

# **P & G STRUCTURES PTY LTD**

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**Stormwater management report**  
**For Proposed residential/commercial development**  
**At 42-46 Unley Road**  
**Unley**

**Client: Otello Projects**

**Date: 25/02/2025**

**Job No: PG23017**

## Introduction

This report is prepared at the request of Otello Projects. P&G Structures were engaged to prepare Stormwater management report to support the Planning submission for the development.

This development is a multi-use residential and commercial building. The site is within City of Unley Council area. The site has street boundary along Unley Rd and Irwin Lane.

## Stormwater management analysis

### *Design Criteria*

The design criteria is established based on council guidelines provided Russell King of City of Unley in an email dated 24/03/2023 and City of Unley planning RFI, dated 2/12/2024.

The requirements are as follows:

*Stormwater detention:* Given the drainage limitations in the localised area council are expecting stormwater detention requirements restricting post development 1% AEP flows to 10% pre-development flows adopting a 60% impervious area pre development.

*Street discharge:* Discharge to Irwin lane is preferred. Stormwater to be directly connected to underground street pipe.

*WSUD measures:* Council encourage on site retention, such as permeable paving

### *Pre-development site conditions*

This site is approximately 1115m<sup>2</sup> and has a single residence .The stormwater from the site is discharged to the kerb watertable on Unley Rd and Irwin Lane.

### *Post-Development site conditions*

The proposed development is a multi-storey building with approximate roofed area of 895sqm.

All paved areas that are exposed to stormwater runoff and are not under cover are proposed to be constructed with permeable paving. The runoff from the paved areas is undetained and is discharged into the underground stormwater system on Irwin Lane.

The sump that collects surface stormwater runoff is fitted with Oceanguard Pollutant filter.

The runoff from the roof is directed to a stormwater detention tank with detention volume of 13.5 kL.

The detention tank is discharged to the street via a pump, which restricts the outflow to the street as per the council guidelines:

- post development 1% AEP flows are limited to 10% pre-development flows
- 60% impervious area pre development.

The detention tank is proposed to be placed below ground in the carpark area. Overflow pipe is connected to the top of the tank to allow for emergency overflow of 100year event.

The detention tank overflow and the surface runoff are connected to the street underground pipe on Irwin Lane.

### *Flood hazard*

The site is positioned within a flood zone and is subjected to 100mm high flood water.

The floor level is FL11.32 and is selected based on entry point to the building of 9.97 and allows 100mm freeboard above top of kerb level. This will allow 250mm freeboard above flood levels.



Galina Petrova MSc(StrEng) FIEAust CPEng NER(Civil)NER(Str)

For P&G Structures

Attachments:

- Stormwater calculations
- Drawings PG23016-C1 to C3

## SURVEY LEGEND

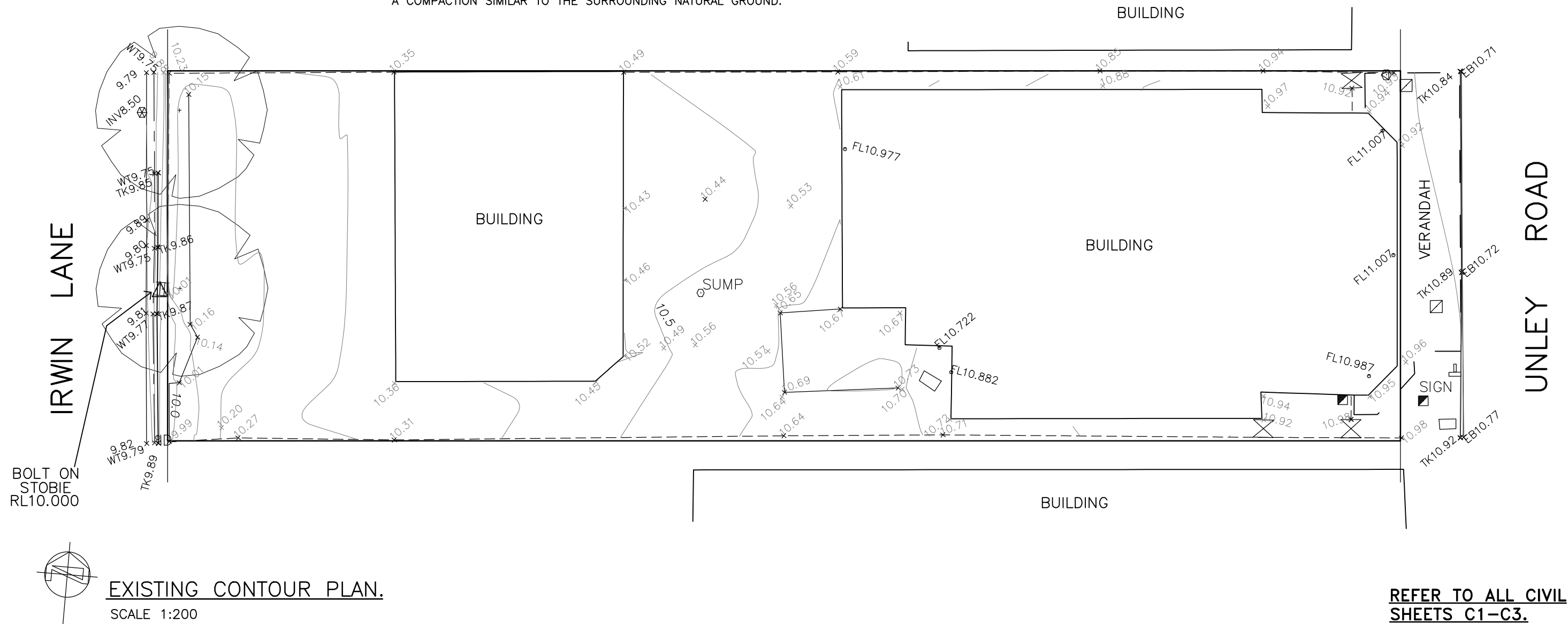
⊕7.36	SPOT HEIGHT
△	TBM
⊗	WATER METER
⊥	STOBIE POLE
⊗	SEWER
■	GAS
⊕D	DOMESTIC OUTLET
⊠	TELSTRA

## NOTES:

1. STORMWATER LAYOUT IS INDICATIVE ONLY, AND MAY CHANGE TO SUIT SITE CONDITIONS.  
THE INTEGRITY OF THE STORMWATER DRAINAGE DESIGN SHALL BE MAINTAINED AT ALL TIMES.
2. REFER TO ARCHITECTURAL SITE PLAN FOR ALL SET OUT DIMENSIONS, LANDSCAPING AND ADDITIONAL DETAILS.
3. BOUNDARY NOTE: BOUNDARY LOCATIONS ARE BASED ON FENCES ONLY. IT IS STRONGLY RECOMMENDED THAT AN IDENTIFICATION SURVEY BE DONE TO ESTABLISH TRUE BOUNDARIES.
4. EXISTING SERVICES NOTE:  
APPROVAL WILL NEED TO BE SOUGHT FROM RELEVANT AUTHORITIES FOR ANY EXISTING SERVICES TO BE RELOCATED.
5. SITE IS VEGETATED. COMPLETE REMOVAL OF ALL TREES LOCATED WITHIN THE BUILDING PLATFORM MUST BE REMOVED SO AS NOT TO ALLOW ANY FUTURE GROWTH.  
THIS REMOVAL PROCESS MUST INCLUDE THE BASE AND ALL MAJOR ROOT SYSTEMS OF EACH TREE. ANY VOIDS IN THE GROUND AFTER THE REMOVAL OF THE TREE MUST BE BACKFILLED WITH CLEAN MATERIAL TO A COMPACTION SIMILAR TO THE SURROUNDING NATURAL GROUND.

## CONTINUED:

6. SITE SURVEY NOTE: SITE SURVEY BY OTHERS.  
  
THE SURVEY DOESN'T COVERS GROUND LEVELS ON THE ADJACENT PROPERTY.  
IF ANY EXISTING RETAINING WALLS ARE ENCOUNTERED ALONG THE BOUNDARY AND THE LEVELS BOTH SIDES OF THE BOUNDARY DIFFER BY MORE THAN 100mm, CONTACT THIS OFFICE FOR FURTHER ADVICE.
7. COUNCIL GENERAL NOTE: ALL WORKS BEYOND THE PROPERTY BOUNDARY ARE TO BE TO COUNCILS REQUIREMENTS AND STANDARD DETAILS.
8. EXISTING BUILDINGS ON BLOCK NOTE:  
PRIOR TO THE COMMENCEMENT OF SITE EARTHWORKS, IT IS RECOMMENDED THAT ADDITIONAL SITE LEVELS BE TAKEN TO CONFIRM REQUIRED BENCH LEVEL ONCE ALL EXISTING STRUCTURES HAVE BEEN REMOVED OVER THE HOUSE SITE.
9. REFER TO ARCHITECTURAL SITE PLAN FOR ALL SET OUT DIMENSIONS, LANDSCAPING AND ADDITIONAL DETAILS.



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LEGEND:

SURFACE STORMWATER PIPE  
uPVC, DIAMETER AS SHOWN.  
GRADE AT 1% FALL.

375mm DIAMETER REINFORCED  
CONCRETE PIPE. CONNECTED TO  
STREET SYSTEM.  
GRADE AT 1% FALL.

NOTE:  
PROVIDE ADEQUATE PROTECTION OR COVER TO  
STORMWATER PIPES, WHERE SUBJECTED TO  
VEHICULAR LOADING.

100mm DIAMETER AG. DRAIN AS  
PER PERMEABLE PAVING DETAIL.  
GRADE AT 1% FALL.  
CONNECT TO SUMP S1.

S...

SUMP AS PER SCHEDULE.  
REFER TO DETAILS.

P...

PIT AS PER SCHEDULE.  
REFER TO DETAILS.

10.20

PAVING CONTOUR LINE LEVEL.

10.00

PAVING SPOT LEVEL.

9.86  
MEL.  
(COS.)

PAVING SPOT LEVEL.  
MATCH EXISTING LEVEL.  
(CHECK ON SITE).

10.5

EXISTING CONTOUR LINE.

10.44

EXISTING SPOT LEVEL.

K

450mm WIDE CONCRETE  
SPOON DRAIN.  
FALL IN DIRECTION OF  
ARROWS.

PERMEABLE PAVING AS PER  
DETAIL ON C3.

K

100mm HIGH KERB.

T.

UNDERGROUND RAINWATER  
TANK AS PER DETAIL ON C3.  
CONNECT ALL ROOF  
STORMWATER TO TANK. (REFER  
TO HYDRAULICS DRAWINGS).

TREE PROTECTION ZONE.  
DO NOT EXCAVATE BELOW BASE  
OF EXISTING PAVING. REFER TO  
DETAIL ON SHEET S3.

IRWIN LANE

UNLEY ROAD

SITEWORKS AND DRAINAGE PLAN.

SCALE 1:200

REFER TO ALL CIVIL  
SHEETS C1-C3.

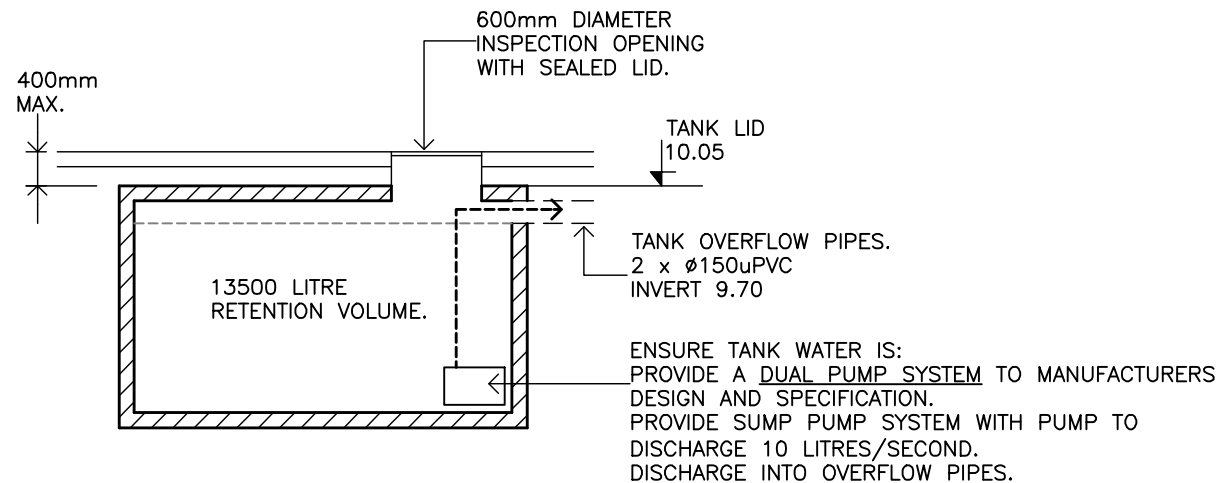
P6	G.P.	04.2025	LAYOUT AMENDED.
P5	G.P.	02.2025	DESIGN LEVELS AMENDED.
P4	G.P.	02.2025	LAYOUT AMENDED.
P3	G.P.	12.2024	FFL CHANGED, OUTLET S/W PIPE DIAM CHANGED
P2	G.P.	04.2023	FOR COUNCIL APPROVAL.
P1	G.P.	04.2023	FOR COUNCIL APPROVAL.
ISSUE:	CHECKED:	DATE:	REVISION:

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DESIGNED: G.P.	PROJECT: PROPOSED APARTMENTS 42-46 UNLEY ROAD, UNLEY. S.A.	DRAWING TITLE: SITEWORKS AND DRAINAGE PLAN.	
DRAWN: T.D.	CLIENT: OTELLO.		
CHECKED: G.P.	ORIGINAL SIZE: A3 SHEET SCALES: AS SHOWN	JOB No: PG23016	DRAWING No: C2
DATE: 04.2023			ISSUE: P6



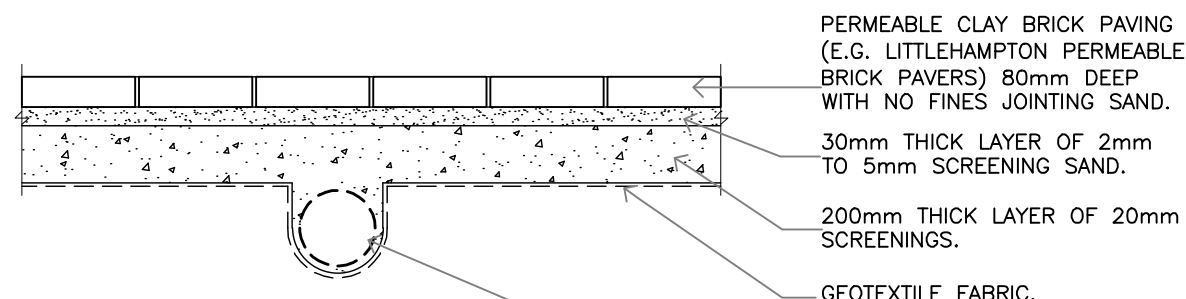
## DETENTION TANK DETAIL.

NTS.

NOTE: ALL DETAILS AS PER RELEVANT AUTHORITIES.

NOTE: PUMP SYSTEM TO COMPLY WITH AS/NZS 3500.3:2003 SECTION 9, 'PUMPED SYSTEMS.'

– THE INLET AND OVERFLOW OF THE TANK MUST BE FITTED WITH MOSQUITO PROOF, NON-DEGRADABLE SCREENS FORMED FROM 0.315mm DIAMETER MATERIAL AND HAVE A MINIMUM OF 6x7 OPENINGS PER SQUARE CENTIMETRE.

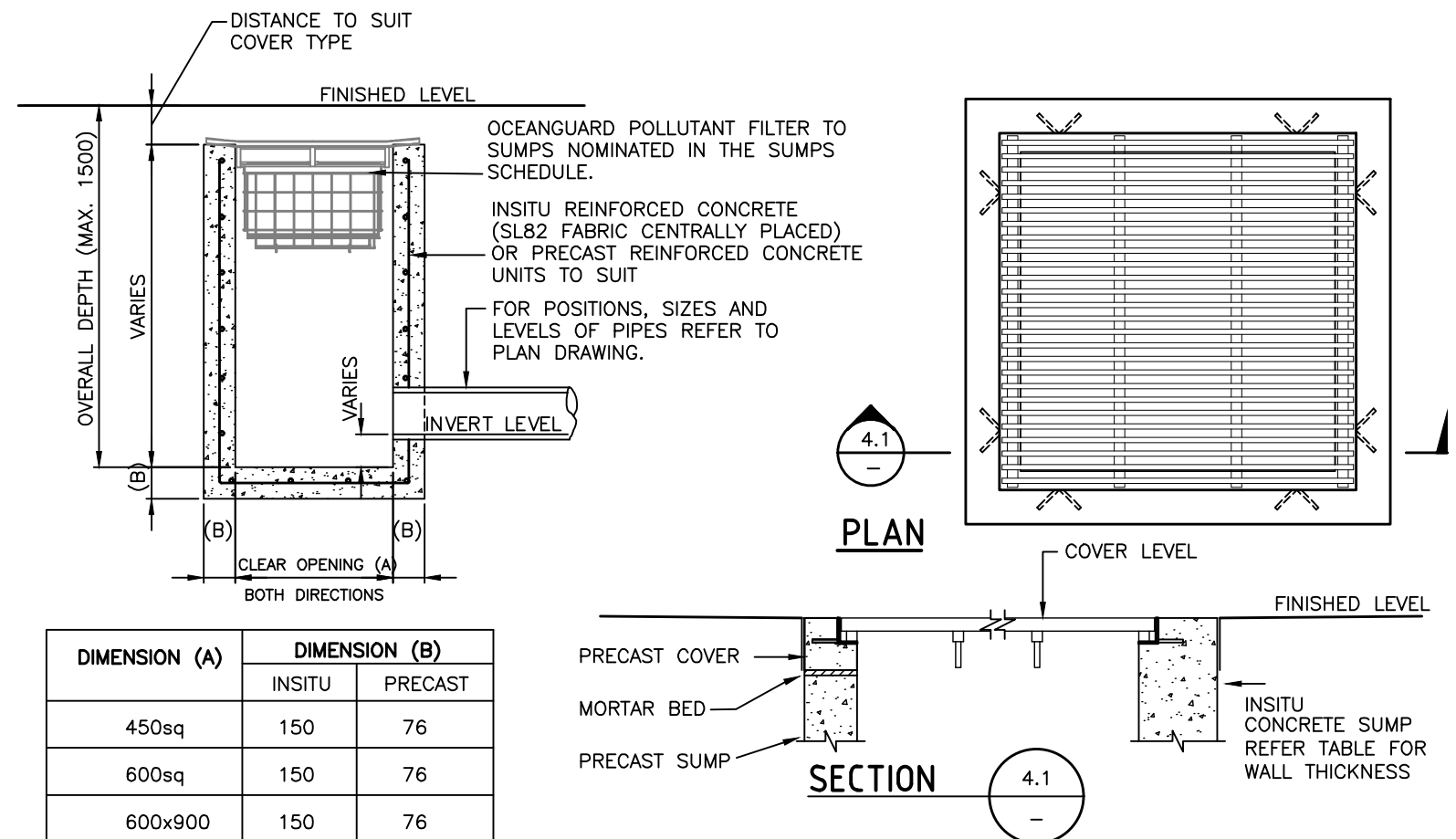


## TYPICAL DETAIL OF PERMEABLE PAVING FOR MEDIUM VEHICLE TRAFFIC.

SCALE 1:20  
(THIS DETAIL IS NOT APPLICABLE FOR TPZ AREA.)

## SUMP SCHEDULE:

SUMP NUMBER	TOP RL	OUTLET IL	INLET IL	SIZE	COVER	NOTES
S1	9.84 C.O.S.	9.10	9.35	450x450	CLASS D.	GRATED COVER. INSTALL OCEAN GUARD POLLUTANT FILTER TO OCEAN PROTECT SPECIFICATIONS.
P1	M.E.L.	C.O.S.	9.03	600x600	CLASS D.	SOLID COVER. SUMP TO BE CONSTRUCTED STRICTLY TO COUNCILS SPECIFICATIONS.



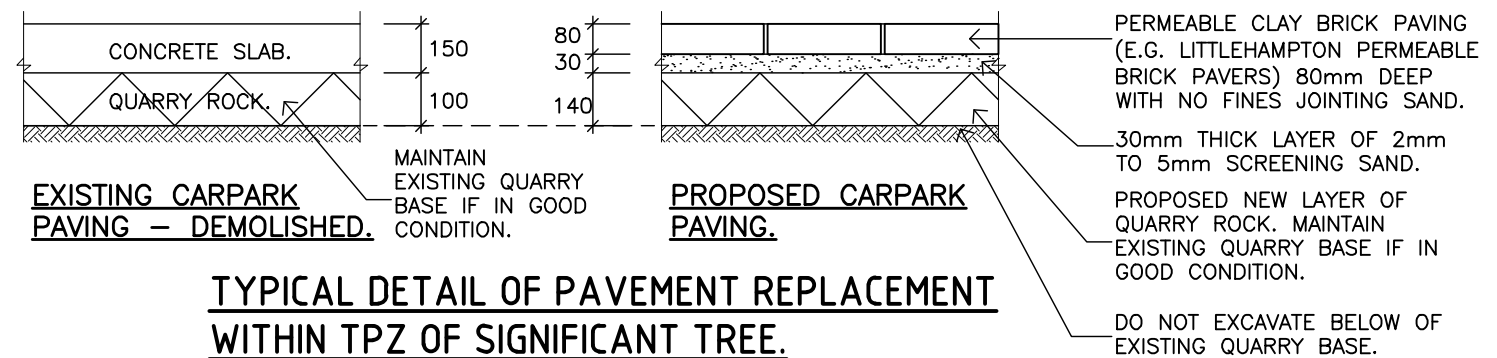
## NOTES:

1. THE GRATE AND FRAME SHALL BE AS SCHEDULED

## STORMWATER SUMP DETAIL

## NOTES: (FOR PRECAST UNITS)

- PENETRATIONS FOR PIPES SHALL BE APPROX 50 GREATER THAN THE O/D OF THE PIPE. PIPES SHALL BE FINISHED FLUSH WITH THE INTERNAL FACE OF THE SUMP. A STIFF MORTAR MIX OF 2:1 SAND:CEMENT SHALL BE PACKED INTO THE SPACE FROM BOTH SIDES OF THE STRUCTURE. THE INTERNAL FACE SHALL BE FINISHED SMOOTH AND A 150 THICK BAND OF CONCRETE SHALL BE POURED OUTSIDE THE SUMP TO SEAL THE PENETRATION
- WHERE SUMPS CONSIST OF MORE THAN ONE PRECAST UNIT THE JOINTS SHALL BE SEALED WITH BUTYL MASTIC SEALANT AROUND THE OUTSIDE AND A 3:1 SAND:CEMENT GROUT ON THE INSIDE OF THE SUMP.



## TYPICAL DETAIL OF PAVEMENT REPLACEMENT WITHIN TPZ OF SIGNIFICANT TREE.

SCALE 1:20

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P4	G.P.	04.2025	LAYOUT AMENDED.
P3	G.P.	12.2024	PERMEABLE PAVING CHANGED TO BRICK PAVER.
P2	G.P.	04.2023	FOR COUNCIL APPROVAL.
P1	G.P.	04.2023	FOR COUNCIL APPROVAL.
ISSUE:	CHECKED:	DATE:	REVISION:

0 1000 2000 3000 4000 5000  
MILLIMETRES  
A3 SHEET

## REFER TO ALL CIVIL SHEETS C1–C3.

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DESIGNED: G.P.	PROJECT: PROPOSED APARTMENTS 42–46 UNLEY ROAD, UNLEY. S.A.		DRAWING TITLE: NOTES AND DETAILS.	
DRAWN: T.D.	CLIENT: OTELLO.			
CHECKED: G.P.	ORIGINAL SIZE: A3 SHEET		DRAWING No: C3	
DATE: 04.2023	SCALES: AS SHOWN	JOB No: PG23016	ISSUE: P4	