

STORMWATER MANAGEMENT

GENERAL : UNLESS NOTED OTHERWISE

- G1 - DRAWINGS SHALL BE READ IN CONJUNCTION WITHV ALL OTHER WORKING DRAWINGS, SPECIFICATIONS AND ANY OTHER WRITTEN INSTRUCTIONS ISSUED DURING CONSTRUCTION. ALL DISCREPENCIES AND VARIATIONS SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- G2 - DURING CONSTRUCTION THE STRUCTURE AND ANY ADJACENT STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO OPART SHALL BE OVERSTRESSED.
- G3 - DIMENSIONS SHALL NOT BE OBTAINED BY SCALING OFF THIS DRAWING. ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THIS DRAWING SHALL BE CHECKED ON-SITE PRIOR TO THE COMMENCEMENT OF THE WORKS.
- G4 - THE CONTRACTOR IS RESPONSIBLE TO ESTABLISH THE LOCATION, SIZE AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS.
- G5 - ALL PIPES, JOINTS, VALVES, SUB-SOIL DRAINS ETC SHALL CONFORM, BE INSTALLED AND BACKFILLED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
- G6 - ALL BALCONIES AND ROOFS ARE TO INCORPORATE A SAFETY OVERFLOW
- G7 - NOTWITHSTANDING THE EXTENT AND LAYOUT OF DRAINAGE SHOWN ON THIS DRAWING, ADDITIONAL WORKS OR REMEDIATION MAY BE REQUIRED SHOULD UNDISCLOSED FEATURES OR ALTERED SITE CONDITIONS WARRANT IT.
- G8 - ADEQUATE SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO WORKS BEGINNING ON-SITE. ALL SEDIMENT CONTROL IS TO BE LOCATED WITHIN THE SITE BOUNDARY AND BE MAINTAINED DURING THE PERIOD OF CONSTRUCTION.
- G9 - ALL DISTURBED AREAS ARE TO BE STABILISED AND RESTORED IN ACCORDANCE WITH ARCHITECTURAL OR LANDSCAPE PLANS WHEN INSIDE THE BOUNDARY, AND IN ACCORDANCE WITH COUNCILS CIVIL WORKS POLICY TO COUNCIL SATISFACTION WHEN OUTSIDE THE SITE BOUNDARY.
- G10 - DRIVEWAY CROSSINGS AND FOOTPATHS ARE SHOWN INDICATIVELY AND ARE TO BE CONSTRUCTED TO COUNCIL SPECIFICATIONS.
- G11 - ALL PROPOSED DRAINAGE STRUCTURES INCLUDING RETAINING WALLS, PITS, TANKS AND DETENTION BASINS BUILT ADJACENT OR OVER UNDERGROUND SERVICES, EASEMENTS OR SEWER ARE TO BE CONSTRUCTED TO THE RELEVANT AUTHORITY REQUIREMENTS.

DESIGN SUMMARY NORTHERN BEACHES COUNCIL (PITTWATER)

SITE AREA	836.1 m2 (Survey)
PREDEVELOPMENT IMPERVIOUS AREA	422.5 m2 (51%)
POST DEVELOPMENT IMPERVIOUS AREA	451.0 m2 (54%)
PROPOSED CHANGE IN IMPERVIOUS AREA	28.5 m2 (3.0%)

THIS IS A NEW DWELLING DEVELOPMENT  
THIS IS A LOW LEVEL PROPERTY  
THERE IS AN OVERALL INCREASE IN IMPERVIOUS AREA  
WITH EXISTING STORMWATER DISCHARGE TO THE REAR VIA LEVEL SPREADER

IN ACCORDANCE WITH COUNCIL POLICY SECTION 5.5  
DISCHARGE TO EXISTING SYSTEM VIA GRAVITY NOT ACHIEVABLE (SECTION 5.5.1.2.1)  
DISCHARGE TO EASEMENT NOT ACHIEVABLE - EASEMENT REFUSAL (SECTION 5.5.1.2.2)  
DISCHARGE TO ABSORPTION NOT SUITABLE - SHALLOW SHALE (SECTION 5.5.1.2.3)  
DISCHARGE VIA LEVEL SPREADER ACHIEVABLE (SECTION 5.5.1.2.4)

OSD IS REQUIRED FOR THIS DEVELOPMENT - LOW LEVEL PROPERTY

STORMWATER MANAGEMENT FOR DA ONLY

- DA1 - THIS PLAN IS ISSUED FOR THE PURPOSES OF COUNCIL ENGINEER REVIEW AND DEVELOPMENT APPROVAL WITH RESPECT TO COUNCILS STORMWATER MANAGEMENT POLICY.
- DA2 - THIS DRAWING IS INTENDED TO BE SCHEMATIC AND NOT FOR USED FOR CONSTRUCTION
- DA3 - FINAL LOCATION OF ALL DOWNPIPES, PITS, RAINWATER TANK ELEMENTS AND SUBSOIL PIPES ARE TO BE CONFIRMED DURING CONSTRUCTION CERTIFICATE STAGE (CC) OF THE PROPOSED DEVELOPMENT
- DA4 - DIMENSIONS, LOCATION, LEVELS AND VOLUMES OF RAINWATER AND ON-SITE DETENTION TANKS ARE TO BE GENERALLY AS PER THE COUNCIL DA APPROVED DESIGN. ANY CHANGES AT CC STAGE ARE SUBJECT TO ENGINEER APPROVAL AND MAY REQUIRE COUNCIL RESUBMISSION FOR COUNCIL ENGINEERING APPROVAL.

SEEPAGE, LANDSCAPING AND SUBSOIL DRAINAGE

- LD1 - ANY EXPOSED CUT TO BE STABILISED AND DRAINED IN ACCORDANCE WITH GEOTECHNICAL ENGINEERING ADVICE AND DRAINAGE INSTALLED IN ACCORDANCE WITH AS3500.3.
- LD2 - ANY NUISANCE SEEPAGE FLOWS, OVERLAND FLOWS OR WATER TABLE ENCOUNTERED TO BE CAPTURED AND RE-DIRECTED IN ACCORDANCE WITH GEOTECHNICAL, HYDROLOGIC AND HYDRAULIC ENGINEERS REQUIREMENTS.
- LD3 - ALL LANDSCAPED AREAS LOCATED OVER CONCRETE SLABS OR ADJACENT TO WALLS SERVICING A HABITABLE AREA TO BE EQUIPPED WITH WATERPROOFING MEMBRABE, DRAINAGE CELL, GEOFABRIC AND A SUITABLE MEANS OF OVERFLOW IN THE EVENT OF BLOCKAGE TO THE PRIMARY DRAINAGE SYSTEM.

DESIGN SUMMARY NORTHERN BEACHES COUNCIL (PITTWATER)  
(CONTINUED)  
FROM DRAINS MODELLING

DESIGN AREA	836.1 m2
PERMITTED SITE DISCHARGE RATES	
PSD 20% AEP (GREENFIELDS)	18 L/s
PSD 5% AEP (GREENFIELDS)	29 L/s
PSD 1% AEP (GREENFIELDS)	41 L/s

PROPOSED 100% ROOF AREA TO OSD  
AREA TO OSD 324.1 m2 (100% ROOF IMPERVIOUS)  
BYPASS OSD 512.0 m2 (33.0% IMPERVIOUS PAVING)

BYPASS 20% AEP 13 L/s	OSD OUT 20% AEP 3 L/s	POST DEV 20% AEP 16 L/s
BYPASS 5.0% AEP 19 L/s	OSD OUT 5.0% AEP 4 L/s	POST DEV 5.0% AEP 23 L/s
BYPASS 1.0% AEP 27 L/s	OSD OUT 1.0% AEP 5 L/s	POST DEV 20% AEP 32 L/s

RAINWATER TANK PROVIDED 16,000L  
(BASIX 6000L, 10,000L EXCESS)  
RWT OFFSET (50% MAX) 5000 L  
OSD REQUIRED 10,330 L  
DEDICATED OSD PROVIDED 5500 L  
OSD ACHIEVED INC RWT OFFSET 10,500 L  
OSD ACHIEVED > OSD REQUIRED

PRE DEVELOPMENT (GREENFIELDS) DISCHARGE ESSENTIALLY MATCHES POST DEVELOPMENT DISCHARGE  
REFER TO OSD TANK DETAILS FOR ORIFICE PLATE AND LEVEL SPREADER DETAILS

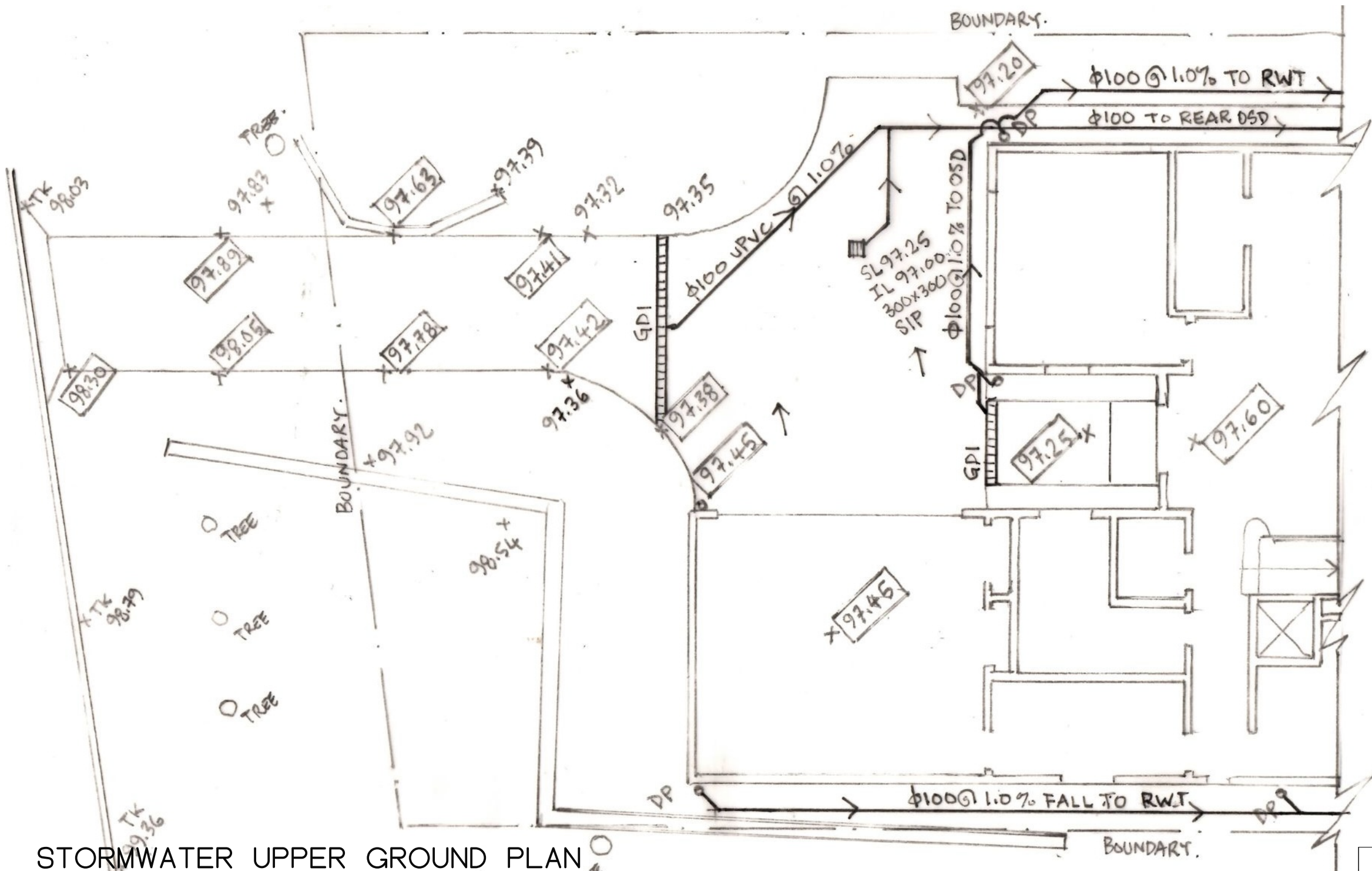
STORMWATER MANAGEMENT BY TLA ENGINEERS

B	15/5/2025	ISSUE FOR DA		
A	2/5/2025	ISSUE FOR DA		
REV	ISSUE DATE	DESCRIPTION		
REVISIONS				

5	4	3	2	1
Checked by	Date	Approved by	Date	
		LG		
Project/Builder/Designer <b>PROPOSED NEW DWELLING BY BEACHES GROUP</b>		Client Name <b>SANDY &amp; SUE PROBERT</b>		
Project Address <b>31 RALSTON ROAD, PALM BEACH</b>		Sheet Title <b>STORMWATER NOTES &amp; COUNCIL SUMMARY</b>		
Building Designer <b>BEACHES GROUP</b>		Building Designer Contact <b>02 9940 2229</b>		
ACN <b>666 057 582</b>		Email <b>g@tlaengineers.com.au</b>		
Address <b>Killarney Heights NSW</b>		Phone Number <b>0409446570</b>		
Website <b>www.tlaengineers.com.au</b>		Job Ref/Sheet/Rev <b>251131 SW01 B</b>		
Authorisation Luke Gerkens (Engineer) BE(Civil) MIEAust MER				

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# STORMWATER UPPER GROUND PLAN

SCALE 1:100

KEY	DESCRIPTION
	DP DENOTES 100 Ø DOWNPIPE TO OSD
	SURFACE GRATED DRAIN 150x100 DEEP & BASE AT 1.0% FALL U.N.O.
	100 DIA SEWER GRADE uPVC AT MIN. 1.0% FALL U.N.O.
	SURFACE INLET PIT (SIP) GRATED U.N.O. SURFACE LEVEL (SL) INVERT LEVEL (IL)

KEY	DESCRIPTION
	RWT DENOTES RAINWATER RE-USE (BASIX 6000L MIN.) 16000L DESIGNED
	FIRST FLUSH DEVICE (UNDERGROUND) 300 Ø PIPE REFER TO DETAIL
	100 DIA SEWER GRADE uPVC SUSPENDED LINE REFER TO DETAILS
	90 Ø AG-LINE FOR SUBSOIL DRAINAGE FOR RETAINING WALLS REFER TO DETAIL

KEY	DESCRIPTION
	PROPOSED SPOT LEVEL (RL)
	200x200 FLOOR DRAIN. REFER TO DETAIL.
	DIRECTION OF FALL 1.0% FALL U.N.O.
	INSPECTION RISER (DIA TO MATCH PIPE)

REV	ISSUE DATE	DESCRIPTION
B	15/5/2025	ISSUE FOR DA
A	2/5/2025	ISSUE FOR DA
REV	ISSUE DATE	DESCRIPTION
REVISIONS		

Project/Builder/Designer	Scale 1:100	Drawing Size A3
Client Name	Job No.	251131
Sheet Title	Sheet	SW03
Building Designer	Rev	B
BEACHES GROUP		
Building Designer Contact		
02 9940 2229		

## PROPOSED NEW DWELLING BY BEACHES

Client Name SANDY & SUE PROBERT  
Project Address 31 RALSTON ROAD, PALM BEACH

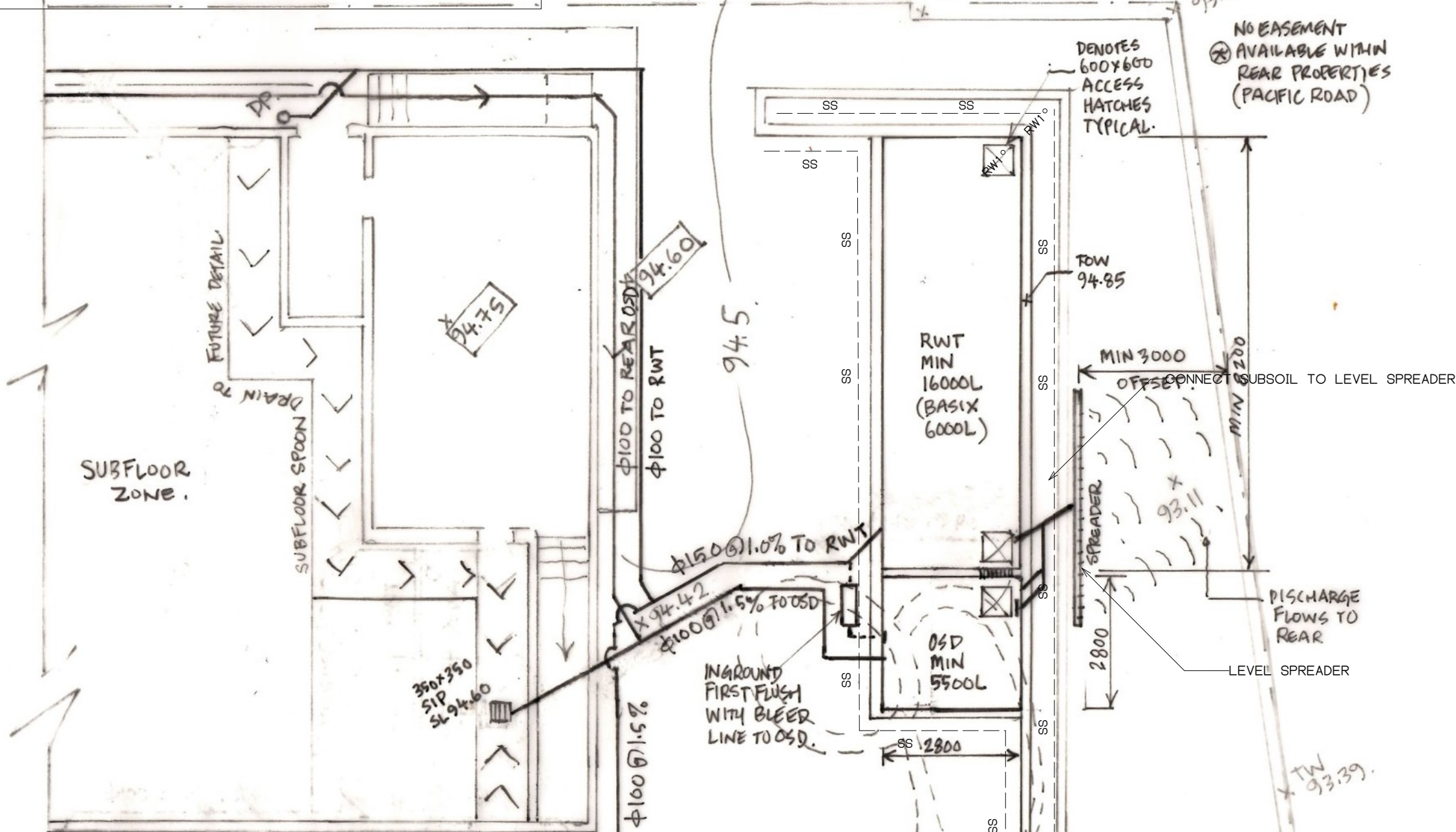
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Checked by	Date	4
Approved by	Date	3
LG		2
		1
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Job Ref/Sheet/ Rev	251131 SW03 B	

EXISTING DRAINAGE NOTE:-  
BUILDER PLUMBER TO INSPECT & CAMERA TEST EXISTING  
DRAINAGE AND CONFIRM GENERAL COMPLIANCE WITH AS3500.3  
AND COUNCIL POLICY. UPGRADE AS REQUIRED



## STORMWATER LOWER GROUND PLAN

SCALE 1:100

KEY	DESCRIPTION
	DP DENOTES 100 Ø DOWNPIPE TO OSD
	SURFACE GRATED DRAIN 150x100 DEEP & BASE AT 1.0% FALL U.N.O.
	100 DIA SEWER GRADE uPVC AT MIN. 1.0% FALL U.N.O.
	SURFACE INLET PIT (SIP) GRATED U.N.O. SURFACE LEVEL (SL) INVERT LEVEL (IL)

KEY	DESCRIPTION
	RWT DENOTES RAINWATER RE-USE REFER TO BASIX (MIN 16000L DESIGNED)
	OSD DENOTES ON-SITE DETENTION DIRECTLY IN-LINE WITH RWT SEE DETAIL
	100 DIA SEWER GRADE uPVC SUSPENDED LINE REFER TO DETAILS
	90 Ø AG-LINE FOR SUBSOIL DRAINAGE FOR RETAINING WALLS REFER TO DETAIL

KEY	DESCRIPTION
	PROPOSED SPOT LEVEL (RL)
	FIRST FLUSH DEVICE REFER TO DETAIL
	DIRECTION OF FALL 1.0% FALL U.N.O.
	INSPECTION RISER (DIA TO MATCH PIPE)

REV	ISSUE DATE	DESCRIPTION
A	2/5/2025	ISSUE FOR DA

### REVISIONS

Scale 1:100

Drawing Size A3

Job No.

251131

Sheet

SW04

Rev

A

## PROPOSED NEW DWELLING BY BEACHES

Client Name  
**SANDY & SUE PROBERT**

Project Address  
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## STORMWATER LOWER GROU

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Job Ref/Sheet/ Rev  
**251131 SW04 A**





SCALE = 1 : 20



PIT DIMENSION REFER TO PLAN

PIT SURFACE GRATED LID SL REFER TO PLAN

PIT OUTLET DISCHARGE DOWNSTREAM REFER TO PLAN

MIN 100

INLET IL REFER TO PLAN

PIT INLET FROM UPSTREAM REFER TO PLAN

INVERT

MIN 4 x 20 DIAMETER HOLES ON A 200 DEEP GRAVEL BED WRAPPED IN BIDEM A24 GEOFABRIC OR SIMILAR

PRECAST OR CAST INSITU PIT

REFER STORMWATER NOTES


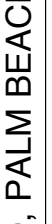
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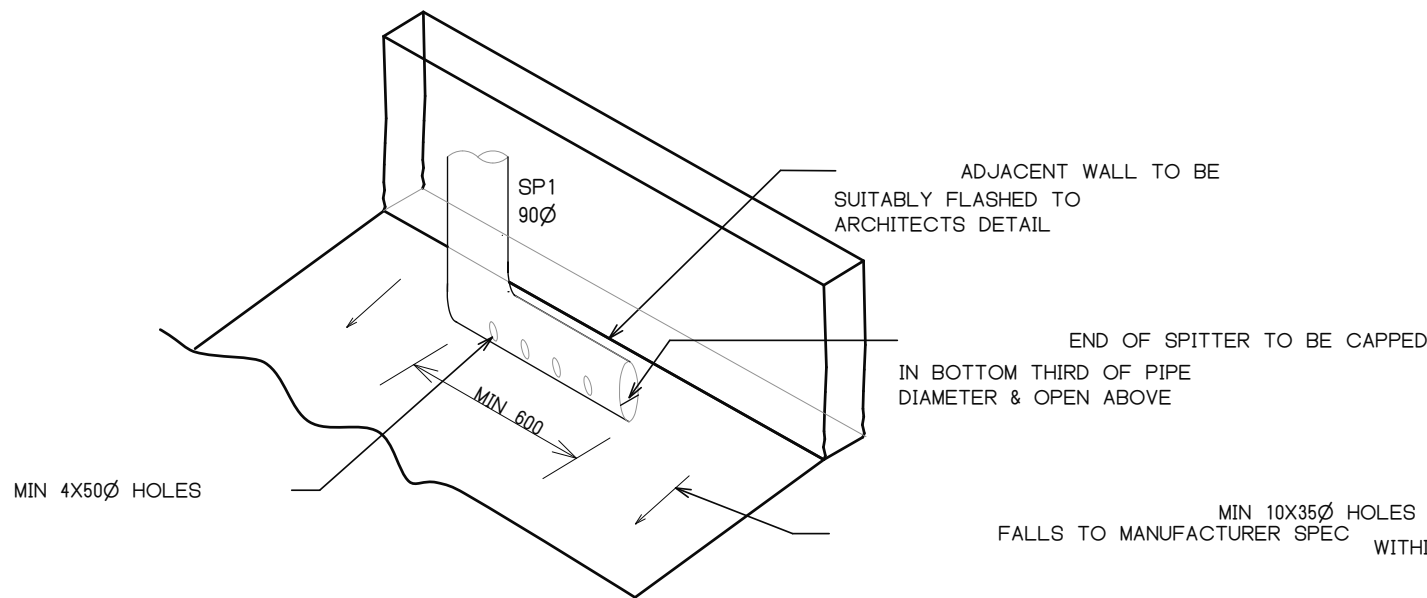
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FLOOR DRAIN - FD

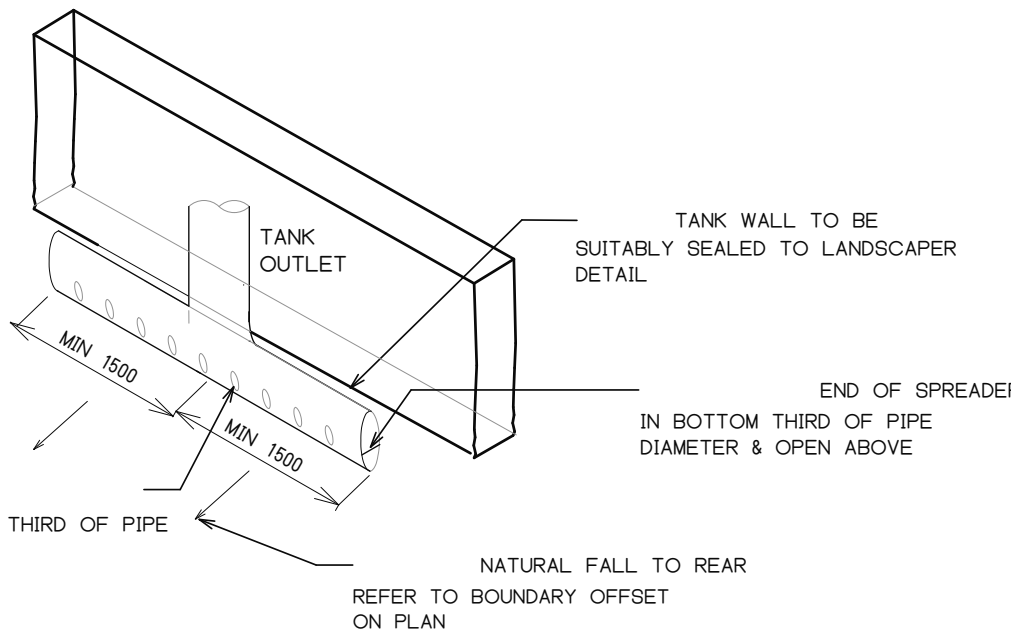
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	Sheet	SW05	Rev A

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Client Name		4	
<b>SANDY &amp; SUE PROBERT</b>			
Project Address		3	
<b>31 RALSTON ROAD, PALM BEACH</b>			
Sheet Title		2	
<b>STORMWATER DETAILS 1/2</b>			
Beaches Group		1	
		TLA Engineers ACN 057 582 <a href="http://www.tlaengineers.com.au">www.tlaengineers.com.au</a>	
Beaches Group contact 08 9490 2222		Address: Heights NSW Phone: 0406 446570 <a href="http://www.tlaengineers.com.au">www.tlaengineers.com.au</a>	
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Approved by	Date		
LG			
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		<b>251131 SW05 A</b>	



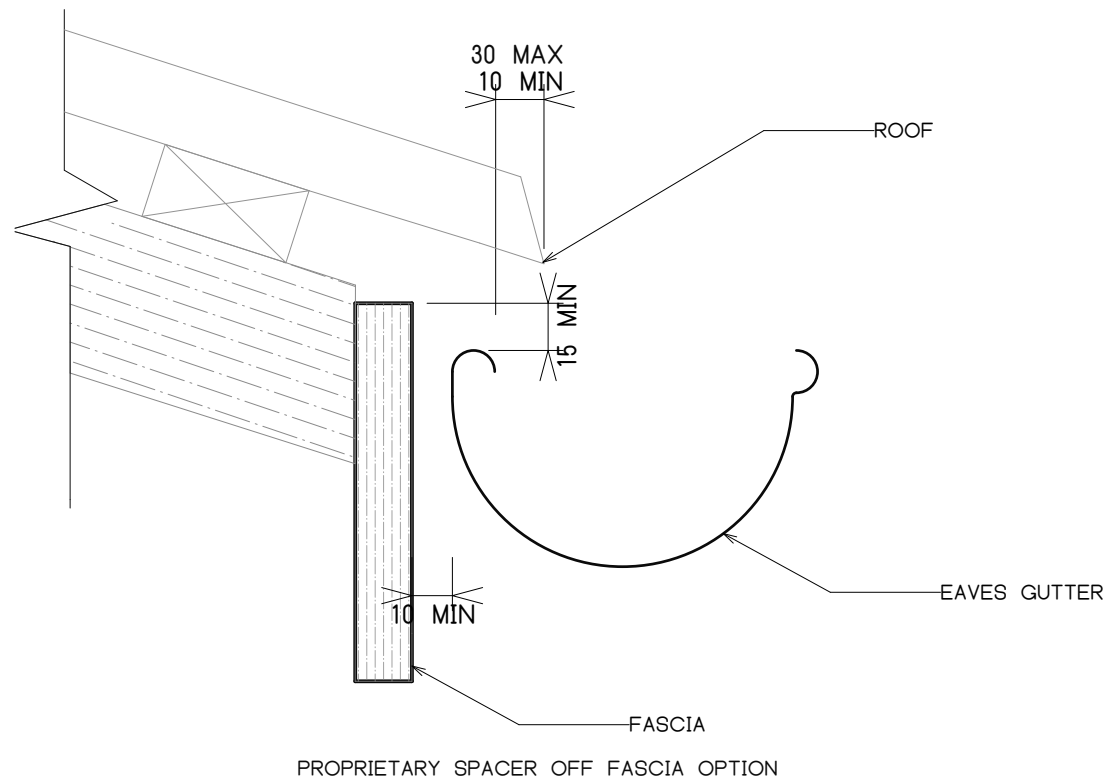
SP1 SPITTER DETAIL

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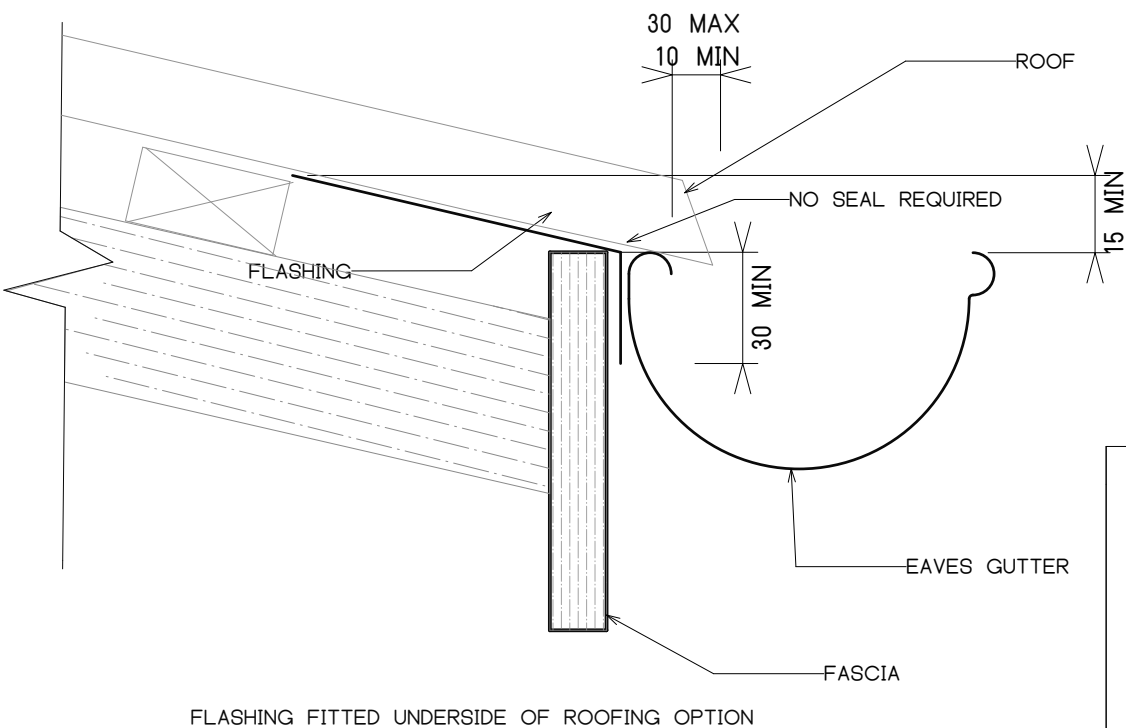
OSD TANK SPREADER DETAIL

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EAVES GUTTER EG1 OVERFLOW

NTS



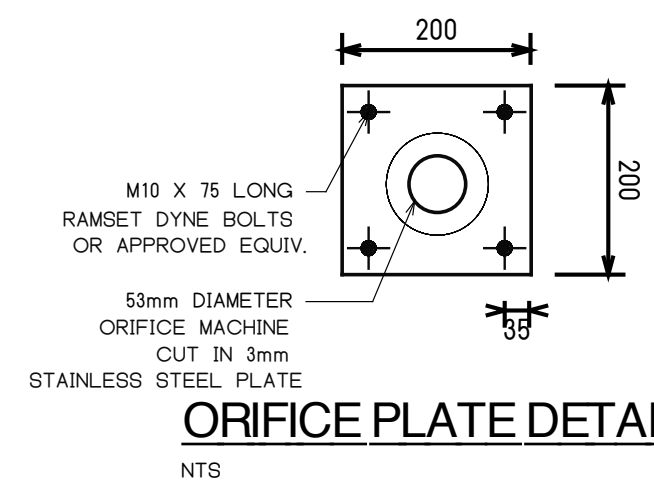
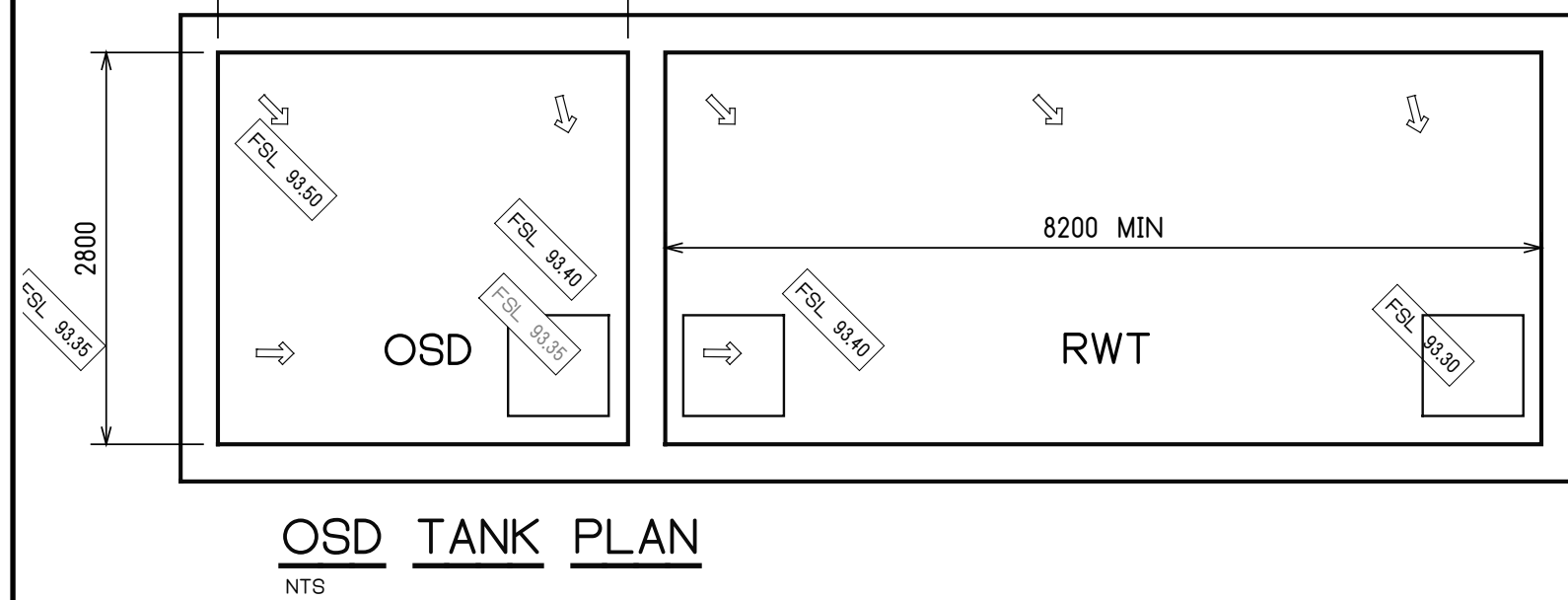
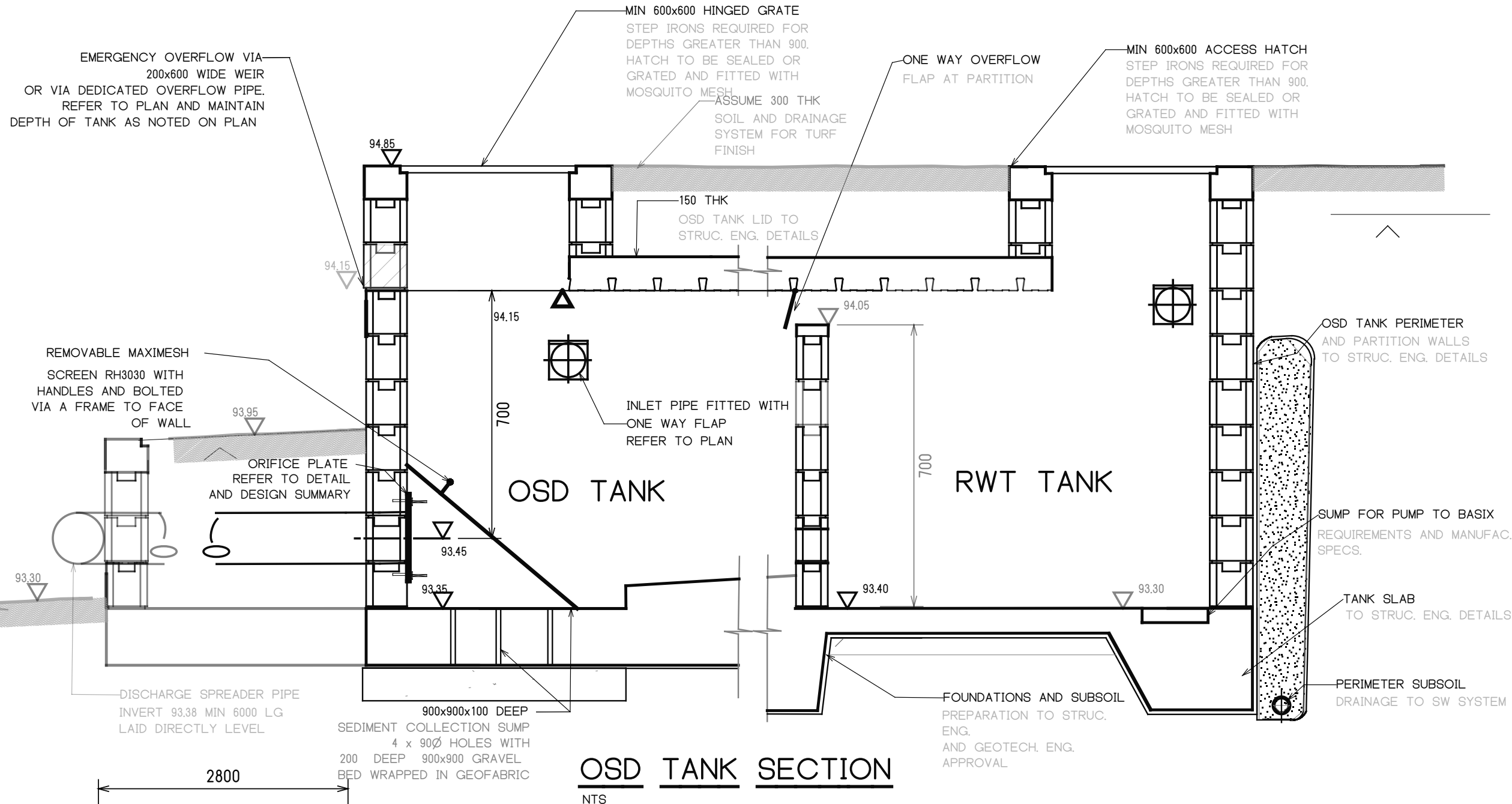
EAVES GUTTER EG1 OVERFLOW

NTS

REV	ISSUE DATE	DESCRIPTION
A	2/5/2025	ISSUE FOR DA

REVISIONS	Scale	Drawing Size
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	Job No.	251131
	Sheet	SW06
	Rev	A

Project/Builder/Designer	Client Name	Sheet Title	Building Designer	Building Designer Contact
PROPOSED NEW DWELLING BY BEACHES	SANDY & SUE PROBERT	STORMWATER DETAILS	BEACHES GROUP	02 9940 2229
Project Address	31 RALSTON ROAD, PALM BEACH	TLA Engineers	ACN 656 057 582	Address Klamey Heights NSW
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			Scale	Drawing Size
B	15/5/2025	ISSUE FOR DA	1:1	A3
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Job No.			251131	
Sheet			SW07	Rev B

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Job Ref/Sheet/Rev 251131 SW07 B

Project Address  
31 RALSTON ROAD, PALM BEACH

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STORMWATER OSD TANK DETAILS

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