING OF VEGETATION SHALL BE KEPT TO THE ABSOLUTE MINIMUM NECESSARY TO UNDERTAKE THE WORKS. NO VEGETATION SHALL BE REMOVED WITHOUT THE PRIOR APPROVAL OF THE SUPERINTENDENT.
43. TREES THAT ARE TO REMAIN AND THAT ARE AFFECTED BY TRENCHING ARE TO BE IDENTIFIED AND MARKED. ROOTS ARE TO BE EXPOSED BY HAND AND SAW–CUT IN ACCORDANCE WITH RE–VEGETATION PLANS.
44. EROSION AND SEDIMENT CONTROLS (PRIOR TO CONSTRUCTION), SITE RE–VEGETATION AND ENVIRONMENTAL REQUIREMENTS SHALL IMPLEMENTED AND MAINTAINED TO THE SATISFACTION OF THE SUPERINTENDENT.
45. CONSTRUCTION SHALL COMPLY WITH ALL ENVIRONMENTAL AND LEGISLATIVE REQUIREMENTS SET OUT IN THE PROJECT CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP).
46. NOISE AND AIR POLLUTION TO CONFORM TO EPA REGULATIONS.
47. THE CONTRACTOR SHALL NOT CONTRIBUTE ADDITIONAL STORMWATER RUNOFF AT ALL TIMES DURING CONSTRUCTION.
48. NSW NATIONAL PARKS AND WILDLIFE SERVICE (NPWS) IS TO BE CONTACTED ON 1300 072 757 IF INJURED OR DEAD ANIMALS ARE FOUND
49. NO DIRECT DE–WATERING TO CREEKS OR DRAINAGE LINES IS PERMITTED.
50. IF SUSPECTED CULTURAL HERITAGE ARTEFACTS ARE FOUND, STOP WORK AND INFORM THE SUPERINTENDENT. CULTURAL HERITAGE ARTEFACTS INCLUDE SCAR TREES, STONE ARTEFACTS, BONES AND MIDDEN MOUNDS

POLYETHYLENE PIPE:

51. POLYETHYLENE PIPE TO BE MANUFACTURED IN ACCORDANCE WITH AS4130.
52. EXTERNAL COLOUR IS TO BE FOR THE PE SEWER MAINS SHALL BE BLACK WITH CREAM STRIPES.
53. POLYETHYLENE FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH AS4129.
54. POLYETHYLENE PIPES AND BENDS SHALL BE MINIMUM PE100 SDR11 PN16
55. ALL POLYETHYLENE BENDS SHALL BE SWEEP BENDS UNLESS INDICATED OTHERWISE.
56. POLYETHYLENE PIPES TO BE INSTALLED IN ACCORDANCE WITH AS2033 AND WSA 04–2005 V 2.1.
57. POLYETHYLENE PIPE MAY BE CURVED ON SITE TO A MINIMUM RADIUS OF 33 TIMES THE PIPE OUTSIDE DIAMETER (UNLESS OTHERWISE SPECIFIED) PROVIDED THE AMBIENT TEMPERATURE IS ABOVE 15°C. PIPES MUST NOT BE BENT AROUND STAKES. SANDBAGS MAY BE USED TO BEND THE PIPES.

POLYETHYLENE WELDING NOTES:

58. PE WELDING MUST ONLY BE CARRIED OUT IN ACCORDANCE WITH WSA 01 – 2004 REQUIREMENTS.
59. WELDERS SHALL BE CREDITED TO PMBWELD301A – BUTT WELD POLYETHYLENE PLASTIC PIPELINES AND PMBWELD302A – ELECTROFUSION POLYETHYLENE PLASTIC PIPELINES.
60. JOINTING SHALL BE MADE IN ACCORDANCE WITH THIS SPECIFICATION, WSA 01–2004; AS2033, AS2566.2 AND THE PE PIPE MANUFACTURER'S REQUIREMENTS.
61. JOINTS SHALL ONLY BE MADE BETWEEN PIPE MATERIALS OF THE SAME GRADE AS DEFINED IN AS4130. PILOT WELDS SHALL BE MADE AND TESTED FOR ANY PROPOSED JOINTS BETWEEN PIPES FROM DIFFERENT MANUFACTURERS.
62. FUSION BUTT–WELDED JOINTS SHALL ACHIEVE AT LEAST 90% OF THE TENSILE STRENGTH OF THE PARENT PIPE. INTERNAL WELD BEADS SHALL NOT BE REMOVED.
63. BUTT WELDING IN TRENCHES IS NOT PERMITTED.
64. ALL ELECTROFUSION TO BE APPROVED BY SUPERINTENDENT.
65. ALL WELDING SHALL BE PERFORMED UNDER CONTROLLED ENVIRONMENTAL CONDITIONS. FIELD WELDING SHALL BE CARRIED OUT IN SHELTERS TO PREVENT DUST AND WATER CONTAMINATION. SHELTERS SHALL REMAIN IN PLACE UNTIL COMPLETION OF THE JOINT COOLING PERIOD. PIPE ENDS SHALL BE BLOCKED OFF TO PREVENT WIND CHILL AND DIRT CONTAMINATION.
66. WELDING MACHINES USING HAND WOUND CARRIAGES WITHOUT PRESSURE GAUGES SHALL NOT BE USED. AT ALL TIMES THAT WELDING IS IN PROGRESS, THE WELDER SHALL HAVE AVAILABLE A HAND–HELD TEMPERATURE SENSING DEVICE CAPABLE OF CHECKING THE TEMPERATURE OF THE HEATER PLATE AT THE CIRCUMFERENCE OF THE WELD.

VALVES:

67. ALL VALVES SHALL BE COMPLY WITH WSAA APPROVED PRODUCTS AND MATERIALS.
68. ALL GATE VALVES SHALL BE FLANGE AND HAVE A PRESSURE CLASS PN116.
69. ALL GATE VALVES SHALL BE METAL SEATED GATE VALVES.
70. ALL AIR VALVES SHALL BE FLANGE AND HAVE A PRESSURE CLASS PN116.
71. UNLESS INDICATED OTHERWISE ON THE DESIGN DRAWINGS, ALL AIR VALVES PITS SHALL COMPLY WITH S–25350–48 TYPICAL AIR VALVE PIT AND S–25350–55 – TYPICAL AIR VALVE PIT WITH OFFSET ODOUR SCRUBBER.
72. UNLESS INDICATED OTHERWISE ON THE DESIGN DRAWINGS, ALL SCOUR VALVES SHALL COMPLY WITH S–25350–53 TYPICAL SCOUR VALVE WITH DN80 CAMLOCK.

PIPEWORK AND FITTINGS:

73. THE CONTRACTOR SHALL ARRANGE FOR ALL PIPES, VALVES, FITTINGS HOLES TO BE INSPECTED BY THE SUPERINTENDENT AND INSPECTOR PRIOR TO THE OPENING OF ANY TRENCHES ON SITE. THE CONTRACTOR SHALL GIVE NOT LESS THAN TWO (2) DAYS' NOTICE WHEN REQUESTING FOR AN INSPECTION.
74. ALL GATE VALVES SHALL BE METAL SEATED GATE VALVES.
75. FLANGES SHALL BE IN ACCORDANCE WITH AS4087, CLASS 16, UNLESS NOTED OTHERWISE.
76. ALL BOLT HOLE ORIENTATIONS SHALL BE OFF–CENTRE UNLESS NOTED OTHERWISE.
77. ALL BOLT SETS SHALL BE GRADE 316 STAINLESS STEEL. REFER TO AS4087–TABLE C1 FOR CLASS. 'BREAKAWAY PLUS' ANTI–SIEZE PASTE SHALL BE APPLIED TO SS THREAD. ALL WASHERS SHALL BE 3MM THICK. PE TO DICL CONNECTIONS REQUIRE A PE STUB FLANGE. THE BACKING PLATE/FLANGE, BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED FROM GRADE 316 STAINLESS STEEL.
78. ALL BOLTS ON PE FLANGE CONNECTIONS SHALL BE RETIGHTENED AFTER A MINIMUM OF 4 HOURS AFTER INITIAL TIGHTENING.
79. FLANGE GASKET MATERIAL AND THICKNESS SHALL BE IN ACCORDANCE WITH AS4087–TABLE C1.
80. 1THRUST AND PUDDLE FLANGES SHALL BE CAST CENTRALLY WITHIN WALLS UNLESS SHOWN OTHERWISE.
81. ALL PROPRIETARY MATERIALS SHALL BE PLACED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
82. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND PLACEMENT OF PIPELINE RESTRAINS AT ALL LOCATIONS WHERE UNBALANCED THRUSTS EXIST AND TRANSMIT ALL THRUST LOADS TO THE ADJACENT NATIVE SOIL OR ROCK.
83. MINIMUM SERVICE CLEARANCES SHALL BE IN ACCORDANCE WITH TABLE 4.2 OF GRIFFITH CITY COUNCIL SUPPLEMENT WSA 02–2002 V2.3.
84. RISING MAIN VALVE MARKER POSTS, KERB MARKER DISCS AND PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH SHOALHAVEN WATER'S STANDARD DRAWING S–25350–52.
85. THE CONTRACTOR SHALL VACUUM EXCAVATE WHERE EXCAVATION IS REQUIRED WITHIN THE DRIP ZONE OF EXISTING TREES AND WHERE SHOWN ON THE DRAWINGS. NEW PIPE WORK SHALL BE INSTALLED UNDER ROOT PLATE OF TREE.
86. PIPELINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH WSA 01–2004 AND WSA 04–2005 V 2.1 AND PIPE MANUFACTURER'S REQUIREMENTS. MAXIMUM JOINT DEFLECTIONS AND/OR BENDING RADII SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.
87. HANDLING AND STORAGE OF PIPES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND WSA 04–2005 V 2.1.
88. UNLESS APPROVED OTHERWISE BY GRIFFITH CITY COUNCIL IN WRITING, COUNCIL PERSONNEL ARE TO UNDERTAKE ALL LIVE WORKS ON EXISTING GRIFFITH CITY COUNCIL INFRASTRUCTURE.
89. PLUG AND SEAL ALL OPENINGS OF DISUSED MAINS AGAINST INFILTRATION SEAL EXISTING FLANGES WITH BOLTED AND GASKETED FLANGES SEAL CUT PIPE ENDS WITH CAP, GIBAULT CAPS OR SIMILAR.
90. INTERCONNECTION WORKS WILL NOT TAKE PLACE UNTIL SUCH TIME AS ALL PROPOSED CONSTRUCTION IS COMPLETED, BACKFILLED AND SATISFACTORILY TESTED.

TRENCH AND BEDDING NOTES:

91. SUPPORT ALL TRENCHES IN ACCORDANCE WITH THE REQUIREMENTS OF WHS ACT.
92. TRENCHSTOPS AND CONCRETE BULKHEADS SHALL BE PROVIDED AT LOCATIONS INDICATED ON THE DESIGN DRAWINGS AND SHALL COMPLY WITH COMPLY WITH SHOALHAVEN WATER'S STANDARD DRAWING SEW–1206SW.
93. PRIOR TO BACKFILL, FILL VOIDS WITH BACKFILL MATERIAL.
94. ALL BEDDING MATERIALS SHALL BE COMPACTED TO ENSURE SOLID AND UNIFORM SUPPORT OVER THE LENGTH OF PIPE.
95. SELECTED BACKFILL SHALL BE FREE OF CLAY LUMPS RETAINED ON A 75MM SIEVE AND SHALL NOT CONTAIN STONES RETAINED ON A 26.5MM SIEVE.
96. BACKFILL SHALL BE PLACED IN A MANNER THAT VOIDS IMPACT LOADING ON PIPES AND SHALL BE COMPACTED USING A SELF–PROPELLED COMPACTION UNIT.
97. STANDARD TRACEABLE MARKING TAPE SHALL BE LAID ALONG THE SEWER MAIN ON TOP OF THE PIPE EMBEDMENT MATERIAL AND SHALL BE ATTACHED TO METAL SURFACE FITTINGS TO PROVIDE AN ATTACHMENT POINT FOR LOCATING DEVICES.

THRUST RESTRAINTS

1. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE CONFIRMED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING ANCHOR BLOCK.
2. CAST THE THRUST AREA OF ALL BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
3. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING.
4. THRUST FLANGE SHALL BE FACTORY FITTED BOLT ON FULL THRUST RESTRAINT TYPE IN ACCORDANCE WITH AS2280.
5. CONCRETE SHALL BE CLASS N25 TO PS–357. SLUMP SHALL BE IN THE RANGE OF 80mm TO 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
6. ALL REINFORCEMENT TO BE TO AS4671 SHAPE–D, STRENGTH GRADE=500MPa, DUCTILITY CLASS–N.
7. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
8. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
9. ANCHOR BLOCK DETAILS SHOWN IN THESE DRAWINGS ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.
10. NUMBER AND LOCATION OF ANCHOR BLOCKS SHALL BE RECORDED IN WORK AS CONSTRUCTED DRAWINGS.

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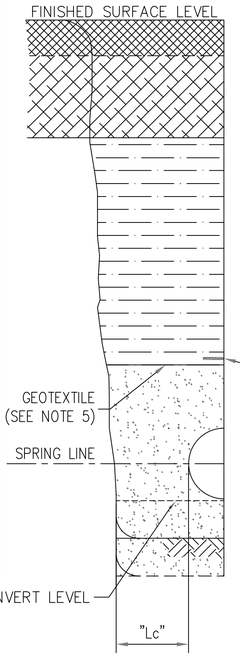
Drawn	LACHLAN MOORE	Date 24/05/2024
Checked	NELSON MCLEOD	Date 24/05/2024
Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN
Title: NOTES
Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum: A.H.D. | Scale: | Size: A1
Drawing Number: 304800722-WW-SRM-003
Revision: 1

CAD File: \\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:05 AM BY : MCLEOD, NELSON

MATERIAL		ZONE	
ROAD SURFACE	VERGE & TRACK		
ROAD SURFACE LAYER	TO MATCH EXISTING	SURFACE COURSE	
TO MATCH EXISTING ROAD BASE OR TO ROAD OWNER'S REQUIREMENTS		ROAD BASE	
TRENCH FILL TO ROAD OWNER'S REQUIREMENTS OR INORGANIC FILL MATERIAL WITH 75 MAXIMUM STONE SIZE	TRENCH FILL TO ROAD OWNER'S REQUIREMENTS OR INORGANIC FILL MATERIAL WITH 75 MAXIMUM STONE SIZE	TRENCH FILL (AS SPECIFIED IN DESIGN DRAWINGS)	
EMBEDMENT MATERIAL IN ACCORDANCE WITH DESIGN DRAWINGS AND WATER AGENCY REQUIREMENTS. (SEE NOTE 4)		OVERLAY	EMBEDMENT
		SIDE SUPPORT	
BEDDING MAY BE OMITTED IF TRENCH BASE IS GRANULAR SAND OR GRAVEL OF SUITABLE GRADING.		BEDDING	
		OVER-EXCAVATION	



VEHICULAR LOADING

LEGEND

\# SPECIFIED BY DESIGNER IN DESIGN DRAWINGS

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. SPECIFY SPECIAL BEDDING TO SUIT THE CONDITIONS IF THE TRENCH FLOOR HAS:
   - IRREGULAR OUTCROPS OF ROCK.
   - AHBP OF <50 kPa (SEE SEW-1200), OR
   - BEEN DISTURBED BY UNCONTROLLED GROUND WATER .
3. COMPACT AND EVENLY GRADE FINISHED TRENCH FLOOR .
4. EMBEDMENT, TRENCH FILL AND COMPACTION TO MEET THE REQUIREMENT OF DESIGN DRAWINGS AND WSA 02 PART 3.
5. USE GEOTEXTILE FILTER FABRIC WHERE SPECIFIED.
6. SIDES OF EXCAVATION TO BE KEPT VERTICAL TO AT LEAST 150 ABOVE THE PIPE.

MINIMUM PIPE COVER

LOCATION	MINIMUM COVER #
PRIVATE PROPERTY NON VEHICULAR NEW DEVELOPMENTS	600
PRIVATE PROPERTY NON VEHICULAR EXISTING DEVELOPMENTS	450
PRIVATE PROPERTY VEHICULAR	750
FOOTPATHS, SEALED ROADS (NON ARTERIAL)	900
UNSEALED ROADS	1200
ARTERIAL ROADS	1200

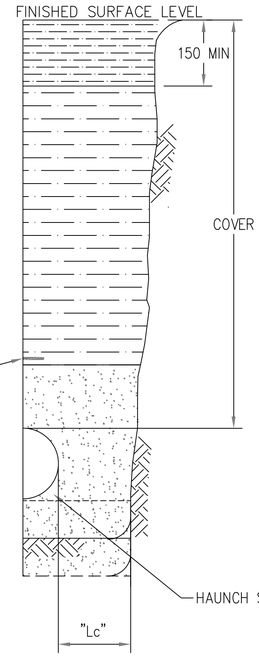
WHERE MINIMUM COVER CAN NOT BE ACHIEVED, PROVIDE ALTERNATIVE PROTECTION OF THE PIPELINE

MARKING TAPE #

SPRING LINE TRENCH CLEARANCE

NOMINAL DIAMETER DN	MINIMUM CLEARANCE "Lc"
⩽150	100
>150-⩽300	150
>300-⩽450	200
>450-⩽900	300
>900-⩽1500	350

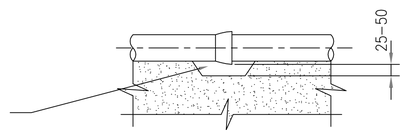
TRENCH WIDTH TO BE SUFFICIENT TO SAFELY LAY PIPE AND COMPACT THE SIDE SUPPORT ZONE.



ZONE	MATERIAL	
TOPSOIL OR PAVEMENT	ORIGINAL OR IMPORTED MATERIAL TO MATCH EXISTING	
TRENCH FILL	INORGANIC FILL MATERIAL WITH 75 MAXIMUM STONE STONE SIZE	
EMBEDMENT	OVERLAY	EMBEDMENT MATERIAL IN ACCORDANCE WITH DESIGN DRAWINGS AND WATER AGENCY REQUIREMENTS (SEE NOTE 4)
	SIDE SUPPORT	
	BEDDING	BEDDING MAY BE OMITTED IF TRENCH BASE IS GRANULAR SAND OR GRAVEL OF SUITABLE GRADING
OVER-EXCAVATION		

NO VEHICULAR LOADING

INCLUDES LOCATIONS WHERE OCCASSIONAL VEHICLE LOADING OCCURS EG RESERVES AND FOOTWAYS



PROVIDE POCKETS IN BEDDING, AT JOINTS PRIOR TO LAYING PIPES. FILL VOID DURING COMPLETION OF EMBEDMENT.

PIPE JOINT BEDDING POCKETS

FOR JOINT PROJECTIONS (SOCKETS, FLANGES ETC)

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Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: TRENCH DETAIL SHEET

Status: PRELIMINARY
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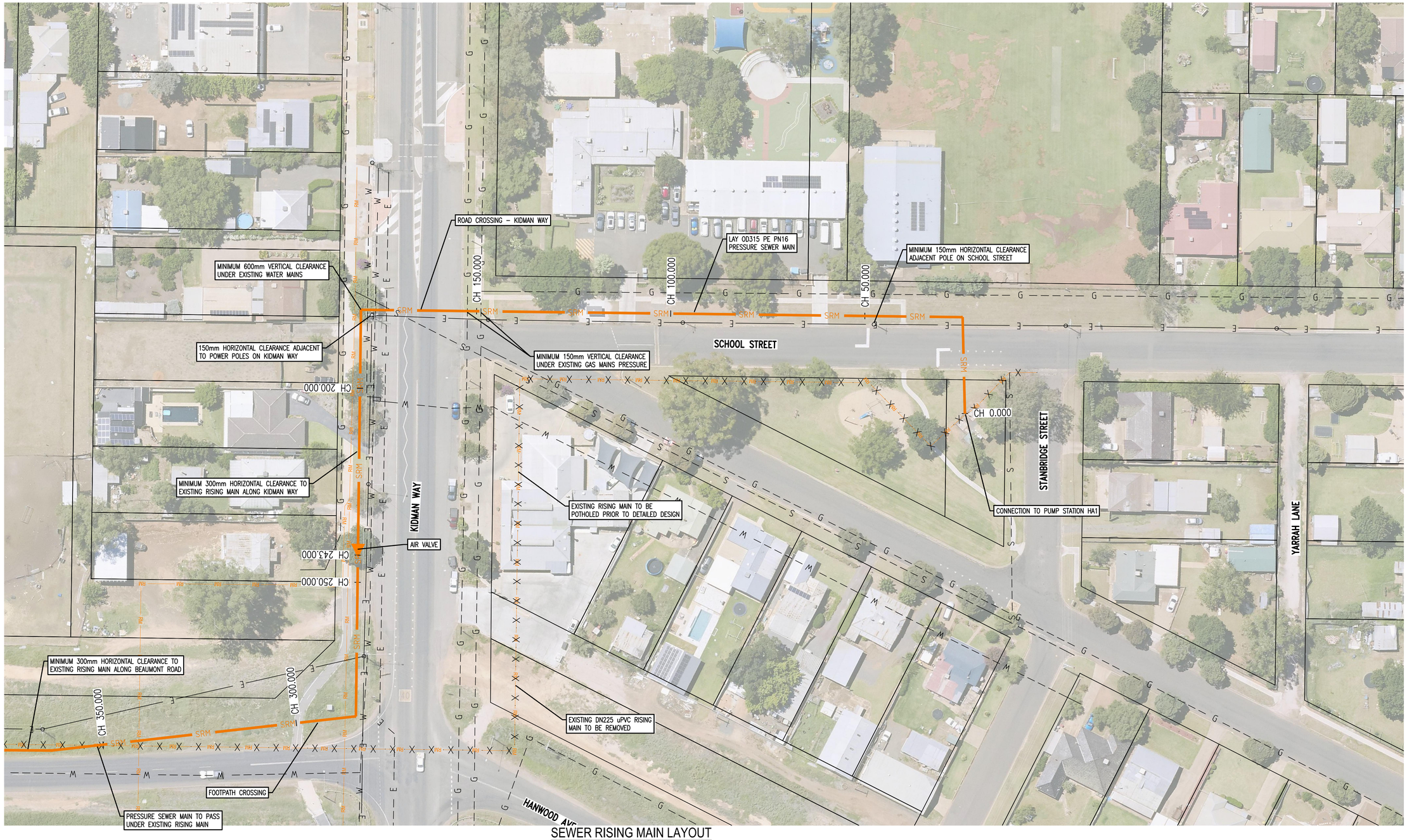
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Drawing Number: 304800722-WW-SRM-004

Revision: 1

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DATE PLOTTED: 23 May 2024 8:05 AM BY : MCLEOD, NELSON



SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
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Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 1 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

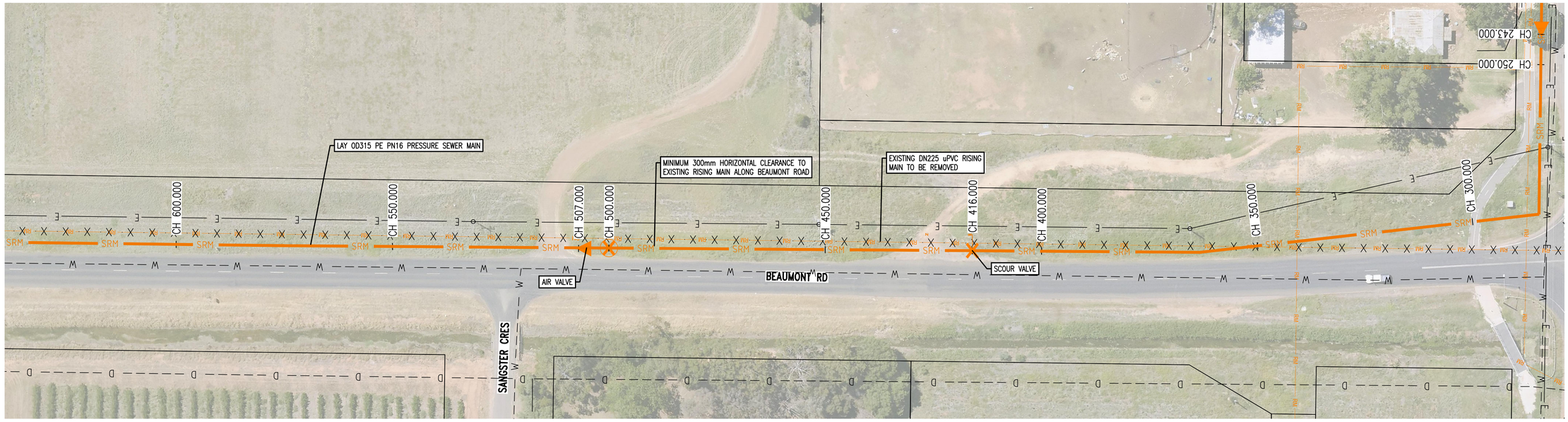
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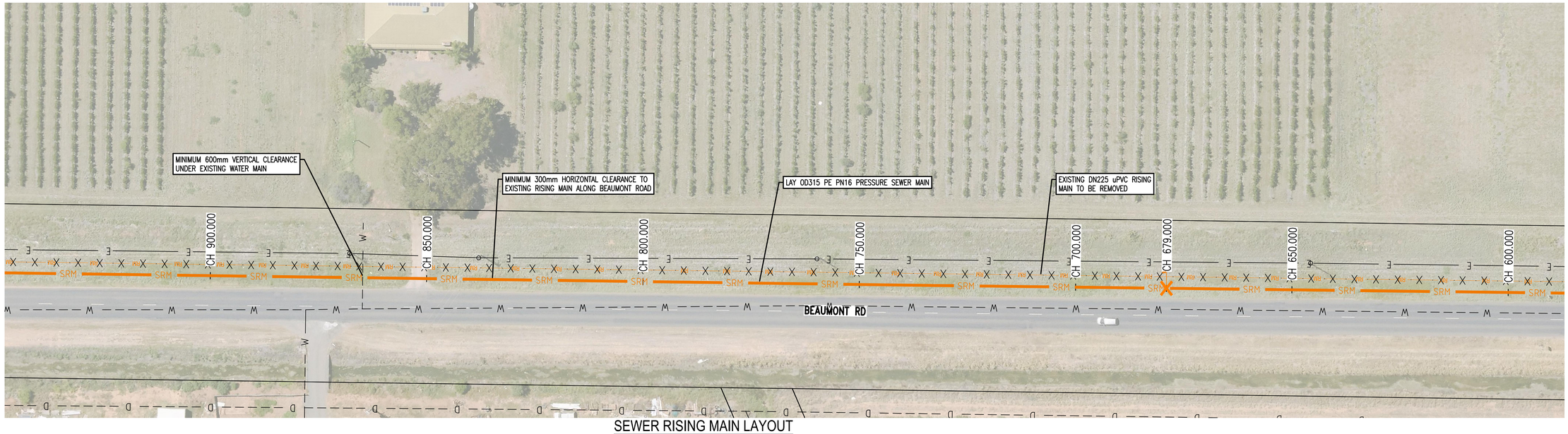
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Revision: 1

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DATE PLOTTED: 23 May 2024 8:05 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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Checked	NELSON MCLEOD	24/05/2024
Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 2 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

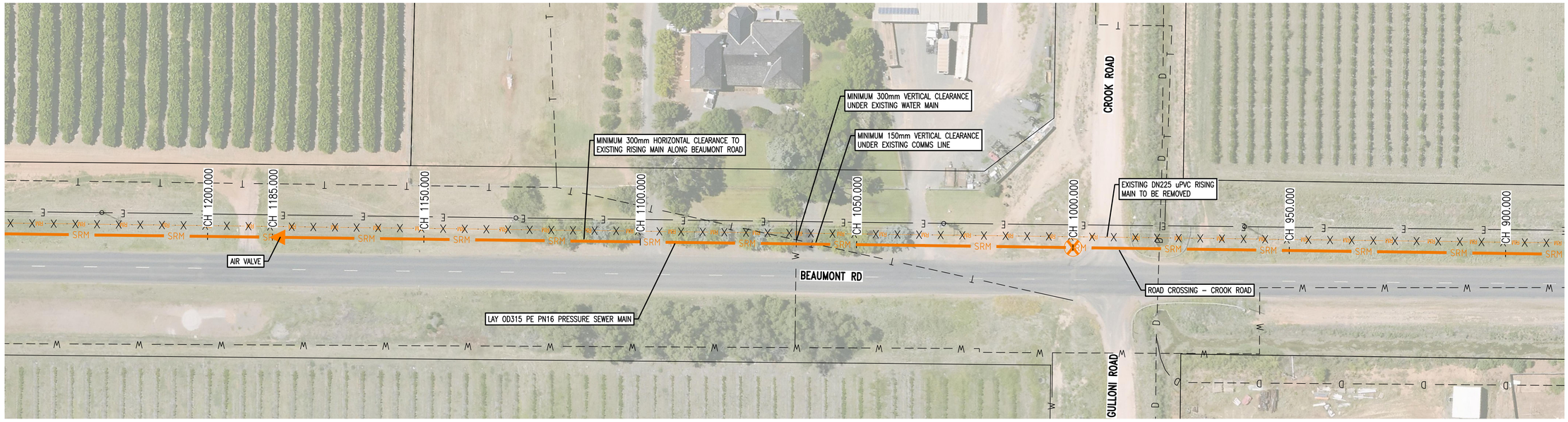
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Drawing Number: 304800722-WW-SRM-006

Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:05 AM BY : MCLEOD, NELSON



SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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Checked	NELSON MCLEOD	Date 24/05/2024
Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 3 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

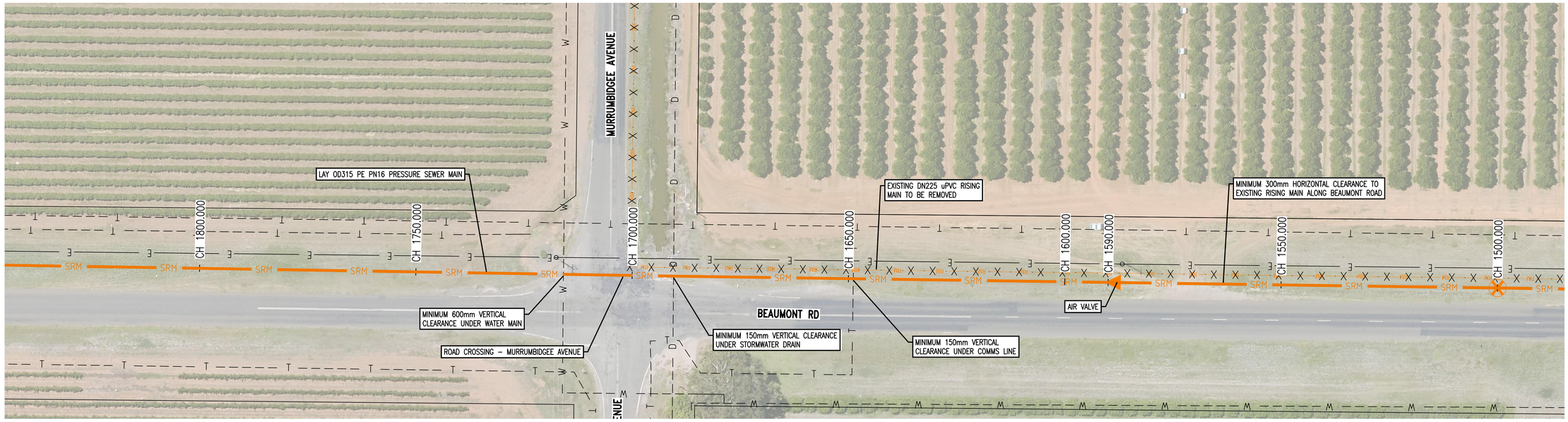
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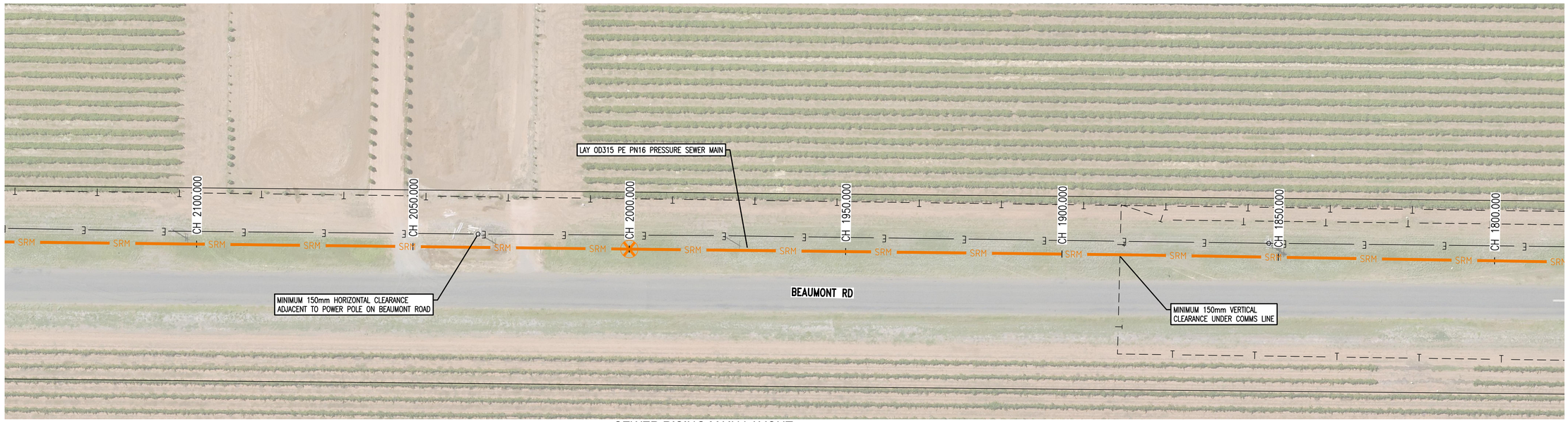
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Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:06 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

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Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 4 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

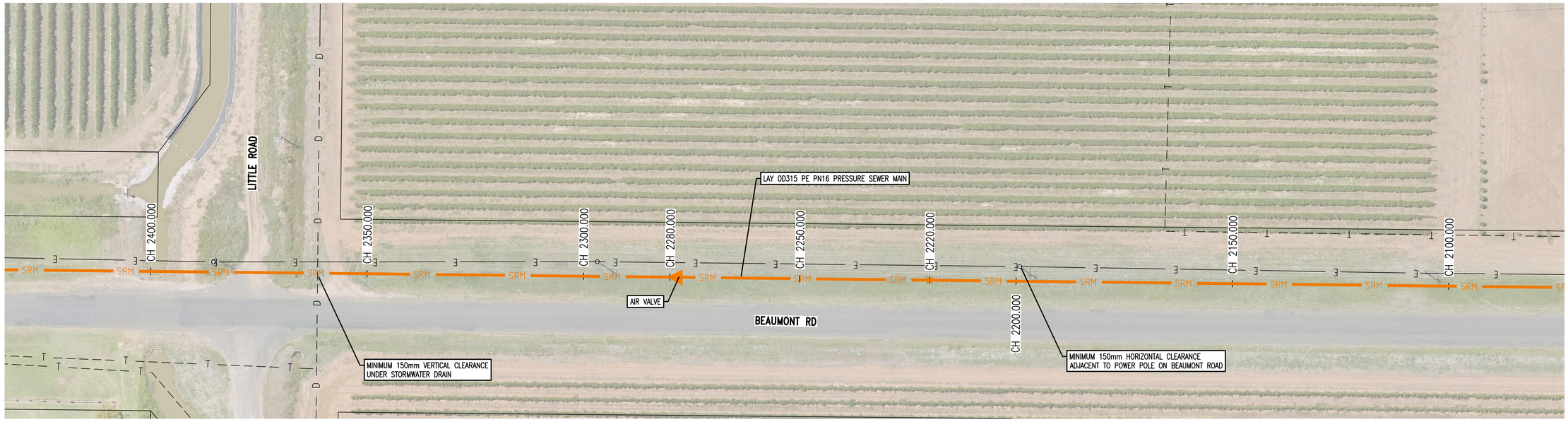
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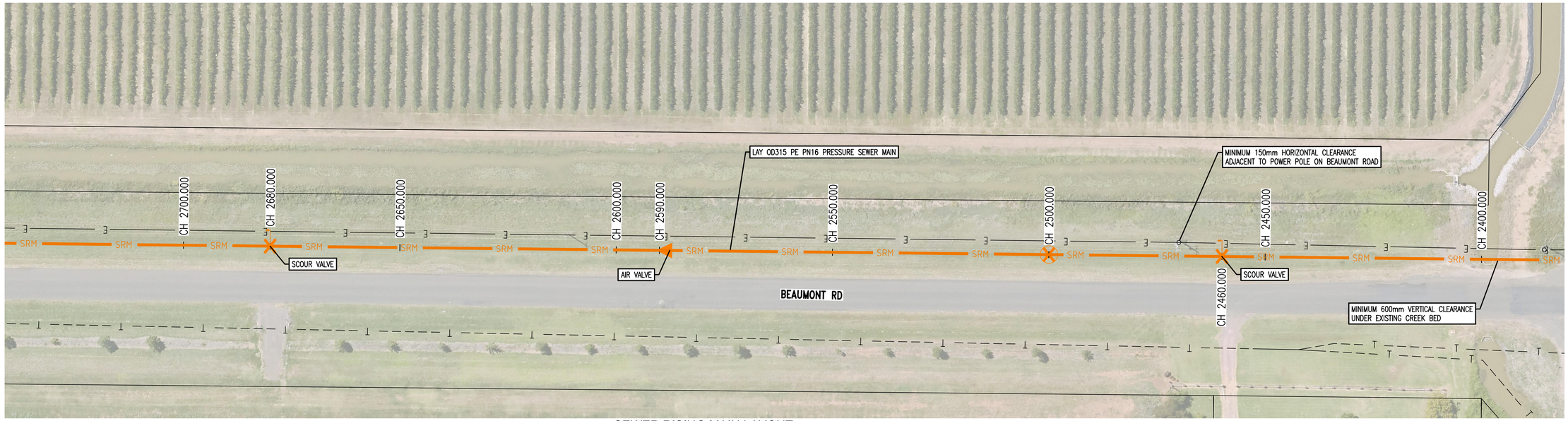
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Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:06 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

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Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 5 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

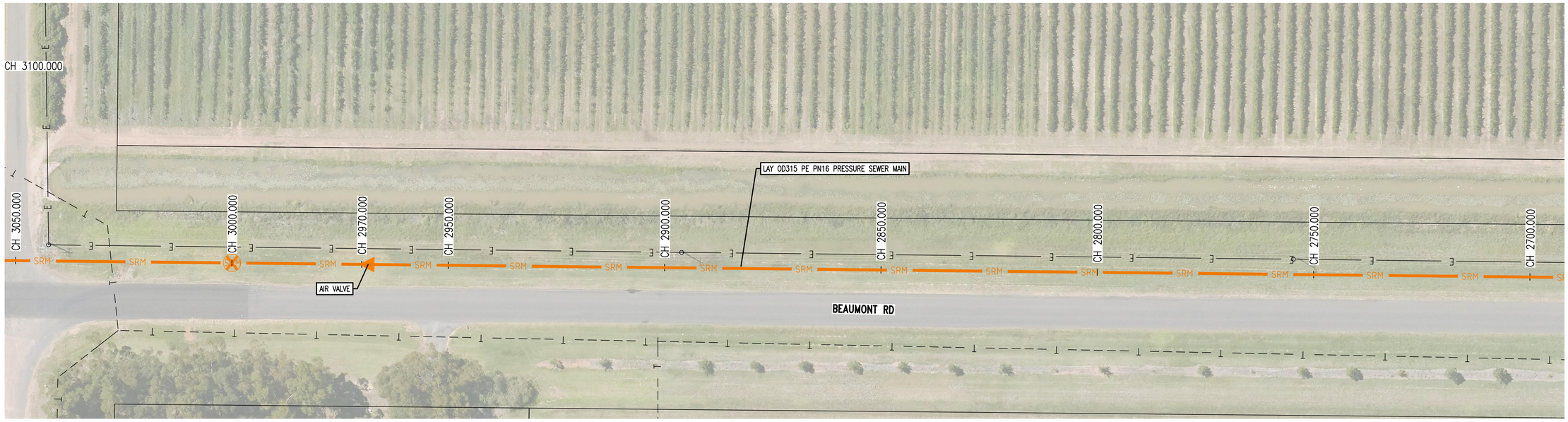
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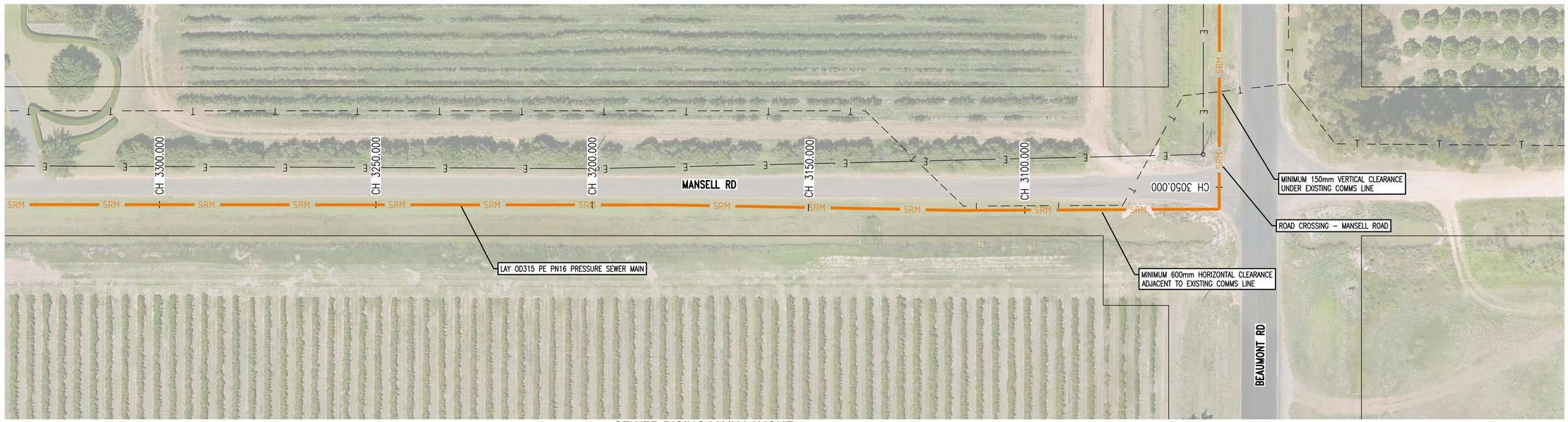
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Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

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SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

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Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 6 OF 17

Status: PRELIMINARY
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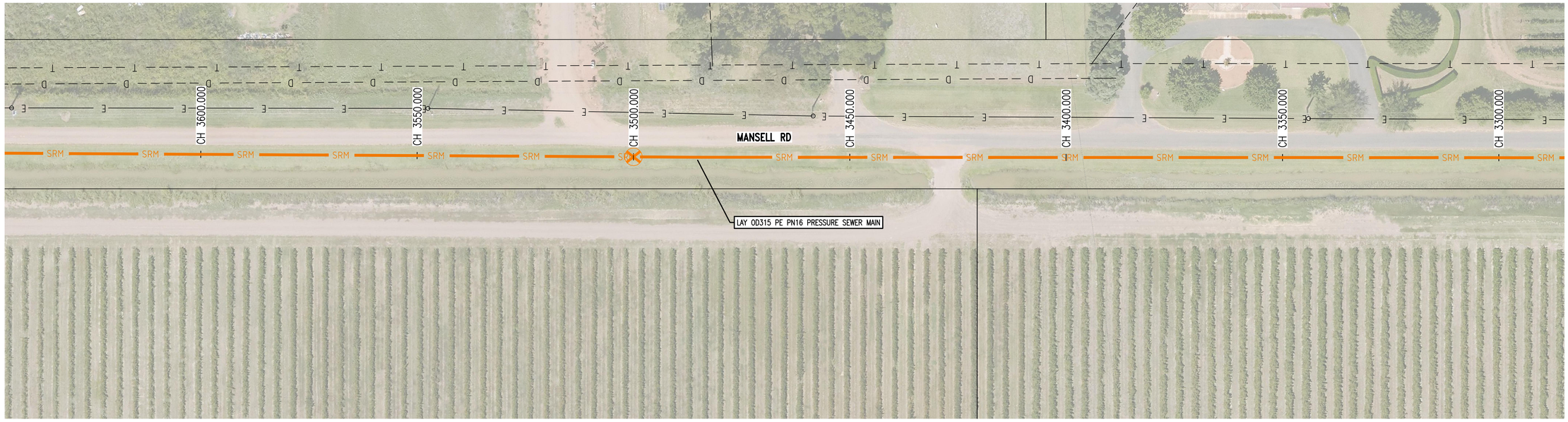
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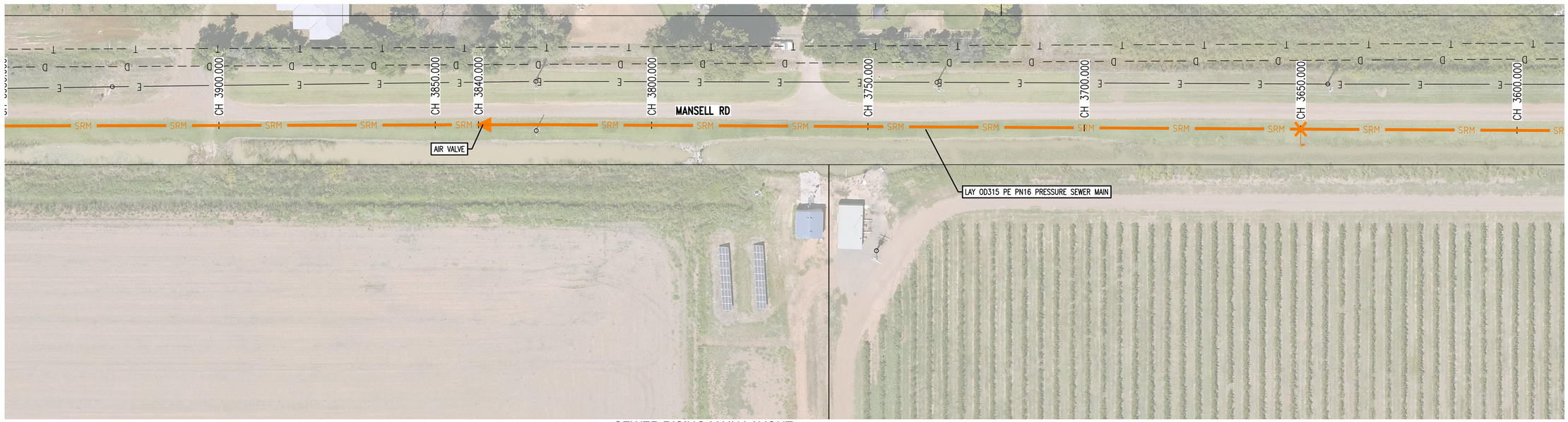
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Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

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SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

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Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 7 OF 17

Status: PRELIMINARY
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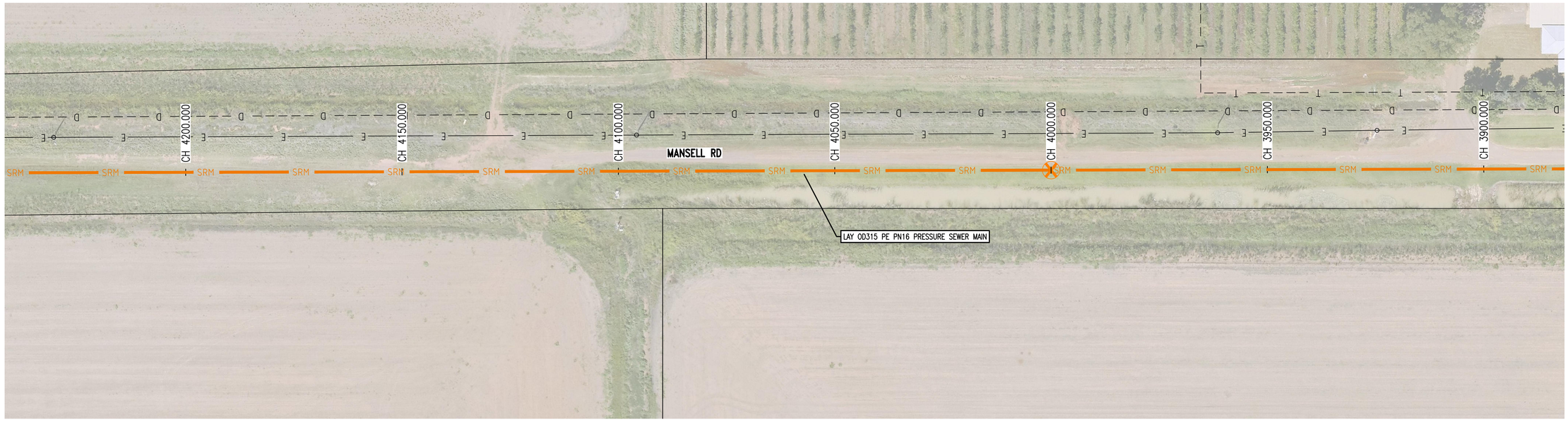
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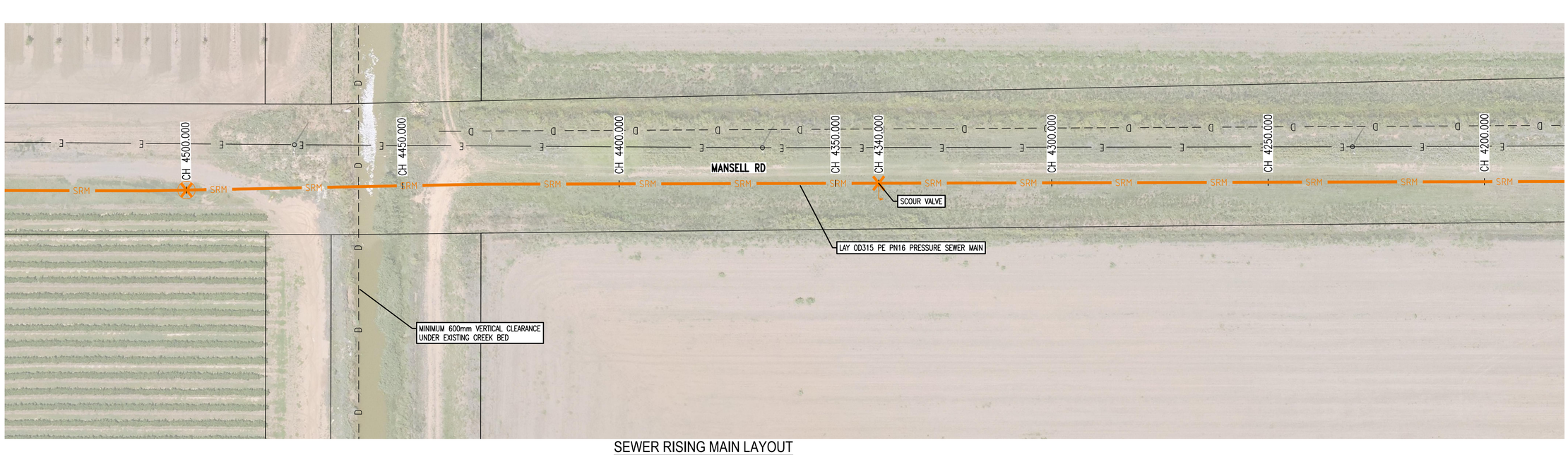
Drawing Number: 304800722-WW-SRM-011

Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:06 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
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Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 8 OF 17

Status: PRELIMINARY
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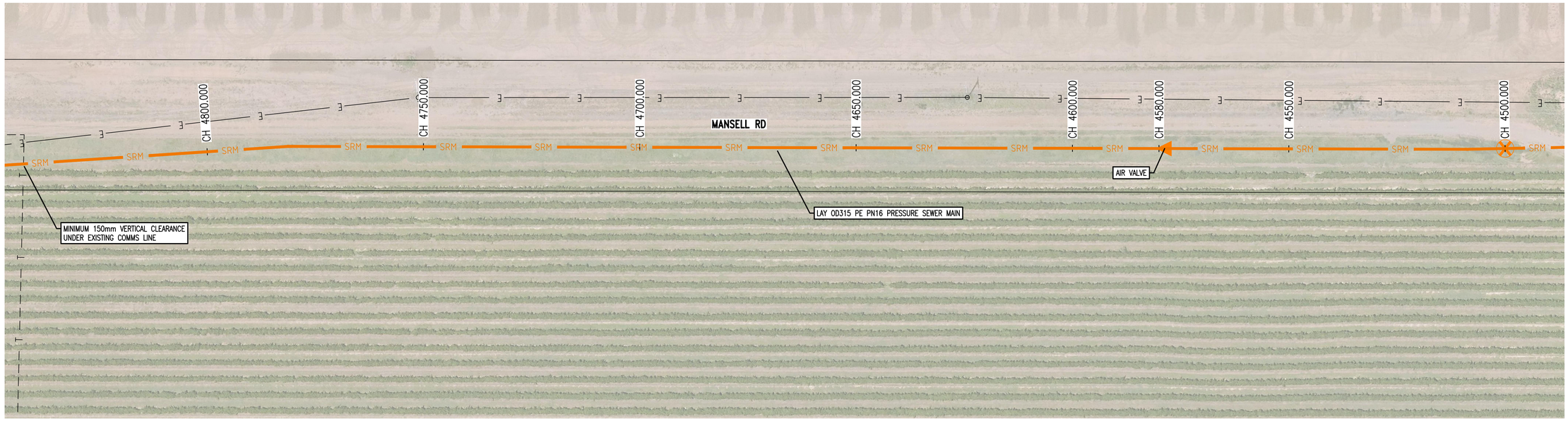
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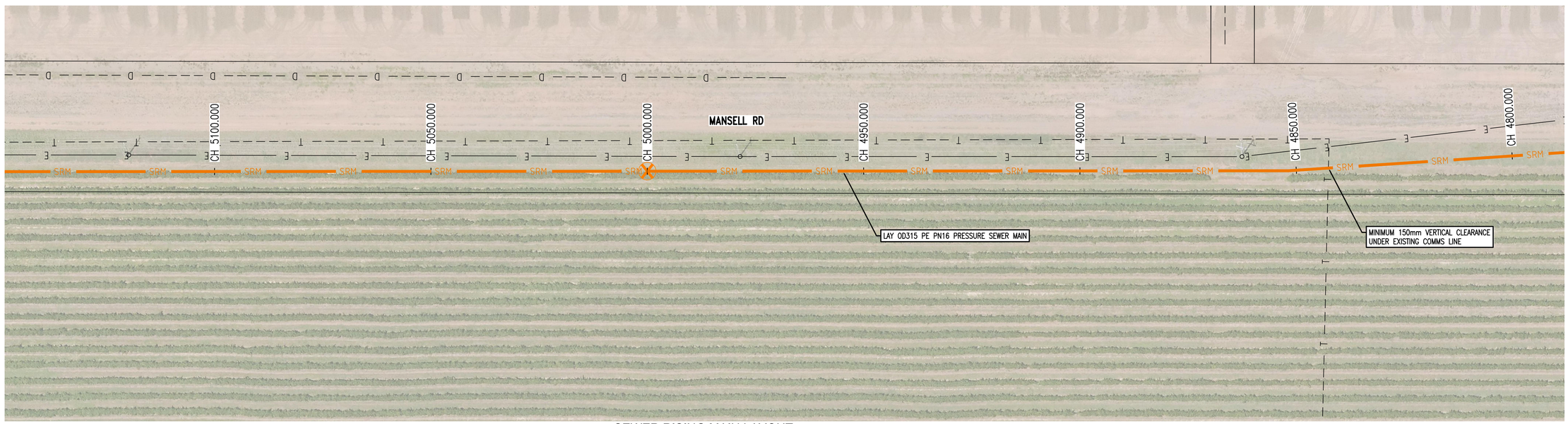
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Revision: 1

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DATE PLOTTED: 23 May 2024 8:07 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

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Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 9 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

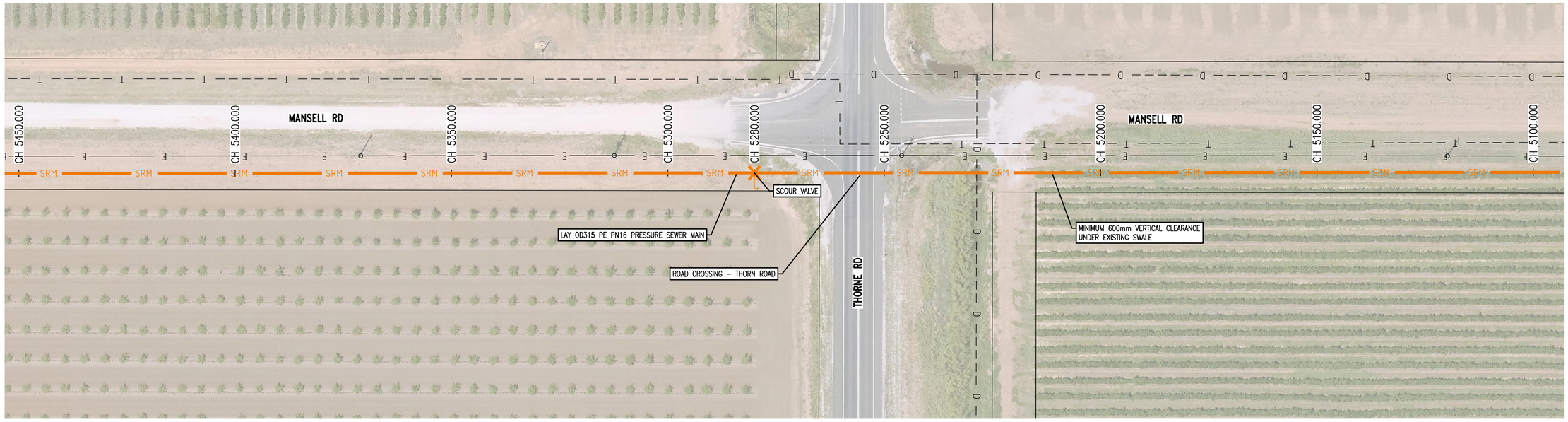
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A.H.D.		1:500	A1

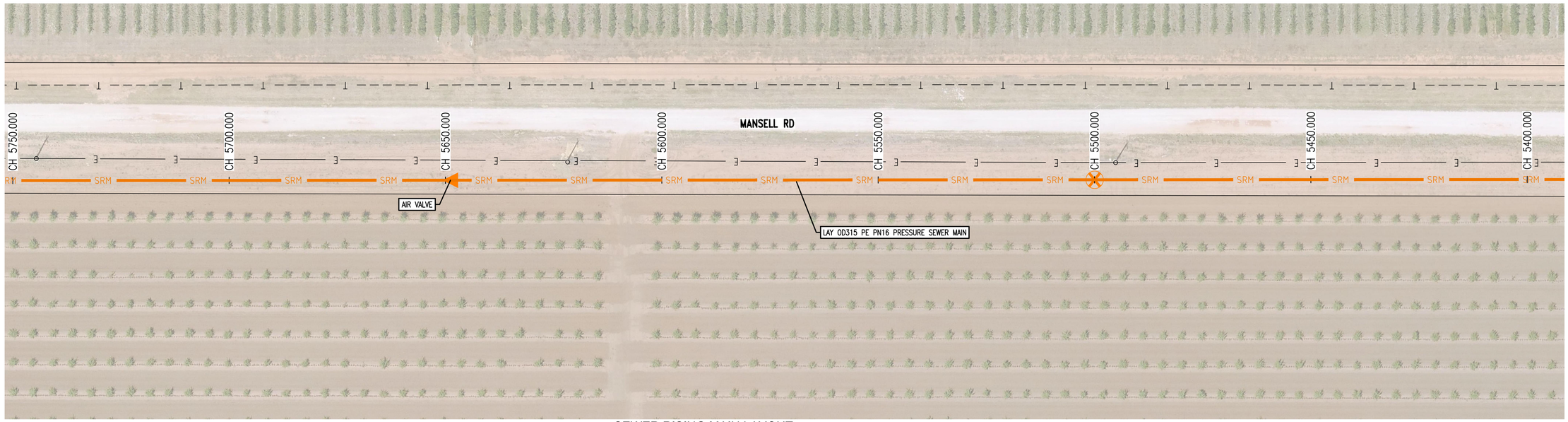
Drawing Number: 304800722-WW-SRM-013

Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:07 AM BY: MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
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Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 10 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

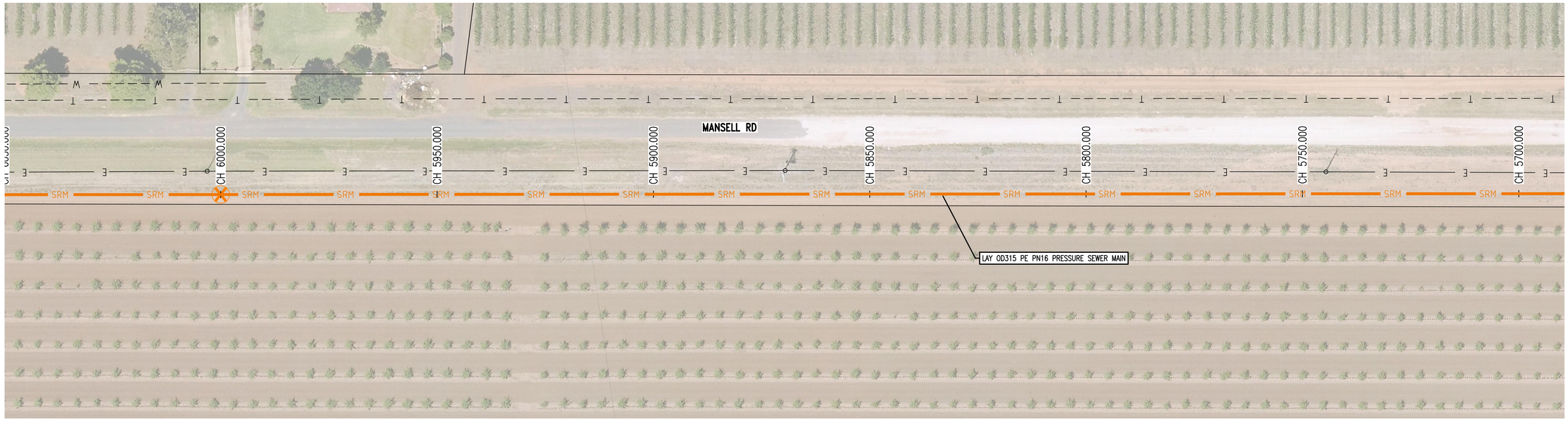
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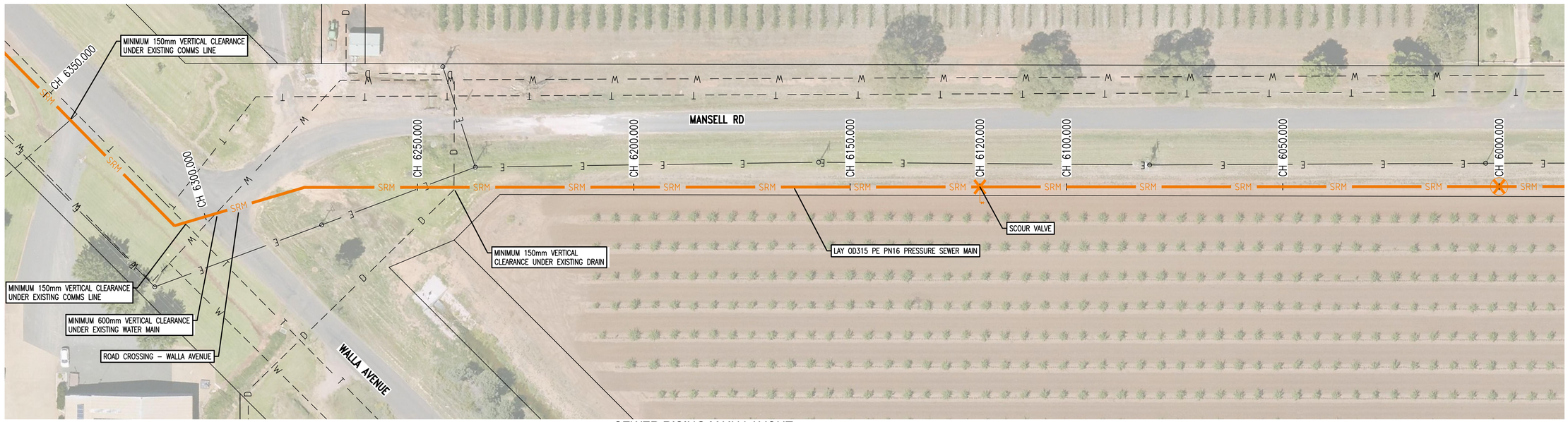
Drawing Number: 304800722-WW-SRM-014

Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023 08 03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:08 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
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Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 11 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

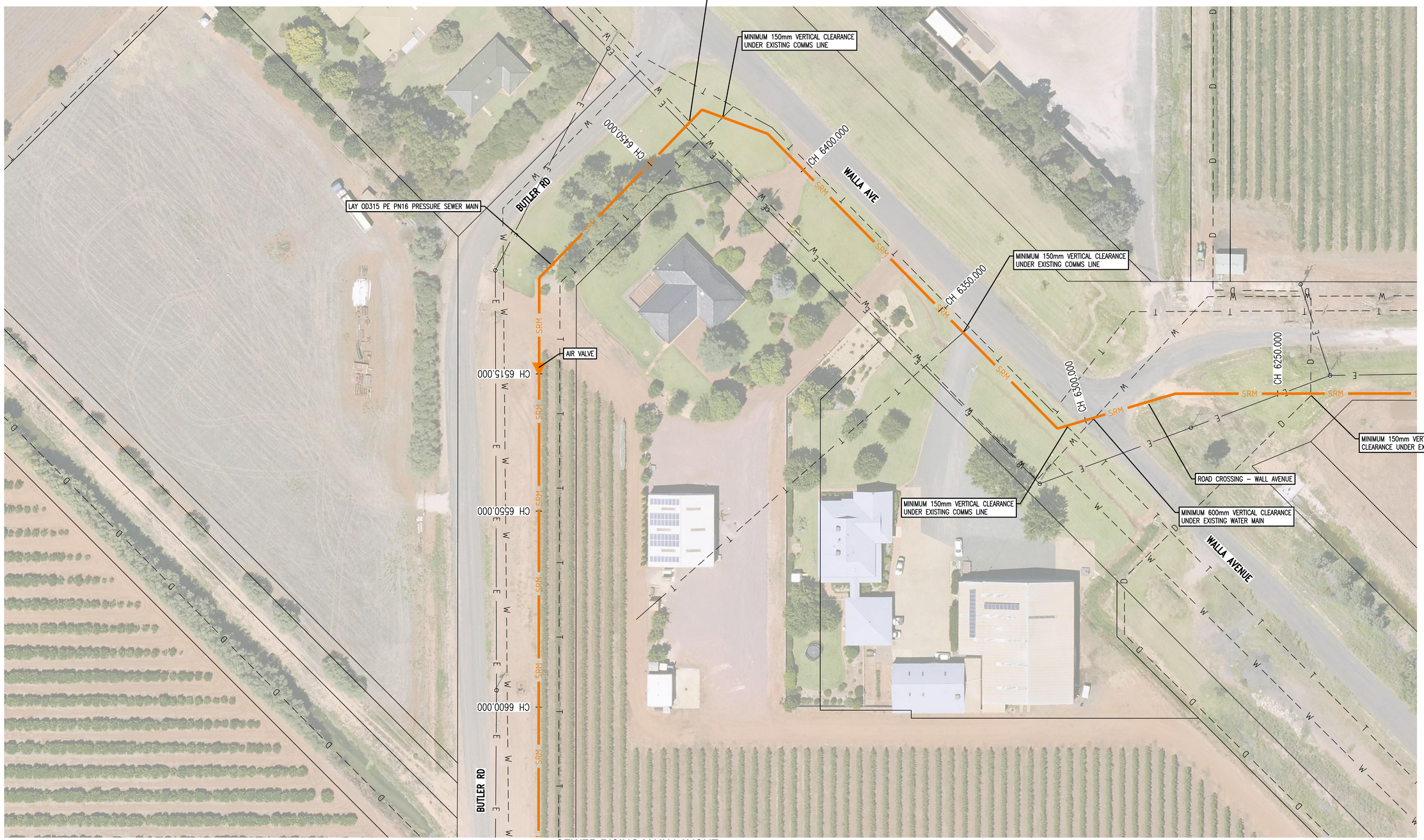
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A.H.D.	1:500	A1

Drawing Number: 304800722-WW-SRM-015

Revision: 1

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2023.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

DATE PLOTTED: 23 May 2024 8:08 AM BY : MCLEOD, NELSON



SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
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		Date
Drawn	LACHLAN MOORE	24/05/2024
Checked	NELSON MCLEOD	24/05/2024
Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 12 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

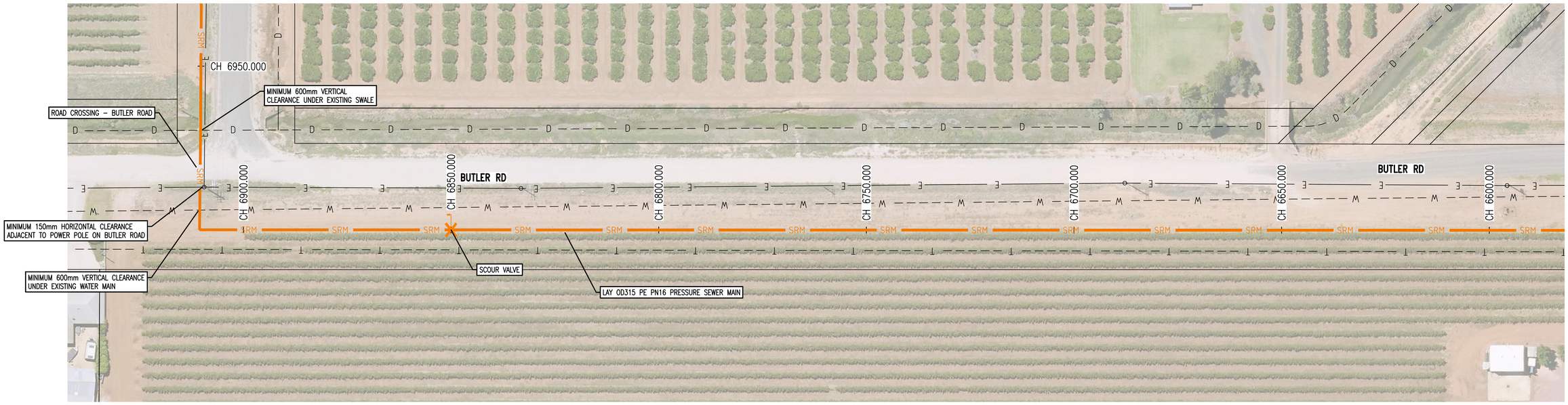
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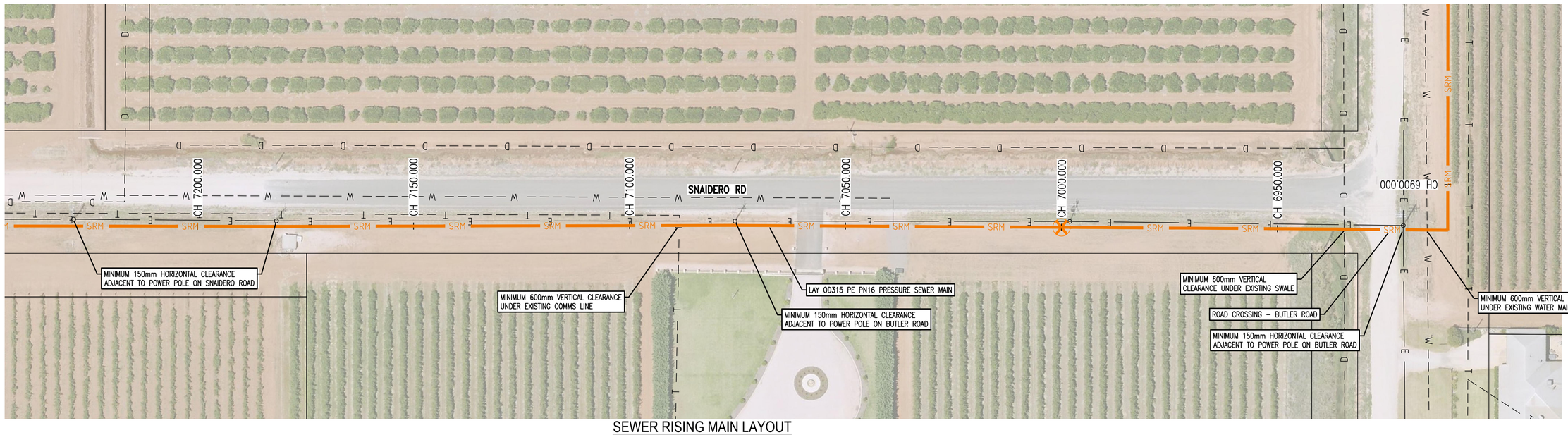
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Revision: 1

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DATE PLOTTED: 23 May 2024 8:08 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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Tel: 02 4231 9600 Fax: 02 4228 6811
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		Date
Drawn	LACHLAN MOORE	24/05/2024
Checked	NELSON MCLEOD	24/05/2024
Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 13 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

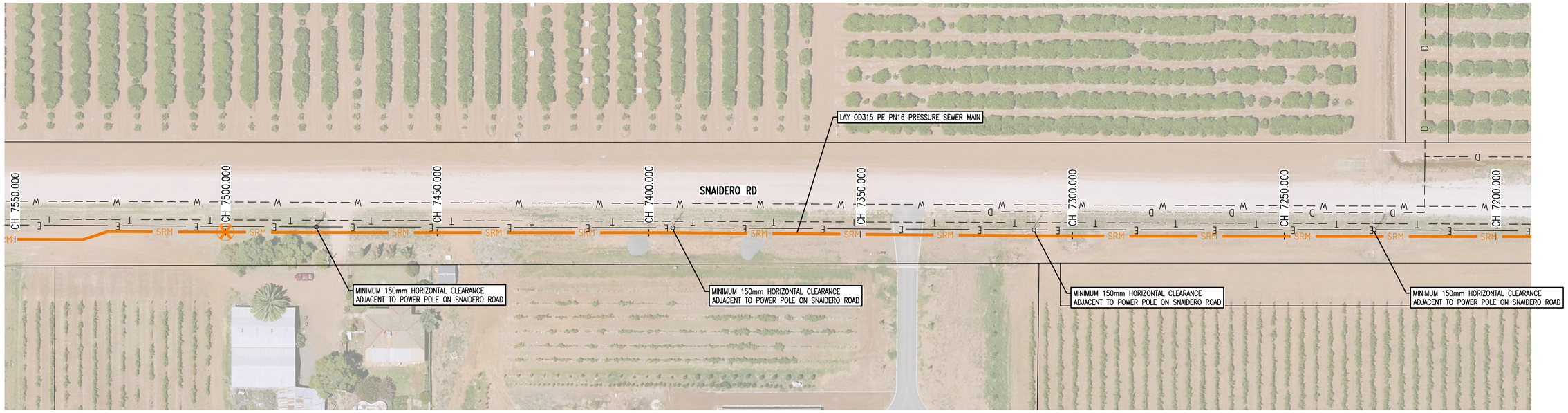
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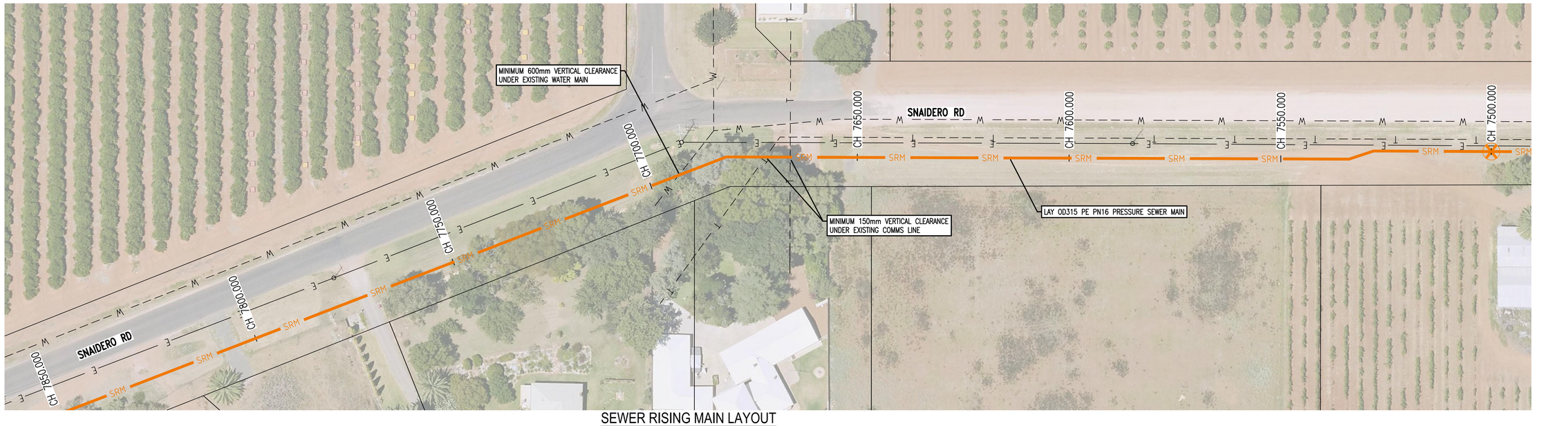
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Revision: 1

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DATE PLOTTED: 23 May 2024 8:08 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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Drawn	LACHLAN MOORE	Date 24/05/2024
Checked	NELSON MCLEOD	Date 24/05/2024
Designed	LACHLAN MOORE	Date 24/05/2024
Verified	NELSON MCLEOD	Date 24/05/2024
Approved	BOBBY FITZGERALD	Date 24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 14 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

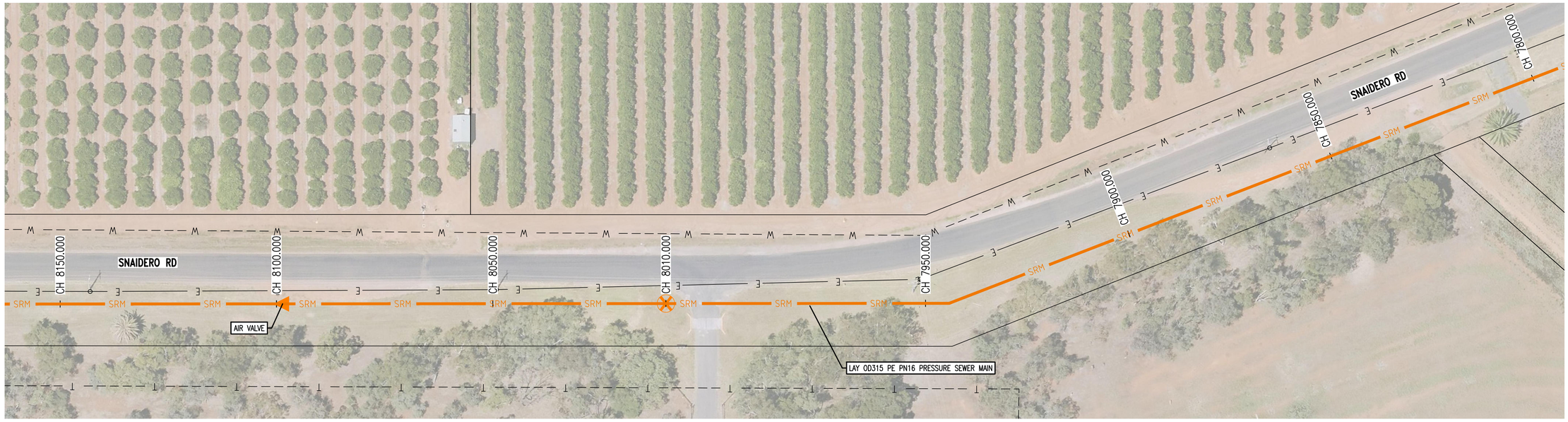
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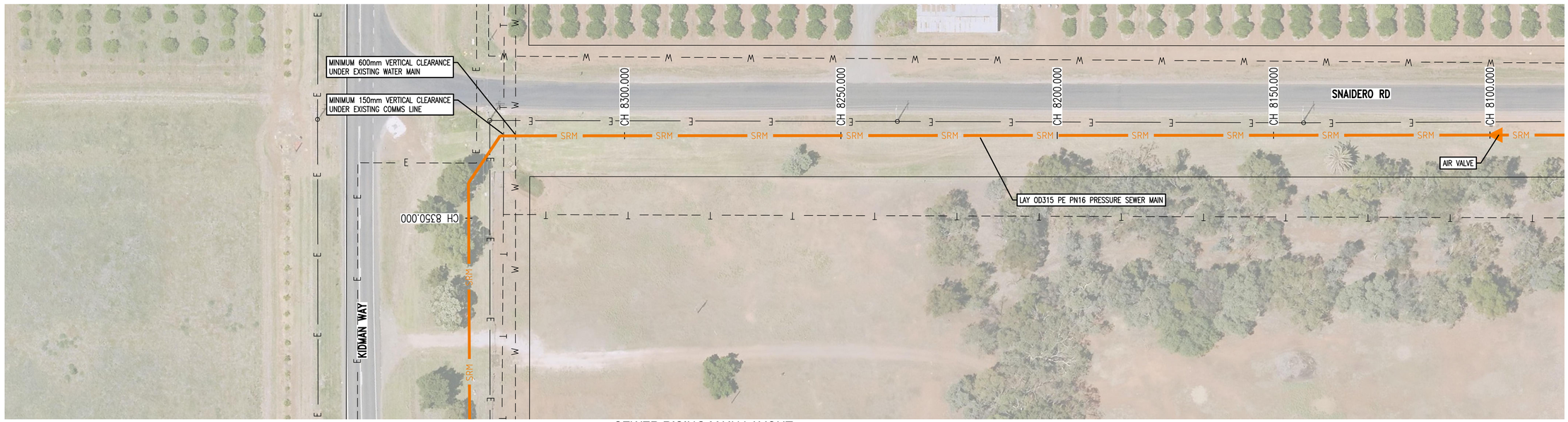
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Revision: 1

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DATE PLOTTED: 23 May 2024 8:09 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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		Date
Drawn	LACHLAN MOORE	24/05/2024
Checked	NELSON MCLEOD	24/05/2024
Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 15 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

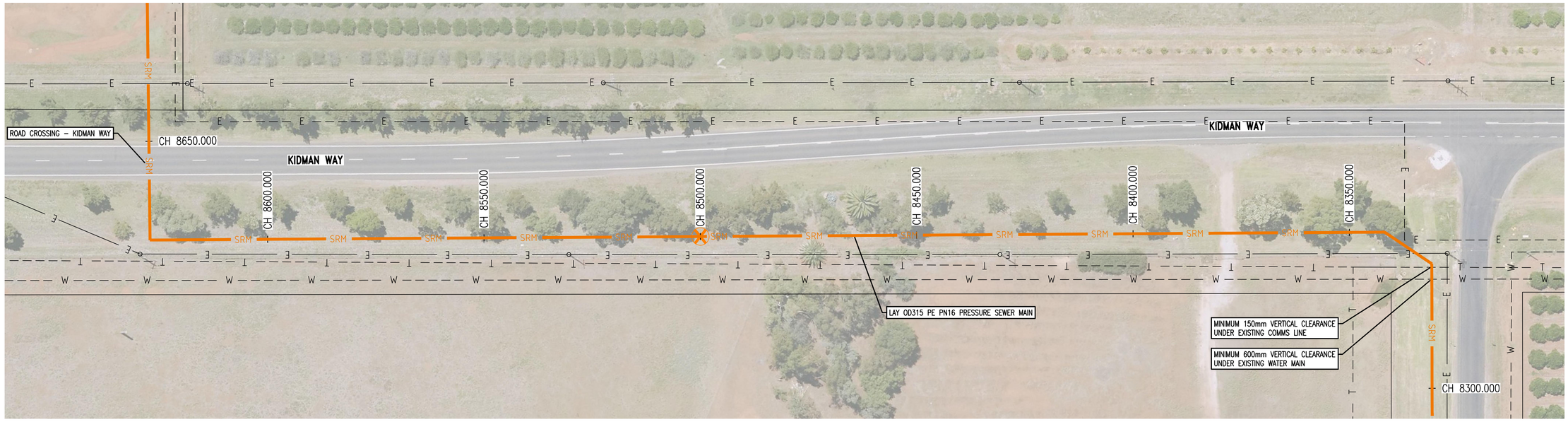
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Drawing Number: 304800722-WW-SRM-019

Revision: 1

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DATE PLOTTED: 23 May 2024 8:09 AM BY : MCLEOD, NELSON





SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
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		Date
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Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 16 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

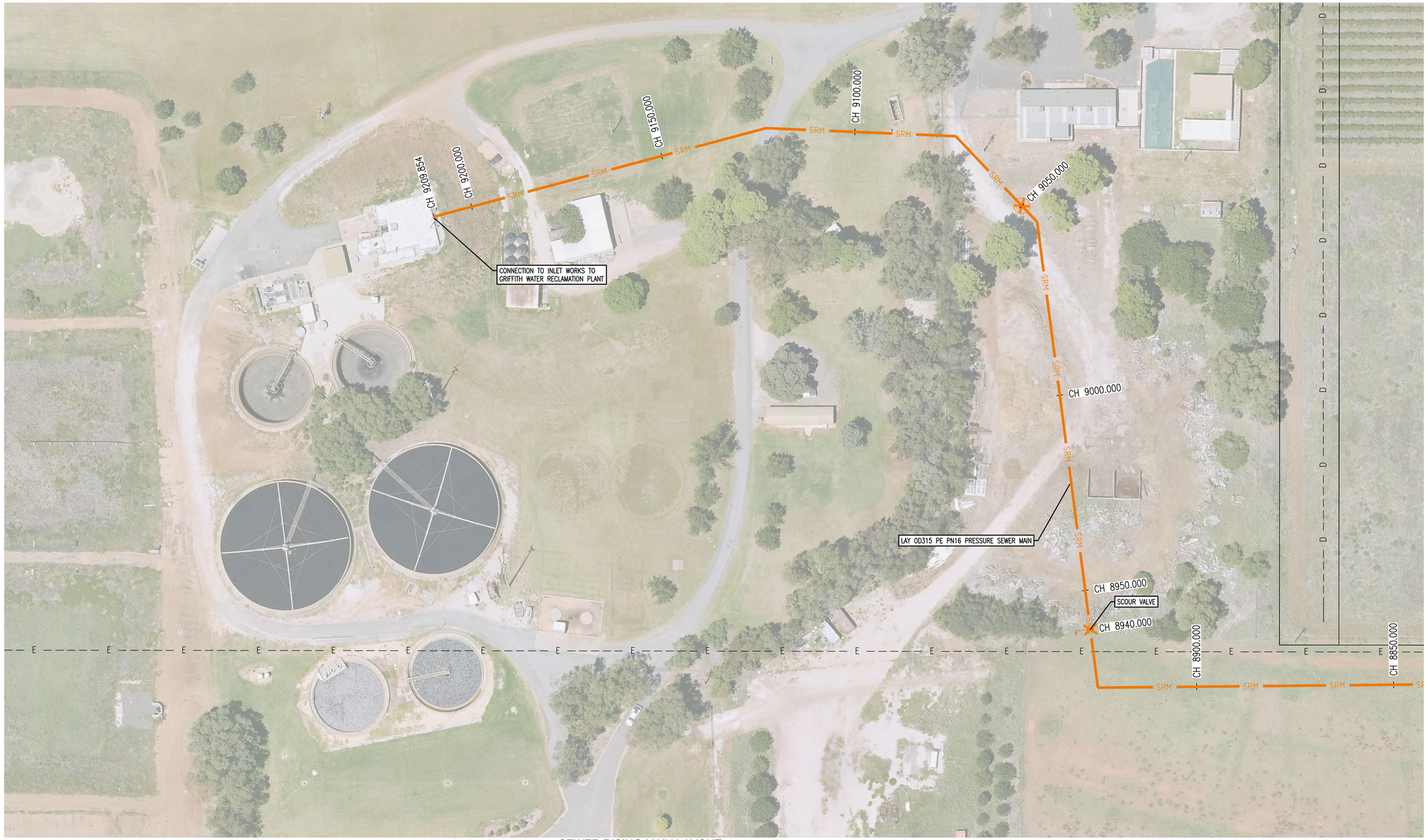
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Drawing Number: 304800722-WW-SRM-020

Revision: 1

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DATE PLOTTED: 23 May 2024 8:09 AM BY : MCLEOD, NELSON



SEWER RISING MAIN LAYOUT

SCALE 1:500

0 10 20 30 40 50m

SCALE 1:500 (A1), 1:1000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
1	24/05/2024	CONCEPT DESIGN	LBM	NSM	BF

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Checked	NELSON MCLEOD	24/05/2024
Designed	LACHLAN MOORE	24/05/2024
Verified	NELSON MCLEOD	24/05/2024
Approved	BOBBY FITZGERALD	24/05/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT DESIGN
HA1 ALTERNATE SEWER RISING MAIN

Title: SEWER RISING MAIN LAYOUT
SHEET 17 OF 17

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Scale	Size
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Drawing Number: 304800722-WW-SRM-021

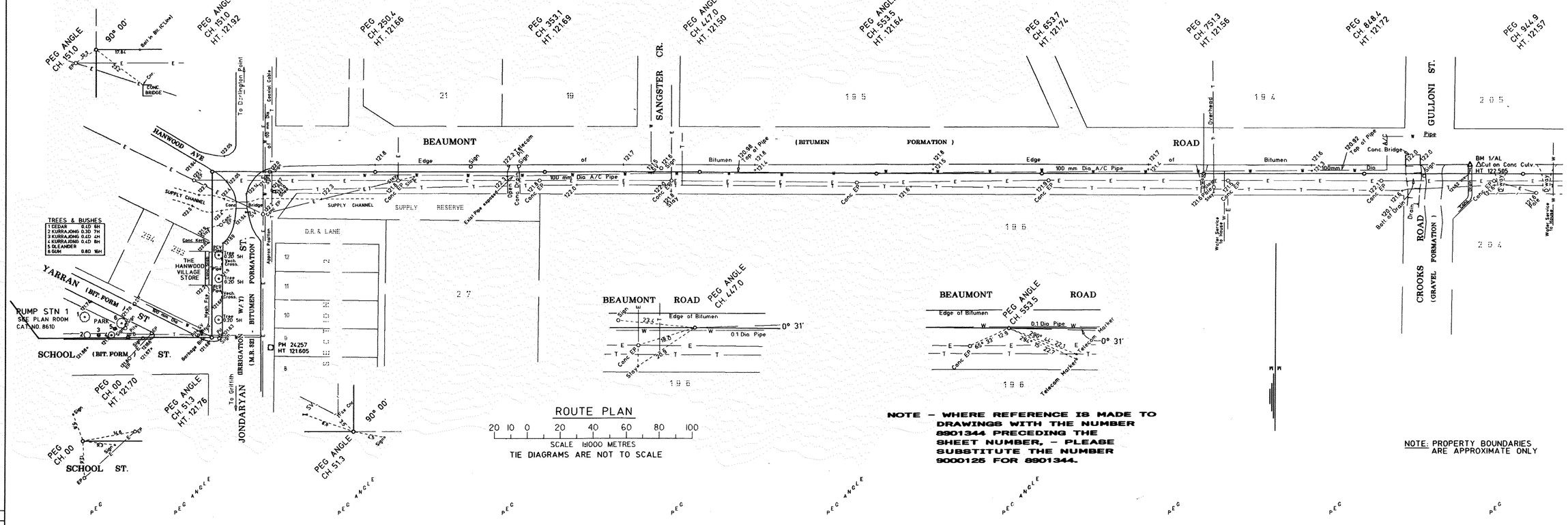
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CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\WSC\2022.08.03 - WW Masterplan Stage 1 and Stage 2\304800722-WW - SRM.dwg

Appendix B

Existing Rising Main WAE

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

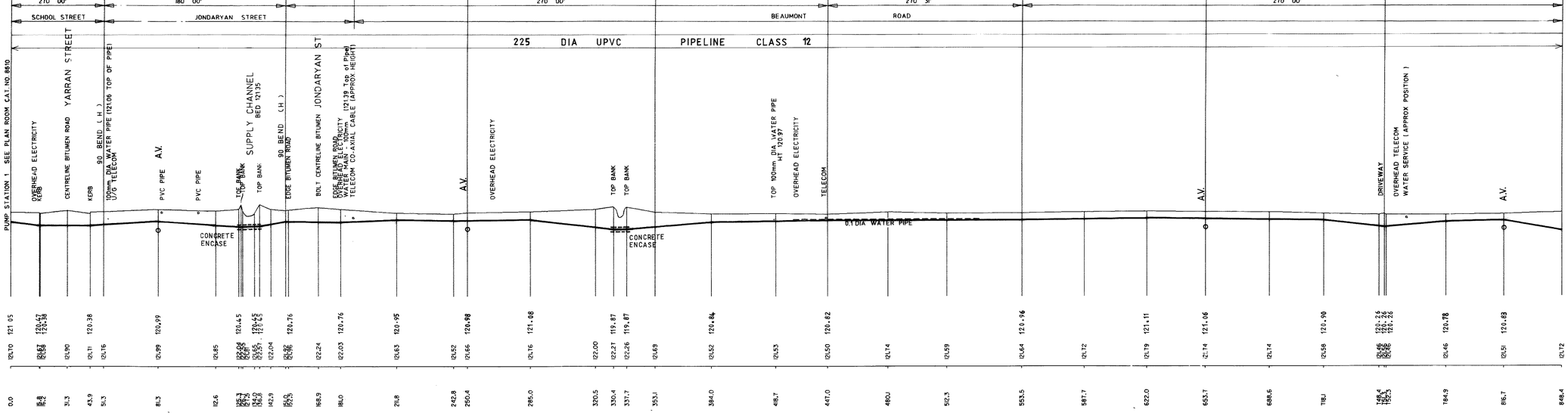


ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES
TIE DIAGRAMS ARE NOT TO SCALE

NOTE – WHERE REFERENCE IS MADE TO DRAWINGS WITH THE NUMBER 8901344 PRECEDING THE SHEET NUMBER, – PLEASE SUBSTITUTE THE NUMBER 9000125 FOR 8901344.

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



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SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM

ORIGIN OF LEVELS : PM 24257 FD. ON WEST SIDE OF M.R. 321 OPPOSITE SCHOOL STREET, HANWOOD.

SURVEY INSTRUCTION N°. : 70080.DC.03
AZIMUTH OF SURVEY : SECTION 2 HANWOOD
PLOTTED FROM : SF 3328
SURVEYED BY : A. LONGHURST
DATE OF SURVEY : MARCH, 1989

CAUTION
1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

WORK AS EXECUTED
I certify that this original sheet or Layout Guides Drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is now a true representation of the completed work as regards dimensions.
Signed 24/9/92

BA	DIA & CLASS CHANGED, HENCE SOME LEVELS BENDS SHOWN (CH. 51.3) (CH 151.0)		FEB 90 NOV 88
MK	DETAILS OF AMENDMENTS	APPROVED	DATE

PREPARED NAME G STEVENSON	SURVEYED A. LONGHURST	
TRACED NAME	K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME D. PICCOLO		

DESIGNED S. T. DOAN	G WATT SUPERVISING ENGINEER	
CHECKED 20/9/89	R.J. Smillie 20.9.89 REGIONAL ENGINEER COOTAMUNDRA	

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 00 TO CH. 848.4

FILE 10.006.377

DRAWING NO. 9000125 –10[B]

9000125-10[B]

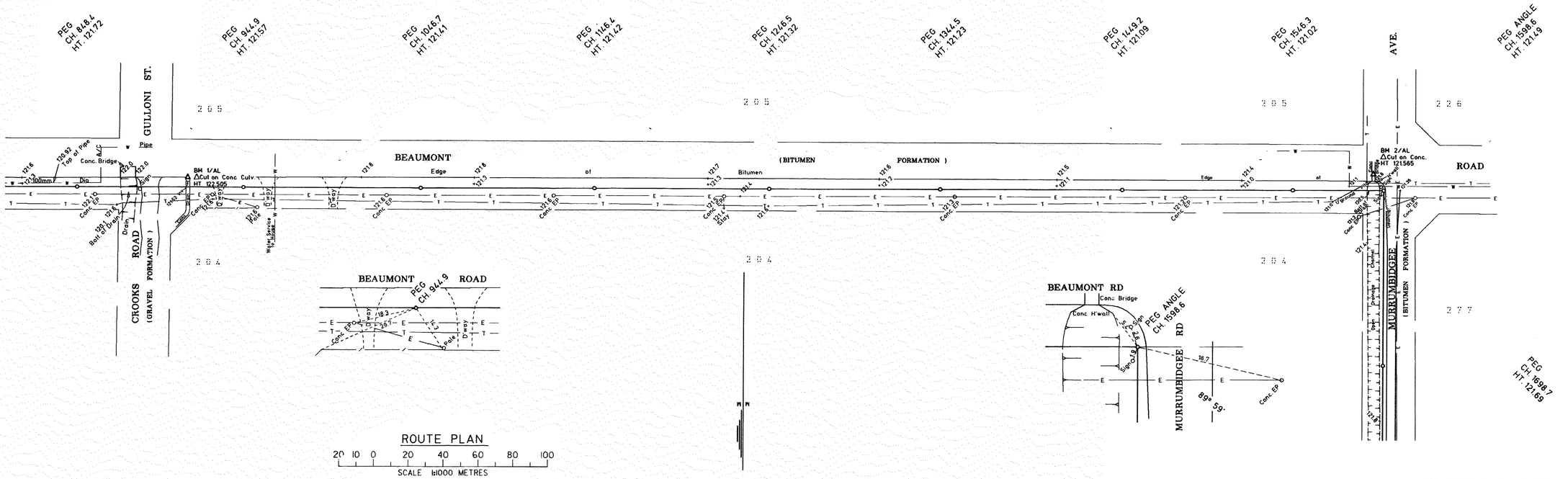
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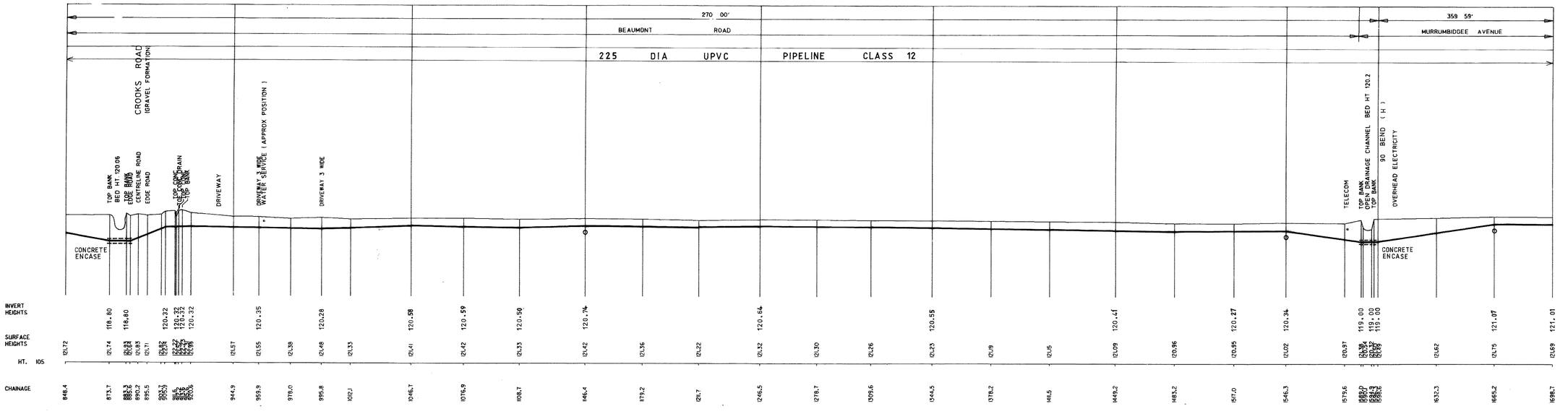
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9000125-11B

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



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SCALE 1:1000 METRES HORIZONTAL
4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
"The original plan or Local Office Drawing has been carefully compared with the work as carried out and has been amended where necessary to make it a true representation of the actual work as regards dimensions, levels, layout and materials."
9-9-92

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000 HOR 1:200 VER FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 90
A	BENDS SHOWN. (CH. 1598.6)		NOV 89

PREPARED NAME	G. STEVENSON	SURVEYOR	A/LONGHURST
TRACED NAME		K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. DOAN
CHECKED	G. WATT SUPERVISING ENGINEER
	K.J. Smith 20.9.89 REGIONAL ENGINEER GOOMALLING

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)

LONGITUDINAL SECTION AND ROUTE PLAN

CH. 848.4 TO CH. 1698.7

FILE 10.006.377

DRAWING NO. 9000125-11B

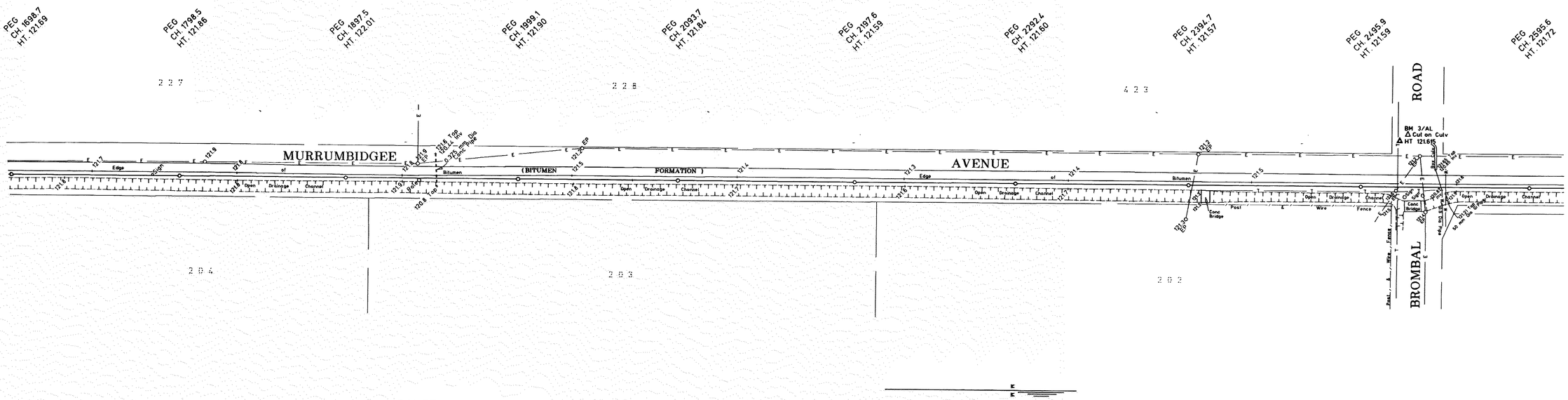
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10-AUG-1989 17:29
STEVENSON
1979
B1
890412.02

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

9000125-12A

B. 15812



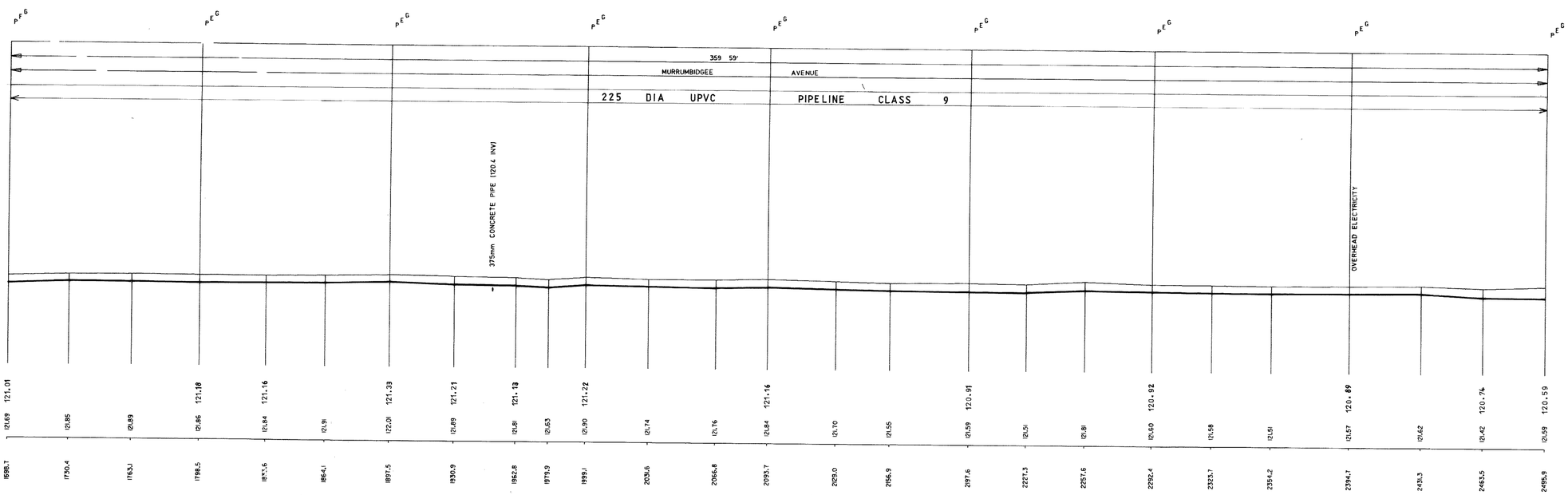
ROUTE PLAN

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SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100

SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20

SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED

"The original plan or Local Office Drawing has been carefully compared with the 'as built' work and records supplied to me and I hereby now a true representation of the actual work as regards dimensions, levels, layout and materials."

Signature 28/4/92

AUSTRALIAN HEIGHT DATUM

SEE DRG FOR DETAILS

CAUTION

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MK	DETAILS OF AMENDMENTS	APPROVED	DATE
A	DIA & CLASS CHANGED, HINGES SOME LEVELS		Feb 90

PREPARED			
NAME	G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME		K.J. Quarmby	29.9.89
		PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. DOAN	G. WATT	SUPERVISING ENGINEER
CHECKED	26/9/89	K.J. Smillie	20.9.89
		REGIONAL ENGINEER GOYAMUNDRA	

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)

LONGITUDINAL SECTION AND ROUTE PLAN

CH. 1698.7 TO CH. 2495.9

FILE 10.006.377

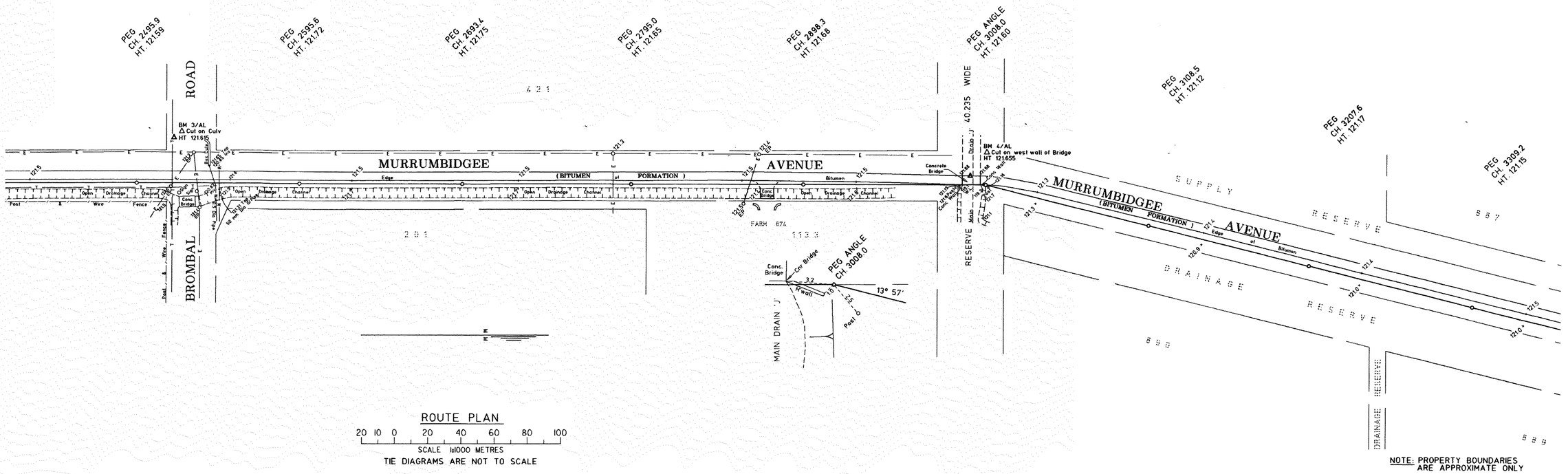
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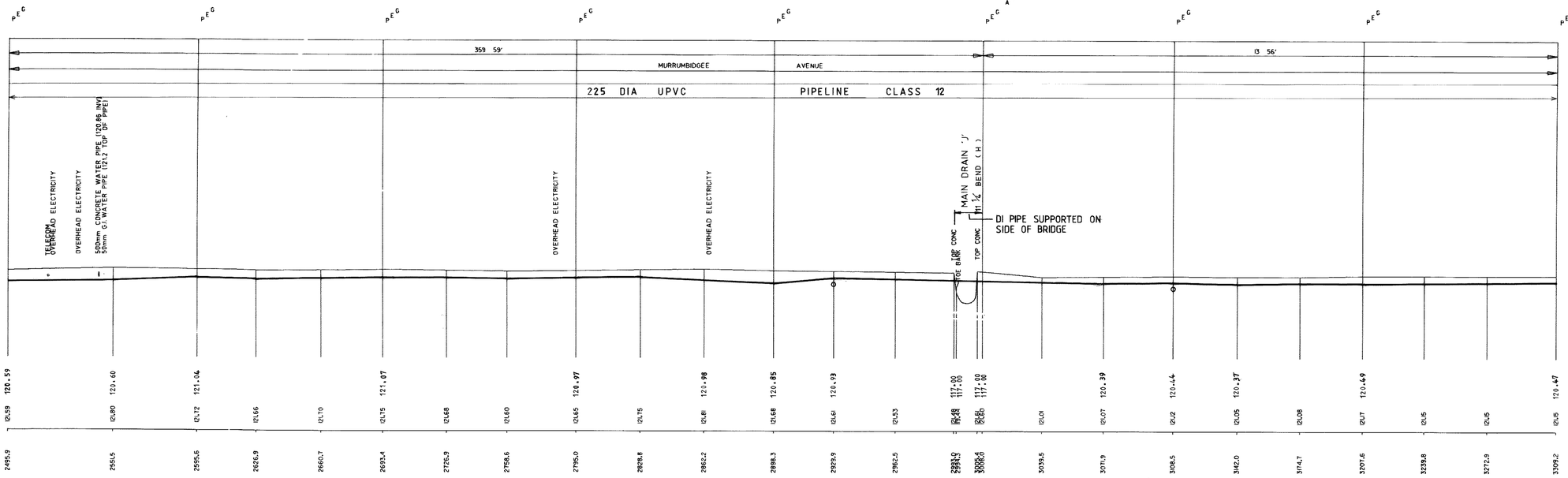
SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



ROUTE PLAN

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SCALE 1:1000 METRES
TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL
4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

WORK AS EXECUTED
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4/12/92

CAUTION
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MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 92
A	BENDS SHOWN (CH. 3008.0)		NOV 91

PREPARED NAME G. STEVENSON
SURVEYOR A. WONDHURST
TRACED NAME
EXAMINER NAME D. PICCOLO
K.J. Quarmby 29.8.89
PRINCIPAL SURVEYOR & PROPERTY OFFICER

DESIGNED G.T. DOAN.
CHECKED 20/9/89
G. WATT. SUPERVISING ENGINEER
K.J. Smillie 20.9.89
REGIONAL ENGINEER GOOTAMUNDRA

PUBLIC WORKS
R.D. Christie Director of Public Works
M.N. Clarke Chief Engineer

GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 2495.9 TO CH. 3309.2

FILE 10.006.377
DRAWING NO. 9000125 -13B

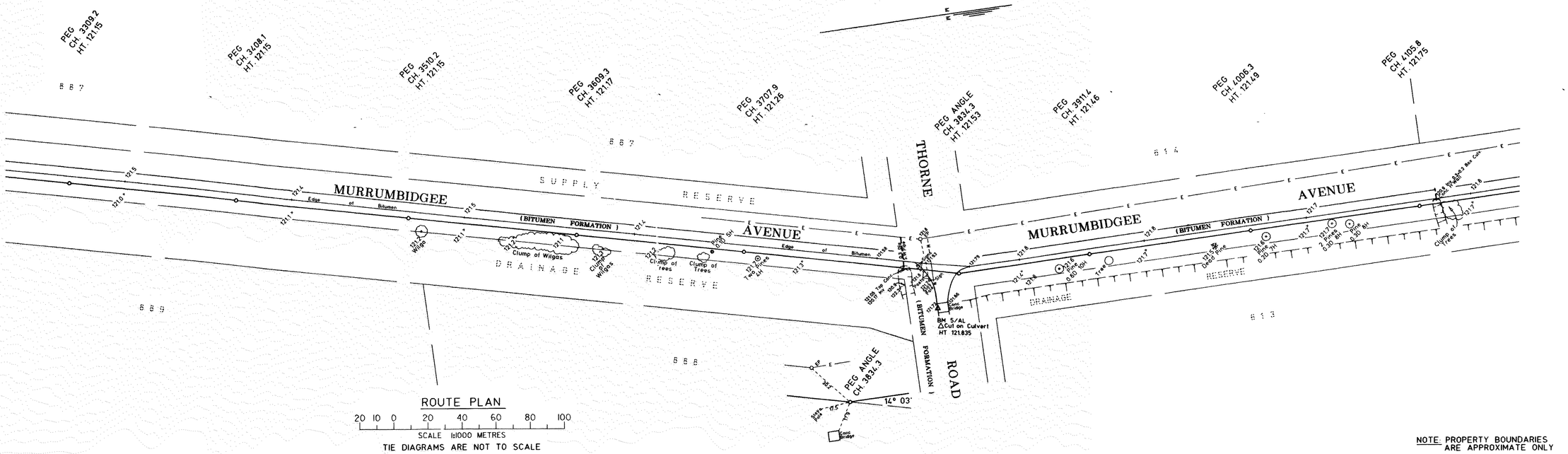
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960
890412.04
B1

9000125-14B

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

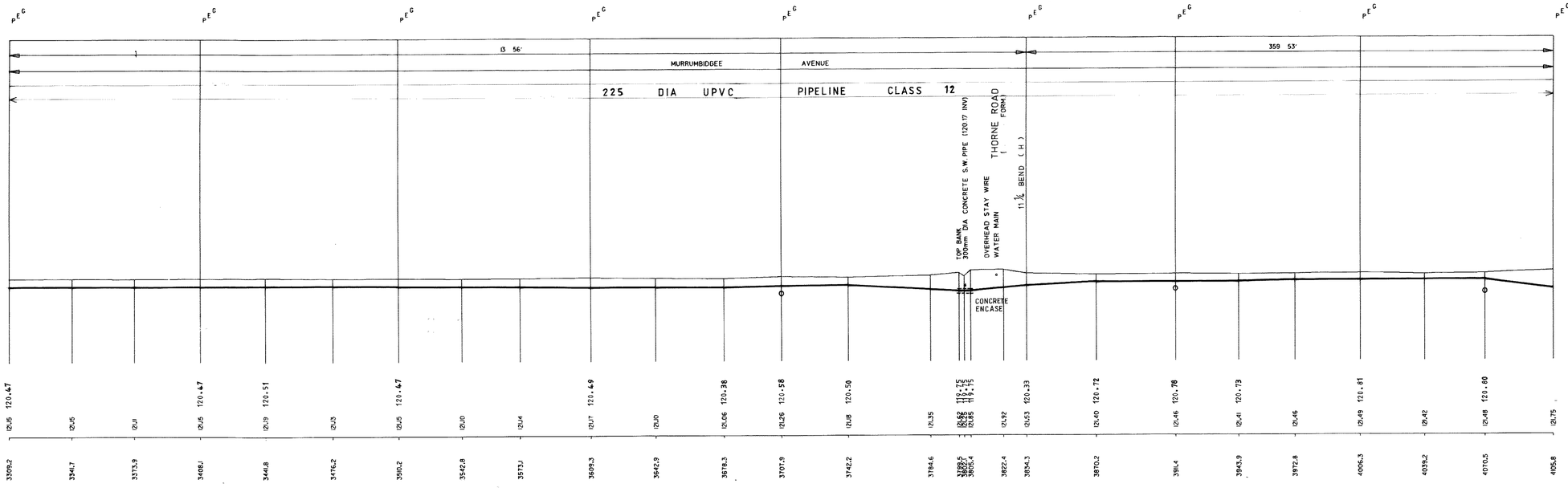


ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
"The original plan or local office drawing has been carefully corrected with all work as carried out and recorded and where necessary, on this it is drawn. It may represent, in whole or in part, the engineer's records dimensions..."
20/9/89

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

CAUTION 1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER
FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN
AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES.
THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION
MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS.		FEB 90
A	BENDS SHOWN (CH. 3834.3)		NOV. 89

PREPARED NAME	G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME		K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. PEAN.	G. WATT	SUPERVISING ENGINEER
CHECKED	20/9/89	K.J. Sullie 20.9.89	REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM
HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 3809.2 TO CH. 4105.8

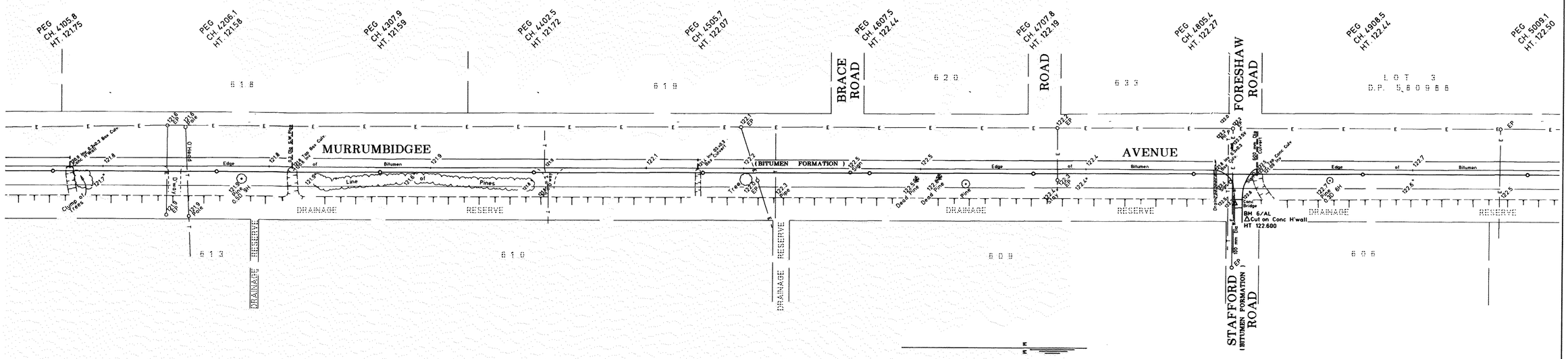
FILE 10.006.377

DRAWING NO. 9000125 –14B

B. 15812

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B1
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SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

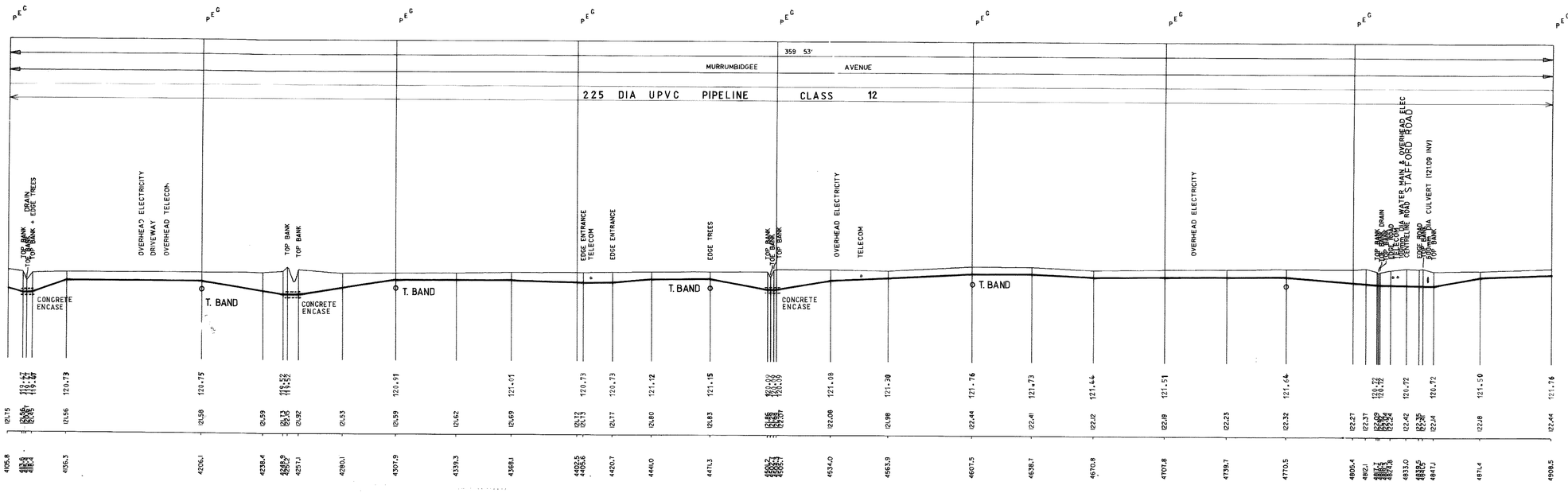


ROUTE PLAN

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SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
...the original plans or Local Office Drawing for these ...carefully compared with the work as carried out and ...are accurate and where necessary, so that it is now a ...of the actual work as regards dimensions, levels, type and ...material.
Graeme 28/4/92

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

CAUTION
1:1000 HDR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER
FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN
AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES.
THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION
MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
A	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 90

PREPARED NAME G. STEVENSON	SURVEYOR	A. LONGHURST	
TRACED NAME	K.J. Quarmby 28.8.89	PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME D. PICCOLO			

DESIGNED S.T. DOAN		L. WATT	SUPERVISING ENGINEER
CHECKED	20/9/89	K.J. Smillie 20.9.89	REGIONAL ENGINEER COOTAMUNDRA

PUBLIC WORKS
R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

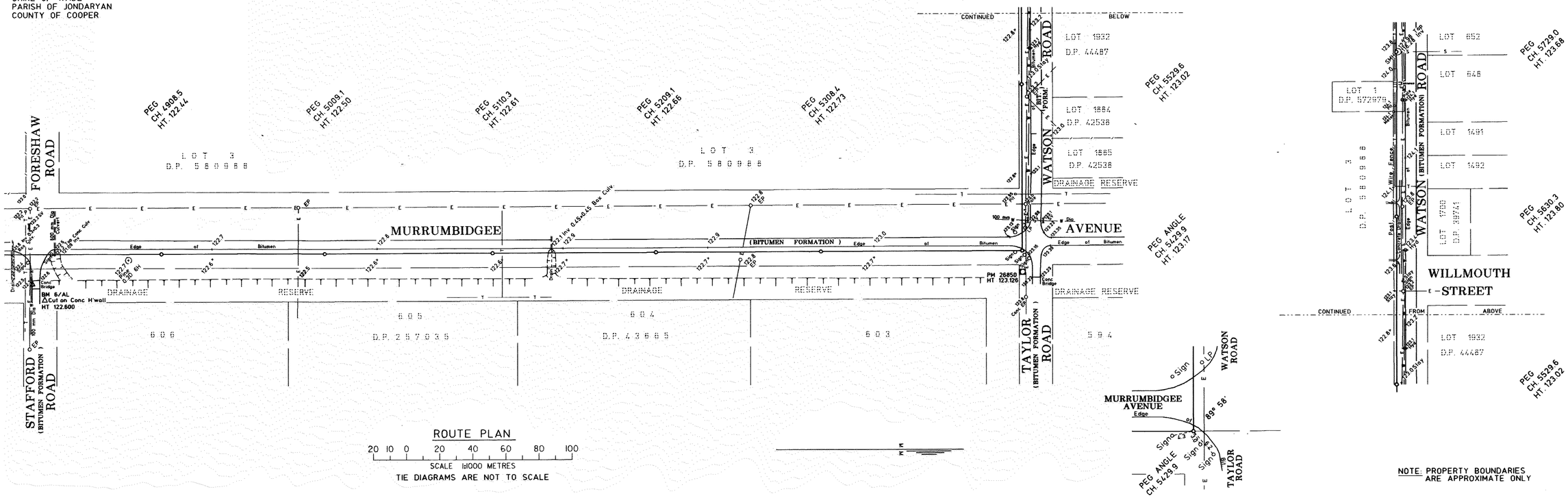
GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 4106.8 TO CH. 4908.5

FILE 10.006.377
DRAWING NO. 9000125 —15A

9000125-15A
B. 15812
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B1

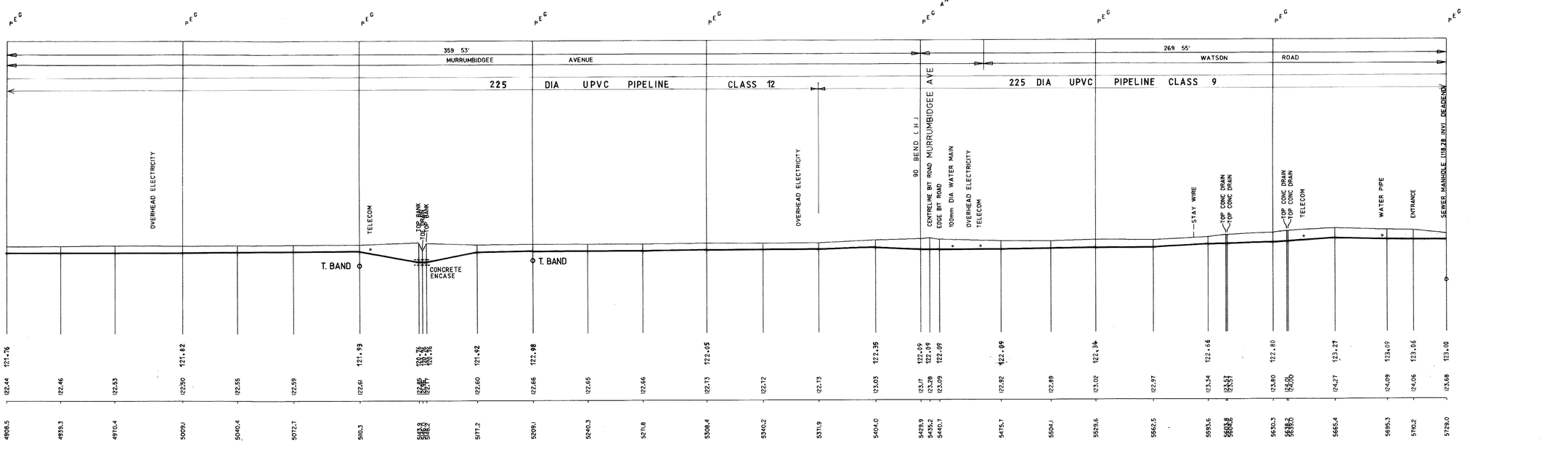
SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



ROUTE PLAN

20 10 0 20 40 60 80 100
SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

WORK AS EXECUTED
I/We hereby certify that the original plan of this drawing has been carefully compared with the work as carried out and is true & correct amended where necessary so that it is now a true representation of the actual work as regards dimensions, levels, layout and materials.
28/8/92

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B A	DIA & LEVELS CHANGED, HENCE SOME LEVELS BENDS SHOWN (CH. 5429.9)		FEB 90 NOV 91

PREPARED NAME	G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME		K.J. Quarmby PRINCIPAL SURVEYOR & PROPERTY OFFICER	28.8.89
EXAMINER NAME	D. PICCOLO		

DESIGNED	S.T. DOAN.	L. WATT	SUPERVISING ENGINEER
CHECKED	20/9/89	K.J. Smillie REGIONAL ENGINEER GOOTAMUNDRA	20.9.89

PUBLIC WORKS
R.D.Christie Director of Public Works
M.N.Clarke Chief Engineer

GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 4908.5 TO CH. 5729.0

FILE 10.006.377
DRAWING NO. 9000125 – 16B

CAUTION
1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VET FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MICROFILMED

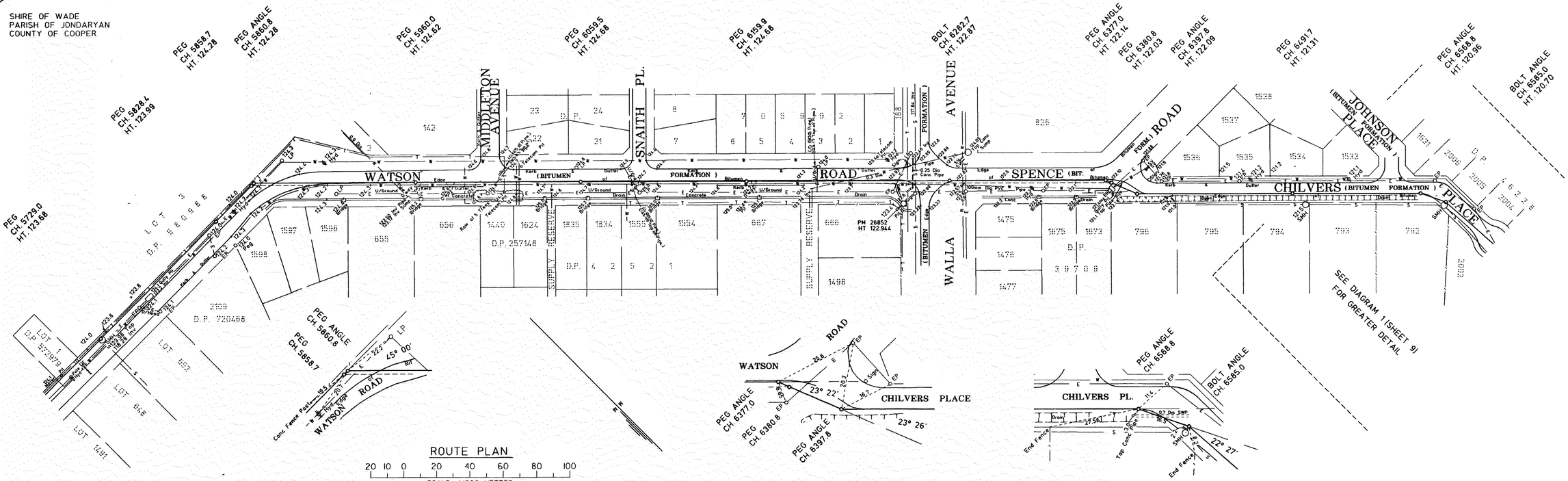
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B. 15812

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9000125-17B

SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER

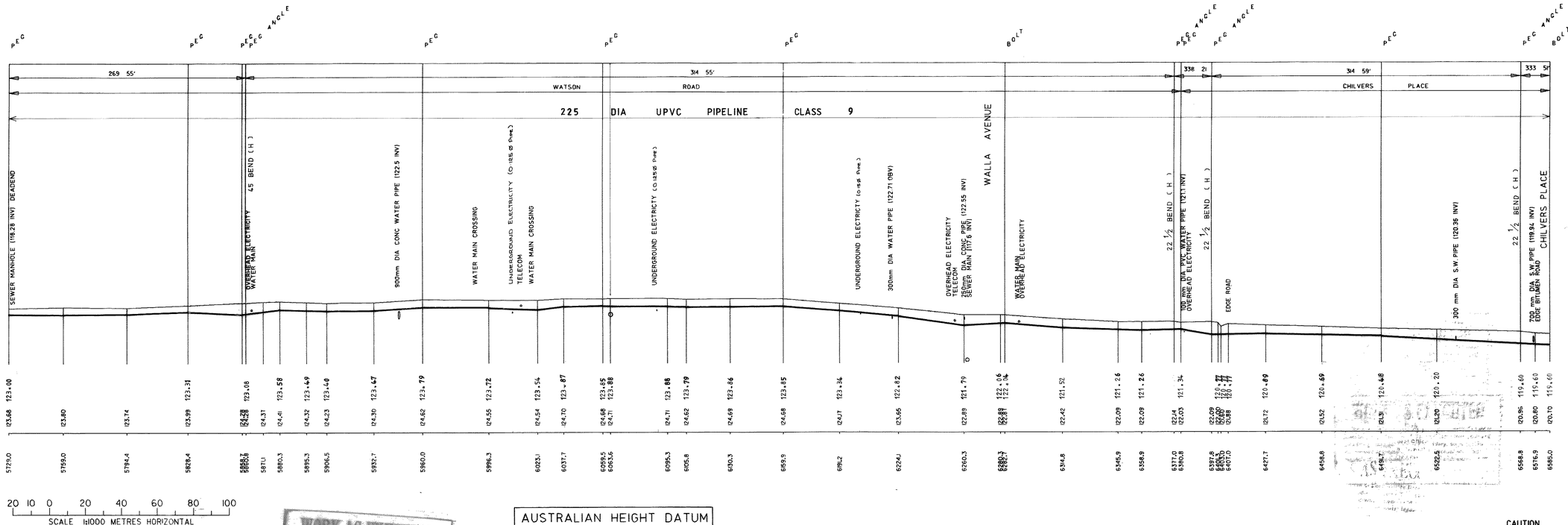


ROUTE PLAN

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SCALE 1:1000 METRES

TIE DIAGRAMS ARE NOT TO SCALE

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL

4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

WORK AS EXECUTED
"The original plan or Land Office Drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is a true representation of the finished work as regards dimensions, levels, layout and materials."
28/4/92

CAUTION
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:1000 HOR FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK.	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 90
A	BENDS SHOWN (CH. 5858.8)(CH. 6377.0)(CH. 6397.8)(CH. 6458.8)		NOV 88

PREPARED NAME G. STEVENSON	SURVEYOR	A.J. LONGHURST	
TRACED NAME	K.J. Quarmby	29.8.89	PRINCIPAL SURVEYOR & PROPERTY OFFICER
EXAMINER NAME D. PICCOLO			

DESIGNED	S.T. DOAN.	S. WATT	SUPERVISING ENGINEER
CHECKED	20/9/89	K.J. Smallie 20.9.89	REGIONAL ENGINEER GOOTAMUNDRA

PUBLIC WORKS

R.D.Christie
Director of Public Works
M.N.Clarke
Chief Engineer

GRIFFITH VILLAGES SEWERAGE

RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)

LONGITUDINAL SECTION AND ROUTE PLAN

CH. 5729.0 TO CH. 6585.0

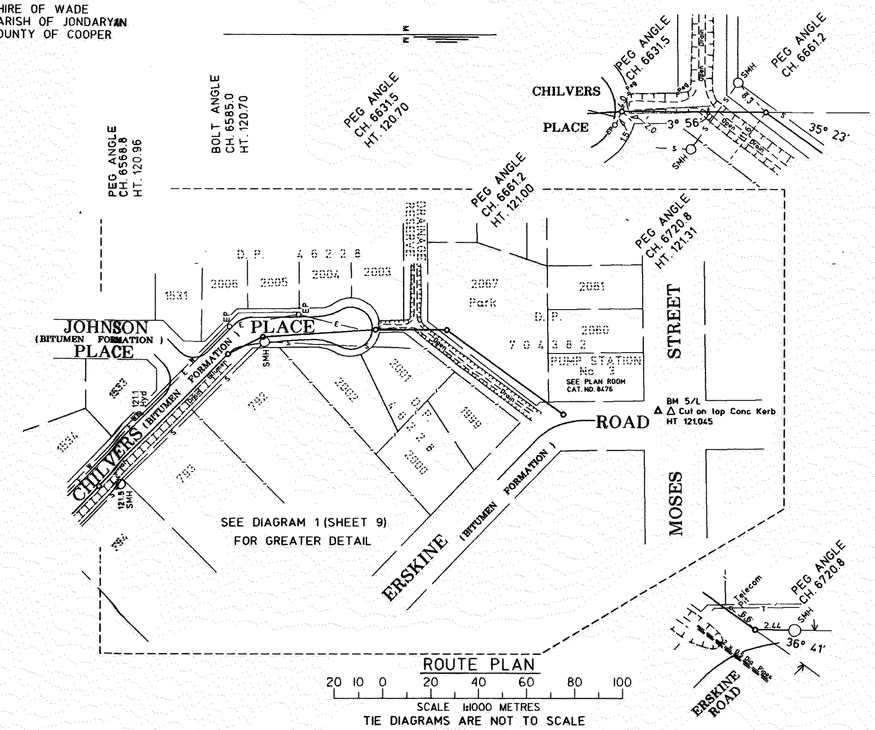
FILE 10.006.377

DRAWING NO. 9000125 — 17B

B. 15812

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SHIRE OF WADE
PARISH OF JONDARYAN
COUNTY OF COOPER



ROUTE PLAN
20 10 0 20 40 60 80 100
SCALE 1:1000 METRES
TIE DIAGRAMS ARE NOT TO SCALE

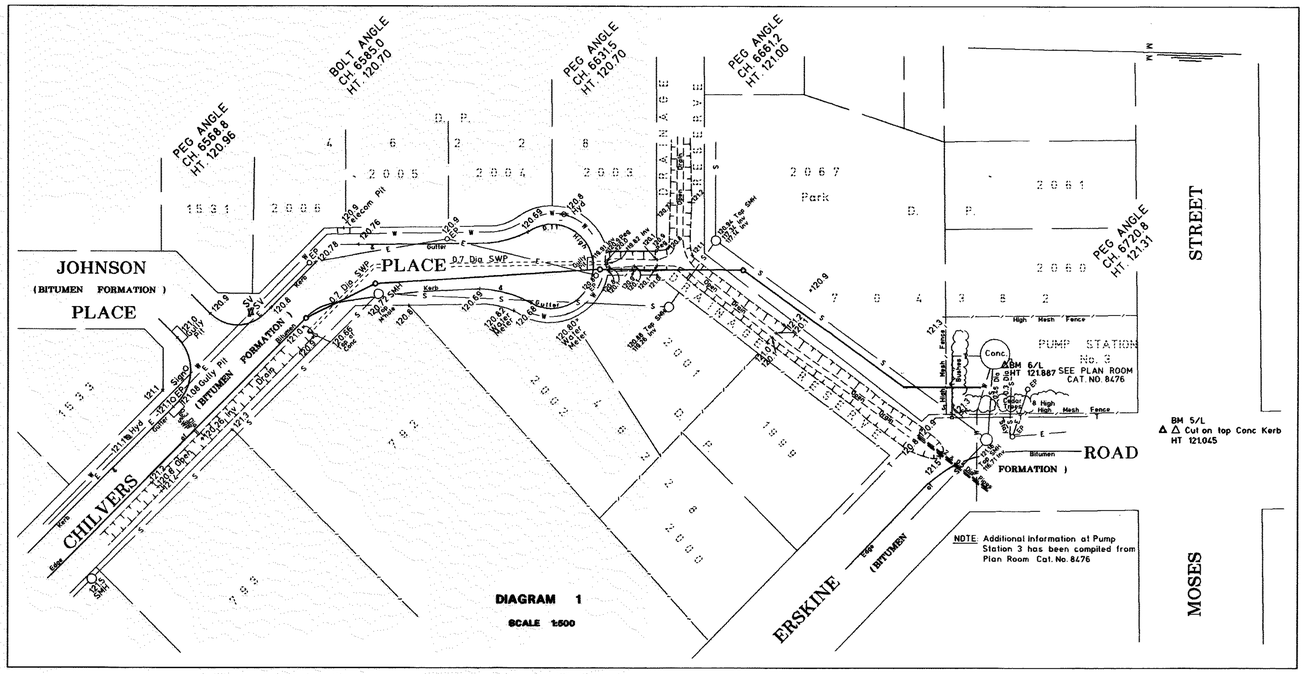
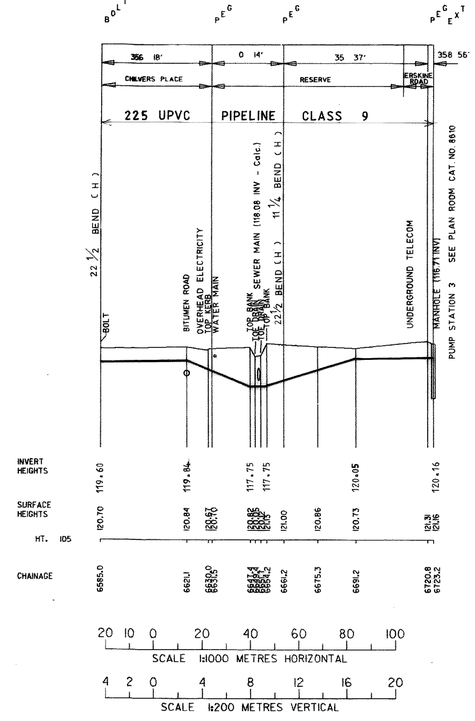


DIAGRAM 1
SCALE 1:500

NOTE: PROPERTY BOUNDARIES ARE APPROXIMATE ONLY



20 10 0 20 40 60 80 100
SCALE 1:1000 METRES HORIZONTAL
4 2 0 4 8 12 16 20
SCALE 1:200 METRES VERTICAL

AUSTRALIAN HEIGHT DATUM
SEE DRG FOR DETAILS

WORK AS EXECUTED
"The original plan or Local Office Drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is now a true representation of the actual work as regards dimensions, levels, layout and materials."
24/8/92

CAUTION 1:1000 HOR
THIS PLAN HAS BEEN PREPARED AT A SCALE OF 1:200 VER FOR THE PURPOSE OF SEWERAGE PIPELINE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL.

MK	DETAILS OF AMENDMENTS	APPROVED	DATE
B	DIA & CLASS CHANGED, HENCE SOME LEVELS		FEB 89
A	BENDS SHOWN (CH6585.0 CH6661.2)		NOV 88

PREPARED		
NAME G. STEVENSON	SURVEYOR	A. LONGHURST
TRACED NAME	K.J. Quarmby 29.8.89 PRINCIPAL SURVEYOR & PROPERTY OFFICER	
EXAMINER NAME D. PICCOLO		

DESIGNED	G.T. DEAN.	S. WATT SUPERVISING ENGINEER
CHECKED	[signature] 20/9/89	K.J. Smithie 20.9.89 REGIONAL ENGINEER BUNBURY

PUBLIC WORKS
R.D. Christie, Director of Public Works
M.N. Clarke, Chief Engineer

GRIFFITH VILLAGES SEWERAGE
RISING MAIN FROM HANWOOD (P.S. 1) TO GRIFFITH (P.S. 3)
LONGITUDINAL SECTION AND ROUTE PLAN
CH. 6585.0 TO CH. 6723.2

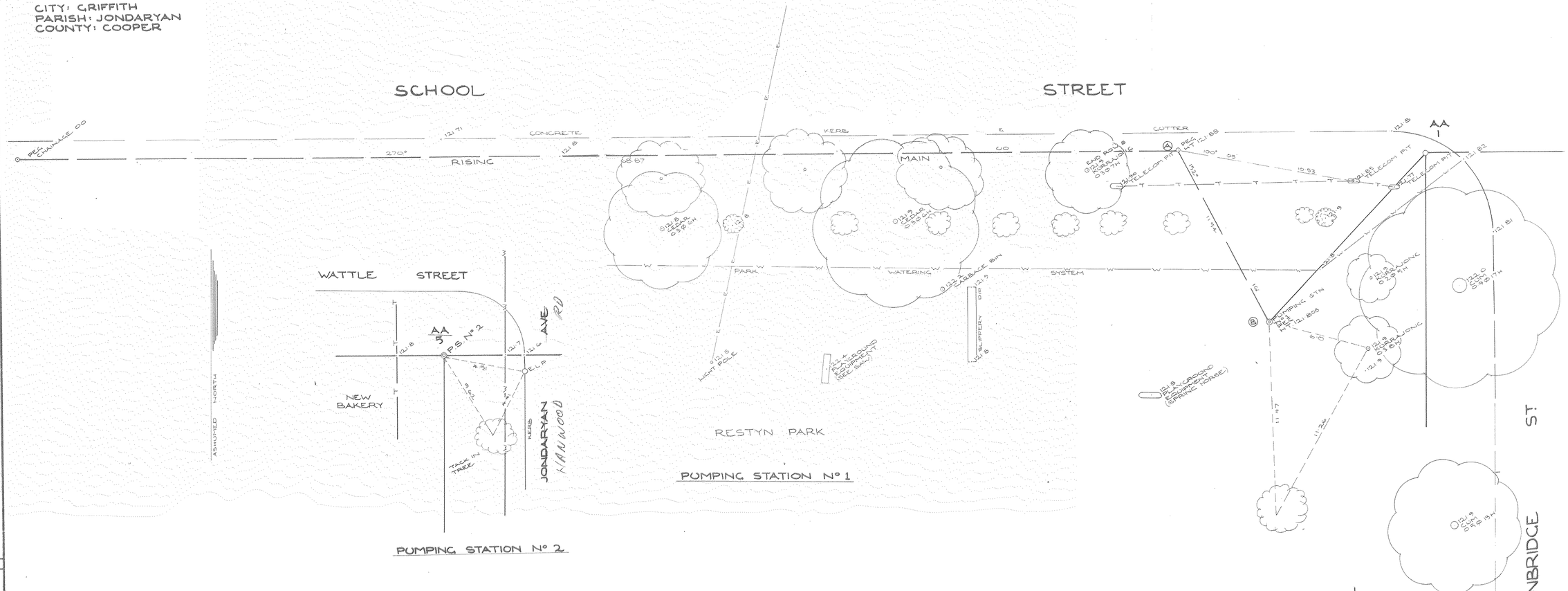
FILE 10.006.377
DRAWING NO. 9000125 - 18B

9000125-18B
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B. 15812
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B1

PLAN ROOM CAT.No. 8610

9000125-19

CITY: GRIFFITH
PARISH: JONDARYAN
COUNTY: COOPER



WORK AS EXECUTED
"The original plan or Local Office drawing has been carefully compared with the work as carried out and has been amended where necessary, so that it is now a true representation of the actual work as regards dimensions, levels, layout and materials."
24/9/92

MICROFILMED

CAUTION
THIS PLAN WAS PREPARED AT A SCALE OF 1:100 FOR THE PURPOSE OF SEWERAGE DESIGN AND MAY NOT BE SATISFACTORY FOR OTHER PURPOSES. THE ACCURACY OF ANY ENLARGEMENT OR OTHER REPRODUCTION MAY BE LESS THAN THAT OF THE ORIGINAL

MK	DETAILS OF AMENDMENTS	APPROVED	DATE

DRAWN C. Triantafillis	FAULKS POLKINGHORNE AND BODD
NAME	SURVEYOR
TRACED NAME C. TRIANTAFILLIS	PRINCIPAL SURVEYOR & PROPERTY OFFICER 26/9/89
EXAMINER NAME J. MULLINS	PROJECT MANAGER

DESIGNED	
DRAWN	R.J. Smillie 20.9.89 REGIONAL ENGINEER COOTAMUNDRA
CHECKED 26/9/89	

PUBLIC WORKS
R.D. Christie
Director of Public Works
M.N. Clarke
Chief Engineer

GRIFFITH VILLAGES SCE HANWOOD
PUMPING STATIONS 1, 2, 3, 4 AND 5 DETAIL AND CONTOUR PLAN

FILE 10·006·377
DRAWING
9000125—19

B 1513

B 1513

679
0 100 200 300
0 960
B1

Appendix F
Civil Design Drawings

Appendix F Civil Design Drawings

DATE PLOTTED: 19 March 2025 2:02 PM BY: KLEINHANS, ERNEST

Stantec

STANTEC AUSTRALIA Pty Ltd | ABN 95 001 145 035
Ground Floor, 16 Burelli Street
Wollongong NSW 2500
TEL: 02 4228 6811 Fax: 02 4228 6811
WEB: www.stantec.com

GRIFFITH CITY COUNCIL

HANWOOD GROWTH AREA CONCEPT MASTER PLAN

COVER SHEET

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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Drawn	EJK	Date 26/06/2023
Checked	MPR	Date 20/03/2024
Designed	LAB	Date 9/02/2024
Verified	CSH	Date 25/03/2024
Approved	MV	Date 25/03/2024

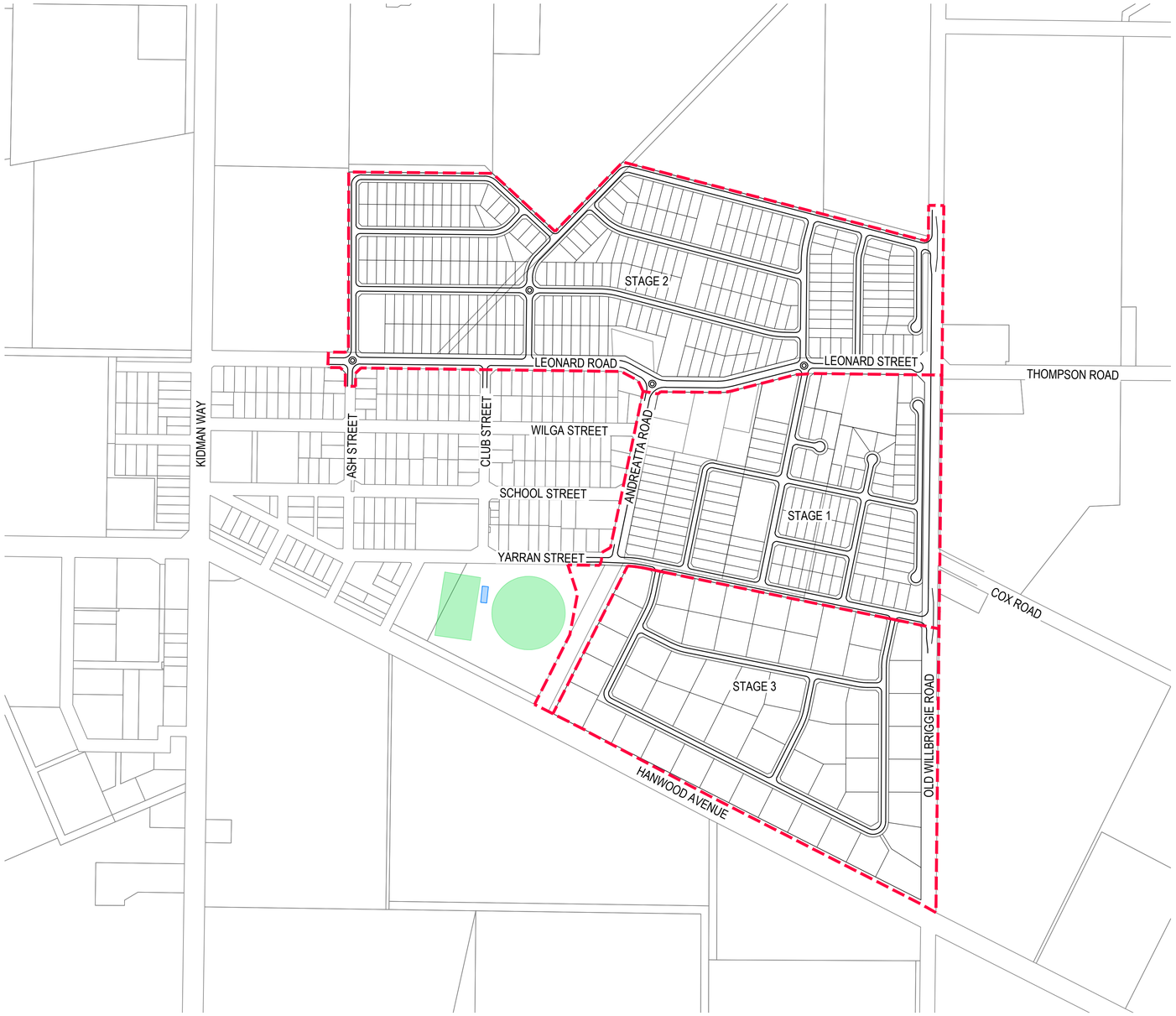
Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM	GDA	Scale	Size
AHD	2020	N.T.S	A1

Drawing Number: 304800722 C1000
Revision: 5

XREF's:
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1000.dwg

DATE PLOTTED: 19 March 2025 2:02 PM BY: KLEINHANS, ERNEST



LOCALITY PLAN
SCALE 1:5000

SCHEDULE OF DRAWINGS

DRAWING No.	DESCRIPTION
304800722 C1000	COVER SHEET
304800722 C1001	LOCALITY PLAN AND DRAWING SCHEDULE
304800722 C1005	SEWER AND WATER CONCEPT LAYOUT SHEET 1 OF 2
304800722 C1006	SEWER AND WATER CONCEPT LAYOUT SHEET 2 OF 2
304800722 C1007	LOT LAYOUT
304800722 C1008	OPEN SPACE LAYOUT PLAN
304800722 C1010	GENERAL ARRANGEMENT KEY PLAN
304800722 C1011	GENERAL ARRANGEMENT LAYOUT PLAN SHEET 1 OF 6
304800722 C1012	GENERAL ARRANGEMENT LAYOUT PLAN SHEET 2 OF 6
304800722 C1013	GENERAL ARRANGEMENT LAYOUT PLAN SHEET 3 OF 6
304800722 C1014	GENERAL ARRANGEMENT LAYOUT PLAN SHEET 4 OF 6
304800722 C1015	GENERAL ARRANGEMENT LAYOUT PLAN SHEET 5 OF 6
304800722 C1016	GENERAL ARRANGEMENT LAYOUT PLAN SHEET 6 OF 6
304800722 C1020	CONCEPT STORMWATER LAYOUT AND DETAILS
304800722 C1030	ROAD HEIRARCHY PLAN
304800722 C1031	TYPICAL ROAD SECTIONS
304800722 C1040	PROPOSED BAR/BAL INTERSECTION LAYOUTS SHEET 01 OF 04
304800722 C1041	PROPOSED BAR/BAL INTERSECTION LAYOUTS SHEET 02 OF 04
304800722 C1042	PROPOSED BAR/BAL INTERSECTION LAYOUTS SHEET 03 OF 04
304800722 C1043	PROPOSED BAR/BAL INTERSECTION LAYOUTS SHEET 04 OF 04

LEGEND
- PROPOSED STAGING BOUNDARY
- PROPOSED OSD LOT BOUNDARY

0 100 200 300 400 500m
SCALE 1:5000 (A1), 1:10000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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Stantec (NSW/ACT) Pty Ltd | ABN 17 007 820 322
Ground Floor, 16 Burelli Street
Wollongong NSW 2500
Tel: 02 4231 9600 Fax: 02 4228 6811
Web: www.stantec.com

Drawn	EJK	Date 26/06/2023
Checked	MPR	Date 20/03/2024
Designed	LAB	Date 9/02/2024
Verified	CSH	Date 25/03/2024
Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN
Title: LOCALITY PLAN AND DRAWING SCHEDULE

Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM	GDA	Scale	Size
AHD	2020	1:5000	A1

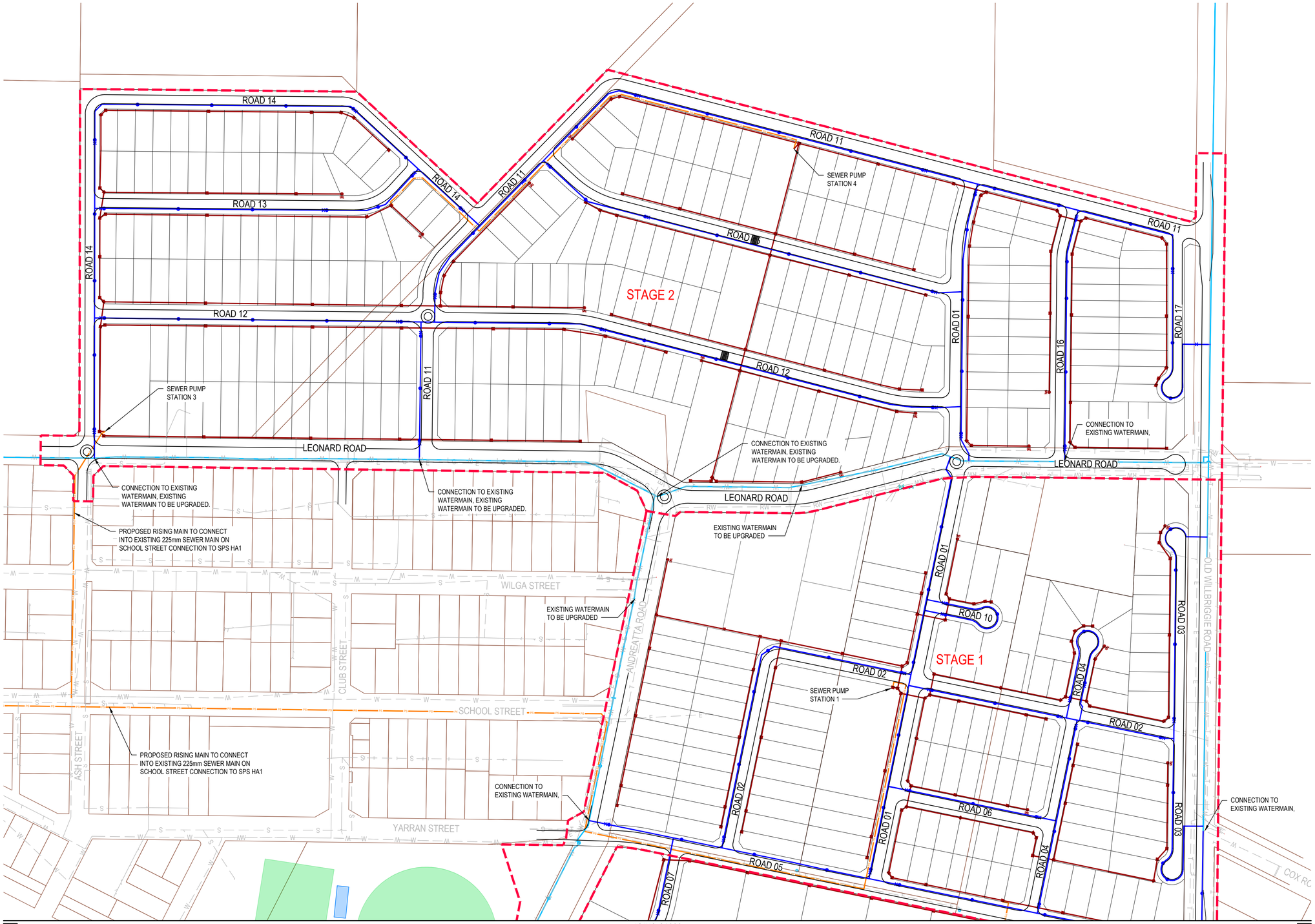
Drawing Number: 304800722 C1001
Revision: 5

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DATE PLOTTED: 19 March 2025 2:03 PM BY: KLEINHANS, ERNEST

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-E-SURVEY; XR-304800722-G-Legend; XR-304800722-D-BASE; XR-304800722-D-PW & WW Layout; XR-304800722-E-SERVICES

CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1005.dwg



SEWER AND WATER CONCEPT LAYOUT

SCALE 1:2000

NOTE

1. LOCATION OF POTABLE WATER LINES ARE INDICATIVE AND TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION OF EXISTING SERVICES ARE INDICATIVE AND NEED TO BE CONFIRMED BY CONTRACTOR ON-SITE.

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED OSD BASIN BOUNDARY
- PROPOSED POTABLE WATER MAIN
- EXISTING POTABLE WATER MAIN TO BE UPGRADED
- PROPOSED WASTE WATER MAIN
- INDICATIVE RISING MAIN
- S — EXISTING SEWER MAIN
- T — EXISTING COMMUNICATIONS CONDUIT
- E — EXISTING ELECTRICAL CONDUIT
- W — EXISTING POTABLE WATER MAIN
- RW — EXISTING RECYCLED WATER MAIN

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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Drawn	EJK	Date 26/06/2023
Checked	MPR	Date 20/03/2024
Designed	LAB	Date 9/02/2024
Verified	CSH	Date 25/03/2024
Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN

Title: SEWER AND WATER CONCEPT LAYOUT SHEET 1 OF 2

Status: FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION PURPOSES

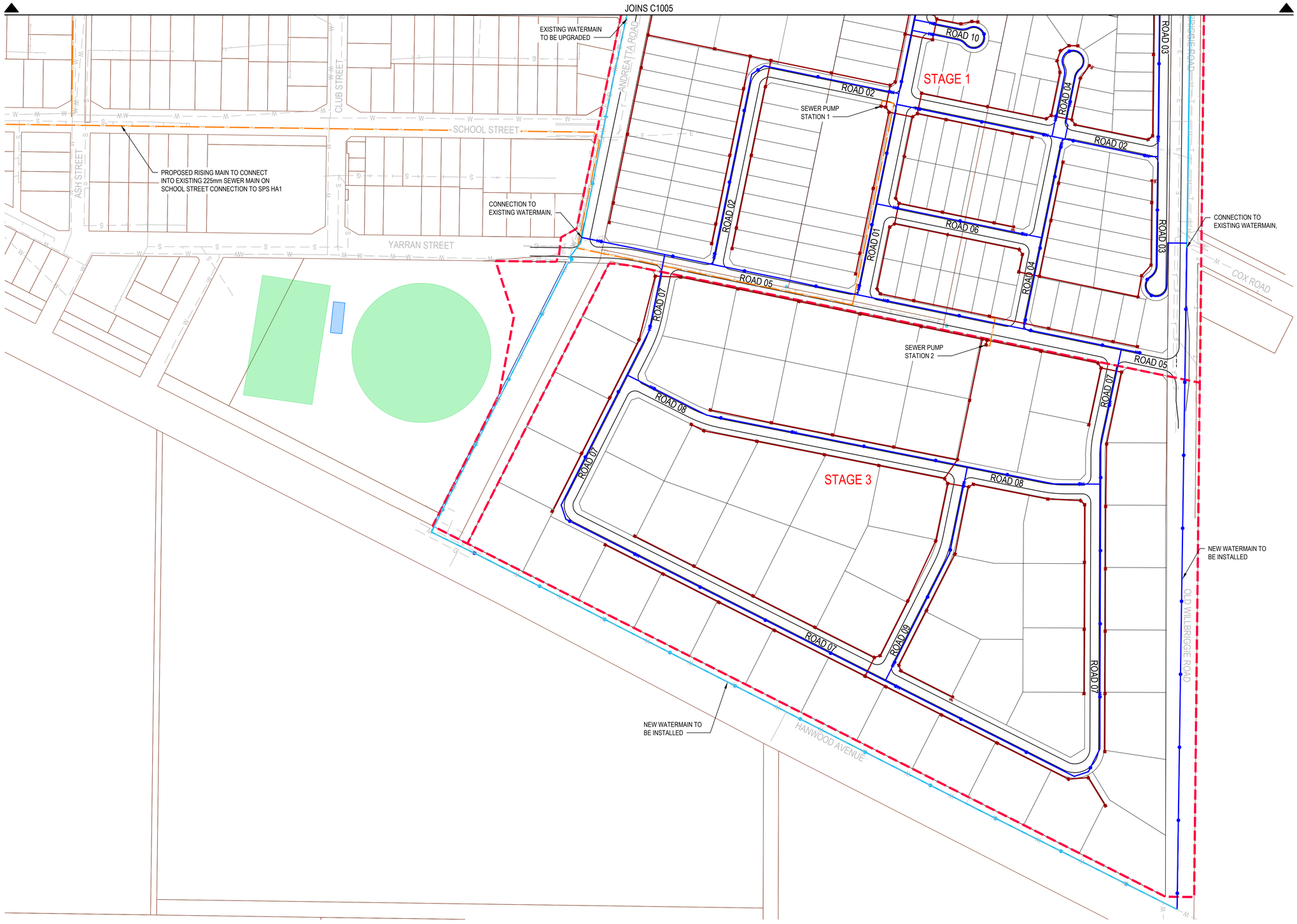
DATUM	GDA	Scale	Size
AHD	2020	1:2000	A1

Drawing Number: 304800722 C1005

Revision: 5

DATE PLOTTED: 19 March 2025 2:03 PM BY: KLEINHANS, ERNEST

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-E-SURVEY; XR-304800722-G-Legend; XR-304800722-D-BASE; XR-304800722-D-PW & WW Layout; XR-304800722-E-SERVICES
CAD File: U:\304800722\304800722 Hanwood Master Plan\Drawings\Build\C1000\304800722 C1006.dwg



NOTE

1. LOCATION OF POTABLE WATER LINES ARE INDICATIVE AND TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION OF EXISTING SERVICES ARE INDICATIVE AND NEED TO BE CONFIRMED BY CONTRACTOR ON-SITE.

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED OSD BASIN BOUNDARY
- PROPOSED POTABLE WATER MAIN
- EXISTING POTABLE WATER MAIN TO BE UPGRADED
- PROPOSED WASTE WATER MAIN
- INDICATIVE RISING MAIN
- EXISTING SEWER MAIN
- EXISTING COMMUNICATIONS CONDUIT
- EXISTING ELECTRICAL CONDUIT
- EXISTING POTABLE WATER MAIN
- EXISTING RECYCLED WATER MAIN

SEWER AND WATER CONCEPT LAYOUT

SCALE 1:2000

0 50 100 150 200m

SCALE 1:2000 (A1), 1:4000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

griffith city council ...love the lifestyle...

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		Date
Drawn	EJK	26/06/2023
Checked	MPR	20/03/2024
Designed	LAB	9/02/2024
Verified	CSH	25/03/2024
Approved	MV	25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN

Title: SEWER AND WATER CONCEPT LAYOUT SHEET 2 OF 2

Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM	GDA	Scale	Size
AHD	2020	1:2000	A1

Drawing Number: 304800722 C1006

Revision: 5

DATE PLOTTED: 30 April 2025 9:15 AM BY : DEITZ, ASTON



LOT LAYOUT
SCALE 1:3000

CONCEPT LOT COUNT	
STAGE 1	125 LOTS
STAGE 2	276 LOTS
STAGE 3	55 LOTS
TOTAL LOT COUNT:	456 LOTS

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED BOUNDARY
- PROPOSED RAISED PEDESTRIAN ACCESS
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- MEDIUM DENSITY LOTS
- PROPOSED TREE BUFFER
- EXISTING BOUNDARY

0 87.5 175 350m
SCALE 1:3500 (A1), 1:7000 (A3) @A1

Rev.	Date	Description	Des.	Verif.	Appd.
6	30/04/2025	ADDITION OF NORMALISED LOTS AND RE-ISSUED	LAB	CSH	MV
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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		Date
Drawn	EJK	26/06/2023
Checked	MPR	20/03/2024
Designed	LAB	9/02/2024
Verified	CSH	25/03/2024
Approved		Date
		Date
	MV	25/03/2024

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN
Title: LOT LAYOUT
Status: FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION PURPOSES
DATUM: AHD | GDA: 2020 | Scale: 1:3000 | Size: A1
Drawing Number: 304800722 C1007 | Revision: 6

XREF's: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722 E-SURVEY; XR-304800722 D-BASE; XR-304800722 E-CONTOURS; XR-304800722-G-Legend
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1007.dwg

DATE PLOTTED: 19 March 2025 2:03 PM BY: KLEINHANS, ERNEST



OPEN SPACE LAYOUT PLAN

SCALE 1:3000

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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		Date
Drawn	EJK	26/06/2023
Checked	MPR	20/03/2024
Designed	LAB	9/02/2024
Verified	CSH	25/03/2024
Approved	MV	25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN

Title: OPEN SPACE LAYOUT PLAN

Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

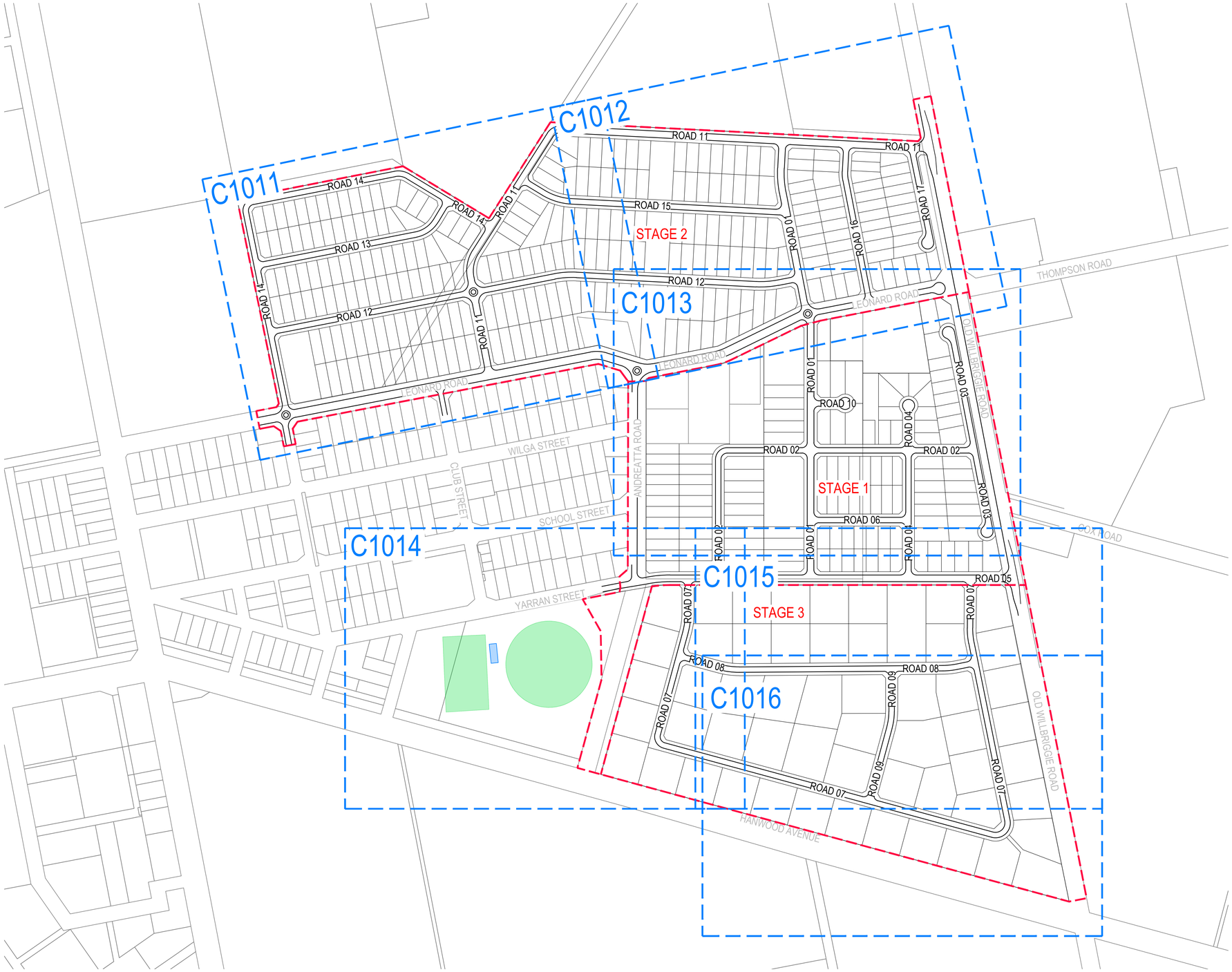
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AHD	2020	1:3000	A1

Drawing Number: 304800722 C1008

Revision: 5

XREF's: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722 E-SURVEY; XR-304800722 D-BASE; XR-304800722 E-CONTOURS; XR-304800722-G-Legend
CAD File: U:\304800722\304800722 - Hanwood Master Plan\Drawings\Build\C1000\304800722 C1008.dwg

DATE PLOTTED: 19 March 2025 2:03 PM BY: KLEINHANS, ERNEST



GENERAL ARRANGEMENT KEY PLAN

SCALE 1:3500

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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Drawn	EJK	Date 26/06/2023
Checked	MPR	Date 20/03/2024
Designed	LAB	Date 9/02/2024
Verified	CSH	Date 25/03/2024
Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: GENERAL ARRANGEMENT KEY PLAN

Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

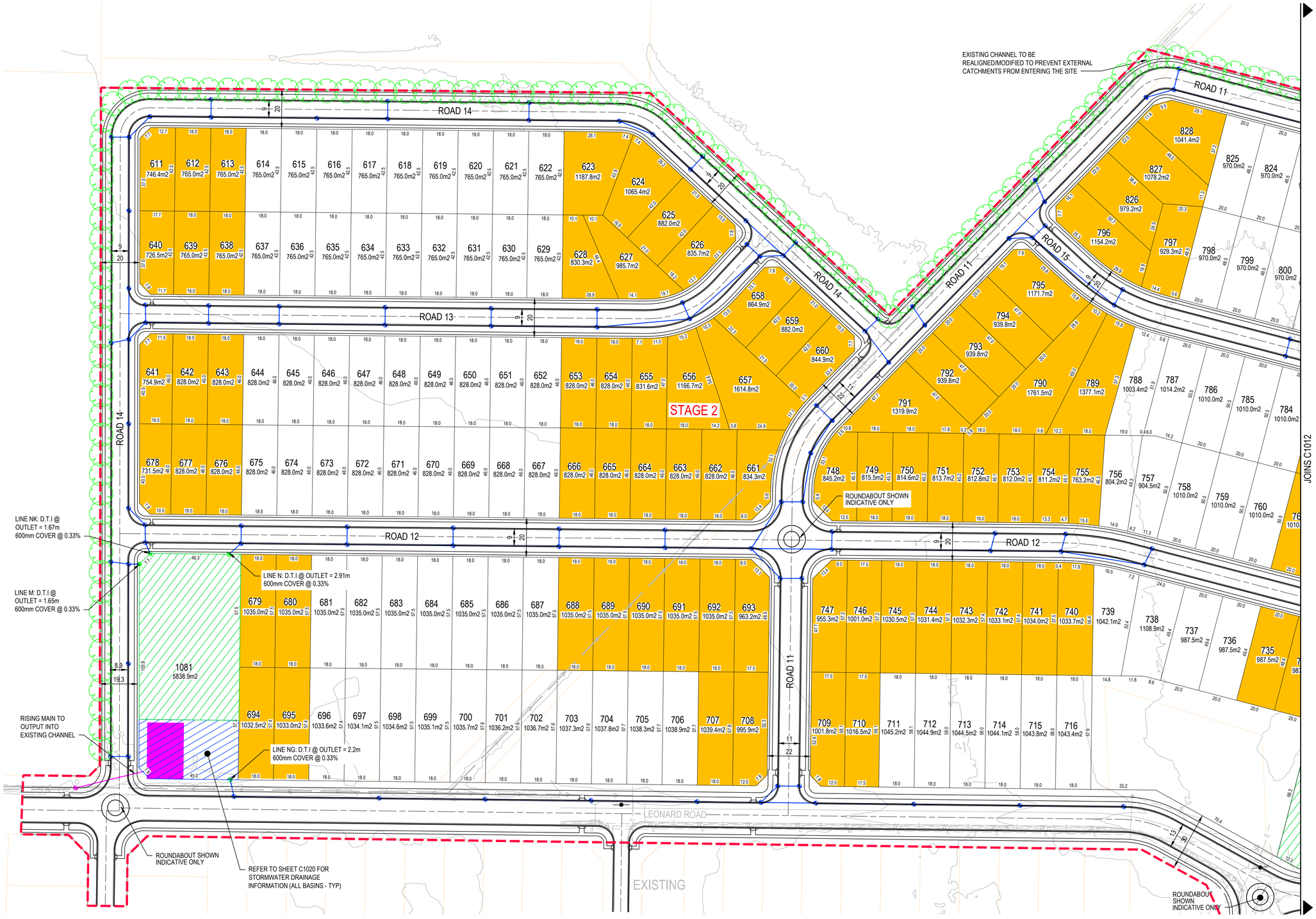
DATUM	GDA	Scale	Size
AHD	2020	1:3500	A1

Drawing Number: 304800722 C1010

Revision: 5

XREFs: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722 E-SURVEY; XR-304800722 D-BASE; XR-304800722 E-CONTOURS; XR-304800722-G-Legend
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1010.dwg

DATE PLOTTED: 19 March 2025 2:04 PM BY: KLEINHANS, ERNEST



CONCEPT GENERAL ARRANGEMENT LAYOUT

SCALE 1:1000

NOTE

1. LOCATION AND OSD BASIN FIT OUT TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION AND ARRANGEMENT OF STORMWATER NETWORK TO BE CONFIRMED AT DETAIL DESIGN.
3. LOT COUNT IS INDICATIVE OF THIS STAGE AND WILL NEED TO BE CONFIRMED AT DETAIL DESIGN.
4. ROAD RESERVE AND CARRIAGEWAY WIDTHS ARE IN ACCORDANCE WITH GRIFFITH CITY COUNCIL'S ENGINEERING GUIDELINES - SUBDIVISIONS AND DEVELOPMENT STANDARDS.

CONCEPT LOT COUNT

STAGE 1	125 LOTS
STAGE 2	276 LOTS
STAGE 3	55 LOTS
TOTAL LOT COUNT:	456 LOTS

LEGEND

- PROPOSED STAGING BOUNDARY
- EXISTING SURFACE CONTOURS
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED STORMWATER LINE
- PROPOSED RISING MAIN LINE
- PROPOSED STORMWATER PITS
- PROPOSED STORMWATER OUTLETS
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- MEDIUM DENSITY LOTS
- INDICATIVE PUMP STATION LOCATIONS
- PROPOSED RAISED PEDESTRIAN ACCESS
- PROPOSED TREE BUFFER
- EXISTING BUILDINGS
- EXISTING SWALE/CHANNEL
- EXISTING ROAD EDGE
- EXISTING COMMUNICATIONS CONDUIT
- EXISTING ELECTRICAL CONDUIT
- EXISTING POTABLE WATER MAIN
- EXISTING RECYCLED WATER MAIN

0 20 40 60 80 100m

SCALE 1:1000 (A1), 1:2000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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Drawn	EJK	Date 26/06/2023
Checked	MPR	Date 20/03/2024
Designed	LAB	Date 9/02/2024
Verified	CSH	Date 25/03/2024
Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL
Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN
Title: GENERAL ARRANGEMENT LAYOUT PLAN SHEET 1 OF 6

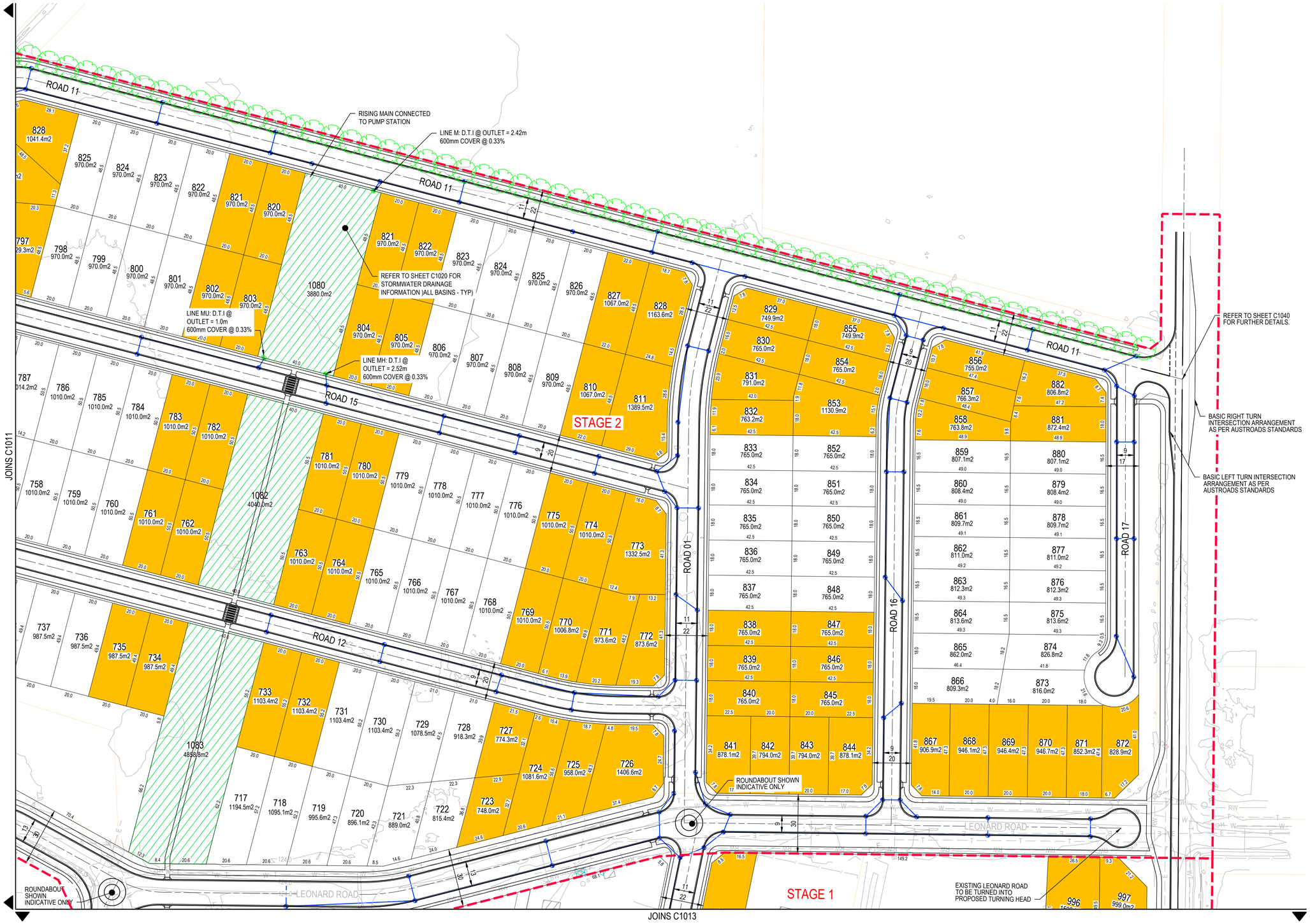
Status: FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM	GDA	Scale	Size
AHD	2020	1:1000	A1

Drawing Number: 304800722 C1011
Revision: 5

XREFs: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722 E-SURVEY; XR-304800722 D-BASE; XR-304800722 E-CONTOURS; XR-304800722 D-STORMWATER; XR-304800722-G-Legend
CAD File: U:\304800722\304800722 Hanwood Master Plan\Drawings\Build\C1000\304800722 C1011.dwg

DATE PLOTTED: 19 March 2025 2:04 PM BY: KLEINHANS, ERNEST



CONCEPT GENERAL ARRANGEMENT LAYOUT

SCALE 1:1000

NOTE

1. LOCATION AND OSD BASIN FIT OUT TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION AND ARRANGEMENT OF STORMWATER NETWORK TO BE CONFIRMED AT DETAIL DESIGN.
3. LOT COUNT IS INDICATIVE OF THIS STAGE AND WILL NEED TO BE CONFIRMED AT DETAIL DESIGN.
4. ROAD RESERVE AND CARRIAGEWAY WIDTHS ARE IN ACCORDANCE WITH GRIFFITH CITY COUNCIL'S ENGINEERING GUIDELINES - SUBDIVISIONS AND DEVELOPMENT STANDARDS.

CONCEPT LOT COUNT

STAGE 1	125 LOTS
STAGE 2	276 LOTS
STAGE 3	55 LOTS
TOTAL LOT COUNT:	456 LOTS

LEGEND

- PROPOSED STAGING BOUNDARY
- EXISTING SURFACE CONTOURS
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED STORMWATER LINE
- PROPOSED RISING MAIN LINE
- PROPOSED STORMWATER PITS
- PROPOSED STORMWATER OUTLETS
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- MEDIUM DENSITY LOTS
- INDICATIVE PUMP STATION LOCATIONS
- PROPOSED RAISED PEDESTRIAN ACCESS
- PROPOSED TREE BUFFER
- EXISTING BUILDINGS
- EXISTING SWALE/CHANNEL
- EXISTING ROAD EDGE
- EXISTING COMMUNICATIONS CONDUIT
- EXISTING ELECTRICAL CONDUIT
- EXISTING POTABLE WATER MAIN
- EXISTING RECYCLED WATER MAIN

0 20 40 60 80 100m

SCALE 1:1000 (A1), 1:2000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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		Date
Drawn	EJK	26/06/2023
Checked	MPR	20/03/2024
Designed	LAB	9/02/2024
Verified	CSH	25/03/2024
Approved	MV	25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: GENERAL ARRANGEMENT LAYOUT PLAN
SHEET 2 OF 6

Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

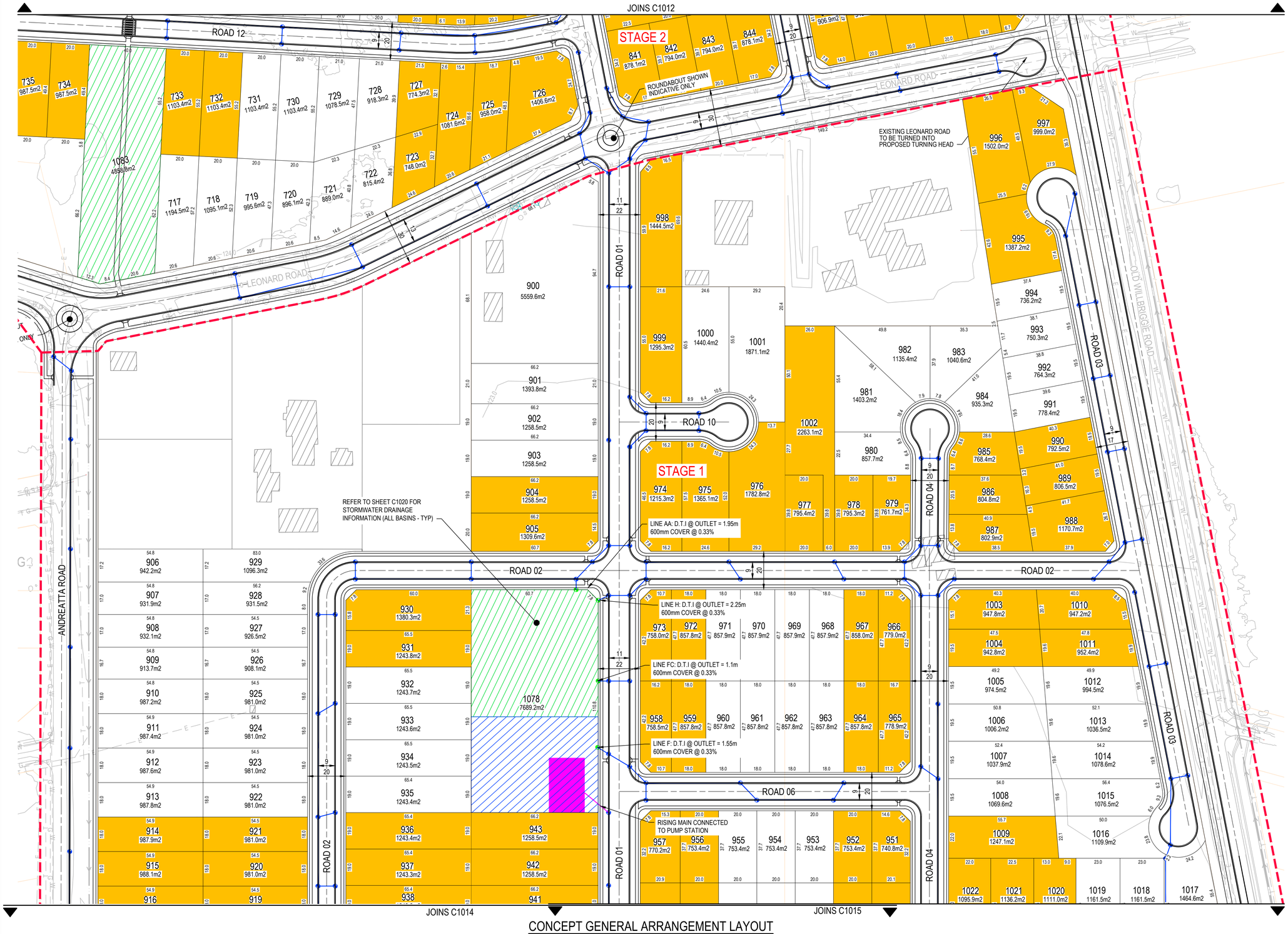
DATUM	GDA	Scale	Size
AHD	2020	1:1000	A1

Drawing Number: 304800722 C1012
Revision: 5

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-E-SURVEY; XR-304800722 D-BASE; XR-304800722 E-CONTOURS; XR-304800722 D-STORMWATER; XR-304800722-G-Legend
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1012.dwg

DATE PLOTTED: 19 March 2025 2:04 PM BY: - KLEINHANS, ERNEST

JOINS C1012



JOINS C1014

JOINS C1015

CONCEPT GENERAL ARRANGEMENT LAYOUT

SCALE 1:1000

NOTE

1. LOCATION AND OSD BASIN FIT OUT TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION AND ARRANGEMENT OF STORMWATER NETWORK TO BE CONFIRMED AT DETAIL DESIGN.
3. LOT COUNT IS INDICATIVE OF THIS STAGE AND WILL NEED TO BE CONFIRMED AT DETAIL DESIGN.
4. ROAD RESERVE AND CARRIAGEWAY WIDTHS ARE IN ACCORDANCE WITH GRIFFITH CITY COUNCIL'S ENGINEERING GUIDELINES - SUBDIVISIONS AND DEVELOPMENT STANDARDS.

CONCEPT LOT COUNT

STAGE 1	125 LOTS
STAGE 2	276 LOTS
STAGE 3	55 LOTS
TOTAL LOT COUNT:	456 LOTS

LEGEND

- PROPOSED STAGING BOUNDARY
- 10.0 EXISTING SURFACE CONTOURS
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED STORMWATER LINE
- PROPOSED RISING MAIN LINE
- PROPOSED STORMWATER PITS
- PROPOSED STORMWATER OUTLETS
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- MEDIUM DENSITY LOTS
- INDICATIVE PUMP STATION LOCATIONS
- PROPOSED RAISED PEDESTRIAN ACCESS
- PROPOSED TREE BUFFER
- EXISTING BUILDINGS
- EXISTING SWALE/CHANNEL
- EXISTING ROAD EDGE
- T EXISTING COMMUNICATIONS CONDUIT
- E EXISTING ELECTRICAL CONDUIT
- W EXISTING POTABLE WATER MAIN
- RW EXISTING RECYCLED WATER MAIN

0 20 40 60 80 100m

SCALE 1:1000 (A1), 1:2000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
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3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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Drawn EJK	Date 26/06/2023
Checked MPR	Date 20/03/2024
Designed LAB	Date 9/02/2024
Verified CSH	Date 25/03/2024
Approved MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN

Title: GENERAL ARRANGEMENT LAYOUT PLAN SHEET 3 OF 6

Status: FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION PURPOSES

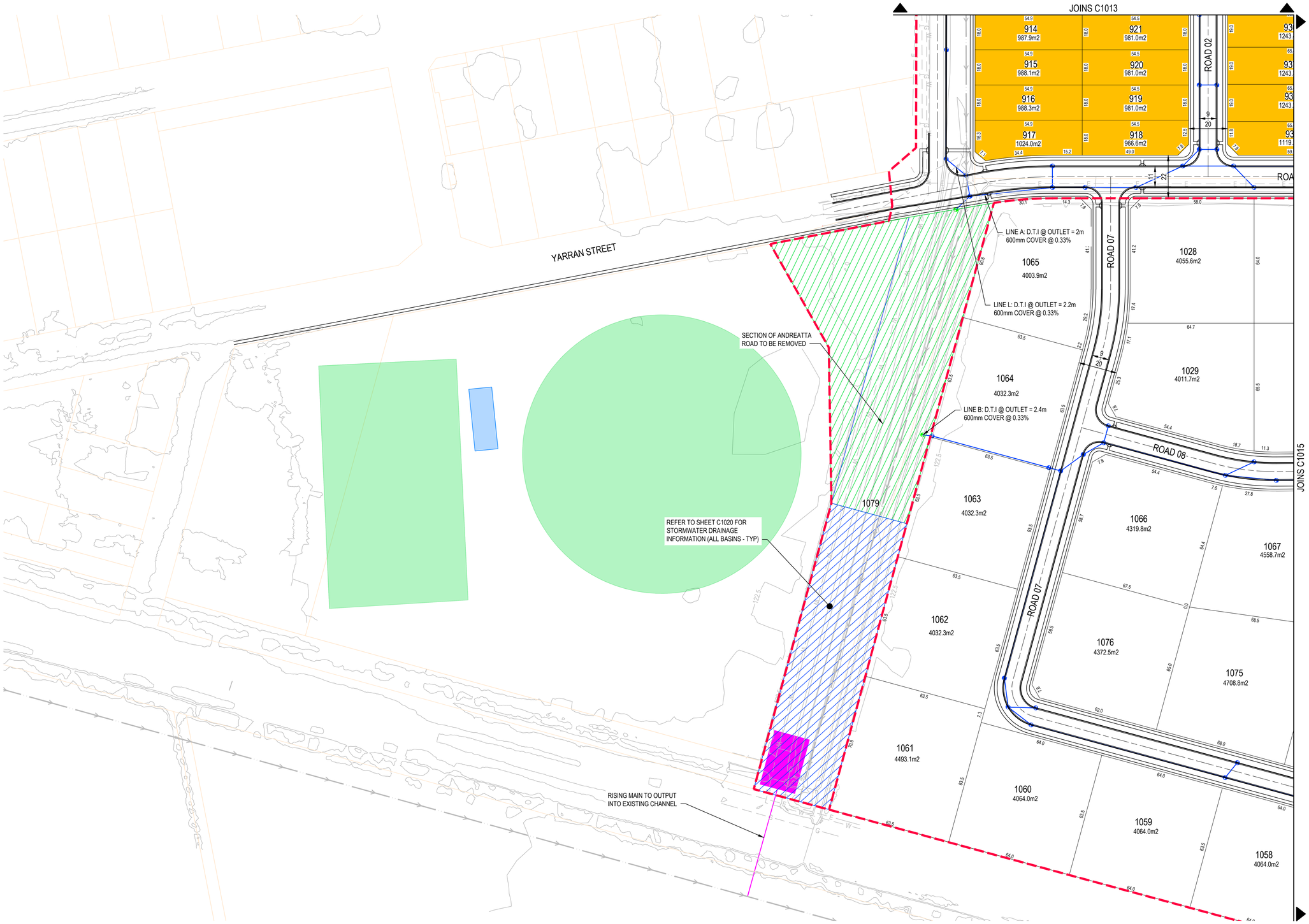
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AHD	2020	1:1000	A1

Drawing Number: 304800722 C1013

Revision: 5

XREF's: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722 E-SURVEY; XR-304800722 D-BASE; XR-304800722 E-CONTOURS; XR-304800722 D-STORMWATER; XR-304800722 D-STORMWATER-Legend
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1013.dwg

DATE PLOTTED: 19 March 2025 2:04 PM BY: KLEINHANS, ERNEST



CONCEPT GENERAL ARRANGEMENT LAYOUT

SCALE 1:1000

NOTE

1. LOCATION AND OSD BASIN FIT OUT TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION AND ARRANGEMENT OF STORMWATER NETWORK TO BE CONFIRMED AT DETAIL DESIGN.
3. LOT COUNT IS INDICATIVE OF THIS STAGE AND WILL NEED TO BE CONFIRMED AT DETAIL DESIGN.
4. ROAD RESERVE AND CARRIAGEWAY WIDTHS ARE IN ACCORDANCE WITH GRIFFITH CITY COUNCIL'S ENGINEERING GUIDELINES - SUBDIVISIONS AND DEVELOPMENT STANDARDS.

CONCEPT LOT COUNT

STAGE 1	125 LOTS
STAGE 2	276 LOTS
STAGE 3	55 LOTS
TOTAL LOT COUNT:	456 LOTS

LEGEND

- PROPOSED STAGING BOUNDARY
- 10.0 EXISTING SURFACE CONTOURS
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED STORMWATER LINE
- PROPOSED RISING MAIN LINE
- PROPOSED STORMWATER PITS
- PROPOSED STORMWATER OUTLETS
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- MEDIUM DENSITY LOTS
- INDICATIVE PUMP STATION LOCATIONS
- PROPOSED RAISED PEDESTRIAN ACCESS
- PROPOSED TREE BUFFER
- EXISTING BUILDINGS
- EXISTING SWALE/CHANNEL
- EXISTING ROAD EDGE
- T EXISTING COMMUNICATIONS CONDUIT
- E EXISTING ELECTRICAL CONDUIT
- W EXISTING POTABLE WATER MAIN
- RW EXISTING RECYCLED WATER MAIN

0 20 40 60 80 100m

SCALE 1:1000 (A1), 1:2000 (A3)

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
4	30/07/2024	ADDRESSED COUNCIL COMMENTS 23/7/2024 AND REISSUED	LAB	CSH	MV
3	25/03/2024	ADDRESSED COUNCIL COMMENTS 25/1/2024 AND REISSUED	LAB	CSH	MV
2	22/09/2023	ISSUED FOR INFORMATION	DAC	CSH	MV
1	30/06/2023	ISSUED FOR INFORMATION	DAC	CSH	MV

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Drawn	EJK	Date 26/06/2023
Checked	MPR	Date 20/03/2024
Designed	LAB	Date 9/02/2024
Verified	CSH	Date 25/03/2024
Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: GENERAL ARRANGEMENT LAYOUT PLAN
SHEET 4 OF 6

Status: FOR INFORMATION ONLY
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DATUM	GDA	Scale	Size
AHD	2020	1:1000	A1

Drawing Number: 304800722 C1014

Revision: 5

XREFs: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-E-SURVEY; XR-304800722-D-BASE; XR-304800722-E-CONTOURS; XR-304800722-D-STORMWATER; XR-304800722-G-Legend
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1014.dwg

DATE PLOTTED: 19 March 2025 2:05 PM BY: KLEINHANS, ERNEST

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CAD File: I:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1015.dwg

JOINS C1013

JOINS C1014

JOINS C1016

ROAD 01

ROAD 02

ROAD 04

ROAD 05

ROAD 07

ROAD 08

ROAD 09

OLD WILLBRIGGIE ROAD

936 1243.4m2
937 1243.3m2
938 1243.2m2
939 1119.2m2
940 1133.2m2
941 1258.5m2
942 1258.5m2
943 1258.5m2
944 770.5m2
945 753.4m2
946 753.4m2
947 753.4m2
948 753.4m2
949 753.4m2
950 740.8m2
951 740.8m2
952 753.4m2
953 753.4m2
954 753.4m2
955 753.4m2
956 753.4m2
957 770.2m2
1009 1247.1m2
1016 1109.9m2
1017 1464.6m2
1018 1161.5m2
1019 1161.5m2
1020 1111.0m2
1021 1136.2m2
1022 1095.9m2
1023 4032.1m2
1024 4096.0m2
1025 4096.0m2
1026 4096.0m2
1027 4096.0m2
1028 4055.6m2
1029 4011.7m2
1030 4212.4m2
1031 4184.9m2
1032 4155.2m2
1033 4125.5m2
1034 4062.6m2
1035 4182.9m2
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1037 4191.0m2
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1039 4483.1m2
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1041 6603.1m2
1042 4958.0m2
1043 4014.6m2
1044 4059.4m2
1045 4064.0m2
1046 4064.0m2
1047 4064.0m2
1048 4068.6m2
1057 4064.0m2
1058 4064.0m2
1067 4558.7m2
1068 5245.2m2
1069 5708.7m2
1070 4605.1m2
1071 4429.7m2
1072 4788.0m2
1073 6155.1m2
1074 5286.5m2
1075 4708.8m2
1077 8191.8m2

STAGE 3

REFER TO SHEET C1040 FOR FURTHER DETAILS

BASIC RIGHT TURN INTERSECTION ARRANGEMENT AS PER AUSTROADS STANDARDS

BASIC LEFT TURN INTERSECTION ARRANGEMENT AS PER AUSTROADS STANDARDS

REFER TO SHEET C1020 FOR STORMWATER DRAINAGE INFORMATION (ALL BASINS - TYP)

RISING MAIN CONNECT TO PUMP STATION

LINE CD: DTI @ OUTLET = 2.3m
600mm COVER @ 0.33%

NORTH

NOTE

1. LOCATION AND OSD BASIN FIT OUT TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION AND ARRANGEMENT OF STORMWATER NETWORK TO BE CONFIRMED AT DETAIL DESIGN.
3. LOT COUNT IS INDICATIVE OF THIS STAGE AND WILL NEED TO BE CONFIRMED AT DETAIL DESIGN.
4. ROAD RESERVE AND CARRIAGEWAY WIDTHS ARE IN ACCORDANCE WITH GRIFFITH CITY COUNCIL'S ENGINEERING GUIDELINES - SUBDIVISIONS AND DEVELOPMENT STANDARDS.

CONCEPT LOT COUNT

STAGE 1	125 LOTS
STAGE 2	276 LOTS
STAGE 3	55 LOTS
TOTAL LOT COUNT:	456 LOTS

LEGEND

- PROPOSED STAGING BOUNDARY
- EXISTING SURFACE CONTOURS (10.0)
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED STORMWATER LINE
- PROPOSED RISING MAIN LINE
- PROPOSED STORMWATER PITS
- PROPOSED STORMWATER OUTLETS
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- MEDIUM DENSITY LOTS
- INDICATIVE PUMP STATION LOCATIONS
- PROPOSED RAISED PEDESTRIAN ACCESS
- PROPOSED TREE BUFFER
- EXISTING BUILDINGS
- EXISTING SWALE/CHANNEL
- EXISTING ROAD EDGE
- EXISTING COMMUNICATIONS CONDUIT (T)
- EXISTING ELECTRICAL CONDUIT (E)
- EXISTING POTABLE WATER MAIN (W)
- EXISTING RECYCLED WATER MAIN (RW)

0 20 40 60 80 100m

SCALE 1:1000 (A1), 1:2000 (A3)

CONCEPT GENERAL ARRANGEMENT LAYOUT

SCALE 1:1000

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
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Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: GENERAL ARRANGEMENT LAYOUT PLAN
SHEET 5 OF 6

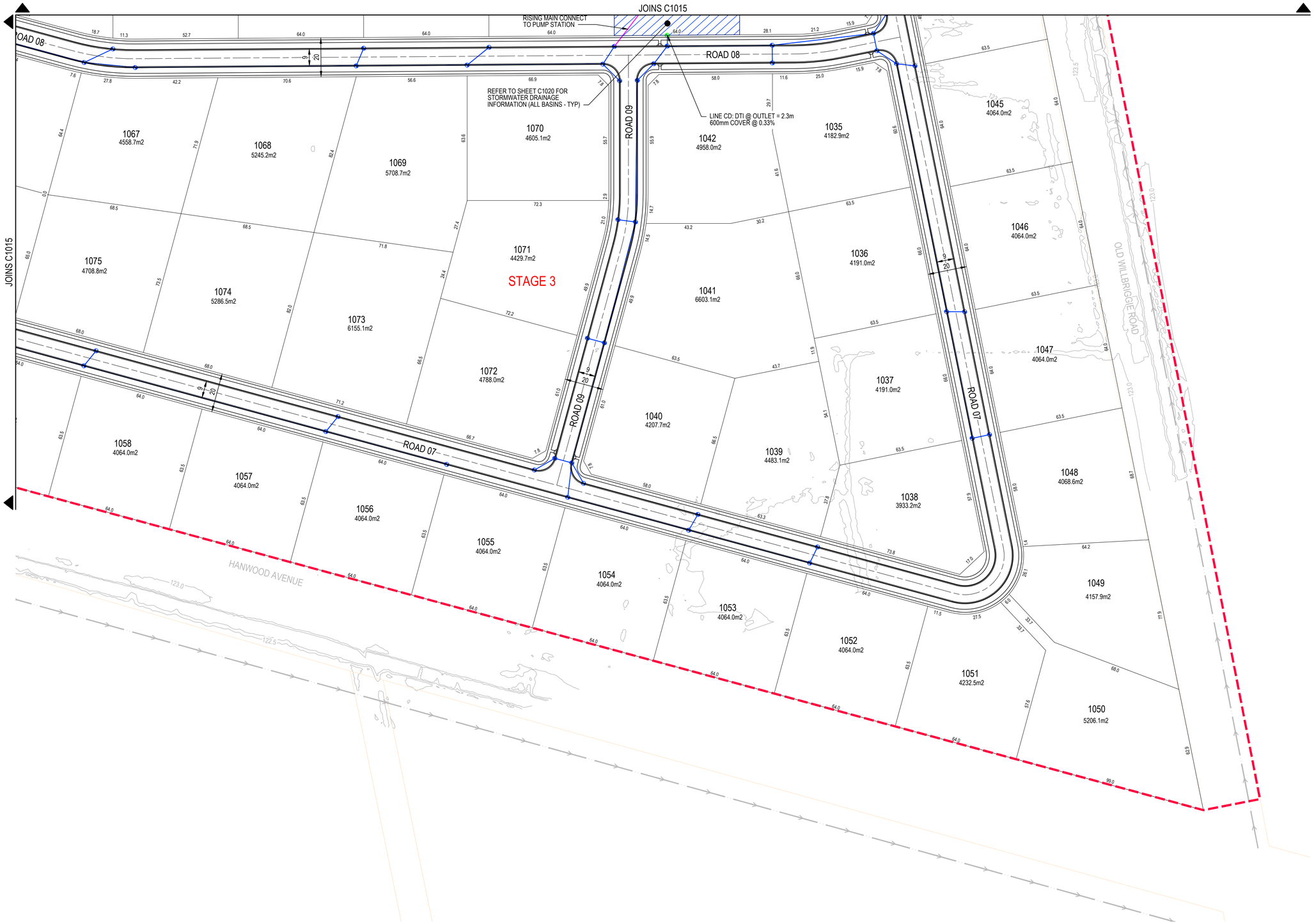
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DATUM	GDA	Scale	Size
AHD	2020	1:1000	A1

Drawing Number: 304800722 C1015

Revision: 5

DATE PLOTTED: 19 March 2025 2:05 PM BY: KLEINHANS, ERNEST



NOTE

1. LOCATION AND OSD BASIN FIT OUT TO BE CONFIRMED AT DETAIL DESIGN.
2. LOCATION AND ARRANGEMENT OF STORMWATER NETWORK TO BE CONFIRMED AT DETAIL DESIGN.
3. LOT COUNT IS INDICATIVE OF THIS STAGE AND WILL NEED TO BE CONFIRMED AT DETAIL DESIGN.
4. ROAD RESERVE AND CARRIAGEWAY WIDTHS ARE IN ACCORDANCE WITH GRIFFITH CITY COUNCIL'S ENGINEERING GUIDELINES - SUBDIVISIONS AND DEVELOPMENT STANDARDS.

CONCEPT LOT COUNT

STAGE 1	125 LOTS
STAGE 2	276 LOTS
STAGE 3	55 LOTS
TOTAL LOT COUNT:	456 LOTS

LEGEND

- PROPOSED STAGING BOUNDARY
- EXISTING SURFACE CONTOURS (10.0)
- PROPOSED BOUNDARY
- EXISTING BOUNDARY
- PROPOSED STORMWATER LINE
- PROPOSED RISING MAIN LINE
- PROPOSED STORMWATER PITS
- PROPOSED STORMWATER OUTLETS
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- MEDIUM DENSITY LOTS
- INDICATIVE PUMP STATION LOCATIONS
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- EXISTING ROAD EDGE
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- EXISTING ELECTRICAL CONDUIT (E)
- EXISTING POTABLE WATER MAIN (W)
- EXISTING RECYCLED WATER MAIN (RW)

0 20 40 60 80 100m

SCALE 1:1000 (A1), 1:2000 (A3)

CONCEPT GENERAL ARRANGEMENT LAYOUT

SCALE 1:1000

Rev.	Date	Description	Des.	Verif.	Appd.
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Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: GENERAL ARRANGEMENT LAYOUT PLAN
SHEET 6 OF 6

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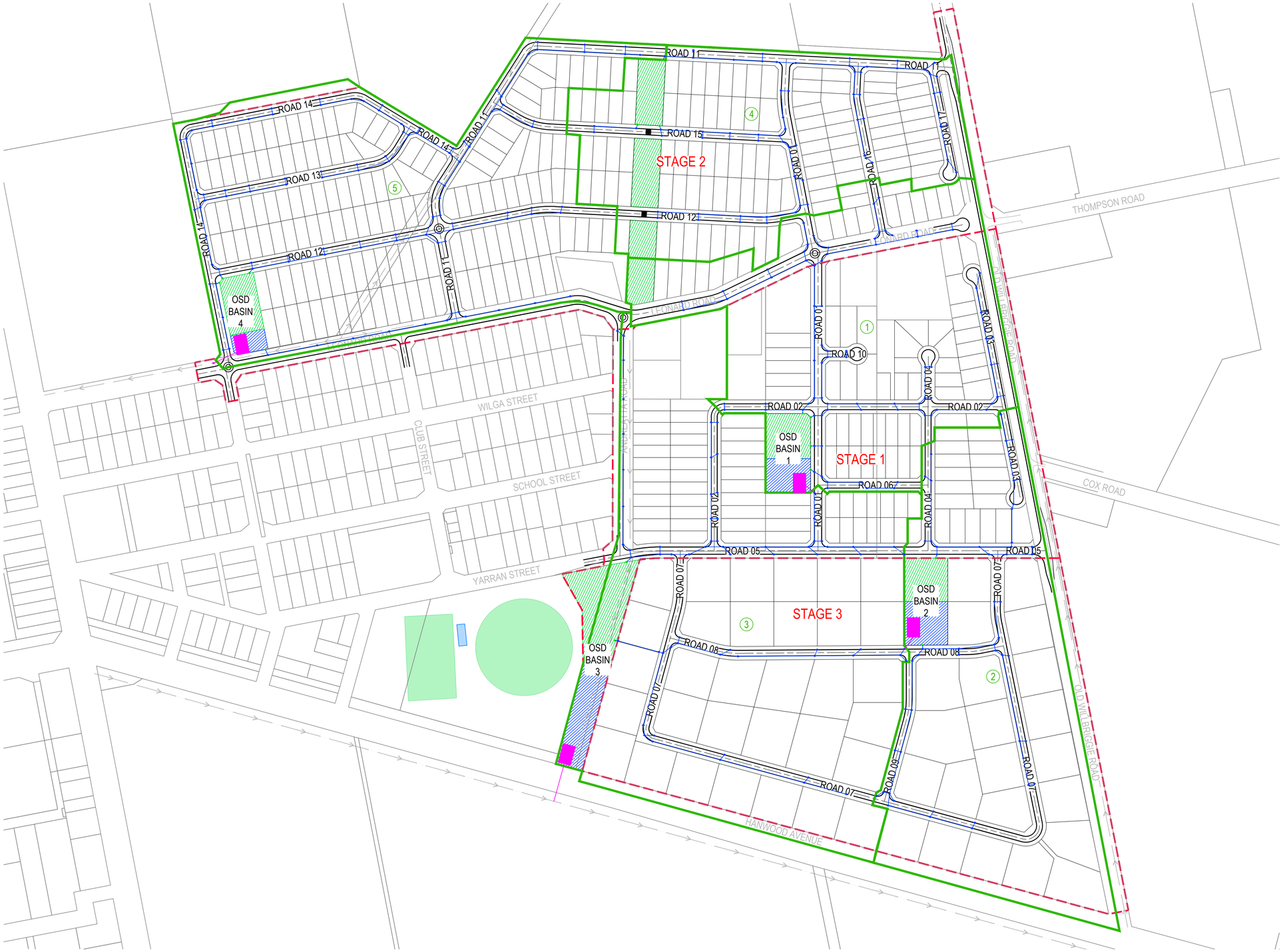
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Drawing Number: 304800722 C1016

Revision: 5

XREFs: XR-304800722-G-TITLE; XR-304800722 E-CADASTRE; XR-304800722 E-SURVEY; XR-304800722 D-BASE; XR-304800722 E-CONTOURS; XR-304800722 D-STORMWATER; XR-304800722-G-Legend
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XREF's: XR-304800722-G-TITLE; XR-304800722-E-CADASTRE; XR-304800722-E-SURVEY; XR-304800722-D-BASE; XR-304800722-E-CONTOURS; XR-304800722-G-Legend; XR-304800722-D-STORMWATER; XR-304800722-D-Catchments
CAD File: U:\304800722\304800722_Hanwood Master Plan\Drawings\Build\C1000\304800722 C1020.dwg



CONCEPT STORMWATER LAYOUT AND DETAILS

SCALE 1:3000

CATCHMENT DETAILS:	
CATCHMENT No.	AREA (ha)
1	16.39
2	17.09
3	26.92
4	13.82
5	21.56

CONCEPT OSD BASINS:	
BASIN No.	VOLUME REQUIRED (m³)
STAGE 1:	
BASIN 1	3311.702
BASIN 3	6070.117
STAGE 2:	
BASIN 4	1516.524
STAGE 3:	
BASIN 2	4095.786

NOTE

1. LOCATION AND OSD BASIN FIT OUT TO BE CONFIRMED AT DETAIL DESIGN STAGE.
2. LOCATION AND ARRANGEMENT OF STORMWATER NETWORK TO BE CONFIRMED AT DETAIL DESIGN STAGE.
3. REFER TO STORMWATER MANAGEMENT REPORT REGARDING FURTHER DETAILS OF THE BASINS, EMERGENCY DISCHARGE AND THE SITE OVERFLOW DISCHARGE PATHWAY.

LEGEND

- PROPOSED STAGING BOUNDARY
- PROPOSED OPEN SPACE
- CONCEPT OSD BASINS
- PROPOSED STORMWATER LINE
- PROPOSED STORMWATER PITS
- PROPOSED RISING MAIN LINE
- PROPOSED STORMWATER OUTLETS
- PROPOSED STORMWATER CATCHMENT
- EXISTING SWALE/CHANNEL
- INDICATIVE PUMP STATION LOCATIONS

0 50 100 200 300m

SCALE 1:3000 (A1), 1:6000 (A3) @A1

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5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
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		Date
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Designed	LAB	9/02/2024
Verified	CSH	25/03/2024
Approved	MV	25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: CONCEPT STORMWATER LAYOUT AND DETAILS

Status: FOR INFORMATION ONLY
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DATUM	GDA	Scale	Size
AHD	2020	1:3000	A1

Drawing Number: 304800722 C1020

Revision: 5

DATE PLOTTED: 19 March 2025 2:05 PM BY: KLEINHANS, ERNEST



ROAD HIERARCHY PLAN

SCALE 1:3000

NOTE

1. ROAD RESERVE AND CARRIAGEWAY WIDTHS ARE IN ACCORDANCE WITH GRIFFITH CITY COUNCIL'S ENGINEERING GUIDELINES - SUBDIVISIONS AND DEVELOPMENT STANDARDS.
2. REFER TO C1031 FOR TYPICAL ROAD SECTIONS

LEGEND

- ACCESS PLACE (17m)
- LOCAL ACCESS ROAD (20m)
- COLLECTOR ROAD (22m)
- LOCAL DISTRIBUTOR ROAD (25m) - MODIFIED

0 50 100 200 300m

SCALE 1:3000 (A1), 1:6000 (A3) @A1

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
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Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: ROAD HEIRARCHY PLAN

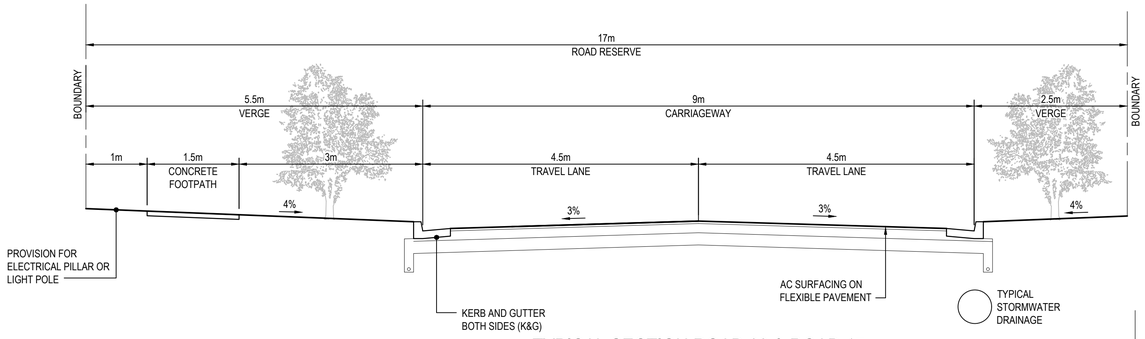
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DATUM	GDA	Scale	Size
AHD	2020	1:3000	A1

Drawing Number: 304800722 C1030
Revision: 5

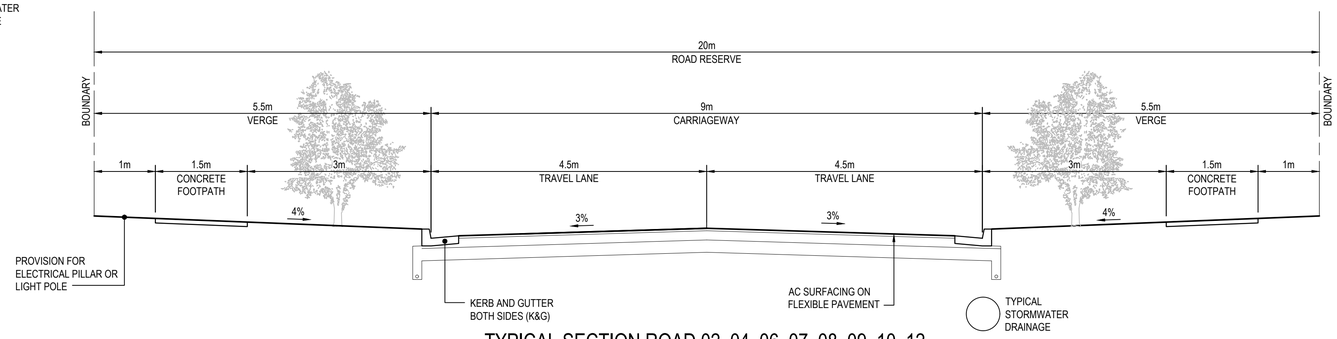
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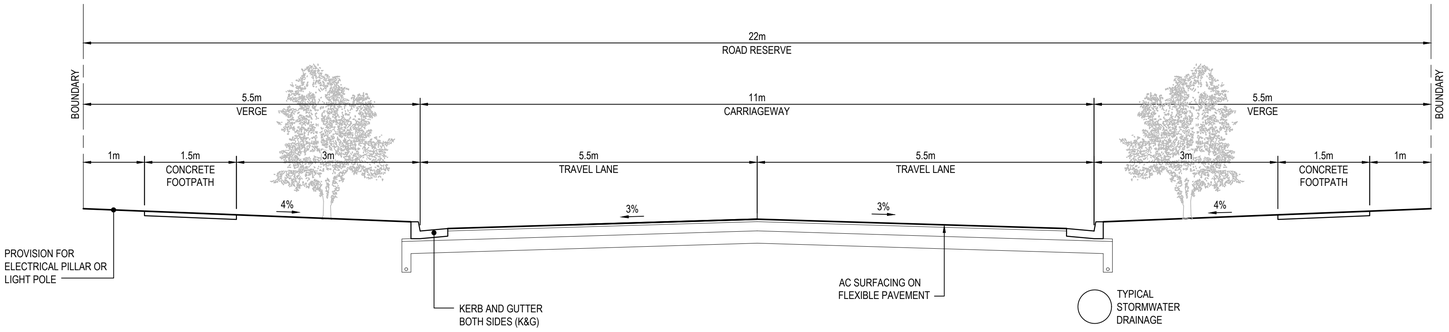
TYPICAL SECTION ROAD 03 & ROAD 17

SCALE 1:50



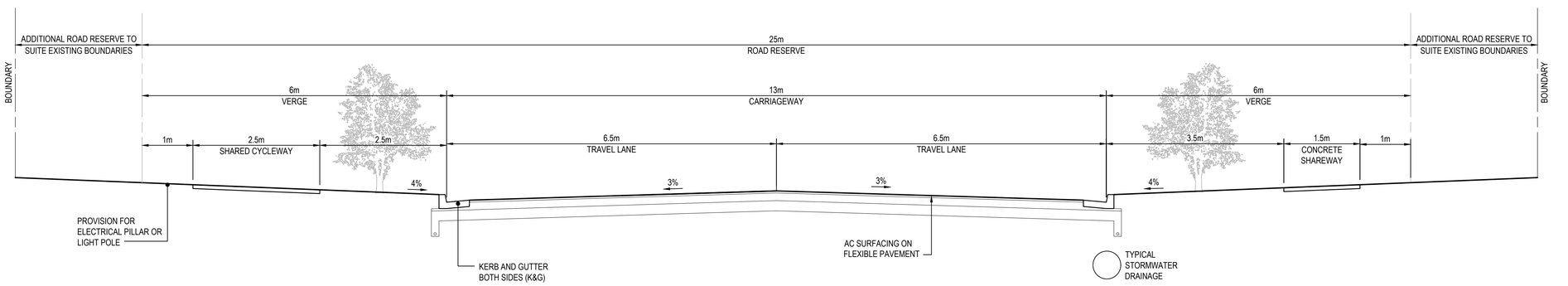
TYPICAL SECTION ROAD 02, 04, 06, 07, 08, 09, 10, 12, 13, 14, 15, 16 & LEONARD ROAD

SCALE 1:50



TYPICAL SECTION ROAD 01, 05 & ROAD 11

SCALE 1:50



TYPICAL SECTION LEONARD ROAD

SCALE 1:50

0 1 2 3 4 5m

SCALE 1:50 (A1), 1:100 (A3) @A1

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Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: TYPICAL ROAD SECTIONS

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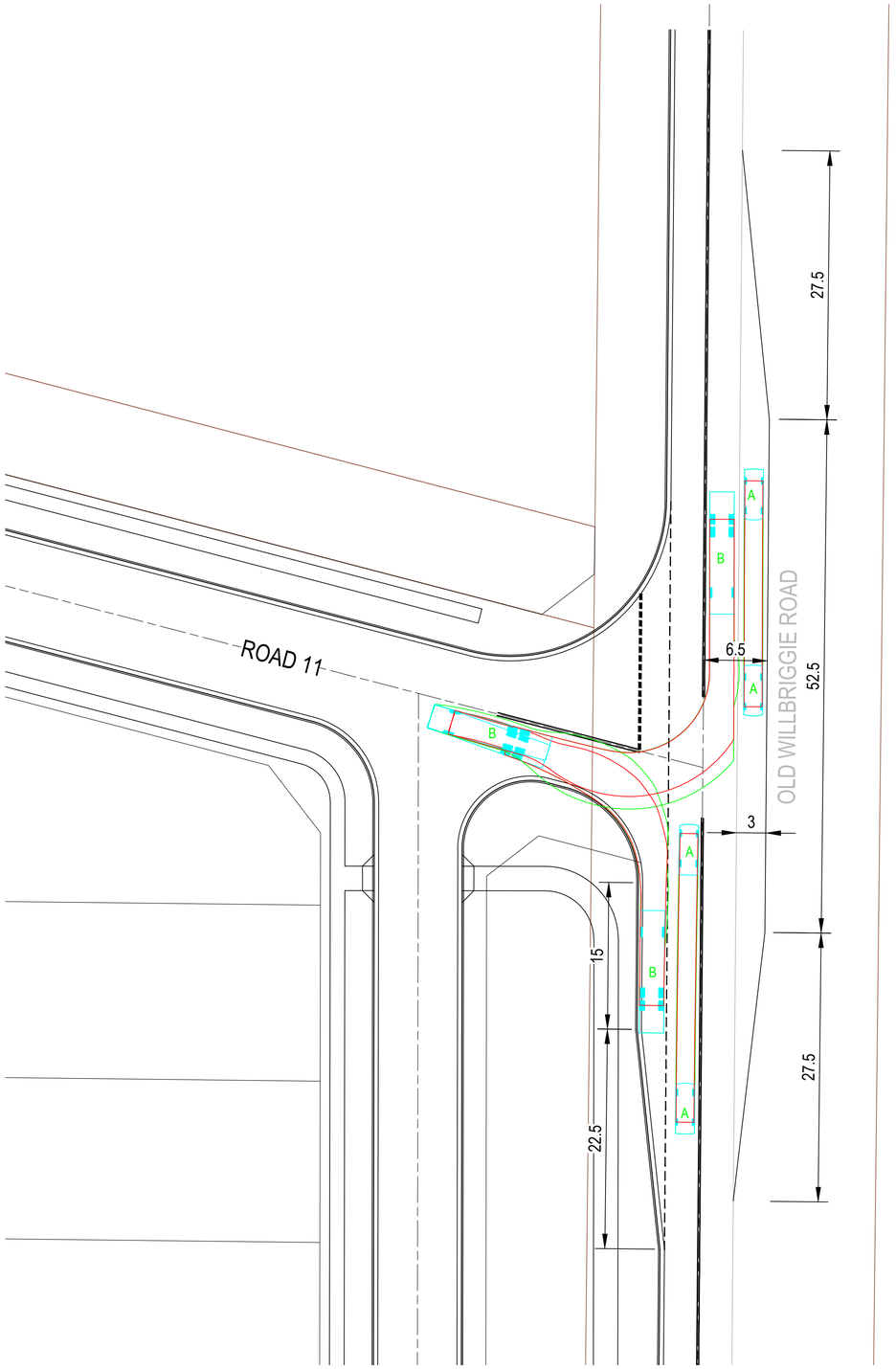
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AHD	2020	1:50	A1

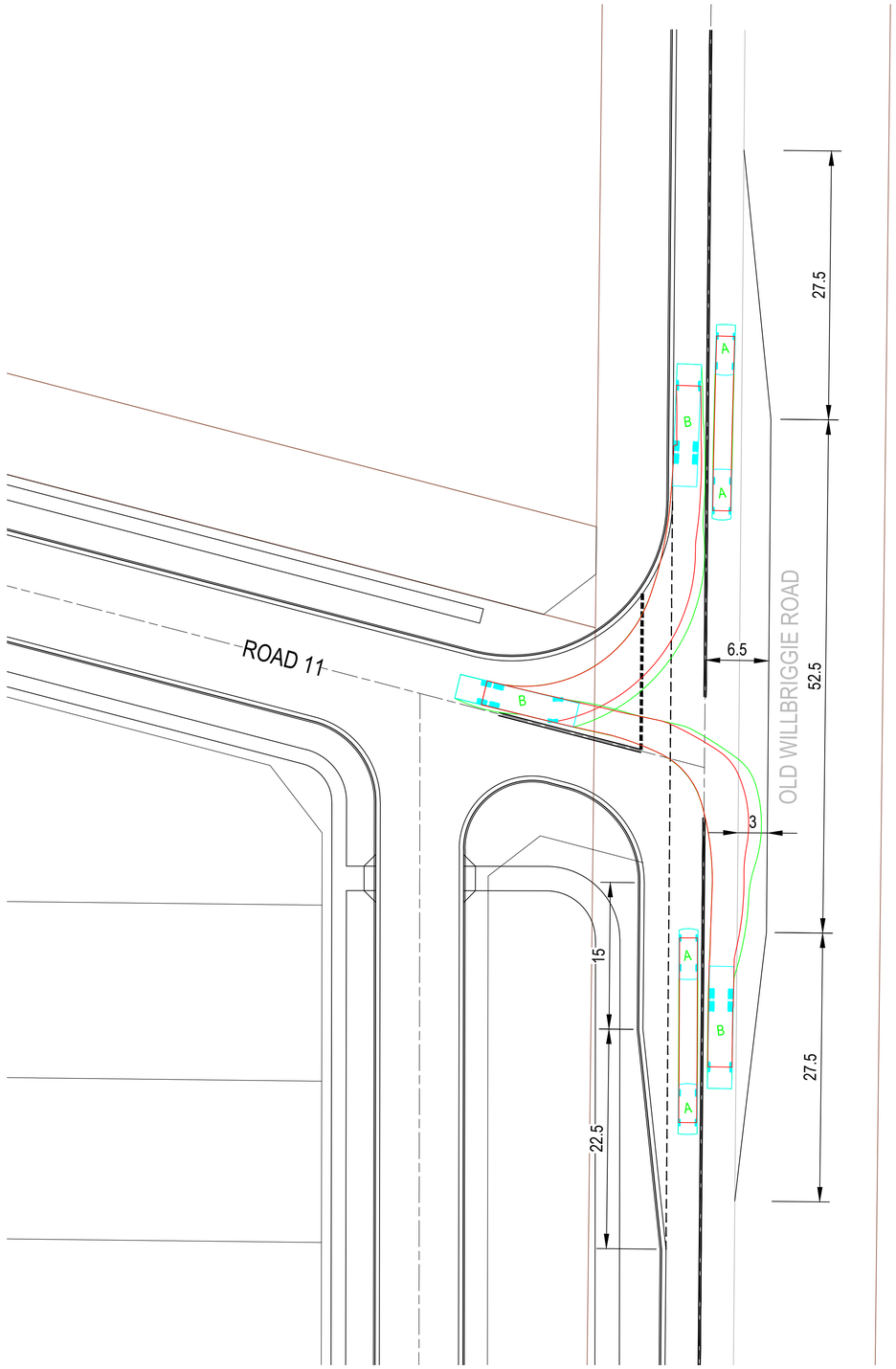
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Revision: 5

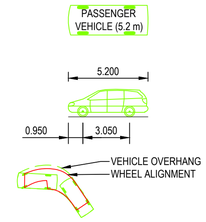
XREFs: XR-304800722-G-TITLE
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DATE PLOTTED: 19 March 2025 2:06 PM BY: KLEINHANS, ERNEST



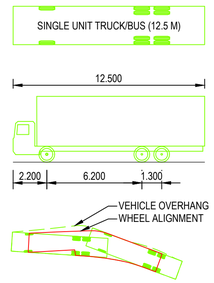


LEGEND - A



PASSENGER VEHICLE (5.2 m)	
OVERALL LENGTH	5.200m
OVERALL WIDTH	1.940m
OVERALL BODY HEIGHT	1.804m
MIN BODY GROUND CLEARANCE	0.295m
TRACK WIDTH	1.840m
LOCK-TO-LOCK TIME	4.00s
CURB TO CURB TURNING RADIUS	6.300m

LEGEND - B

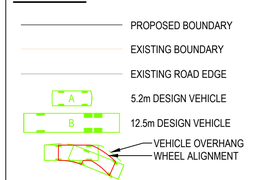


SINGLE UNIT TRUCK/BUS (12.5 m)	
OVERALL LENGTH	12.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.490m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
CURB TO CURB TURNING RADIUS	12.500m

NOTE

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LEGEND



0 5 10 20 30m

SCALE 1:300 (A1), 1:600 (A3)

PROPOSED BAR/BAL INTERSECTION LAYOUTS

SCALE 1:300

Rev.	Date	Description	Des.	Verif.	Appd.
5	19/03/2025	ADDITION OF OPEN SPACE AREAS AND RE-ISSUED	LAB	CSH	MV
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		Date
Drawn	EJK	26/06/2023
Checked	MPR	20/03/2024
Designed	LAB	9/02/2024
Verified	CSH	25/03/2024
Approved	MV	25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: PROPOSED BAR/BAL INTERSECTION LAYOUTS
SHEET 01 OF 04

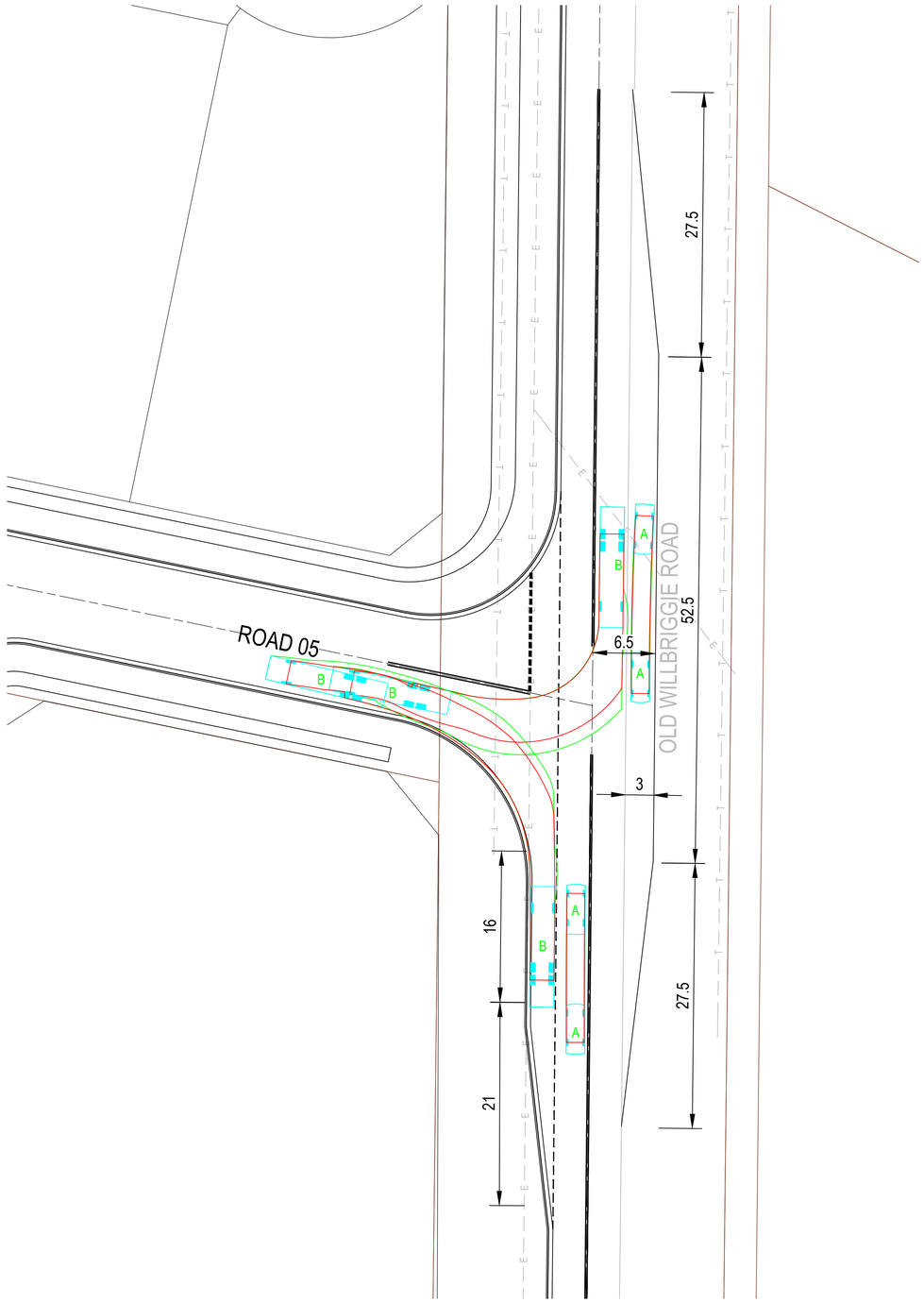
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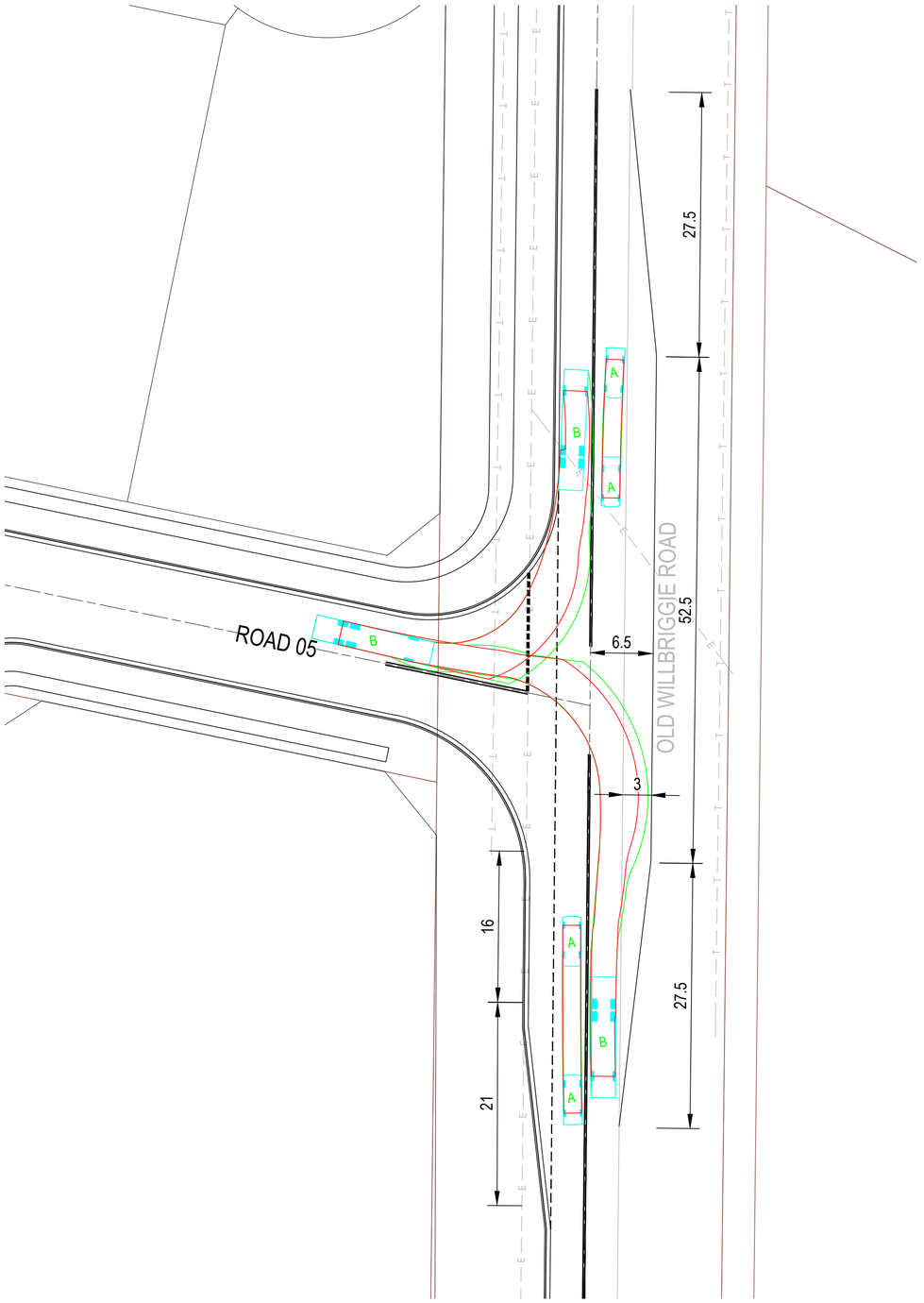
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Revision: 5

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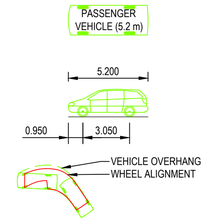


PROPOSED BAR/BAL INTERSECTION LAYOUTS

SCALE 1:300

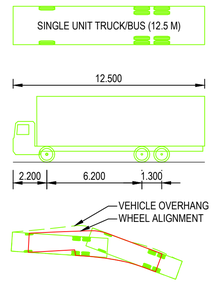
NORTH

LEGEND - A



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LEGEND - B

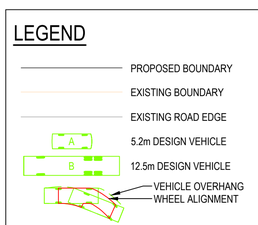


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LEGEND



0 5 10 20 30m

SCALE 1:300 (A1), 1:600 (A3)

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Verified	CSH	Date 25/03/2024
Approved	MV	Date 25/03/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: PROPOSED BAR/BAL INTERSECTION LAYOUTS
SHEET 02 OF 04

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DATUM	GDA	Scale	Size
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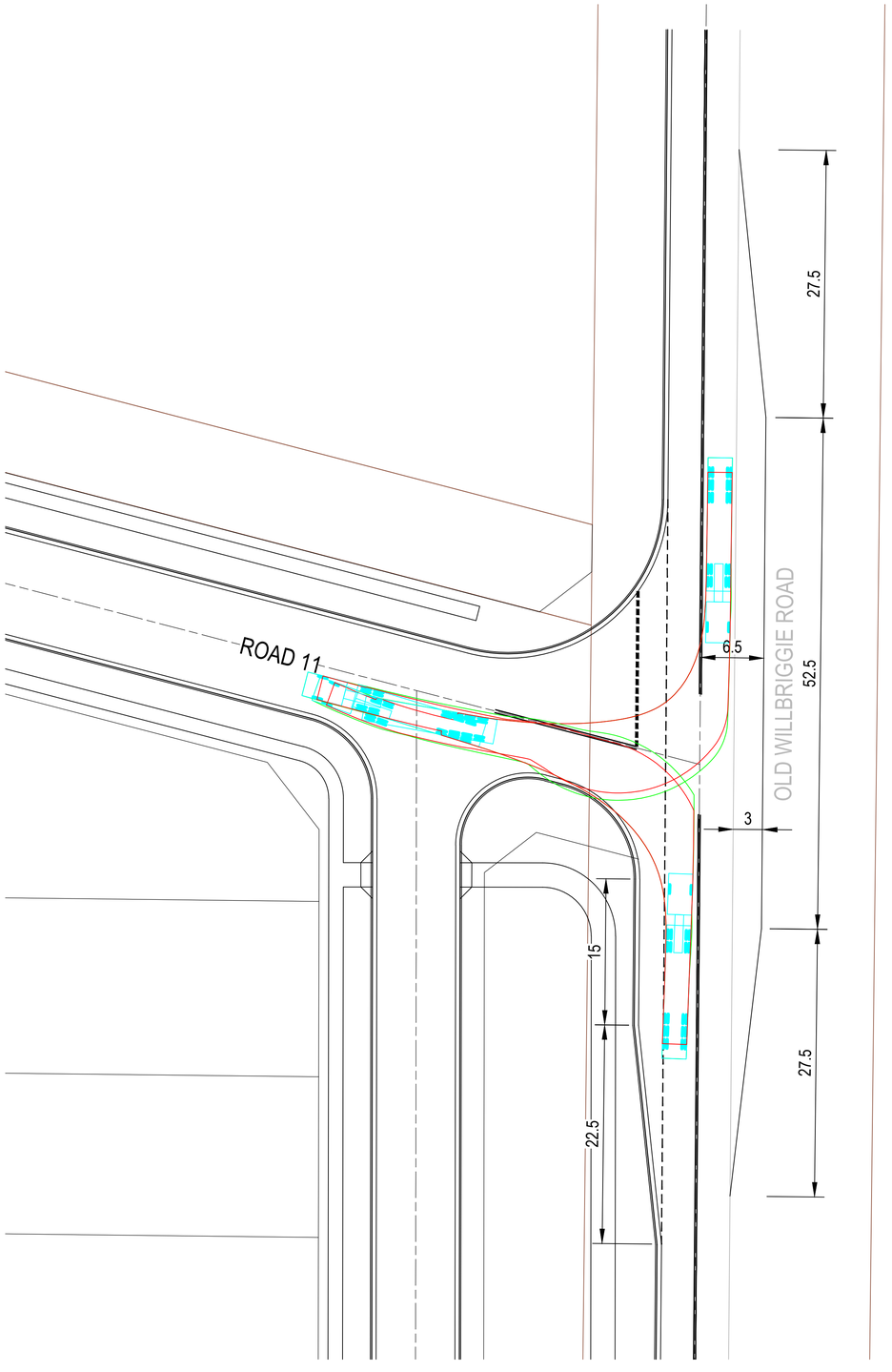
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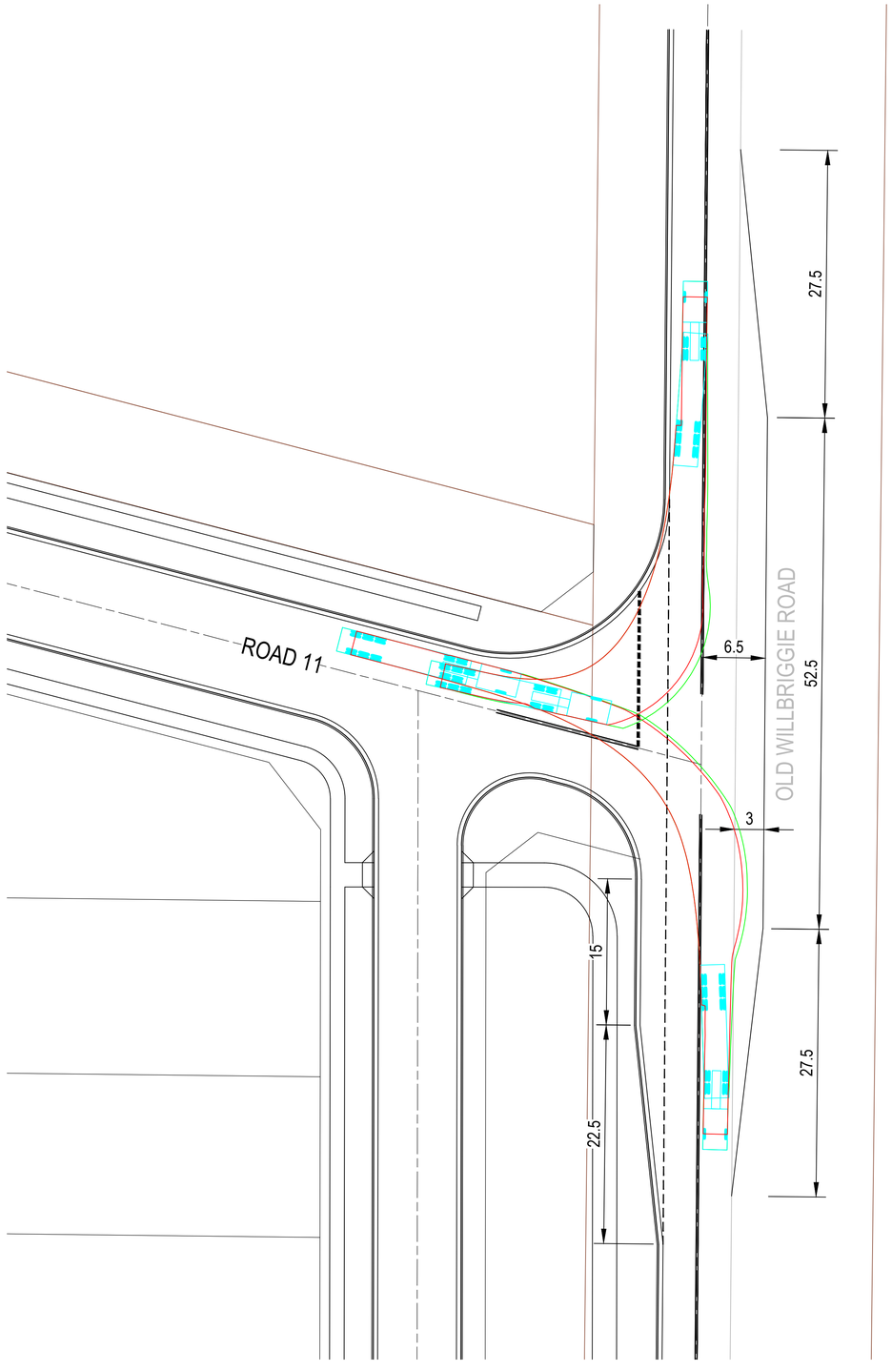
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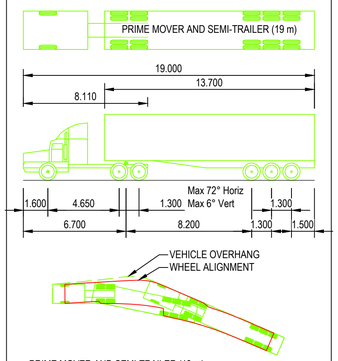


PROPOSED BAR/BAL INTERSECTION LAYOUTS

SCALE 1:300

NORTH

LEGEND - D

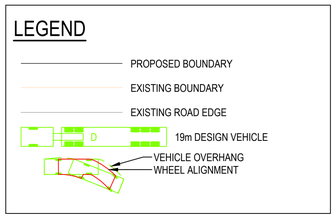


PRIME MOVER AND SEMI-TRAILER (19 m)	
OVERALL LENGTH	19.000m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.540m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
CURB TO CURB TURNING RADIUS	12.500m

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LEGEND



0 5 10 20 30m

SCALE 1:300 (A1), 1:600 (A3)

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Designed	LAB	9/02/2024
Verified	CSH	30/07/2024
Approved	MV	30/07/2024

Client: GRIFFITH CITY COUNCIL

Project: HANWOOD GROWTH AREA CONCEPT MASTER PLAN

Title: PROPOSED BAR/BAL INTERSECTION LAYOUTS SHEET 03 OF 04

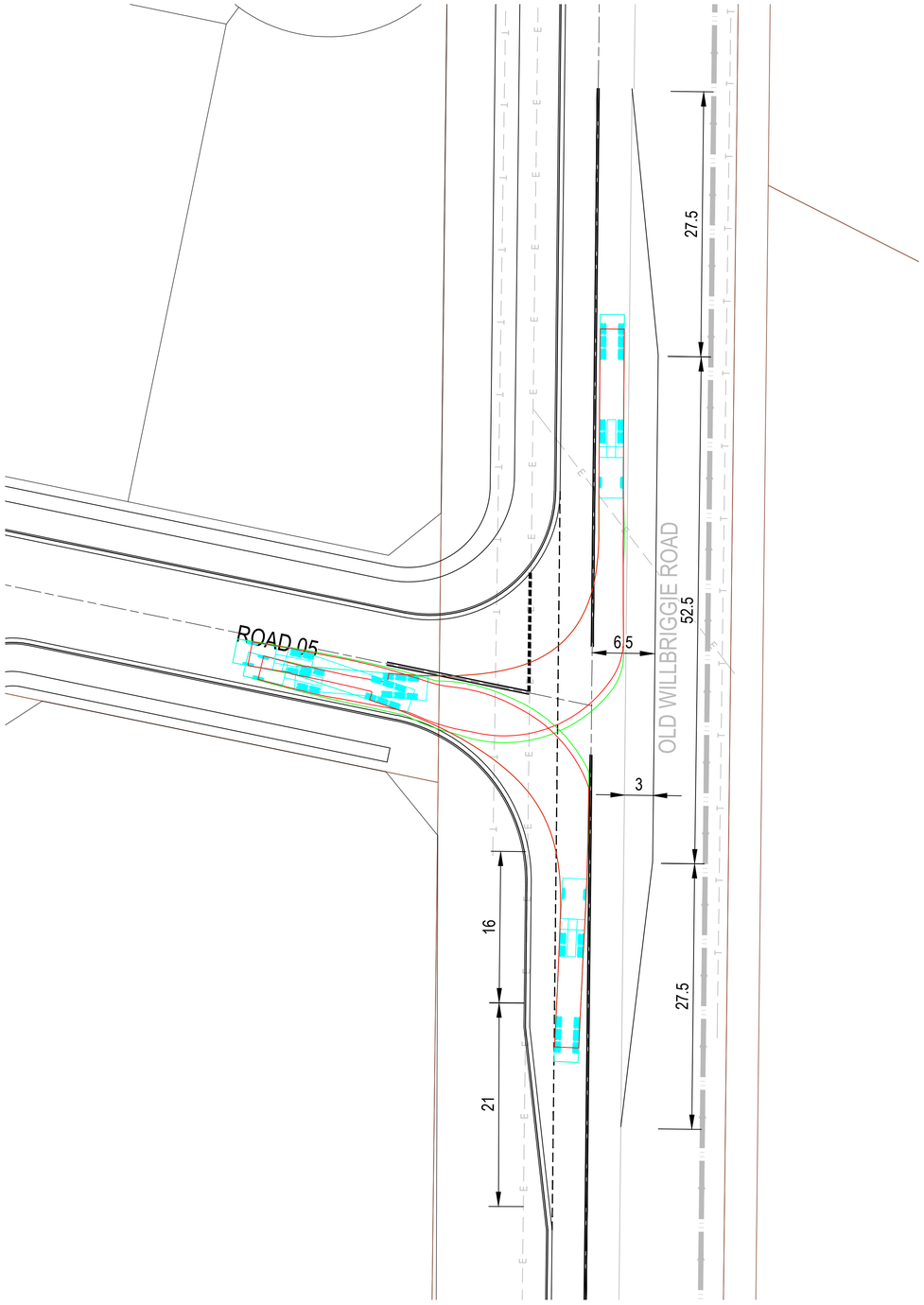
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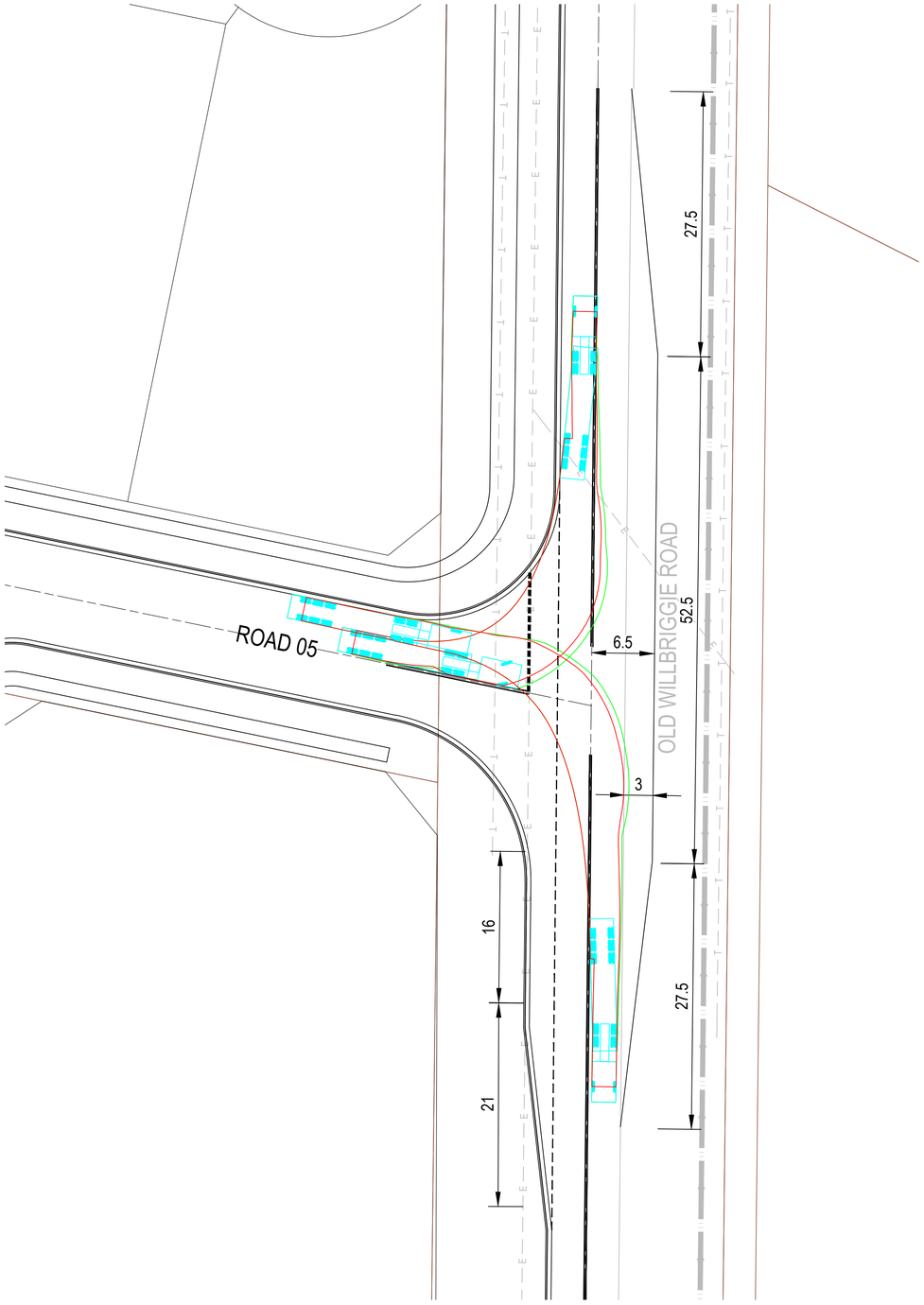
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Drawing Number: 304800722 C1042

Revision: 5

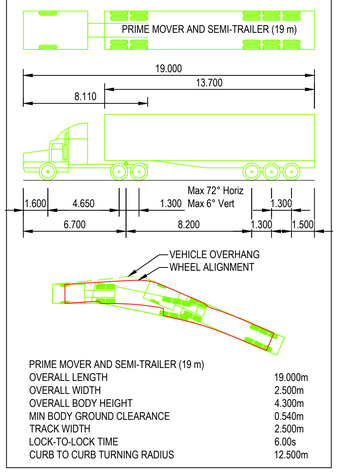
DATE PLOTTED: 19 March 2025 2:06 PM BY: KLEINHANS, ERNEST





NORTH

LEGEND - D

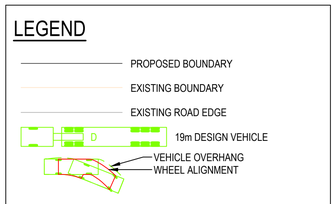


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LEGEND



0 5 10 20 30m

SCALE 1:300 (A1), 1:600 (A3)

PROPOSED BAR/BAL INTERSECTION LAYOUTS

SCALE 1:300

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Project: HANWOOD GROWTH AREA
CONCEPT MASTER PLAN

Title: PROPOSED BAR/BAL INTERSECTION LAYOUTS
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DATUM	GDA	Scale	Size
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Drawing Number: 304800722 C1043

Revision: 5

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Appendix G
Survey provided by Council

Appendix G **Survey provided by Council**

LINETYPE TABLE

SW	STORMWATER LINE
RW	RAW WATER LINE
	EXISTING ROAD
	EXISTING CONCRETE
UE	UNDERGROUND ELECTRICITY LINE
E	OVERHEAD ELECTRICITY LINE
	CENTERLINE OF ROAD
	BOTTOM OF BANK
	TOP OF BANK
W	WATER LINE
T	TELECOMMUNICATION LINE

HATCHED AREA

	CONCRETE SURFACE
	EXISTING BUILDING

(A) PROPOSED RIGHT OF ACCESS
(B) PROPOSED EASEMENT FOR DRAINAGE

LEGEND TABLE

OH	HYDRANT
M	WATER METER
	ELECTRICITY LIGHT POLE
	ELECTRICITY POLE
	ELECTRICITY STAY POST
F	RAW WATER FLOW METER
	SINGLE TELECOMMUNICATION PIT
EJ	ELEVATED JUNCTION PIT

MGA

EXISTING ACCESS
EXISTING ACCESS TO BE EXTENDED
LEONARD ROAD
PROPOSED ACCESS
(A)
(B)
DWELLING
SHED
POOL HOUSE
CONCRETE CHANNEL
ANDREATTA ROAD
PUMP SHED
PM 24261 RL 122.32

4 — 4001m²
3 — 8698m²
2 — 4300m²
5 — 4001m²
1 — 4300m²
6 — 4.357Ha
2 DP 1131414

98° 11' 52" 71.253
98° 11' 52" 59.512
83° 12' 30" 56.587
83° 12' 30" 6.676
83° 12' 30" 10.577
50.389
121.246
64.035
137.29
72.110
96.944
69.934
109° 14' 21"
57.211
14'
289°
69.934
67.914
56.934
65.175
19°
165.048
30"
199°
223.68
223.528
194.78
12'
11°
40"
194.90

DATE	No.	ISSUE	AUTH
13/10/22	1A	ISSUED TO CLIENT	GP

PRELIMINARY PLAN ONLY

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phl surveyors
115 Yambil Street, Griffith NSW
13 Gibraltar Street, Bungendore NSW
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POLKINGHORNE HARRISON LONGHURST

CLIENT: LOUIS SARTOR
TITLE: LOT 679 DP 751709, HANWOOD
PROPOSED SUBDIVISION

DATE: 13/10/2022
FILE: 1331A22.dwg
SCALE: 1:1500
COMMENTS:
CHECKED: GP | DRAWN: RS
JOB: IR1331 | A3– 548840_1A

100mm ORIGINAL A3 SHEET LIABILITY LIMITED BY A SCHEME APPROVED UNDER PROFESSIONAL STANDARDS LEGISLATION

Z:\PROPERTIES by No\1331\Drawings\1331A22

Appendix H
Stantec Traffic Impact Statement

Appendix H **Stantec Traffic Impact Statement**

Stantec

Memorandum

Project:	Hanwood Growth Area Master Plan	**Office:**	Sydney, St Leonards
Project №:	304800722	**Status:**	Final
Client:	Griffith City Council	**Prepared by:**	Liz McCormack
Date:	20 March 2025	**Approved by:**	Bayzid Khan
Subject:	**Transport Impact Statement**		

1. Introduction

Griffith City Council (Council) have engaged Stantec to prepare a Transport Impact Statement to support the Master Plan for the Hanwood Growth Area.

A Traffic and Transport study was prepared for the area by GHD in 2022 (Hanwood Traffic Impact Assessment). This assessment was based the assumption that the Hanwood Growth Area would consist of 175 total residences across three stages. However, Stantec's preliminary design indicated there may be a total of approximately 450 lots upon the completion of the works. Recently, the Griffith Worker and Housing Shortage Task force recommended that 50 per cent of lots in growth areas be reserved for medium density development. In response, this traffic assessment has assumed a maximum dwelling yield of 660 dwellings (50 per cent increase from previous 450 lots). The increased number of dwellings has been assumed to be proportionate across the three stages.

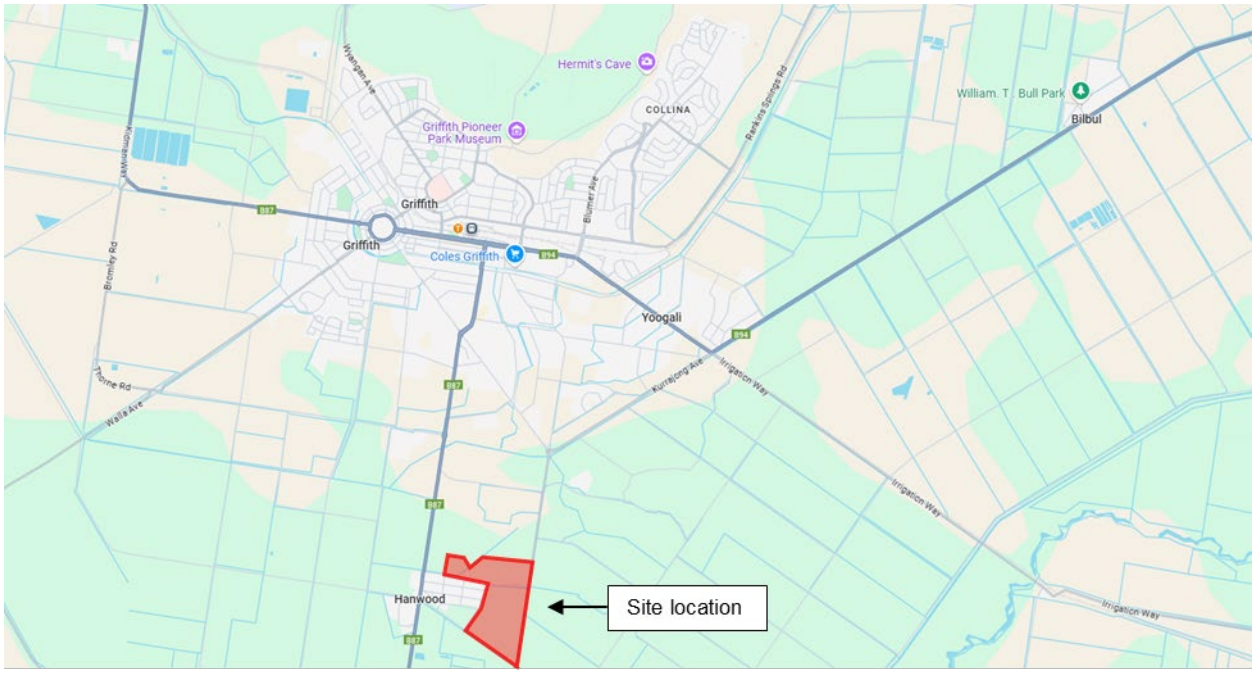
The purpose of this report is to provide a high level update to the impact assessment with regards to the increased yield in the area.

2. Existing conditions

The site is located in Hanwood, NSW and is located approximately one kilometre to the east of Hanwood and five kilometres to the south of Griffith.

The subject site and the surrounding environs are shown in Figure 2.1 below.

Figure 2.1 Subject site and surrounding environs



2.1 Surrounding road network

2.1.1 Road Hierarchy

Table 2.1 details the key surrounding roads that provide road access to the proposed development.

Table 2.1 Key roads surrounding proposed development

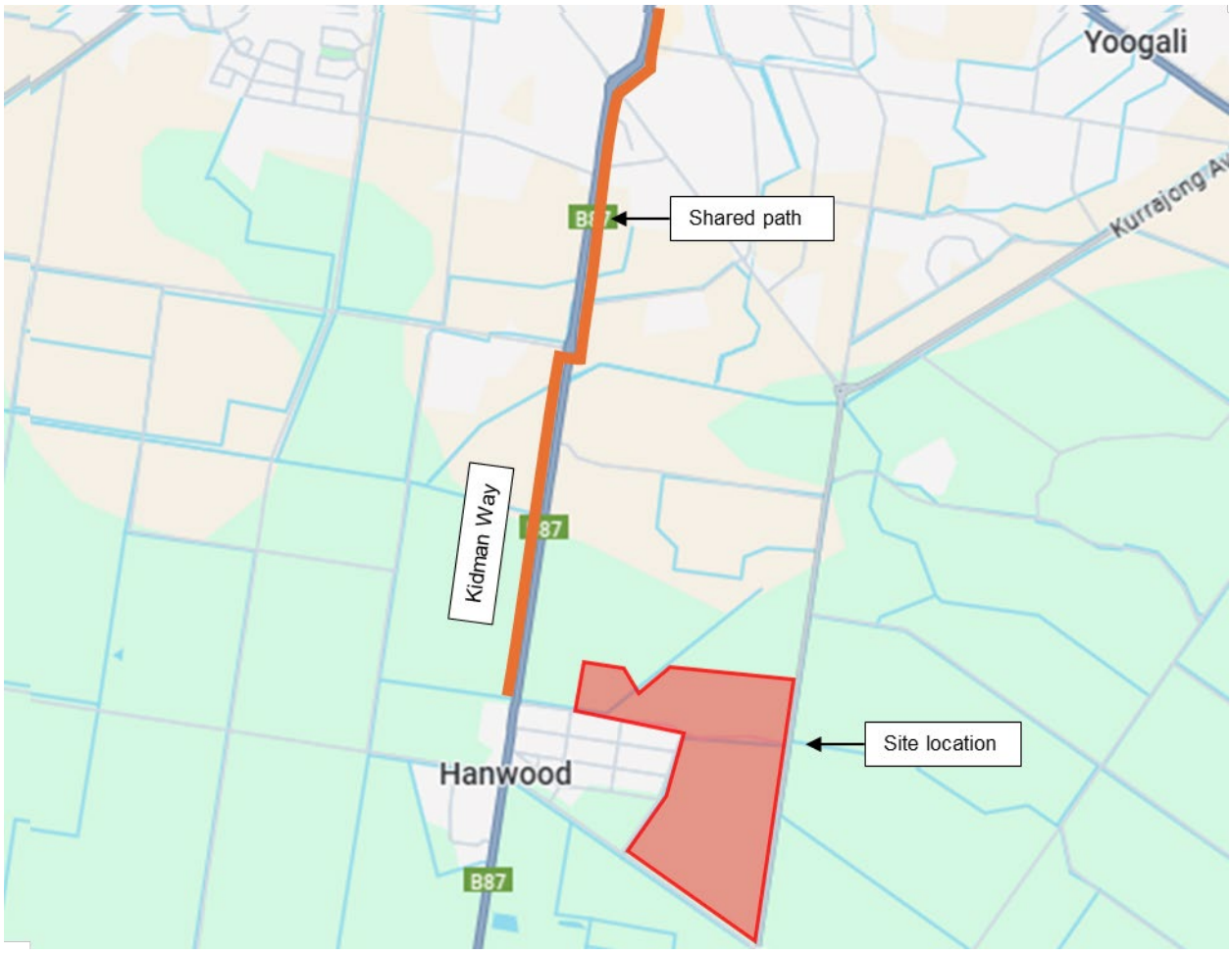
Road	Details
Kidman Way	Kidman Road is classified as a State Road. The road runs in a north-south alignment and provides the main access between Hanwood and Griffith. Kidman Way is an undivided road with one lane in each direction, with a posted speed limit of 50km/h through the town of Hanwood. Between School Street and Leonard Road there is a school zone. Within Hanwood, there is parking on both sides of the road.
Old Willbriggie Road	Old Willbriggie Road is a Local Road that has a north-south alignment to the east of Hanwood. It is a two lane, undivided road with a posted speed limit of 80km/h in the vicinity of the site and a carriageway wide of approximately 6.3 metres
Leonard Road	Leonard Road is a two-way, undivided local road that runs east-west between Kidman Way and Old Willbriggie Road through the existing Hanwood township. Leonard Road has a carriageway of approximately 7.0 metres.
Andreatta Road	Andreatta Road is a two-way, undivided local road that runs north-south between Leonard Road and Hanwood Avenue through the existing Hanwood township. Andreatta Road has a carriageway of approximately 6.5 metres.
Hanwood Avenue	Hanwood Avenue is a two-way undivided local road the runs north-west to south-eat between Kidman Way and Old Willbriggie Road with an approximate carriageway width of 6.0 metres.

2.2 Public transport and active transport

There is no public transport in the area surrounding the proposed development.

The active transport infrastructure in the vicinity of the site is a shared path the runs adjacent Kidman Way between Hanwood and Griffith. The location of this path is shown on Figure 3.1 below. The surrounding area also has limited active transport facilities in the area, for example there are no footpaths on Leonard Road or Andreatta Road.

Figure 3.2 Active transport surrounding subject site



2.3 Crash history

An analysis has been undertaken of the most recent five-year period of available crash data been accessed from the Transport for NSW Centre of Road Safety site. The locations and severity of the crash data for the five-year period is shown in Figure 6 and summarised in Table 2.2.

Figure 2.3 Crash map 2019 – 2023



Table 2.2 Crashes in the vicinity of the proposed development 2019 – 2023

Location	Number of crashes	Number of injuries	Number of fatalities
Kidman Way	7	3	0
Hanwood Avenue	2	2	0
Murrumbidgee Road	5	10	0
Thorne Road	5	8	0
Mansell Road	1	0	0
Total	20	23	0

There were 23 crashes that occurred in the five year period between 2019 and 2023. Seven of these crashes were on Kidman Way between Hanwood and Griffith. No crash has been recorded on Old Willbriggie Road and Leonard Road.

2.4 Existing traffic volumes

As part of the previous traffic assessment undertaken by GHD in 2021, traffic surveys were undertaken for intersections on Kidman Way and Old Willbriggie Road. The peak periods were found to be 8:15 to 9:15 in the AM and 3:15 to 4:15 in the PM. The 2021 traffic volumes are summarised in Table 2.2 below

Table 2.3 2021 surveyed volumes

Road	Peak period	Surveyed traffic volumes[1]		Total
		Northbound	Southbound	
Kidman Way	AM	241	158	**399**
	PM	296	275	**571**
Old Willbriggie Road	AM	100	110	**210**
	PM	144	147	**291**

[1] GHD 2021 report

3. Proposed development

3.1 Land use summary

The proposed development is a residential subdivision that would have a maximum dwelling yield of 660 units. These dwellings would be split into three stages, which are shown on the site layout plan in Figure 3.1 below, with a summary of the maximum dwelling numbers in each stage shown in Table 3.1. The number of dwellings in each stage has been increased proportionally from the previous Stantec assessment to reflect the anticipated maximum yield.

Figure 3.1 Proposed layout for Hanwood Growth Area



Table 3.1 Number of proposed dwellings by stage

Stage	Previously proposed number of dwellings	Updated number of proposed dwellings under maximum yield scenario
Stage 1	123	178
Stage 2	280	404
Stage 3	54	78
Total lots	**457**	**660**

3.2 Proposed road network upgrades/changes

The following changes to the road network are proposed to accommodate the proposed development:

- Upgrade of Leonard Road from a local road to a local distributor
- Closure of Leonard Road at Old Willbriggie Road
- New three-way roundabout at Leonard Road/ Andretta Road
- New Four way roundabout at Ash Street/ Leonard Road
- New Four way roundabout at Leonard Road/Road 01
- Upgrade of Andretta Road to a collector road
- Speed limit reduction on Old Willbriggie Road
- Two new intersections on Old Willbriggie Road to provide access to the proposed development

4. Traffic impact

4.1 Previous assessment

A previous traffic assessment was undertaken by GHD in 2021. This assessment assumed that the proposed total number of dwellings was 175. The conclusion of the assessment was that all access intersections assessed would operate at a Level of Service (LoS) A.

The previous assessment used a future assessment year of 2030, assuming 1 per cent per annum background growth, applied to the existing traffic volumes to establish base volumes. These 2030 base volumes have been adopted for the purposes of this assessment.

4.2 Traffic generation and distribution

The total traffic generation from the proposed development is summarised by stage in Table 4.1.

The Transport for NSW Guide to Transport Impact Assessment allows provisions for internal trips for any sub-division of large lands. These trips are internal and do not travel externally, hence are not considered for external road network assessment. Considering this, an internal trip rate of 15% has been adopted.

It is assumed that these internal trips would remain within the Hanwood village, which has existing services and amenities.

Table 4.1 Number of trips generated by the proposed development by stage

Stage	No. of dwellings	AM trip generation rate (vehicles per dwelling)	PM trip generation rate (vehicles per dwelling)	AM vehicle trips	PM vehicle trips
Stage 1	178	0.85	0.9	151	160
Stage 2	404			344	364

Stage	No. of dwellings	AM trip generation rate (vehicles per dwelling)	PM trip generation rate (vehicles per dwelling)	AM vehicle trips	PM vehicle trips
Stage 3	78			66	70
Total vehicular trips				**561**	**594**
Total vehicular trips (15% internal trips reduction)				***477***	***505***

Based on the layout of the proposed development, and a high level assessment of the road layout and nearby trip attractors, the following assumptions have been made about the traffic distribution:

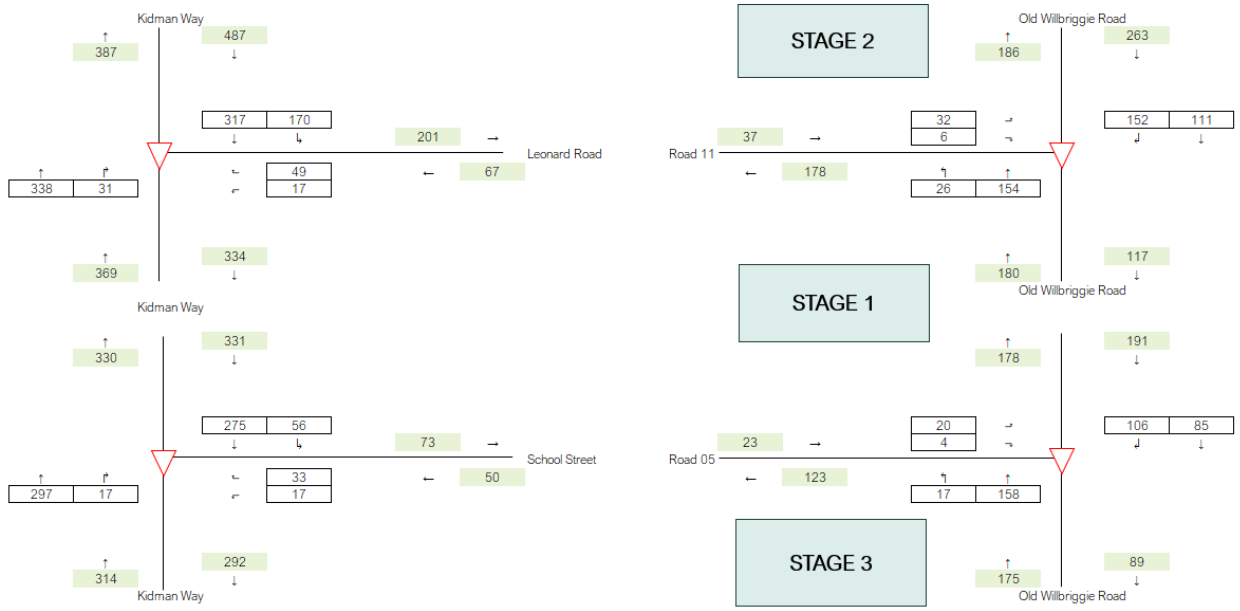
- 60% of vehicles will use Old Willbriggie Road and 40% of vehicles will use Kidman Way
- It is expected that a large majority of traffic from the proposed development would be travelling to and from locations in the Griffith area. As such, it has bene assumed that 85% of the traffic will be to/from the north and 15% of the traffic will be to/from the south
- For the intersections on Kidman Way, it is assumed that 100% of the eastbound traffic from Stages 1 and 2 will access the development via the Leonard Road/Kidman Way intersection and 100% of the eastbound traffic from Stage 3 will access the development via the Kidman Way/ School Street intersection
- For the intersections on Old Willbriggie Road, it is assumed that 100% of the eastbound traffic from Stages 2 will access the development via the Old Willbriggie Road/ Road 11 intersection and 100% of the eastbound traffic from Stage 1 and Stage 3 will access the development via the Old Willbriggie Road/ Road 01 intersection
- This assessment has focused on the main access points of the subdivision, nominated as the two intersections off Old Willbriggie Road and the Kidman Way/ Leonard Road intersections. It has been assumed that 100% of the Stage 1 traffic would utilise Lenard Road to account for the worst case. While some of this traffic from Stage 1 may access Kidman Way via School Street, however it is anticipated to only be a small number of vehicles which would not have a material impact.

The resultant traffic expected at each interaction for 2030 in the AM and PM peak period are summarised in Figure 4.1 and Figure 4.2 respectively.

Figure 4.1 Resultant intersection traffic for the AM peak period in 2030



Figure 4.2 Resultant intersection traffic for the PM peak period in 2030



The traffic volumes across both peak hours and intersections are reasonably low. Kidman Way and Old Willbriggie Road would be considered to have adequate capacity to accommodate both the assumed background traffic growth and the proposed development.

4.3 Intersection treatments

Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings (AGTM06-19) outlines different intersection turn treatments and provides advice on when they are appropriate for implementation. The low volumes of traffic mean it is likely there would be minimal delays to any of the surrounding intersections. However, the process of selecting an appropriate intersection type includes consideration of:

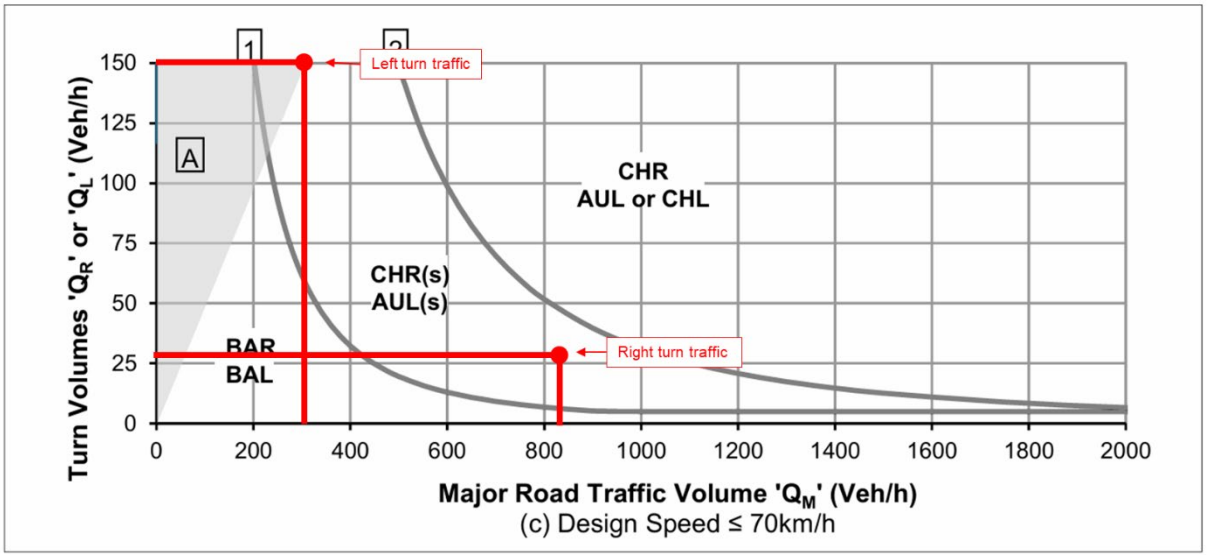
- Road safety for all users
- Traffic volumes, capacity, delay and level of service
- Traffic management strategies and objectives for the road network
- Available space and adjacent property access
- Road hierarchy and speed environment

As part of future planning for the site it will be necessary to consider all of these issues in order to ensure that suitable access arrangements for the site are achieved. The following sections provide recommendations of intersection advice based on the proposed volumes and AGTM06-19. The warrants for different treatment types have been assessed, which focus on safety performance outcomes.

4.3.1 Kidman Way/Leonard Road

Figure 4.3 shows the warrants laid out in section 2.6 of AGTM06-19 and the assumed peak volumes for both the right and left turn from Kidman Way into Leonard Road.

Figure 4.3 Warrants for turn treatments on major roads at unsignalised intersection for Kidman Way/Leonard Road



The PM peak hour has been used for assessment as it represents the worst case. The relevant volumes are as follows:

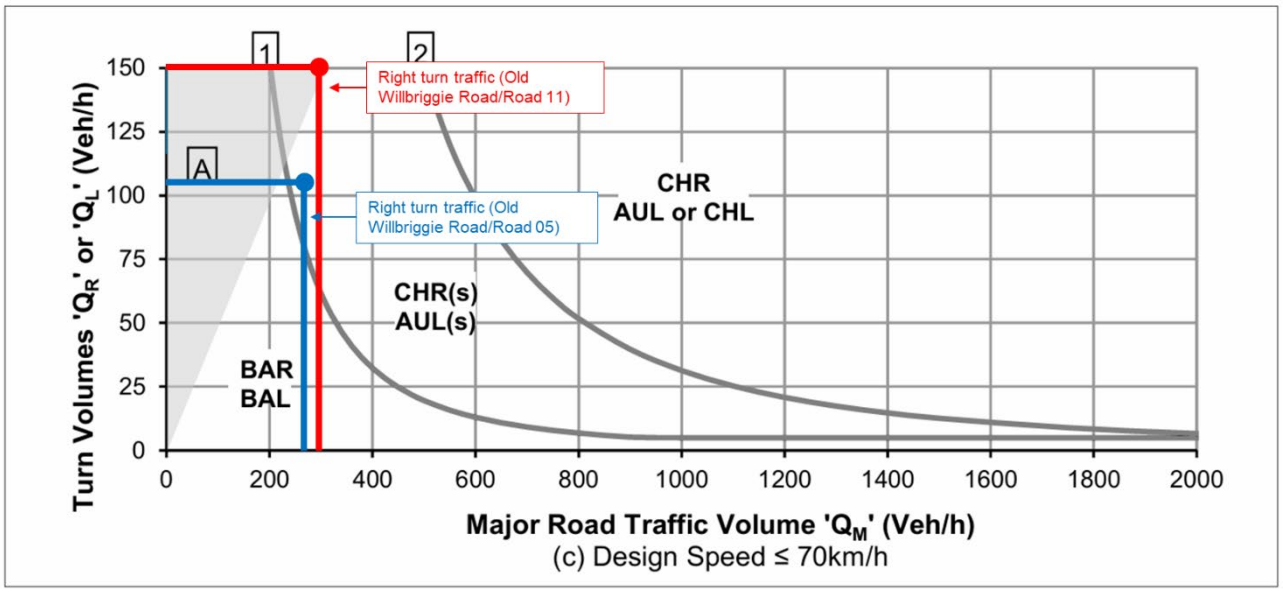
- For the left turn from Kidman Way from the north approach the major road traffic volume is 317 vehicles and the turn volume is 170 vehicles
- For the right turn from Kidman Way from the south approach the major road traffic volume is 811 vehicles and the turn volume is 31 vehicles

The above shows that a left turn auxiliary lane should be considered on the north approach on Kidman Way and a channelised right turn on the south approach. Examples of these treatments are shown in Figure 4.5 and Figure 4.6 respectively.

4.3.2 Old Willbriggie Road/site access

There are two proposed intersections on Old Willbriggie Road. The volumes for the northern intersection (Road 11) and the southern intersection (Road 05) are shown below on the Figure 4.4. As described above, it has been assumed that the posted speed limit on Old Willbriggie Road would be lowered to improve safety and accommodate the proposed development. For this assessment it has been assumed that the posted speed would be lowered to less than 70km/h.

Figure 4.4 Warrants for turn treatments on major roads at unsignalised intersection for Old Willbriggie Road/site accesses



The PM peak hour has been used for assessment as it represents the worst case. The relevant volumes are as follows:

- For the right turn from Old Willbriggie Road from the north approach into Road 11 the major road traffic volume is 291 vehicles and the turn volume is 152 vehicles
- For the right turn from Old Willbriggie Road from the north approach into Road 05 the major road traffic volume is 260 vehicles and the turn volume is 106 vehicles

For both proposed intersection with Old Willbriggie Road a channelised right turn is recommended to provide safe access. An example of this arrangement is shown below in Figure 4.6. For the left turns for both of these intersections, a basic left turn treatment would be considered adequate.

Figure 4.5 Example auxiliary left turn treatment

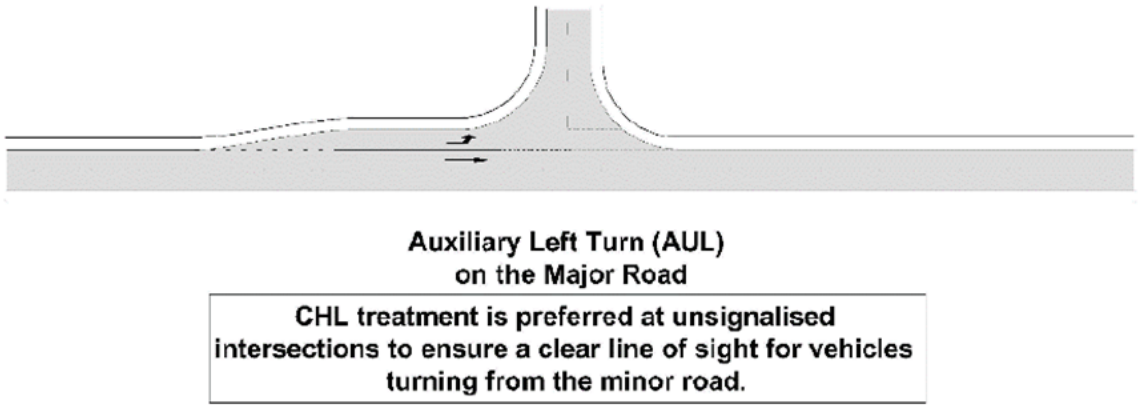


Figure 4.6 Example channelised right turn treatment



5. Parking requirements

Parking requirements for residential areas will apply to the lots should the land be rezoned. The car parking requirements for residential developments are set out in Griffith DCP (2020), which requires the following off street parking:

- 1 space per 1 bedroom dwelling
- 1.5 spaces per 2 bedroom dwelling;
- 2 spaces per 3 or more bedroom dwelling,
- plus 1 space per 5 dwellings for visitor parking

This would result in the need for 132 visitor parking spaces to be accommodated on street across the proposed development. Additionally, it is assumed that the dwelling parking will be accommodated for off-street.

6. Recommendations

The following is recommended from a traffic and transport perspective to support the proposed development:

- Improvements to active transport infrastructure including connectivity to the wider active transport network, such as an active travel link that connects to the existing shared path on Kidman Way.
- Consideration for a new bus stop/bus route to support future development and to reduce vehicular trips.

- Upgrade of the intersection at Kidman Way to provide an auxiliary left turn lane and a channelised right turn lane to improve the safety and operation of the intersection.
- Design of the intersections on Old Willbriggie Road and the site to include a channelised right turn lane to improve the safety and operation of the intersection.

7. Conclusion

The following conclusions can be drawn from the traffic assessment:

- The proposed development is expected the generate 476 trips in the AM peak hour and 504 trips in the PM peak hour.
- This amount of traffic is not expected to cause any congestion or delays considering the existing traffic volumes and a one per cent per annum background traffic growth to 2030.
- Griffith DCP required residential parking to be provided off-street, with visitor available parking on-street. It is understood the proposed development would supply an appropriate amount of off-street parking and include space for the required 132 visitor parking spaces.
- The design of the intersections and Kidman Way/Leonard Road and Old Willbriggie Road/site accesses should be considered in terms of safety and operation. Additional auxiliary and turning lanes are recommended based on a warrant assessment as per Austroads Guide to Traffic Management Part 6.
- It is recommended that consideration be given to providing for new bus stops and route for future
- It is recommended that the active transport facilities are improved, particularly with regards to connectivity with the wider active transport network

Overall, the proposal is supported from traffic and transport perspectives

Appendix I
Subconsultant Electrical Design

Appendix I **Subconsultant Electrical Design**

NOTES:
1. ALL MATERIALS USED WITHIN THE ESSENTIAL ENERGY NETWORK MUST BE ON CEOM7004 - MATERIALS INVENTORY - CONTESTABILITY (APPROVED). ANY ITEMS NOT ON THIS LIST MUST BE APPROVED FOR NON STANDARD INSTALLATION PRIOR TO BEING INSTALLED.
2. CERTIFIED DESIGN REMAINS VALID FOR A PERIOD OF 6 MONTHS AFTER CERTIFICATION BY ESSENTIAL ENERGY.
3. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE TO ENSURE ACCURACY AND NOTIFY DESIGNER OF ANY DISCREPANCIES PRIOR TO COMMENCING WORK.
4. ALL CONSTRUCTION WORKS ARE TO COMPLY WITH ESSENTIAL ENERGY CONSTRUCTION STANDARDS AND RELEVANT AUSTRALIAN STANDARDS/CODES OF PRACTICE

LEGEND

- Existing Pole - HV
- Existing Pole - HV/LV
- New Pole - HV/LV
- Existing Guy - Ground
- New URD Cubicle - LV
- New URD Cubicle - LV with Links
- New Pit (URD Cubicle) - LV
- New Closed Link - LV
- New Open Link - LV
- Existing URD Cubicle - LV
- Existing URD Cubicle - LV with Links
- Existing Pit (URD Cubicle) - LV
- New Substation Site - pad mounted
- Easement
- Existing Substation - pole mounted
- New Substation - pole mounted
- Conduit
- New Streetlight
- Existing LV Spreader
- Cable Underground - New LV
- Cable Underground - New Streetlight
- Cable Underground - New 11kV
- Cable Overhead Deleted
- Cable Overhead - Existing LV
- Cable Overhead - Existing HV
- Underground - Gas
- Underground - Phone/Fibre
- Underground - Water

REV	DATE	COMMENTS	DESIGNER
1	30/05/2024	INITIAL REVIEW	KP

NOTE:
1. THE INTENDED PURPOSE OF THIS PLAN IS THAT OF A CONSTRUCTION DRAWING FOR ELECTRICAL RETICULATION REQUIREMENTS. THIS PLAN IS NOT TO BE USED BY ANY OTHER PERSON OR COMPANY. DELTA STAR DESIGNS ACCEPTS NO RESPONSIBILITY FOR ANY LOSS OR DAMAGE SUFFERED FROM USE OF THIS PLAN IN ANY CAPACITY FROM WHAT ITS INTENDED PURPOSE IS.
2. DIMENSIONS, AREAS AND ITEMS SHOWN ARE APPROXIMATE ONLY AND MAY VARY. THE ELECTRICAL DESIGN SHOWN MAY BE SUBJECT TO VARIATION DEPENDING ON CONDITIONS ENCOUNTERED DURING INSTALLATION WORKS.
3. THIS PLAN IS NOT TO BE REPRODUCED UNLESS THIS NOTE IS INCLUDED. WRITTEN CONSENT FROM DELTA STAR DESIGNS IS REQUIRED PRIOR TO REPRODUCING THIS PLAN.

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PROJECT NAME	HANWOOD MASTER PLAN - STAGE 1	CONTESTABLE WORKS #	TBA
		DESIGNER	KURT
PROJECT LOCATION	LOT155 DP751729 OLD WILLBRIDGE RD HANWOOD NSW 2680	CHECKED	DAVID
		REVISION	1
CUSTOMER	STANTEC	ISSUE DATE	30/05/2024
DSD - 1096	PLOT SIZE - A1	SCALE	1:1000
		SHEET	1 OF 1