



Integrated Water Management Plan

68-80 O'Connell Street, Caddens

Prepared for
Caddens Estate Pty Ltd

Issue C August 2025

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Prepared By	Sergios Bou Francis	Stormwater Engineer	13 August 2025	Nil
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Disclaimer

The advice and information contained within this report relies on the quality of the records and other data provided by the Client, site inspections along with the time and budgetary constraints imposed.

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1 INTRODUCTION

1.1 Executive summary

This Integrating Water Management Plan has been prepared by Telford Consulting Pty Ltd for Caddens Estate Pty Ltd to accompany a State Significant Development Application (SSDA) for a mixed-use development (including in-fill affordable housing) at 68-80 O'Connell Street, Caddens, within the Penrith Local Government Area (LGA).

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-80875966) on 14 March 2025.

This report concludes that the proposed mixed-use development is suitable and warrants approval subject to the implementation of the following mitigation measures.

- Stormwater quantity assessment
- Stormwater quality treatment

Following the implementation of the above mitigation measures, the remaining impacts are considered appropriate.

1.2 Introduction

The SSDA seeks development consent for a mixed-use development (including in-fill affordable housing) comprising a combination of shop-top housing, residential flat buildings and a commercial premises (shop) at 68-80 O'Connell Street, Caddens. The proposed works include site preparation works, excavation, infrastructure, construction of the buildings and associated landscaping works.

Specifically, the SSDA seeks development consent for:

- demolition of an existing at grade car park
- construction of 4 x 4 - 6 storey shop top housing buildings at 68 O'Connell Street, Caddens, comprising:
 - 177 residential dwellings
 - ground floor commercial, retail and medical uses
- construction of a single storey commercial premises (shop) located at the south western corner of 68 O'Connell Street
- construction of basement carparking to service the shop top housing, ground floor commercial and commercial premises at the southwestern corner
- construction of 11 x 4 - 7 storey residential flat buildings at 80 O'Connell Street, including
 - 305 residential dwellings
 - basement carparking
- internal roads
- associated infrastructure and services
- landscaping and communal open spaces including a 'public square'

The proposal also incorporates 15% affordable housing and seeks to utilise the incentive controls under Chapter 2, Part 2, Division 1, Section 18 of the State Environmental Planning Policy (Housing) 2021 (Housing SEPP) to achieve 30% additional building height.

This SSDA also seeks to modify DA17/0995 (pursuant to Clause 4.17(5) of the Environmental Planning and Assessment Act 1979 (EP&A Act) by amending the description of works and removing reference to the Concept DA and Stage 2 works to avoid inconsistency of the proposed works on the existing at-grade car park and southwestern corner of the site with that approval.

This report has been prepared in response to the requirements contained within the Secretary’s Environmental Assessment Requirements (SEARs) dated 14 March 2025 (SSD-80875966). Specifically, this report has been prepared to respond to the SEARs requirement issued below.

Issue and Assessment Requirements	Supporting Documentation
11. Water Management - Detail the proposed drainage design and servicing infrastructure to be incorporated as part of the development (stormwater and wastewater). - Demonstrate how the development complies with council’s drainage requirements and identify proposed stormwater treatment and water quality management measures to minimise adverse environmental impacts.	Integrated Water Management Plan

1.3 Subject Site

The site is located at 68-80 O’Connell Street, Caddens, within the Penrith LGA. It is legally described as Lot 1 and 2 in DP 1268507. The site has an area of 8.2 ha and is generally rectangular in shape.

The western portion of the site (68 O’Connell Street) currently comprises an approved commercial shopping centre development and associated carpark, commonly known as ‘Caddens Corner’. It is zoned E1 Local Centre pursuant to the Penrith Local Environmental Plan 2010 (PLEP 2010). This portion of the site is subject to a Concept DA (DA17/0995). A portion of 68 O’Connell Street, that is currently used for at-grade carparking, is subject to this SSDA.

The eastern portion of the site (80 O’Connell Street) is a cleared vacant lot, historically occupied by rural residential land uses. It is zoned R4 High Density Residential pursuant to the PLEP 2010. The site itself is not identified as a heritage item; however, it is located to the east of the ‘Teacher’s residence (former)’ (Item 670), a local heritage item which is identified under Schedule 5 of the PLEP 2010.

High biodiversity value land is present at the site at its north-eastern corner, pursuant to the Biodiversity Conservation Act 2016.

The location of the site is shown in Figure 1.3.1: The site (Base source: Group GSA) below.



Figure 1.3.1: The site (Base source: Group GSA)

The site is located within the Caddens Release Area within the Penrith Development Control Plan 2014 (PDCP 2014), and, under the Caddens Release Area Structure Plan, is strategically identified as the precinct centre with adjoining residential areas.

The site is approximately 2.2 kilometres (km) from Werrington Station and 1.8km from Kingswood Station. It is also well serviced by local buses with stops in proximity to the site along O'Connell Street in both directions.

1.4 Surrounding Context

The site is surrounded by established and newly developed low-density residential areas of Caddens, Claremont Meadows, Werrington and Kingswood, as envisioned by the Caddens Release Area plan within the PDCP 2014.

A staged residential subdivision for 119 residential lots is located immediately to the north of the site at 46-66 O'Connell Street.

The area is interspersed with a variety of uses, including Western Sydney University (WSU), TAFE NSW and sporting fields.

The site is located 5.5km east of Penrith City Centre and 30km west from Parramatta CBD.

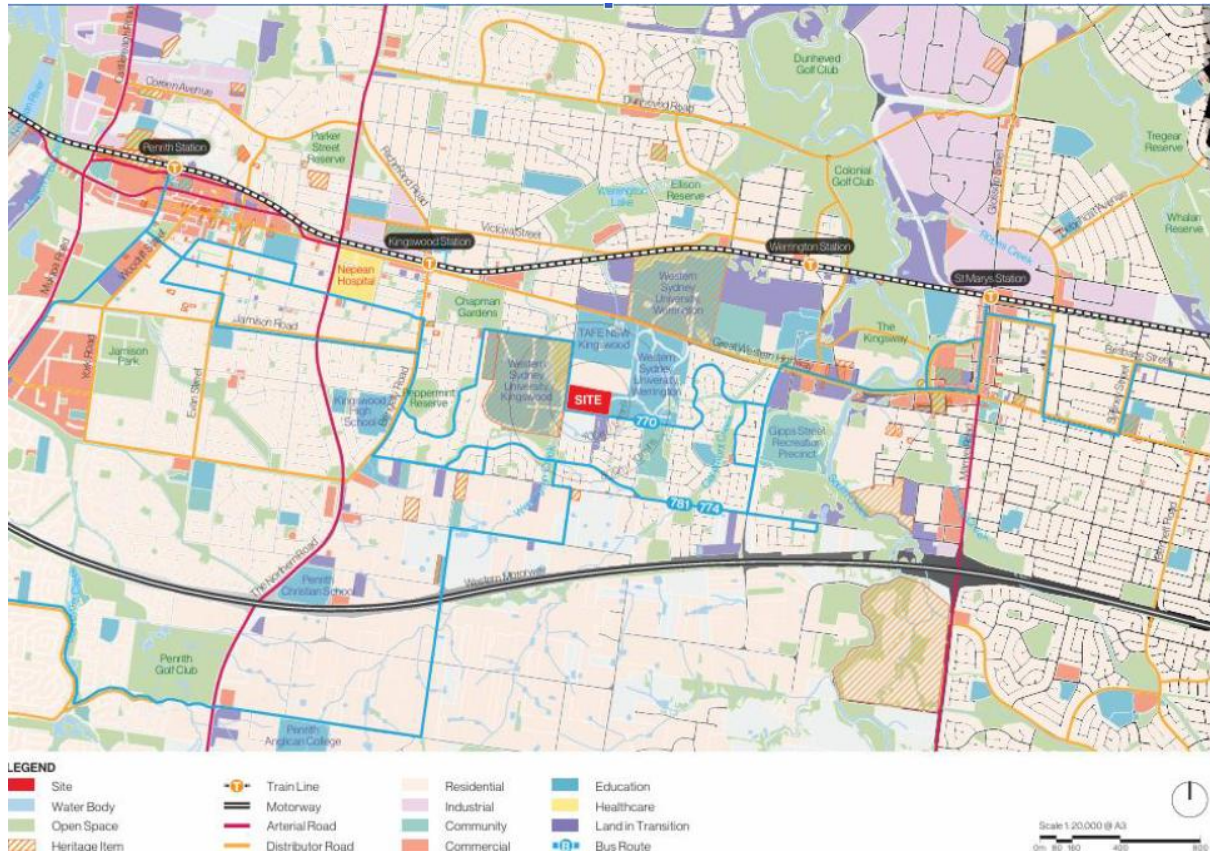


Figure 1.4.1: Site Context (Base source: Group GSA)

1.5 Existing Topography

Based on the survey provided by Ramsay Surveyors Pty Ltd dated 25/02/2021 (**Appendix B**), the topography of the subject site slopes from east to west. The subject site accommodates a total level change of approximately 21 metres.

2 STORMWATER QUANTITY ASSESSMENT

2.1 Aims & Objectives

Penrith City Council states that OSD is required for subdivisions, industrial and commercial developments, multi-unit housing, dual occupancy and other development that creates impervious areas within the localities identified by Council.

Where the development site area is greater than 5000m² specific site analysis shall be undertaken using an appropriate computer model, Council's preferred model is Drains. As a minimum it will be necessary to demonstrate that there will be no increase in runoff from the site as result of the development for all storms up to and including the 100-year Average Recurrence Interval (ARI) event for all storm durations.

Given all the above, On-Site Detention is required.

The OSD is designed on the basis that the total discharge of stormwater from the post development site is less or equal than that from the site before it was developed.

To mitigate the increased post-development runoff, it has been proposed to install three (3) underground OSD tanks prior to the discharge points: OSD (1) for building B-J, OSD (2) for building K-N & OSD (3) for building P-U. No OSD was proposed for the retail development.

The points of discharge for the proposed development are three proposed stormwater kerb inlet pits within the new proposed road development.

The discharge from the proposed road will be managed through two separate drainage catchments: one directing stormwater to a proposed headwall within the adjacent ecological area, and the other connecting to the existing drainage system to the west at Corr Road.

Refer to the stormwater plans shown on Appendix A for more details.

2.2 Stormwater Design

The stormwater design intends to allow stormwater runoff to drain from the site by gravity. Most of the roof runoff is designed to be collected and drained towards an underground rainwater tank. Any overflow from the rainwater tank will be conveyed to the proposed water quality devices located within the site.

All surface runoff from the paved and unpaved areas is also captured by the proposed pit and pipe network across the paved surface, and directed to the proposed water quality chamber for treatment before being discharged from the site at a legally approved point of discharge.

Refer to the stormwater plans shown on Appendix A for more details.

2.3 DRAINS Modelling and Results

DRAINS ILSAX model was used to analyse the detention requirements for a range of storm events (0.2EY, 10%, 5%, 2% & 1% AEP Storm events). The following table details the preliminary detention storage requirements for the proposed OSD tanks.

The following images and tables show the Result of DRAINS modelling

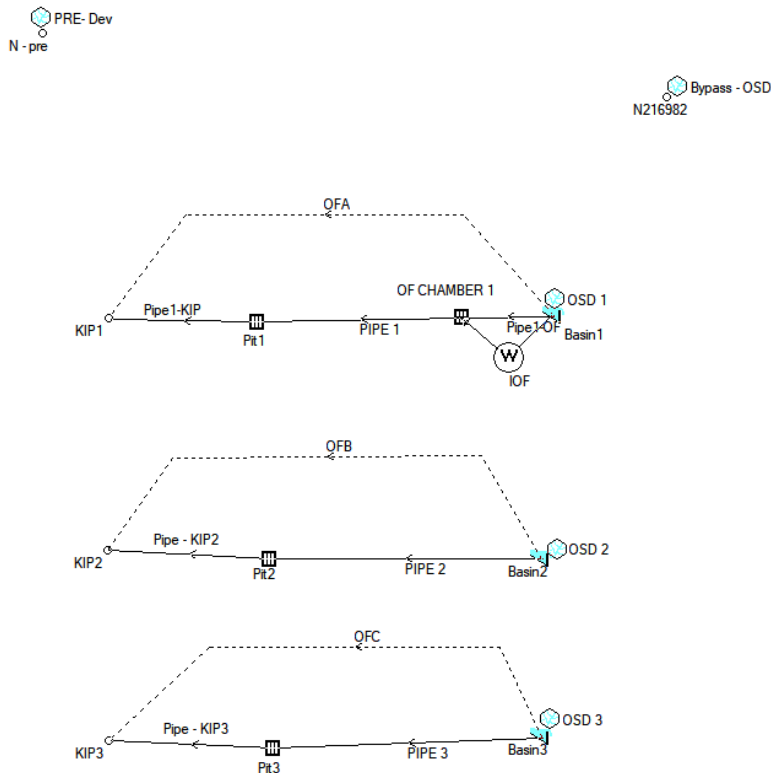


Figure 2.3.1: DRAINS Model

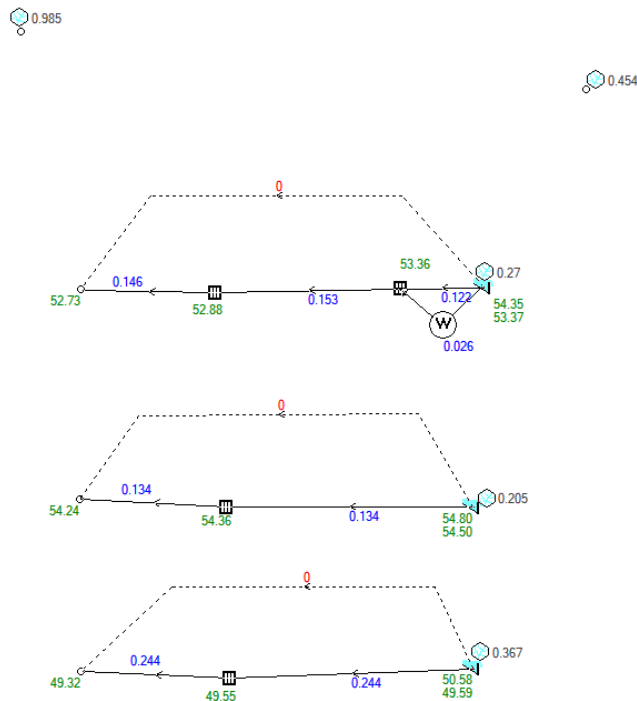


Figure 2.3.2: Minor Storm Event Result (0.2 EY)

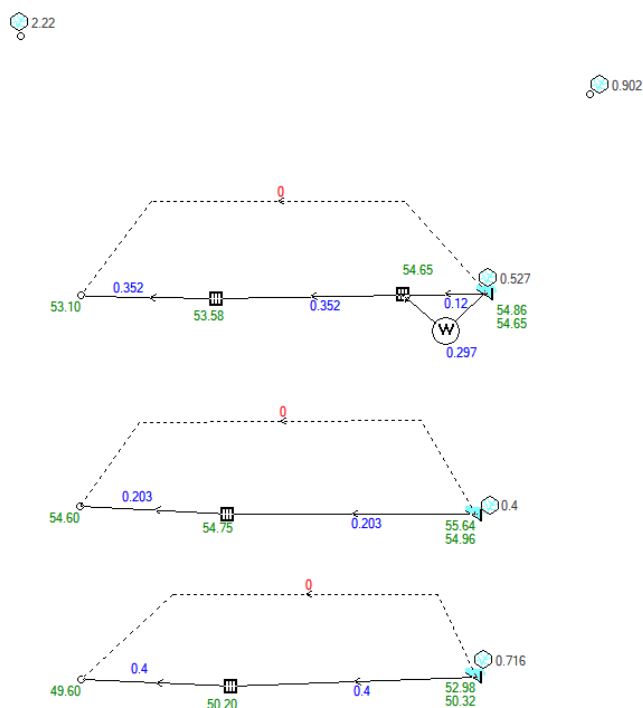


Figure 2.3.3 : Major Storm Event Result (1% AEP)

Table 3.1 – Preliminary Detention Tanks Properties

Name	Volume (m³)	Area (m²)	Average Depth (m)
OSD Tank (1)	136	83	1.60
OSD Tank (2)	131	126	1.16
OSD Tank (3)	182	52	3.54

Table below summarises the peak discharge from the site in the pre-development and post-development scenario at all Outlets.

Table 3.2 – Summary of peak discharge

Outlet	Scenario	STORM EVENT (AEP)				
		0.2EY	10%	5%	2%	1%
Site	Pre-dev	985	1240	1540	1930	2220
	Post-dev	978	1209	1437	1680	1857

The table indicates that with the proposed detention tanks, the development will successfully attenuate all post-development peak discharges from the proposed development, for all investigated return periods.

Refer to the Stormwater Concept Plans attached in Appendix A for further details.

3 STORMWATER QUALITY ASSESSMENT

3.1 Aims and Objectives

Penrith City Council's Water Sensitive Urban Design (WSUD) Policy has been developed to reduce the negative impact of development on our natural environment.

The policy will help reduce environmental damage by regulating the sustainable management of the urban water cycle as part of planning and designing development in our City.

As per DCP requirement, WSUD strategy must be provided if all new commercial, retail, mixed use and industrial development greater than 2,500m² total site area and alterations and additions where the increase in the roofed and impervious area is equal to or greater than 250m².

The water quality requirements for development types identified in the Penrith DCP 2014 are the following pollution load reductions:

Pollutant	% Post Development Average Annual Load Reduction
Gross Pollutants	90%
Total Suspended Solids	85%
Total Phosphorus	60%
Total Nitrogen	45%

Table 3.1-1: Stormwater Treatment Targets.

3.2 Site Analysis and Design Strategy

The proposed development offers the opportunity to provide stormwater quality treatment where none exists at present.

The proposed solution is to use Stormfilter Cartridges, Ocean Guards Filtration Baskets and rainwater tanks to treat and remove gross pollutants from the stormwater drainage cycle from roof, hard surface and landscape and to limit the mean annual runoff volume from the development site as well as ensuring suitable low flow regime in the streams.

The elements of the proposed water quality management strategy include:

- Minimise areas of impervious surfaces to minimise runoff volume.
- Incorporate Stormfilter Cartridges to target TSS, TN & TP.
- Incorporate Ocean Guards Filtration Baskets to remove large debris.
- Implement rainwater re-use tanks to reduce runoff volume.

MUSICX software was used to assess pollutant generation and the performance of stormwater treatment measures for the proposed development.

3.3 Water Quality Management Measures

3.3.1 Rainwater tank

Rainwater tanks collect roof runoff for subsequent reuse and therefore conserve potable mains water, reduce stormwater runoff volumes and remove pollutants. Rainwater tanks may be plumbed to all non-potable internal uses such as toilets, laundry and hot water units as well as used for irrigation to ensure a year-round demand.

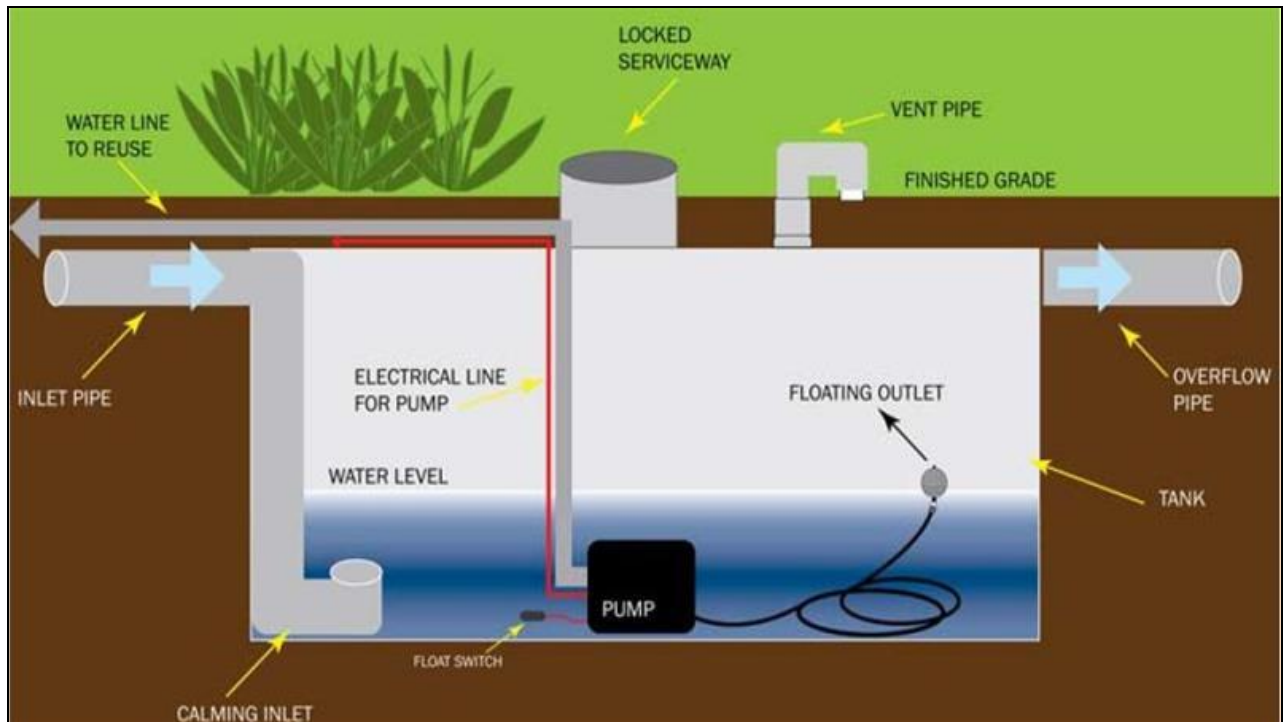


Figure 3.3.1: Rainwater tank

A rainwater tank was modelled for the development based on the following assumptions:

- 100 % of roof area is captured by the rainwater tanks
- The volume provided for rainwater tanks 1, 2 & 3 are respectively 15m³ for building B-J, 15m³ for building K-N & 20m³ for building P-U.
- Rainwater tanks can be used for irrigation purposes.

3.3.2 Stormfilters Cartridges (Ocean Protect)

Stormfilter cartridges from OceanProtect installed within a chamber within the OSD tank as an end-of line treatment. The OceanProtect cartridges target the TSS, TP and TN. The number of Stormfilter cartridges proposed for the development was based on MUSIC modelling outcomes. Refer to MUSIC results in section 5 of this report for more information.

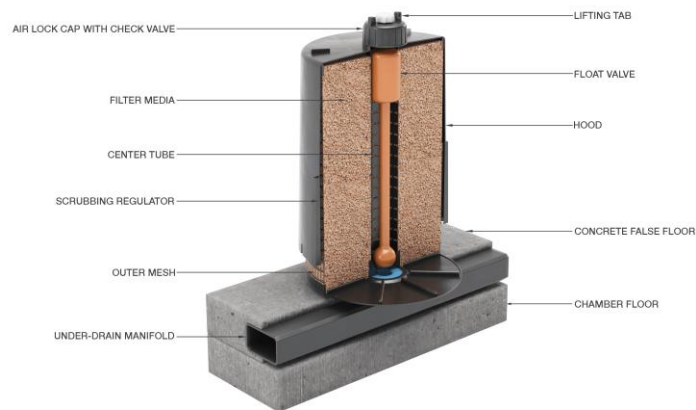


Figure 3.3.2: Ocean Protect Filtration Cartridge

3.3.3 Oceanguards Filtration Baskets (Ocean Protect)

Gully pit baskets from OceanProtect “OceanGuard” will be installed at some of the grated stormwater pits. The OceanGuard gully pit targets TSS and GP.

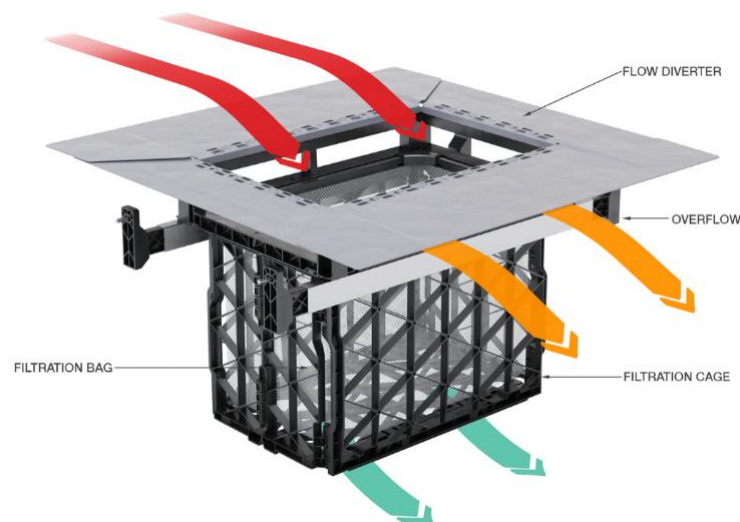


Figure 3.3.3: Ocean Guard Filtration Basket

3.4 MUSIC MODEL RESULTS

The water quality model adopted for this project is the MUSICX.

MUSIC Software can model a wide range of treatment devices to identify the best way to capture and reuse stormwater runoff, remove its contaminants, as well as reduce runoff frequency, to achieve WSUD and integrated water management goals.

The MUSIC model was generated using the rainfall data and Stormfilter nodes prepared by Ocean Protect.

Catchment characteristics were defined using a combination of catchments with varying imperviousness ratios to replicate the catchment for the development condition.

Figure below presents the MUSIC model.

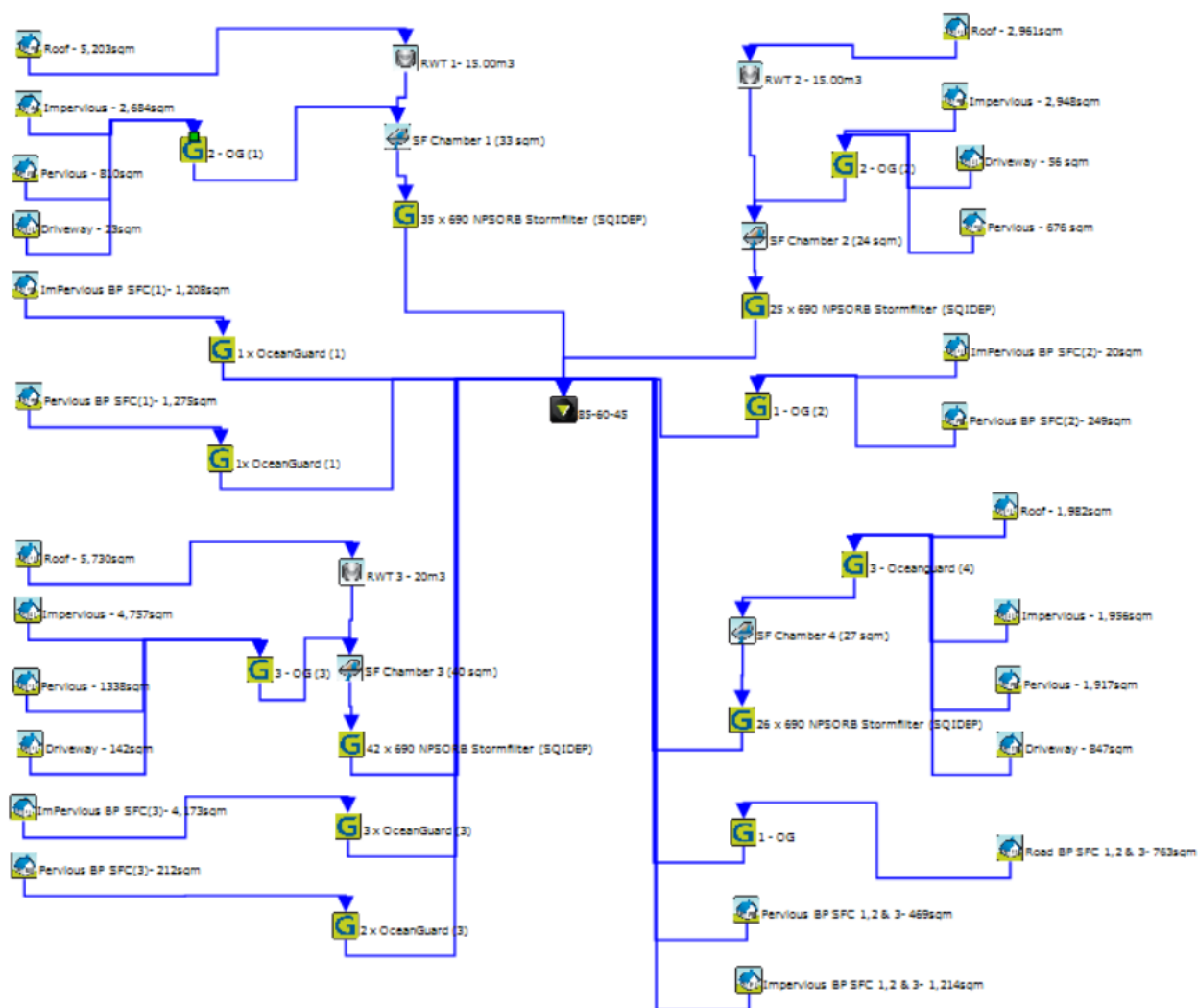


Figure 3.4.1: Music Model

Figure below presents the MUSIC results.

	Sources	Residual Load	% Reduction
Flow (ML/yr)	22.36	21.35	4.483
Total Suspended Solids (kg/yr)	2792	373.1	86.64
Total Phosphorus (kg/yr)	5.544	1.656	70.12
Total Nitrogen (kg/yr)	49	23.36	52.33
Gross Pollutants (kg/yr)	607.7	21.11	96.53

Figure 3.4.2 : Music Results

4 CONCLUSIONS

This Integrated Water Management Plan has been prepared for the proposed Development at 68-80 O'Connell Street, Caddens. This report has demonstrated that the site will be able to manage stormwater quantity & quality requirements for the design storms up to and including the 1% AEP event.

The proposed stormwater management measures are as below:

The proposed stormwater quantity management measures, including three On-Site Detentions (OSD) and the pit and pipe network, have been designed to meet the requirements set out by Penrith city Council, effectively controlling stormwater runoff and minimizing the impact on adjoining properties.

A filtration system with Storm filter cartridges, filtration baskets and rainwater tanks will be incorporated to provide stormwater quality treatment for the runoff from the proposed development

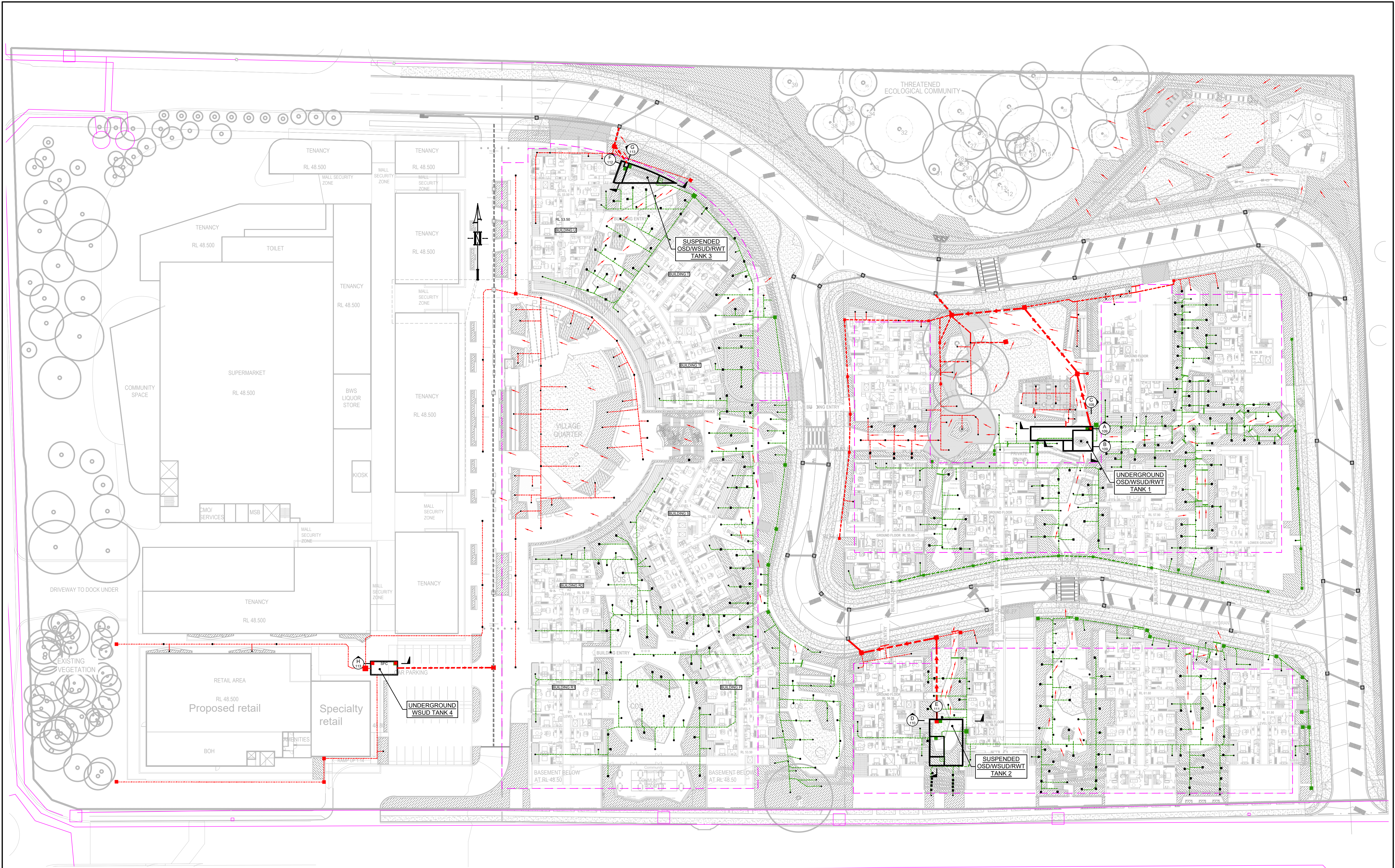
The conclusion of this Report is that by implementing the proposed stormwater quantity and quality management measures, the proposed development will ensure no worsening effects downstream of the proposed development and conforms to best engineering practices in accordance with the 'Penrith City Council Development Control Plan 2014'.

5 References

- Stormwater Drainage Guidelines for Building Developments – Penrith City Council
- Penrith City Council Development Control Plan 2014

APPENDIX A

Stormwater Plans



SITE PLAN
SCALE 1:500

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
C	ISSUE FOR DEVELOPMENT APPLICATION	13/08/2025	YKK	SBF
B	ISSUE FOR DEVELOPMENT APPLICATION	06/08/2025	YKK	SBF
A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF

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Client
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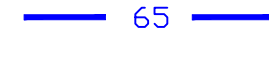
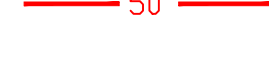
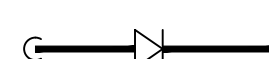
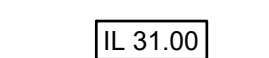
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SCALE 1:500 @ A1

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Company: Telford Consulting Pty Ltd

Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title
**STORMWATER CONCEPT PLAN
SITE PLAN**
Scale A1 Project No. 25037 Dwg. No. 101 Issue C

LEGEND

-  PROPOSED STORMWATER DRAINAGE PIPE
-  PROPOSED STORMWATER DRAINING TO OSD
-  PROPOSED STORMWATER BYPASSING OSD
-  Ø100 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
-  Ø65 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
-  Ø50 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
-  PROPOSED STORMWATER PIPE TO RAINWATER TANK
-  Ø100 SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIMA34
-  RISER PIPE
-  DP DOWNPIPE Ø100
-  VD VERTICAL DROP Ø100
-  D VERTICAL DROP FROM SLAB
-  PG PLANTER GRATE Ø150
-  FG FLOOR GRATE Ø150
-  FG FLOOR GRATE 200x200 (ALLOW MINIMUM 1.0% FALL TO FG)
-  FW FLOOR GRATE 300x300 (ALLOW MINIMUM 1.0% FALL TO FW)
-  RWO RAINWATER OUTLET Ø260 SPS (ALLOW MINIMUM 1.0% FALL TO RWO)
-  SPB SUSPENDED PLANTER BOX RAINWATER OUTLET
-  TD AC CONDENSER TUNDISH TO MANUFACTURER'S DETAILS
-  EMERGENCY OVERLAND FLOWPATH IN CASE OF EMERGENCY / OSD BLOCKAGE
-  IL 31.00 INVERT LEVEL
-  X RL 29.65 DESIGN SURFACE LEVEL
-  + NS 28.31 EXISTING SURFACE LEVEL

NOTE:

ALL NON-TRAFFICABLE AREAS DRAINAGE SYSTEM IN UPPER LEVELS IS SUBJECT TO DETAILED DESIGN STAGE & TO BE CONNECTED TO THE UNDERGROUND RAINWATER TANK.

ALL TRAFFICABLE AREAS DRAINAGE SYSTEM IN UPPER LEVELS IS SUBJECT TO DETAILED DESIGN STAGE & TO BE CONNECTED TO THE UNDERGROUND WSUD TANK.

NOTE:

REFER ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS.

NOTE:

ALL GRATES WITHIN FOOTWAY AREAS TO BE HEEL GUARD & BIKE SAFE.

NOTE:

- CONTRACTOR IS TO PROVIDE OVERFLOW OUTLETS & EMERGENCY OVERFLOW SPITTERS TO ALL TRAPPED AREAS.
- DP/VD ARE Ø100 PIPES U.N.O.
- ALL TRANSFERRING PIPES ARE SUSPENDED U.N.O.
- BALCONIES PIPES ARE Ø50mm HDPE OR PVC CAST IN SLAB AT MIN 1.0% SLOPE.

NOTE:

IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM PONDING IS ACHIEVED OVER THE FLOOR WASTES BY GRADING CATCHMENTS' SURFACES AT MINIMUM 1.0% FALL.

PIPES NOTE:

Ø65 PVC @ MIN 1.0%
Ø90 PVC @ MIN 1.0%
Ø100 PVC @ MIN 1.0%
Ø150 PVC @ MIN 1.0%
Ø225 PVC @ MIN 0.5%
Ø300 PVC @ MIN 0.4%
UNLESS NOTED OTHERWISE

NOTE:

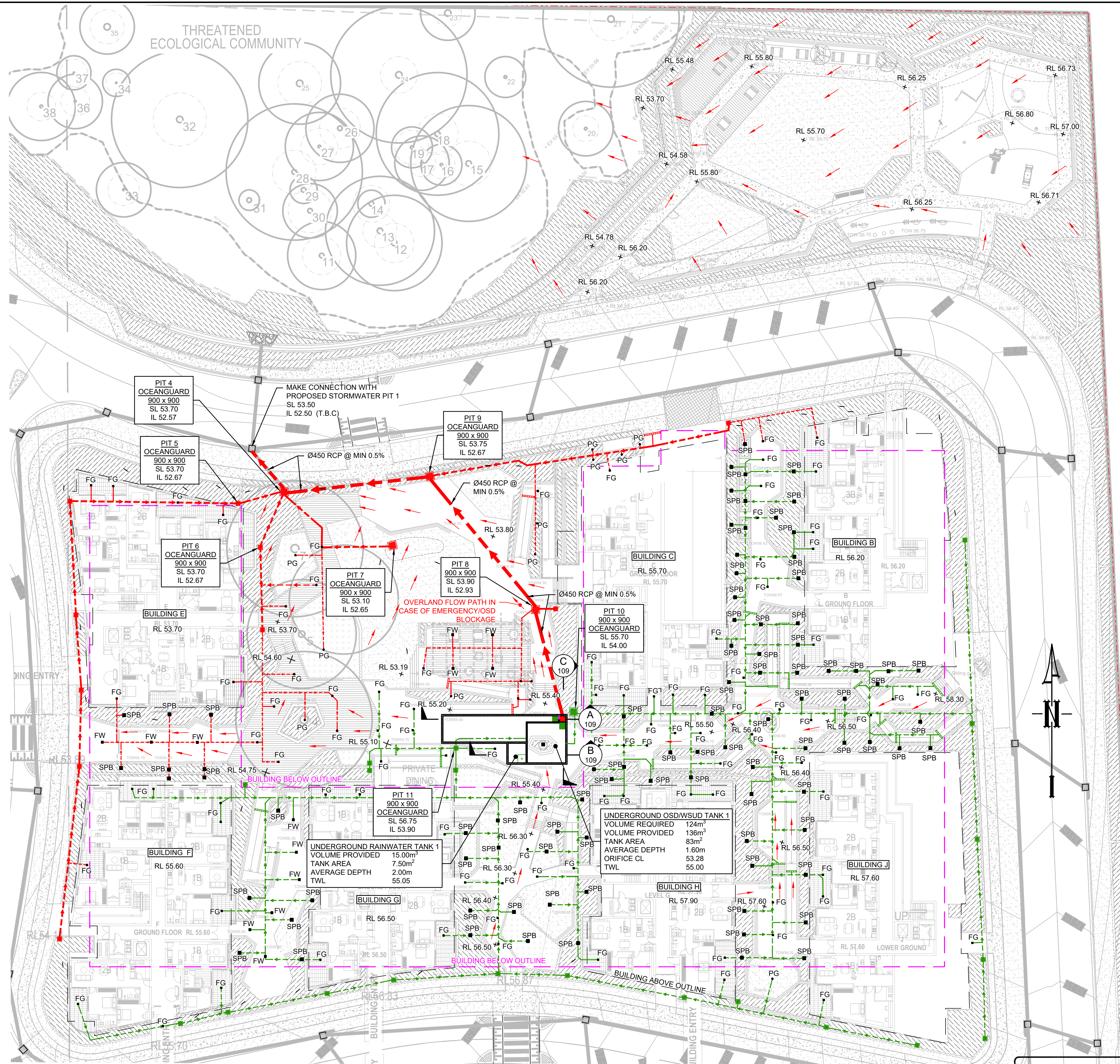
ALL STORMWATER DRAINAGE PIPES ARE Ø100 PVC AT MIN 1.0% SLOPE U.N.O.

NOTE:

ALL LINEAR GRATED DRAINS TO BE MIN. 100mm DEEP.

NOTE:

PITS DEEPER THAN 1.0m TO BE FITTED WITH STEP IRONS.



BUILDING PLAN - BUILDING B - J
SCALE 1:300

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
B	ISSUE FOR DEVELOPMENT APPLICATION	13/08/2025	YKK	SBF
A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF

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Council
Penrith City Council
Client
Caddens Estate Pty Ltd

Scale
0 3 6 9 12 15 18 m
SCALE 1:300 @ A1

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Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title
**STORMWATER CONCEPT PLAN
BUILDING PLAN -
BUILDING B - J**
Scale A1 Project No. 25037 Dwg. No. 102 Issue B

LEGEND

- > [Symbol] PROPOSED STORMWATER DRAINAGE PIPE
- > [Symbol] PROPOSED STORMWATER DRAINING TO OSD
- > [Symbol] PROPOSED STORMWATER BYPASSING OSD
- > [Symbol] Ø100 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- > [Symbol] Ø65 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- > [Symbol] Ø50 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
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3. ALL TRANSFERRING PIPES ARE SUSPENDED U.N.O.
4. BALCONIES PIPES ARE Ø50mm HDPE OR PVC CAST IN SLAB AT MIN 1.0% SLOPE.

NOTE:

IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM PONDING IS ACHIEVED OVER THE FLOOR WASTES BY GRADING CATCHMENTS' SURFACES AT MINIMUM 1.0% FALL.

PIPES NOTE:

- Ø65 PVC @ MIN 1.0%
- Ø90 PVC @ MIN 1.0%
- Ø100 PVC @ MIN 1.0%
- Ø150 PVC @ MIN 1.0%
- Ø225 PVC @ MIN 0.5%
- Ø300 PVC @ MIN 0.4%
- UNLESS NOTED OTHERWISE

NOTE:

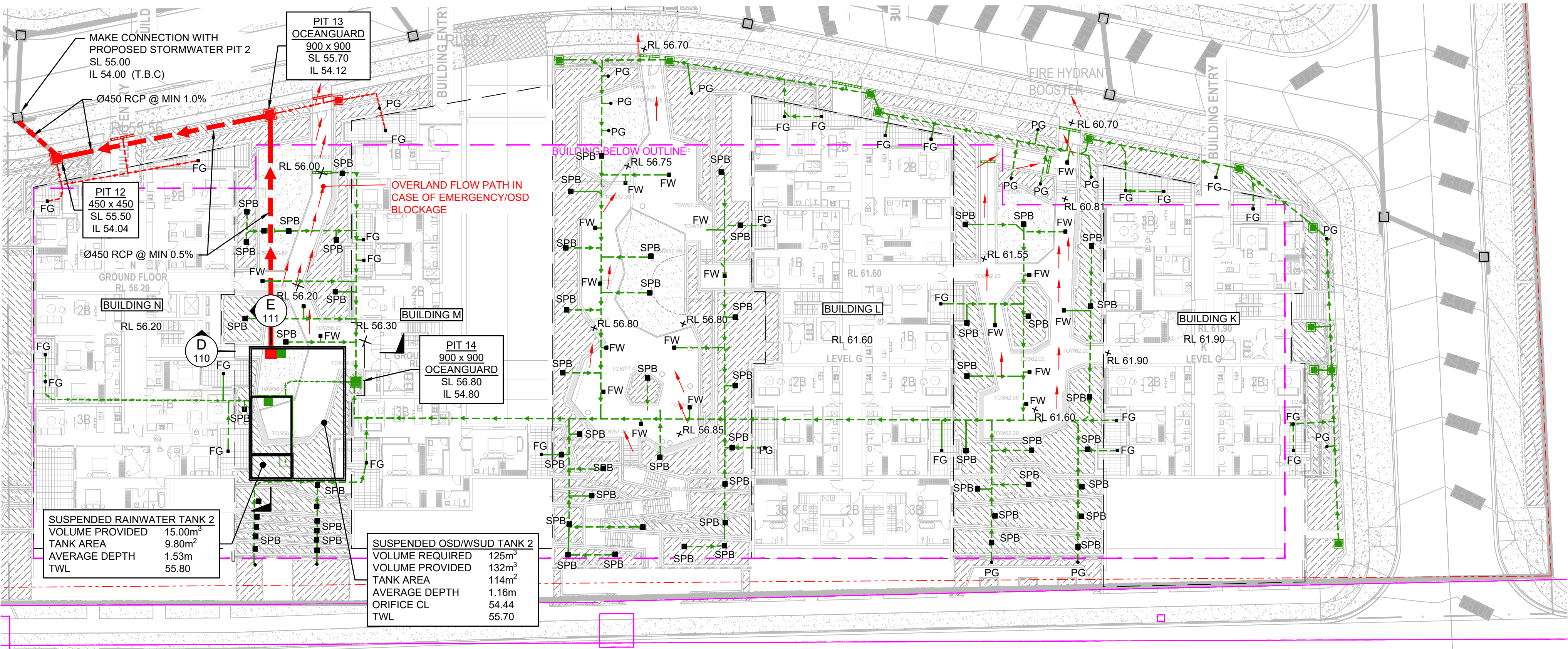
ALL STORMWATER DRAINAGE PIPES ARE Ø100 PVC AT MIN 1.0% SLOPE U.N.O.

NOTE:

ALL LINEAR GRATED DRAINS TO BE MIN. 100mm DEEP.

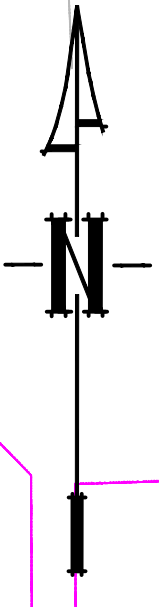
NOTE:

PITS DEEPER THAN 1.0m TO BE FITTED WITH STEP IRONS.



BUILDING PLAN - BUILDING K - N

SCALE 1:300



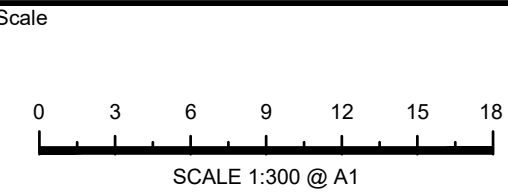
NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
B	ISSUE FOR DEVELOPMENT APPLICATION	06/08/2025	YKK	SBF
A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF

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Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title	Scale	A1	Project No.	Dwg. No.	Issue
STORMWATER CONCEPT PLAN BUILDING PLAN - BUILDING K - N	1:300		25037	103	B

LEGEND

- PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED STORMWATER DRAINING TO OSD
- PROPOSED STORMWATER BYPASSING OSD
- Ø100 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- 65 Ø65 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- 50 Ø50 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- RWT PROPOSED STORMWATER PIPE TO RAINWATER TANK
- SS Ø100 SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIM34
- RISER PIPE
- DP DOWNPIPE Ø100
- VD VERTICAL DROP Ø100
- VD VERTICAL DROP FROM SLAB
- PG PLANTER GRATE Ø150
- FG FLOOR GRATE Ø150
- FG FLOOR GRATE 200x200 (ALLOW MINIMUM 1.0% FALL TO FG)
- FG FLOOR GRATE 300x300 (ALLOW MINIMUM 1.0% FALL TO FW)
- RWO RAINWATER OUTLET Ø260 SPS (ALLOW MINIMUM 1.0% FALL TO RWO)
- SPB SUSPENDED PLANTER BOX RAINWATER OUTLET
- TD AC CONDENSER TUNDISH TO MANUFACTURER'S DETAILS
- CE Ø300 CLEANING EYE
- IL 31.00 INVERT LEVEL
- RL 29.65 DESIGN SURFACE LEVEL

NOTE:
REFER ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS.

NOTE:
ALL GRATES WITHIN FOOTWAY AREAS TO BE HEEL GUARD & BIKE SAFE.

PIPES NOTE:
Ø65 PVC @ MIN 1.0%
Ø90 PVC @ MIN 1.0%
Ø100 PVC @ MIN 1.0%
Ø150 PVC @ MIN 1.0%
Ø225 PVC @ MIN 0.5%
Ø300 PVC @ MIN 0.4%
UNLESS NOTED OTHERWISE

NOTE:
PITS DEEPER THAN 1.0m TO BE FITTED WITH STEP IRONS.

NOTE:
IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM PONDING IS ACHIEVED OVER THE FLOOR WASTES BY GRADING CATCHMENTS' SURFACES AT MINIMUM 1.0% FALL.

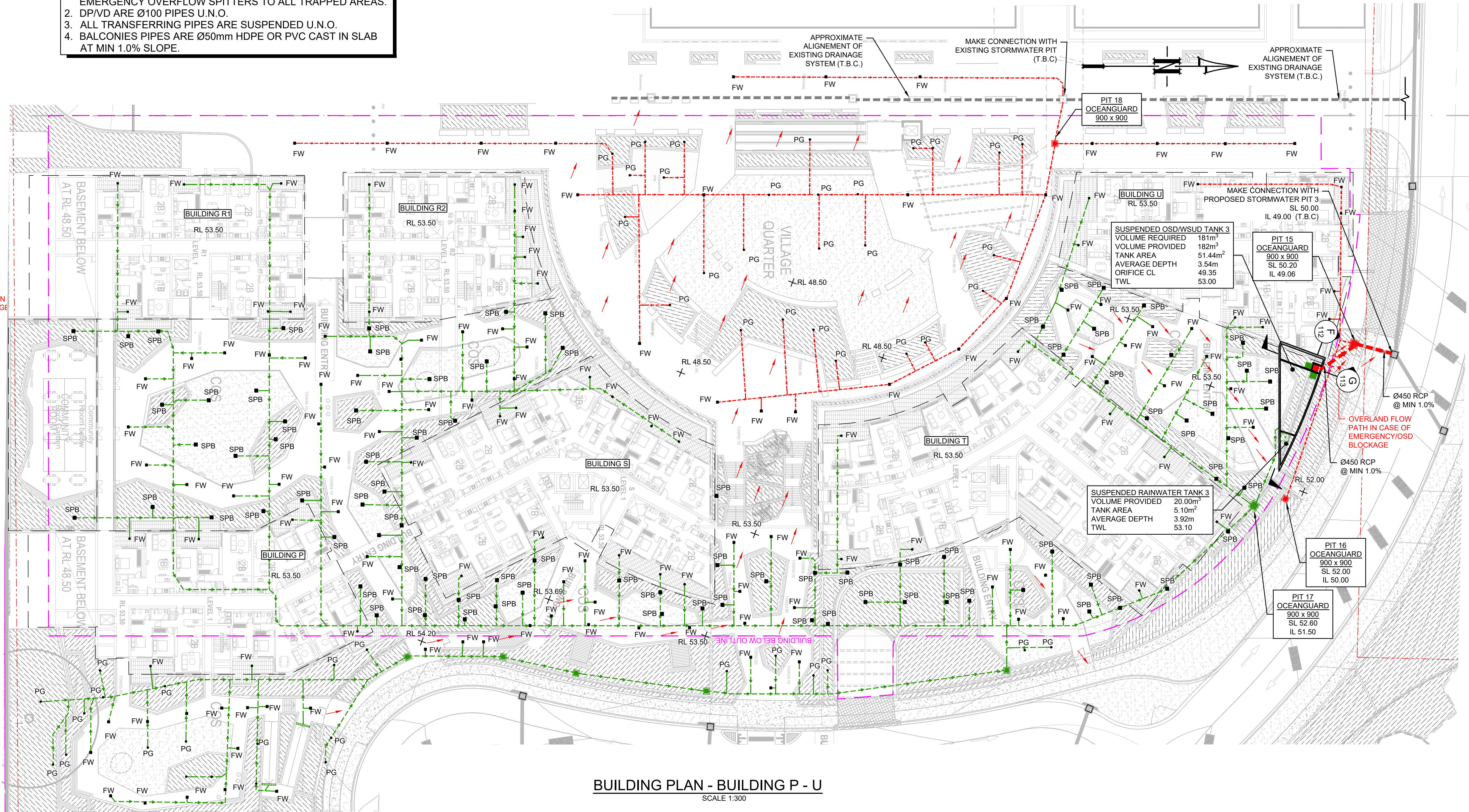
NOTE:
ALL LINEAR GRATED DRAINS TO BE MIN. 100mm DEEP.

NOTE:
ALL STORMWATER DRAINAGE PIPES ARE Ø100 PVC AT MIN 1.0% SLOPE U.N.O.

NOTE:
ALL NON-TRAFFICABLE AREAS DRAINAGE SYSTEM IN UPPER LEVELS IS SUBJECT TO DETAILED DESIGN STAGE & TO BE CONNECTED TO THE UNDERGROUND RAINWATER TANK.

ALL TRAFFICABLE AREAS DRAINAGE SYSTEM IN UPPER LEVELS IS SUBJECT TO DETAILED DESIGN STAGE & TO BE CONNECTED TO THE UNDERGROUND WSUD TANK.

NOTE:
1. CONTRACTOR IS TO PROVIDE OVERFLOW OUTLETS & EMERGENCY OVERFLOW SPITTERS TO ALL TRAPPED AREAS.
2. DP/VD ARE Ø100 PIPES U.N.O.
3. ALL TRANSFERRING PIPES ARE SUSPENDED U.N.O.
4. BALCONIES PIPES ARE Ø50mm HDPE OR PVC CAST IN SLAB AT MIN 1.0% SLOPE.



NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF

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Client
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Scale
0 3 6 9 12 15 18 m
SCALE 1:300 @ A1

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Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title
**STORMWATER CONCEPT PLAN
BUILDING PLAN -
BUILDING P - U**
Scale A1 Project No. 25037 Dwg. No. 104 Issue A

LEGEND

- > [Symbol] PROPOSED STORMWATER DRAINAGE PIPE
- [Symbol] PROPOSED STORMWATER DRAINING TO OSD
- > [Symbol] PROPOSED STORMWATER BYPASSING OSD
- > [Symbol] Ø100 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- 65 --- [Symbol] Ø65 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- 50 --- [Symbol] Ø50 HDPE OR PVC STORMWATER DRAINAGE PIPE CAST IN SLAB
- RWT --- PROPOSED STORMWATER PIPE TO RAINWATER TANK
- SS --- Ø100 SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIMA34
- G [Symbol] RISER PIPE
- DP DOWNPIPE Ø100
- VD VERTICAL DROP Ø100
- VERTICAL DROP FROM SLAB
- PG PLANTER GRATE Ø150
- FG FLOOR GRATE Ø150
- FG FLOOR GRATE 200x200 (ALLOW MINIMUM 1.0% FALL TO FG)
- FG FLOOR GRATE 300x300 (ALLOW MINIMUM 1.0% FALL TO FW)
- ⊞ FW RAINWATER OUTLET Ø260 SPS (ALLOW MINIMUM 1.0% FALL TO RWO)
- ⊞ SPB SUSPENDED PLANTER BOX RAINWATER OUTLET
- TD AC CONDENSER TUNDISH TO MANUFACTURER'S DETAILS
- EMERGENCY OVERLAND FLOWPATH IN CASE OF EMERGENCY / OSD BLOCKAGE
- CE Ø300 CLEANING EYE
- [IL 31.00] INVERT LEVEL
- RL 29.65 DESIGN SURFACE LEVEL

NOTE:

ALL NON-TRAFFICABLE AREAS DRAINAGE SYSTEM IN UPPER LEVELS IS SUBJECT TO DETAILED DESIGN STAGE & TO BE CONNECTED TO THE UNDERGROUND RAINWATER TANK.

ALL TRAFFICABLE AREAS DRAINAGE SYSTEM IN UPPER LEVELS IS SUBJECT TO DETAILED DESIGN STAGE & TO BE CONNECTED TO THE UNDERGROUND WSUD TANK.

NOTE:

REFER ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS.

NOTE:

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NOTE:

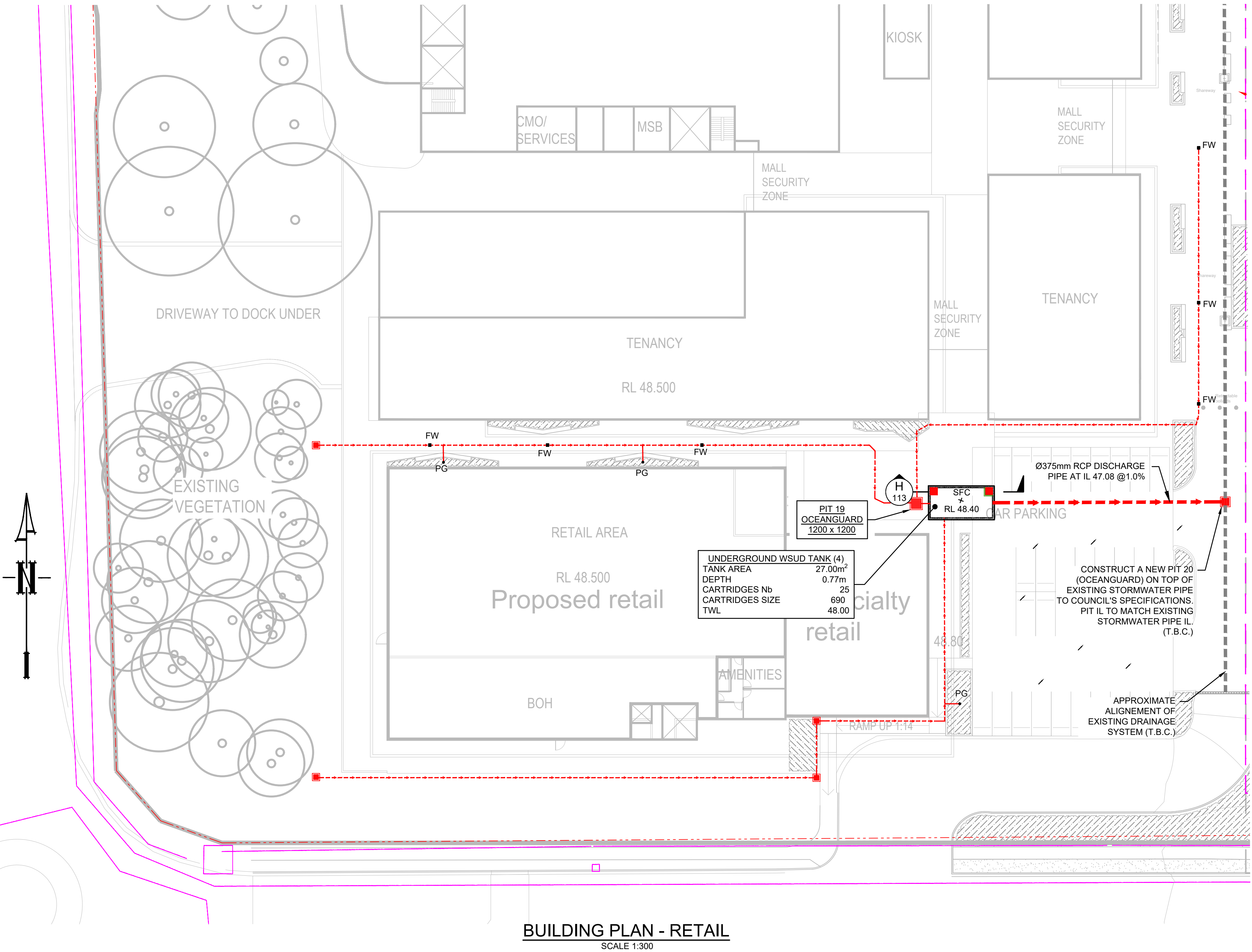
ALL STORMWATER DRAINAGE PIPES ARE Ø100 PVC AT MIN 1.0% SLOPE U.N.O.

NOTE:

ALL LINEAR GRATED DRAINS TO BE MIN. 100mm DEEP.

NOTE:

PITS DEEPER THAN 1.0m TO BE FITTED WITH STEP IRONS.



BUILDING PLAN - RETAIL

SCALE 1:300

NOT FOR CONSTRUCTION

A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF	
Issue	Description	Date	Design	Checked	
Scale: 1:300					

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Scale
0 3 6 9 12 15 18 m
SCALE 1:300 @ A1

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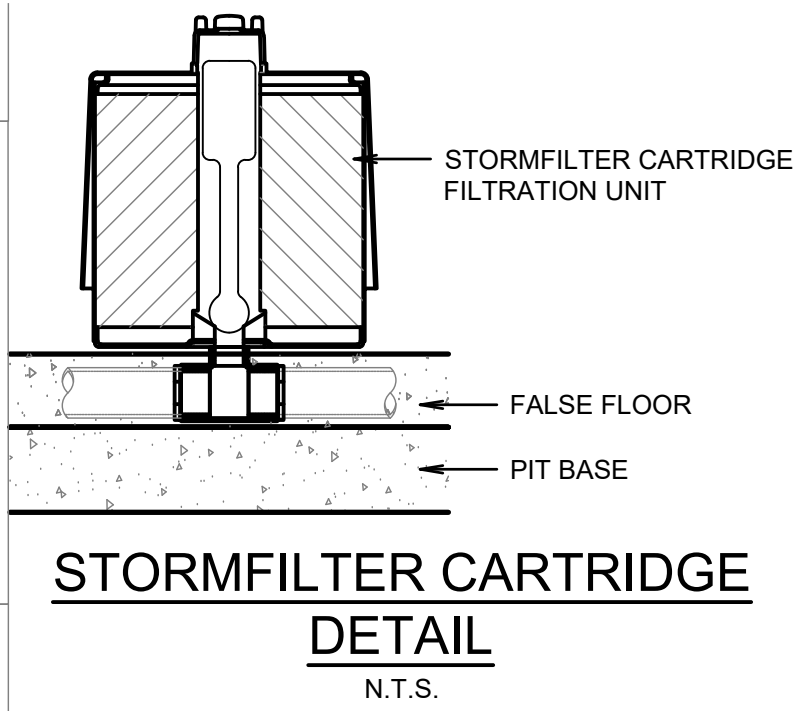
Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title STORMWATER CONCEPT PLAN BUILDING PLAN - RETAIL				
Scale 1:300	A1	Project No. 25037	Dwg. No. 105	Issue A

CATCHMENT LEGEND

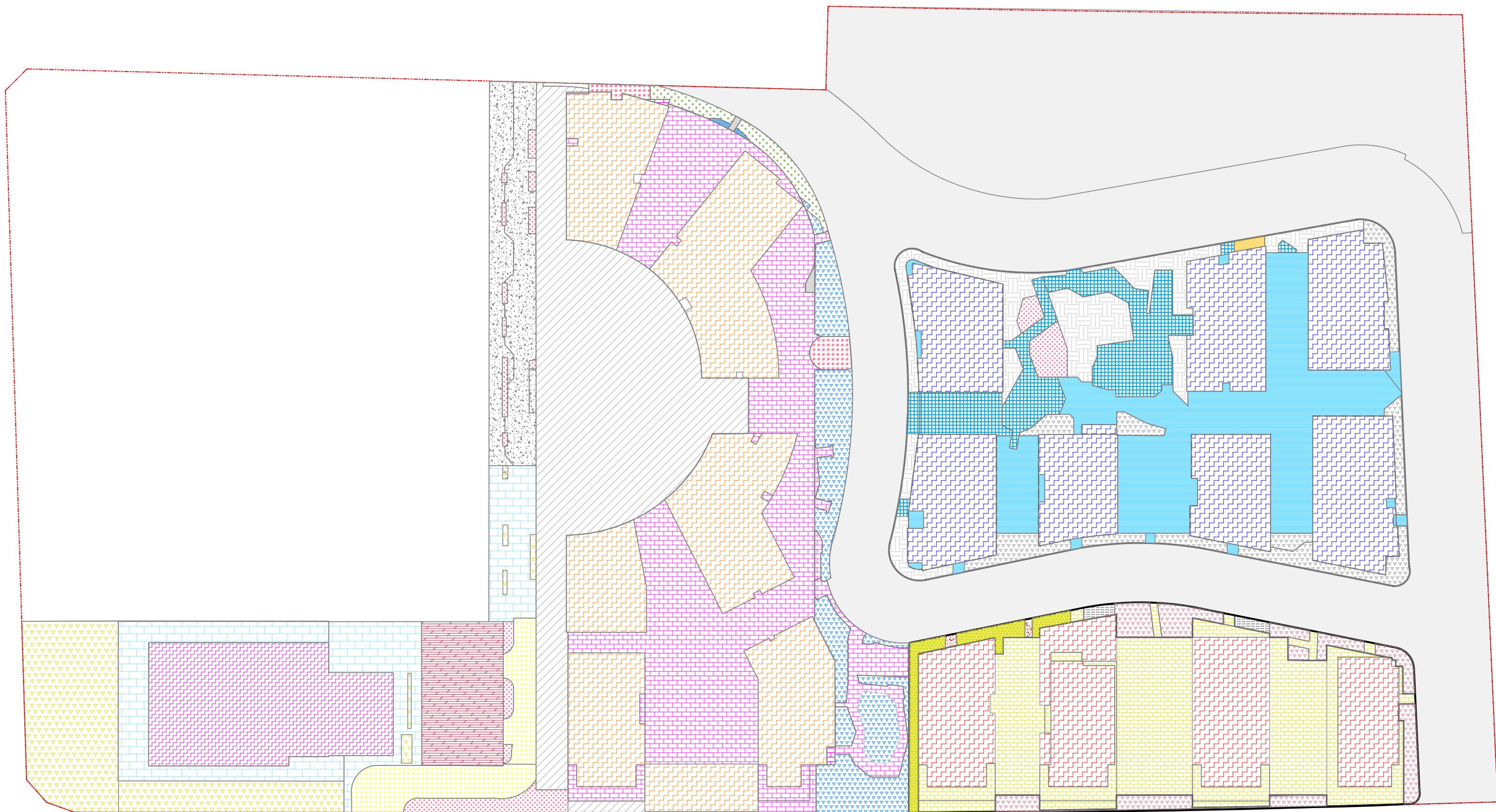
	ROOF AREA TO RWT & SFC (1) = 5,203m ²
	IMPERVIOUS AREA TO OG & SFC (1) = 2,684m ²
	PERVIOUS AREA TO OG & SFC (1) = 810m ²
	DRIVEWAY TO OG & SFC (1) = 23m ²
	IMPERVIOUS AREA TO OG BYPASSING SFC1 = 1,208m ²
	PERVIOUS AREA TO OG BYPASSING SFC1 = 1,275m ²
	ROOF AREA TO RWT & SFC (2) = 2,961m ²
	IMPERVIOUS AREA TO OG / SFC (2) = 2,948m ²
	DRIVEWAY TO OG / SFC (2) = 56m ²
	PERVIOUS AREA TO OG / SFC (2) = 676m ²
	IMPERVIOUS AREA TO OG BYPASSING SFC (2) = 20m ²
	PERVIOUS AREA TO OG BYPASSING SFC (2) = 249m ²
	ROOF AREA TO RWT & SFC (3) = 5,730m ²
	IMPERVIOUS AREA TO OG / SFC (3) = 4,757m ²
	PERVIOUS AREA TO OG & SFC (3) = 1,338m ²
	DRIVEWAY TO OG & SFC (3) = 142m ²
	IMPERVIOUS AREA TO OG BYPASSING SFC (3) = 4,173m ²

	PERVIOUS AREA TO OG BYPASSING SFC (3) = 212m ²
	ROOF AREA TO SFC4 / OG BYPASSING SFC 1, 2& 3 = 1,982m ²
	IMPERVIOUS AREA TO SFC4 / OG BYPASSING SFC 1, 2& 3 = 1,956m ²
	PERVIOUS AREA TO SFC4 / OG BYPASSING SFC 1, 2& 3 = 1,917m ²
	DRIVEWAY TO SFC4 / OG BYPASSING SFC 1, 2& 3 = 847m ²
	ROAD TO OG BYPASSING SFC (1), (2), (3) & (4) = 763m ²
	PERVIOUS AREA BYPASSING SFC (1), (2), (3) & (4) = 469m ²
	IMPERVIOUS AREA BYPASSING SFC (1), (2), (3) & (4) = 1,214m ²
	AREA EXCLUDED FROM CALCULATION = 18,713m ²
TOTAL SITE AREA = 62,327m ² TOTAL SITE AREA INCLUDED IN CALCULATION = 43,614m ² TOTAL AREA TO SFC = 41,168m ² TOTAL BYPASS AREA = 2,446m ²	



Facility Component Requiring Maintenance	Maintenance Activity	When Maintenance Activity Is Required	Expected Facility Performance After Maintaining	INSPECTION/MINOR MAINTENANCE (TIMES/YEAR)	MAJOR MAINTENANCE (TIMES/YEAR)
StormFilter® Cartridges and Containment Structure	Trash and Debris Removal	Floatable objects or other trash is present in the filter. Remove to avoid hindrance of filtration and eliminate unsightly debris and trash.	Permanent removal from storm system.	2 (and after major storms)	1 (except in case of a spill)
	Cartridge Replacement and Sediment Removal	1. Media has been contaminated by high levels of pollutants, such as after a spill.	1. New media is able to effectively treat stormwater.	-	-
Drainage System Piping	Flushing With Water	Drainage system is obstructed by debris or sediment.	Outflow is not restricted.	-	-

FILTRATION UNIT MAINTENANCE SCHEDULE



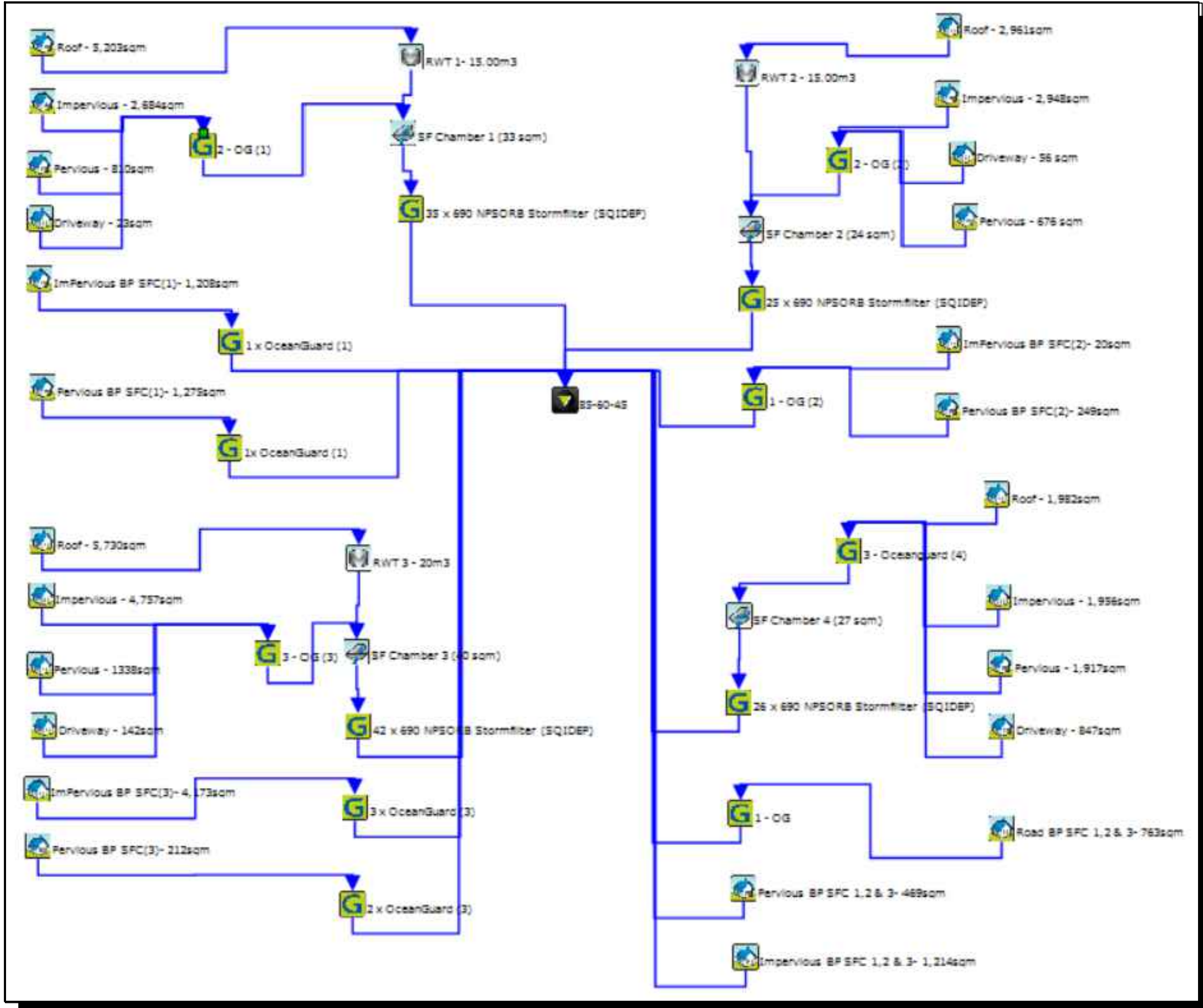
WSUD CATCHMENT PLAN
SCALE 1:1000

GENERAL NOTES:

1. INLET AND OUTLET PIPES TO BE IN ACCORDANCE WITH APPROVED PLANS.
2. A HIGH FLOW BYPASS ARRANGEMENT OR DISSIPATION STRUCTURE MAY BE REQUIRED TO MINIMISE RE-SUSPENSION OF SOLIDS OR ANY SIGNIFICANT INERTIAL FORCES ON THE CARTRIDGES.
3. ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
4. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
5. THE INVERT LEVEL OF THE INLET PIPE MUST BE GREATER THAN THE RL OF THE FALSE FLOOR WITHIN THE CARTRIDGE CHAMBER.
6. CONCRETE STRUCTURE AND ACCESS COVERS DESIGNED AND PROVIDED BY OTHERS. ACCESS COVERS TO BE A MINIMUM 900 x 900 ABOVE CARTRIDGES. OH&S REGARDING ACCESS COVERS AND TANK ACCESS TO BE ASSESSED BY OTHERS ON SITE.
7. THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES.
8. DRAWINGS NOT TO SCALE.

	Sources	Residual Load	% Reduction
Flow (ML/yr)	22.36	21.35	4.483
Total Suspended Solids (kg/yr)	2792	373.1	86.64
Total Phosphorus (kg/yr)	5.544	1.656	70.12
Total Nitrogen (kg/yr)	49	23.36	52.33
Gross Pollutants (kg/yr)	607.7	21.11	96.53

MUSIC RESULTS
N.T.S.



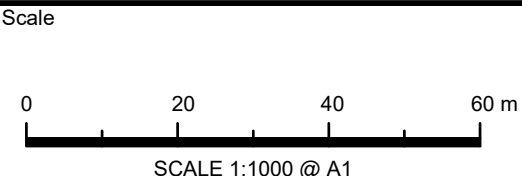
MUSIC MODEL
N.T.S.

A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF
Issue	Description	Date	Design	Checked
1:1000 at full size				

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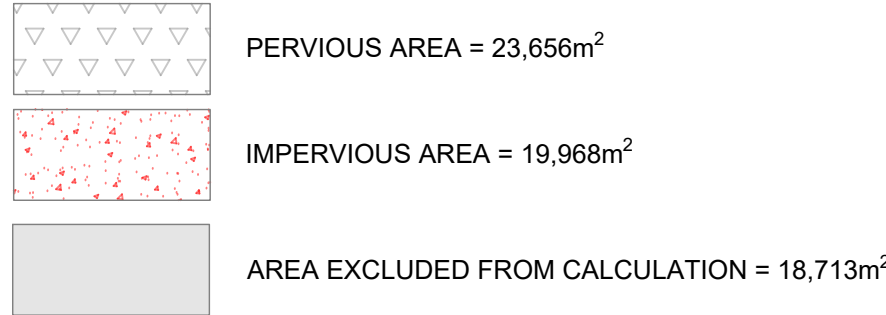
TELFORD CIVIL
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Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

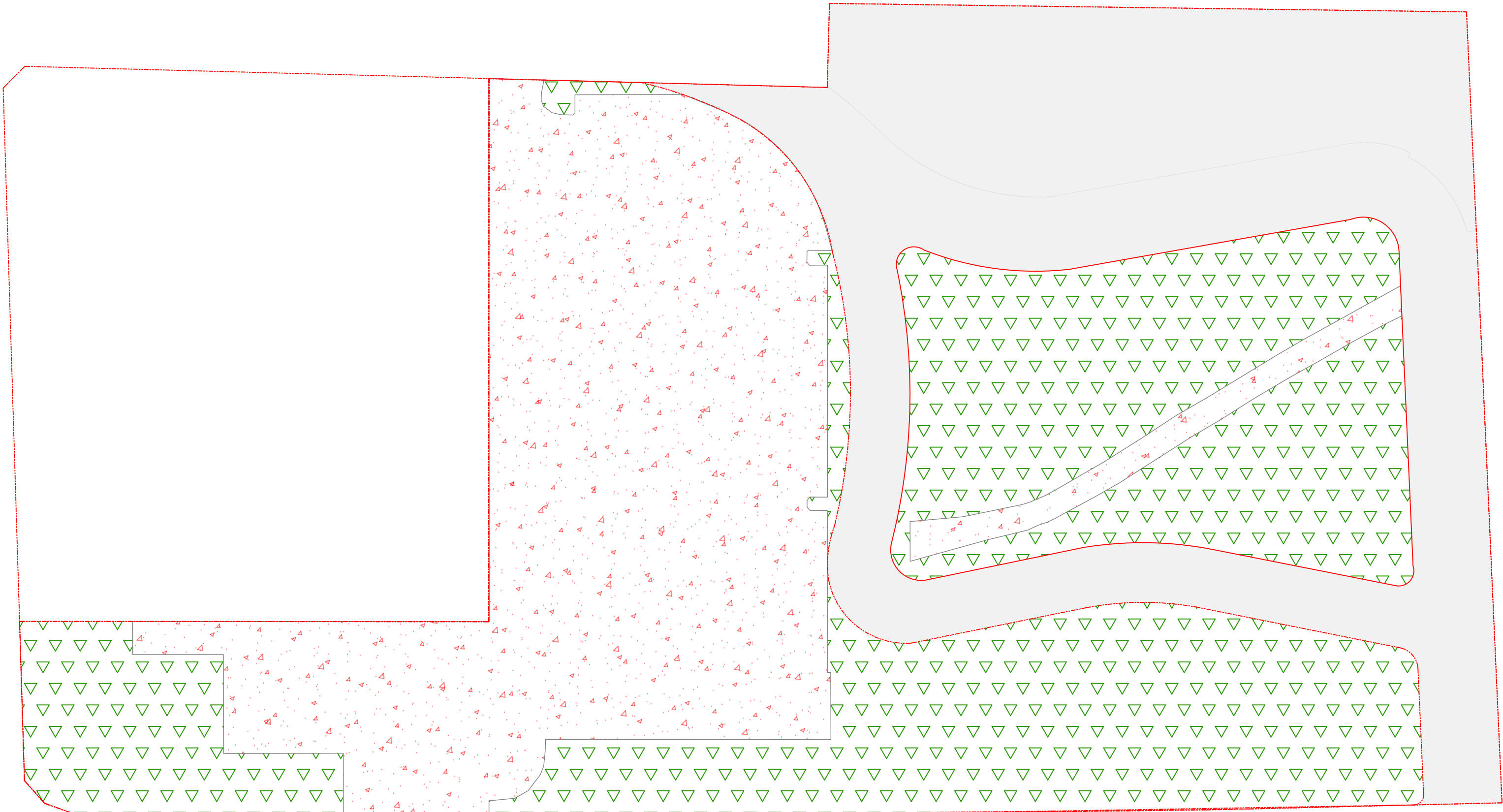
Drawing Title WSUD CATCHMENT PLAN AND MUSIC RESULTS			
Scale As Shown	A1 Project No. 25037	Dwg. No. 106	Issue A

NOT FOR CONSTRUCTION

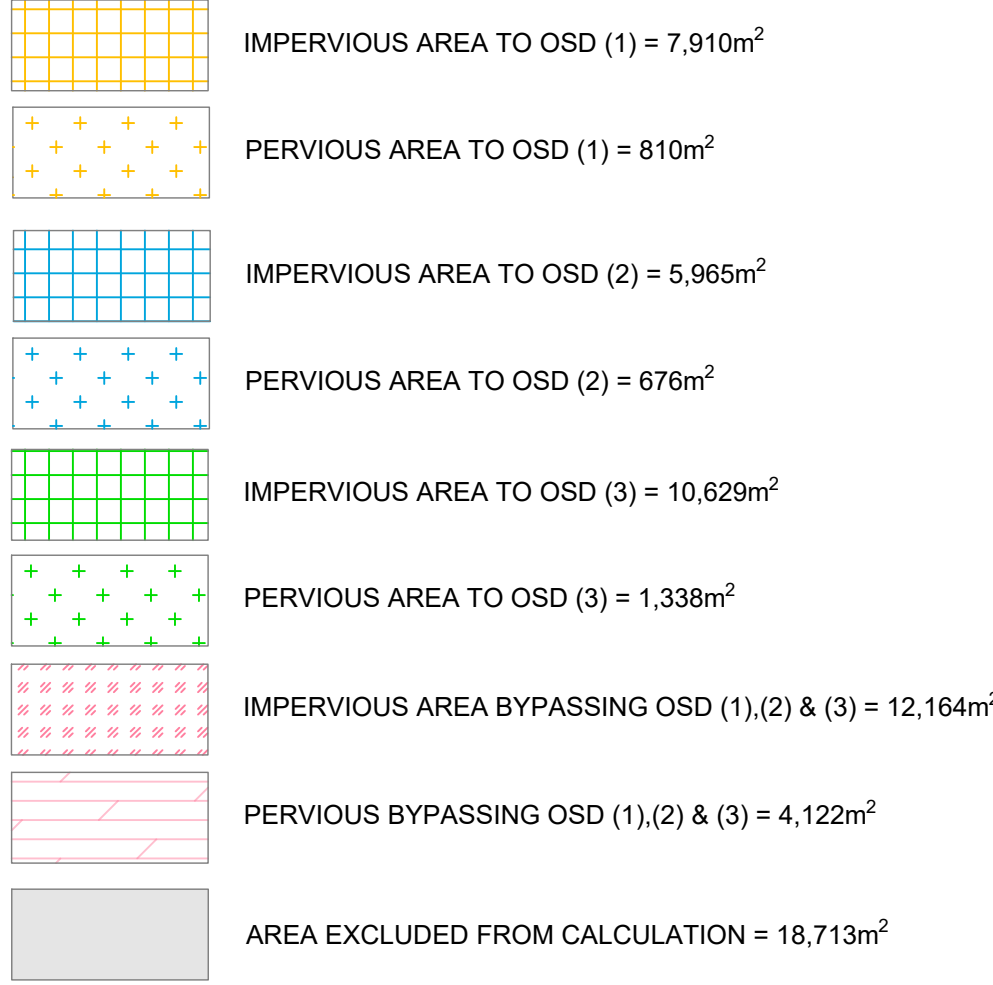
PRE- DEVELOPMENT CATCHMENT LEGEND



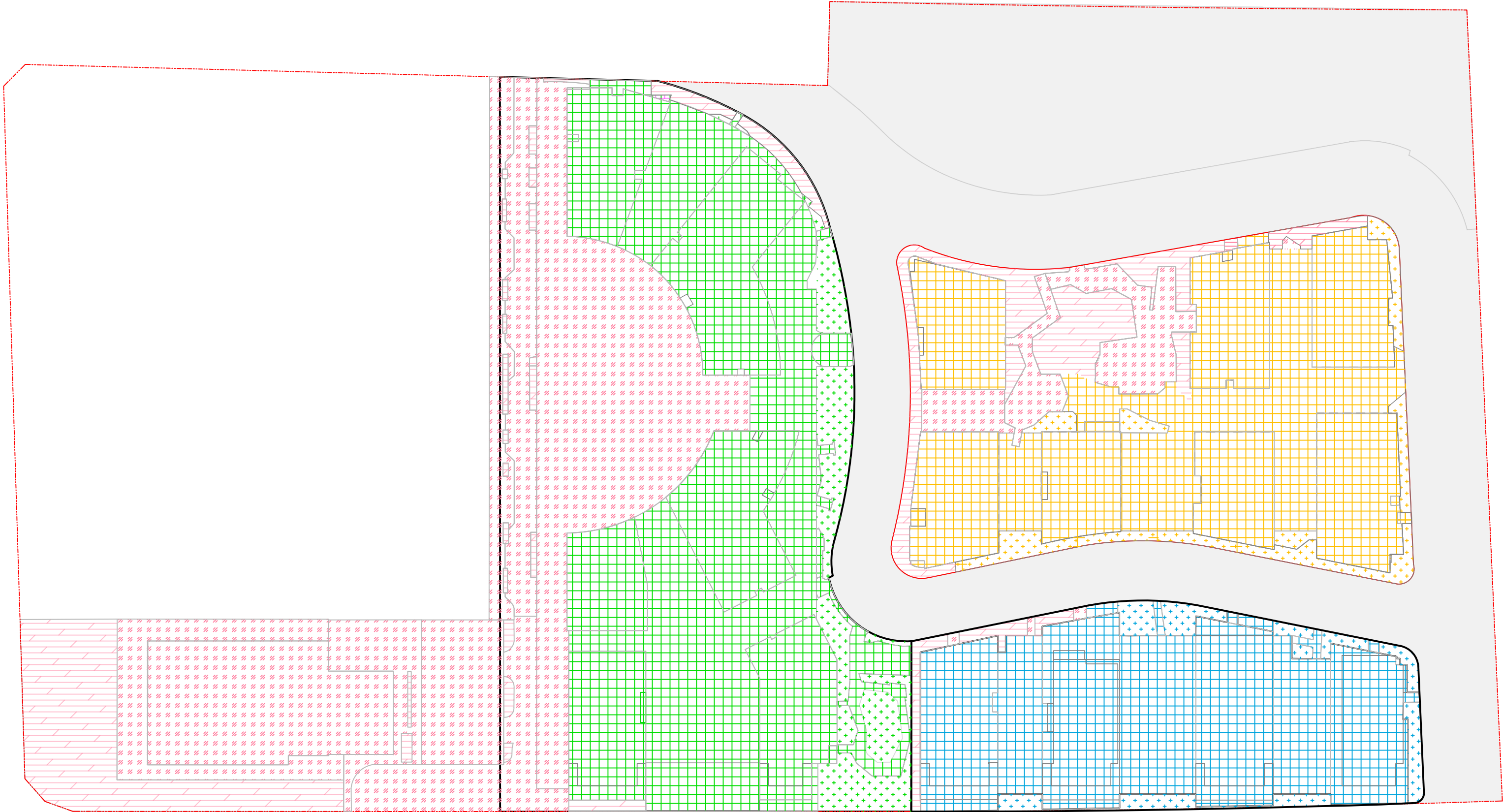
TOTAL SITE AREA = 62,327m²
TOTAL SITE AREA INCLUDED IN CALCULATION = 43,624m² (45.8% IMPERVIOUS)
AREA EXCLUDED FROM CALCULATION = 18,713m²



POST DEVELOPMENT CATCHMENT LEGEND



TOTAL SITE AREA = 62,327m²
TOTAL SITE AREA INCLUDED IN CALCULATION = 43,614m²
TOTAL AREA TO OSD = 27,328m²
TOTAL BYPASS AREA = 16,286m²



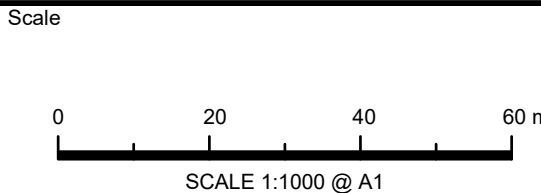
NOT FOR CONSTRUCTION

A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF
Issue	Description	Date	Design	Checked
1:1000 at full size				

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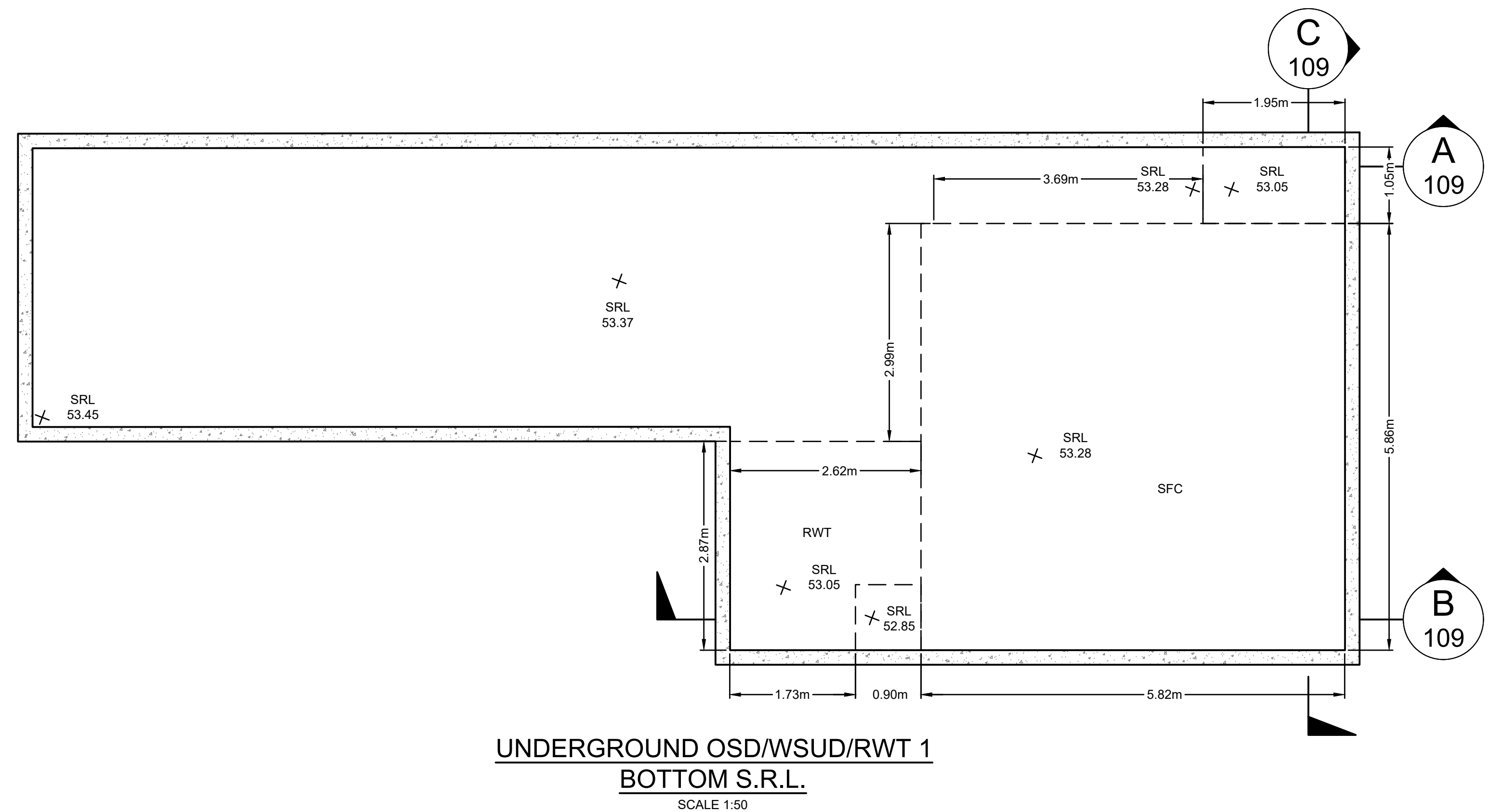
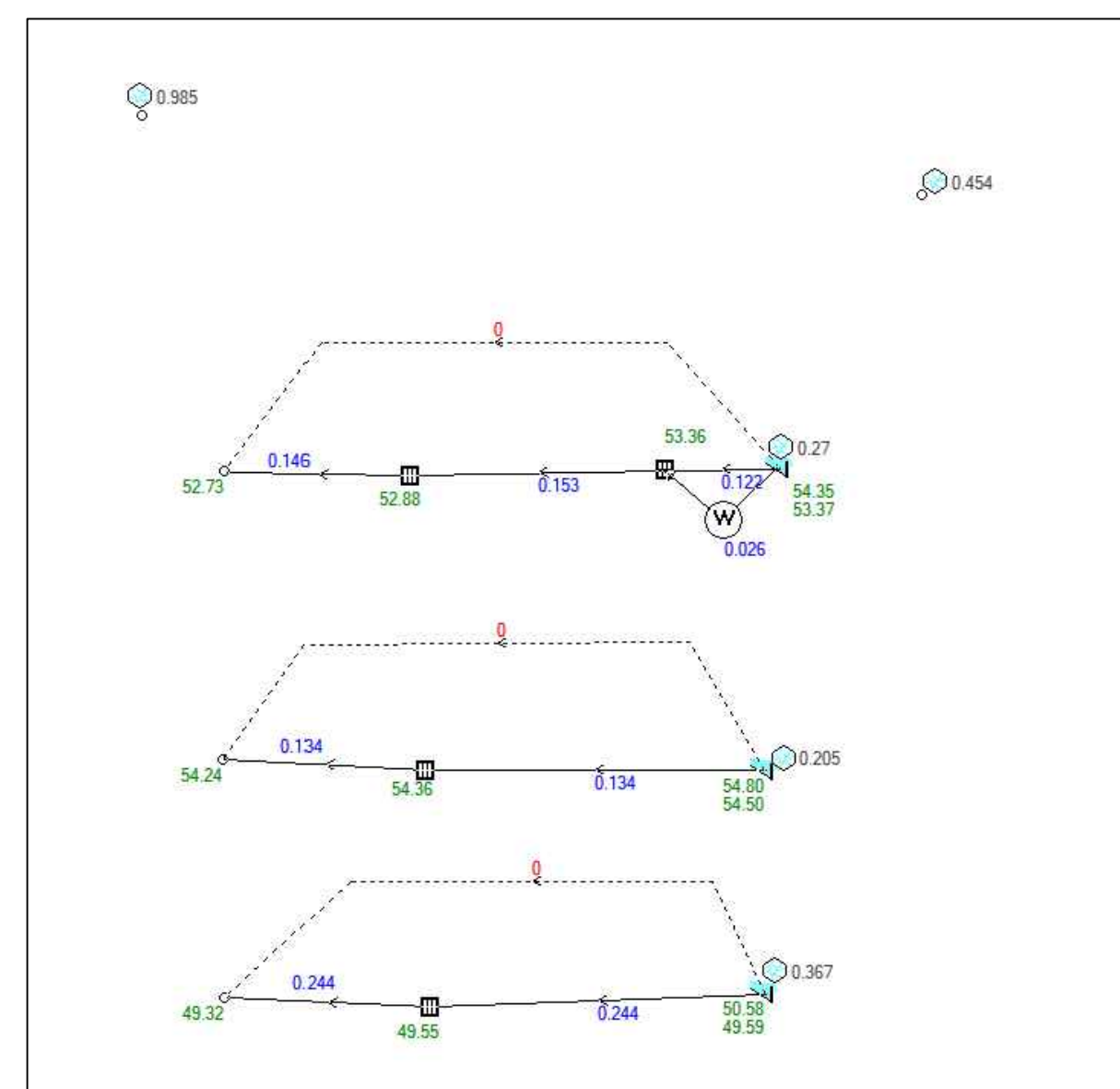
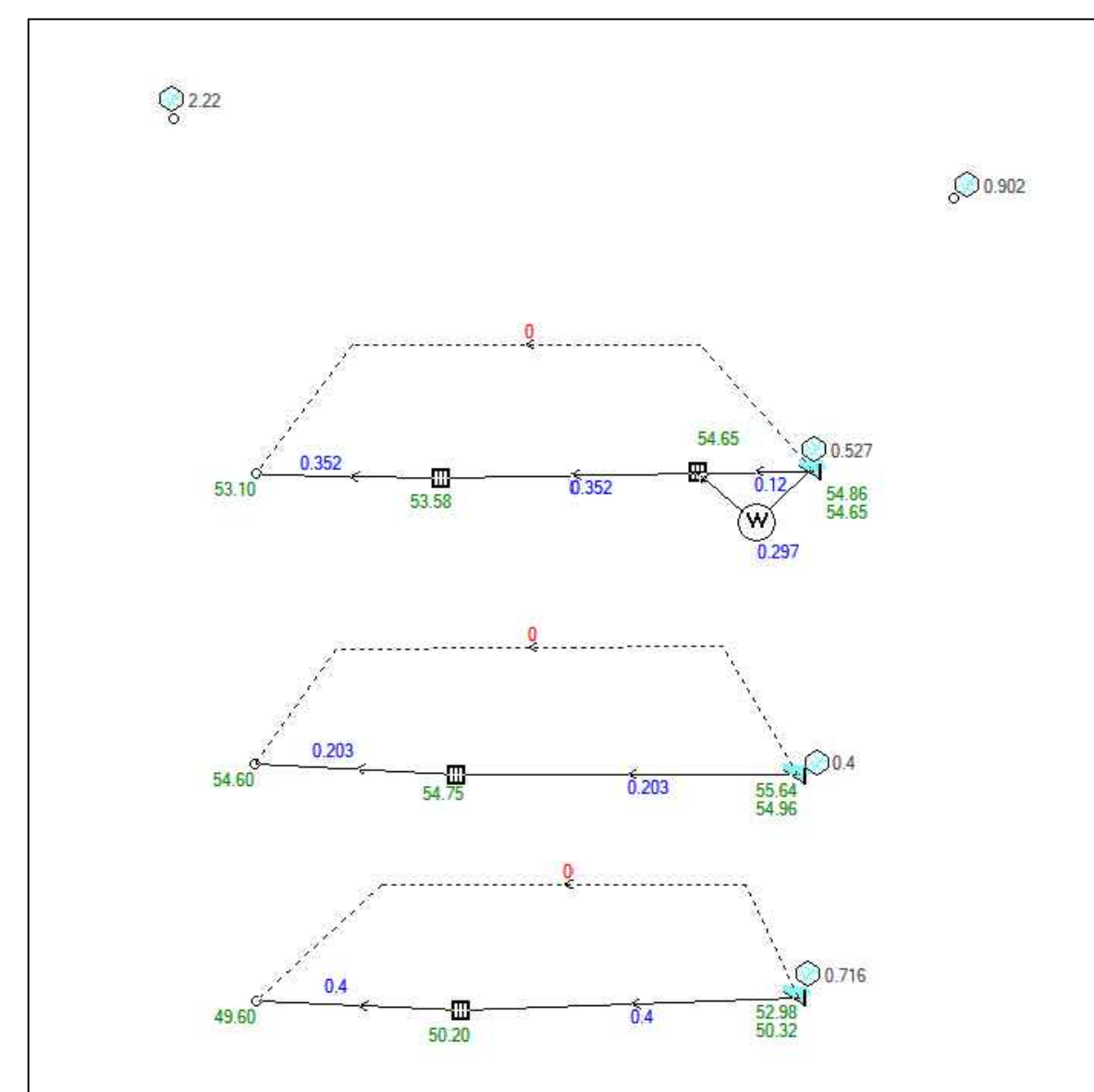
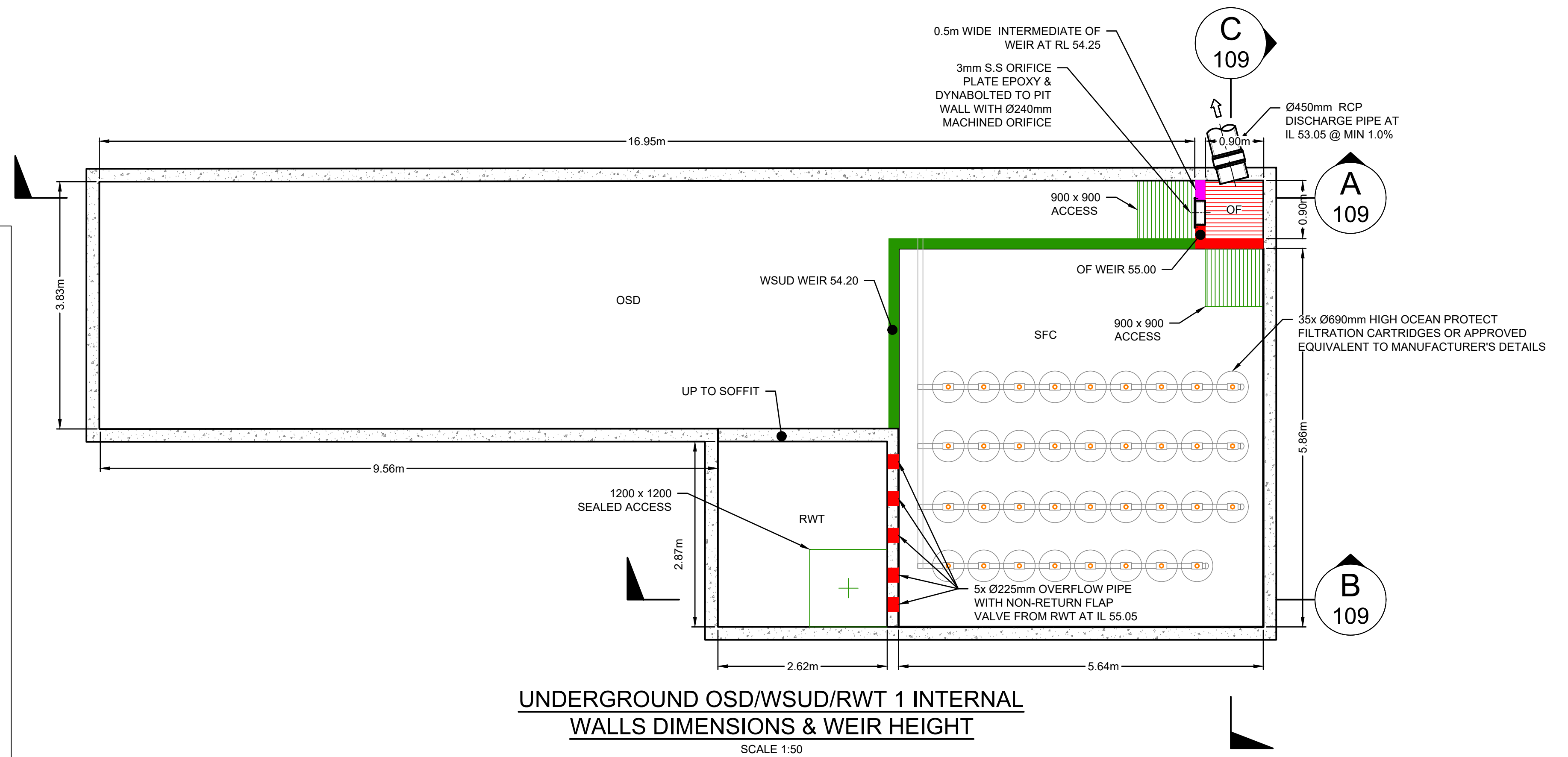
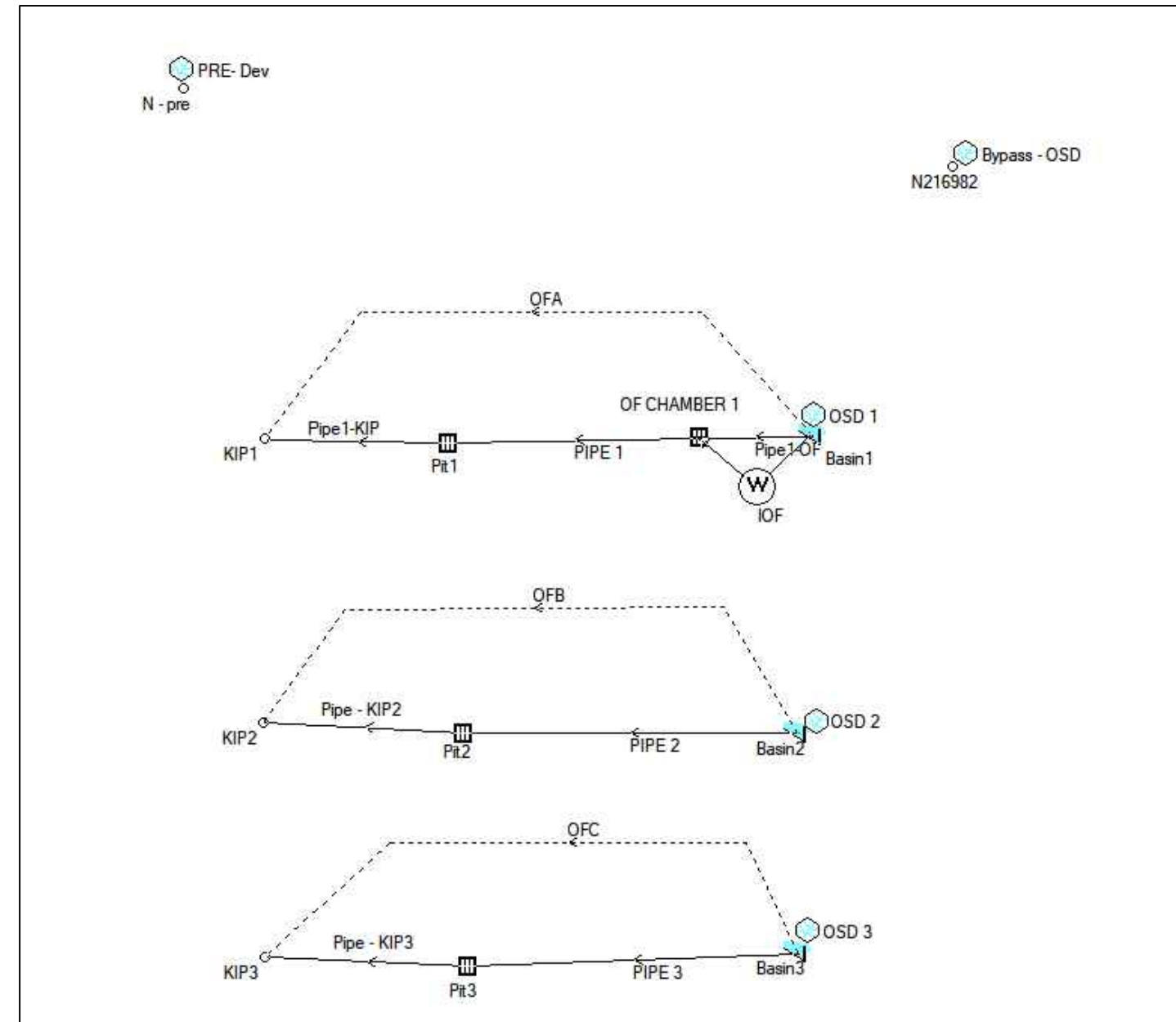
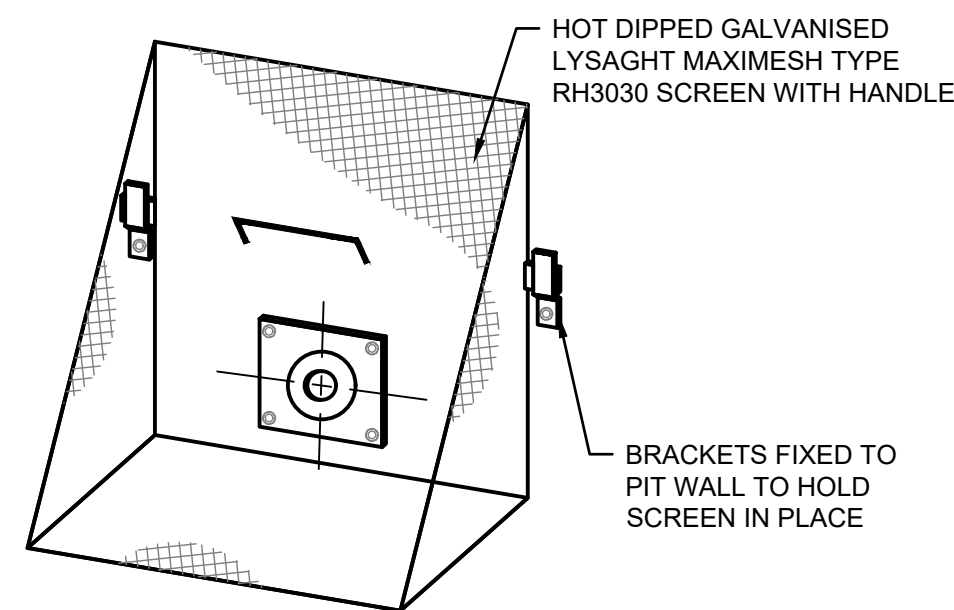
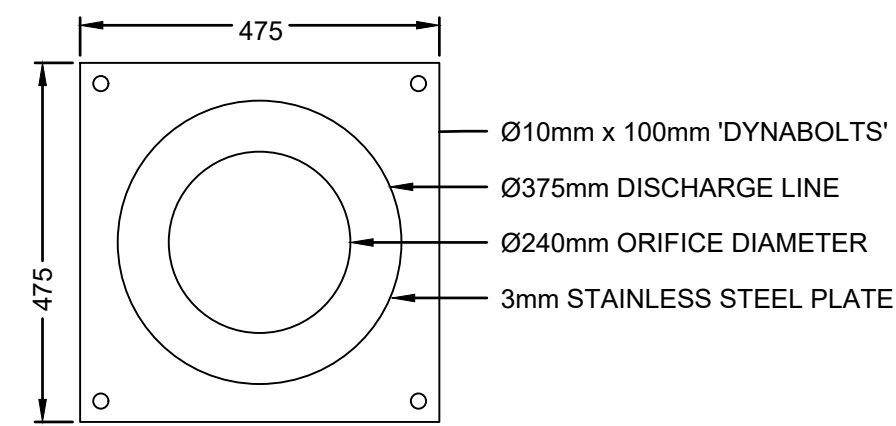
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Project
68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

Drawing Title
OSD CATCHMENT PLAN

Scale	A1	Project No.	Dwg. No.	Issue
As Shown		25037	107	A

DRAINS RESULTS									
STORM EVENT (AEP)	PRE-DEV INTERNAL FLOWS (L/s)	OSD 1 POST-DEV FLOWS (L/s)	OSD 2 POST-DEV FLOWS (L/s)	OSD 3 POST-DEV FLOWS (L/s)	BYPASS FLOWS (L/s)	TOTAL POST-DEV FLOWS (L/s)	WATER STORAGE LEVEL 1 (m)	WATER STORAGE LEVEL 2 (m)	WATER STORAGE LEVEL 3 (m)
0.2EY	985	146	134	244	454	978	54.35	54.80	50.58
10%	1240	214	155	283	557	1209	54.48	54.93	51.06
5%	1540	278	174	320	665	1437	54.59	55.07	51.56
2%	1930	329	195	363	793	1680	54.69	55.25	52.19
1%	2220	352	203	400	902	1857	54.86	55.64	52.98



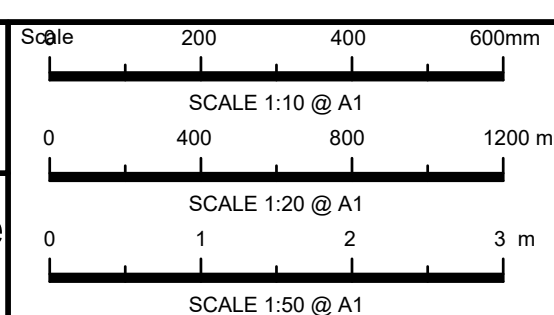
NOT FOR CONSTRUCTION

[illegible]

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Council	Penrith City Council
Client	Caddens Estate Pty Ltd



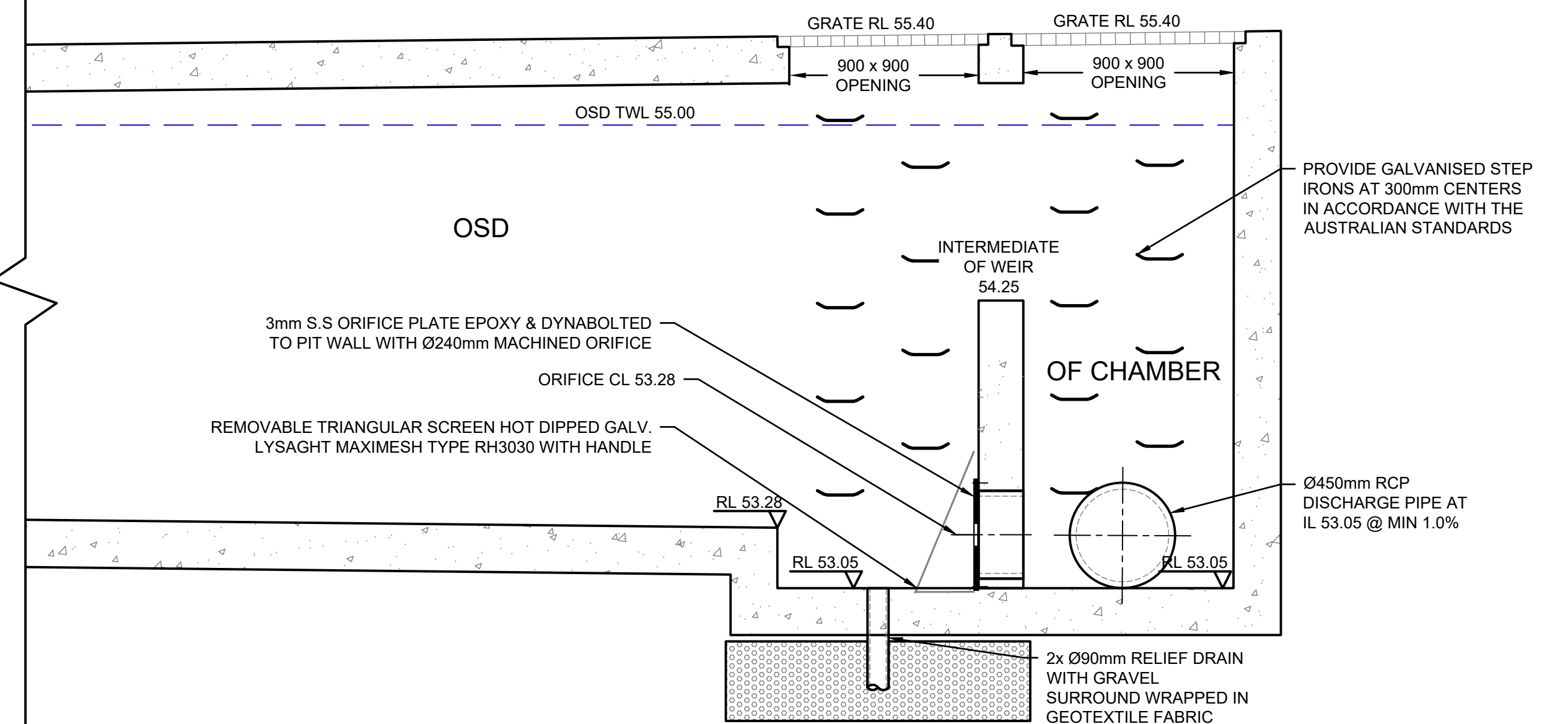
TELFORD CIVIL
 CONSULTING CIVIL & STORMWATER ENGINEERS

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 Parramatta NSW 2150
 PO BOX 3579 Parramatta 2124

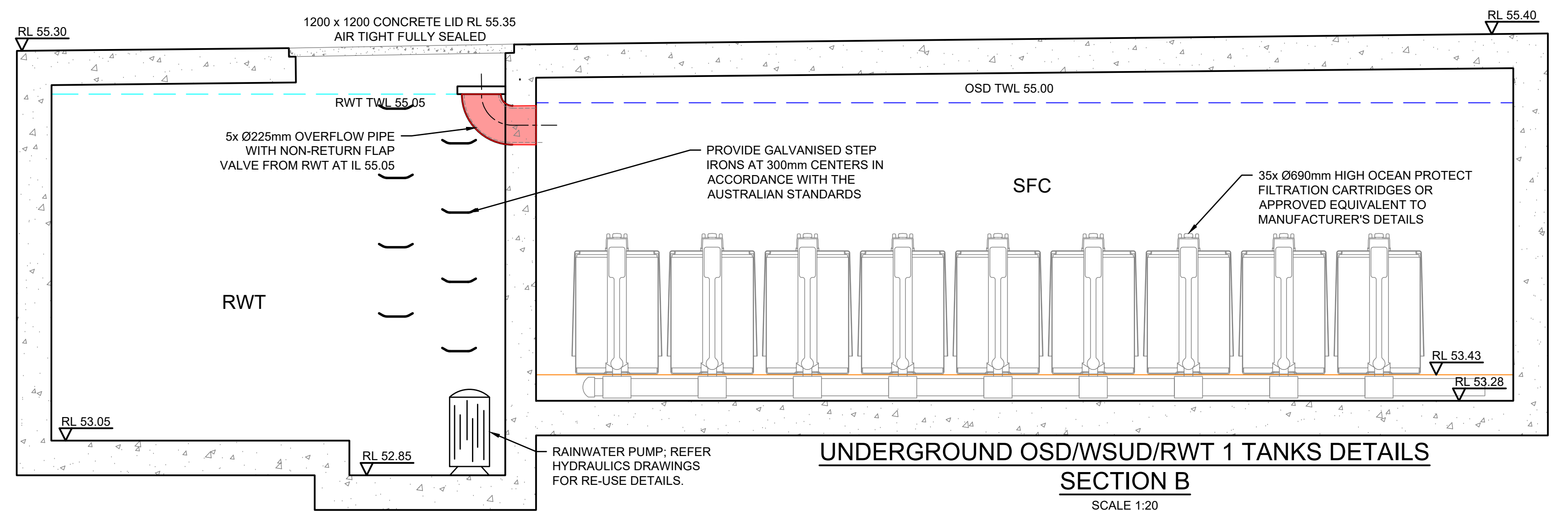
Email: info@telfordcivil.com.au
 Phone: 02 7809 4931
 Company: Telford Consulting Pty Ltd

Project
68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

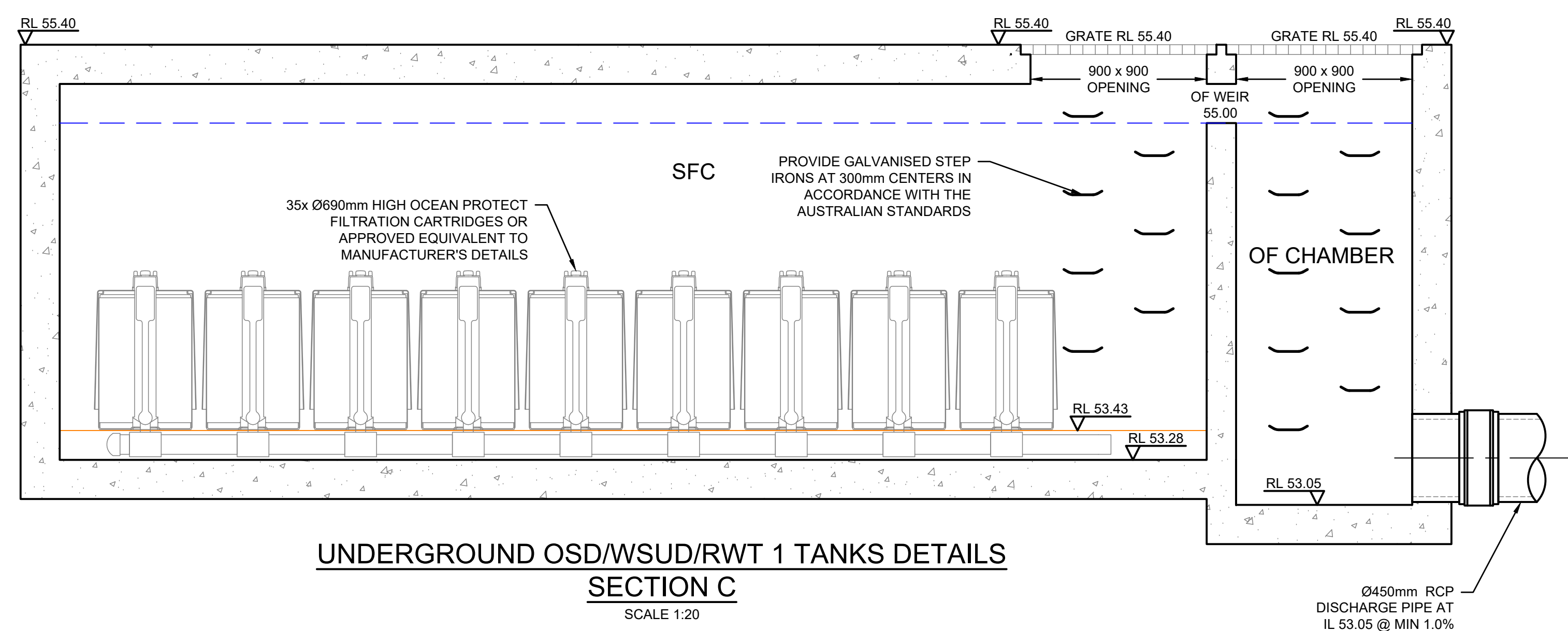
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ON-SITE DETENTION DETAILS AND CALCULATIONS SHEET 1 OF 6			
Scale	A1	Project No.	Dwg. No.
As Shown		25037	108
			Issue A



UNDERGROUND OSD/WSUD/RWT 1 TANKS DETAILS
SECTION A
SCALE 1:20



UNDERGROUND OSD/WSUD/RWT 1 TANKS DETAILS
SECTION B
SCALE 1:20



UNDERGROUND OSD/WSUD/RWT 1 TANKS DETAILS
SECTION C
SCALE 1:20

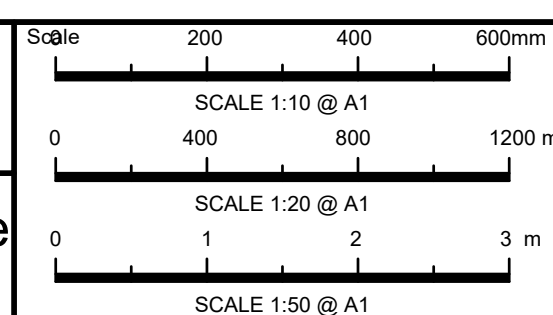
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Scale	A1	Project No.	Dwg. No.
As Shown		25037	109
			Issue
			A

[illegible]

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Client	Caddens Estate Pty Ltd

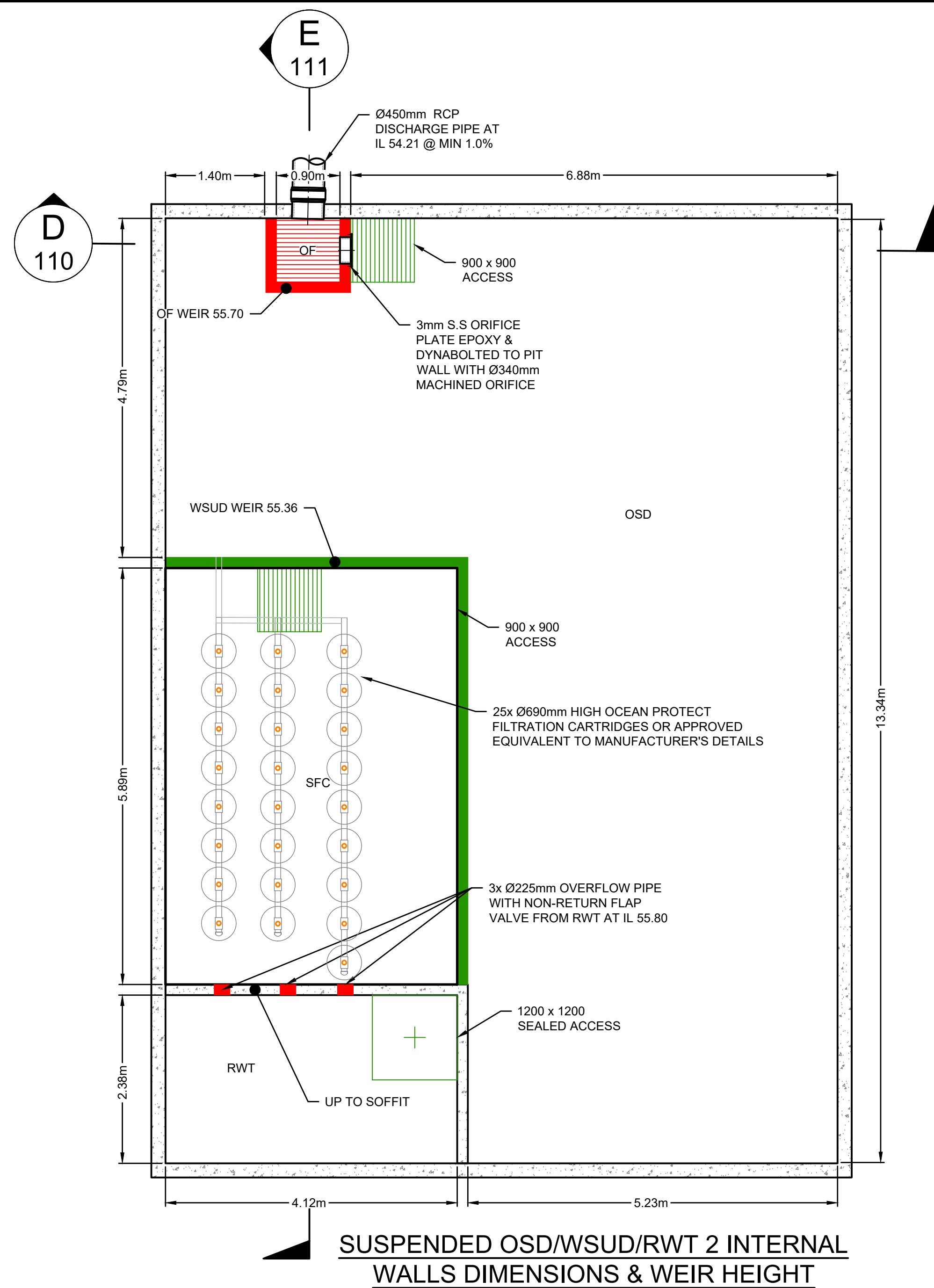


TELFORD^{CIVIL}
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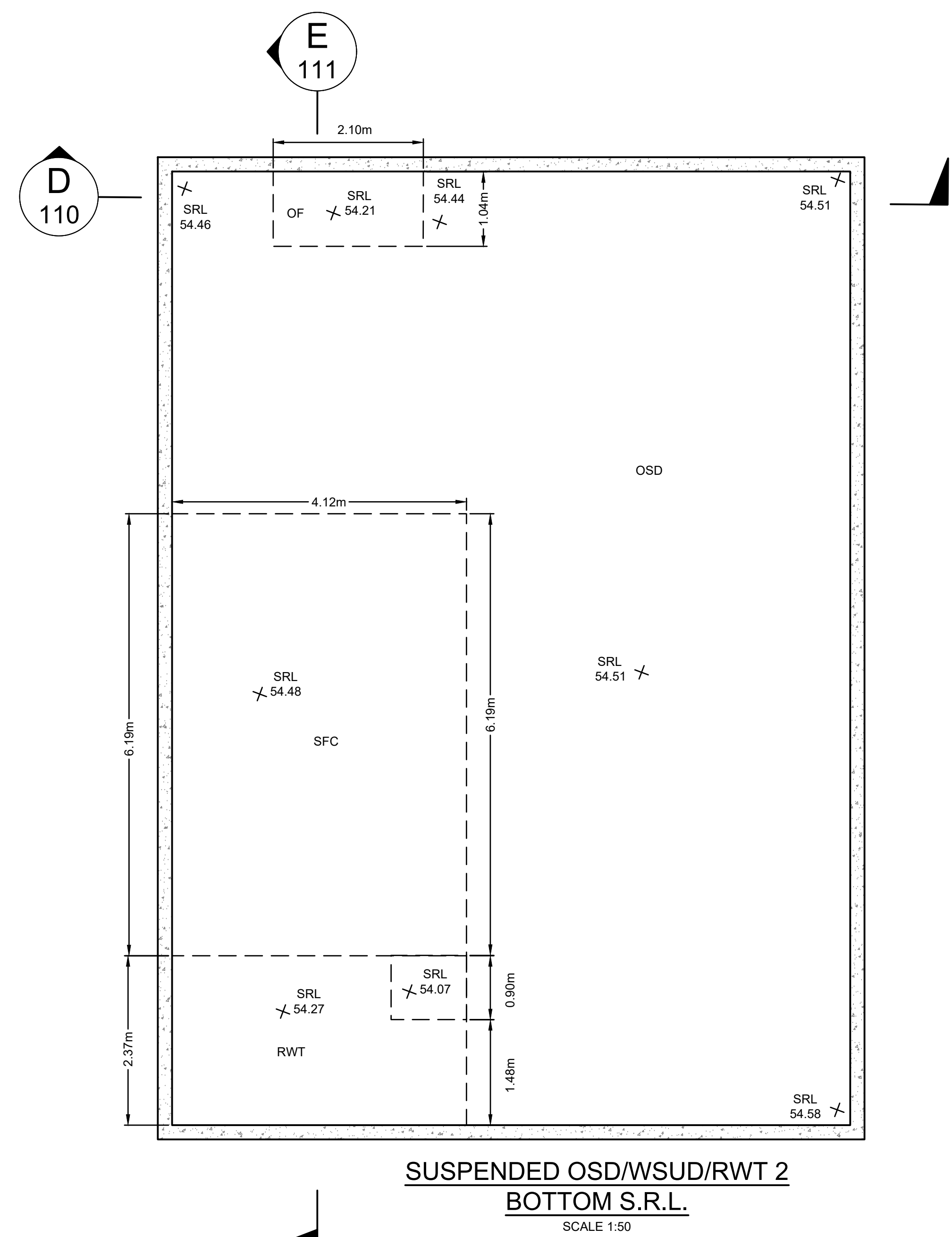
Email: info@telfordcivil.com.au
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Project
68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION



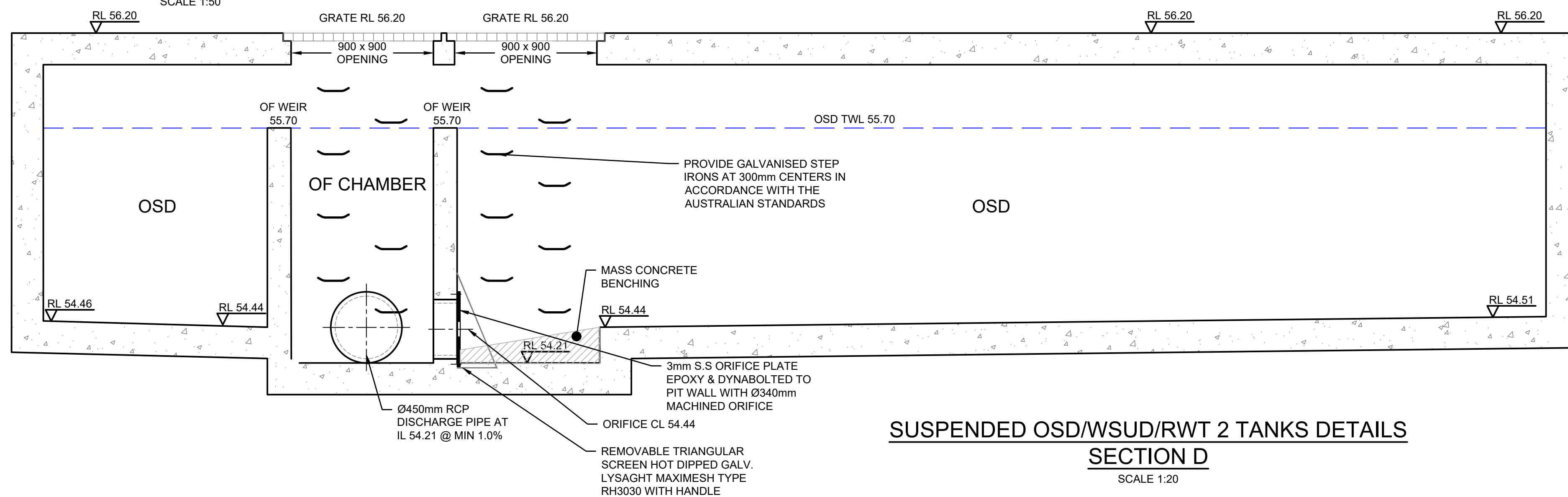
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SCALE 1:50



SUSPENDED OSD/WSUD/RWT 2
BOTTOM S.R.L.

SCALE 1:50



SUSPENDED OSD/WSUD/RWT 2 TANKS DETAILS

SECTION D

SCALE 1:20

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
B	ISSUE FOR DEVELOPMENT APPLICATION	06/08/2025	YKK	SBF
A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF

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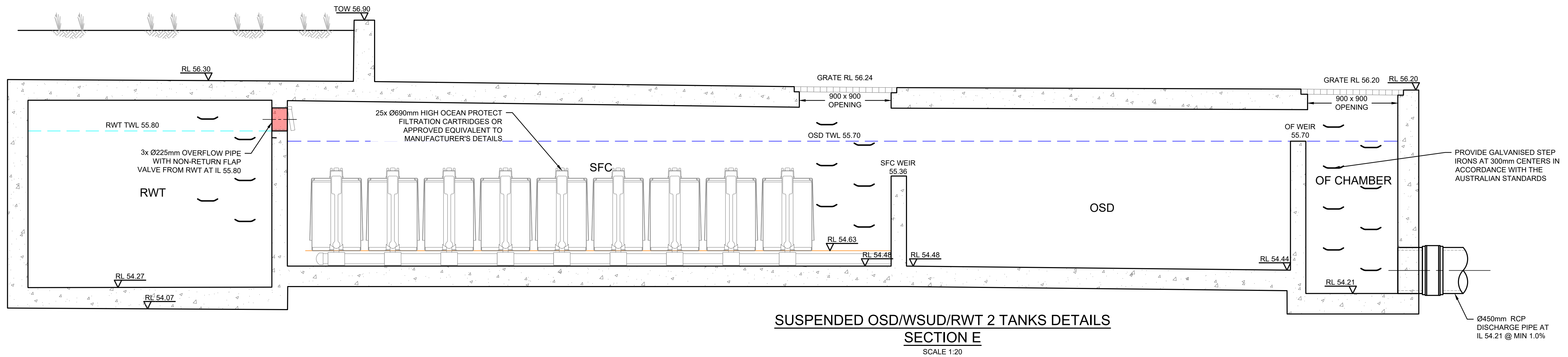
Council
Penrith City Council
Client
Caddens Estate Pty Ltd

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SCALE 1:50 @ A1

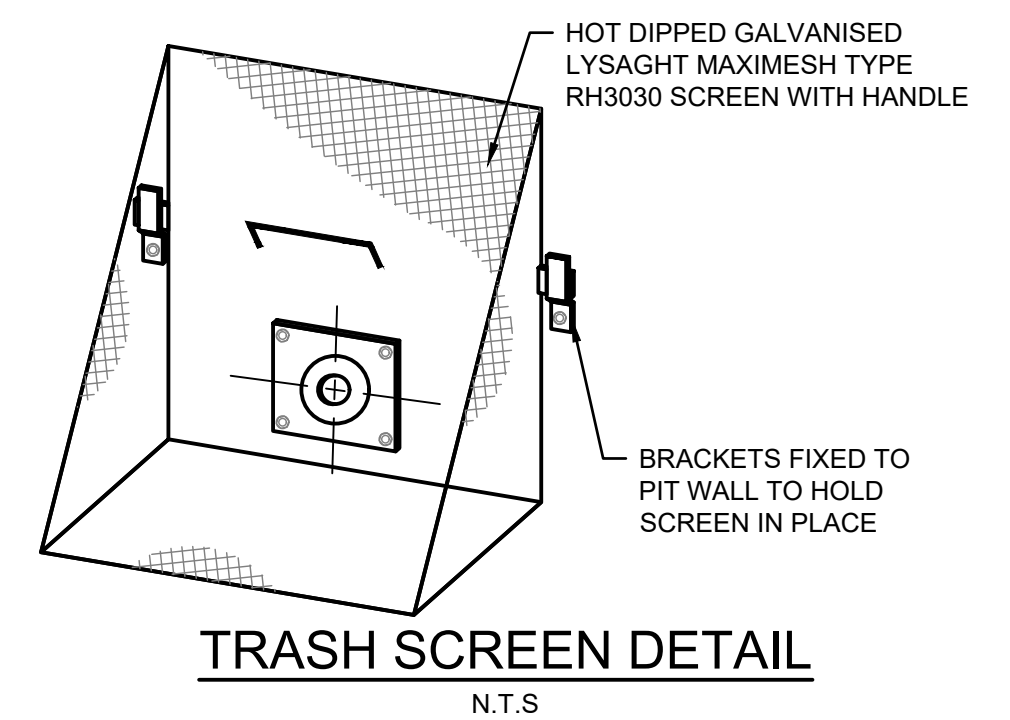
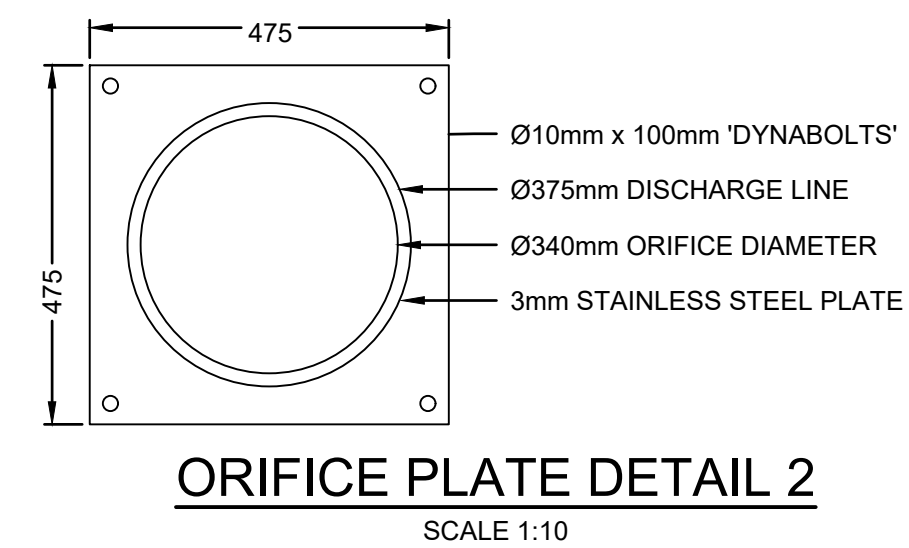
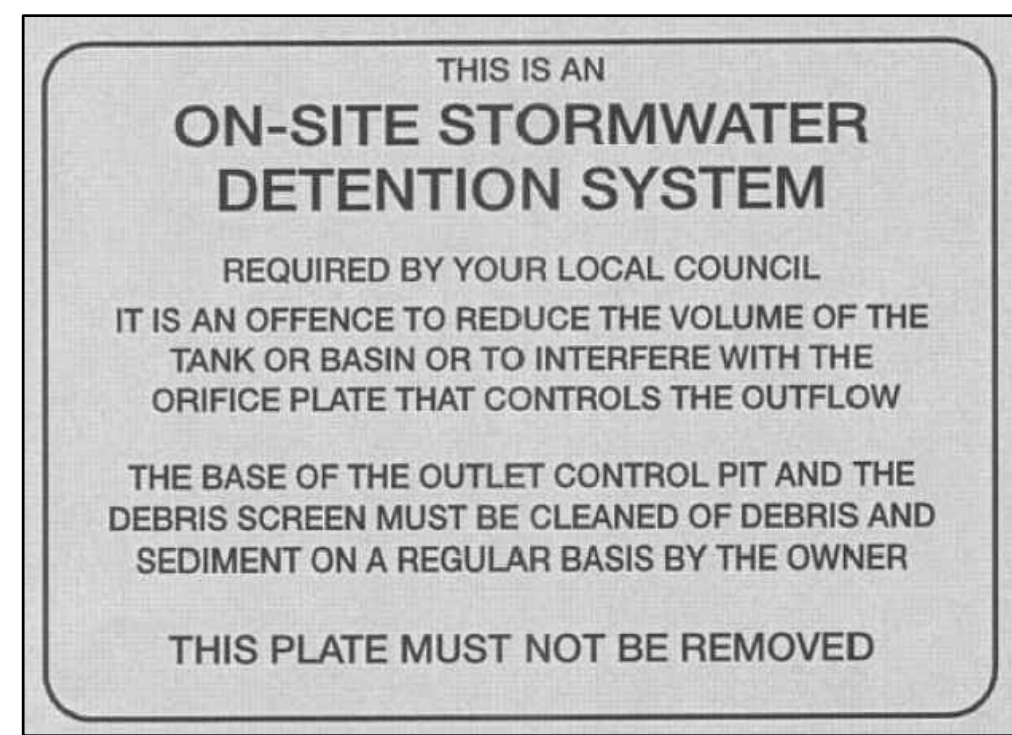
TELFORD CIVIL
CONSULTING CIVIL & STORMWATER ENGINEERS
Level 14, 32 Smith Street,
Parramatta NSW 2150
PO BOX 3579 Parramatta 2124
Email: info@telfordcivil.com.au
Phone: 02 7809 4931
Company: Telford Consulting Pty Ltd

Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title
**ON-SITE DETENTION DETAILS
AND CALCULATIONS
SHEET 3 OF 6**
Scale A1 Project No. 25037 Dwg. No. 110 Issue B

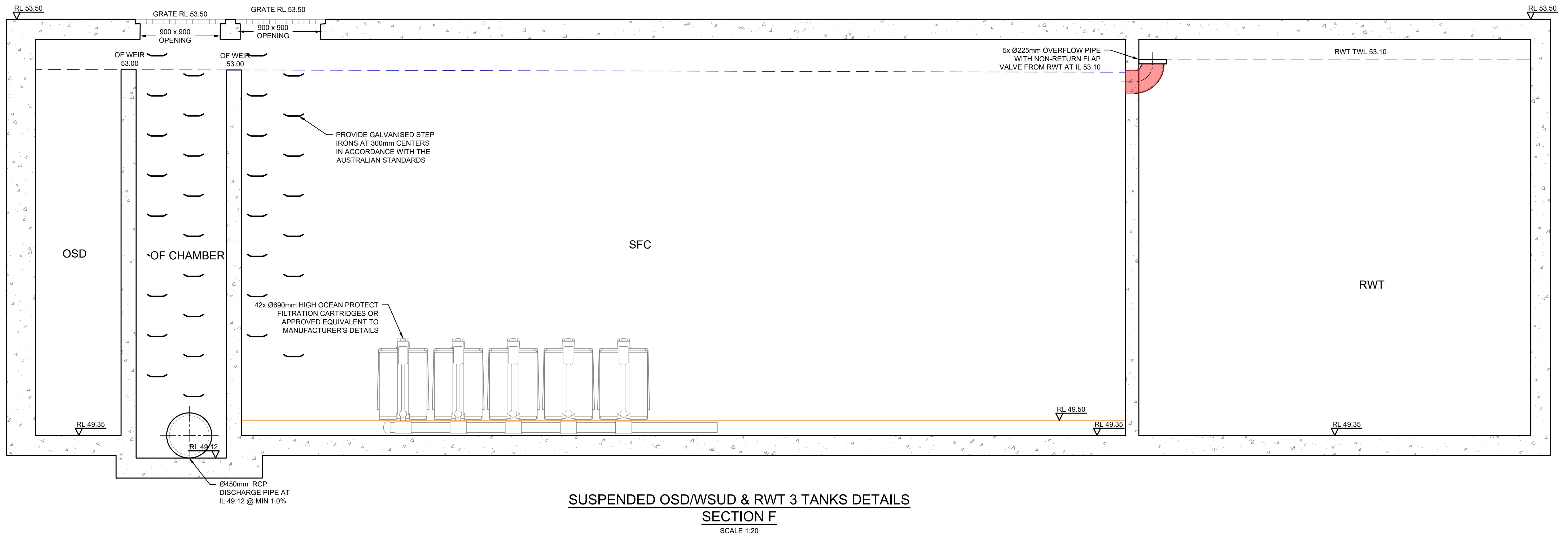
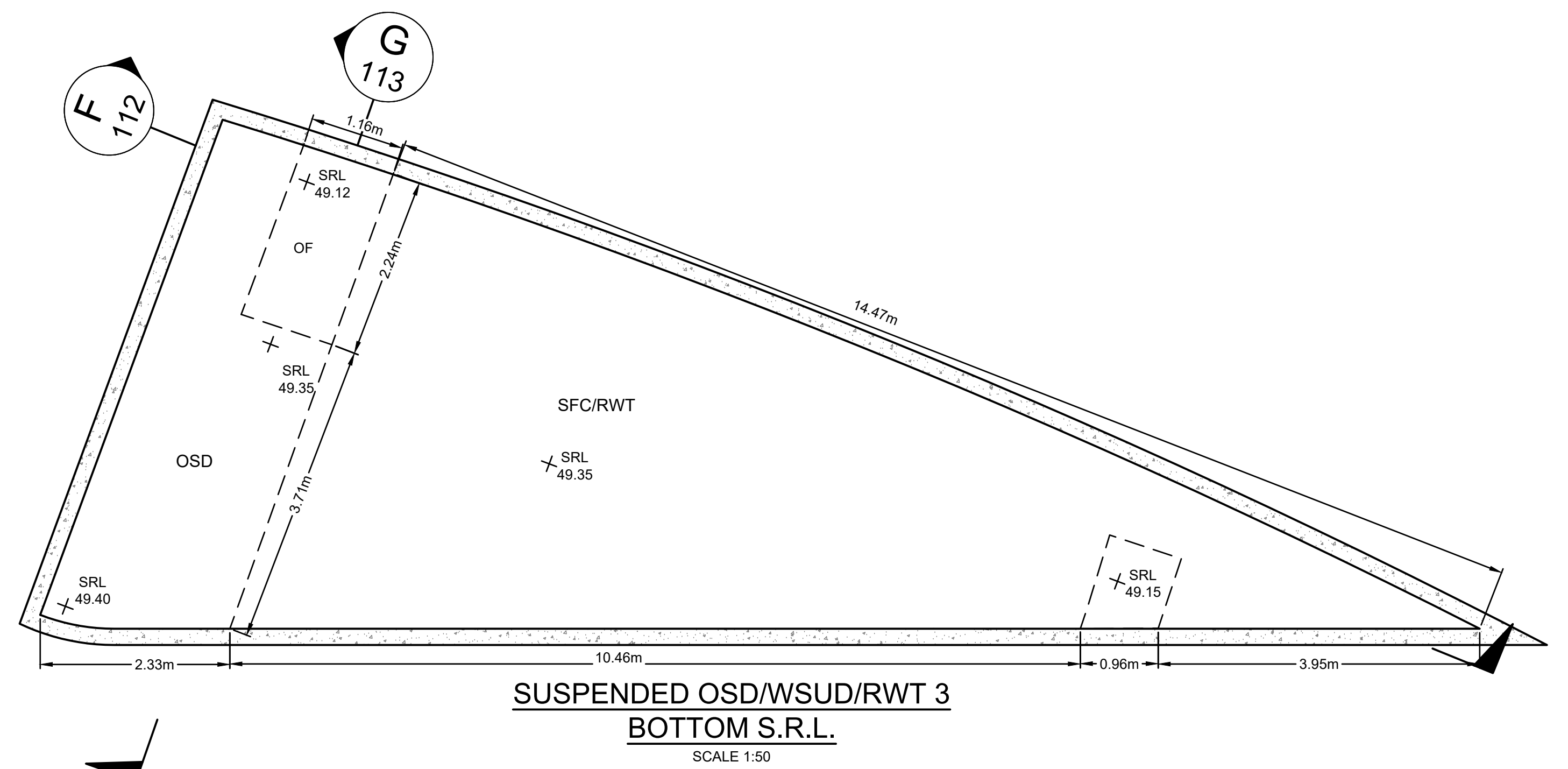
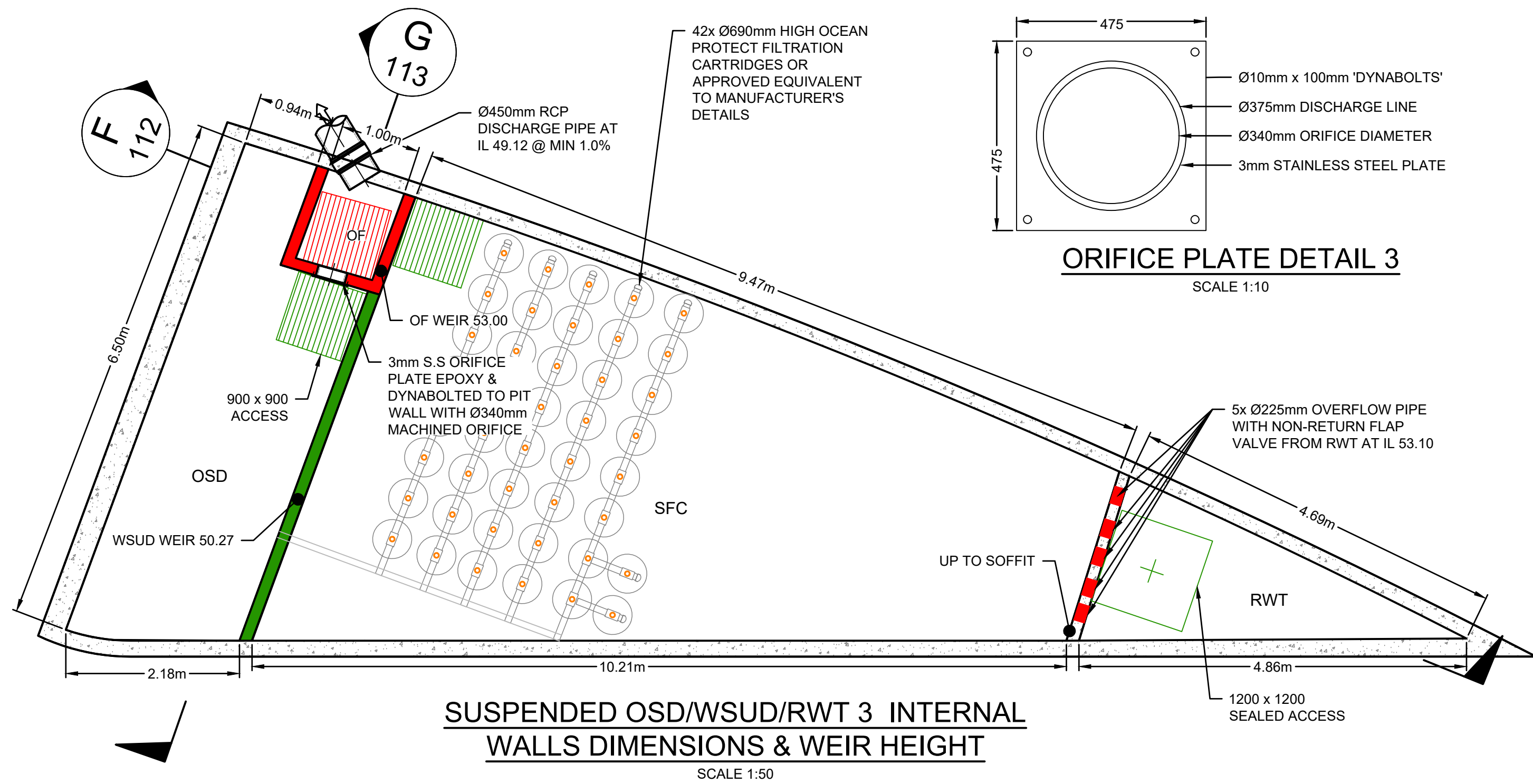


SUSPENDED OSD/WSUD/RWT 2 TANKS DETAILS
SECTION E
SCALE 1:20



					Certification By Dr. Michel Chasaya B.E., M.E. (Res), Ph.D., F.I.E. Aust., CPEng., Civil & Structural Engineer		Architect GROUP GSA Group GSA Pty Ltd, Level 7, 80 William St East Sydney NSW Australia 2011 T : +612 9361 4144 F : +612 9332 3458 Web : www.groupgsa.com		Council Penrith City Council Client Caddens Estate Pty Ltd		Scale 200 400 600mm SCALE 1:10 @ A1 0 400 800 1200 mm SCALE 1:20 @ A1 0 1 2 3 m SCALE 1:50 @ A1 TELFORD CIVIL CONSULTING CIVIL & STORMWATER ENGINEERS Level 14, 32 Smith Street, Parramatta NSW 2150 PO BOX 3579 Parramatta 2124 Email: info@telfordcivil.com.au Phone: 02 7809 4931 Company: Telford Consulting Pty Ltd		Project 68-80 O'CONNELL STREET, CADDENS PROPOSED MIXED-USE DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION		Drawing Title ON-SITE DETENTION DETAILS AND CALCULATIONS SHEET 4 OF 6		
B		ISSUE FOR DEVELOPMENT APPLICATION			06/08/2025		YKK		SBF								
A		ISSUE FOR DEVELOPMENT APPLICATION			04/08/2025		YKK		SBF								
Issue		Description			Date		Design		Checked								

NOT FOR CONSTRUCTION



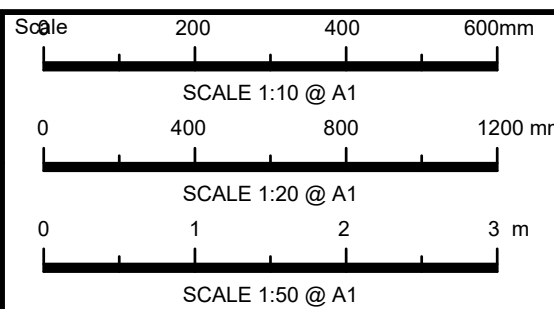
NOT FOR CONSTRUCTION

A				ISSUE FOR DEVELOPMENT APPLICATION				04/08/2025	YKK	SBF
Issue	Description	Date	Design	Checked						

Certification By Dr. Michel Chasaya
B.E., M.E. (Res), Ph.D., F.I.E. Aust., CPEng.,
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Architect
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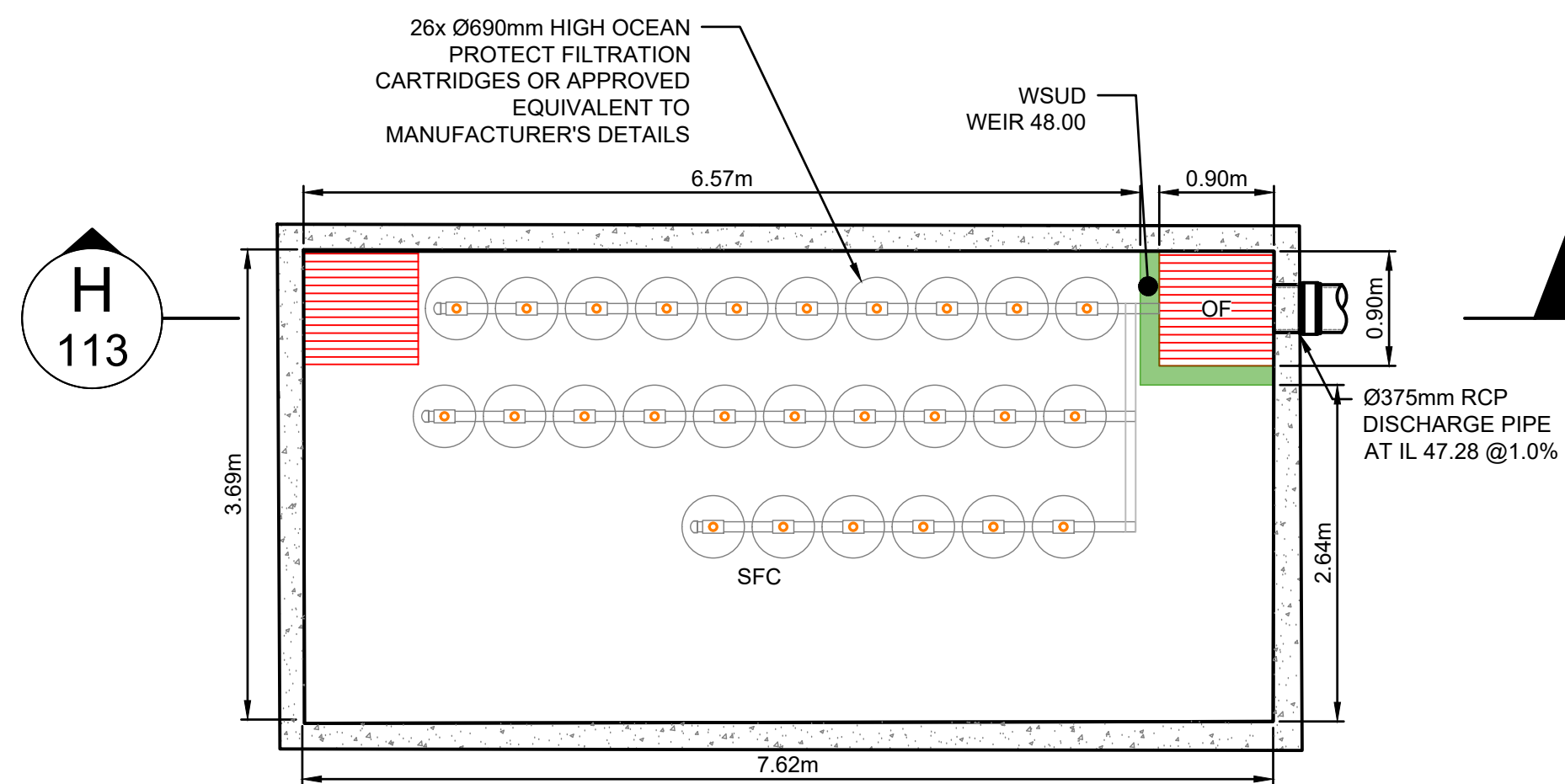
Council
Penrith City Council
Client
Caddens Estate Pty Ltd



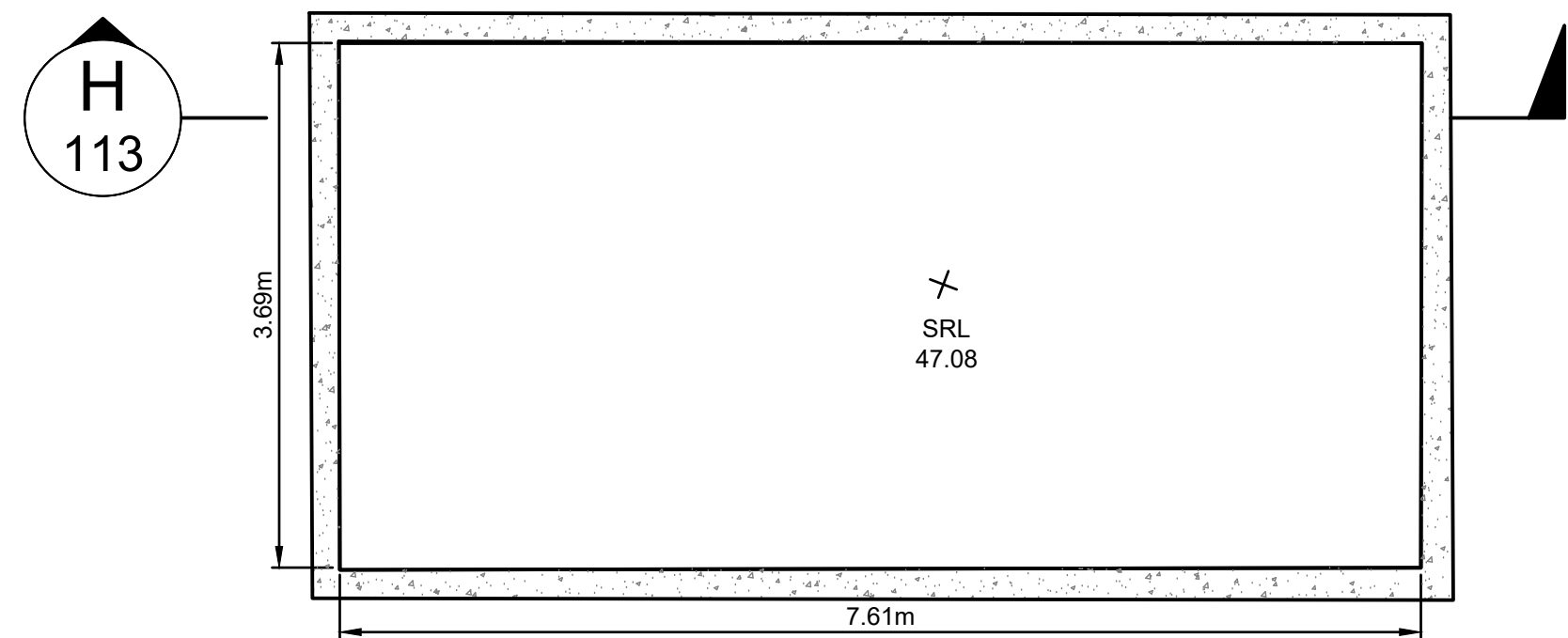
TELFORD CIVIL
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PO BOX 3579 Parramatta 2124
Email: info@telfordcivil.com.au
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Company: Telford Consulting Pty Ltd

Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

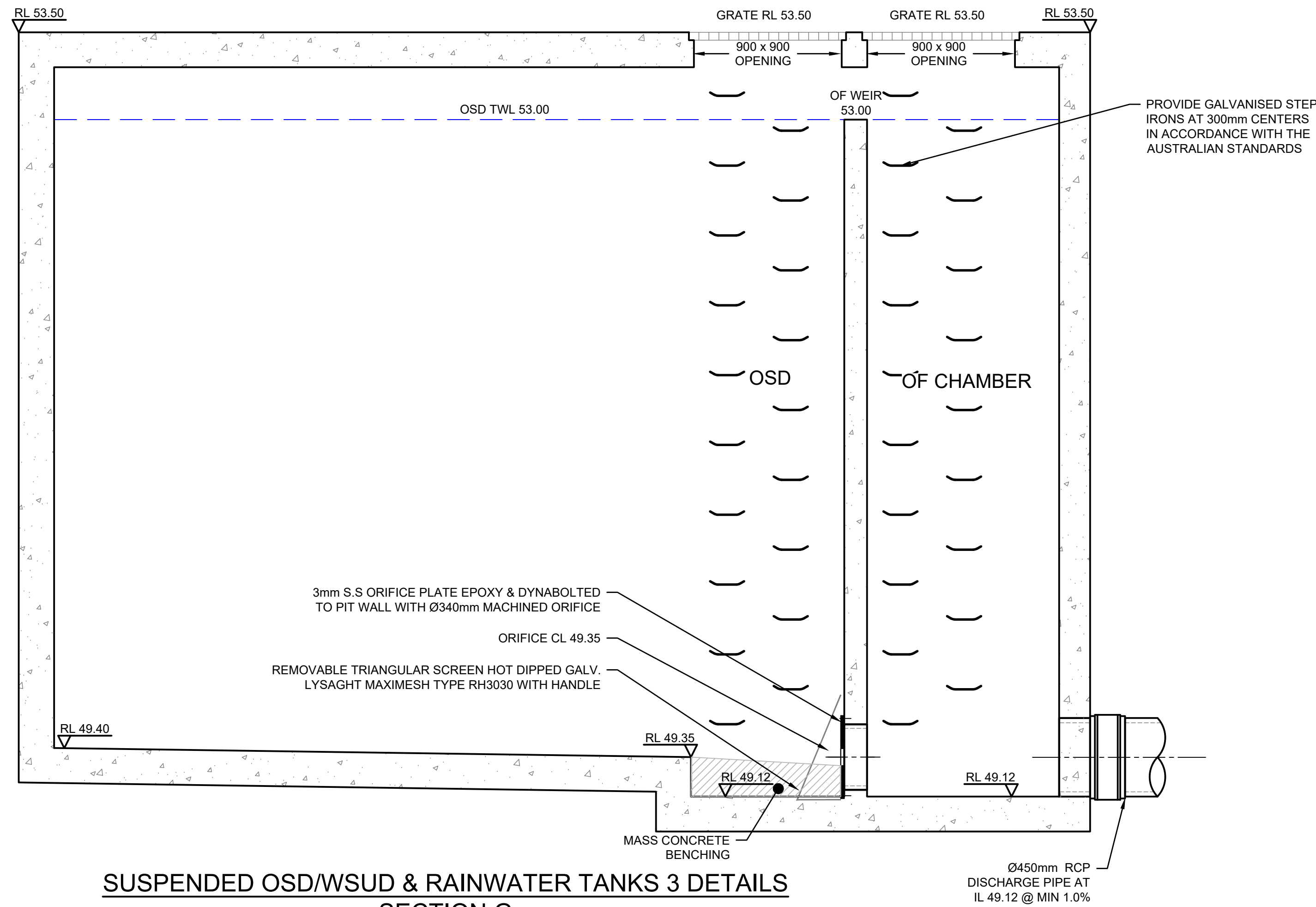
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Scale As Shown	Project No. 25037	Dwg. No. 112	Issue A



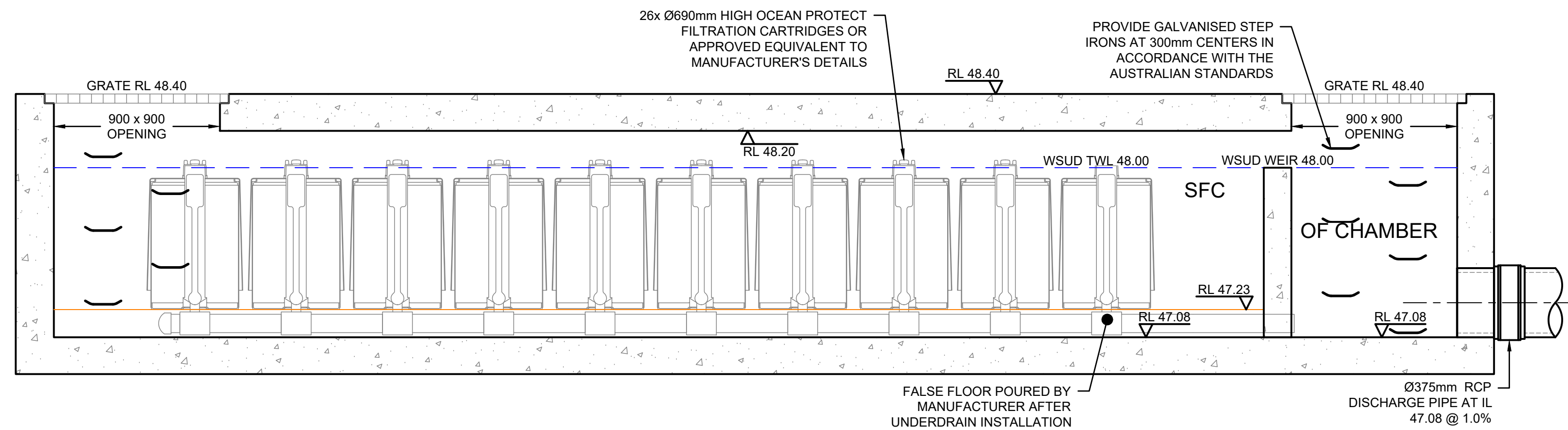
**UNDERGROUND WSUD TANK 4
INTERNAL WALLS DIMENSIONS & WEIR
HEIGHT**
SCALE 1:50



**UNDERGROUND WSUD 4
TANK BOTTOM S.R.L.**
SCALE 1:50



**SUSPENDED OSD/WSUD & RAINWATER TANKS 3 DETAILS
SECTION G**
SCALE 1:20



**UNDERGROUND WSUD TANK 4 DETAILS
SECTION H**
SCALE 1:20

NOT FOR CONSTRUCTION

A	ISSUE FOR DEVELOPMENT APPLICATION	04/08/2025	YKK	SBF
Issue	Description	Date	Design	Checked
100m at full size				

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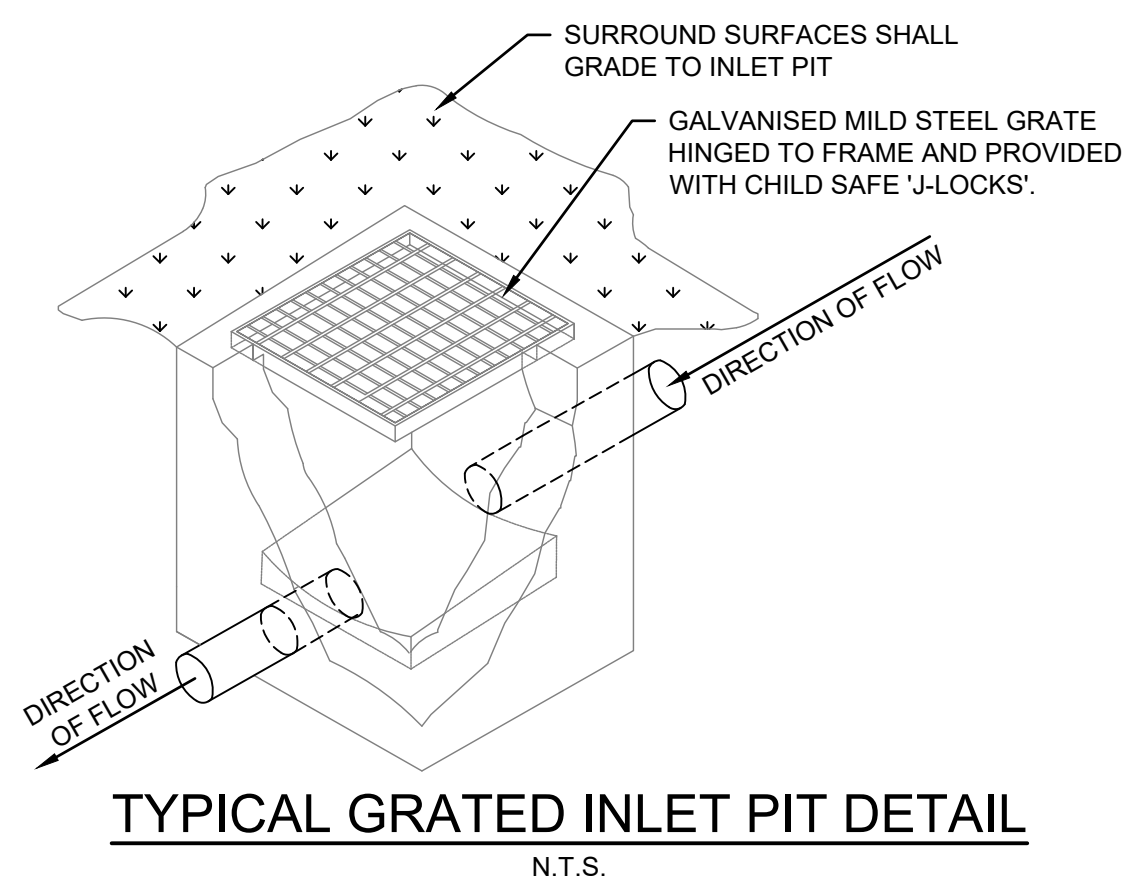
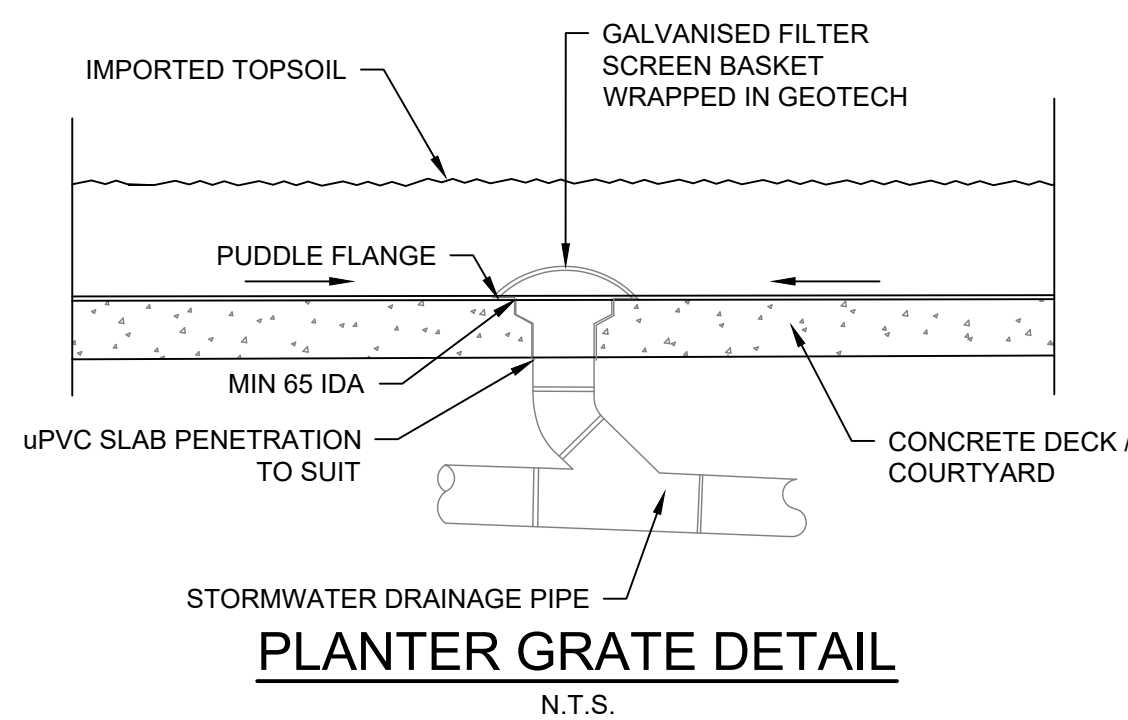
Council
Penrith City Council
Client
Caddens Estate Pty Ltd

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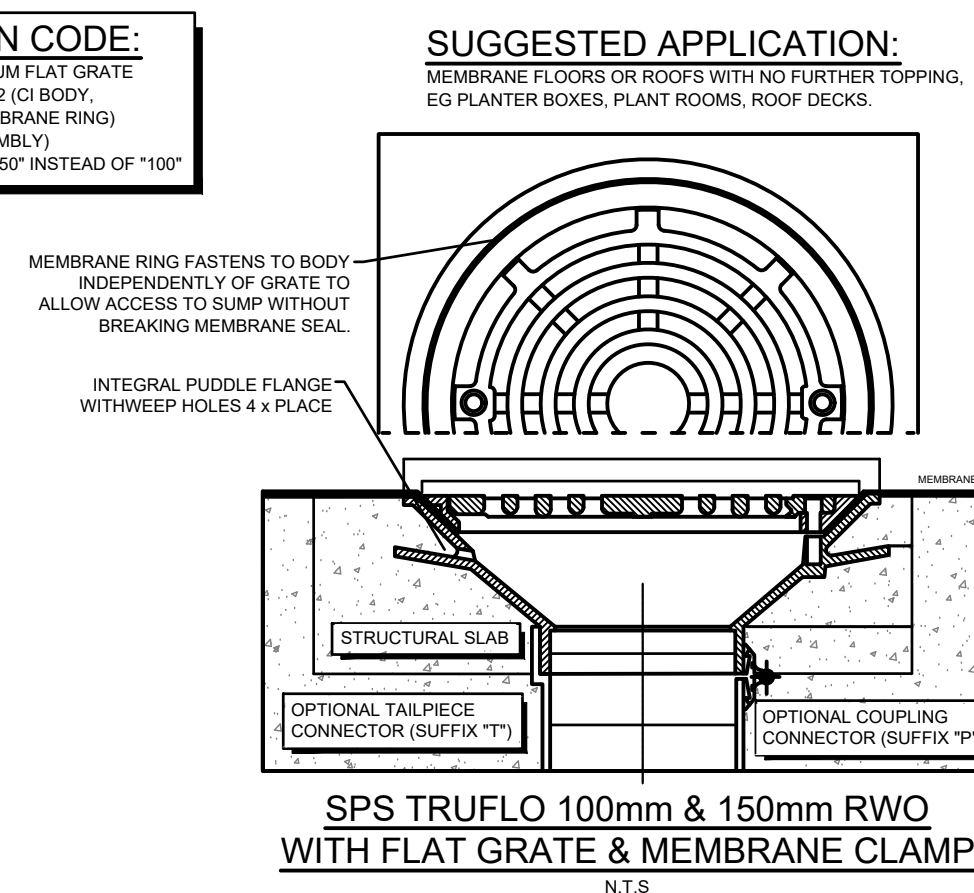
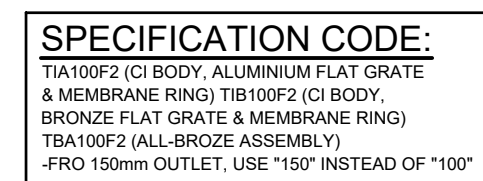
TELFORD CIVIL
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Project
**68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title
**ON-SITE DETENTION DETAILS
AND CALCULATIONS
SHEET 6 OF 6**
Scale A1 Project No. 25037 Dwg. No. 113 Issue A

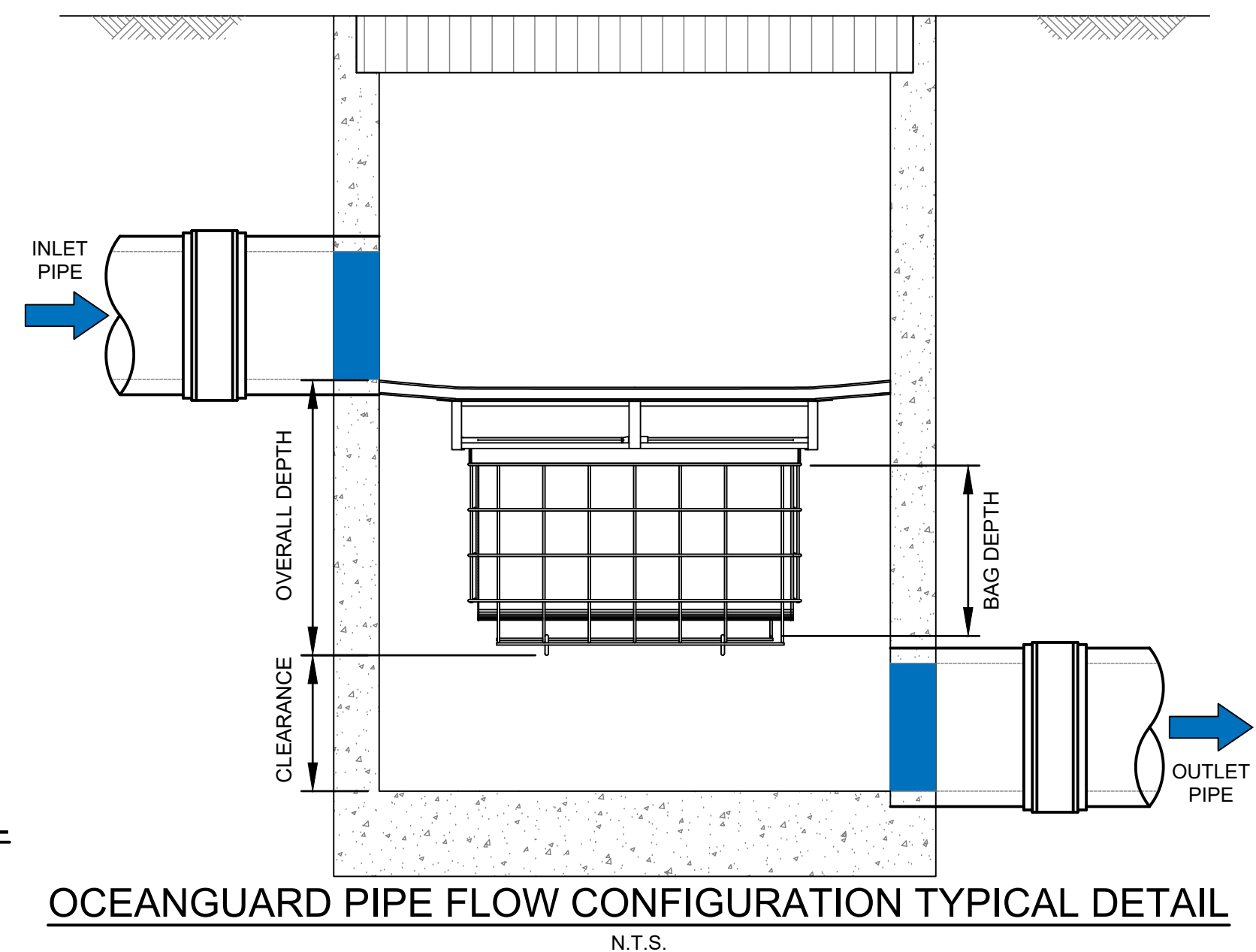
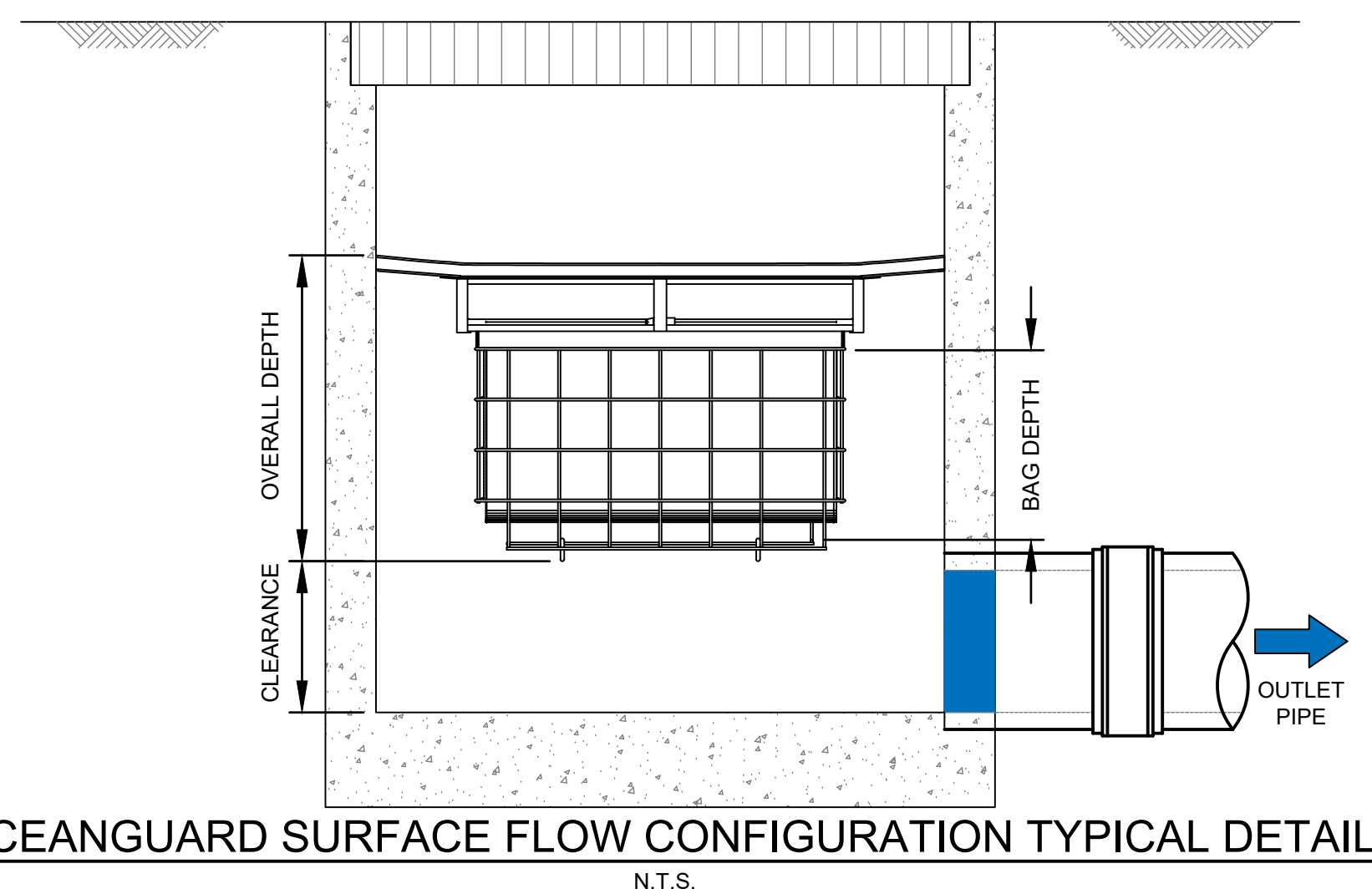
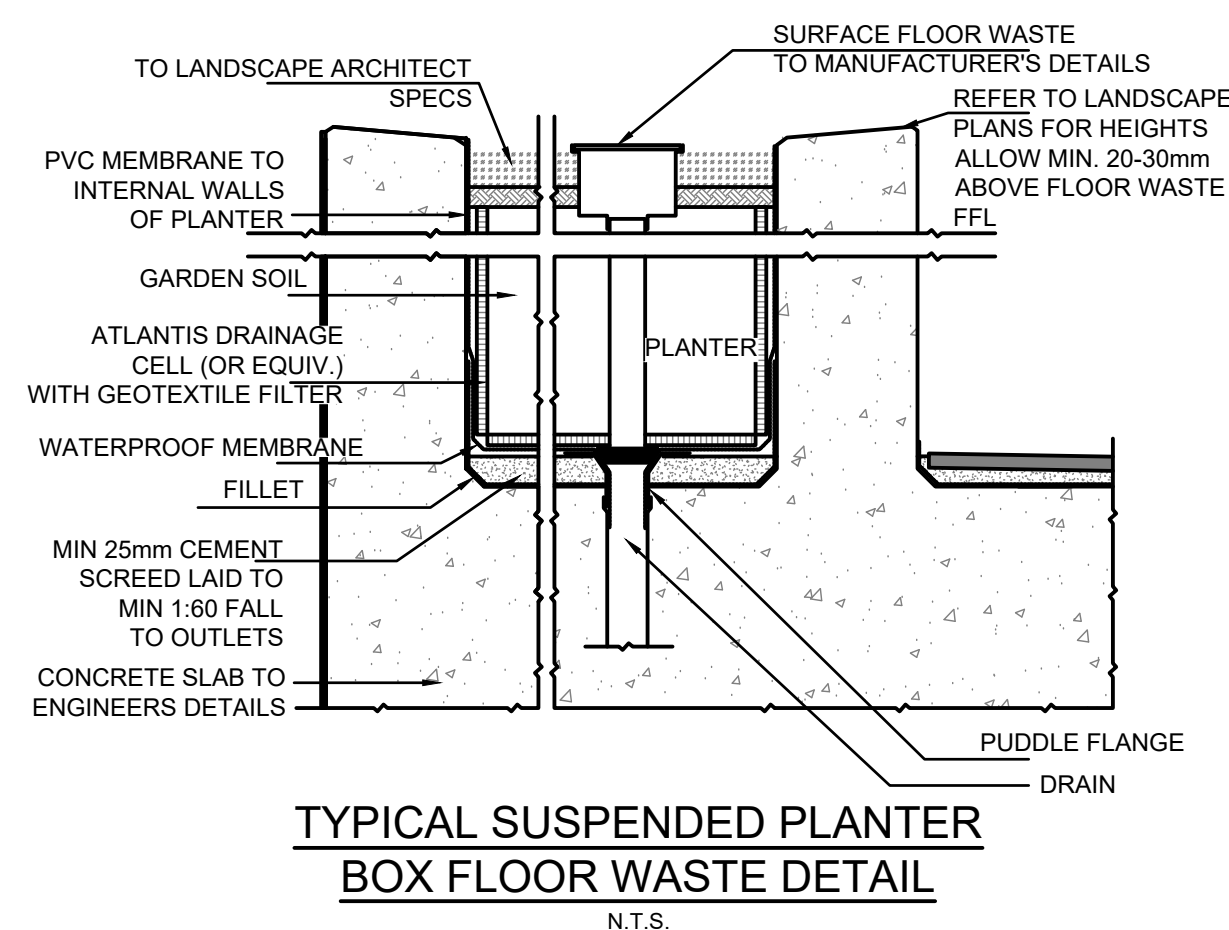


Stormwater Drainage System Maintenance Schedule			
Maintenance Action	Frequency	Responsibility	Procedure
General			
Inspect roof drainage system of building and remove any debris/sludge	Six Monthly	Strata/Maintenance Contractor	Remove any leaves or debris and sludge from gutters of building and flush downpipes of building to remove any blockages. Pits downstream of downpipes to be cleaned of flushed debris.
Inspect pits and trench drains on site and remove debris/litter/sludge	Monthly or following Rain Period	Strata/Maintenance Contractor	Remove grate. Remove any debris/litter/sludge from within pits.
Inspect site for litter and floatable debris and remove	Fortnightly	Strata/Maintenance Contractor	Remove litter from site and sweep all driveway and pathways in order to remove leaves or sediments that may enter into the drainage system.
Basement Pump out			
Inspect and clean flap valve,	Six Monthly	Strata/Maintenance Contractor	Remove grate and check flap valve and pipe for blockages and clean. Check hinges for rust and test operation by moving flap to full extent.
Check hinge operation.	Annually	Strata/Maintenance Contractor	Inspect hinge and check its operation.
Check attachment of flap valve to wall pit.	Annually	Strata/Maintenance Contractor	Remove grate and ensure valve fixings are secure.
Check flap valve seal.	Six Monthly	Strata/Maintenance Contractor	Remove grate and fill pit with water, ensure flap seals against side of pit with minimal leakage.
Inspect walls for cracking or spalling.	Annually	Strata/Maintenance Contractor	Remove grate to inspect internal walls, remove vegetation to inspect external wall, repair as required.
Inspect sump and clean.	Six Monthly	Strata/Maintenance Contractor	Remove grate and clean sediment/sludge from sump.
Inspect grate for damage or blockage.	Six Monthly	Strata/Maintenance Contractor	Check both sides of grate for corrosion (particularly welds and corners); also check for damage and blockages.
Inspect outlet pipe and remove blockages	Six Monthly	Strata/Maintenance Contractor	Remove grate and flush outlet pipe to ensure it drains freely. Check for debris on upstream side of return line.
Outlets			
Inspect & remove any blockage of orifices	Six monthly	Strata/Maintenance Contractor	Remove grate & screen to inspect orifice. See plan for location of outlets
Check attachment of orifice plates to wall of chamber and/or pit (gaps less than 5 mm)	Annually	Strata/Maintenance Contractor	Remove grate and screen. Ensure plates are mounted securely, tighten fixings if required. Seal gaps as required.
Check orifice diameters are correct and retain sharp edges	Five yearly	Strata/Maintenance Contractor	Compare diameter to design (see Work-as-Executed) and ensure edge is not pitted or damaged.
Inspect screen and clean	Six monthly	Strata/Maintenance Contractor	Remove grate(s) and screens if required to clean them.
Check attachment of screens to wall of chamber or pit	Annually	Strata/Maintenance Contractor	Remove grate(s) and screen(s). Ensure screen fixings are secure. Repair as required.
Check screen(s) for corrosion	Annually	Strata/Maintenance Contractor	Remove grate(s) and examine screen(s) for rust or corrosion, especially at corners or welds.
Inspect walls (internal and external, if appropriate) for cracks or spalling	Annually	Strata/Maintenance Contractor	Remove grate(s) to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.
Inspect outlet sumps & remove any sediment/sludge	Six monthly	Strata/Maintenance Contractor	Remove grate(s) and screen(s). Remove sediment/sludge build-up and check orifices are clear.
Inspect grate(s) for damage or blockage	Six monthly	Strata/Maintenance Contractor	Check both sides of a grate for corrosion, (especially corners and welds) damage or blockage.
Inspect outlet pipe & remove any blockage	Six monthly	Strata/Maintenance Contractor	Remove grate(s) and screen(s). Ventilate underground storage if present. Check orifices and remove any blockages in outlet pipe. Flush outlet pipe to confirm it drains freely. Check for sludge/debris on upstream side of return line.
Check step irons for corrosion	Annually	Strata/Maintenance Contractor	Remove grate. Examine step irons and repair any corrosion or damage
Check fixing of step irons is secure	Six monthly	Strata/Maintenance Contractor	Remove grate(s) and ensure fixings are secure prior to placing weight on step iron.
Storage			
Inspect storage & remove any sediment/sludge in pit	Six monthly	Strata/Maintenance Contractor	Remove grate(s) and screen(s). Remove sediment/sludge build-up.
Inspect internal walls of storage (and external, if appropriate) for cracks or spalling	Annually	Strata/Maintenance Contractor	Remove grate(s) to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.
Inspect & remove any debris/litter/mulch etc blocking grates	Six monthly	Strata/Maintenance Contractor	Remove blockages from grate(s) and check if storage is blocked.
Inspect areas draining to the storage(s) & remove debris/mulch/litter etc likely to block screens/grates	Six monthly	Strata/Maintenance Contractor	Remove debris and floatable material likely to be blocked to grates.
Compare storage volume to volume approved. (Rectify if loss > 5%)	Annually	Strata/Maintenance Contractor	Compare actual storage available with Work-as Executed plans. If volume loss is greater than 5%, arrange for reconstruction to replace the volume lost. Council to be notified of the proposal.
Inspect storages for subsidence near pits	Annually	Strata/Maintenance Contractor	Check along drainage lines and at pits for subsidence likely to indicate leakages.



N.B	A	B	C	D	E	F	G	FLOW RATE* L/S
100	260	240	110	98	28	45	25	8.5
150	260	238	160	90	28	37	25	9.4

NOTE:
DETAIL TO BE CONFIRMED BY
WATERPROOFING CONSULTANT/ARCHITECT.



NOT FOR CONSTRUCTION

[illegible]

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Council	Penrith City Council
Client	Caddens Estate Pty Ltd

Scale

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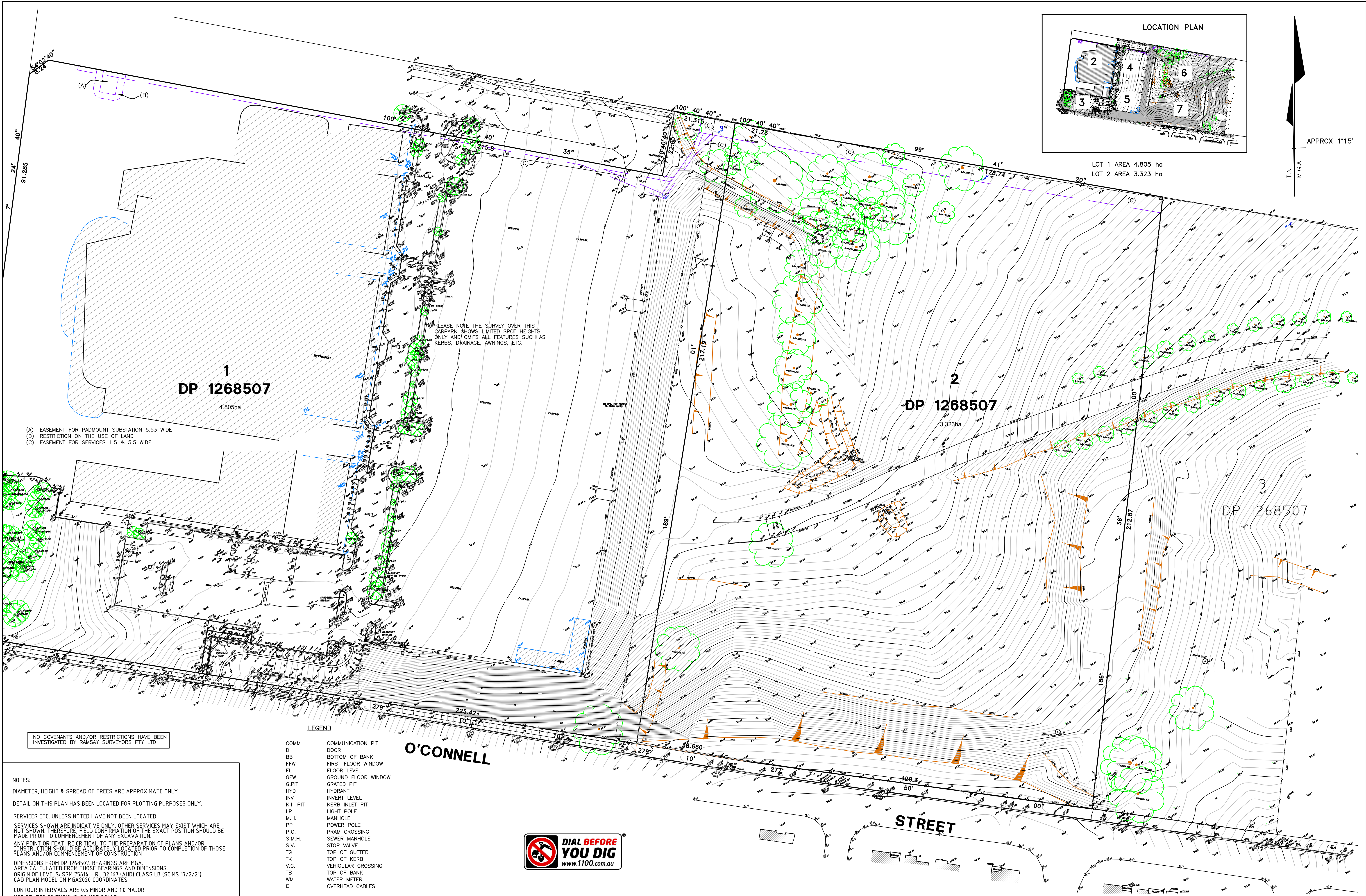
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68-80 O'CONNELL STREET, CADDENS
PROPOSED MIXED-USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

Drawing Title
MISCELLANEOUS DETAILS
SHEET

Scale	A1	Project No.	Dwg. No.	Issue
As Shown		25037	114	A

APPENDIX B

Survey



NO COVENANTS AND/OR RESTRICTIONS HAVE BEEN INVESTIGATED BY RAMSAY SURVEYORS PTY LTD

NOTES:
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ANY POINT OR FEATURE CRITICAL TO THE PREPARATION OF PLANS AND/OR CONSTRUCTION SHOULD BE ACCURATELY LOCATED PRIOR TO COMPLETION OF THOSE PLANS AND/OR COMMENCEMENT OF CONSTRUCTION
DIMENSIONS FROM DP 1268507. BEARINGS ARE MGA.
AREA CALCULATED FROM THOSE BEARINGS AND DIMENSIONS.
ORIGIN OF LEVELS: SS4 75614 - RL 32.167 (AHD) CLASS LB (SCMS 17/2/21)
CAD PLAN MODEL ON MGA2020 COORDINATES
CONTOUR INTERVALS ARE 0.5 MINOR AND 1.0 MAJOR
USE STATED DIMENSIONS. DO NOT SCALE.

LEGEND	
COMM	COMMUNICATION PIT
D	DOOR
BB	BOTTOM OF BANK
FFW	FIRST FLOOR WINDOW
FL	FLOOR LEVEL
GFW	GROUND FLOOR WINDOW
G.PIT	GRATED PIT
HYD	HYDRANT
INV	INVERT LEVEL
K.I. PIT	KERB INLET PIT
LP	LIGHT POLE
M.H.	MANHOLE
PP	POWER POLE
P.C.	PRAM CROSSING
S.M.H.	SEWER MANHOLE
S.V.	STOP VALVE
TG	TOP OF GUTTER
TK	TOP OF KERB
V.C.	VEHICULAR CROSSING
TB	TOP OF BANK
WM	WATER METER
E	OVERHEAD CABLES



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THIS PLAN HAS BEEN PREPARED FOR THE SOLE USE OF THE INSTRUCTING PARTY &/OR THEIR NOMINATED CLIENT

AMENDMENTS		
DATE	DESCRIPTION	
31/03/21	INFORMATION ADDED AROUND RAMP	
15/10/21	BOUNDARIES UPDATED	
05/08/22	NOTE ADDED REGARDING MGA 2020	
19/03/25	TREES AND BUILDINGS REMOVED IN	
10/04/25	INFORMATION ADDED	

L.G.A	INSTRUCTED BY:
PENRITH	SUJITH KAVALI
LOCALITY:	RE:
CADDENS	HOLDMARK PTY LTD

H

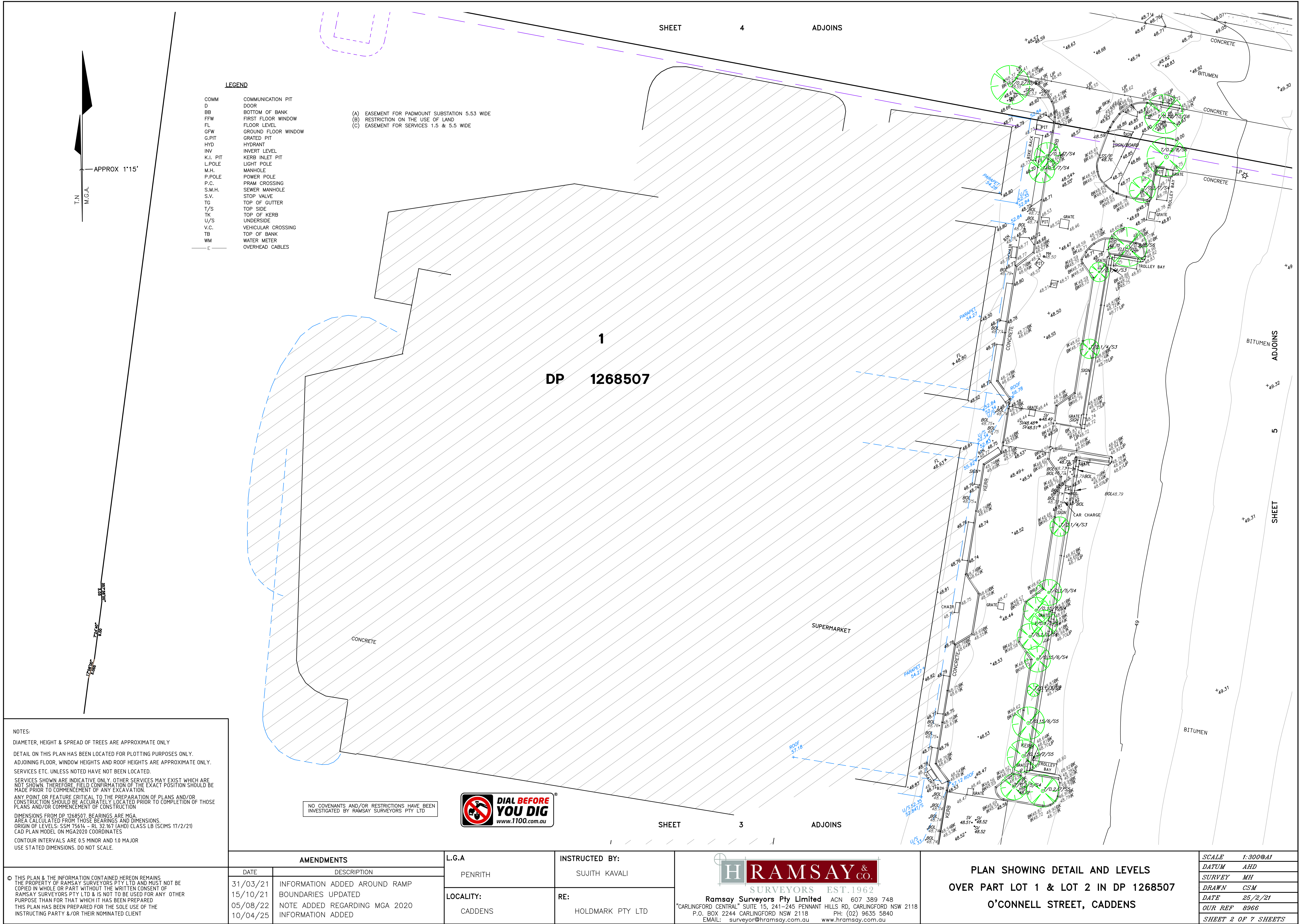
RAMSAY & CO.

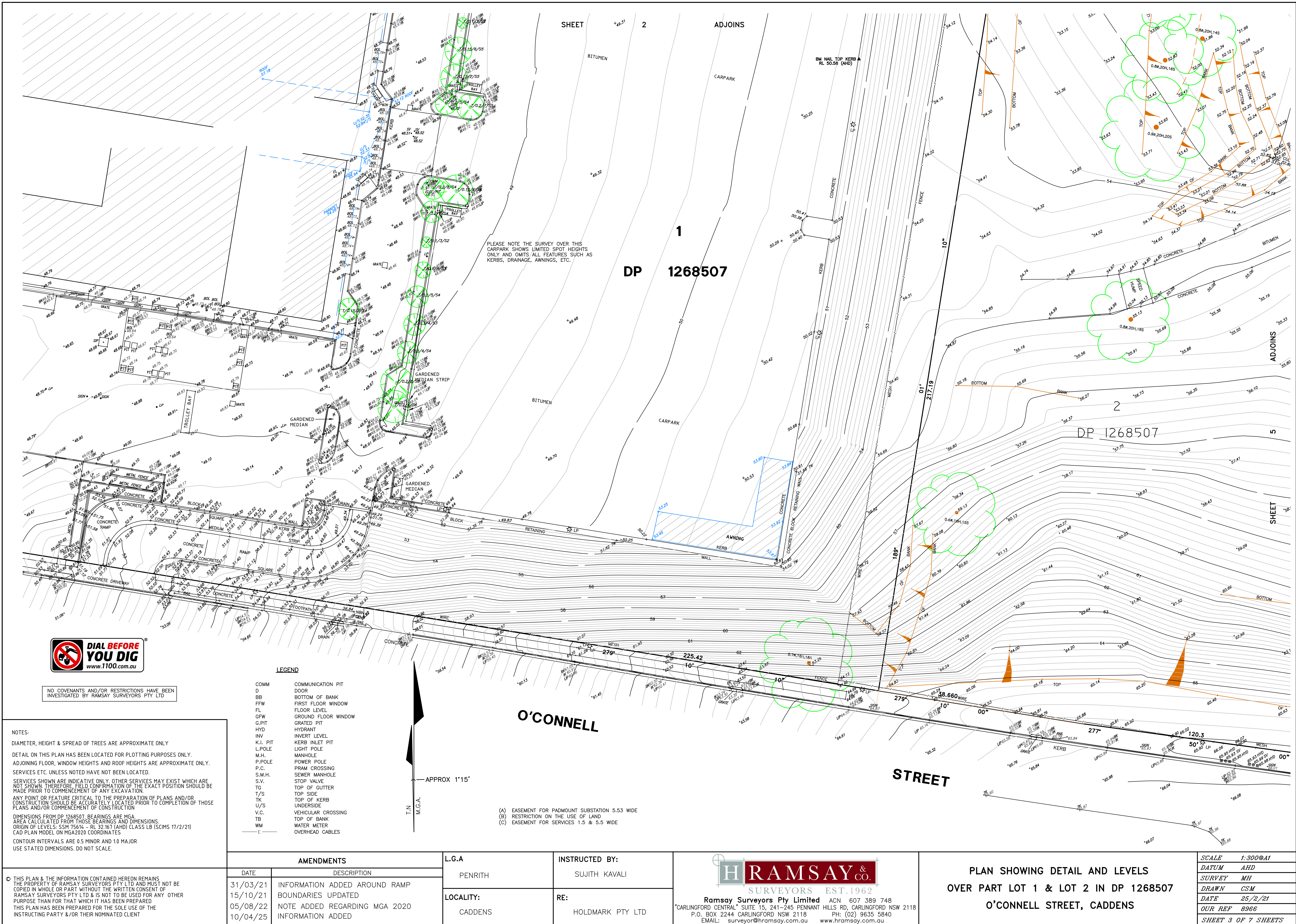
SURVEYORS EST.1962

Ramsay Surveyors Pty Limited ACN 607 389 748
"CARLINGFORD CENTRAL" SUITE 15, 241-245 PENNANT HILLS RD, CARLINGFORD NSW 2118
P.O. BOX 2244 CARLINGFORD NSW 2118 PH: (02) 9635 5840
EMAIL: surveyor@hramsay.com.au www.hramsay.com.au

PLAN SHOWING DETAIL AND LEVELS
OVER PART LOT 1 & LOT 2 IN DP 1268507
O'CONNELL STREET, CADDENS

SCALE	N.T.S.
DATUM	AHD
SURVEY	MH
DRAWN	CSM
DATE	25/2/21
OUR REF	8966
SHEET 1 OF 7 SHEETS	





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AREA CALCULATED FROM THOSE BEARINGS AND DIMENSIONS
ORIGIN OF LEVELS: SSM 75614 - RL 32.167 (AHD) CLASS LB (SCIMS 17/2/21)
CAD PLAN MODEL ON MGA2020 COORDINATES
CONTOUR INTERVALS ARE 0.5 MINOR AND 1.0 MAJOR
USE STATED DIMENSIONS. DO NOT SCALE.

LEGEND

COMM COMMUNICATION PIT
D DOOR
BB BOTTOM OF BANK
FFW FIRST FLOOR WINDOW
FL FLOOR LEVEL
GFW GROUND FLOOR WINDOW
G.PIT GRATED PIT
HYD HYDRANT
INV INVERT LEVEL
K.I. PIT KERB INLET PIT
L.POLE LIGHT POLE
M.H. MANHOLE
P.POLE POWER POLE
P.C. PRAM CROSSING
S.M.H. SEWER MANHOLE
S.V. STOP VALVE
TG TOP OF GUTTER
T/S TOP SIDE
TK TOP OF KERB
U/S UNDERSIDE
V.C. VEHICULAR CROSSING
TB TOP OF BANK
WM WATER METER
E OVERHEAD CABLES

APPROX 1:15'

(A) EASEMENT FOR PADMOUNT SUBSTATION 5.53 WIDE
(B) RESTRICTION ON THE USE OF LAND
(C) EASEMENT FOR SERVICES 1.5 & 5.5 WIDE

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THIS PLAN HAS BEEN PREPARED FOR THE SOLE USE OF THE INSTRUCTING PARTY &/OR THEIR NOMINATED CLIENT

AMENDMENTS	
DATE	DESCRIPTION
31/03/21	INFORMATION ADDED AROUND RAMP
15/10/21	BOUNDARIES UPDATED
05/08/22	NOTE ADDED REGARDING MGA 2020
10/04/25	INFORMATION ADDED

L.G.A
PENRITH
LOCALITY:
CADDENS

INSTRUCTED BY:
SUJITH KAVALI
RE:
HOLDMARK PTY LTD

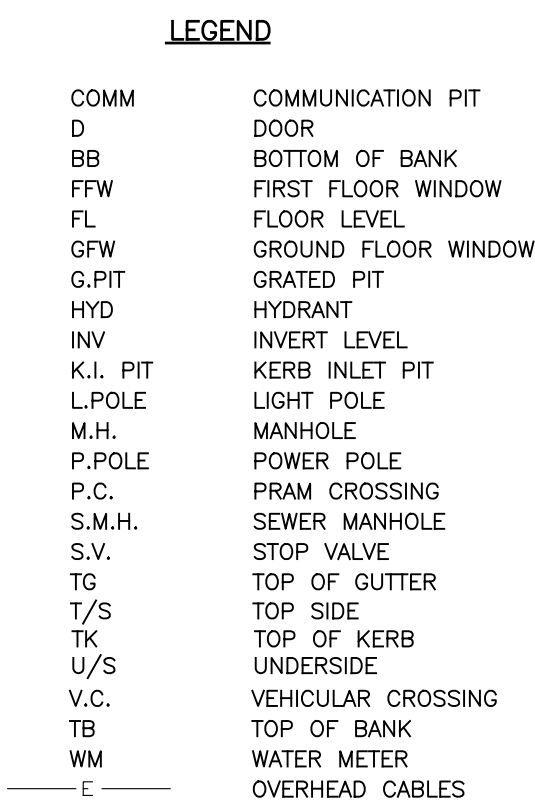


RAMSAY & CO.
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Ramsay Surveyors Pty Limited ACN 607 389 748
"CARLINGFORD CENTRAL" SUITE 15, 241-245 PENNANT HILLS RD, CARLINGFORD NSW 2118
P.O. BOX 2244 CARLINGFORD NSW 2118 PH: (02) 9635 5840
EMAIL: surveyor@ramsay.com.au www.ramsay.com.au

PLAN SHOWING DETAIL AND LEVELS
OVER PART LOT 1 & LOT 2 IN DP 1268507
O'CONNELL STREET, CADDENS

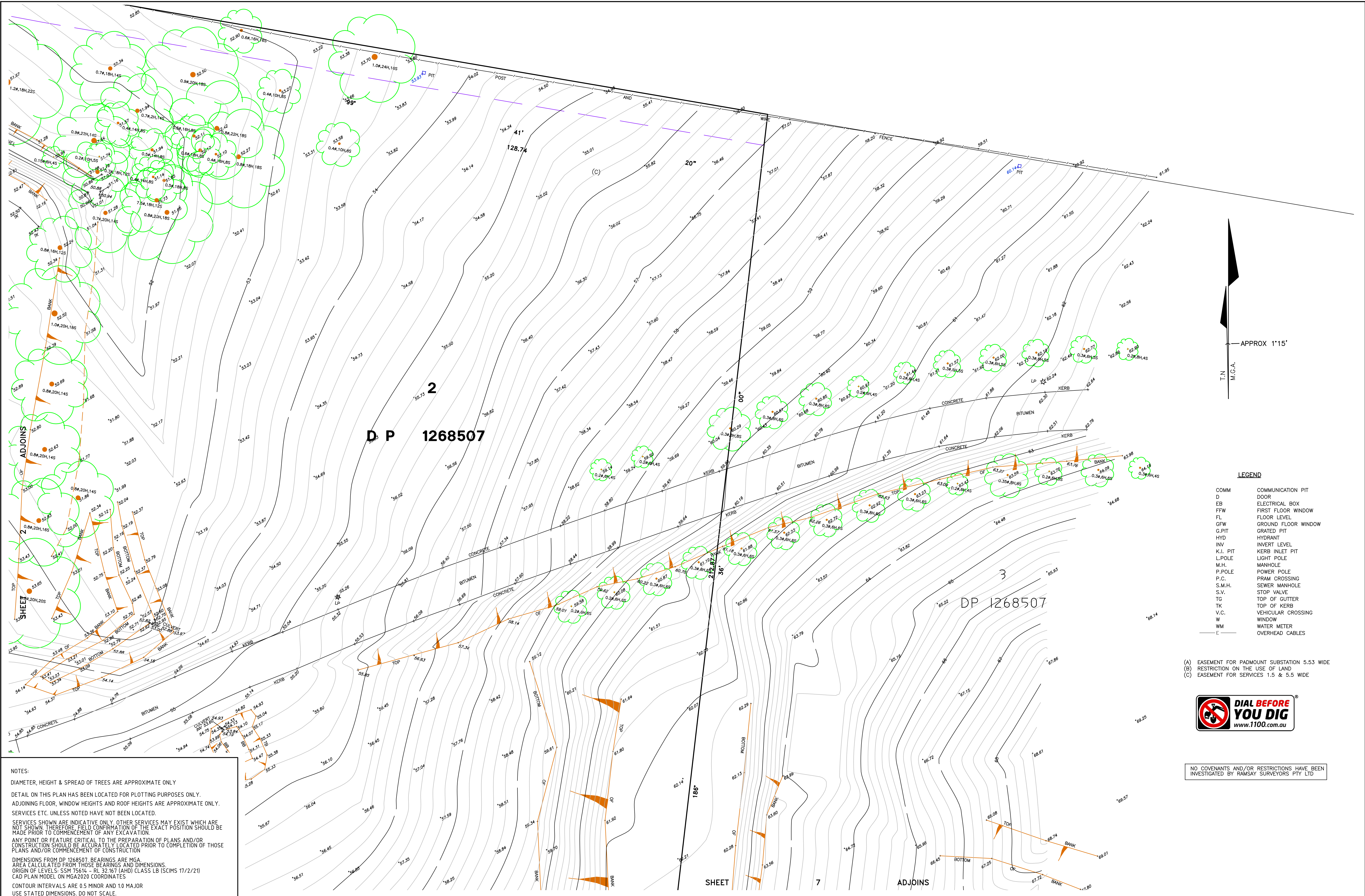
SCALE	1:300@A1
DATUM	AHD
SURVEY	MH
DRAWN	CSM
DATE	25/2/21
OUR REF	8966
SHEET 3 OF 7 SHEETS	



NO COVENANTS AND/OR RESTRICTIONS HAVE BEEN
INVESTIGATED BY RAMSAY SURVEYORS PTY LTD



AMENDMENTS		L.G.A	INSTRUCTED BY:	 H RAMSAY & CO. SURVEYORS EST. 1962 Ramsay Surveyors Pty Limited ACN 607 389 748 "CARLINGFORD CENTRAL" SUITE 15, 241-245 PENNANT HILLS RD, CARLINGFORD NSW 2118 P.O. BOX 2244 CARLINGFORD NSW 2118 PH: (02) 9635 5840 EMAIL: surveyor@hramsay.com.au www.hramsay.com.au	PLAN SHOWING DETAIL AND LEVELS OVER PART LOT 1 & LOT 2 IN DP 1268507 O'CONNELL STREET, CADDENS	SCALE 1:300@A1
DATE	DESCRIPTION	PENRITH	SUJITH KAVALI			DATUM AHD
31/03/21	INFORMATION ADDED AROUND RAMP	LOCALITY: CADDENS	RE: HOLDMARK PTY LTD			SURVEY MH
15/10/21	BOUNDARIES UPDATED					DRAWN CSM
05/08/22	NOTE ADDED REGARDING MGA 2020					DATE 25/2/21
10/04/25	INFORMATION ADDED			OUR REF 8966		
						SHEET 5 OF 7 SHEETS



LEGEND	
COMM	COMMUNICATION PIT
D	DOOR
EB	ELECTRICAL BOX
FFW	FIRST FLOOR WINDOW
FL	FLOOR LEVEL
GFW	GROUND FLOOR WINDOW
G.PIT	GRADED PIT
HYD	HYDRANT
INV	INVERT LEVEL
K.I. PIT	KERB INLET PIT
L.POLE	LIGHT POLE
M.H.	MANHOLE
P.POLE	POWER POLE
P.C.	PRAM CROSSING
S.M.H.	SEWER MANHOLE
S.V.	STOP VALVE
TG	TOP OF GUTTER
TK	TOP OF KERB
V.C.	VEHICULAR CROSSING
W	WINDOW
WM	WATER METER
E	OVERHEAD CABLES

- (A) EASEMENT FOR PADMOUNT SUBSTATION 5.53 WIDE
(B) RESTRICTION ON THE USE OF LAND
(C) EASEMENT FOR SERVICES 1.5 & 5.5 WIDE



NO COVENANTS AND/OR RESTRICTIONS HAVE BEEN INVESTIGATED BY RAMSAY SURVEYORS PTY LTD

NOTES:
DIAMETER, HEIGHT & SPREAD OF TREES ARE APPROXIMATE ONLY
DETAIL ON THIS PLAN HAS BEEN LOCATED FOR PLOTTING PURPOSES ONLY.
ADJOINING FLOOR, WINDOW HEIGHTS AND ROOF HEIGHTS ARE APPROXIMATE ONLY.
SERVICES ETC. UNLESS NOTED HAVE NOT BEEN LOCATED.
SERVICES SHOWN ARE INDICATIVE ONLY. OTHER SERVICES MAY EXIST WHICH ARE NOT SHOWN. THEREFORE FIELD CONFIRMATION OF THE EXACT POSITION SHOULD BE MADE PRIOR TO COMMENCEMENT OF ANY EXCAVATION.
ANY POINT OR FEATURE CRITICAL TO THE PREPARATION OF PLANS AND/OR CONSTRUCTION SHOULD BE ACCURATELY LOCATED PRIOR TO COMPLETION OF THOSE PLANS AND/OR COMMENCEMENT OF CONSTRUCTION
DIMENSIONS FROM DP 1268507 BEARINGS ARE MGA
AREA CALCULATED FROM THOSE BEARINGS AND DIMENSIONS.
ORIGIN OF LEVELS: SSM 75614 - RL 32.167 (AHD) CLASS LB (SCIMS 17/2/21)
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L.G.A	
PENRITH	
LOCALITY:	CADDENS

INSTRUCTED BY:	SUJITH KAVALI
RE:	HOLDMARK PTY LTD



RAMSAY & CO.
SURVEYORS EST.1962

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OVER PART LOT 1 & LOT 2 IN DP 1268507
O'CONNELL STREET, CADDENS

SCALE	1:300@A1
DATUM	AHD
SURVEY	MH
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DATE	25/2/21
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SHEET 6 OF 7 SHEETS	

