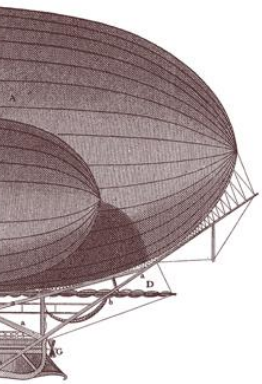

# ENGINEERS ADVICE



GANDY AND ROBERTS
159 DAVEY ST
HOBART TASMANIA
AUSTRALIA 7000
CONSULTING ENGINEERS

| | | | |
|---|---|---|---|
| **TO** | Zac Lovell | **DATE** | 21/10/2025 |
| **FROM** | Josh Farner | **TIME** | |
| **PROJECT** | New Tasmanian Youth Justice Facility | **PROJECT №** | 24.0447 |
| **SUBJECT** | Response to Council RAI | **REF №** | EA-C02 |

A Request for Additional Information (RFI) was received from Southern Midlands Council for the proposed Tasmanian Youth Justice Facility (DA2500106) on 30 September 2025.

The additional information concerning to the site Civil design has been provided in Civil Engineering Drawings and a revised Concept Services Report, both dated 21 October 2025. This Engineers Advice provides a summary of the RFI information provided in these documents, and provides further detail where required. It should be noted that the design drawings are for the purpose of concept design for development approval. Further engineering design will be carried out during the detailed design phase to produce the final design and documentation for construction.

**RFI Item 2. Parking and Sustainable Transport Code**

*More detail is required to demonstrate how drainage is conveyed from car parking, hardstand, and driveway access areas to onsite detention basin. Details should include car park, hardstand and driveway grades (long sections and cross sections) and typical details of stormwater conveyance system and grades.*

*More detail is required to demonstrate that car park and access gradients are in accordance with Australian Standard AS 2890 - Parking facilities, Parts 1- 6. Provide cross sections and long sections of car park, hardstand and driveway access and show grades and levels of car parking and hardstand areas required for vehicle manoeuvring.*

*In addition, please provide detail and grades of cut and fill batters surrounding car park areas and provide detail of any vehicle safety barriers if required.*

Refer updated Civil Engineering drawings for concept design finished surface contours, car park and roadway longitudinal sections, stormwater plans and longitudinal sections, and typical road and car park cross sections.

**RFI Item 5. Stormwater**

Stormwater system: Design. More detail required:

- *Provide stormwater long sections for major internal stormwater alignments, sized to convey the 5% AEP storm event.*
  Concept stormwater design longitudinal sections are provided in drawings C410-412. Detailed hydraulic design of the system to cater for the 5% AEP rainfall runoff shall be undertaken for building approval, once the detailed landscape design is finalised. As noted in the concept services report, on site detention shall be provided to ensure that post development runoff (up to a 5% AEP rainfall event) does not exceed the 5% AEP pre-development runoff.

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- *Provide details for general stormwater concepts for drainage of fire truck access road and building areas.*
  Refer drawing C700 for typical roadway cross sections and drawings C400-402 for site stormwater plans.

- *Provide detail for swale adjacent to entry road and proposed discharge point to Rifle Range Road.*
  Refer Pitt and Sherry for design of this portion of the works (design by others).

- *Provide cross sections of detention and bioretention basins with invert levels of stormwater infrastructure and bypass system for major events.*
  Refer drawing C701 for a cross section of the concept design detention and bioretention basin arrangement and outlet pipe. Refer drawing C400 for plan detail and detention basin overflow channel schematic design.

- *Provide details of maintenance access road to detention and bioretention basin with turning head for 8.8m service vehicle at a minimum.*
  An unsealed gravel access road shall be provided as the maintenance access road to the detention and bioretention basins. This access road shall match the Fire Access road as detailed on drawing C700. Refer drawing C200 for the turning manoeuvre of an 8.8 m service vehicle on this road.

- *Provide details of proposed upgraded table drain along Rifle Range Road and existing table drain discharge location.*
  Refer Pitt and Sherry for design of this portion of the works (design by others).

**RFI Item 6. Stormwater system: Quality**

Bioretention size has been reduced from the area estimation (based on the Derwent Estuary Program recommendations) using MUSIC modelling.

- *Provide MUSIC treatment train, pollutant reduction output and MUSIC model file for confirmation of bioretention size calculations.*
  In conjunction with submitting the MUSIC model to Council for review, additional model information and results have been provided within the updated Concept Services Report.

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- *Provide details on stormwater quality improvements through the proposed swale adjacent to the access driveway from Rifle Range Road, and how runoff from the driveway can be cleaned to meet Council's water quality treatment targets specified in Gandy and Roberts' report.*
  Refer Pitt and Sherry for design of this portion of the works (design by others).

- *Provide details on maintenance schedules and responsibilities for detention and bioretention basins.*
  A bioretention basin maintenance checklist has been provided in the updated Concept Services Report (refer Appendix C) detailing the inspection requirements and frequencies. This maintenance checklist shall also apply for the detention basin, with a consolidated document to be provided during detailed design which shall be integrated into the the facilities' management systems manuals.

**RFI Item 7. Soil and Water Management Plan (SWMP)**

*Because of the proximity to the Bagdad Rivulet, provide a Soil and Water Management Plan including erosion and sediment control measures during construction (basins, silt fencing, stabilised entry/exit, etc.).*

It is recommended that this item be conditioned as part of the development Planning Permit, to be provided prior to start of works on site. This will allow the SWMP to be developed in conjunction with the builder and site manager and will ensure that the SWMP is appropriate at the time of construction.

**RFI Item 8. On site sewer disposal**

*As the site cannot be connected to the Taswater sewer network and is identified within the SES 1% + CC shows H1 hazard level overland flow, please provide a Wastewater Assessment and Design Report prepared by a suitably qualified person to demonstrate that wastewater can be effectively be treated on the site.*

Refer to the updated Concept Services Report Appendix A for post-development overland flow mapping. The proposed sewer treatment areas are located outside of the post-development 1% AEP overland flow extents.

Refer to the updated Concept Services Report Appendix D for sewer servicing concept design information and Onsite Wastewater Management Systems (OWMS) calculations. It should be noted that these calculations have been undertaken based on the concept design, and are to be verified during detailed design.

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**RFI Item 11. Flood-Prone Areas Hazard Code**

*The SES 1% + CC shows H1 hazard level overland flow on the property, therefore the land is subject to risk from flood or has the potential to cause increased risk from flood. Council requests that a Flood Hazard Report be prepared by a suitably qualified person.*

*Also, please provide a Stormwater Management Plan prepare by a suitably qualified person that demonstrates the pre and post overland flow paths.*

Refer to Section 2.1 and Appendix A of the updated Concept Services Report for an assessment of overland flow across the site, including pre- and post-development flow mapping for the 1% AEP + CC rainfall event. A revised flow path is proposed to redirect all overland flow around the site perimeter, ensuring an acceptable risk of inundation for the new buildings and users of the facility.

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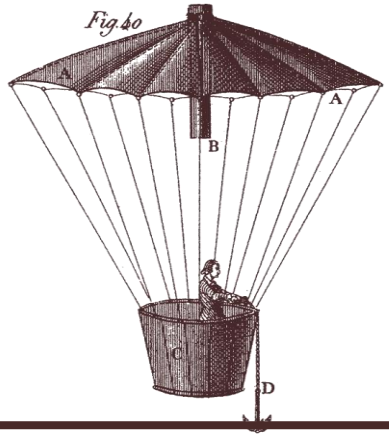


# Tasmanian Youth Justice Facility

## Concept Services Report

466 Brighton Road, Pontville
for Grieve Gillett Architects

21 October 2025

Version control

| Revision | Description | Issue date | Issued by |
|---|---|---|---|
| A | Preliminary Issue | 13.06.2025 | Joshua Farner |
| B | Issued for Development Approval | 29.07.2025 | Joshua Farner |
| C | Revised for Development Approval | 21.10.2025 | Joshua Farner |

PROJECT NUMBER **24.0447**
REPORT AUTHOR **Joshua Farner**
CHECKED BY **Dale Hayers**

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# Contents



# Figures

# 1 Introduction

Gandy and Roberts Consulting Engineers have been engaged by Grieve Gillett architects to undertake aspects of the engineering design for the new Tasmanian Youth Justice Facility. The facility is proposed on a greenfield site located at 466 Brighton Road, Pontville, as shown in **Figure 1** below.

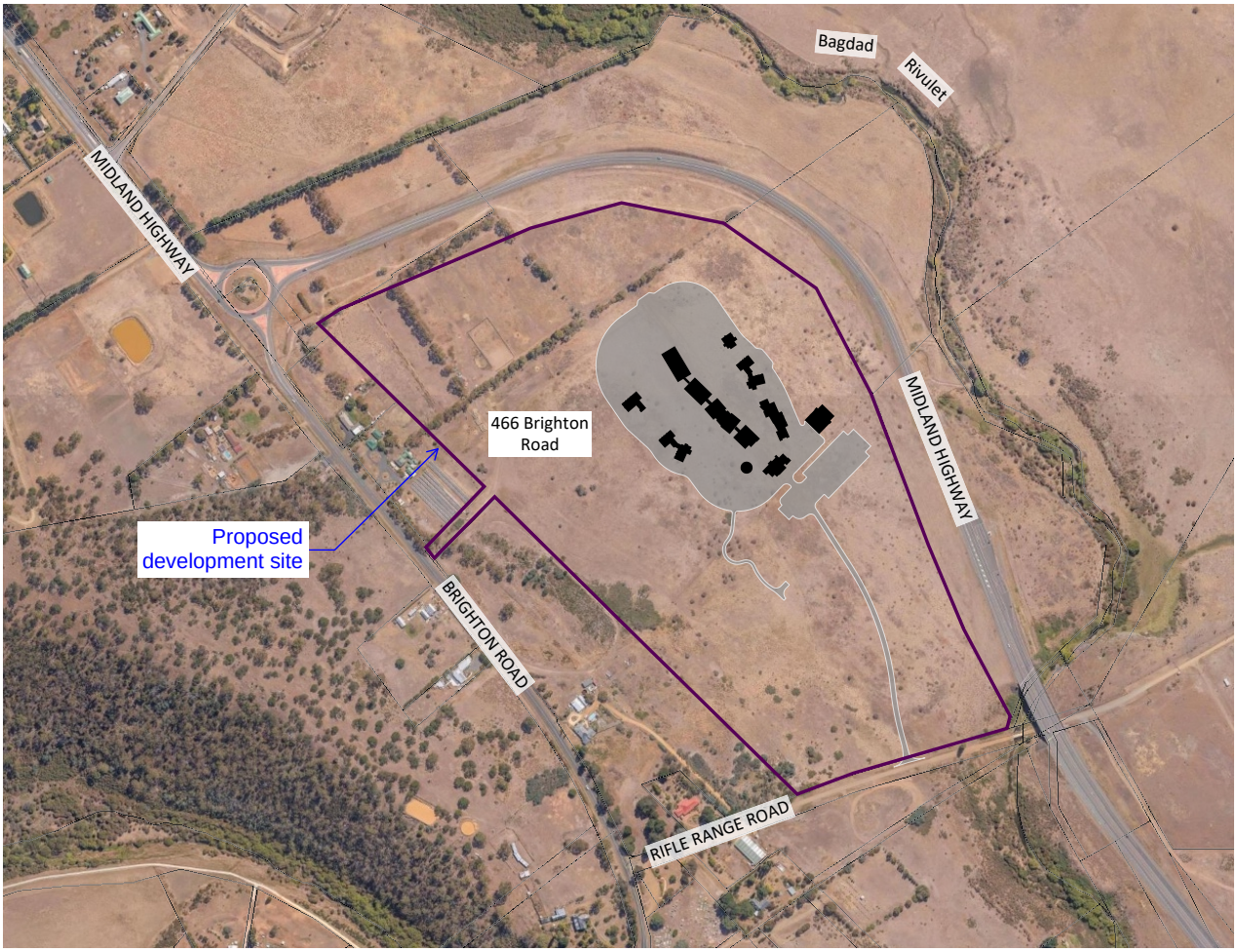



**Figure 1: Site location**

## 1.1 Existing Site

The entire site forms an area approximately 32 ha and is bounded to the north and east by the Midland Highway, and to the south by Rifle Range Road. A footprint within the site of approximately 6.99 ha will be utilised for the proposed facility. The site is predominantly gently sloping, with an average grade of around 2% falling from the north to the south. A broad and shallow valley passes through the centre of the land, forming a natural overland flow path towards Rifle Range Road.

The site is zoned as 'Rural' under the Tasmanian Planning Scheme.

### 1.1.1 Existing Infrastructure

There are no existing services within the footprint of the proposed development. As part of the development, access is to be provided via Rifle Range Road during an early works stage.

# 2 Stormwater Management and Water Sensitive Urban Design

As part of the site design, stormwater treatment and on-site detention (OSD) shall be provided to align the post-development runoff to pre-development conditions and meet the capacity of the receiving downstream infrastructure. Stormwater runoff from the new facility is proposed to be conveyed along the existing flow path through the site and shall be discharged to Rifle Range Road before ultimately reporting to the Bagdad Rivulet.

## 2.1 Overland Flow

An existing overland flow path within the site has been identified by the SES Strategic Flood Mapping (refer **Figure 2** below). The catchment reporting to the proposed development site is shown in **Figure 3**, and includes a small portion of the eastern face of Winton Hill on the western side of Brighton Road. This rainfall runoff is conveyed via culverts underneath Brighton Road, and, during more extreme rainfall events, contributes to localised rainfall runoff to form overland flow within the site.

For this analysis, only the contributing runoff affecting the new proposed buildings was considered. For the access road site design, a more extensive runoff catchment has been considered to encapsulate all runoff reporting to the new site access at Rifle Range Road. The site access shall be designed to provide 1% AEP flood immunity, ensuring access to the site during a high rainfall event. Refer Pitt and Sherry design Memo (*Subject: Tasmanian Youth Justice Facility – Access Road Culvert Hydraulic Sizing*, 18 September 2025) for further detail.

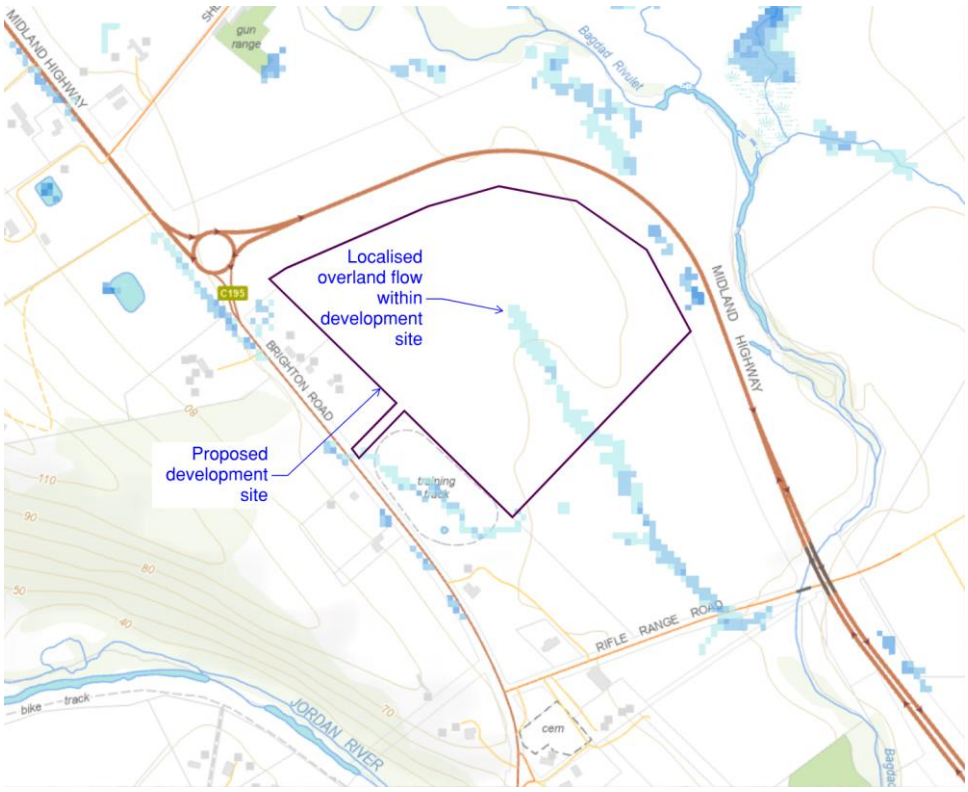



**Figure 2: 1% AEP SES Strategic Flood Mapping**

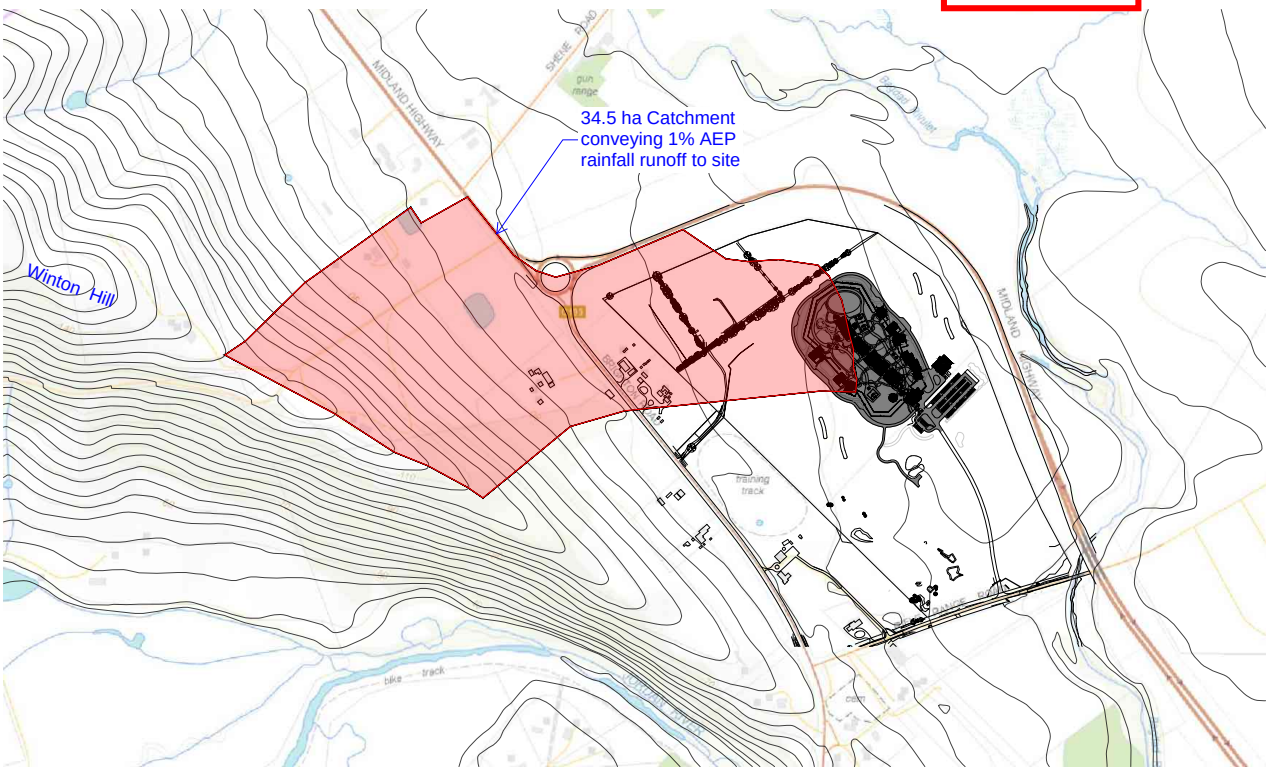



**Figure 3: 1% Rainfall runoff catchment impacting the proposed development site**

To quantify the rainfall runoff potentially impacting the development site under a 1% AEP flood event, a runoff analysis was undertaken in XPSWMM 2026 using the methods outlined in ARR 2019. Hydrological parameters were adopted in accordance with the Pitt and Sherry *Access Road Culvert Hydraulic Sizing* report. Rainfall depth data was obtained from the BOM for Latitude -42.676, Longitude 147.264 and an increase of 18% was applied for climate change effects. Runoff results for the catchment (as delineated in **Figure 3**) are presented in **Figure 4** below.

To protect the new development from overland flow, a landscape swale is proposed along the western boundary of the site, sized appropriately to convey 1% AEP rainfall runoff. To undertake concept design of this swale, 2D modelling was undertaken in 12d Model using the TUFLOW engine. Inundation maps are presented in Appendix A for the pre- and post-development site layout.

As shown in Appendix A, a modified overland flow path can be provided to effectively convey the 1% AEP rainfall runoff around the perimeter of the proposed development footprint. During detail design, a minimum of 300 mm freeboard shall be provided between the finished floor levels and the adjacent inundation levels, ensuring that the new buildings achieve a tolerable risk from flood. Given that the modified overland flow path shall be outside of the facility perimeter and all associated access roads, the food hazard is considered acceptable.

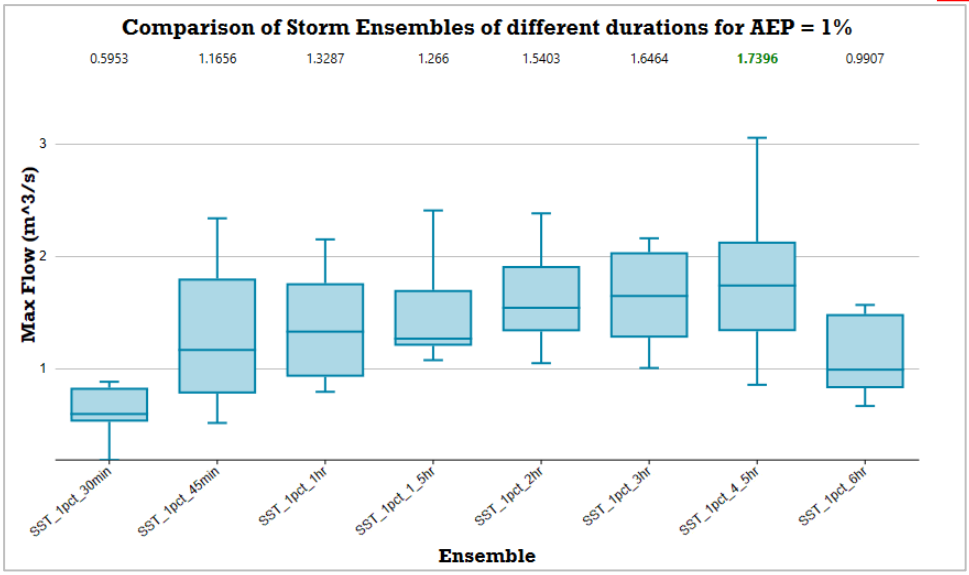



**Figure 4: 1% + CC Rainfall runoff catchment impacting the proposed development site**

## 2.2 Stormwater Treatment

In order to comply with Council requirements and incorporate water sensitive urban design (WSUD) into the development, stormwater detention and treatment shall be incorporated across the site to more closely align the developed site with the natural water cycle, minimise environmental degradation and enhance the landscape aesthetic.

To comply with Council policy, stormwater treatment targets shall be adopted as outlined in **Table 1** below.

**Table 1: Water Quality Treatment Targets**

| |
|---|
| From the Tasmanian State Stormwater Strategy 2010: |
| *80% reduction in the average annual load of total suspended solids (TSS) based on typical urban stormwater TSS concentrations; AND* |
| *45% reduction in the average annual load of total phosphorus (TP) based on typical urban stormwater TP concentrations; AND* |
| *45% reduction in the average annual load of total nitrogen (TN) based on typical urban stormwater TN concentrations* |

WSUD may be implemented in a number of ways across the site, and will be distributed across the site to best align with the detail site design. WSUD elements may include:

- Swales
- Rainwater harvesting for on-site reuse
- Raingardens/Bioretention basins

Primary detention and treatment basins are proposed directly downhill of the main development site and car park. Due to the local landscape aesthetics and area available for WSUD, a bioretention system is considered the most suitable treatment solution for the development.

To investigate treatment options for the site and work towards the optimal treatment solution, two analyses have been undertaken for the preliminary sizing, as outlined below.

### 2.2.1 Analysis based on Derwent Estuary Program WSUD Engineering Procedures

This analysis was undertaken for several catchments across the site, as delineated in **Figure 5** below. The required treatment areas based on the DEP analysis are provided in **Table 2** below, and indicate a bioretention system requirement of 530 $m^2$.

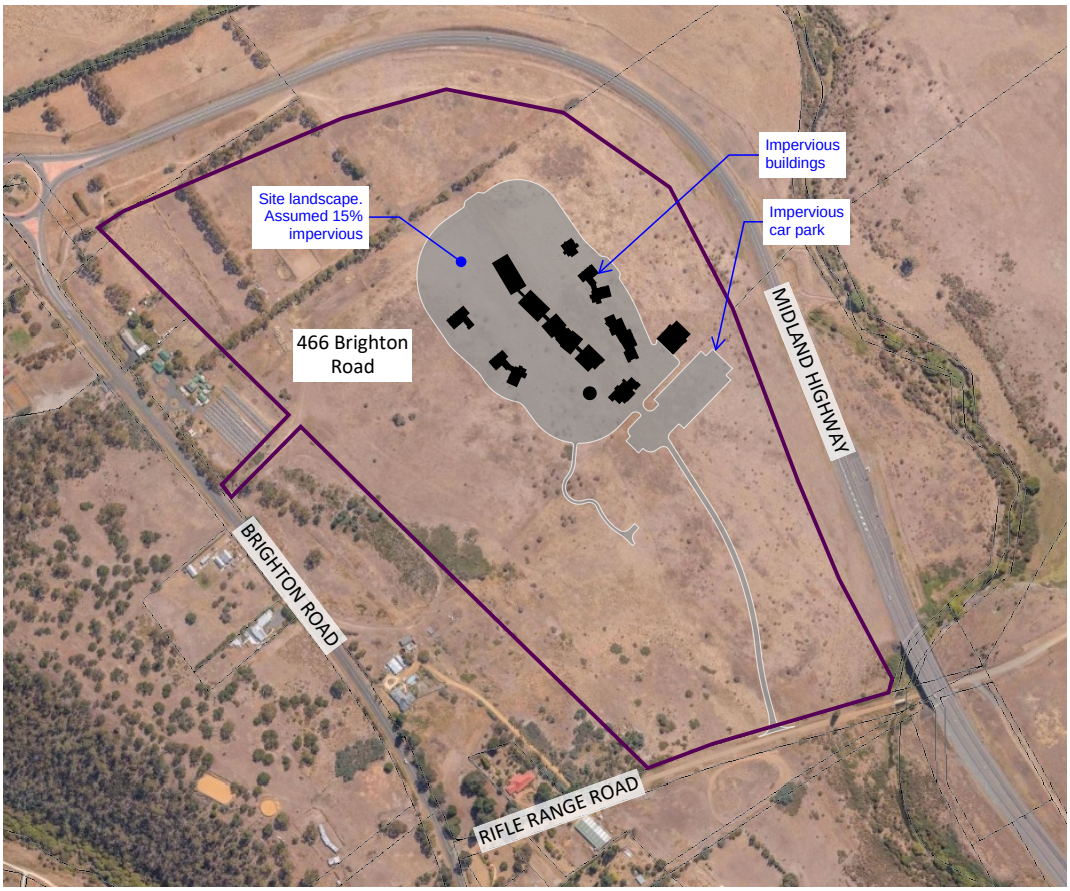



**Figure 5: Impervious site catchments**

**Table 2: Bioretention treatment requirements (DEP analysis)**

| Catchment | Total area (m2) | % impervious | Tot. impervious area (m2) | Bioretention | |
|---|---|---|---|---|---|
| | | | | Req'd area: | 1.30% |
| | | | | Scaling: | 1.8152 |
| **BLDG A** | 534 | 100% | 534 | 13 | |
| **BLDG B** | 710 | 100% | 710 | 17 | |
| **BLDG C/D** | 807 | 100% | 807 | 19 | |
| **BLDG E/F/G/H** | 2845 | 100% | 2845 | 67 | |
| **BLDG J** | 614 | 100% | 614 | 14 | |
| **BLDG K** | 614 | 100% | 614 | 14 | |
| **BLDG L** | 248 | 100% | 248 | 6 | |
| **BLDG M** | 174 | 100% | 174 | 4 | |
| **BLDG N** | 395 | 100% | 395 | 9 | |
| **Site Landscape** | 41872 | 15% | 6280.8 | 148 | |
| **Car Park** | 5414 | 100% | 5414 | 128 | |
| **TOTAL** | 54,227 | | 18,635 | **SUM** | 440 |

### 2.2.2 Analysis using the Model for Urban Stormwater Improvement Conceptualisation

For comparison, a further analysis was undertaken in MUSIC for the entire site, with results outlined in **Table 3 below**. This analysis considered the entire stormwater treatment train, including the proposed detention basin and roadside swales. From this analysis, the site bioretention requirement is estimated to be 230 $m^2$ (filtration area).

**Table 3: MUSIC analysis site catchment areas**

| Catchment (area; ha) | Area (ha) | % Impervious |
|---|---|---|
| Buildings (0.69 ha) | 0.69 ha | 100% |
| Landscape (4.14 ha) | 4.14 ha | 15% |
| Car Park (0.54 ha) | 0.54 ha | 100% |
| Fire ring road (0.032 ha) | 0.032 ha | 100% |

The MUSIC model catchment areas and treatment train results are presented in **Figure 6** below. A concept bioretention schematic detail is provided in Appendix B. A Bioretention Basin Maintenance Checklist is provided in Appendix C, with recommended inspection frequencies and actions.

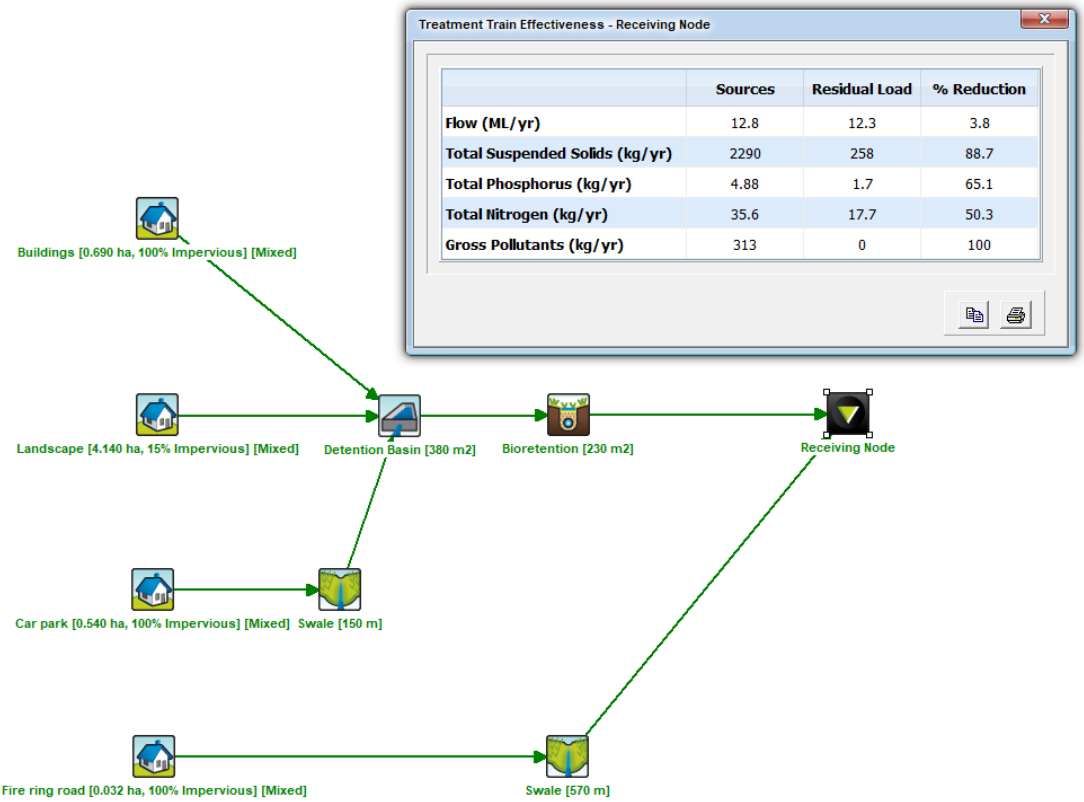


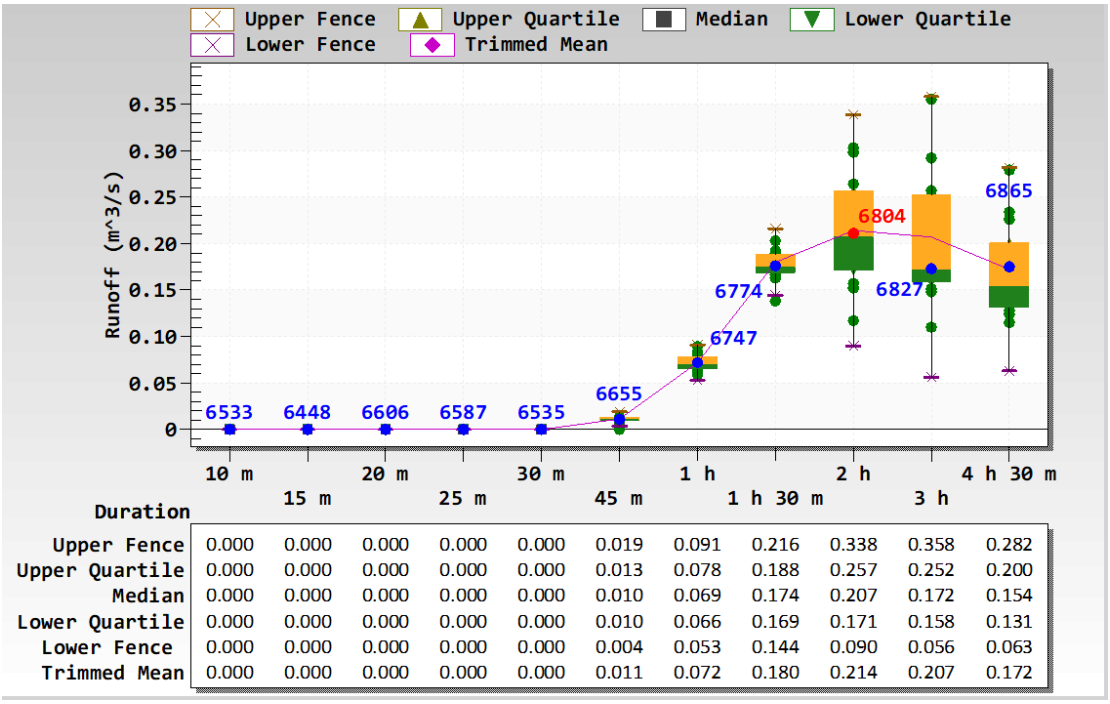

**Figure 6: MUSIC catchment areas and treatment train effectiveness results**

The treatment area can be accommodated on site. The required treatment area will be finalised during detail design, and may incorporate a distributed approach across the site. Additional WSUD elements may be provided to the site access road in addition to a grass lined swale drain. Council stormwater quality treatment targets will be met, with final results provided in detail design.

## 2.3 Stormwater Disposal

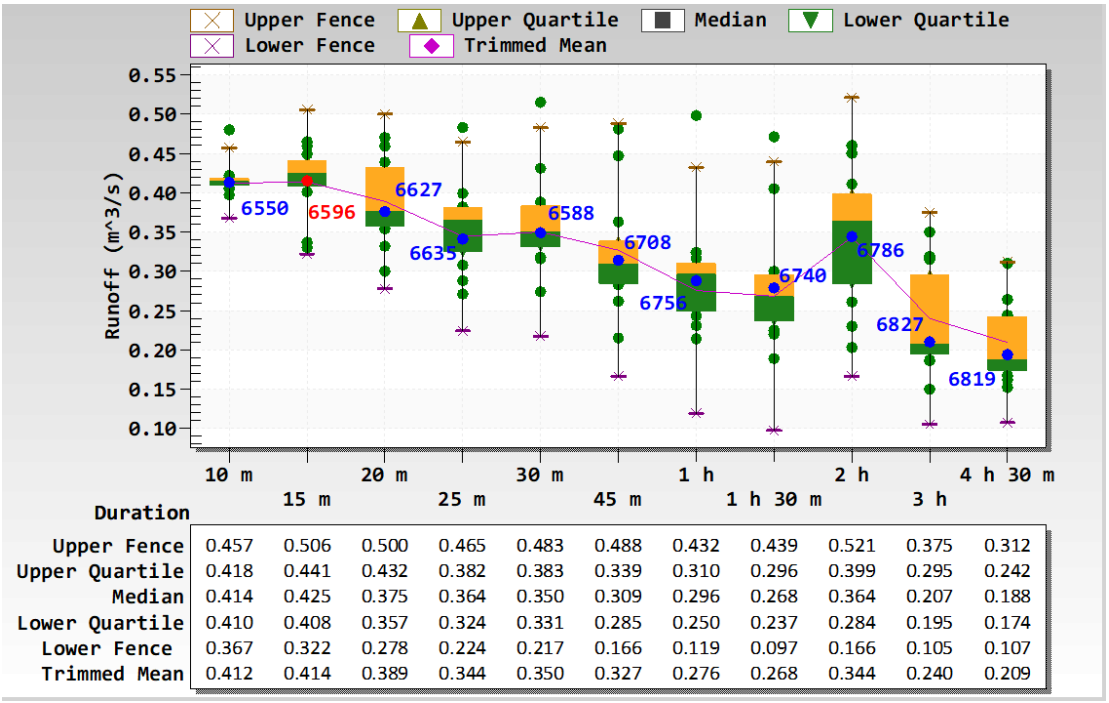
Rainfall runoff from the site currently drains to Rifle Range Road to the south of the site. As a part of this development, detention will be designed in order to reduce post-development runoff to align with the pre-development conditions for rainfall events up to the 5% Annual Exceedance Probability event, to ensure that downstream networks are not adversely impacted as a result of the development.

A hydrological analysis has been undertaken on the development footprint, with the pre-development estimated runoff flow rates for the 5% AEP rainfall event shown in **Figure 7** below.




| Duration | 10 m | 15 m | 20 m | 25 m | 30 m | 45 m | 1 h | 1 h 30 m | 2 h | 3 h | 4 h 30 m |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Upper Fence | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.019 | 0.091 | 0.216 | 0.338 | 0.358 | 0.282 |
| Upper Quartile | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.013 | 0.078 | 0.188 | 0.257 | 0.252 | 0.200 |
| Median | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 | 0.069 | 0.174 | 0.207 | 0.172 | 0.154 |
| Lower Quartile | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 | 0.066 | 0.169 | 0.171 | 0.158 | 0.131 |
| Lower Fence | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.053 | 0.144 | 0.090 | 0.056 | 0.063 |
| Trimmed Mean | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.011 | 0.072 | 0.180 | 0.214 | 0.207 | 0.172 |

**Figure 7: 5% AEP Pre-development site discharge**




| Duration | 10 m | 15 m | 20 m | 25 m | 30 m | 45 m | 1 h | 1 h 30 m | 2 h | 3 h | 4 h 30 m |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Upper Fence | 0.457 | 0.506 | 0.500 | 0.465 | 0.483 | 0.488 | 0.432 | 0.439 | 0.521 | 0.375 | 0.312 |
| Upper Quartile | 0.418 | 0.441 | 0.432 | 0.382 | 0.383 | 0.339 | 0.310 | 0.296 | 0.399 | 0.295 | 0.242 |
| Median | 0.414 | 0.425 | 0.375 | 0.364 | 0.350 | 0.309 | 0.296 | 0.268 | 0.364 | 0.207 | 0.188 |
| Lower Quartile | 0.410 | 0.408 | 0.357 | 0.324 | 0.331 | 0.285 | 0.250 | 0.237 | 0.284 | 0.195 | 0.174 |
| Lower Fence | 0.367 | 0.322 | 0.278 | 0.224 | 0.217 | 0.166 | 0.119 | 0.097 | 0.166 | 0.105 | 0.107 |
| Trimmed Mean | 0.412 | 0.414 | 0.389 | 0.344 | 0.350 | 0.327 | 0.276 | 0.268 | 0.344 | 0.240 | 0.209 |

**Figure 8: 5% AEP Post-development site discharge**

From this analysis, the permissible site discharge (PSD) from the development area can be taken as 207 L/s. To detain the post-developed site to the PSD, an estimated detention volume of 240 $m^3$ will be required. This has been calculated based on the concept design impervious catchments. The final detention requirement shall be calculated during detail design based on the fully developed landscape design, and may result in a reduced detention volume.

On Site Detention (OSD) is intended to be provided via an above ground landscape basin downhill of the proposed development site. The basin will be designed to integrate into the existing overland flow path within the site and shall be designed with a similar visual aesthetic to a farm dam. Stormwater discharge hydrographs for the pre-development, post-development, and post-development with detention site runoff are presented in **Figure 9** below. These results present the median peak flows for the critical storm events for the concept design analysis. As shown, the post-development site discharge can be limited to the pre-development site runoff.

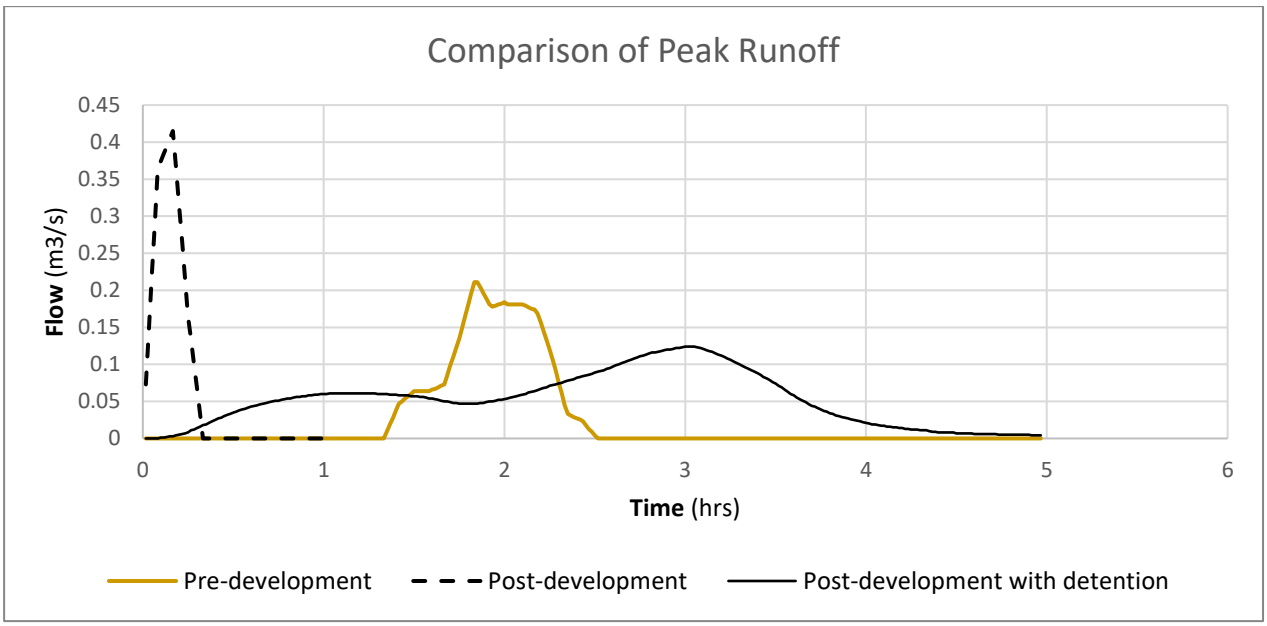



**Figure 9: Site rainfall runoff**

# 3 Sewer Service Connection

Currently, the proposed development site is not serviced by Taswater's municipal sewage network, as shown in **Figure 10** below. Under the Tasmanian Planning Scheme, sewer servicing requirements are not directly addressed for Buildings and Works under *Section 20: Rural Zone*. In accordance with Section 11.5.3, however, lots *"must be capable of accommodating an on-site wastewater treatment system adequate for the future use and development of the land."*

For this development, primary effluent treatment is proposed via a distributed system of septic tanks. Two sewer pump wells are proposed (providing redundancy to the site) with Land Application Areas designated to the east and to the west of the development. Refer Appendix D for a concept design sewer servicing summary and OWMS calculations. These calculations have been undertaken to inform the concept design, and shall be verified during detailed design.

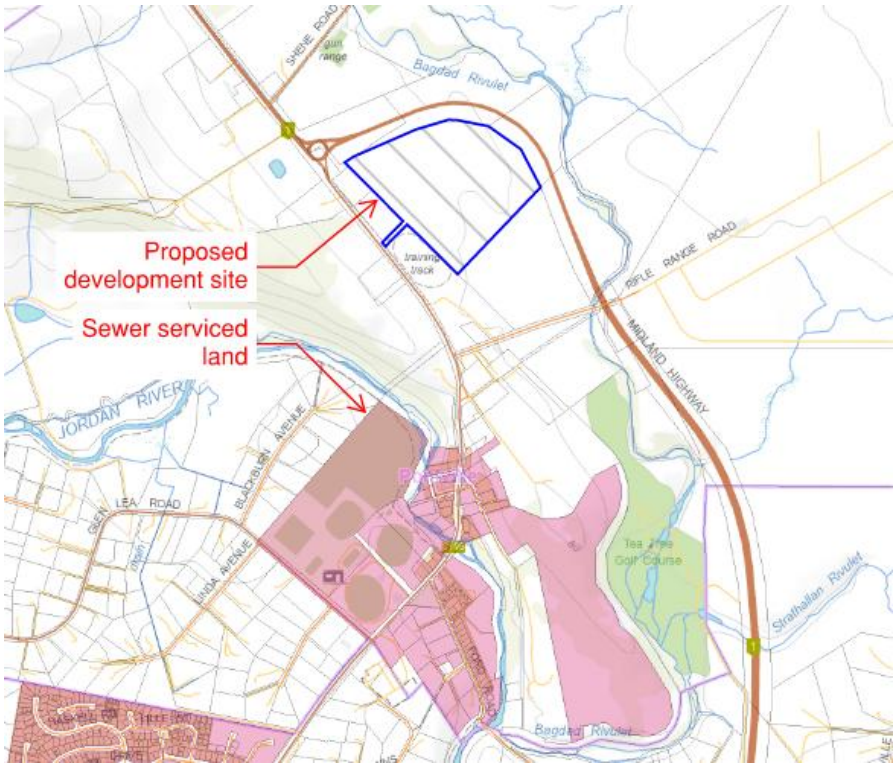



**Figure 10: Taswater sewer serviced land**

# 4 Water Service Connection

In conjunction with the proposed development, upgrades will be undertaken to Rifle Range Road to support the new site access. Upgrades shall be undertaken to the Taswater main within Rifle Range Road, with a new water property connection provided at the site access. Water services, including new property connection and metering, shall be designed and detailed by others.

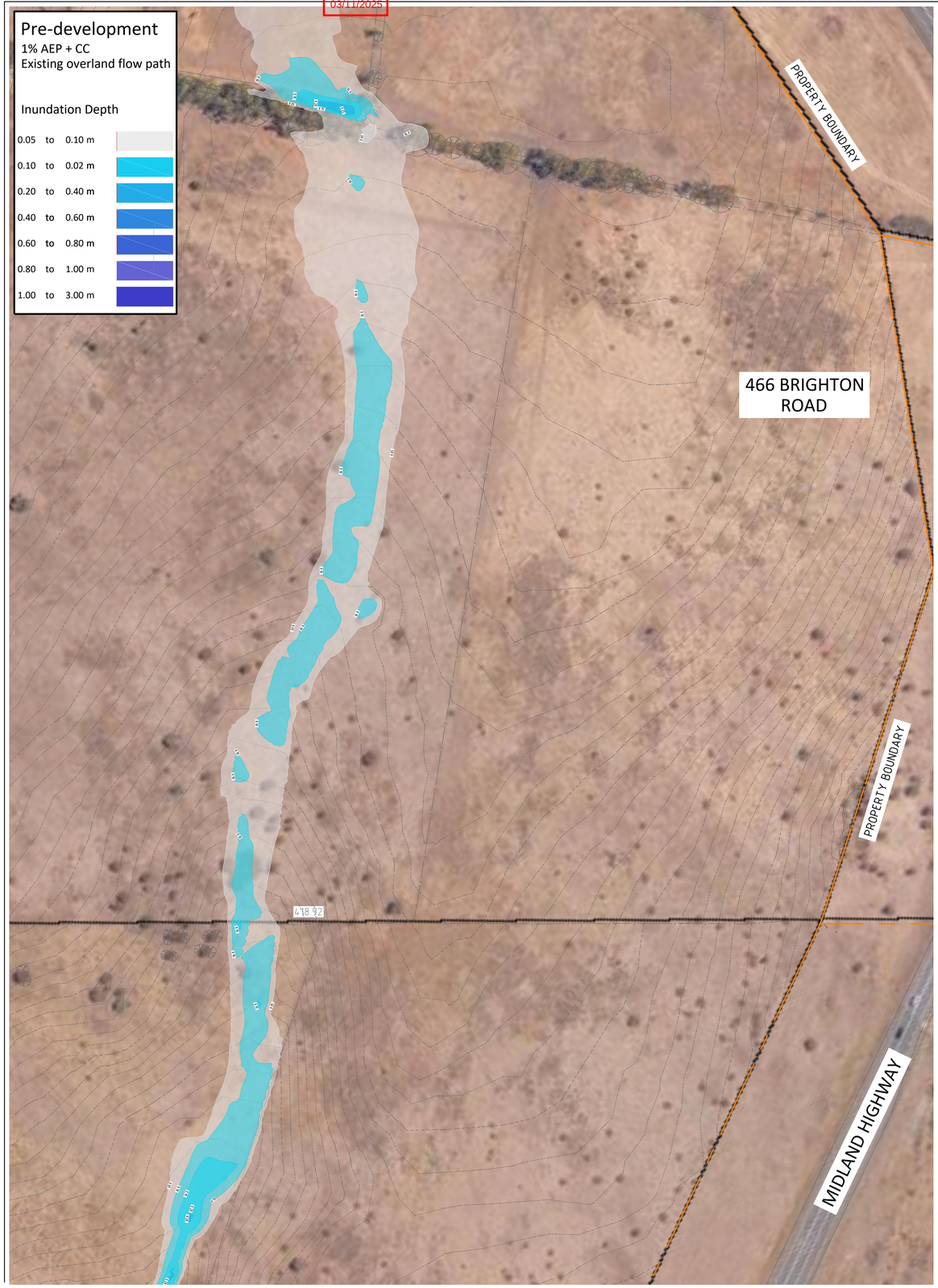
# Appendix A – 1% AEP Stormwater Overland Flow Mapping

## Pre-development

1% AEP + CC
Existing overland flow path

Inundation Depth

| | | | |
|---|---|---|---|
| 0.05 | to | 0.10 m | |
| 0.10 | to | 0.02 m | |
| 0.20 | to | 0.40 m | |
| 0.40 | to | 0.60 m | |
| 0.60 | to | 0.80 m | |
| 0.80 | to | 1.00 m | |
| 1.00 | to | 3.00 m | |

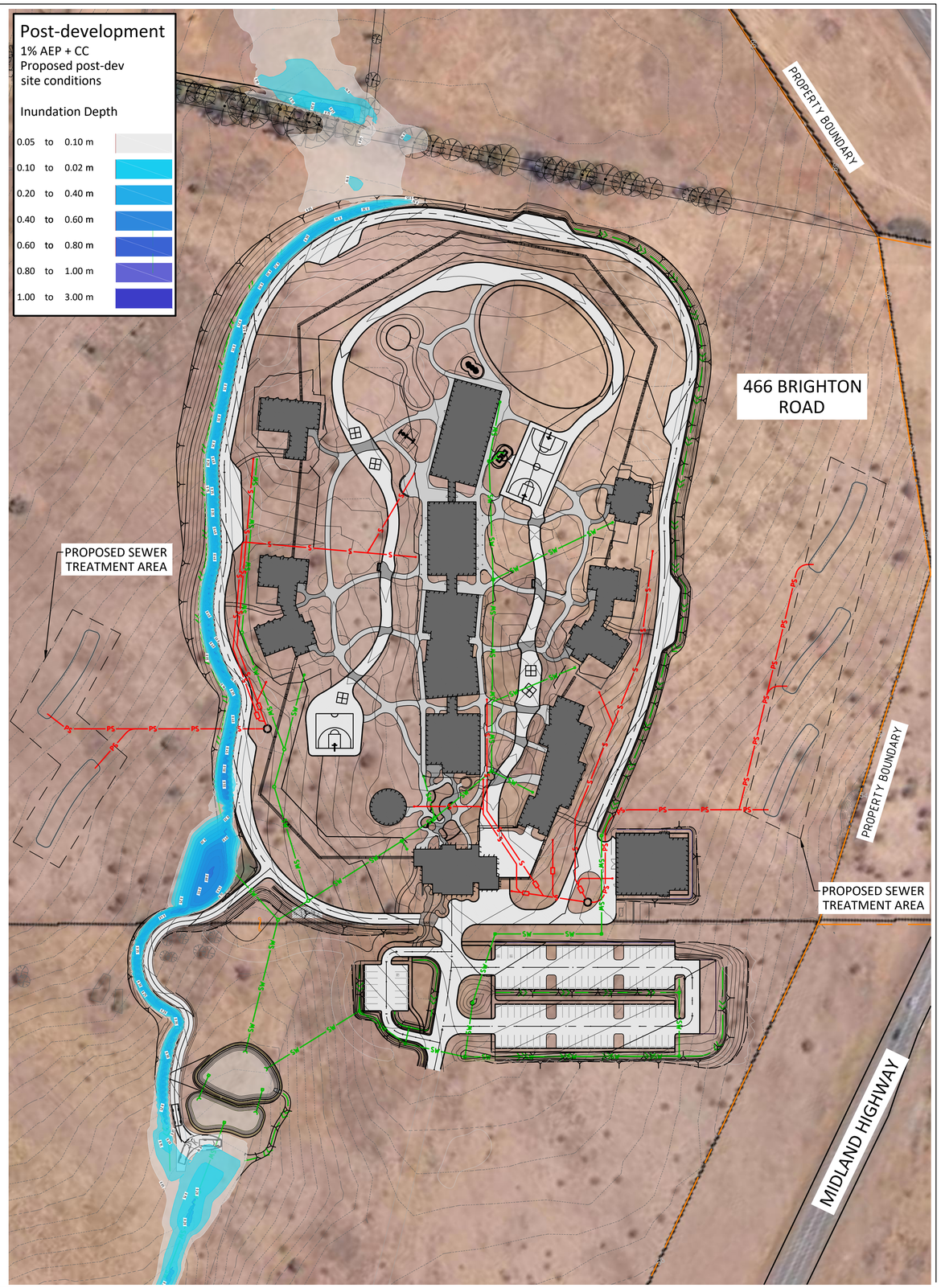



## Post-development

1% AEP + CC
Proposed post-dev
site conditions

Inundation Depth

| | | | |
|---|---|---|---|
| 0.05 | to | 0.10 m | |
| 0.10 | to | 0.02 m | |
| 0.20 | to | 0.40 m | |
| 0.40 | to | 0.60 m | |
| 0.60 | to | 0.80 m | |
| 0.80 | to | 1.00 m | |
| 1.00 | to | 3.00 m | |




| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|---|---|---|---|
| A | PLANNING APPROVAL | DH | 21.10.2025 | | | | |

THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

North

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TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030

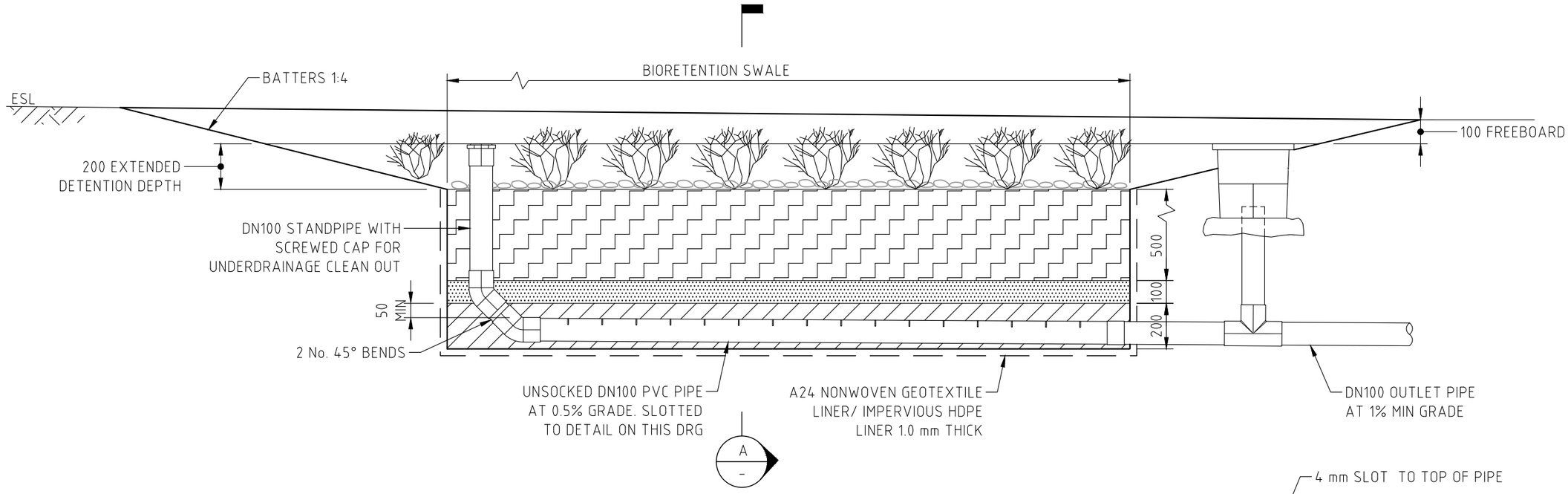
DRAWING TITLE
1% AEP OVERLAND FLOW

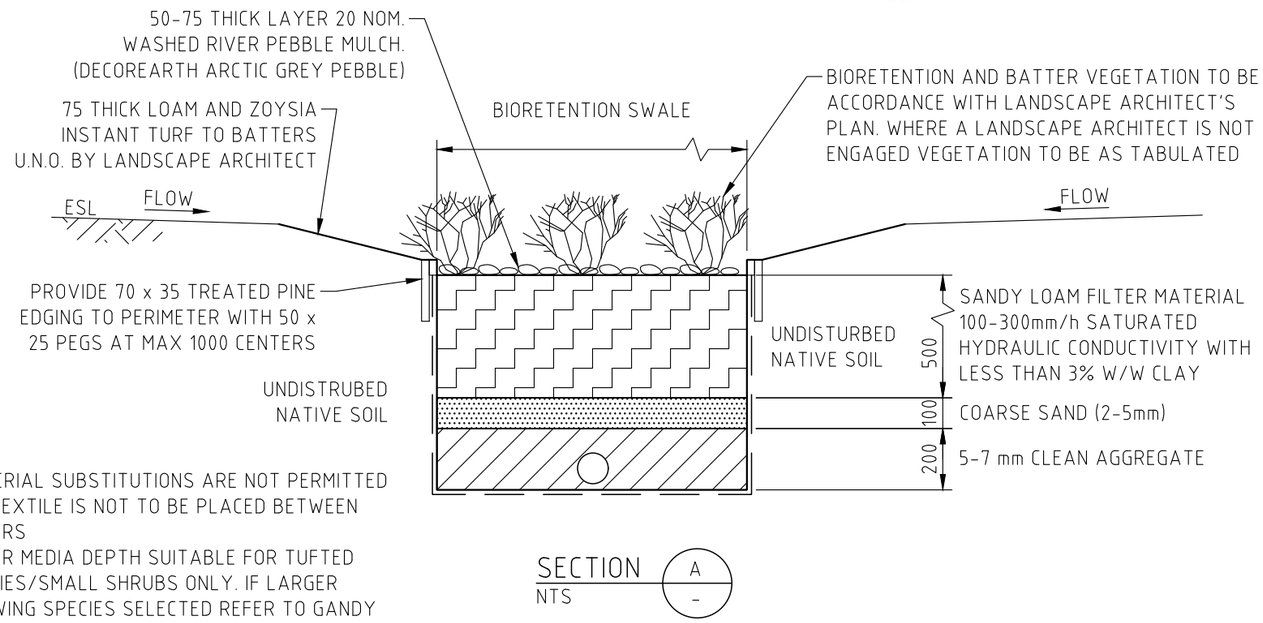
0 50mm SCALE AS SHOWN @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |

| PROJECT | DRAWING | REVISION |
|---|---|---|
| 24.0447 | C090 | A |

# Appendix B – Bioretention Schematic Detail

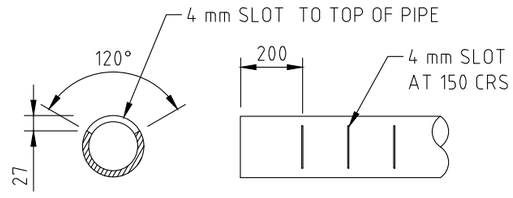



NOTE:
1. MATERIAL SUBSTITUTIONS ARE NOT PERMITTED
2. GEOTEXTILE IS NOT TO BE PLACED BETWEEN LAYERS
3. FILTER MEDIA DEPTH SUITABLE FOR TUFTED SPECIES/SMALL SHRUBS ONLY. IF LARGER GROWING SPECIES SELECTED REFER TO GANDY AND ROBERTS

## BIORETENTION SWALE

SCALE 1:20




## UPVC PIPE SLOTTING DETAIL

NTS

| BIORETENTION PLANTING SCHEDULE | |
|---|---|
| WHERE A PROJECT LANDSCAPE ARCHITECT HAS NOT BEEN APPOINTED THE BIORETNETION AREA IS TO BE PLANTED WITH A MINIMUM OF TWO OF THE SPECIES LISTED. | |
| PLANT SPECIES | PLANT DENSITY |
| CAREX INVERSA | 10 PER $m^2$ |
| ISOLEPIS NODOSA | 8 PER $m^2$ |
| JUNCUS AMABILIS | 10 PER $m^2$ |

GANDY AND ROBERTS CONSULTING ENGINEERS

GANDY & ROBERTS CONSULTING ENGINEERS

CIVIL STANDARD DETAILS

DRAWING TITLE
STORMWATER TREATMENT
BIORETENTION SWALE

SCALE 1:20 @ A3

05.03.2020

DRAWING NO.
CSD 452

# Appendix C – Bioretention Basin Maintenance Checklist

| **Bioretention Basin Maintenance Checklist**<br>Inspection Frequency: Monthly (Years 1-2), 3-Monthly (Years 3+) | | | |
|---|---|---|---|
| Date of Visit: | | | |
| Basin: | | | |
| Description: | | | |
| Site Visit By: | | | |
| Inspection Items | Y | N | Action Required (details) |
| Sediment accumulation at inflow points? | | | |
| Litter within basin? | | | |
| Erosion at inlet or other key structures (e.g. crossovers)? | | | |
| Traffic damage present? | | | |
| Evidence of dumping (e.g. building waste)? | | | |
| Vegetation condition satisfactory (density, weeds etc)? | | | |
| Replanting required? | | | |
| Mowing required? | | | |
| Clogging of drainage points (sediment or debris)? | | | |
| Evidence of ponding? | | | |
| Damage/vandalism to structures present? | | | |
| Surface clogging visible? | | | |
| Drainage system inspected? | | | |
| Subsoil drains flushed at I.O. points? | | | |
| Additional maintenance items required? | | | |
| Comments: | | | |

# Appendix D – Onsite Wastewater Management System (OWMS) Calculations

TASMAN
geotechnics

21 October 2025

Gandy and Roberts
159 Davey Street
Hobart TAS 7000

**Attention: Josh Farner, Dale Hayers**

**RE: Onsite Wastewater Management System (OWMS) Calculations**
**Tasmanian Youth Justice Facility, Pontville.**

The system design is based on the following inputs and concepts:

- The estimated Daily Hydraulic Loading (DHL) = 10,000L across the site.
- Using primary treatment systems involving septic tanks and pump wells to avoid using expensive secondary treatment systems (STS or AWTS) thus reducing ongoing maintenance expenses associated with an STS system.
- Using approved, readily available off the shelf components such as domestic sized septic tanks (4500L) and pump-wells/holding tanks. Such tanks require only around 1.65m of excavation for installation and CBOS approved Tasmanian made products are readily available.
- Grouping buildings into a number of zones (see Figure 1) that allow:
    - Firstly, up to 2000L of DHL per zone which suits a 4500L septic tank (that is, the capacity to process 2000L per day, i.e. 24hr residence time).
    - Secondly, gravity feed based on the site contours to a septic tank and pump well located outside the facility perimeter.
- The type of land application method recommended for the site, being sand mounds (aka Wisconsin mounds), which are suited to processing primary treated effluent at sites with shallow soils over a limiting layer such as rock.
- Using a number of Land Application Areas (LAA's) incorporated around the site to reduce pumping distances and make alternate dosing to the mounds simpler. The efficacy of a sand mound is improved with smaller more frequent doses. Alternate dosing also allows longer loading and resting intervals, which also improves efficacy. Simple maintenance free off the shelf components such as 'K-Rain' valves are readily available for alternate dosing of effluent into a number of zones.

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**OWMS Calculations**

To calculate the size and shape of the sand mound LAA, we need to consider the following:

- The soil at the site is deemed to be a well-structured 'Category 5' sandy, silty CLAY soil.
- The Design Loading Rate (DLR) for this type of soil is 8L/m$^2$/day when using a sand mound LAA.
- The DHL at the site is estimated as 10,000L/day.
- The minimum area (sand mound foot print) required is 10,000L/day / 8L/m$^2$/day = 1250m$^2$.
- The Standard (AS/NZS 1547:2012 – OWMS) recommends that where there is shallow soil and a limiting layer, the effluent will mostly move horizontally in the soil beneath the linear toe (i.e. the downslope front edge of the sand mound). Therefore, it is recommended that the application rate does not exceed 50L/m/day at the front edge.
- Thus, the total length of the front edge of the mound/s should be 10,000L/day / 50L/m/day = 200m. .
- Figure 1 shows the concept layout:
    - Grouping of building with gravity fed lines to one 4500L (minimum) septic tank per building group. The buildings are grouped to obtain between 1200L and 1800L of wastewater output per day.
    - Then, primary treated effluent from the septic tanks will be gravity feed to 2 pump-wells, accepting effluent from 2 or 4 septic tanks each.
    - It is recommended that the pump wells pump a dose of no more than 500L at a time, preferably less. The pump wells should be sized to provide at least 24hr emergency capacity within the pump well which is a requirement.
    - We recommend a dual pump system be installed at each pump-well, with the second pump acting as back up. A visible and audible high level alarm is required to be installed for each pump well.
    - Effluent from each pump well will be pumped to dedicated sand mounds, with at least 2 dosing zones within each mound, via 32mm lilac poly pressure pipe and a 32mm K-Rain valve.
    - The mounds are to be built along the contour. A layout parallel to the carpark is not recommended.
    - If using 5 mounds as suggested, the downslope toe length of each mound will need to be 200m / 5 = 40m long each. See Figure 1.
    - The width of the mound will be 6.3m minimum.
    - The height of the mound will be around 1.2m above natural ground level.
- The basal area of the mounds is 5 x 40m x 6.3m = 1260m$^2$.

Vegetation other than grass could be planted on the mounds, as long as it is shallow rooted. The type of vegetation may also be dictated by security requirements for the site.

Mulch cover is not recommended as mulch will help retain moisture. The aim of the mounds is to facilitate as much evapotranspiration as possible.

Should you require further information or clarification of any details, please do not hesitate to contact undersigned.

Kind regards,

**Dr Wayne Griffioen**

Principal Geotechnical Engineer

Attachments: Important Information about your Report (1 page)
Figure 1 – Concept site layout (1 page)

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# Important information about your report

## These notes are provided to help you understand the limitations of your report.

### Project Scope

Your report has been developed on the basis of your unique project specific requirements as understood by Tasman Geotechnics at the time, and applies only to the site investigated. Tasman Geotechnics should be consulted if there are subsequent changes to the proposed project, to assess how the changes impact on the report's recommendations.

### Subsurface Conditions

Subsurface conditions are created by natural processes and the activity of man.

A site assessment identifies subsurface conditions at discrete locations. Actual conditions at other locations may differ from those inferred to exist, because no professional, no matter how qualified, can reveal what is hidden by earth, rock and time.

Nothing can be done to change the conditions that exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, the services of Tasman Geotechnics should be retained throughout the project, to identify variable conditions, conduct additional investigation or tests if required and recommend solutions to problems encountered on site.

### Advice and Recommendations

Your report contains advice or recommendations which are based on observations, measurements, calculations and professional interpretation, all of which have a level of uncertainty attached.

The recommendations are based on the assumption that subsurface conditions encountered at the discrete locations are indicative of an area. This can not be substantiated until implementation of the project has commenced. Tasman Geotechnics is familiar with the background information and should be consulted to assess whether or not the report's recommendations are valid, or whether changes should be considered.

The report as a whole presents the findings of the site assessment, and the report should not be copied in part or altered in any way.

SMC - KEMPTON
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466 BRIGHTON RD

SW OVERLAND FLOW PATH BETWEEN BUILDINGS

SEWAGE TREATMENT AREA

WISCONSIN MOUND (TYP.)

PROPERTY BOUNDARY

MIDLAND HIGHWAY

TITLES TO BE AMALGAMATED

SW TO BE PIPED WITHIN THE SITE

BLDG L
FFL 59.10

BLDG H
FFL 59.30

BLDG G
FFL 59.20

BLDG K
FFL 59.10

BLDG N
FFL 59.20

BLDG F
FFL 59.20

BLDG C/D
FFL 58.90

BLDG B
FFL 57.40

BLDG E
FFL 59.10

BLDG J
FFL 58.40

BLDG A
FFL 58.60

BLDG M
FFL 58.70

EXS PROPERTY BOUNDARY

PROPERTY BOUNDARY

Gravity sewer (typ.)

Septic tank (typ.)

Pump (typ.)

Pumped sewer

36 RIFLE RANGE RD

SEWAGE TREATMENT AREA

SW DETENTION BASIN

SW BIORETENTION TREATMENT BASIN

SW TO BE CONVEYED VIA OPEN CHANNEL THROUGH TO RIFLE RANGE ROAD. REFER INSET PLAN THIS PAGE

SW TO BE CONVEYED VIA OPEN CHANNEL THROUGH TO RIFLE RANGE ROAD

SW TO BE CONVEYED VIA OPEN SWALE THROUGH TO RIFLE RANGE ROAD. SW TREATMENT AND DETENTION TO CATER FOR NEW IMPERVIOUS SURFACE

SW TO DISCHARGE TO TABLE DRAIN ON RIFLE RANGE ROAD. TABLE DRAIN TO BE UPGRADED AS PART OF FUTURE WORKS TO RIFLE RANGE ROAD WORKS

INSET PLAN
1:500

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
| - | - | - | - |
| D | REISSUED FOR DEVELOPMENT APPROVAL | DH | 11.08.2025 |
| C | ISSUED FOR DEVELOPMENT APPROVAL | DH | 28.07.2025 |
| B | SCHEMATIC DESIGN ISSUE | DH | 26.06.2025 |
| A | PRELIMINARY ISSUE | DH | 13.06.2025 |

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YOUTH JUSTIC FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030

DRAWING TITLE
CONCEPT SITE PLAN

0 50mm
SCALE 1:750 @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |

| PROJECT | DRAWING | REVISION |
|---|---|---|
| 24.0447 | C020 | D |



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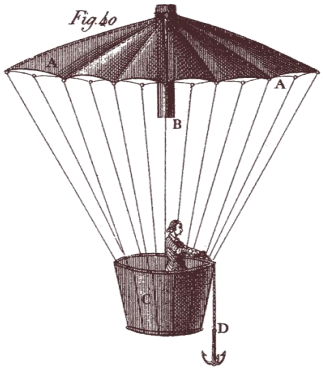


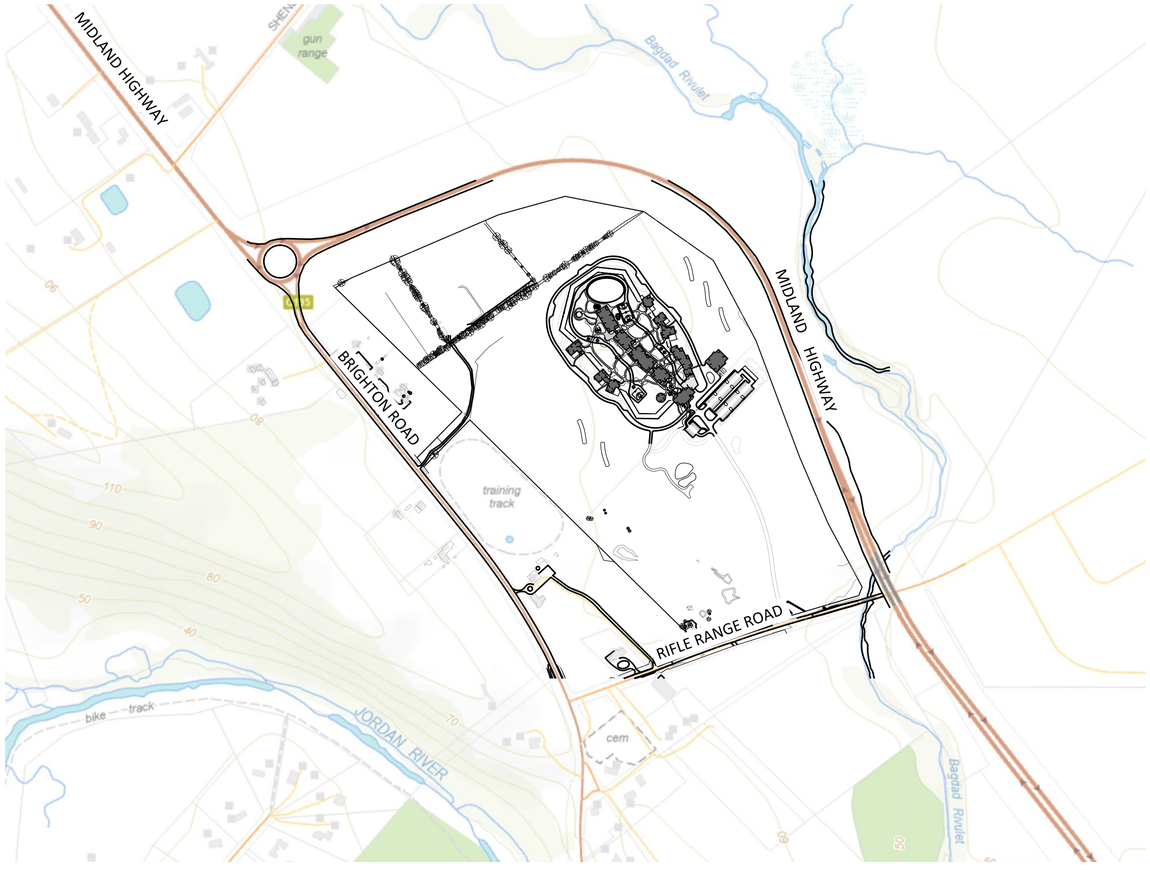

mail@gandyandroberts.com.au www.gandyandroberts.com.au ph 03 6223 8877 fx 03 6223 7183 ABN 29 057 268 532

# DEPT PREMIER AND CABINET
# TASMANIAN YOUTH JUSTICE FACILITY
# 466 BRIGHTON ROAD
# PONTVILLE 7030

| DWG No. | DRAWING TITLE | REV | ISSUE DATE |
|---|---|---|---|
| C001 | DRAWING INDEX AND NOTES | A | 21.10.2025 |
| C100 | OVERALL SITE PLAN | A | 21.10.2025 |
| C200 | SITE WORKS PLAN 01 | A | 21.10.2025 |
| C201 | SITE WORKS PLAN 02 | A | 21.10.2025 |
| C202 | SITE WORKS PLAN 03 | A | 21.10.2025 |
| C210 | LONGITUDINAL SECTIONS 01 | A | 21.10.2025 |
| C211 | LONGITUDINAL SECTIONS 02 | A | 21.10.2025 |
| C212 | LONGITUDINAL SECTIONS 03 | A | 21.10.2025 |
| C213 | LONGITUDINAL SECTIONS 04 | A | 21.10.2025 |
| C214 | LONGITUDINAL SECTIONS 05 | A | 21.10.2025 |
| C400 | STORMWATER AND SEWER PLAN 01 | A | 21.10.2025 |
| C401 | STORMWATER AND SEWER PLAN 02 | A | 21.10.2025 |
| C402 | STORMWATER AND SEWER PLAN 03 | A | 21.10.2025 |
| C410 | STORMWATER LONG. SECTIONS 01 | A | 21.10.2025 |
| C411 | STORMWATER LONG. SECTIONS 02 | A | 21.10.2025 |
| C412 | STORMWATER LONG. SECTIONS 03 | A | 21.10.2025 |
| C700 | DETAILS 01 | A | 21.10.2025 |
| C701 | DETAILS 02 | A | 21.10.2025 |

## LEGEND

- 9.80 — EXISTING SURFACE LEVEL
- 9 80 — PROPOSED BULK EARTHWORKS LEVEL
- 9.60 — PROPOSED FINISHED SURFACE LEVEL
- (Δ-2.5) — CUT (-)/FILL DEPTH
- EX W — EXISTING WATER SUPPLY EXTERNAL TO BUILDING
- W — PROPOSED WATER SUPPLY EXTERNAL TO BUILDING
- EX FS — EXISTING FIRE SUPPLY
- FS — PROPOSED FIRE SUPPLY
- EX S — EXISTING SEWER DRAIN
- S — PROPOSED SEWER DRAIN
- EX SW — EXISTING STORMWATER DRAIN
- SW — PROPOSED STORMWATER DRAIN
- PROPOSED STORMWATER (LARGER)
- SS — PROPOSED DN100 SUBSOIL DRAIN WITH GEOTEXTILE SOCK
- CJ — PROPOSED CONCRETE CONSTRUCTION JOINT
- KJ — PROPOSED CONCRETE KEY JOINT
- SJ — PROPOSED CONCRETE SAWN JOINT
- TOP / TOE — EXISTING BATTER
- TOP / TOE — PROPOSED BATTER
- PROPERTY BOUNDARY
- EJ — EXPANSION JOINT
- SEJ — SWIVEL EXPANSION JOINT




## LOCALITY PLAN
SCALE 1:5,000



| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 |

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TASMANIA 7030
DRAWING TITLE
DRAWING INDEX AND NOTES

0 50mm SCALE AS SHOWN@A1

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| JF | JF | DH |

| PROJECT | DRAWING | REVISION |
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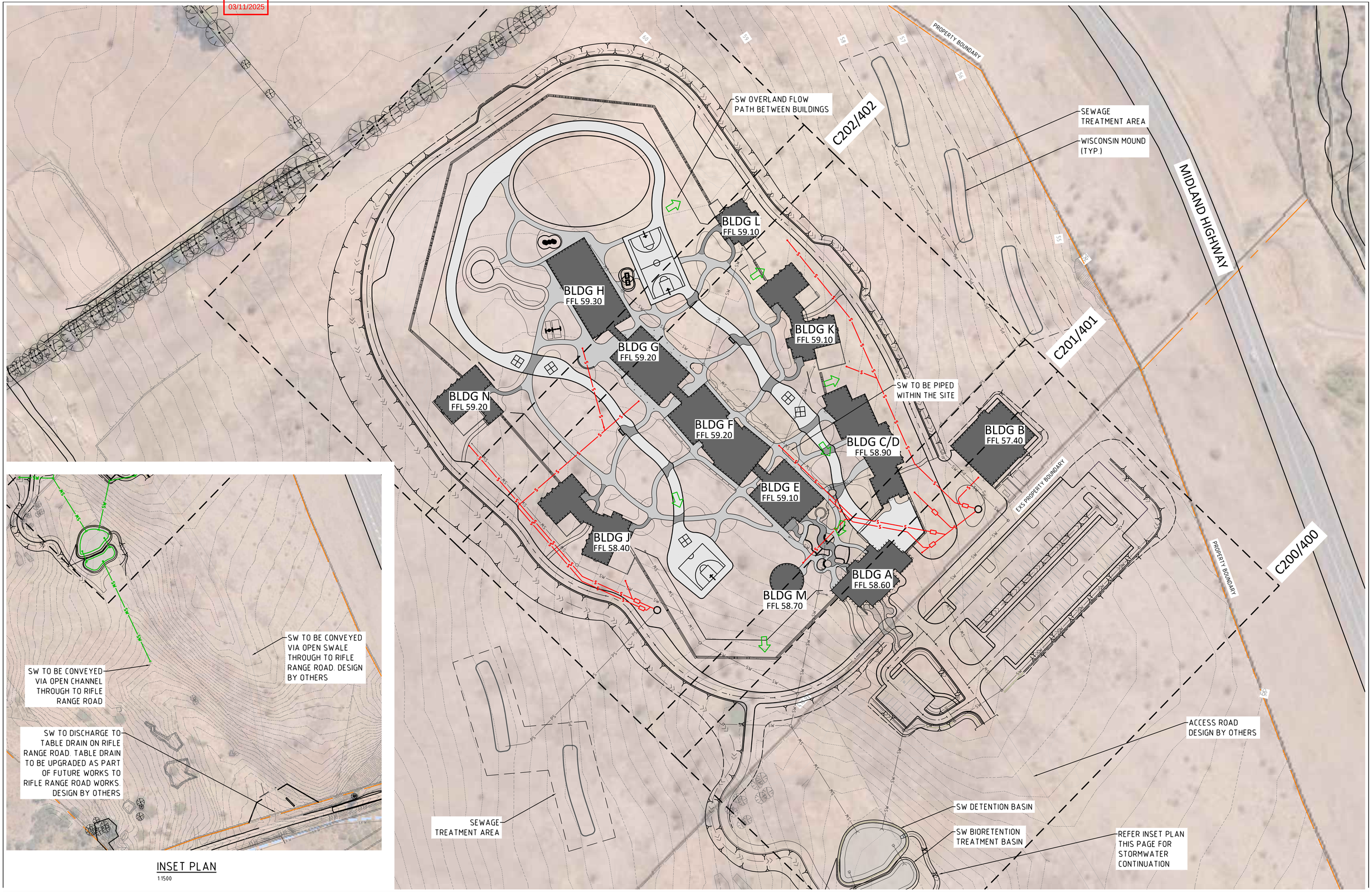





## INSET PLAN
1:1500

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|---|---|---|---|---|---|---|---|
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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TASMANIA 7030
DRAWING TITLE
OVERALL SITE PLAN

0 50mm SCALE 1:750 @ A1

| DESIGNED | DRAWN | CHECKED |
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| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C100 | A |

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MATCH LINE

ROAD 01

ROAD 02

ROAD 03

ROAD 04

BLDG A
FFL 58.60

BLDG B
FFL 57.40

INTERNAL CONCRETE ACCESS ROAD

FOOTPATH (TYP.)

4.5 m WIDE (TYPICALLY) GRAVEL FIRE ACCESS ROAD. REFER DRG C700 FOR DETAIL

1:4 LANDSCAPE BATTER REFER LANDSCAPE ARCHITECT FOR SURFACE TREATMENT

8.8 m SERVICE VEHICLE TURNING MANOEUVRE

DESIGN BY OTHERS

CONCEPT DESIGN FINISHED SURFACE CONTOURS (200 mm CONTOUR INTERVAL)

ASPHALT CAR PARK REFER DRG C070 FOR TYPICAL SECTION

1:8 LANDSCAPE BATTER REFER LANDSCAPE ARCHITECT FOR SURFACE TREATMENT

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
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DRAWING TITLE
SITE WORKS PLAN 01

| SCALE | DESIGNED | DRAWN | CHECKED |
|---|---|---|---|
| 1:300 @ A1 | JF | JF | DH |

| PROJECT | DRAWING | REVISION |
|---|---|---|
| 24.0447 | C200 | A |

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03/11/2025

MATCH LINE

ROAD 01

FOOTPATH (TYP.)

INTERNAL CONCRETE ACCESS ROAD

BLDG G
FFL 59.20

BLDG L
FFL 59.10

BLDG F
FFL 59.20

BLDG K
FFL 59.10

BLDG J
FFL 58.40

BLDG E
FFL 59.10

BLDG C/D
FFL 58.90

BLDG M
FFL 58.70

BLDG A
FFL 58.60

BLDG B
FFL 57.40

CONCEPT DESIGN FINISHED SURFACE CONTOURS (200 mm CONTOUR INTERVAL)

4.5 m WIDE (TYPICALLY) GRAVEL FIRE ACCESS ROAD REFER DRG C070 FOR DETAIL

B
C700

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
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DRAWING TITLE
SITE WORKS PLAN 02

0 50mm
SCALE 1:300 @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C201 | A |



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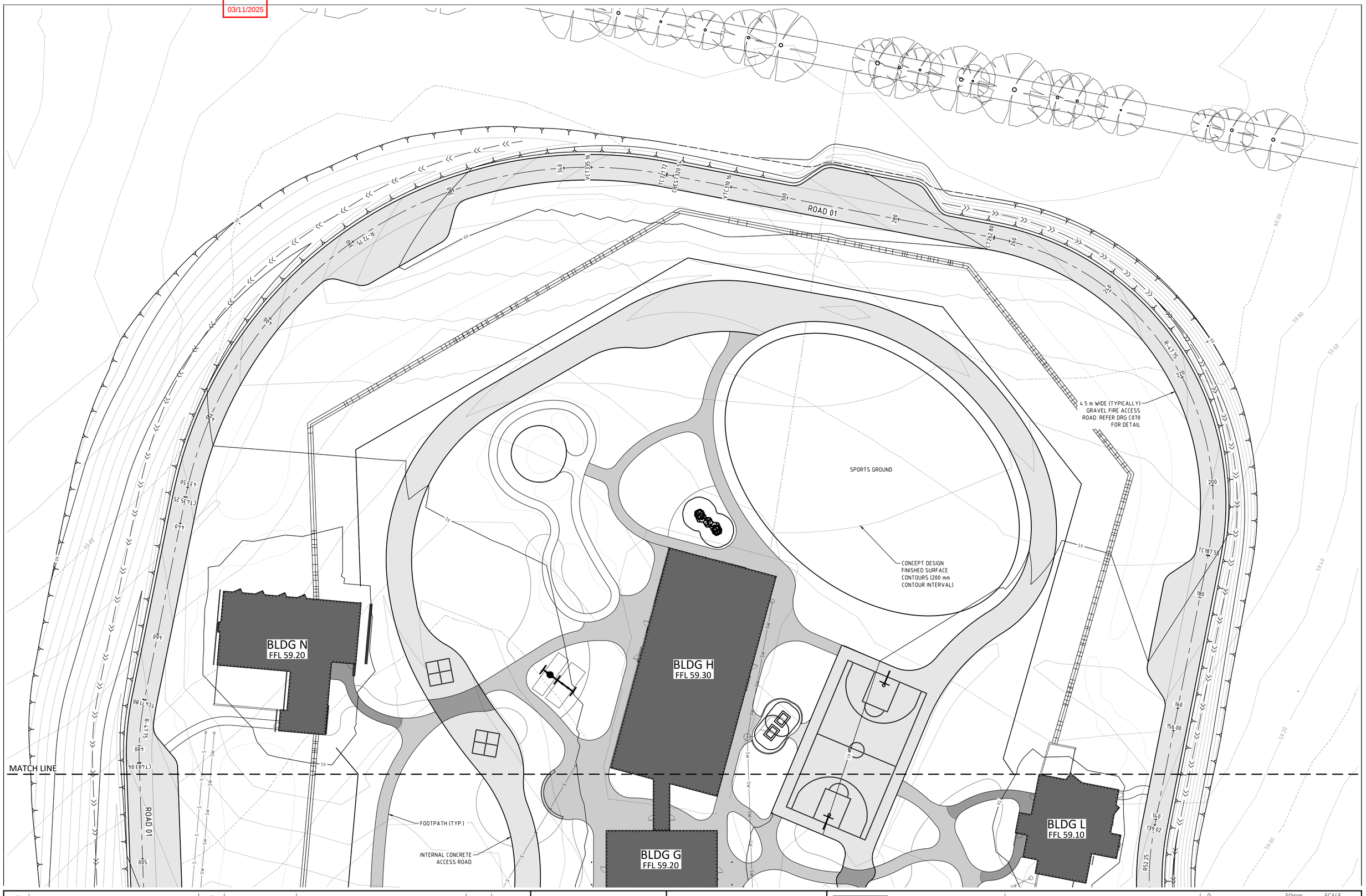


| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|---|---|---|---|
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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TASMANIAN YOUTH JUSTICE FACILITY
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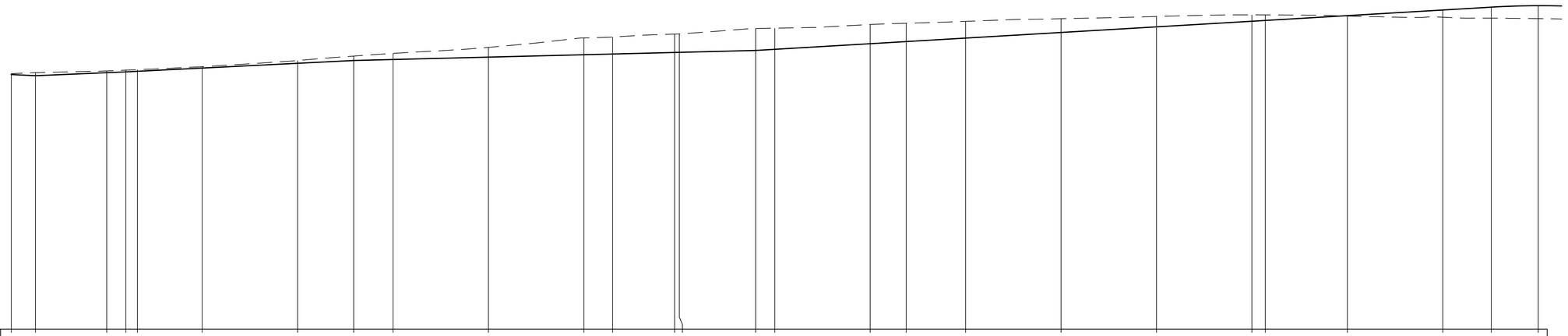
TASMANIA 7030
DRAWING TITLE
SITE WORKS PLAN 03

0 50mm SCALE 1:300 @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |

| PROJECT | DRAWING | REVISION |
|---|---|---|
| 24.0447 | C202 | A |



DATUM RL47

VERTICAL ALIGNMENT
-1.0% 5.1mL
0.8% 19.0mL
1.0% 47.7mL
0.5% 84.2mL
1.2% 154.2mL
25.0mVC 8.8K

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CUT (-)/FILL | -0.036 | -0.127 | -0.073 | -0.072 | -0.069 | -0.059 | -0.116 | -0.184 | -0.256 |
| DESIGN CENTRELINE LEVEL | 57.662 | 57.611 | 57.737 | 57.770 | 57.794 | 57.930 | 58.130 | 58.248 | 58.289 |
| EXISTING SURFACE LEVEL | 57.697 | 57.738 | 57.809 | 57.842 | 57.863 | 57.989 | 58.246 | 58.432 | 58.545 |
| CHAINAGE | 0.00 | 5.06 | 20.00 | 24.00 | 26.44 | 40.00 | 60.00 | 71.76 | 80.00 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CUT (-)/FILL | -0.409 | -0.703 | -0.711 | -0.769 | -0.771 | -0.918 | -0.886 | -0.804 | -0.765 |
| DESIGN CENTRELINE LEVEL | 58.389 | 58.489 | 58.519 | 58.584 | 58.589 | 58.669 | 58.716 | 58.951 | 59.040 |
| EXISTING SURFACE LEVEL | 58.798 | 59.192 | 59.230 | 59.353 | 59.360 | 59.587 | 59.601 | 59.755 | 59.805 |
| CHAINAGE | 100.00 | 120.00 | 126.02 | 139.02 | 140.00 | 156.00 | 160.00 | 180.00 | 187.55 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CUT (-)/FILL | -0.700 | -0.577 | -0.434 | -0.267 | -0.232 | 0.018 | 0.303 | 0.461 | 0.541 |
| DESIGN CENTRELINE LEVEL | 59.186 | 59.421 | 59.657 | 59.892 | 59.925 | 60.127 | 60.362 | 60.482 | 60.542 |
| EXISTING SURFACE LEVEL | 59.886 | 59.998 | 60.090 | 60.158 | 60.157 | 60.109 | 60.059 | 60.021 | 60.002 |
| CHAINAGE | 200.00 | 220.00 | 240.00 | 260.00 | 262.80 | 280.00 | 300.00 | 310.16 | 320.00 |

HORIZONTAL CURVE DATA
52.25 R
-202.25 R
52.25 R
-47.75 R

## LONGITUDINAL SECTION: ROAD 01

SCALE HOR 1:500 VER 1:100

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
| . | . | . | . |
| . | . | . | . |
| . | . | . | . |
| . | . | . | . |
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 |

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|

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GANDY AND ROBERTS
CONSULTING ENGINEERS

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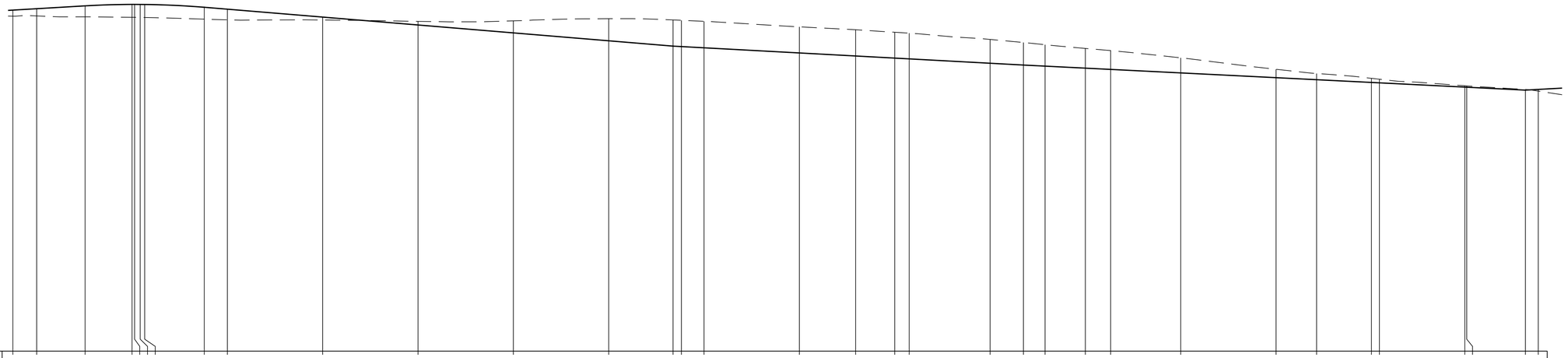
ph 03 6223 8877

TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030
DRAWING TITLE
LONGITUDINAL SECTIONS 01

0 50mm

| SCALE | | |
|---|---|---|
| 1:500H 1:100V@A1 | | |
| DESIGNED | DRAWN | CHECKED |
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C210 | A |

10/21/2025 8:35:31 PM S:\Projects\2024\24.0447 New Tasmanian Youth Justice Facility\5 - GR drawings\CIV - Working drawings, model\24.0447 C.dwg



DATUM RL46

VERTICAL ALIGNMENT: 1.2% 154.2mL; 25.0mVC 8.8K; -1.7% 98.3mL; -1.1% 73.5mL; -1.0% 105.3mL; 1.1% 105.7mL

| CHAINAGE | CUT (-)/FILL | DESIGN CENTRELINE LEVEL | EXISTING SURFACE LEVEL |
|---|---|---|---|
| 295.00 | 0.253 | 60.303 | 60.050 |
| 300.00 | 0.303 | 60.362 | 60.059 |
| 310.16 | 0.461 | 60.482 | 60.021 |
| 320.00 | 0.541 | 60.542 | 60.002 |
| 320.54 | 0.542 | 60.543 | 60.000 |
| 321.72 | 0.544 | 60.542 | 59.998 |
| 322.66 | 0.545 | 60.540 | 59.995 |
| 335.16 | 0.498 | 60.422 | 59.924 |
| 340.00 | 0.445 | 60.341 | 59.896 |
| 360.00 | 0.122 | 60.010 | 59.888 |
| 380.00 | -0.151 | 59.679 | 59.830 |
| 400.00 | -0.505 | 59.348 | 59.853 |
| 420.00 | -0.927 | 59.017 | 59.944 |
| 433.50 | -1.098 | 58.793 | 59.891 |
| 435.25 | -1.101 | 58.774 | 59.875 |
| 440.00 | -1.110 | 58.723 | 59.833 |
| 460.00 | -1.094 | 58.507 | 59.601 |
| 471.80 | -1.100 | 58.380 | 59.480 |
| 480.00 | -1.084 | 58.291 | 59.375 |
| 483.04 | -1.078 | 58.258 | 59.336 |
| 500.00 | -0.998 | 58.075 | 59.074 |
| 507.00 | -0.945 | 58.000 | 58.945 |
| 511.54 | -0.897 | 57.954 | 58.851 |
| 520.00 | -0.826 | 57.870 | 58.696 |
| 525.29 | -0.789 | 57.817 | 58.605 |
| 540.00 | -0.632 | 57.670 | 58.301 |
| 560.00 | -0.352 | 57.470 | 57.821 |
| 568.50 | -0.259 | 57.385 | 57.644 |
| 580.00 | -0.173 | 57.270 | 57.442 |
| 581.68 | -0.152 | 57.253 | 57.405 |
| 599.59 | -0.056 | 57.074 | 57.130 |
| 600.00 | -0.055 | 57.070 | 57.125 |
| 612.31 | -0.029 | 56.947 | 56.975 |
| 615.00 | 0.070 | 56.976 | 56.906 |

HORIZONTAL CURVE DATA: -72.75 R; -47.75 R; 47.75 R; -52.24 R; 17.75 R; -57.75 R

## LONGITUDINAL SECTION: ROAD 01

SCALE HOR 1:500 VER 1:100

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
| . | . | . | . |
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| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 |

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|

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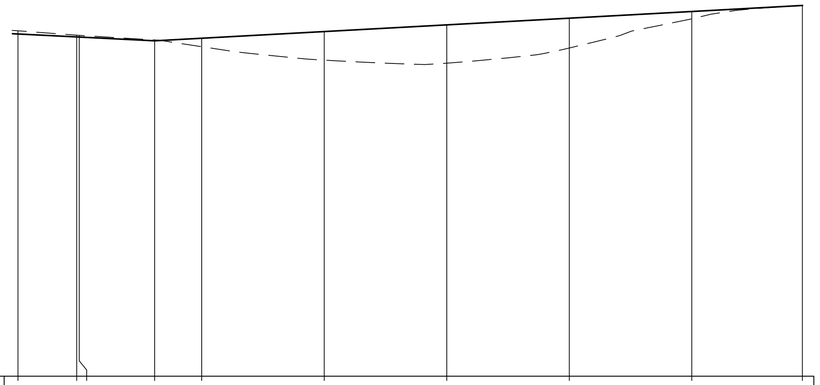
TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030

DRAWING TITLE
LONGITUDINAL SECTIONS 02

0 50mm

| SCALE | | |
|---|---|---|
| 1:500H 1:100V@A1 | | |
| DESIGNED | DRAWN | CHECKED |
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C211 | A |

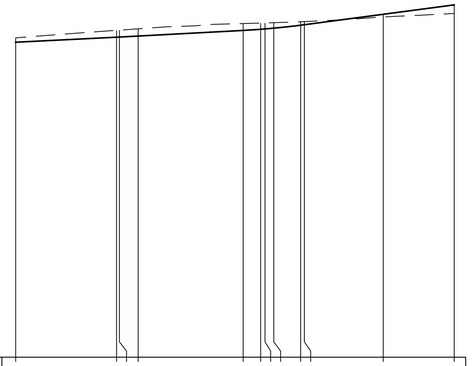


DATUM RL46

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| VERTICAL ALIGNMENT | -1.0%<br>105.3mL | | | | 1.1%<br>105.7mL | | | | |
| CUT (-)/FILL | -0.104 | -0.056<br>-0.055 | -0.029 | 0.277 | 0.933 | 1.251 | 0.974 | 0.240 | |
| DESIGN CENTRELINE LEVEL | 57.170 | 57.074<br>57.070 | 56.947 | 57.031 | 57.249 | 57.467 | 57.686 | 57.904 | 58.101 |
| EXISTING SURFACE LEVEL | 57.274 | 57.130<br>57.125 | 56.975 | 56.754 | 56.316 | 56.217 | 56.711 | 57.664 | |
| CHAINAGE | 590.00 | 599.59<br>600.00 | 612.31 | 620.00 | 640.00 | 660.00 | 680.00 | 700.00 | 718.05 |
| HORIZONTAL CURVE DATA | -57.75 R | | | | | | | | |

## LONGITUDINAL SECTION: ROAD 01

SCALE HOR 1:500 VER 1:100



DATUM RL47

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| VERTICAL ALIGNMENT | 1.0%<br>16.9mL | | 1.1%<br>20.2mL | | | 10.0mVC<br>6.3K | | 2.6%<br>24.5mL | |
| CUT (-)/FILL | -0.143 | -0.223<br>-0.225<br>-0.234 | | | -0.223<br>-0.202<br>-0.195<br>-0.178 | | -0.112<br>-0.102 | 0.087 | 0.281 |
| DESIGN CENTRELINE LEVEL | 57.281 | 57.446<br>57.470<br>57.493 | | | 57.666 | 57.704<br>57.715<br>57.740 | 57.837<br>57.852 | 58.193 | 58.500 |
| EXISTING SURFACE LEVEL | 57.424 | 57.668<br>57.675<br>57.717 | | | 57.890 | 57.906<br>57.909<br>57.917 | 57.949<br>57.954 | 58.106 | 58.219 |
| CHAINAGE | 0.00 | 16.47<br>16.94<br>20.00 | | | 37.14 | 40.00<br>40.70<br>42.74 | 46.53<br>47.14 | 60.00 | 71.59 |
| HORIZONTAL CURVE DATA | -396.98 R | | -396.98 R | | | -50.00 R | | | |

## LONGITUDINAL SECTION: ROAD 02

SCALE HOR 1:500 VER 1:100

| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
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| . | . | . | . | | | | |
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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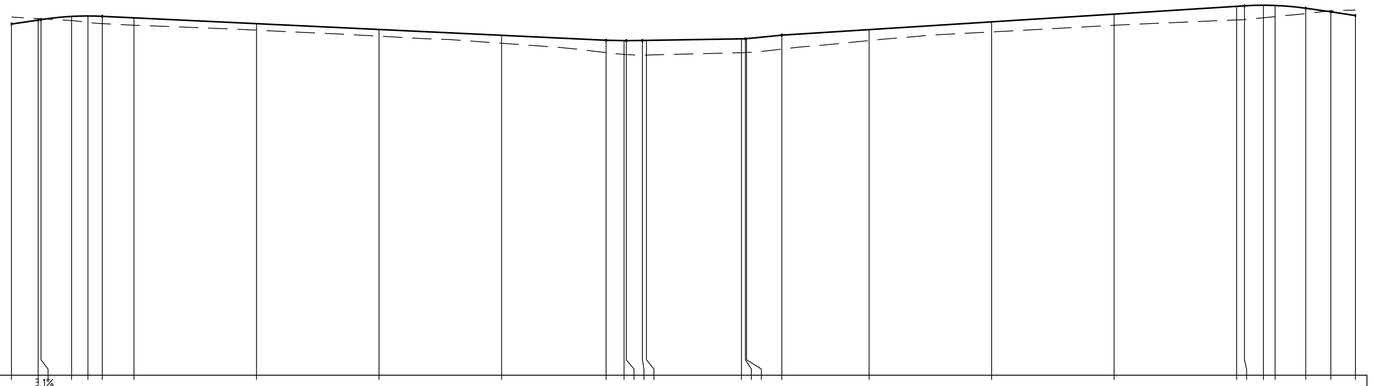
TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030

DRAWING TITLE
LONGITUDINAL SECTIONS 03

0 50mm SCALE 1:500H 1:100V@A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C212 | A |



DATUM RL46

VERTICAL ALIGNMENT
3.0% 4.4mL
3.1% 0.5mL
10.0mVC 2.5K
-1.0% 82.2mL
-0.3% 3.3mL
0.2% 2.6mL
0.3% 16.8mL
2.0% 6.0mL
1.3% 75.5mL
10.0mVC 2.4K
-2.8% 4.1mL
-3.0% 4.0mL

| CHAINAGE | CUT (-)/FILL | DESIGN CENTRELINE LEVEL | EXISTING SURFACE LEVEL | HORIZONTAL CURVE DATA |
|---|---|---|---|---|
| -0.00 | | 57.461 | | |
| 4.35 | -0.048 | 57.591 | 57.639 | |
| 4.82 | -0.028 | 57.606 | 57.634 | |
| 9.82 | 0.134 | 57.711 | 57.577 | |
| 12.48 | 0.208 | 57.725 | 57.517 | |
| 14.82 | 0.238 | 57.714 | 57.476 | |
| 20.00 | 0.242 | 57.665 | 57.423 | |
| 40.00 | 0.213 | 57.474 | 57.262 | |
| 60.00 | 0.219 | 57.284 | 57.065 | |
| 80.00 | 0.259 | 57.094 | 56.835 | |
| 97.06 | 0.402 | 56.931 | 56.529 | -4.20 R |
| 100.00 | 0.452 | 56.921 | 56.470 | |
| 100.37 | 0.456 | 56.920 | 56.464 | |
| 103.00 | 0.477 | 56.925 | 56.448 | |
| 103.66 | 0.477 | 56.927 | 56.450 | |
| 119.16 | 0.452 | 56.978 | 56.526 | -4.20 R |
| 119.81 | 0.450 | 56.980 | 56.530 | |
| 120.00 | 0.452 | 56.984 | 56.531 | |
| 125.76 | 0.457 | 57.100 | 56.643 | |
| 140.00 | 0.358 | 57.280 | 56.922 | |
| 160.00 | 0.329 | 57.533 | 57.204 | |
| 180.00 | 0.365 | 57.786 | 57.421 | |
| 200.00 | 0.444 | 58.039 | 57.596 | |
| 201.28 | 0.449 | 58.056 | 57.607 | |
| 204.37 | 0.408 | 58.075 | 57.667 | |
| 206.28 | 0.364 | 58.068 | 57.704 | |
| 211.28 | 0.175 | 57.978 | 57.803 | |
| 215.38 | -0.036 | 57.862 | 57.898 | |
| 219.39 | | 57.740 | | |

## LONGITUDINAL SECTION: ROAD 03

SCALE HOR 1:500 VER 1:100

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| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
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| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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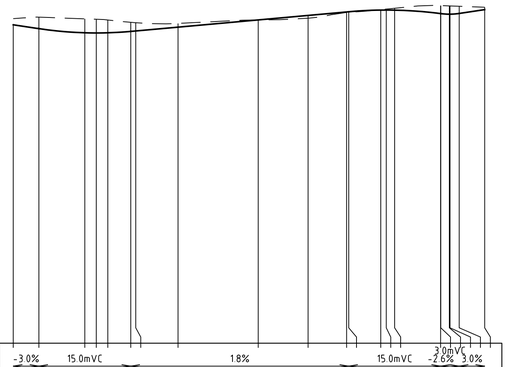
TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030
DRAWING TITLE
LONGITUDINAL SECTIONS 04

0 50mm
SCALE 1:500H 1:100V@A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C213 | A |



DATUM RL47

VERTICAL ALIGNMENT:
-3.0% 4.2mL
15.0mVC 3.1K
1.8% 35.6mL
15.0mVC 3.4K
3.0mVC 0.5K
-2.6% 0.0mL
3.0% 4.2mL

| CHAINAGE | CUT (-)/FILL | DESIGN CENTRELINE LEVEL | EXISTING SURFACE LEVEL |
|---|---|---|---|
| -0.00 |  | 57.393 |  |
| 4.19 | -0.374 | 57.267 | 57.641 |
| 11.69 | -0.455 | 57.132 | 57.587 |
| 13.56 | -0.446 | 57.126 | 57.573 |
| 15.44 | -0.416 | 57.132 | 57.549 |
| 19.19 | -0.295 | 57.177 | 57.472 |
| 20.00 | -0.267 | 57.192 | 57.459 |
| 26.90 | -0.121 | 57.316 | 57.437 |
| 40.00 | 0.002 | 57.552 | 57.550 |
| 48.13 | 0.092 | 57.699 | 57.607 |
| 54.42 | 0.020 | 57.812 | 57.793 |
| 54.77 | 0.021 | 57.819 | 57.798 |
| 60.00 | -0.014 | 57.873 | 57.887 |
| 60.90 | -0.031 | 57.874 | 57.905 |
| 62.27 | -0.061 | 57.871 | 57.932 |
| 69.77 | -0.261 | 57.758 | 58.019 |
| 69.80 | -0.261 | 57.757 | 58.019 |
| 71.20 | -0.269 | 57.739 | 58.009 |
| 71.30 | -0.269 | 57.739 | 58.008 |
| 72.80 | -0.234 | 57.763 | 57.997 |
| 76.96 | -0.079 | 57.888 | 57.967 |

HORIZONTAL CURVE DATA: 8.50 R; 4.00 R

## LONGITUDINAL SECTION: ROAD 04

SCALE HOR 1:500 VER 1:100

10/21/2025 8:35:42 PM S:\Projects\2024\24.0447 New Tasmanian Youth Justice Facility\5 - GR drawings\CIV - Working drawings, model\24.0447 C.dwg

| REV | DESCRIPTION | APP'D | DATE |
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| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 |

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|

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TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030

DRAWING TITLE
LONGITUDINAL SECTIONS 05

0 50mm

| SCALE |  |  |
|---|---|---|
| 1:500H 1:100V@A1 |  |  |
| DESIGNED | DRAWN | CHECKED |
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C214 | A |

SMC - KEMPTON
RECEIVED
03/11/2025

MATCH LINE

BLDG A
FFL 58.60

BLDG B
FFL 57.40

SW 02/4
DN1050 MH

SW 02/5
DN1050 MH

SW 02/3
DN1050 MH

SW 02/2
DN1050 MH

SW 01/2
900 SQ SW GP

SW 01/3
900 SQ SW GP

SW 01/4
900 SQ SW GP

SW 01/5
900 SQ SW GP

SW 02/1
OUTLET HEADWALL

SW 01/1
OUTLET HEADWALL

C701

1.0 ROOF DRAINAGE CONNECTION (TYP.)

1.0 BUILDING SEWER CONNECTION (TYP.)

SEWER RISING MAIN

4500L SEWER SEPTIC TANK (TYP.)

SEWER PUMP WELL

900 SQ SW GP (TYP.)

SW DETENTION BASIN

SW BIORETENTION BASIN

DETENTION BASIN OVERFLOW

DESIGN BY OTHERS

57.00

56.60

56.40

56.20

56.00

55.80

| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|---|---|---|---|
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030

DRAWING TITLE
STORMWATER AND SEWER PLAN 01

| SCALE | DESIGNED | DRAWN | CHECKED |
|---|---|---|---|
| 1:300 @ A1 | JF | JF | DH |

| PROJECT | DRAWING | REVISION |
|---|---|---|
| 24.0447 | C400 | A |

0 50mm

SMC - KEMPTON
RECEIVED
03/11/2025

MATCH LINE

BLDG G
FFL 59.20

BLDG L
FFL 59.10

BLDG F
FFL 59.20

BLDG K
FFL 59.10

BLDG J
FFL 58.40

BLDG E
FFL 59.10

BLDG C/D
FFL 58.90

BLDG M
FFL 58.70

BLDG A
FFL 58.60

BLDG B
FFL 57.40

SW 03/3
DN1050 MH

SW 02/7
DN1050 MH

SW 03/2
DN1050 MH

SW 03/1
DN1050 MH

SW 02/6
DN1050 MH

SW 02/4
DN1050 MH

SW 02/5
DN1050 MH

4500L SEWER SEPTIC TANK (TYP.)

SEWER RISING MAIN

SEWER PUMP WELL

I.O. ROOF DRAINAGE CONNECTION (TYP.)

I.O. BUILDING SEWER CONNECTION (TYP.)

SEWER RISING MAIN

MATCH LINE

| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|---|---|---|---|
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030
DRAWING TITLE
STORMWATER AND SEWER PLAN 02

0 50mm SCALE 1:300 @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C401 | A |



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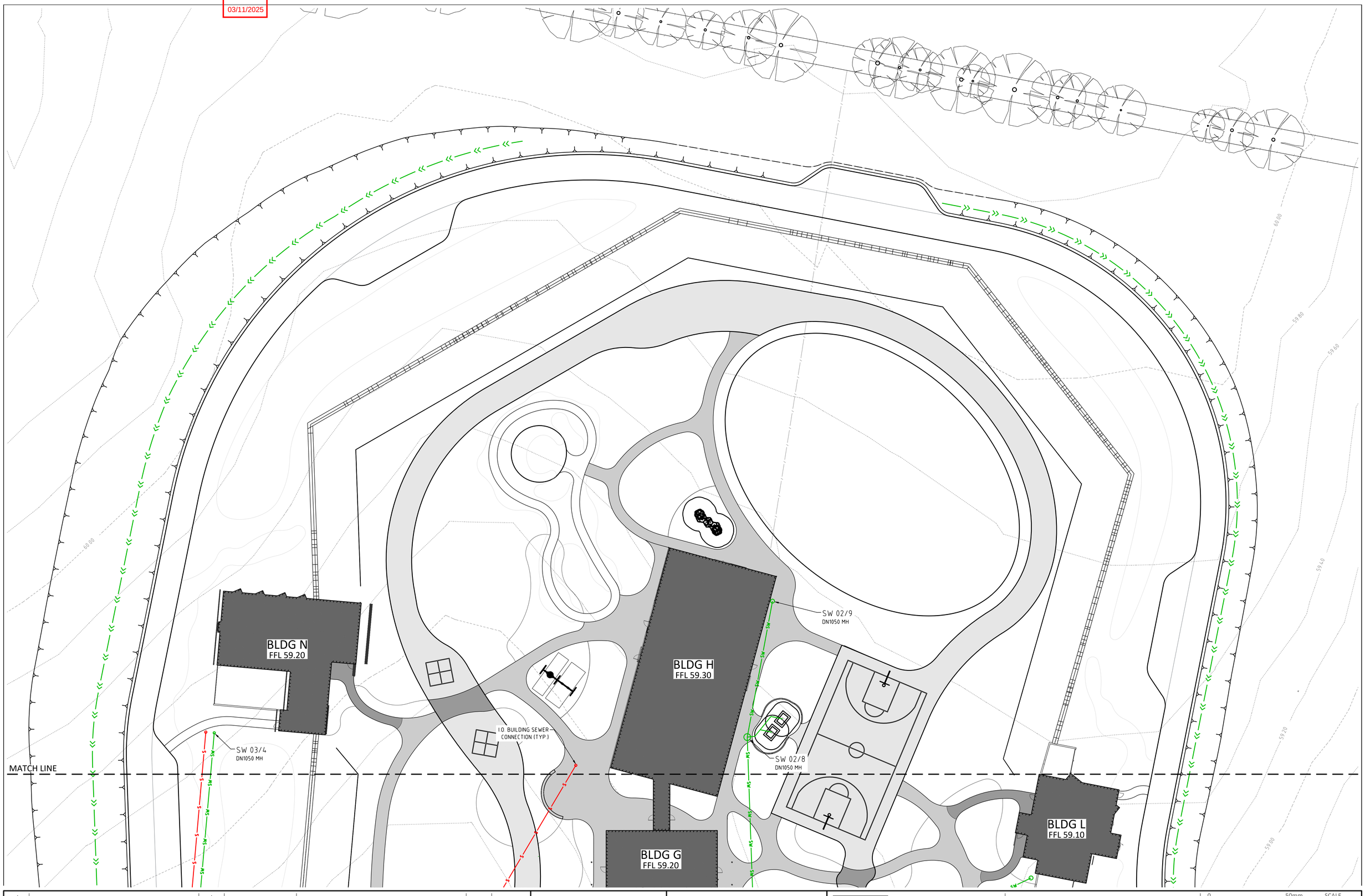
SMC - KEMPTON
RECEIVED
03/11/2025




| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
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| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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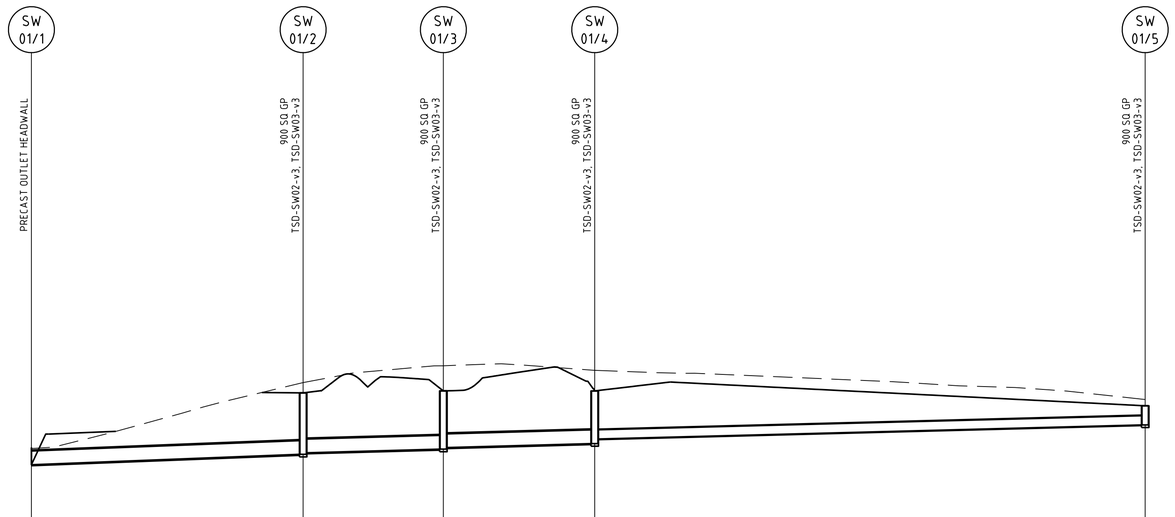
TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030
DRAWING TITLE
STORMWATER AND SEWER PLAN 03

0 50mm SCALE 1:300 @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |

| PROJECT | DRAWING | REVISION |
|---|---|---|
| 24.0447 | C402 | A |



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIAMETER/MATERIAL | | | DN450/STORMPRO SN8 | | | DN450/STORMPRO SN8 | | | DN450/STORMPRO SN8 | | | DN300/STORMPRO SN8 | |
| GRADIENT | | | 0.77% | | | 0.52% | | | 0.53% | | | 0.51% | |
| DATUM R.L. | | 41.00 | | | | | | | | | | | |
| DEPTH TO INVERT | -0.10 | 0.00 | | 2.00 | 1.95 | | 1.90 | 1.85 | | 1.72 | 1.57 | | 0.62 |
| INVERT LEVEL | 54.40 | 54.30 | | 54.64 | 54.69 | | 54.81 | 54.86 | | 54.99 | 55.14 | | 55.60 |
| FINISHED SURFACE LEVEL | 54.30 | | | 56.64 | | | 56.71 | | | 56.71 | | | 56.22 |
| EXISTING SURFACE LEVEL | 54.83 | | | 56.98 | | | 57.53 | | | 57.38 | | | 56.43 |
| CHAINAGE | | 0.00 | 44.35 | | 44.35 | 22.89 | | 67.24 | 24.71 | | 91.96 | 89.86 | 181.81 |

LINE No. SW 01

## LONGITUDINAL SECTION

SCALE HOR 1:500 VER 1:100

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
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| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 |

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|

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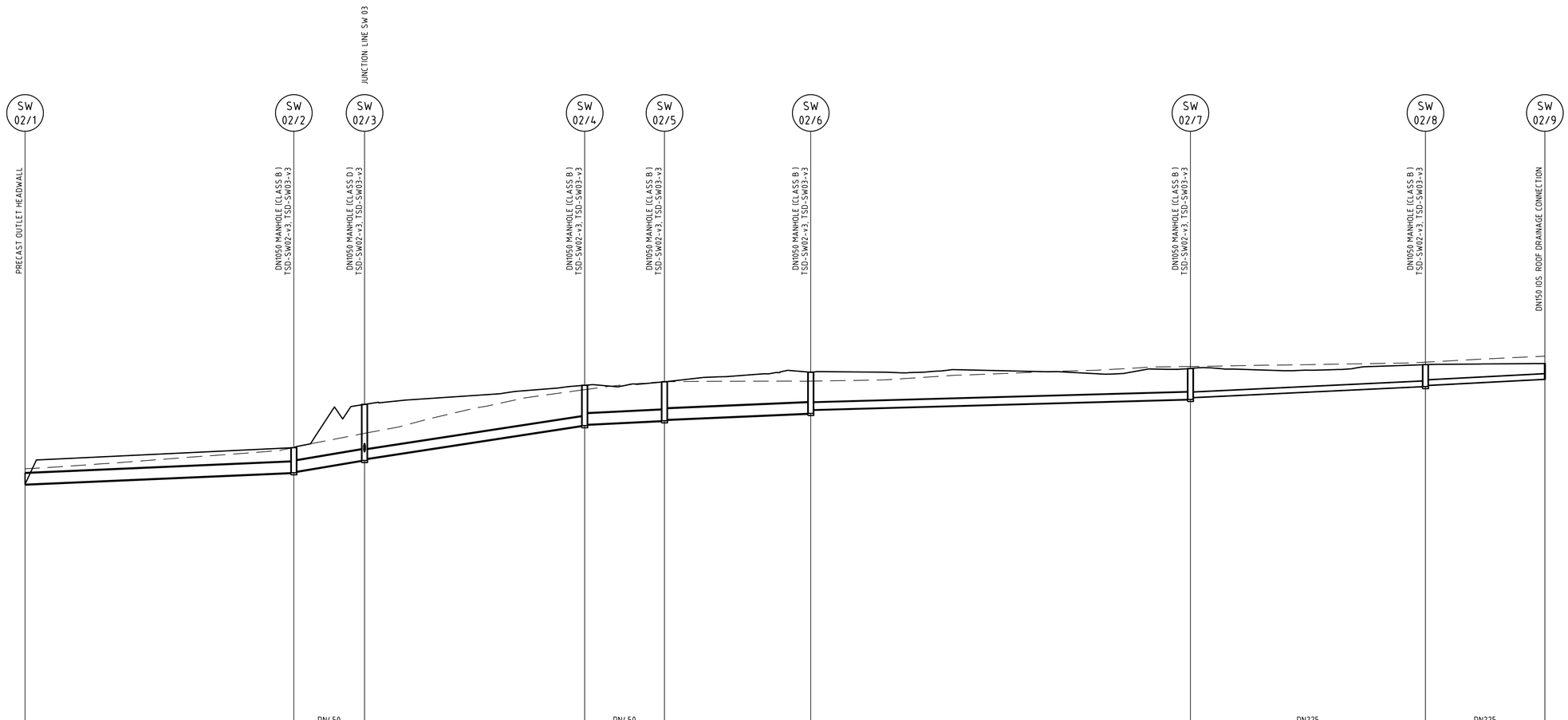
TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030

DRAWING TITLE
STORMWATER LONGITUDINAL SECTIONS 01

0 50mm

| SCALE | | |
|---|---|---|
| 1:500H 1:100V@A1 | | |
| DESIGNED | DRAWN | CHECKED |
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C410 | A |

10/21/2025 8:35:54 PM S:\Projects\2024\24.0447 New Tasmanian Youth Justice Facility\5 - GR drawings\CIV - Working drawings, model\24.0447 C.dwg




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DIAMETER/MATERIAL | DN450/STORMPRO SN8 | DN450 STORMPRO SN8 | DN450/STORMPRO SN8 | DN450 STORMPRO SN8 | DN450/STORMPRO SN8 | DN300/STORMPRO SN8 | DN225 PVC SN8 | DN225 PVC SN8 |
| GRADIENT | 0.86% | 3.13% | 3.00% | 0.92% | 0.83% | 0.55% | 0.94% | 1.02% |
| DATUM R.L. | 42.00 | | | | | | | |
| DEPTH TO INVERT | 0.00 1.03 | 0.98 2.29 | 2.22 1.65 | 1.60 1.60 | 1.55 1.69 | 1.54 1.27 | 1.19 0.90 | 0.85 0.64 |
| INVERT LEVEL | 54.30 54.77 | 54.82 55.27 | 55.35 56.70 | 56.75 56.90 | 56.95 57.20 | 57.35 57.77 | 57.85 58.30 | 58.35 58.60 |
| FINISHED SURFACE LEVEL 54.30 | 55.80 | 57.57 | 58.35 | 58.50 | 58.89 | 59.04 | 59.20 | 59.24 |
| EXISTING SURFACE LEVEL 54.93 | 55.80 | 56.38 | 58.17 | 58.49 | 58.52 | 59.12 | 59.30 | 59.54 |
| CHAINAGE | 0.00 55.01 | 55.01 14.47 | 69.48 45.06 | 114.54 16.33 | 130.87 29.94 | 160.81 77.72 | 238.53 48.10 | 286.63 24.44 311.07 |

LINE No. SW 02

## LONGITUDINAL SECTION

SCALE HOR 1:500 VER 1:100

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 |

THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

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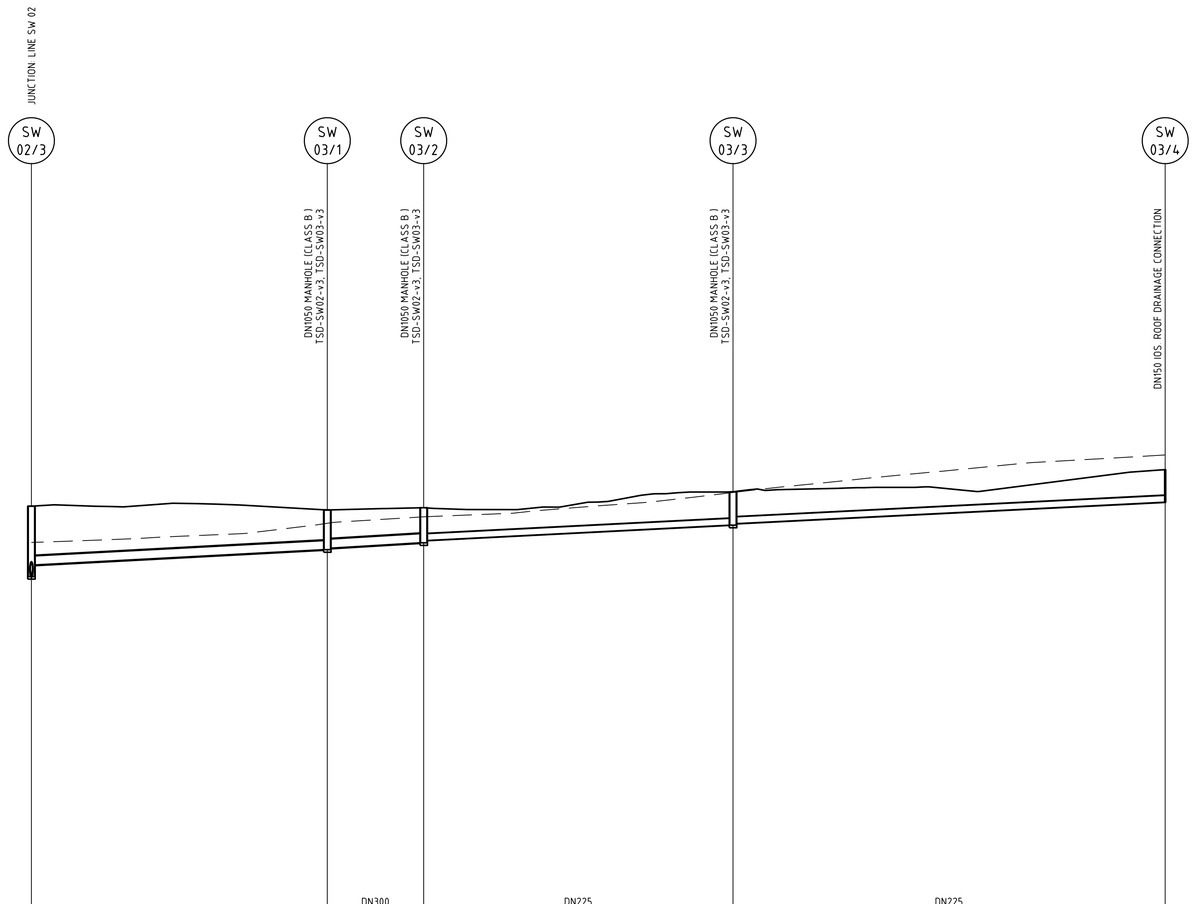
ph 03 6223 8877

TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030
DRAWING TITLE
STORMWATER LONGITUDINAL SECTIONS 02

0 50mm SCALE 1:500H 1:100V@A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C411 | A |



| DIAMETER/MATERIAL | DN300/STORMPRO SN8 | DN300<br>STORMPRO SN8 | DN225<br>PVC SN8 | DN225<br>PVC SN8 |
|---|---|---|---|---|
| GRADIENT | 1.04% | 1.11% | 0.99% | 0.99% |

DATUM R.L. 42.00

| | SW 02/3 | SW 03/1 | SW 03/2 | SW 03/3 | SW 03/4 |
|---|---|---|---|---|---|
| DEPTH TO INVERT | 2.29<br>1.92 | 1.30<br>1.25 | 1.14<br>1.07 | 1.09<br>1.04 | 1.06 |
| INVERT LEVEL | 55.27<br>55.65 | 56.15<br>56.20 | 56.38<br>56.45 | 56.95<br>57.00 | 57.70 |
| FINISHED SURFACE LEVEL | 57.57 | 57.45 | 57.52 | 58.04 | 58.76 |
| EXISTING SURFACE LEVEL | 56.38 | 57.01 | 57.22 | 58.02 | 59.24 |
| CHAINAGE | 0.00 | 48.30 | 64.04 | 114.53 | 185.08 |

| CHAINAGE (lengths) | 48.30 | 15.74 | 50.49 | 70.55 |
|---|---|---|---|---|

LINE No. SW 03

## LONGITUDINAL SECTION

SCALE HOR 1:500 VER 1:100

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|
| . | . | . | . |
| . | . | . | . |
| . | . | . | . |
| . | . | . | . |
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 |

| REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|

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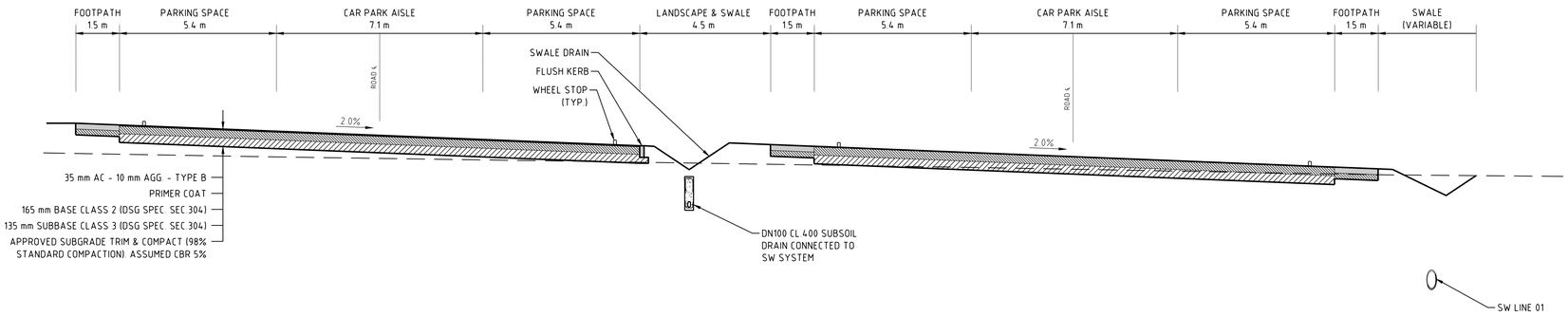
TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030
DRAWING TITLE
STORMWATER LONGITUDINAL SECTIONS 03

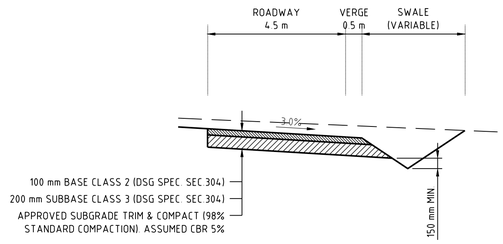
0 50mm

| SCALE | | |
|---|---|---|
| 1:500H 1:100V@A1 | | |
| DESIGNED | DRAWN | CHECKED |
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C412 | A |




## TYPICAL SECTION: ROAD 03
## CAR PARK AND SWALE DETAIL
SECTION A

HORIZONTAL SCALE 1:100 VERTICAL SCALE 1:50




## TYPICAL SECTION: ROAD 01
## FIRE ACCESS DETAIL
SECTION B

HORIZONTAL SCALE 1:100 VERTICAL SCALE 1:50

| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|---|---|---|---|
| . | . | . | | | | | |
| . | . | . | . | | | | |
| . | . | . | . | | | | |
| . | . | . | . | | | | |
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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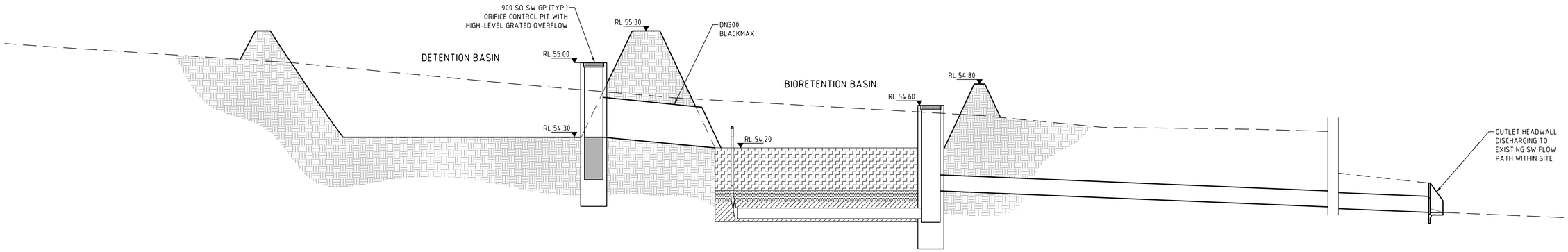
TASMANIA 7030

DRAWING TITLE
DETAILS 01

0 50mm SCALE AS SHOWN @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |
| PROJECT | DRAWING | REVISION |
| 24.0447 | C700 | A |




## LONGITUDINAL SECTION: SW DETENTION AND BIORETENTION DETAIL

SECTION C

NTS (5 x VERTICAL EXAGGERATION)

| REV | DESCRIPTION | APP'D | DATE | REV | DESCRIPTION | APP'D | DATE |
|---|---|---|---|---|---|---|---|
| . | . | . | | | | | |
| . | . | . | . | | | | |
| . | . | . | . | | | | |
| . | . | . | . | | | | |
| A | ISSUED FOR PLANNING APPROVAL | DH | 21.10.2025 | | | | |

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TASMANIAN YOUTH JUSTICE FACILITY
466 BRIGHTON RD, PONTVILLE
TASMANIA 7030
DRAWING TITLE
DETAILS 02

0 50mm SCALE AS SHOWN @ A1

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JF | JF | DH |

| PROJECT | DRAWING | REVISION |
|---|---|---|
| 24.0447 | C701 | A |