

# STORMWATER MANAGEMENT PLAN

## 83 RAMSAY RD, PICNIC POINT NSW 2213

### GENERAL NOTES:

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS, BUILDING CODE OF AUSTRALIA, NSW CODE OF PRACTICE AND THE TO THE RELEVANT SERVICE CODES.

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN MILLIMETERS (U.N.O.). DIMENSIONS SHALL NOT BE OBTAINED BY SCALING OF THESE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

BENCHMARKS HAVE BEEN ESTABLISHED WHERE INDICATED ON THE DRAWINGS. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (A.H.D.). THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY SURVEY WORK TO ENSURE THAT THE WORKS ARE CONSTRUCTED TO DESIGN LINE AND LEVEL.

SETTING OUT DIMENSIONS AND LEVELS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR.

ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT SAA CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL SAFETY FENCES, WARNING SIGNS, TRAFFIC DIVERSIONS AND THE LIKE DURING CONSTRUCTION. ALL WORKS TO COMPLY WITH WORK HEALTH AND SAFETY REQUIREMENTS AND OTHER RELEVANT AUTHORITY SAFETY REQUIREMENTS.

NO TREES SHALL BE REMOVED, CUTBACK OR RELOCATED WITHOUT THE WRITTEN INSTRUCTION FROM THE SUPERINTENDENT.

WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.

ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS AND THESE SPECIFICATIONS.

DESIGN LEVELS GIVEN ARE TO FINISHED SURFACE LEVEL AND INCLUSIVE OF TOPSOIL. (TOPSOIL DEPTH VARIES)

THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A N.A.T.A. REGISTERED SURVEYOR.

CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER TELECOMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THE DRAWING HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED SOLELY FOR THE AUTHORITIES OWN USE AND MAY NOT NECESSARILY BE UPDATED OR ACCURATE.

THE POSITION OF SERVICES AS RECORDED BY THE AUTHORITY AT THE TIME OF INSTALLATION MAY NOT REFLECT CHANGES IN THE PHYSICAL ENVIRONMENT SUBSEQUENT TO INSTALLATION.

CAPITAL ENGINEERING CONSULTANTS DOES NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THE DRAWING SHOWS MORE THAN THE PRESENCE OR ABSENCE OF SERVICES, AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FROM THE UTILITY SERVICES AUTHORITIES A CURRENT COPY OF UNDERGROUND SERVICES SEARCH FOR THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY WORK AND NOTIFY ANY CONFLICT WITH THE DRAWINGS IMMEDIATELY. CLEARANCE SHALL BE OBTAINED FROM THE RELEVANT REGULATORY AUTHORITY. CONTRACTOR TO KEEP COPY OF UNDERGROUND SERVICES SEARCH ON SITE AT ALL TIMES. ANY DAMAGES TO SERVICES OR SERVICES ADJUSTMENTS SHALL BE CARRIED OUT BY THE CONTRACTOR OR RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE.

VISIT THE SITE BEFORE SUBMITTING THE FINAL TENDER PRICE TO ASSESS 'ON SITE' CONDITIONS. FAILURE TO DO SO WILL FORFEIT ANY CLAIM FOR NOT BEING AWARE OF CONDITIONS AFFECTING THE TENDER.

THE CONTRACTOR SHALL PREPARE ACCURATE WORK-AS-EXECUTED DRAWINGS FOLLOWING THE COMPLETION OF ALL WORKS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN PLACE & MAINTAIN TRAFFIC FACILITIES AT ALL TIMES DURING CONSTRUCTION.

### STORMWATER NOTES:

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE AS3500.3-2018: 'STORMWATER DRAINAGE'.

FOR STORMWATER DRAINAGE PIPES THAT EXCEED 1:5 GRADE, REINFORCED CONCRETE ANCHOR BLOCKS SHALL BE INSTALLED. ANCHOR BLOCKS TO BE CONSTRUCTED TO SPECIFICATIONS SET OUT IN AS3500.3-2018.

COORDINATE THE INSTALLATION OF NEW SERVICES WITH ALL NEW & EXISTING SERVICES & STRUCTURAL PROVISIONS AS DETERMINED ON SITE.

ALL PIPEWORK TO BE SUPPORTED IN ACCORDANCE WITH AS3500.3-2018.

ALL PIPEWORK IS TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS AS SET DOWN IN AS3500.3-2018. ALL IN-GROUND PIPEWORK TO BE INSPECTED BY THE SUPERINTENDENT UNDER TEST CONDITIONS PRIOR TO BACKFILLING.

PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT THE CENTRE OF THE INLET PIPE INTERSECTS WITH THE CENTRE OF THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PIT.

BED ALL PIPES FIRMLY AND EVENLY WITH IMPORTED FILL ONLY. THICKNESS OF BEDDING LAYER SHALL BE 75mm IN SOIL AND 200mm IN ROCK.

LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS3725-2007: 'DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES'.

ALLOW TO TEST ALL PIPES AND PITS TO LOCAL AUTHORITY'S REQUIREMENTS.

EXCAVATE TRENCHES AND STOCKPILE ALL MATERIAL FOR INSPECTION WITH REGARD TO REUSE FOR TRENCH BACKFILL. REMAINING MATERIAL TO BE REMOVED FROM SITE.

BACKFILL PIPES WITH IMPORTED FILL. PROVIDE 200mm SIDE SUPPORT AND 150mm OVERLAY ABOVE PIPE CROWN. TRENCH FILL ABOVE THE EMBEDMENT ZONE TO THE UNDERSIDE OF THE ROAD PAVEMENT OR THE FOOTWAY SHALL BE AS FOLLOW:-

UNDER ROADWAY  
TRENCH FILL MATERIAL SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN OF EITHER HIGH GRADE COMPACTION SAND OR APPROVED CRUSHED ROAD GRAVEL CONFORMING TO RMS QA SPECIFICATION 3051 OR SIMILAR.

OTHER THAN ROADWAY  
TRENCH MATERIAL EXCAVATED SHALL CONSIST OF SELECT FILL AS SPECIFIED HEREIN AND SHALL NOT CONTAIN MORE THAN 20% OF STONES OF SIZE BETWEEN 25mm AND 75mm AND NONE LARGER THAN 75mm. PRIOR TO USE OF THE EXCAVATED MATERIAL IT SHALL BE INSPECTED AND APPROVED BY THE ENGINEER.

COMPACT BEDDING. EMBEDMENT AND TRENCH FILL MATERIALS AS FOLLOW:-

EMBEDMENT:-  
FOR GRANULAR FILL MATERIAL (NON-COHESIVE SOIL) e.g. COARSE AGGREGATE FILL, THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%.

TRENCH FILL:-  
FOR GRANULAR MATERIAL (NON COHESIVE SOILS), THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%. FOR NON-GRANULAR FILL MATERIAL (COHESIVE SOILS), THE DRY DENSITY RATIO (RD) SHALL BE NOT LESS THAN 95%.

UTILITY INFORMATION SHOWN ON THE PLANS IS NOT INTENDED TO DEPICT MORE THAN THE PRESENCE OF ANY SERVICES. ACTUAL LOCATIONS SHOULD BE VERIFIED BY HAND EXCAVATION PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS.

GEOTEXTILE FABRIC MATERIAL TO BE BIDIM A24 OR APPROVED EQUIVALENT AND SHALL COMPLY WITH AS3705-2012: 'GEOTEXTILES - IDENTIFICATION, MARKING AND GENERAL DATA'

THE CONTRACTOR SHALL ENSURE THAT SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED AT ALL TIMES. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING WHERE REQUIRED. ONCE THE WORKS ARE COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD ALL DISTURBED AREAS.

### STORMWATER NOTES (CONT):

EXISTING PIPES WHICH FORM NO PART OF THE DRAINAGE SYSTEM SHALL BE REMOVED OR SEALED AS INDICATED ON THE PLANS. PIPES UP TO 300mm DIAMETER SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS (U.N.O.). ALL PIPE JUNCTIONS AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.

WHERE DOWNPIPES PASS UNDER FLOOR SLABS, SEWER GRADE uPVC WITH RUBBER RING JOINTS ARE TO BE USED.

MINIMUM GRADE TO DRAINAGE PIPES TO BE 1% (U.N.O.), MIN. SIZE 100mm DIAMETER (U.N.O.).

PIPES LARGER THAN OR EQUAL TO 300mm DIAMETER TO BE REINFORCED CONCRETE RUBBER RING JOINTED TYPE (CLASS 2) MANUFACTURED TO AS4058 (U.N.O.).

PIPE INSTALLATION UNDER TRAFFICABLE AREAS SHALL BE IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION OF AUSTRALIA PUBLICATION "CONCRETE PIPE SELECTION & INSTALLATION" TYPE HS3 SUPPORT.

EQUIVALENT STRENGTH FRC PIPES MAY BE USED SUBJECT TO AUTHORITY APPROVAL.

MINIMUM PIPE COVER TO BE 600mm UNDER TRAFFICABLE AREAS AND 300mm ELSEWHERE (U.N.O.).

CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.

PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS.

STORMWATER DRAINAGE CONNECTIONS TO COUNCIL'S SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL.

PITS DEEPER THAN 1200mm TO BE FITTED WITH STEP IRONS AT 300 CENTRES TO AS1657-2013: 'FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS - DESIGN, CONSTRUCTION AND INSTALLATION'.

ALL EXPOSED EDGES TO BE ROUNDED WITH 20mm RADIUS, OR CHAMFERED 20mm x 20mm.

PIT REINFORCEMENT - MESH SL82 LAP TO BE 400mm MIN. CLEAR COVER 40 MIN. CAST AGAINST BLINDING OR FORMWORK. CORNER RETURNS MAY BE FABRIC OR EQUIVALENT BARS.

BENCHING TO BE HALF OUTGOING PIPE DEPTH. CONCRETE FOR BENCHING TO BE 20MPa MASS CONCRETE.

BRICKWORK, BLOCKWORK, CONCRETE OR APPROVED PRECAST PITS ARE TO BE USED IN TRAFFICABLE AREAS SUBJECT TO APPROVAL.

FIBREGLASS, HARD-PLASTIC OR APPROVED PRECAST PITS ARE TO BE USED IN NON-TRAFFICABLE AREAS SUBJECT TO APPROVAL.

100mm DIAMETER HOLE FOR SUBSOIL DRAINAGE OUTLET TO BE LOCATED 100mm ABOVE INVERT OF ALL INLET PIPES. SUBSOIL DRAINAGE TO EXTEND FOR A DISTANCE OF 3m UPSTREAM OF PIT (AT EACH INLET TRENCH) WITH THE UPSTREAM END SEALED.

ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.

PIT GRATE, FRAMES AND SOLID COVERS SHALL BE CLASS B IN NON TRAFFIC AREAS AND CLASS C IN TRAFFICABLE AREAS IN ACCORDANCE WITH AS3996 U.N.O.

ALL GRATES SHALL BE PROVIDED WITH A 'J-LOCK' TYPE LOCKING CLIPS.

GRATES TO PITS IN FOOTPATH AREAS SHALL BE HEEL SAFE COMPLYING WITH THE DISABLED ACCESS CODE

PIT GRATING TO BE GALVANISED STEEL TYPE 'WELDLOK' OR APPROVED EQUIVALENT.

SUBSOIL PIPES SHALL BE LAID AT A MIN GRADE OF 1% (U.N.O.).

ADDITIONAL SUBSOIL DRAINAGE SHALL BE LAID TO SUIT SITE CONDITIONS AND GROUNDWATER PRESENCE AS DIRECTED. SUBSOIL PIPES SHALL BE LAID BEHIND KERBS IN CUT AREAS OF THE SITE.

PROVIDE A MINIMUM OF 150mm GRAVEL AROUND SUBSOIL PIPE. TRENCH TO BE LINED WITH GEOTEXTILE FABRIC TYPE BIDIM A24

### SURVEY

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN.

CAPITAL ENGINEERING CONSULTANTS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION OR DESIGN.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT CAPITAL ENGINEERING CONSULTANTS.

### ABBREVIATIONS:

ø or DIA	DIAMETER
CBR	CALIFORNIA BEARING RATIO
CH	CHAINAGE
CL	CENTER LINE
CO	CLEAR OUT
DD	DISH DRAIN
DDO	DISH DRAIN OUTLET
DEJ	DOWELLED EXPANSION JOINT
DGB	DENSE GRADED BASECOURSE
DGS	DENSE GRADED SUB-BASE
DP	DOWNPIPE
e	EXISTING
FFL	FINISHED FLOOR LEVEL
GTD	GRADED TRENCH DRAIN
GSIF	GRADED SURFACE INLET PIT
HYD	HYDRANT
IJ	ISOLATING JOINT
IK	INTEGRAL KERB
IL	INVERT LEVEL
IP	INTERSECTION POINT
KIP	KERB INLET PIT
KO	KERB ONLY
K&G	KERB & GUTTER
KR	KERB RETURN
NGL	NATURAL GROUND LEVEL
OPF	OVERLAND FLOW PATH
OSD	ON-SITE DETENTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RK	ROLL KERB & GUTTER
RL	REDUCED LEVEL
RW	RETAINING WALL
RWT	RAINWATER TANK
SJ	SAWN CONTROL JOINT
SMH	SEWER MAN HOLE
SW	STORMWATER
SWP	STORMWATER PIT
SWRM	STORMWATER RISING MAIN
SWS	STORMWATER SUMP
SV	STOP VALVE
TOK	TOP OF KERB
TOW	TOP OF WALL
TWL	TOP WATER LEVEL
TP	TANGENT POINT
UPVC	UNPLASTICISED POLYVINYL CHLORIDE
UNO	UNLESS NOTED OTHERWISE
WPJ	WEAKENED PLANE JOINT
FF	FIRST FLUSH DEVICE
TYP	TYPICAL
BM	BENCH MARK



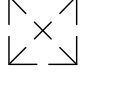

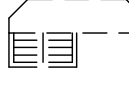

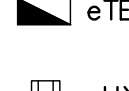
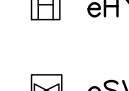



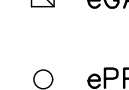

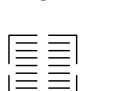

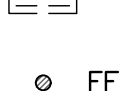



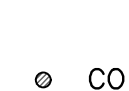





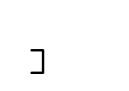
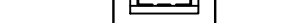















DIAL BEFORE YOU DIG SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION ON SITE

TM: TRADE MARK OF THE ASSOCIATION OF DIAL BEFORE YOU DIG SERVICES LTD. USED UNDER LICENSE.

DRAWING REGISTER		
NUMBER	NAME	REVISION
SW001	COVER SHEET	B
SW010	BASEMENT FLOOR PLAN, NOTES & DETAILS	B
SW020	GROUND FLOOR, NOTES & DETAILS (1/2)	B
SW021	GROUND FLOOR, NOTES & DETAILS (2/2)	B
SW022	SITE CATCHMENT PLAN	B
SW030	FIRST FLOOR & ROOF PLAN, NOTES & DETAILS	B
ER001	EROSION AND SEDIMENT CONTROL PLAN	B

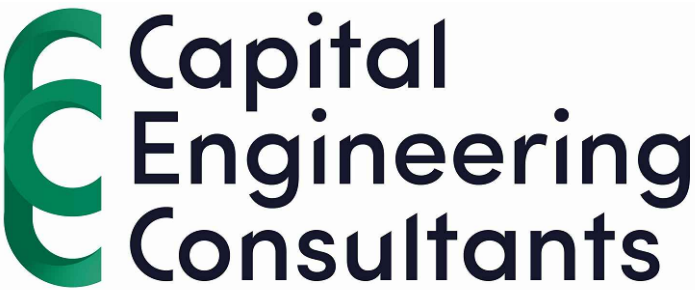
### LEGEND:

● DP	DOWNPIPE		eSMH	EXISTING SEWER MANHOLE
	STORMWATER LINE		eXJ	EXISTING JUNCTION PIT
	STORMWATER LINE DRAINING TO RWT		eKI	EXISTING KERB INLET PIT
	OVER FLOW PIPE		eTEL	EXISTING TELSTRA PIT
	SUBSOIL LINE		eHYD	EXISTING HYDRANT
	STORMWATER RISING MAIN		eSV	EXISTING STOP VALVE
	EXISTING STORMWATER LINE		eGAS	EXISTING GAS VALVE
	AUTHORITY SEWER LINE		ePP	EXISTING POWER POLE
	AUTHORITY WATER LINE			EXISTING GRATED SURFACE INLET PIT
	AUTHORITY GAS LINE		FF	FIRST FLUSH
	AUTHORITY ELECTRICITY LINE		RWO	RAINWATER OUTLET
	AUTHORITY FIBRE OPTIC LINE		CO	CLEAR OUT POINT
	AUTHORITY COMMS LINE		DDO	DISH DRAIN OUTLET
	SEDIMENT FENCE		PD	PLANTER DRAIN
	GRATED SURFACE INLET PIT			CAPPING
	GRATED SURFACE INLET PIT WITH OCEANGUARD INSERT		RH	RAINHEAD
	SEALED JUNCTION PIT		SP	DOWNPIPE SPREADER
	PROPOSED KERB INLET PIT			WARNING LIGHT
	GRATED TRENCH DRAIN		144.37	SPOT LEVELS
	RAINWATER RE-USE TANK			BENCHMARK
	PROPOSED RETAINING WALL		OFF	OVERLAND FLOW PATH

## PROPOSED SINGLE DWELLING

83 RAMSAY RD, PICNIC POINT NSW 2213

Scale 1:100 @ A1 Date 07/03/2025 Drawn K.T. Design K.T. Approved P.E.





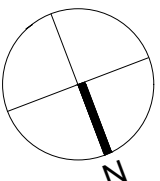
9630 0121  
8 Buller Street, North Parramatta, NSW 2151  
www.cec-au.com

B	ISSUED FOR DA APPROVAL	K.T.	P.C.	07/03/2025	
A	ISSUED FOR DA APPROVAL	K.T.	M.W.	27/01/2025	
Rev	Description	By	Chk	Date	

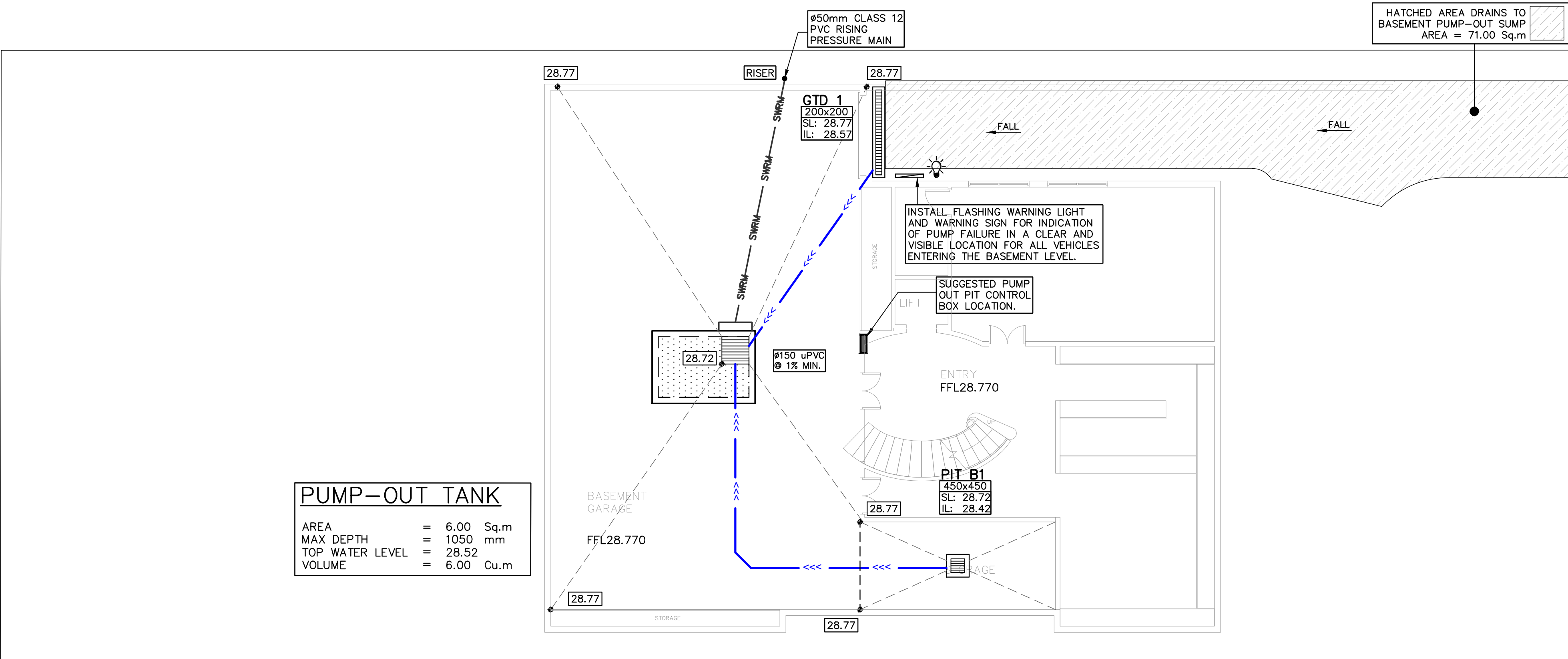
Architect  
**ES DESIGN**  
SUITE 10, LEVEL 1/1 COOKS AVE  
CANTERBURY NSW 2193  
info@esdesign.com.au  
02 977 2800  
ES.COM.AU



FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE		Title
APPROVED BY:  <b>PAUL EL-BAYEH</b> B.E. (CIVIL), M.E. (Structural & Foundation), FEANZ, CPEng No. 3125148, NER, RPSC.	DATE: 07/03/2025 	STORMWATER LAYOUT PLAN COVER SHEET

FOR COUNCIL APPROVAL ONLY (CONCEPT)		DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY	
North 	Project Number <b>SW24454</b>	Drawing Number <b>SW001</b>	Revision <b>B</b>



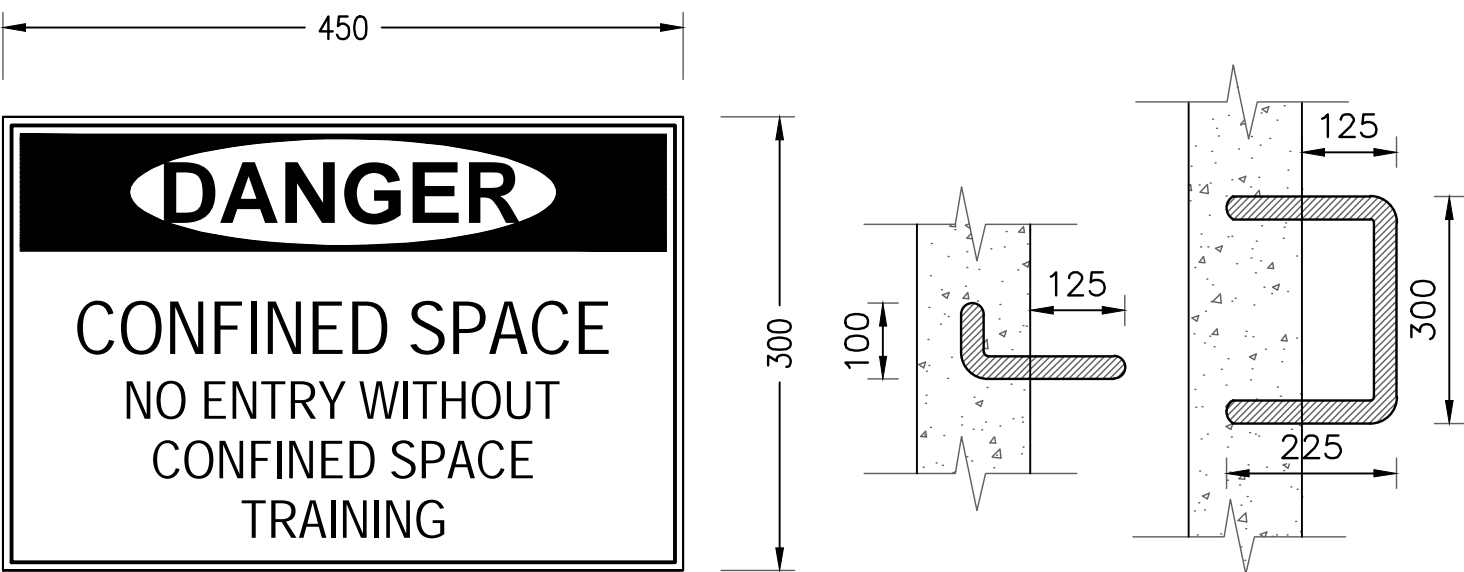


PUMP-OUT TANK			
AREA	=	6.00	Sq.m
MAX DEPTH	=	1050	mm
TOP WATER LEVEL	=	28.52	
VOLUME	=	6.00	Cu.m

STORMWATER LAYOUT PLAN  
BASEMENT FLOOR  
SCALE 1:100

Type	Output		Outlet		Rated		Maximum		Weigh	Dimension		
	HP	kW	mm	Inch	Head Capacity	M	Head Capacity	M		L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	162	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610

**WARNING**  
PUMP OUT SYSTEM  
FAILURE IN BASEMENT  
WHEN LIGHT IS  
FLASHING AND  
SIREN SOUNDING



PUMP-OUT WARNING SIGN DETAIL  
SCALE 1:20

CONFINED SPACE SIGN DETAIL  
SCALE 1:20

STEP IRON DETAIL  
SCALE: 1:10

STANDARD PUMP OUT DESIGN NOTES:

- THE PUMP OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED IN THE FOLLOWING MANNER: –
- I). THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
- II). A FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300MM ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.
- III). A SECOND FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
- IV). AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBELIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
- V). A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINTS TO THE PUMP OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATTA RIVER CATCHMENT TRUST OSD HANDBOOK.

KEY NOTES:

- INSTALL STEP IRONS FOR EASE OF ACCESS DURING MAINTENANCE OF PUMP OUT CONTROL PIT TO COUNCIL SATISFACTION.
- INSTALL CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING.
- ALL STORMWATER PIPES ARE Ø100mm uPVC AND SLOPING @ 1.0% U.N.O (TYP).
- ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).
- STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINTED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

PUMP STORAGE CALCS:

TOTAL STORAGE:

100yr 2hr ARI STORM= 73.70mm  
CATCHMENT AREA= 71.00m<sup>2</sup>

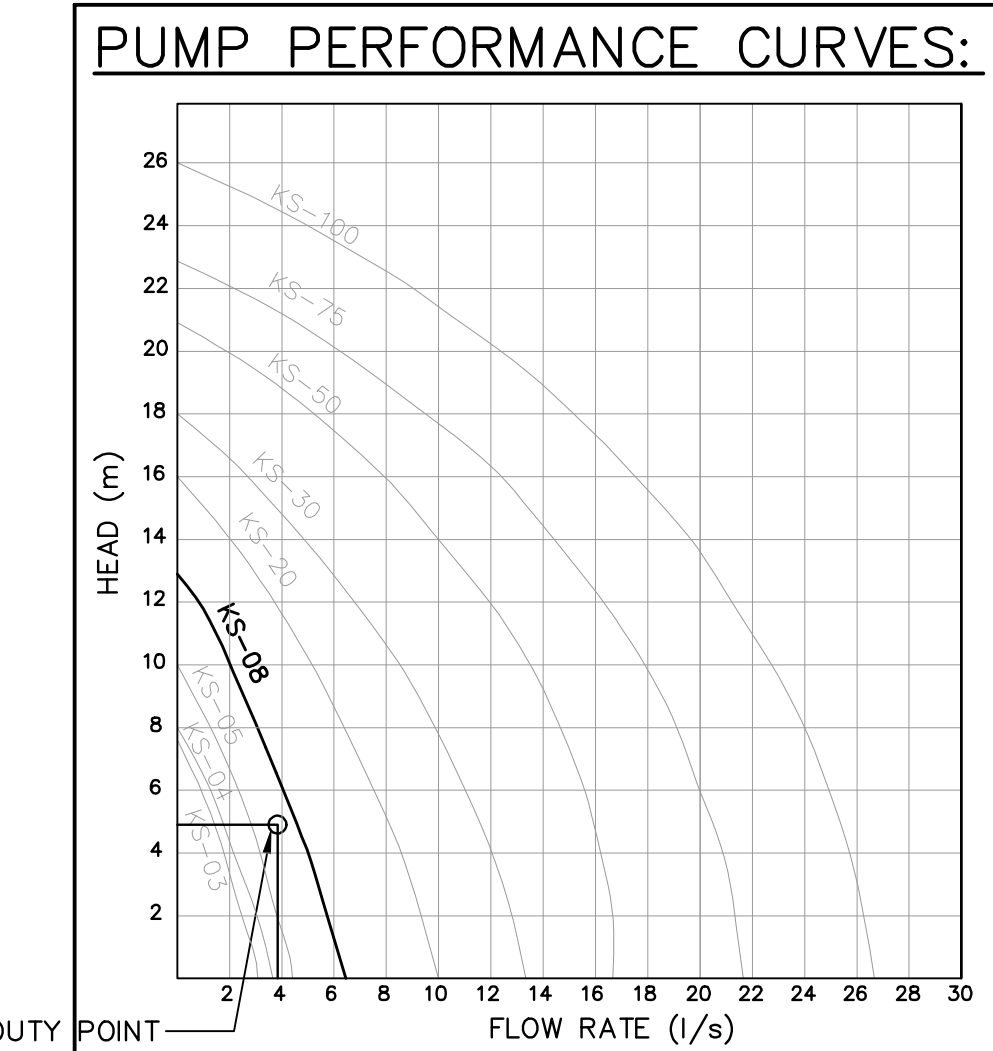
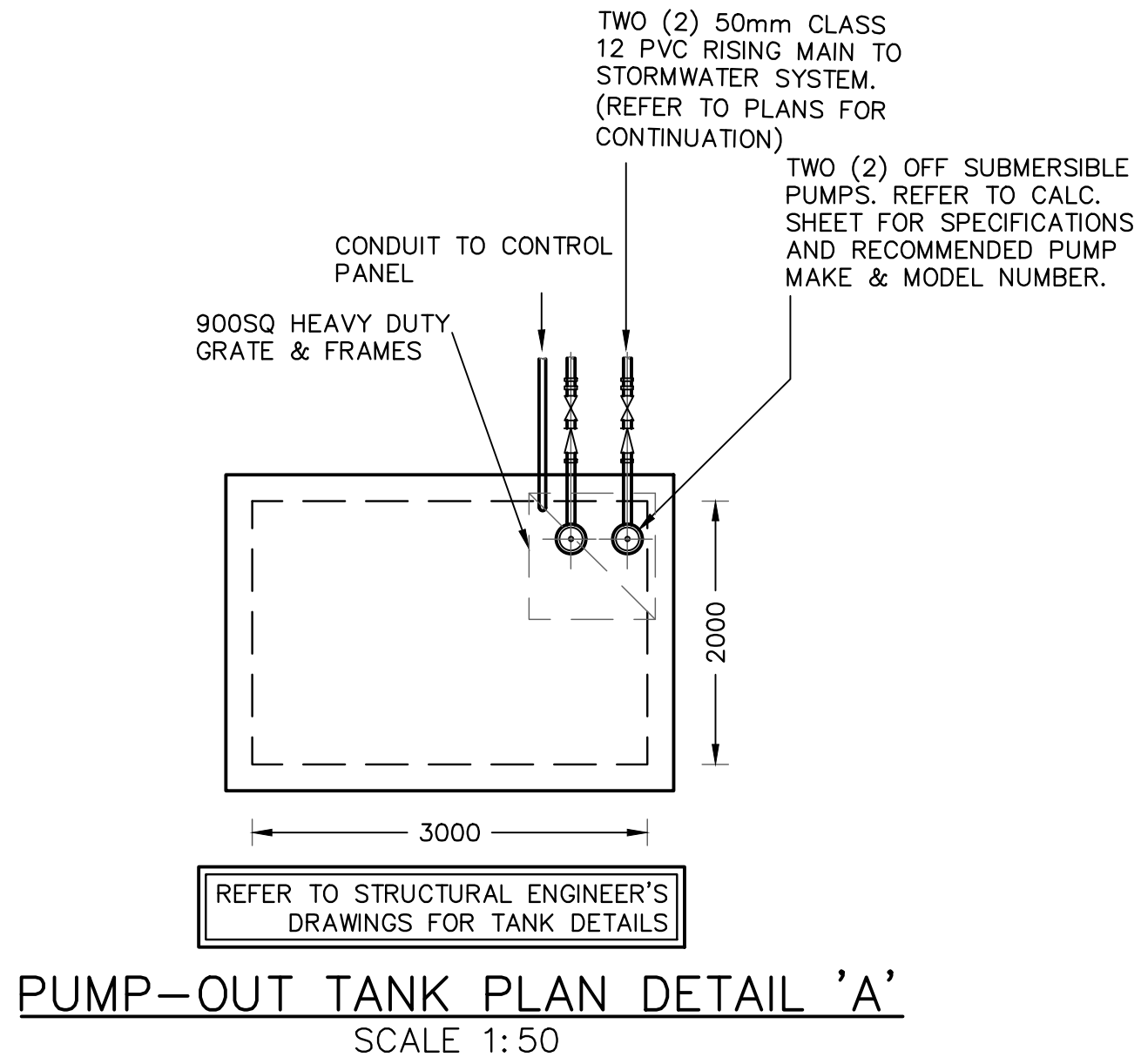
V=Axd  
=71.00x(73.70/1000)  
=5.23m<sup>3</sup> REQUIRED

PUMP-OUT VOLUME REQUIRED = 5.23m<sup>3</sup>  
PUMP-OUT VOLUME PROVIDED = 6.00m<sup>3</sup>

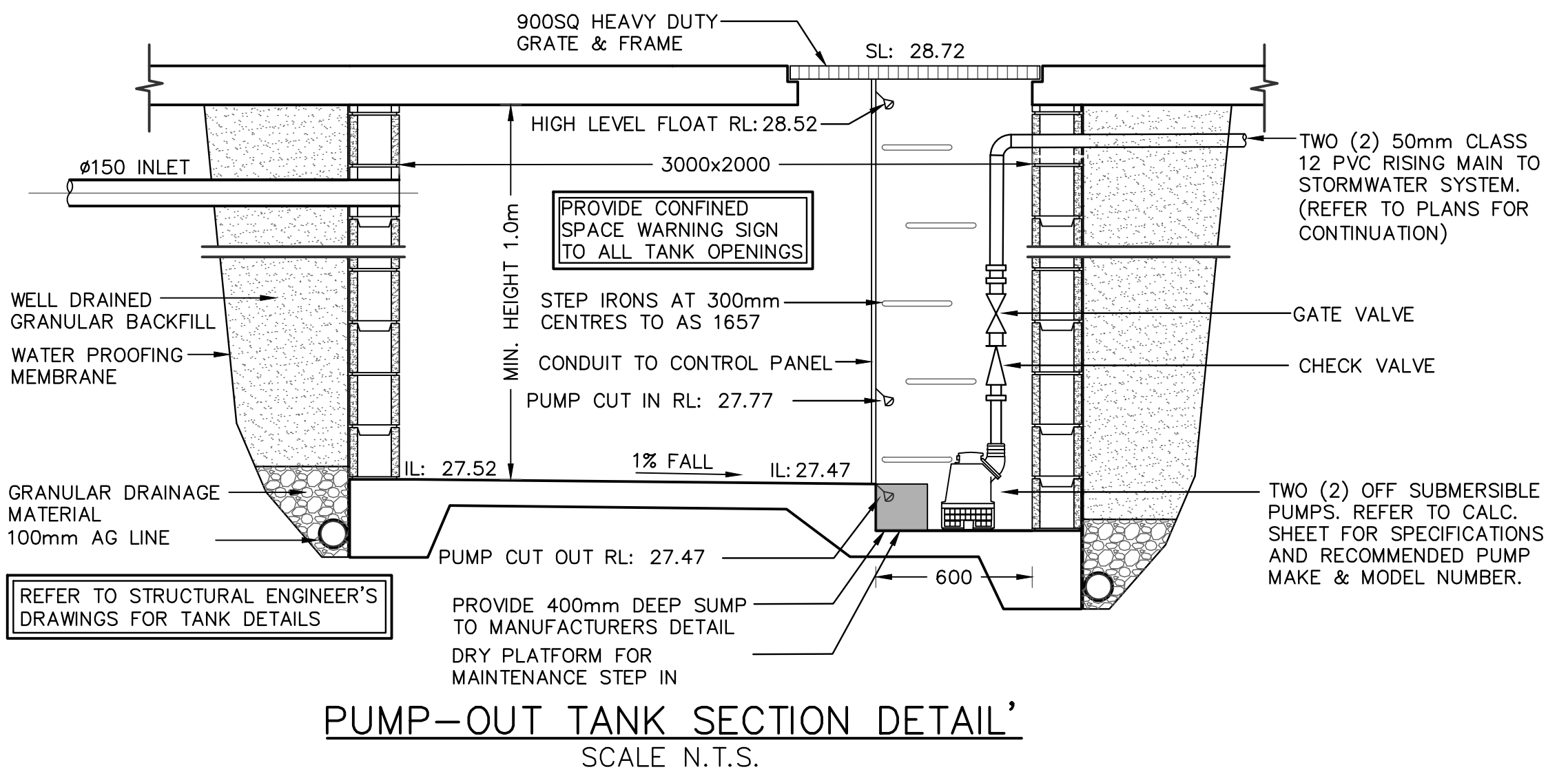
PUMP DISCHARGE RATE WAS DESIGNED FOR THE 100yr 5 MIN STORM:

Q=CIA/3600  
=1.0x199x71.00/3600  
=3.92L/s REQUIRED @ 4.73 m OF HEAD

RECOMMENDED PUMP: DUAL **SABRE MODEL NO. KS-08** PUMPS WITH **50mm PVC CLASS 12** OUTLETS.



PUMP MAKE & MODEL DETAILS  
SCALE N.T.S.



PROPOSED SINGLE DWELLING  
83 RAMSAY RD, PICNIC POINT NSW 2213

Scale 1:100 @ A1 Date 07/03/2025 Drawn K.T. Design K.T. Approved P.E.



9630 0121  
8 Buller Street, North Parramatta, NSW 2151  
www.cec-au.com

Rev	Description	By	Chk	Date
B	ISSUED FOR DA APPROVAL	K.T.	P.C.	07/03/2025
A	ISSUED FOR DA APPROVAL	K.T.	M.W.	27/01/2025

Architect  
**ES DESIGN**  
SUITE 10, LEVEL 1/1 COOKS AVE  
GANTERBURY NSW 2153  
INFO@ESDESIGN.COM.AU  
02 9707 2000  
ES.COM.AU

FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE

APPROVED BY:  
**PAUL EL-BAYEH**  
B.E. (CIVIL), M.E. (Structural & Foundation),  
FEAust, CPEng No. 3132148, NER, RPSC.

DATE:  
07/03/2025

Title  
**STORMWATER LAYOUT PLAN  
BASEMENT FLOOR PLAN,  
NOTES & DETAILS**

DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

North

Project Number  
**SW24454**

Drawing Number  
**SW010**

Revision  
**B**







ABSORPTION TRENCH NOTES:

MAKE SURE THE TRENCH EXCAVATION IS WIDE ENOUGH TO ACCEPT THE SELECTED TRENCH LINER

EXCAVATE THE TRENCH ALONG THE SITE CONTOUR TO PROVIDE AT LEAST 100mm COVER OVER THE TOP OF THE LINER

ALLOW AT LEAST 75mm OVERLAP FOR EACH LENGTH OF LINER

FIT THREE SPREADER BARS INTO EACH STANDARD LINER, THE FIRST 220mm FROM THE INLET END, THEN EQUALLY SPACED ALONG THE EXCAVATION

CUT THE ENTRY PIPE HOLES IN THE TRENCHS LINER END CAP AND FIT THE CAPS TO THE LINER.

PLACE 20mm CRUSHED AGGREGATE ALONG TRENCH LINER AND 200mm MIN AT BOTH ENDS

LAY GEOTEXTILE FABRIC (TYPE 'BIDIM' A12 OR EQUIVALENT) AROUND THE AGGREGATE FOR THE FULL LENGTH OF THE TRENCH

COVER THE GEOTEXTILE FABRIC WITH WATER CONSOLIDATED LAYERS OF APPROVED SANDY LOAM. LAYERS NOT TO EXCEED 100mm IN THICKNESS

TURF MAY BE LAID OVER THE TRENCH AREA

DO NOT COMPACT THE TRENCH OR EXPOSE IT TO VEHICULAR LOADING OR TRAFFIC

ABSORPTION TRENCH CALCULATIONS:

IMPERVIOUS AREA DRAINING TO TRENCH = 99.46 m<sup>2</sup>  
VOLUME REQUIRED PER 1.0m<sup>2</sup> = 0.015 m<sup>3</sup>  
VOLUME REQUIRED = 1.49 Cu.m

NO OF TRENCH LINERS = 1.00  
TRENCH LINER CAPACITY (410 JUMBO) = 175 L/m  
600Wx600D GRAVEL VOLUME (20% VOID) = 37.0 L/m  
TOTAL VOLUME PER METER (1 LINERS) = 212 L  
VOLUME OF END PIT 2x(600Lx600Wx600D) = 432 L

LENGTH OF TRENCH = 6.0 m  
TOTAL VOLUME OF 1x6 TRENCHES = 1.27 Cu.m  
TOTAL VOLUME PROVIDED = 1.70 Cu.m

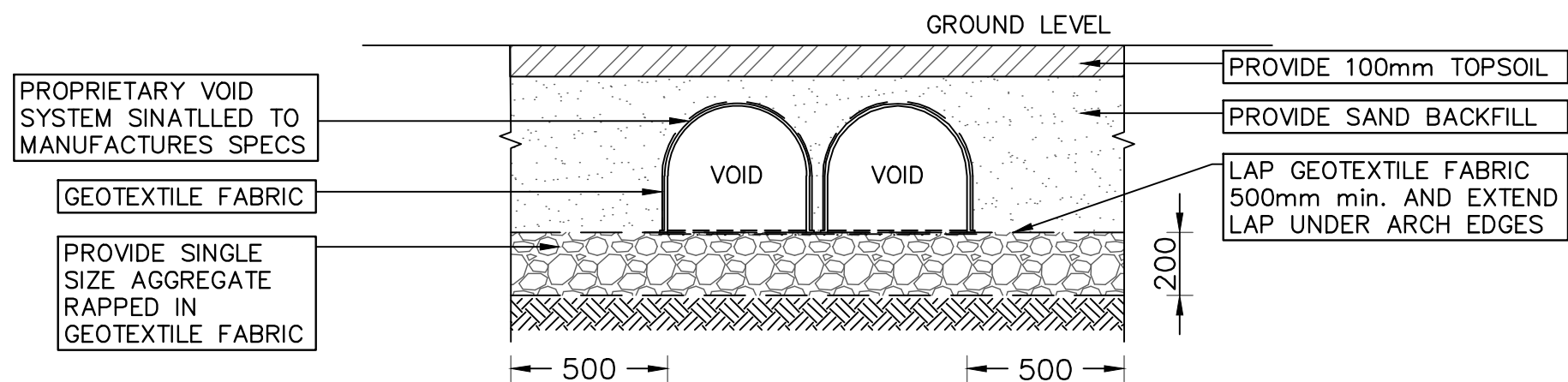


RAINWATER SIGN DETAIL

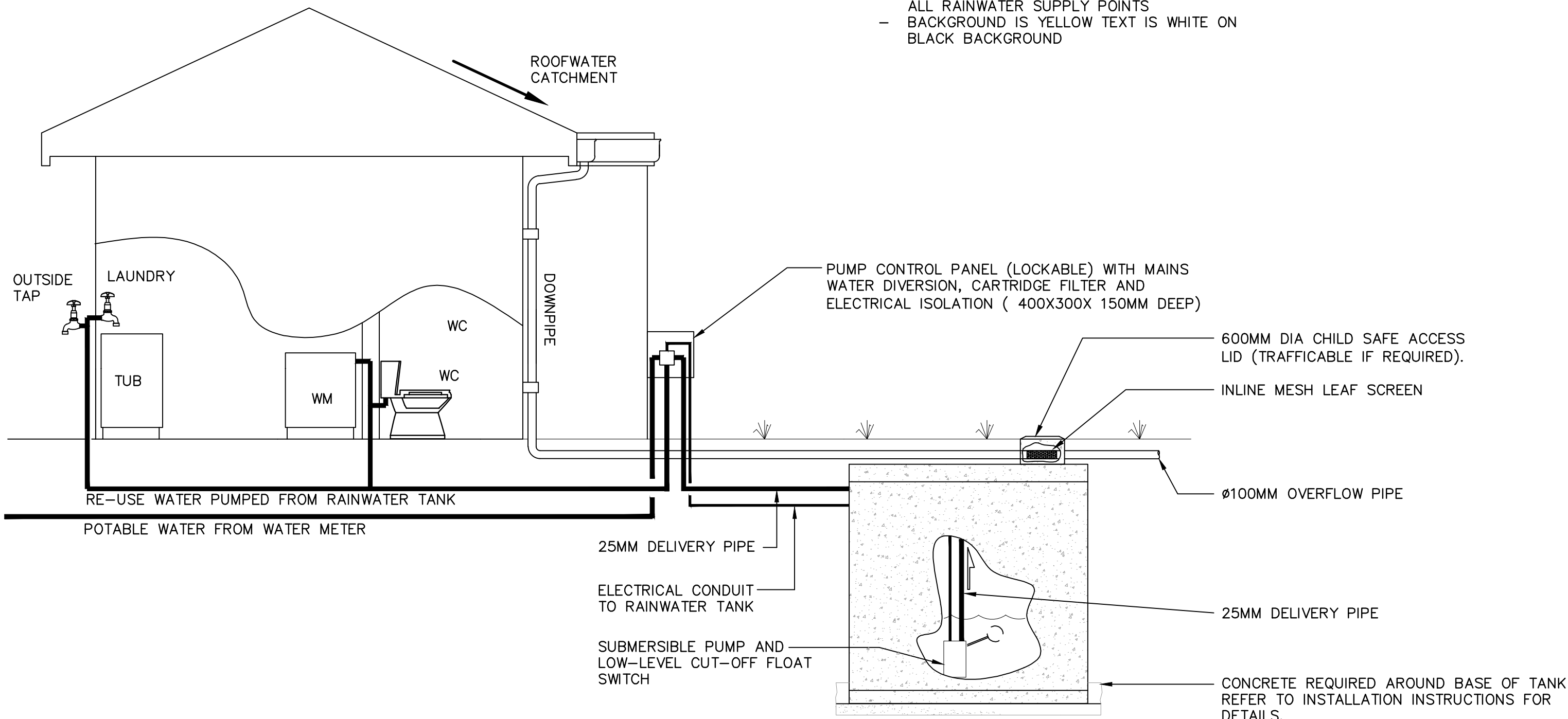
SCALE: 1:10

NOTES: -

- PROVIDE WARNING SIGN IN ACCORDANCE WITH AS 1319 IN A CLEAR AND VISIBLE LOCATION AT ALL RAINWATER SUPPLY POINTS
- BACKGROUND IS YELLOW TEXT IS WHITE ON BLACK BACKGROUND

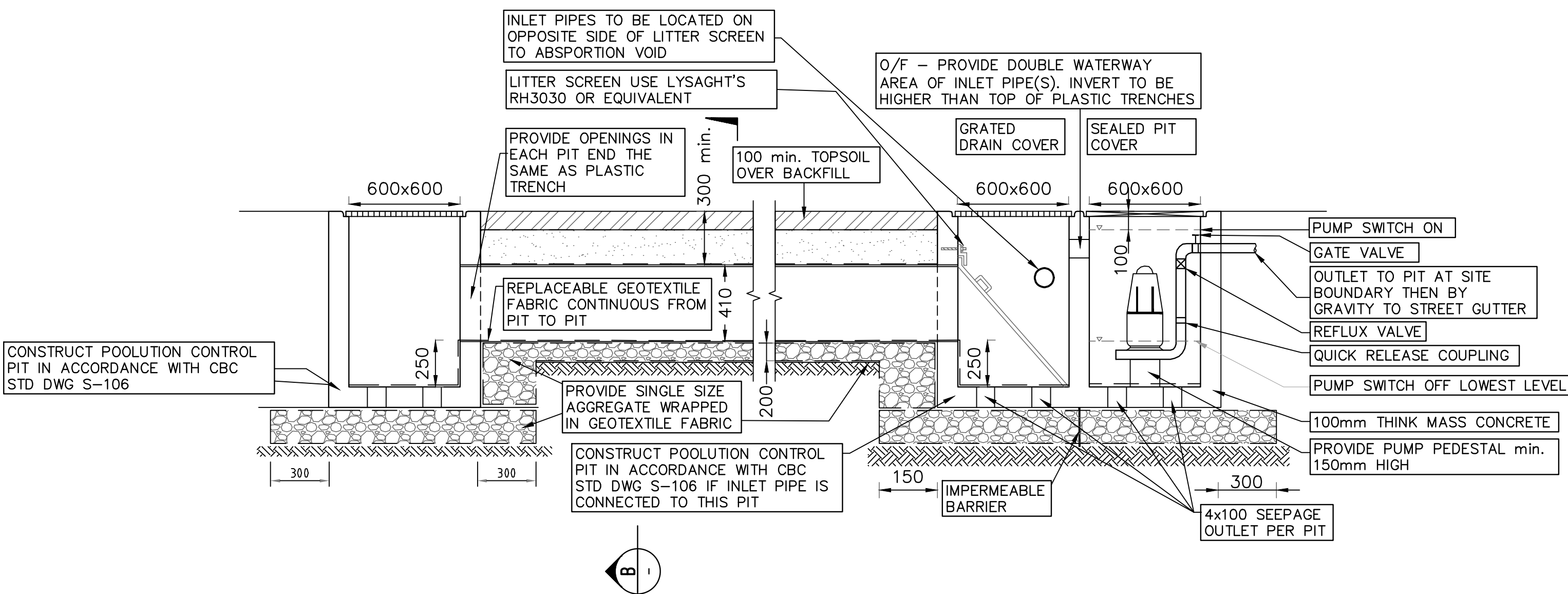


SECTION B  
TRENCH  
SCALE N.T.S.

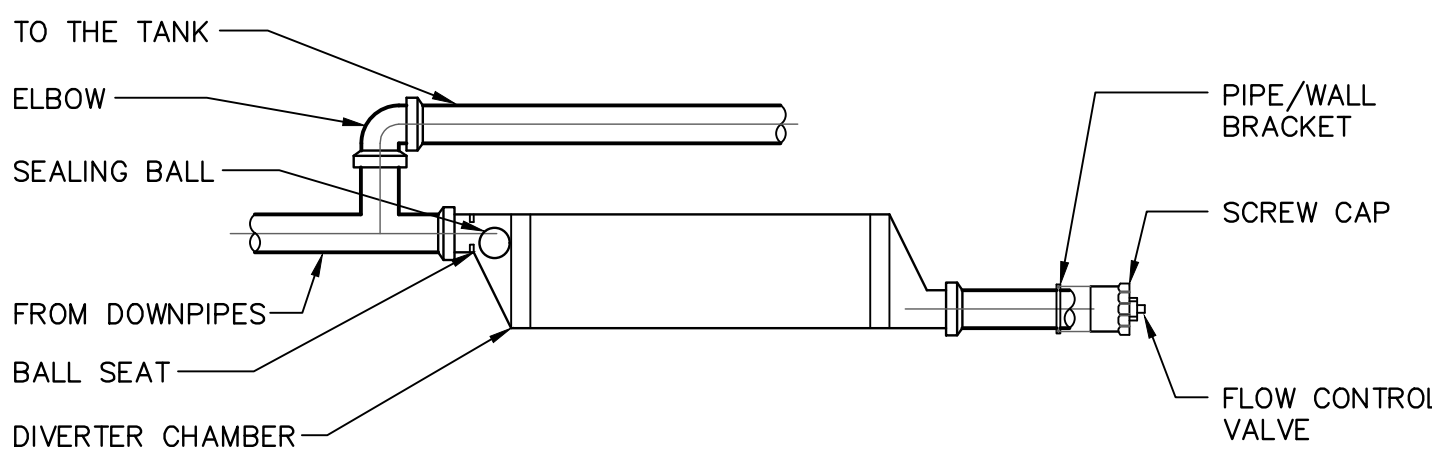


TYPICAL RAINWATER RE-USE TANK CONFIGURATION

NOT TO SCALE



SECTION A  
LONGITUDINAL SECTION OF TRENCH  
SCALE N.T.S.



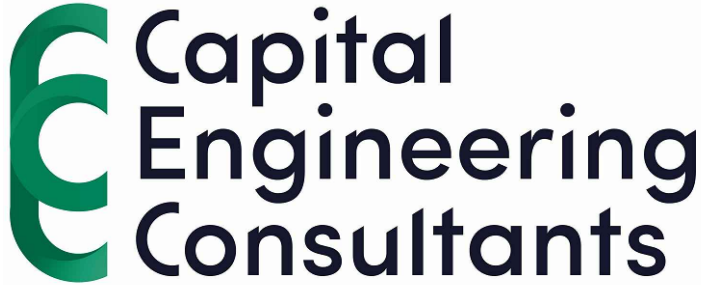
FIRST FLUSH DIVERTER

SCALE: 1:20

PROPOSED SINGLE DWELLING

83 RAMSAY RD, PICNIC POINT NSW 2213

Scale 1:100 @ A1 Date 07/03/2025 Drawn K.T. Design K.T. Approved P.E.



9630 0121  
8 Buller Street, North Parramatta, NSW 2151  
www.cec-au.com

Rev	Description	By	Chk	Date
B	ISSUED FOR DA APPROVAL	K.T.	P.C.	07/03/2025
A	ISSUED FOR DA APPROVAL	K.T.	M.W.	27/01/2025

Architect  
ES DESIGN  
SUITE 10, LEVEL 1/1 COOKS AVE  
GANTERBURY NSW 2103  
INFO@ESDESIGN.COM.AU  
02 9707 2000  
ES.COM.AU



FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE  
APPROVED BY: P. EL-BAYEH  
PAUL EL-BAYEH  
B.E. (CIVIL), M.E. (STRUCTURE & FOUNDATION)  
FEAUS, CPEng No. 3132148, NER, RPSC  
DATE: 07/03/2025  
REGISTERED NER ENGINEER Australia

FOR COUNCIL APPROVAL ONLY (CONCEPT)

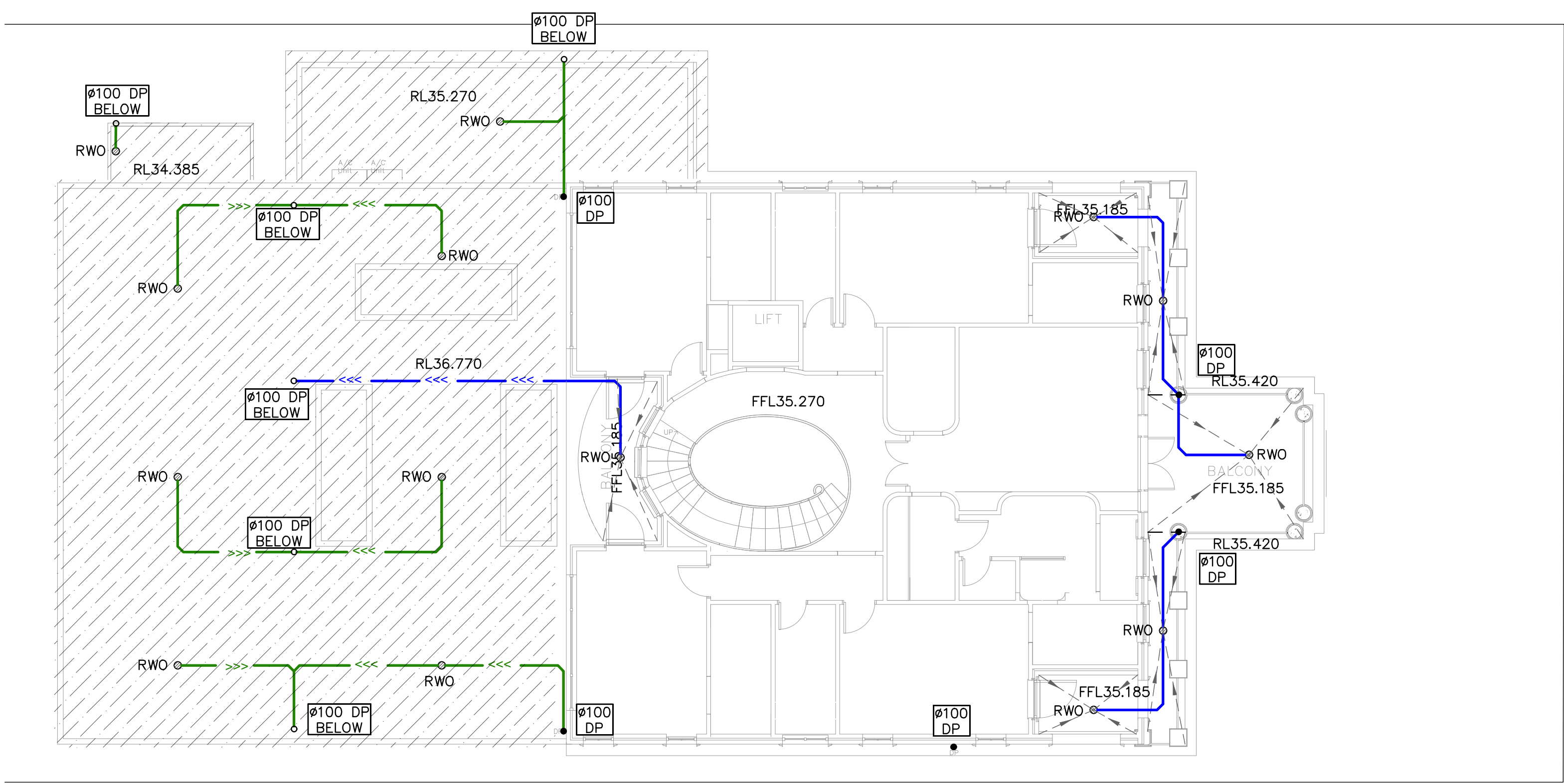
STORMWATER LAYOUT PLAN  
GROUND FLOOR PLAN,  
NOTES & DETAILS (2/2)

DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

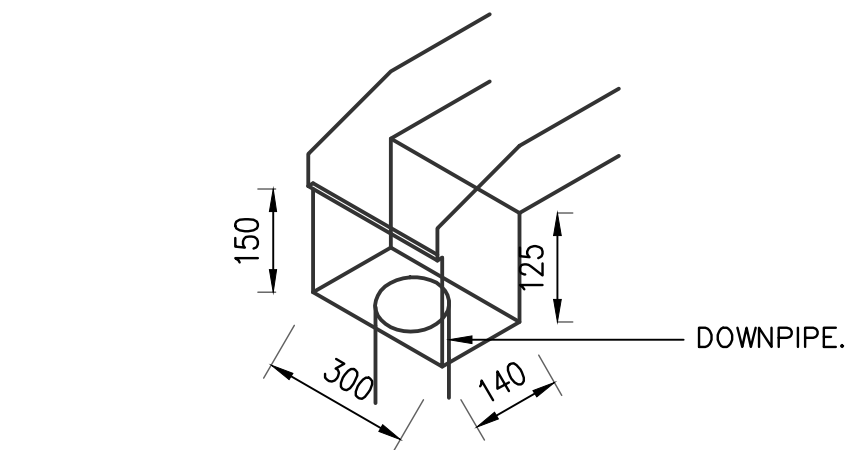
Project Number SW24454  
Drawing Number SW021  
Revision B







STORMWATER LAYOUT PLAN  
FIRST FLOOR  
SCALE 1:100



RAINWATER HEAD DETAIL (BG1)  
NOT TO SCALE

BOX GUTTER TYPE 'BG1' SUMP DIMENSIONS	
DOWNPIPE	ø100mm
SUMP DEPTH	50mm
SUMP LENGTH	400mm
SUMP WIDTH	300mm
OVERFLOW WIDTH	300mm
OVERFLOW DEPTH	65mm
BOX GUTTER WIDTH	300mm
BOX GUTTER DEPTH	150mm
MIN CLEARANCE LOC	7mm
MIN CLEARANCE B	5mm
RWH DEPTH	125mm
RWH LENGTH	140mm
RWH WIDTH	300mm

BOX GUTTER &  
SUMP DIMENSIONS  
NOT TO SCALE

**FIRST FLOOR & ROOF NOTES:**

INSTALL 50mm uPVC SPITTER PIPES 20mm ABOVE SURFACE LEVEL FOR BALCONY AND CONCRETE ROOF AREAS TO ALLOW FOR EMERGENCY OVERFLOW INCASE OF BLOCKAGES DURING HEAVY STORMS. PLUMBER TO CONFIRM LOCATION DURING CONSTRUCTION.

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINATED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

BALCONY, TERRACE & CONCRETE ROOF AREAS TO SLOPE TOWARDS RAINWATER OUTLETS WHERE REQUIRED (TYP).

ARROW DENOTES THE SLOPE OF FINISHED SURFACE LEVEL (TYP).

DOWNPIPES SHOWN ON PLAN ARE TO BE ø100mm uPVC U.N.O. (TYP).

ALL EAVES GUTTERS SHALL BE 145mm WIDE x 75mm DEEP (OR EQUIVALENT) AND LAID AT MIN. 1:500 SLOPE.

ALL GUTTERS TO BE FITTED WITH ADEQUATE OVERFLOW MEASURES IN ACCORDANCE WITH AS3500.3:2018.

PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).

INSTALL DOWNPIPE WITH SPREADER (IF REQUIRED) TO DISPERSE STORMWATER ONTO LOWER ROOF AREAS EFFECTIVELY.

PROVIDE SURFACE DRAINAGE FOR ALL CONCRETE AND BALCONY ROOF AREAS WHERE REQUIRED.

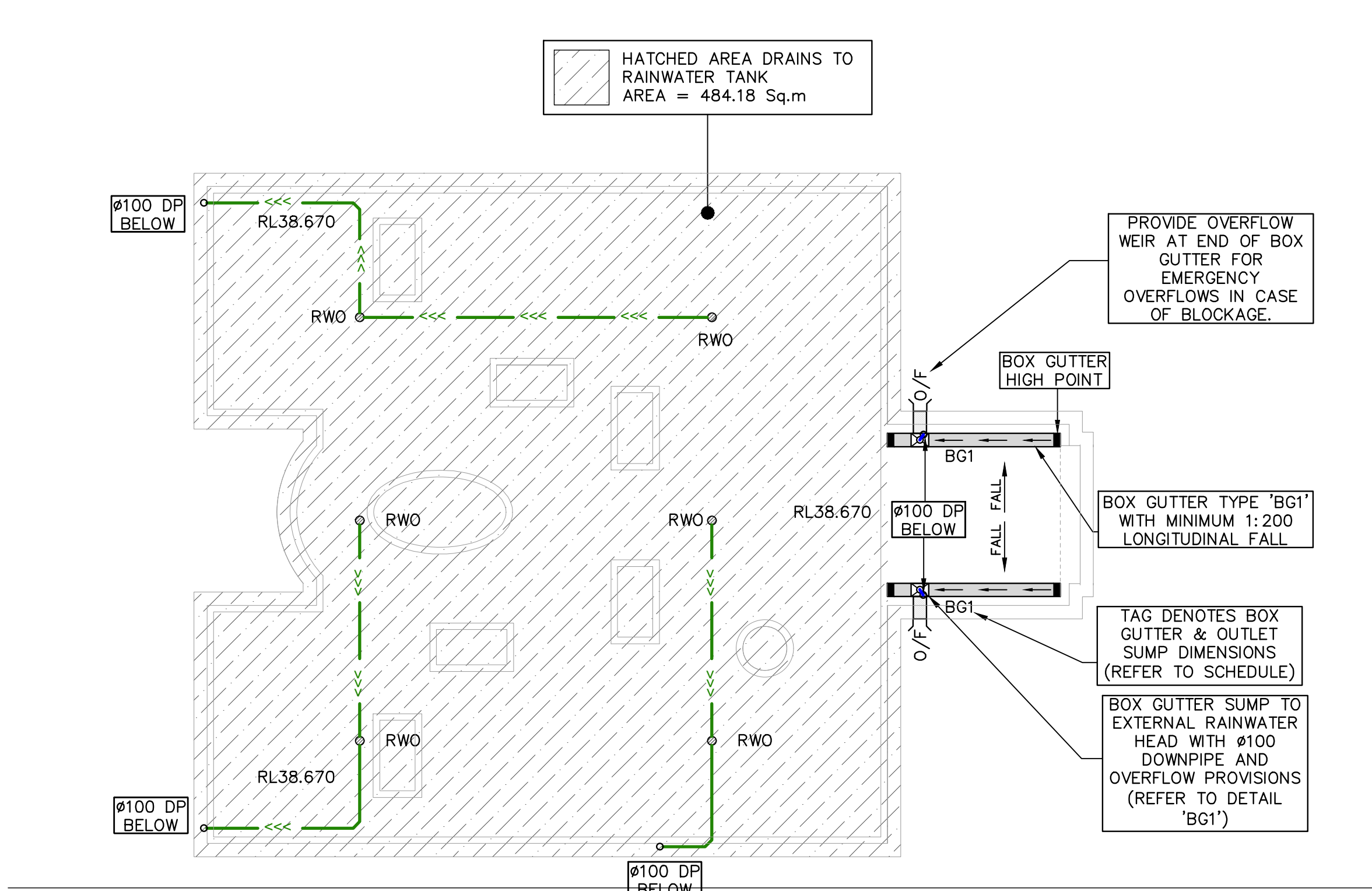
**BOX GUTTER NOTES:**

ALL BOX GUTTERS SHALL BE INSTALLED WITH AN ABSOLUTE MIN. 1:200 LONGITUDINAL BASE SLOPE TO THE OUTLET (1:100 DESIRABLE BASE SLOPE).

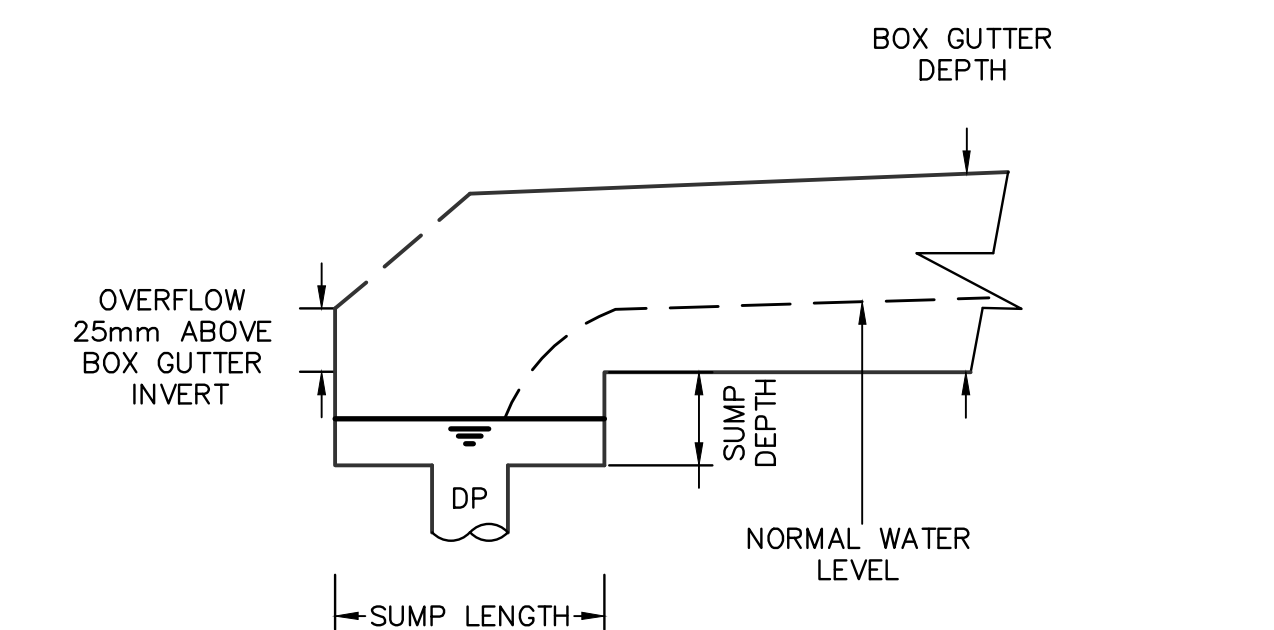
ALL BOX GUTTERS SHALL BE FITTED WITH EMERGENCY OVERFLOW MEASURES - REFER TO PLAN & COMPLIANCE TABLE FOR DETAILS OF OVERFLOW PROVISIONS.

BOX GUTTERS SHALL BE ADEQUATELY SEALED TO THE RECEIVING RAINWATER HEAD / INTERNAL SUMP AND DISCHARGE WITHOUT CHANGES IN DIRECTION.

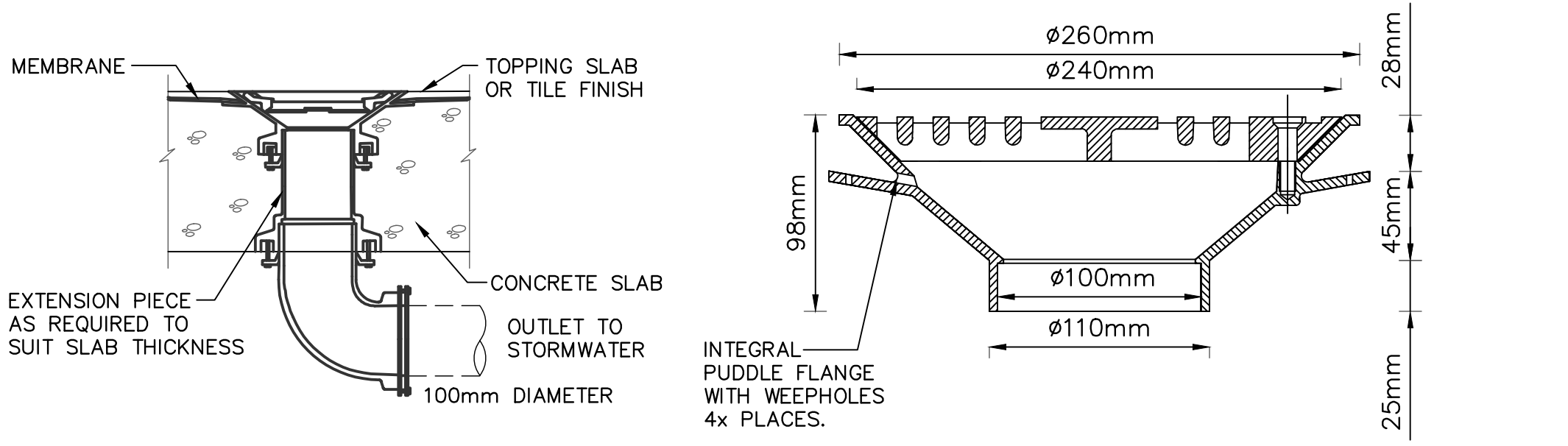
ALL EXPANSION JOINTS AND MINIMUM EXPANSION SPACE SHALL COMPLY WITH AS3500.3 CLAUSE 4.3.2



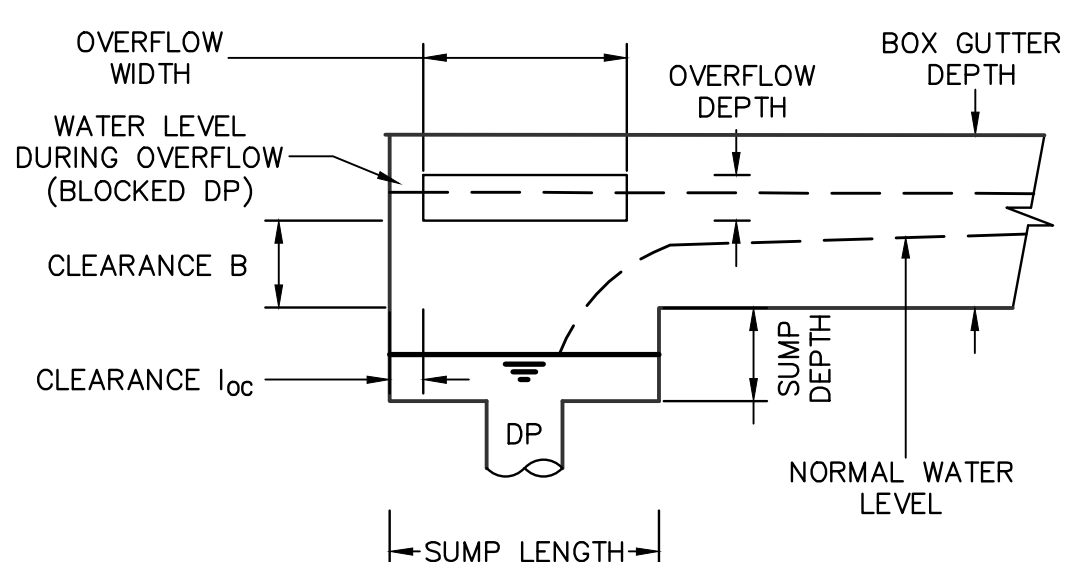
STORMWATER LAYOUT PLAN  
ROOF LEVEL  
SCALE 1:100



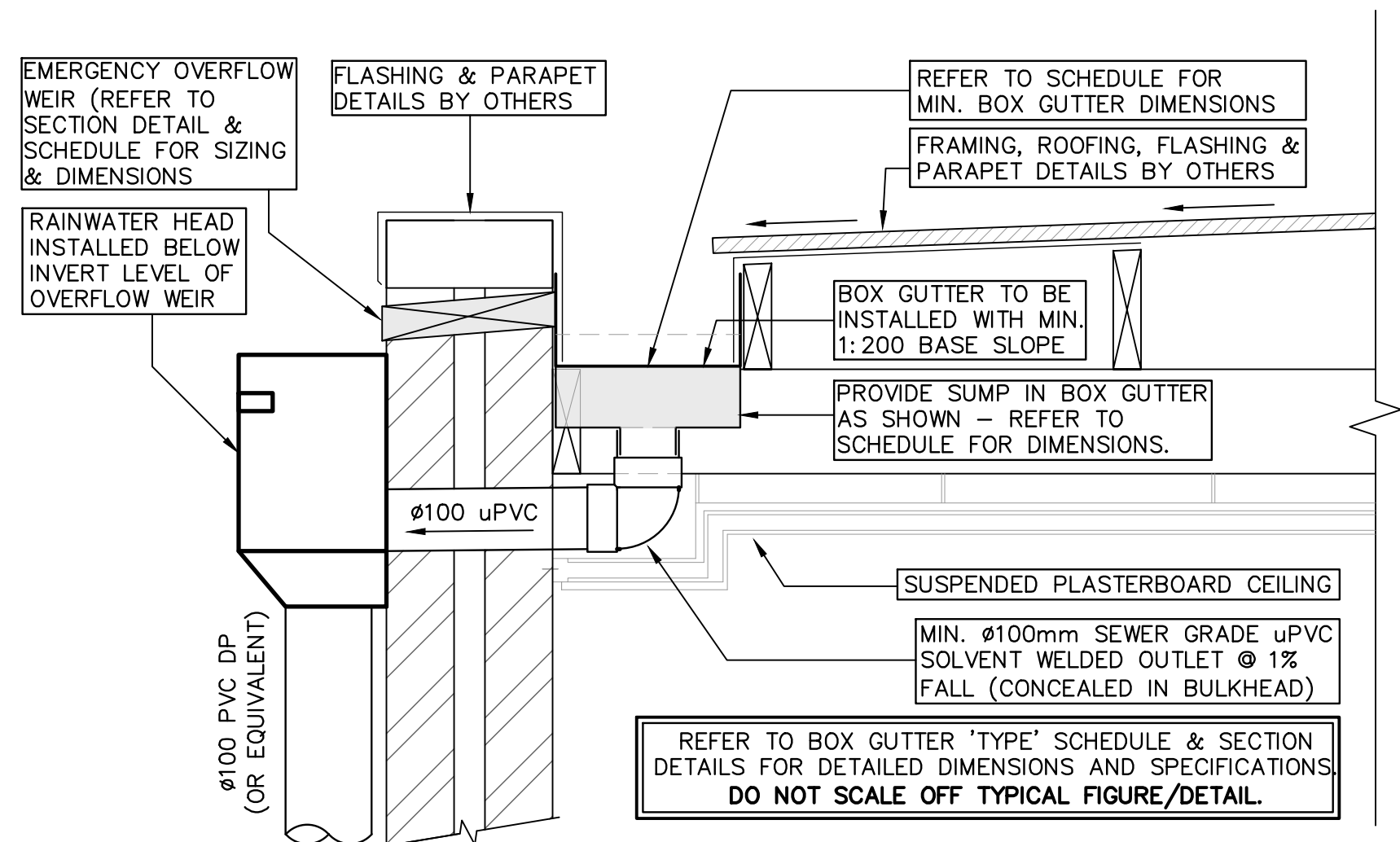
SECTION THROUGH RAINWATER HEAD (TYP.)  
SCALE 1:20



RAINWATER OUTLET DETAIL  
SCALE: 1:10



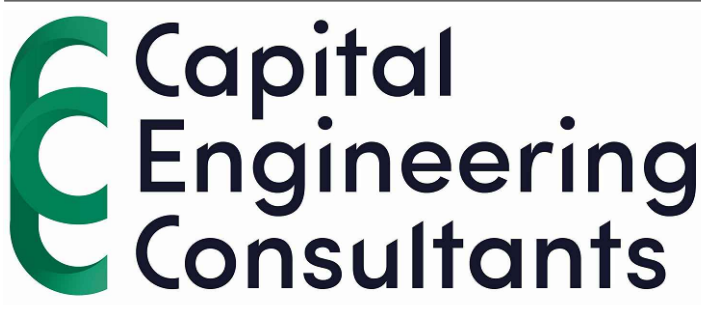
BOX GUTTER WITH INTERNAL SUMP  
AND SIDE OVERFLOW DETAIL  
NOT TO SCALE



BOX GUTTER SUMP TO EXTERNAL  
RAINWATER HEAD TYPICAL DETAIL  
SCALE 1:10

PROPOSED SINGLE DWELLING  
83 RAMSAY RD, PICNIC POINT NSW 2213

Scale 1:100 @ A1 Date 07/03/2025 Drawn K.T. Design K.T. Approved P.E.



9630 0121  
8 Buller Street, North Parramatta, NSW 2151  
www.cec-au.com

Rev	Description	By	Chk	Date
B	ISSUED FOR DA APPROVAL	K.T.	P.C.	07/03/2025
A	ISSUED FOR DA APPROVAL	K.T.	M.W.	27/01/2025

Architect  
ES DESIGN  
SUITE 10, LEVEL 1/1 COOKS AVE  
GANTERBURY NSW 2103  
INFO@ESDESIGN.COM.AU  
(02) 9707 2000  
ES.COM.AU

FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE  
APPROVED BY:  
PAUL EL-BAYEH  
B.E. (CIVIL, M.E. (Structure & Foundation),  
FEAust, CPEng No. 3132148, NER, RPSC.

FOR COUNCIL APPROVAL ONLY (CONCEPT)  
Title  
STORMWATER LAYOUT PLAN  
FIRST FLOOR & ROOF PLAN,  
NOTES & DETAILS

DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY  
North  
Project Number  
SW24454  
Drawing Number  
SW030  
Revision  
B



EROSION CONTROL

BEFORE EARTHWORKS CAN COMMENCE THE EROSION & SEDIMENT CONTROL MEASURES MUST BE IN PLACE.

DURING THE CONSTRUCTION PERIOD, THESE CONTROL MEASURES WILL NEED TO BE INSPECTED & MAINTAINED REGULARLY, ESPECIALLY AFTER STORM EVENTS, BY THE CONTRACTOR.

ALL WORK IS TO BE CARRIED OUT TO PREVENT EROSION, CONTAMINATION & SEDIMENTATION OF THE STORAGE SITE, SURROUNDING AREAS & DRAINAGE SYSTEMS.

MINIMIZE DISTURBED AREA COVERED WITH NATURAL VEGETATION. ONLY THOSE AREAS DIRECTLY REQUIRED FOR CONSTRUCTION ARE TO BE DISTURBED.

ISOLATE EXISTING STORMWATER PITS WITH STRAW BALES OR SILT TRAPS TO FILTER ALL INCOMING FLOWS.

DO NOT STOCKPILE EXCAVATED MATERIAL ON THE ROAD WAY.

DIVERT CLEAN WATER FROM UNDISTURBED AREAS AROUND THE WORKING AREAS.

CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE DO SO IN A FORWARD DIRECTION.

ADOPT TEMPORARY MEASURES AS MAY BE NECESSARY FOR EROSION & SEDIMENT CONTROL, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

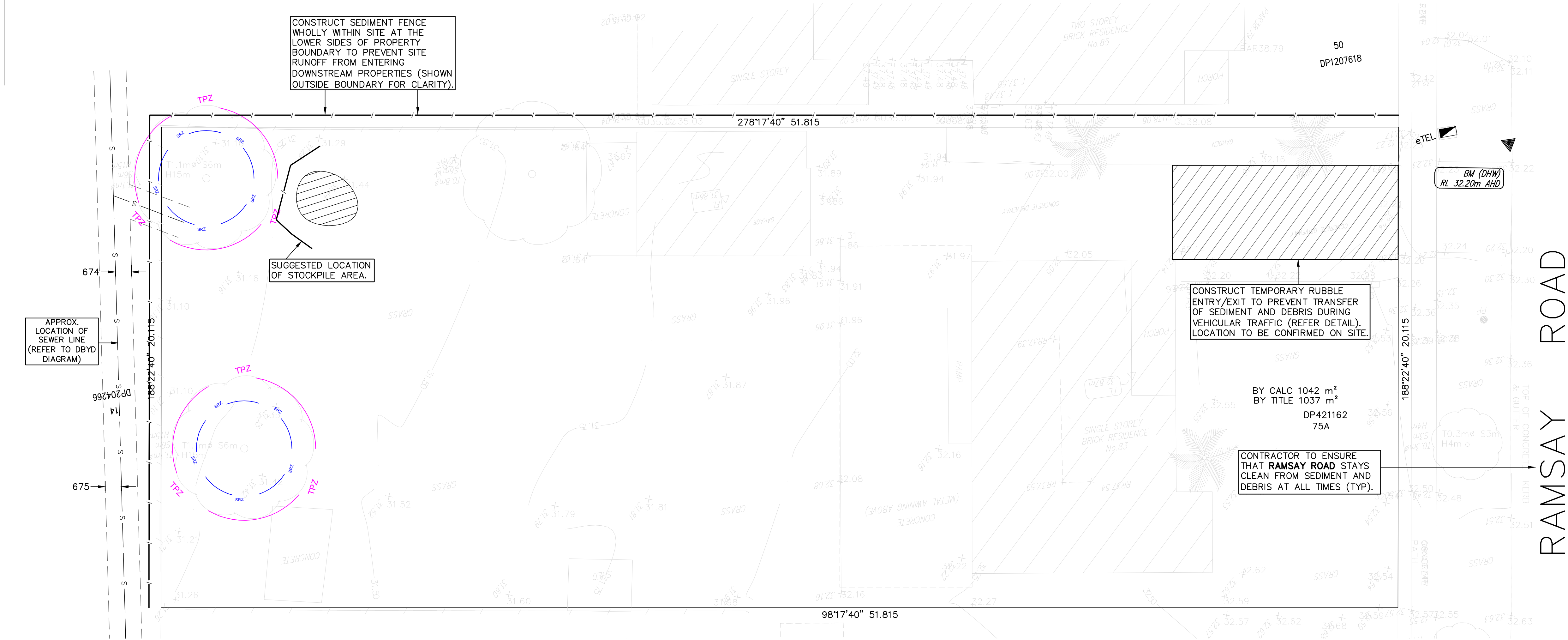
- DRAINS: TEMPORARY DRAINS AND CATCH DRAINS.
- SPREADER BANKS OR OTHER STRUCTURES: TO DISPERSE CONCENTRATED RUNOFF.
- SILT TRAPS: CONSTRUCTION AND MAINTENANCE OF SILT TRAPS TO PREVENT DISCHARGE OF SCOURED MATERIAL TO DOWNSTREAM AREAS.

AFTER RAIN, INSPECT, CLEAN, AND REPAIR IF REQUIRED, TEMPORARY EROSION & SEDIMENT CONTROL MEASURES.

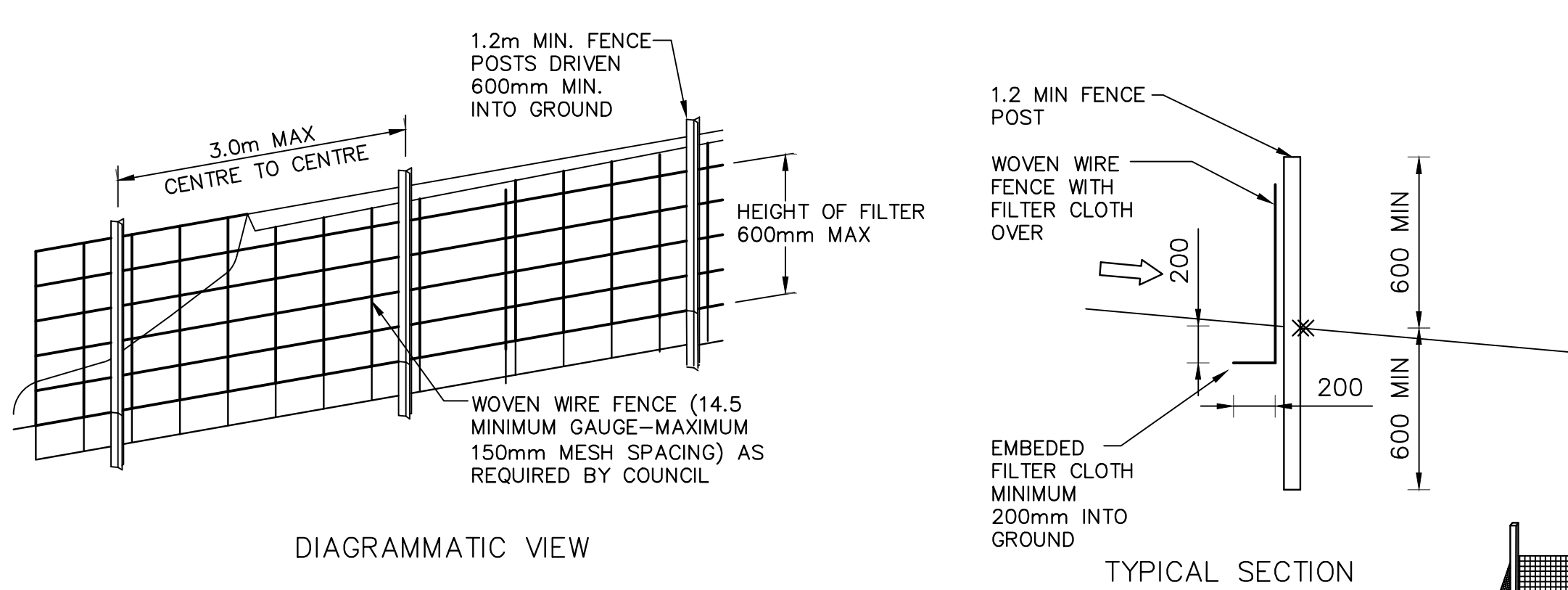
REMOVE TEMPORARY EROSION & SEDIMENT CONTROL MEASURES WHEN THEY ARE NO LONGER REQUIRED.

COMPLY WITH THE REQUIREMENTS OF LANDCOM'S MANAGING URBAN STORMWATER – SOIL AND CONSTRUCTION 'THE BLUE BOOK' LATEST EDITION

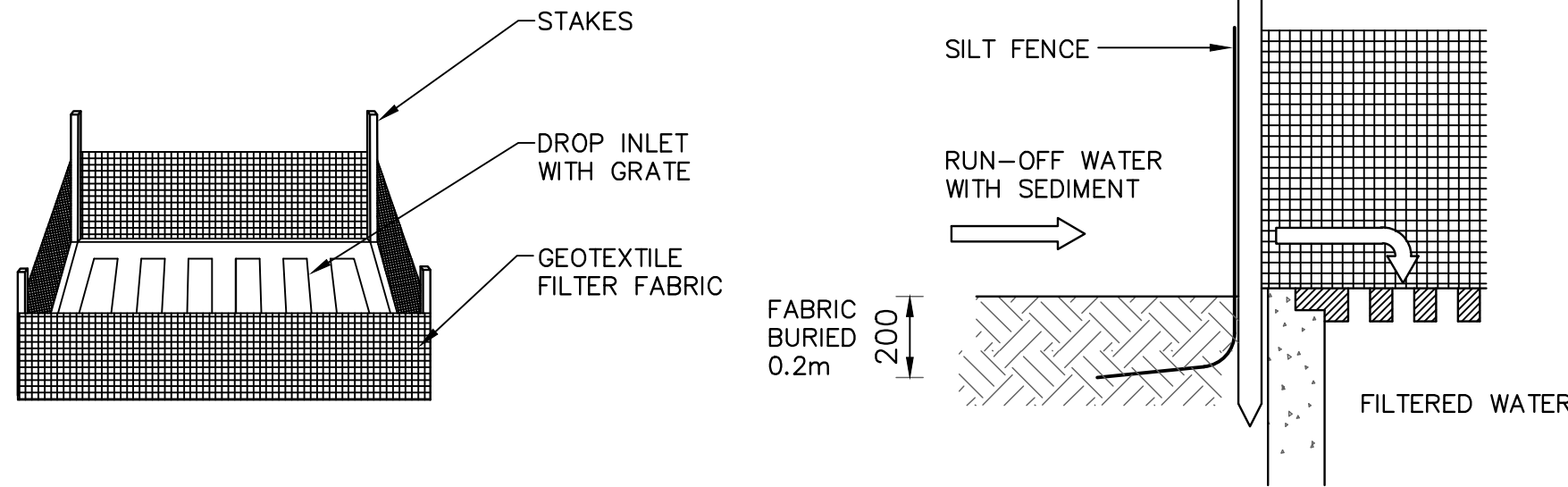
THE EROSION & SEDIMENT CONTROL PLAN PROVIDED IS ONLY INDICATIVE. THE CONTRACTOR SHOULD PREPARE A DETAILED ESCP SUITABLE FOR THE SPECIFIC SITE CONDITIONS



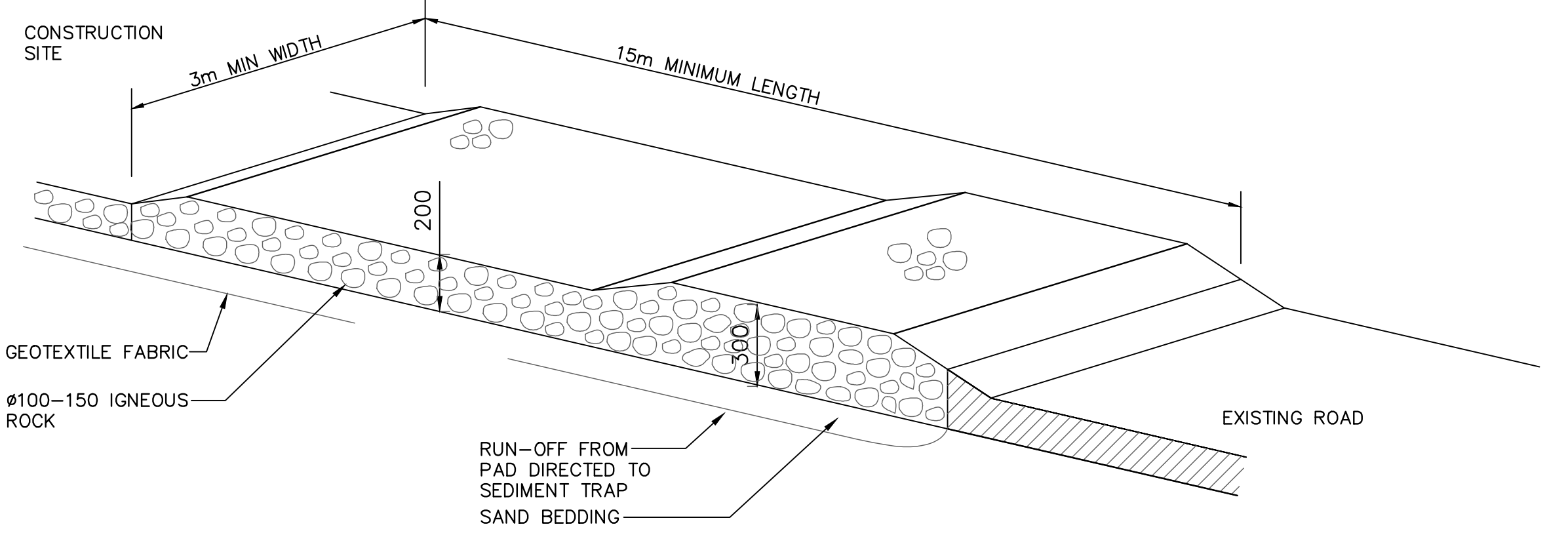
EROSION & SEDIMENT CONTROL PLAN  
SCALE 1:100



SEDIMENT FENCE DETAIL  
NOT TO SCALE



SUMP SEDIMENT TRAP DETAIL  
NOT TO SCALE



TEMPORARY CONSTRUCTION EXIT (RUBBLE ALTERNATIVE)  
NOT TO SCALE

PROPOSED SINGLE DWELLING  
83 RAMSAY RD, PICNIC POINT NSW 2213

Scale 1:100 @ A1 Date 07/03/2025 Drawn K.T. Design K.T. Approved P.E.



9630 0121  
8 Buller Street, North Parramatta, NSW 2151  
www.cec-au.com

B	ISSUED FOR DA APPROVAL	K.T.	P.C.	07/03/2025	
A	ISSUED FOR DA APPROVAL	K.T.	M.W.	27/01/2025	
Rev	Description	By	Chk	Date	

Architect  
ES DESIGN  
SUITE 10, LEVEL 1/1 COOKS AVE  
CANTERBURY NSW 2193  
INFO@ESDESIGN.COM.AU  
02 9707 2000  
ES.COM.AU



FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE  
APPROVED BY:  
PAUL EL-BAYEH  
B.E. (CIVIL, M.E. (Structure & Foundation),  
FEAust, CPEng No. 3132148, NER, RPSC.

DATE:  
07/03/2025



Title  
STORMWATER LAYOUT PLAN  
EROSION & SEDIMENT CONTROL  
PLAN, NOTES & DETAILS

A1 0 20 40 60 80 100  
DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

North  
Project Number  
SW24454  
Drawing Number  
ER001  
Revision  
B