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, EASMEMENTS OR SEWER ARE TO BE CONSTRUCTED TO THE RELEVANT AUTHORITY REQUIREMENTS.

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 (WARRINGAH)

SITE AREA 609.6 m2 (Survey)
DEVELOPMENT DESIGN AREA 187.0 m2 (Rear yard)
PREDEVELOPMENT IMPERVIOUS AREA 52.3 m2 (28%)
POST DEVELOPMENT IMPERVIOUS AREA 73.9 m2 (47%)

THIS IS A LOW LEVEL PROPERTY SITE WITHOUT A STORMWATER EASEMENT
EASEMENTS HAVE BEEN REFUSED BY REAR NEIGHBOURS REFER TO SIGNED LETTERS

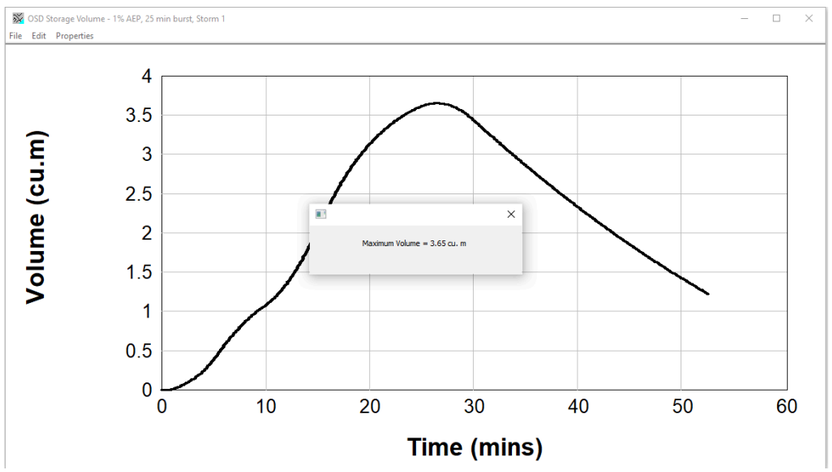
THIS IS AN ALTERATIONS AND ADDITIONS DEVELOPMENT
WITH A SWIMMING POOL AND CABANA TO REAR OF THE SITE
THE SWIMMING POOL RUNOFF WILL BE DIRECTED TO SEWER (POOL AREA 32 m2)

OSD IS REQUIRED FOR THIS DEVELOPMENT
A MINIMUM OF 144.0 m2 OF ROOF AREA IS TO BE DIRECTED TO THE OSD

DESIGN AREA WITH POOL EXCLUDED 155 m2
PSD 20% AEP (GREENFIELDS) 4 L/s
POST DEVELOPMENT OSD 1.0% AEP DISCHARGE 3 L/s
POST DEVELOPMENT BYPASS 1.0% 1 L/s
PRE DEVELOPMENT 20% AEP MATCHES POST DEVELOPMENT 1.0% AEP

OSD DESIGN 3.65 m3 (3650 L)
APPLY RWT TANK OFFSET (BASIX 1662L) 1.62 L (50% OR 1825L MAX)
OSD REQUIRED 2.03 L (2030 L)
OSD PROVIDED 3.12 m3 (3120L)

BASIX REQUIREMENTS MIN 1662L (2100L PROVIDED) WITH 140 m2 ROOF AREA DIRECTED TO TANK WITH PLUMBING TO TAP WITH 10m OF SWIMMING POOL



DRAINS MODELLING OUTPUT; 1.0% AEP; OSD REQUIRED 3.65 m3

STORMWATER MANAGEMENT BY TLA ENGINEERS

REV	ISSUE DATE	DESCRIPTION
-	-	
-	-	
A	31/1/2025	ISSUE FOR DA
-	-	

REVISIONS

Project/Builder/Designer: ALTERATIONS & ADDITIONS BY BEACHES GROUP
Client Name: GREGORY AND MELINDA WILL
Project Address: 33 MARLBOROUGH ST, FRESHWATER
Sheet Title: STORMWATER NOTES & COUNCIL SUMMARY
Building Designer: BEACHES GROUP
Building Designer Contact: 02 9940 2229

TLA Engineers
Address: Killarney Heights NSW
Phone Number: 0409446570
ACN 666 057 582
Email: lg@tlaengineers.com.au
Website: www.tlaengineers.com.au

Authorisation Luke Gerkens [Engineer] BE(Civil) MIEAust NER

Checked by: -
Approved by: LG
Date
Date

Job Ref./Sheet/Rev: 244091 SW01 A

Scale 1:1
Drawing Size A3
Job No. 244091
Sheet SW01
Rev A

EASEMENT REFUSAL NOTE:-
THE REAR NEIGHBOURING PROPERTY HAS BEEN APPROACHED IN RELATION TO OBTAINING A STORMWATER EASEMENT THROUGH THE PROPERTY. THE REQUEST FOR AN EASEMENT HAS BEEN REFUSED. A SIGNED LETTER FROM BOTH REAR NEIGHBOURS, 14 WAIWERA AVENUE AND 16 WAIWERA AVENUE, ACCOMPANIES THIS DA SUBMISSION.

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

ON-SITE DETENTION DESIGN AREA NOTE:-
THE PROPOSED DEVELOPMENT IS CONFINED TO THE REAR YARD. THE PROPOSED SWIMMING POOL RUNOFF IS DIRECTED TO THE SEWER AND IS EXCLUDED FROM THE STORMWATER RUNOFF CALCULATION. THE DESIGN REQUIRES A MINIMUM OF 144.0 m2 OF ROOF AREA TO BE DIRECTED TO THE RAINWATER & ON-SITE DETENTION TANKS REFER TO ROOF PLANS FOR EXTENTS. REFER TO COUNCIL DESIGN SUMMARY ON SW01 FOR DESIGN CALCULATIONS AND DRAINS MODELLING RESULTS

DISCHARGE VIA STORMWATER EASEMENT NOT ACHIEVABLE. REFER TO EASEMENT REFUSAL NOTE

EXISTING STORMWATER DRAINAGE
REFER TO EXISTING DRAINAGE NOTE
UPGRADE S REQUIRED

EXISTING DWELLING DRAINAGE TO THE FRONT OF DWELLING REMAINS UNCHANGED. UPGRADE AS REQUIRED
REFER TO EXISTING DRAINAGE NOTE

EXISTING STORMWATER DRAINAGE
REFER TO EXISTING DRAINAGE NOTE
UPGRADE S REQUIRED

ON-SITE DETENTION DESIGN AREA FOR DEVELOPMENT
187 m2
(32 m2 POOL EXCLUDED)
REFER TO NOTE

RENDERED GARAGE
TILE ROOF

No. 33
2 STOREY
RENDERED HOUSE
TILE ROOF

STORMWATER GROUND PLAN

SCALE 1:100

KEY	DESCRIPTION
EP1-EP3 DP11-DP12	EP DENOTES EXISTING DOWNPIPE TO RWT DP DENOTES GAR. 90Ø DOWNPIPE TO RWT
DP21	DP DENOTES CABANA 90Ø DOWNPIPE TO RWT
100Ø @ 1.0%	100 DIA SEWER GRADE uPVC AT MIN. 1.0% FALL U.N.O.

KEY	DESCRIPTION
OSD RWT	RWT DENOTES BASIX RAINWATER RE-USE OSD DENOTES ON-SITE DETENTION
FF	FIRST FLUSH DEVICE (UNDERGROUND) 300 Ø PIPE REFER TO DETAIL
100Ø(C)	100 DIA SEWER GRADE uPVC CHARGED LINE REFER TO DETAILS
TOPS SIP	SURFACE INLET PIT (SIP) GRATED U.N.O. SURFACE LEVEL (SL) INVERT LEVEL (IL)

KEY	DESCRIPTION
	OSD DESIGN AREA REFER TO NOTE
00.00	PROPOSED SPOT LEVEL (RL)
	DIRECTION OF FALL 1.0% FALL U.N.O.
IR	INSPECTION RISER (DIA TO MATCH PIPE)
SD1	SPREADER DRAIN REFER TO DETAIL

REV	ISSUE DATE	DESCRIPTION
-	-	-
-	-	-
A	31/1/2025	ISSUE FOR DA
-	-	-

Checked by -
Approved by LG
Date
Date

Authorisation Luke Gerkens [Engineer] BE(civil) MIEAust NER

Job Ref/Sheet/Rev 244091 SW02 A

Project/Builder/Designer
ALTERATIONS & ADDITIONS BY BEACHES GROUP

Client Name
GREGORY AND MELINDA WILL

Project Address
33 MARLBOROUGH ST, FRESHWATER

Sheet Title
STORMWATER GROUND FLOOR PLAN

Building Designer
BEACHES GROUP

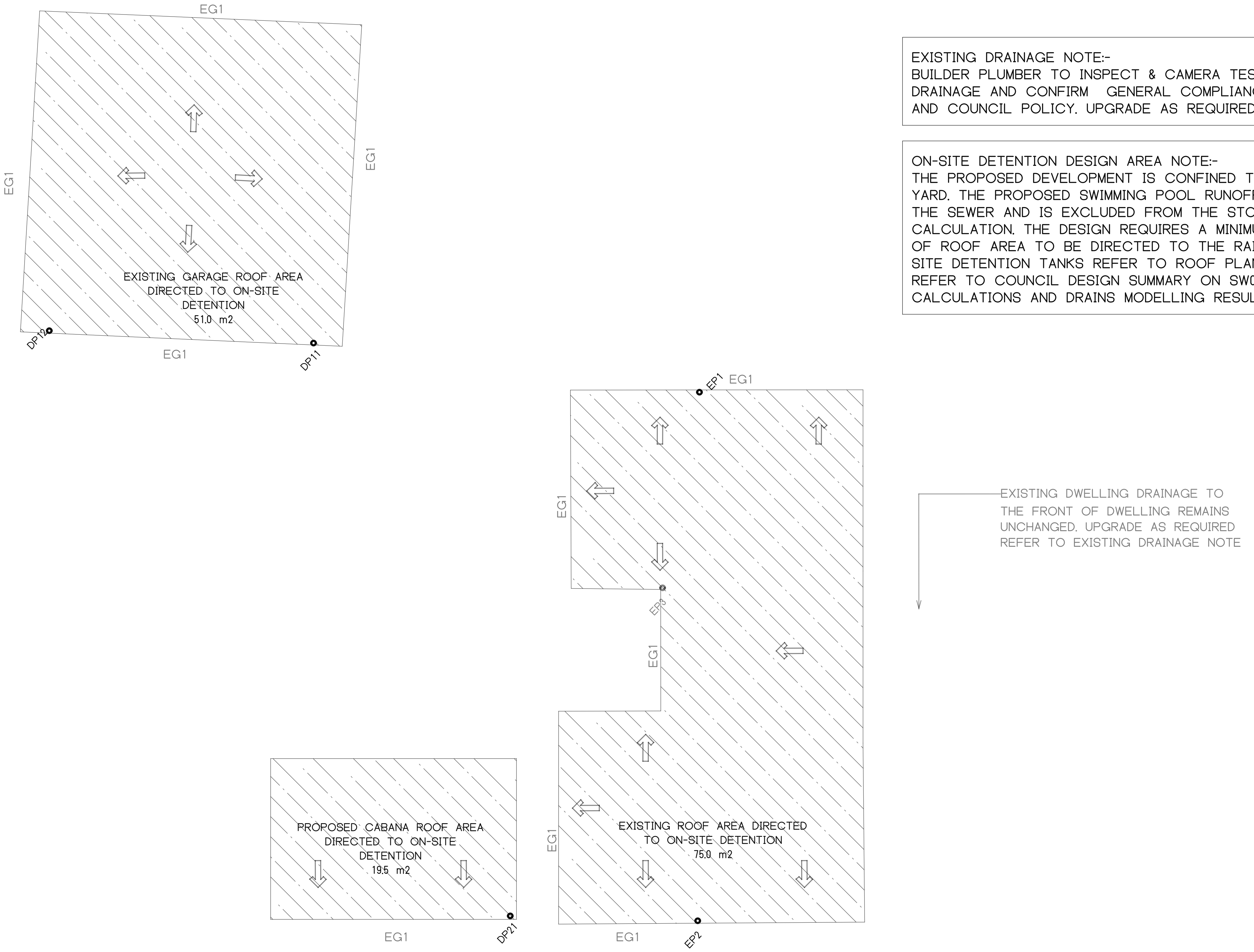
Building Designer Contact
02 9940 2229

TLA Engineers
Address Killarney Heights NSW
Phone Number 0409446570
ACN 656 057 582
Email lg@tlaengineers.com.au
Website www.tlaengineers.com.au

Scale 1:100
Drawing Size A3
Job No. 244091
Sheet SW02
Rev A

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

ON-SITE DETENTION DESIGN AREA NOTE:-
THE PROPOSED DEVELOPMENT IS CONFINED TO THE REAR YARD. THE PROPOSED SWIMMING POOL RUNOFF IS DIRECTED TO THE SEWER AND IS EXCLUDED FROM THE STORMWATER RUNOFF CALCULATION. THE DESIGN REQUIRES A MINIMUM OF 144.0 m2 OF ROOF AREA TO BE DIRECTED TO THE RAINWATER & ON-SITE DETENTION TANKS REFER TO ROOF PLANS FOR EXTENTS. REFER TO COUNCIL DESIGN SUMMARY ON SW01 FOR DESIGN CALCULATIONS AND DRAINS MODELLING RESULTS



STORMWATER ROOF PLAN

SCALE 1:100

KEY	DESCRIPTION
EP1-EP2 DP11-DP12	EP DENOTES EXISTING DOWNPIPE TO RWT DP DENOTES GAR. 90Ø DOWNPIPE TO RWT
DP21	DP DENOTES CABANA 90Ø DOWNPIPE TO RWT
100Ø @ 1.0%	100 DIA SEWER GRADE uPVC AT MIN. 1.0% FALL U.N.O.

KEY	DESCRIPTION
OSD RWT	RWT DENOTES BASIX RAINWATER RE-USE OSD DENOTES ON-SITE DETENTION
FF	FIRST FLUSH DEVICE (UNDERGROUND) 300 Ø PIPE REFER TO DETAIL
100Ø(C)	100 DIA SEWER GRADE uPVC CHARGED LINE REFER TO DETAILS
EG1	EAVES GUTTER MIN CROSS SECTION AREA 9000 mm2

KEY	DESCRIPTION
	OSD DESIGN AREA REFER TO NOTE
00.00	PROPOSED SPOT LEVEL (RL)
	DIRECTION OF FALL 1.0% FALL U.N.O.
IR	INSPECTION RISER (DIA TO MATCH PIPE)

REV	ISSUE DATE	DESCRIPTION
A	31/1/2025	ISSUE FOR DA
-	-	-
-	-	-

REVISIONS

Project/Builder/Designer: ALTERATIONS & ADDITIONS BY BEACHES GROUP

Client Name: GREGORY AND MELINDA WILL

Project Address: 33 MARLBOROUGH ST, FRESHWATER

Sheet Title: STORMWATER ROOF PLAN

Building Designer: BEACHES GROUP

Checked by - Date
Approved by LG Date

Authorisation Luke Gerkens (Engineer) BE(Civil) MIEAust NER

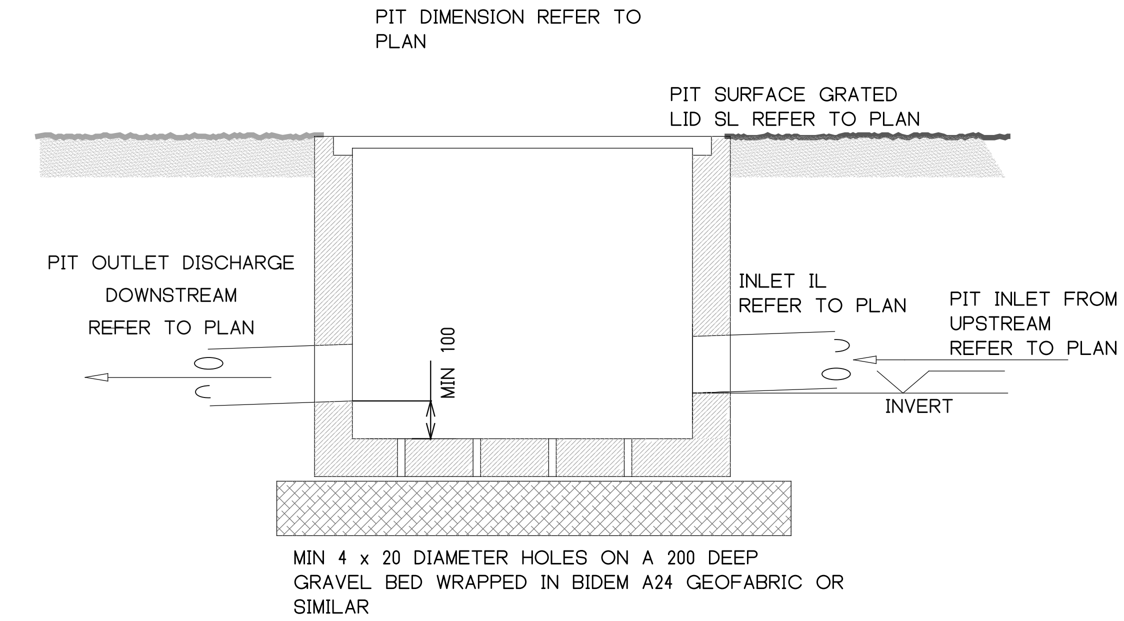
TLA Engineers

Scale 1:100 | Drawing Size A3

Job No. 244091

Sheet SW03 | Rev A

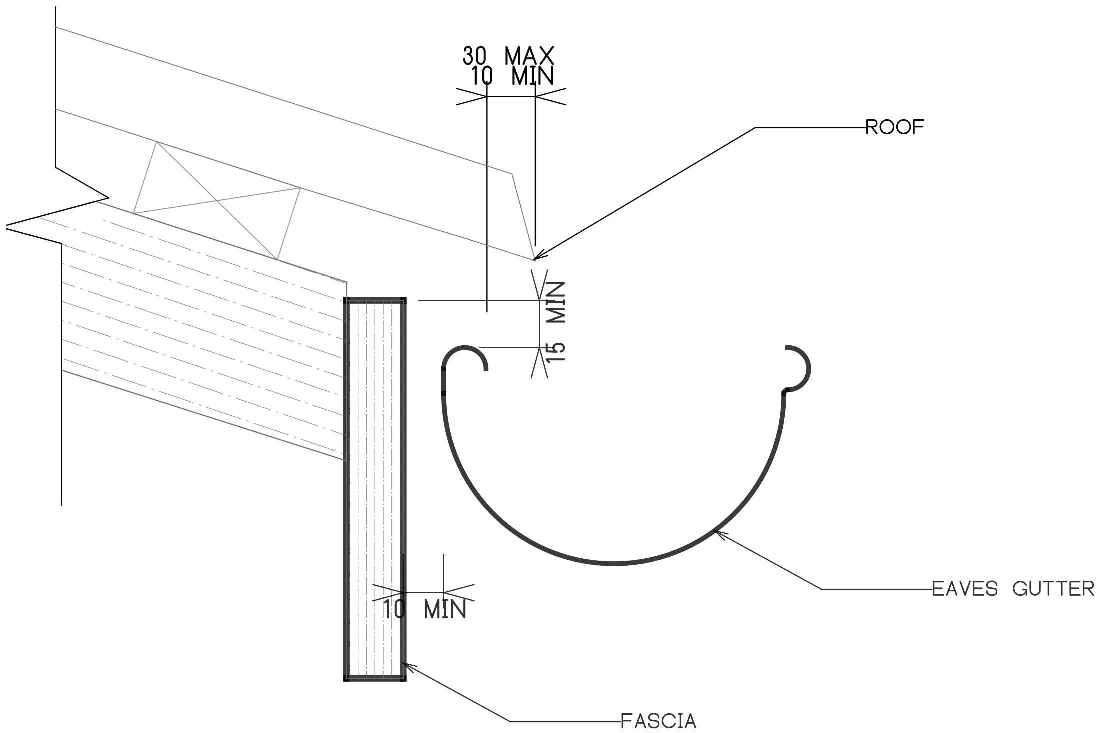
Job Ref/Sheet/Rev 244091 SW03 A



PRECAST OR CAST INSITU PIT
REFER STORMWATER NOTES
ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER

TYPICAL PIT DETAIL

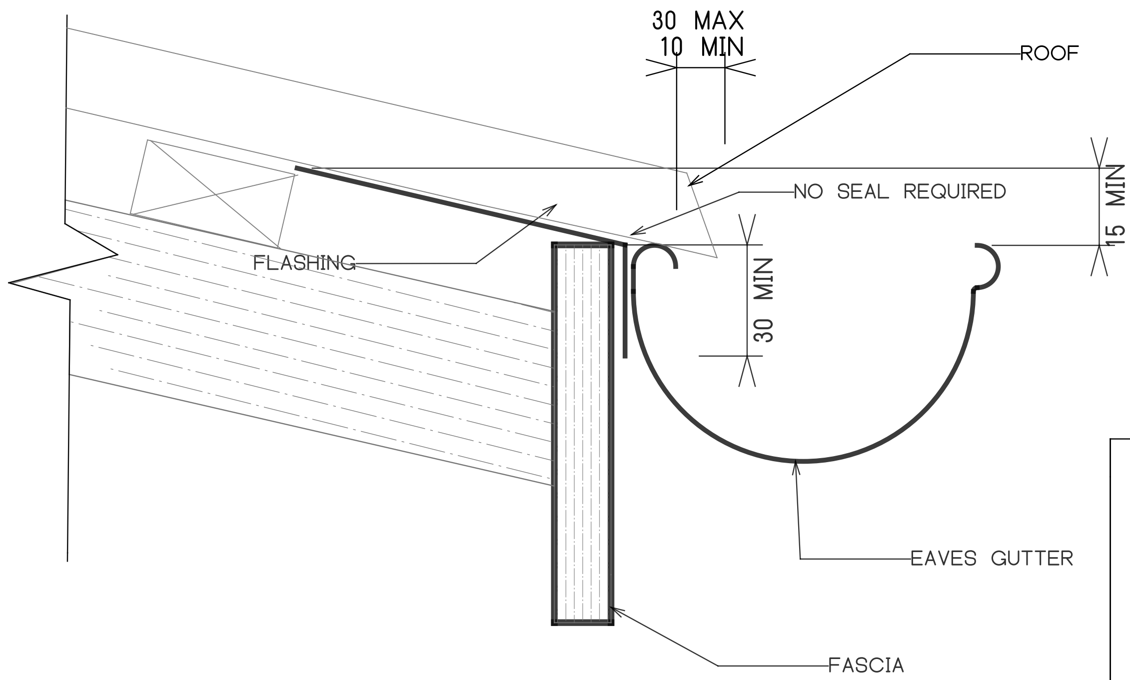
SCALE = 1 : 20



PROPRIETARY SPACER OFF FASCIA OPTION

EAVES GUTTER EG1 OVERFLOW

NTS



FLASHING FITTED UNDERSIDE OF ROOFING OPTION

EAVES GUTTER EG1 OVERFLOW

NTS

REV	ISSUE DATE	DESCRIPTION
A	31/1/2025	ISSUE FOR DA
-	-	-
-	-	-

REVISIONS

Project/Builder/Designer: ALTERATIONS & ADDITIONS BY BEACHES GROUP

Client Name: GREGORY AND MELINDA WILL

Project Address: 33 MARLBOROUGH ST, FRESHWATER

Sheet Title: STORMWATER DETAILS 1/3

Building Designer: BEACHES GROUP

ILA Engineers
ACN 650 057 582
Phone Number: 0409446570

Checked by: -
Approved by: LG

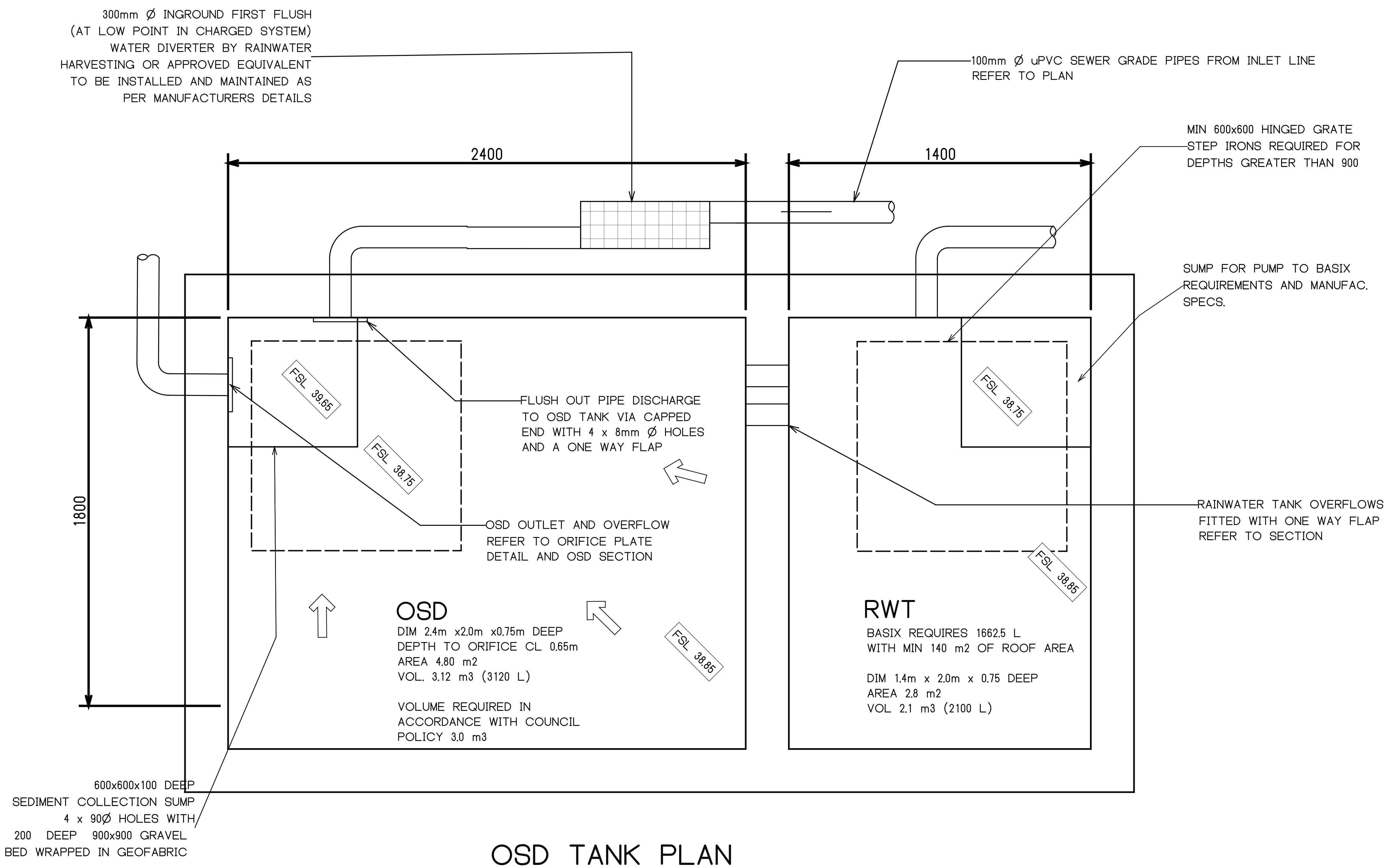
Authorisation Luke Gerkens (Engineer) BE(Civil) MIEAust NER

Job Ref/Sheet/Rev: 244091 SW05 A

Scale 1:20 | Drawing Size A3

Job No. 244091

Sheet SW05 | Rev A



OSD TANK PLAN

SCALE 1:20

REV	ISSUE DATE	DESCRIPTION
A	31/1/2025	ISSUE FOR DA
-	-	-
-	-	-

REVISIONS

Checked by: -
Approved by: LG

Authorisation Luke Gerkens (Engineer) BE(Civil) MIEAust NER

Job Ref/Sheet/Rev: 244091 SW06 A

Project/Builder/Designer: ALTERATIONS & ADDITIONS BY BEACHES GROUP

Client Name: GREGORY AND MELINDA WILL

Project Address: 33 MARLBOROUGH ST, FRESHWATER

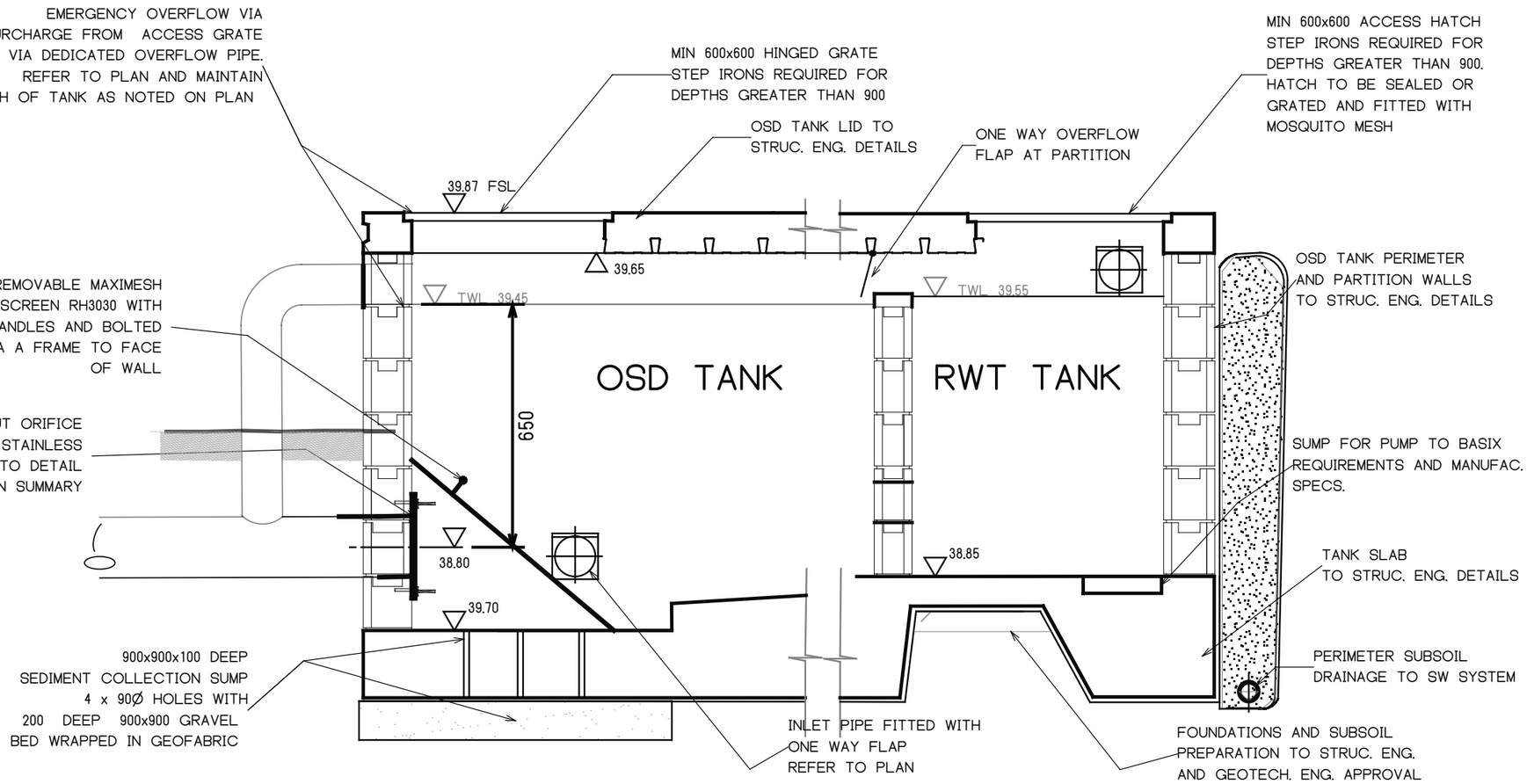
Sheet Title: STORMWATER DETAILS 2/3

Building Designer: BEACHES GROUP

Building Designer Contact: 02 9940 2229

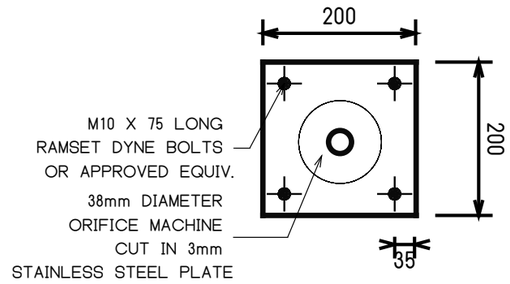
ILA Engineers
ABN 656 057 582
Address: Heights NSW
Email: engineers.com.au
Website: engineers.com.au
Phone Number: 0409446570

Scale 1:20
Drawing Size A3
Job No. 244091
Sheet SW06
Rev A



OSD TANK SECTION

NTS



ORIFICE PLATE DETAIL

NTS

REV	ISSUE DATE	DESCRIPTION
-	-	-
-	-	-
A	31/1/2025	ISSUE FOR DA
-	-	-

Project/Builder/Designer
ALTERATIONS & ADDITIONS BY BEACHES GROUP

Client Name
GREGORY AND MELINDA WILL

Project Address
33 MARLBOROUGH ST, FRESHWATER

Sheet Title
STORMWATER DETAILS 3/3

Building Designer
BEACHES GROUP

Building Designer Contact
02 9940 2229

TLA Engineers
Address
Killarney Heights NSW
Phone Number
0409446570
ACN
656 057 582
Email
lg@tlaengineers.com.au
Website
www.tlaengineers.com.au

Authorisation Luke Gerkens [Engineer] BE(Civil) MIEAust NER

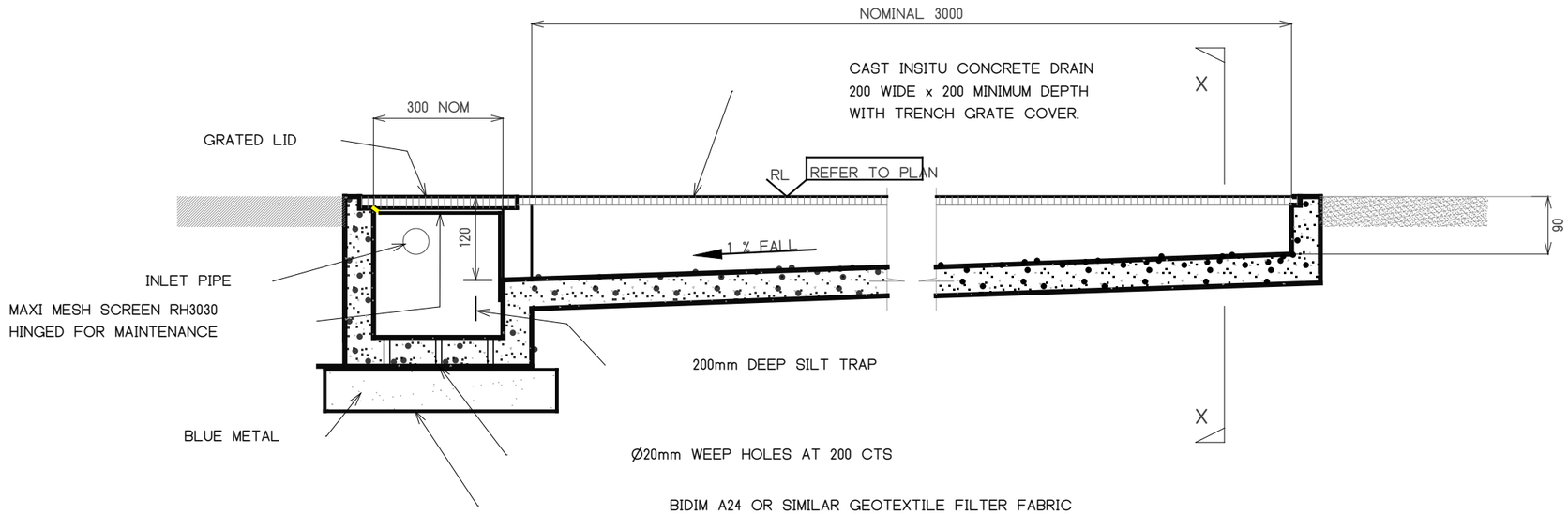
Checked by -
Approved by LG
Date
Date

Job Ref/Sheet/Rev 244091 SW07 A

Scale 1:1
Drawing Size A3
Job No. 244091
Sheet SW07
Rev A

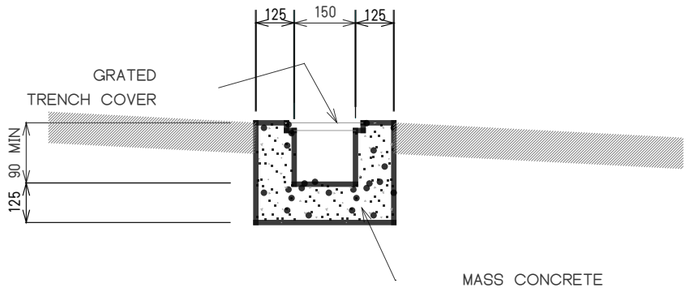
NOTE: SPREADER TRENCH

LOCATION OF TRENCH TO BE SUCH THAT DONWSTREAM NUISANCE FLOWS DO NOT OCCUR TO NEIGHBOURING PROPERTIES AND THAT THE TRENCH GRATE IS EXACTLY HORIZONTAL SUCH THAT DISCHARGE FLOW OCCURS ACROSS THE FULL WIDTH OF THE TRENCH. CONTACT THIS OFFICE SHOULD THE SURROUNDING SOILS BE PRONE TO EROSION (SANDY OR VEGETATED) OR NEARBY TREES AND VEGETATION MAY BE AFFECTED BY THE FLOW OF WATER.



SPREADER TRENCH LONGITUDINAL SECTION

NOT TO SCALE



OR PRECAST GRATED DRAIN

ALTERNATE POLYPROPYLENE DRAIN BY MANUFACTURER

SECTION X-X

NOT TO SCALE

MAXI
HINC

REV	ISSUE DATE	DESCRIPTION
-	-	-
-	-	-
A	31/1/2025	ISSUE FOR DA

Project/Builder/Designer
ALTERATIONS & ADDITIONS BY BEACHES GROUP

Project Address
33 MARLBOROUGH ST, FRESHWATER

Client Name
GREGORY AND MELINDA WILL

Sheet Title
STORMWATER DETAILS 4/4

Building Designer
BEACHES GROUP

Building Designer Contact
02 9940 2229

TLA Engineers
Address Killarney Heights NSW
Phone Number 0409446570
ACN 656 057 582
Email lg@tlaengineers.com.au
Website www.tlaengineers.com.au

Authorisation Luke Gerkens [Engineer] BE(civil) MIEAust NER

Checked by -
Approved by LG
Date
Date

Job Ref/Sheet/Rev 244091 SW08 A

Scale 1:20
Drawing Size A3
Job No. 244091
Sheet SW08
Rev A