STORWATER DRAINAGE

PROPOSED TWO-STOREY DWELLING WITH BASEMENT 19 LANCELOT STREET, PUNCHBOWL NSW 2196

DI	RAWING REGISTER
DRAWING NO.	DRAWING TITLE
V250137 - SW000	COVER SHEET
V250137 - SW001	GENERAL NOTES
V250137 - SW100	BASEMENT DRAINAGE PLAN
V250137 - SW101	GROUND FLOOR DRAINAGE PLAN
V250137 - SW102	FIRST FLOOR DRAINAGE PLAN
V250137 - SW103	ROOF DRAINAGE PLAN
V250137 - SW110	POST-DEVELOPMENT CATCHMENT PLAN
V250137 - SW120	STORMWATER DETAILS - SHEET 1

REVISION	REVISION DETAILS	DATE	DRAWN	DESIG	CHECK	APPROVED	PREPARED BY	ARCHITECT		CLIENT	SCALE		GRID	STATUS FOR AP NOT TO BE USED FOR CO	PROVAL DNSTRUCTION PURPOSES	
В	ISSUED FOR DA ISSUED FOR DA	28.02.2025 14.03.2025		M.N.	D.S.	D.S.	VANGUARD CONSULTI	9				NOT TO SCALE	HEIGHT AHD		MENT	
							E-MAIL: ADMIN@VCENG.COM.AU OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA	2154			DRAWING T			19 LANCELOT STREET, LGA: CANTERBURY-BANKSTOWN	PUNCHBOWL NSW 219	96
							TEL: (02) 9145 0253 WEB: WWW.VCENG.COM.AU	dezc	con			COVER SHE	ET	DRAWING NUMBER V250137 - SW000	REFERENCE NUMBER V250137	REVISION

SITEWORKS NOTES

- ORIGIN OF LEVELS:- REFER SURVEY NOTES
- 2. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LOCAL GOVERNMENT AUTHORITIES ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS.
- PRIOR TO THE COMMENCEMENT OF THE WORKS THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO VANGUARD.
- PRIOR TO THE COMMENCEMENT OF THE WORKS, THE CONTRACTOR IS TO VERIFY THE ALIGNMENT AND LEVELS OF ALL EXISTING SERVICES AT ALL LOCATIONS WHERE THE PROPOSED SERVICES ARE TO CROSS. CONNECT TO OR ARE LOCATED IN CLOSE PROXIMITY TO THE EXISTING SERVICES. ANY DISCREPANCIES TO BE REPORTED TO VANGUARD.
- CONTRACTOR MUST MAKE SMOOTH CONNECTION WITH ALL EXISTING WORKS.
- ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL, REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289.5.2.1 (OR A DENSITY INDEX OF NOT LESS THAN 75).
- PROVIDE 10mm WIDE ISOLATION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVEMENTS.
- ASPHALTIC CONCRETE SHALL CONFORM TO THE CURRENT TFNSW SPECIFICATION TS 03283.1 (R116) HEAVY DUTY DENSE GRADED ASPHALT
- 10. ALL BASECOURSE AND SUB-BASE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH THE CURRENT TFNSW SPECIFICATION TS 03315.1 (3051) GRANULAR BASE AND SUBBASE MATERIALS FOR SURFACED ROAD PAVEMENTS COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289
- FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m³ OF SUB-BASE COURSE MATERIAL PLACED UNLESS OTHERWISED APPROVED BY VANGUARD.
- AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL (IN NOTE 10) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH THE CURRENT TFNSW SPECIFICATION TS 03315.1 (3051 GRANULAR BASE AND SUBBASE MATERIALS FOR SURFACED ROAD PAVEMENTS WILL BE CONSIDERED. SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF VANGUARD.
- 12. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THE CONTRACTOR IS TO SEEK ACCEPTANCE OF THE PRODUCT FROM VANGUARD. THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
- 13. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (EG. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.
- 14. ALL WORKS CARRIED OUT ADJACENT TO AND WITHIN SERVICE EASEMENTS ARE TO COMPLY WITH THE RELEVANT SERVICE AUTHORITIES GUIDELINES AND REQUIREMENTS.

EXISTING UNDERGROUND SERVICES NOTES

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE. AT & L CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.

CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.

CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.



BEFORE YOU DIG AUSTRALIA 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.

STORMWATER DRAINAGE NOTES

GENERAL NOTES

- 1. STORMWATER DESIGN CRITERIA: ANNUAL EXCEEDANCE PROBABILITY:
- MINOR STORM: 5% AEP MAJOR STORM: 1% AEP
- PIPES LESS THAN 300 DIA SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS.
- ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN DN300.
- ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF THE CURRENT AS 3500 3.1 AND AS/NZS
- 3500 3.2. 5. ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE 6. ENSURE ALL VERTICALS AND

DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN

- HEIGHT. ALL DRAINAGE LINES TO PROVIDE A 3.0M LENGTH OF DN100 SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, ON THE UPSTREAM SIDE OF EACH PIT. ALLOW FOR SECONDARY SUBSOIL FOR PIPES FOR PIPE
- GRATER THAN DN825. SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK SHALL BE PROVIDED BENEATH ALL KERBLINES WHERE NO DRAINAGE LINES ARE SHOWN ON THE DRAWINGS AND SHALL DISCHARGE INTO DOWNSTREAM
- PITS. 8. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR
- PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPES ARE TO BE USED. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL FROM VANGUARD.
- 10. GRATES AND COVERS SHALL CONFORM TO THE CURRENT AS 3996. CLASS D COVER (MINIMUM) SHALL BE PROVIDED IN TRAFFICKED PAVEMENTS WITH CLASS B (MINIMUM) BEING PROVIDED IN NON-TRAFFICKED AREAS.
- 11. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, THE CONTRACTOR SHALL PROVIDE ADEQUATE SAFETY PROCEDURES TO PREVENT THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
- 12. ALL PITS AND PIPES TO BE FOUNDED ON SUITABLE MATERIAL WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPa UP TO 3.0m DEPTH TO INVERT AND 150KPa FROM 3.0m TO 6.0m DEPTH TO INVERT ONCE EXCAVATED. A CONCRETE BLINDING LAYER (MINIMUM 100mm THICK 25MPa OR DEEPER TO ENSURE MINIMUM SPECIFIED BEARING CAPACITY IS ACHIEVED) MAY BE PROVIDED. CONTRACTOR TO ENGAGE
- GEOTECHNICAL ENGINEER TO PROVIDE WRITTEN CONFIRMATION. 13. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.
- 14. ALL STORMWATER PITS ARE TO BE CAST IN-SITU IN ACCORDANCE WITH THE STORMWATER DETAILS AND SPECIFICATIONS.
- 15. ALL PITS MUST BE BENCHED AND STREAMLINED TO DIRECT WATER FROM THE INLET PIPE TO THE OUTLET PIPE.
- 16. PITS DEEPER THAN 600mm MUST BE FITTED WITH DOUBLE STEP-IRONS IN ACCORDANCE WITH THE CURRENT AS1657. PLASTIC ENCAPSULATED MAY BE USED. STEP-IRONS TO BE PROVIDED ON A SINGLE FACE WHERE POSSIBLE. SHOULD STEP-IRONS REQUIRE TO CHANGE FACE THEN 3
- OVERLAPPING STEP IRONS ARE TO BE LOCATED ON EACH FACE. 17. FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN 1 TEST PER 2 LAYERS PER 40 LINEAR METERS.

RIGID & SEMI-RIGID PIPE NOTES

- 18. PIPES 300 DIA. AND LARGER TO BE STEEL REINFORCED CONCRETE CLASS '3' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O. ALL ROAD CROSSINGS TO BE CLASS '4' U.N.O. EQUIVALENT STRENGTH FIBRE REINFORCED CONCRETE PIPES MAY BE USED SUBJECT TO APPROVAL BY VANGUARD OR THE LOCAL
- GOVERNMENT AUTHORITY. 19. REINFORCED CONCRETE PIPES TO COMPLY WITH THE CURRENT AS/NZS
- FIBRE REINFORCED CONCRETE PIPES TO COMPLY WITH THE CURRENT AS 4139.
- PIPES TO BE INSTALLED WITH TYPE HS3 (ROAD) AND HS2 (LOTS) SUPPORT IN ACCORDANCE WITH THE CURRENT AS/NZS 3725. N ALL CASES BACKFILL EMBEDMENT ZONE WITH SELECT FILL (MINIMUM CBR 15%) TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289.5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75).

FLEXIBLE PIPE NOTES

20. FLEXIBLE PIPES TO COMPLY WITH THE CURRENT AS/NZS 2566.1. PIPES TO BE INSTALLED IN ACCORDANCE WITH THE CURRENT AS/NZS 2566.2. IN ALL CASES BACKFILL EMBEDMENT ZONE WITH GRAVEL OR SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289.5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)

PRECAST CONCRETE PIT NOTES

- 21. PRECAST PIT MAY BE USED WITH THE APPROVAL OF VANGUARD THE SUPERINTENDENT AND THE LOCAL GOVERNMENT AUTHORITY AND SHALL BE INSTALLED TO THE MANUFACTURERS RECOMENDATIONS. 22. ALL PRE-CAST PITS ARE TO BE STRUCTURALLY CERTIFIED TO MEET
- RELEVANT REQUIREMENTS OF THE CURRENT AS3600 AND AS3996 (2019). 23. PRE-CAST STORMWATER PITS ARE TO BE APPROVED FOR TFNSW MADE WITH OPENINGS UP TO A MAXIMUM +50mm OD OF THE
- CONSTRUCTION (R11) AND ARE TO ARE TO BE DESIGNED AND CUSTOM STORMWATER PIPES. PITS ARE ALSO TO INCLUDE PENETRATIONS FOR SUBSOIL CONNECTIONS AND DOUBLE STEP-IRONS INSTALLED FOR PITS >0.6m DEEP. DEMOLITION SAWS MAY BE USED PROVIDING A NEAT FULL DEPTH CUT IS APPLIED AND ANY ADDITIONAL PENETRATIONS REQUIRED ARE TO BE CORE DRILLED.
- 24. SHOP DRAWINGS ARE TO BE PROVIDED FOR REVIEW AND ACCEPTANCE. IT SHOULD BE NOTED THAT THE CONTRACTOR IS TO ENSURE THAT THE STRUCTURAL COMPONENTS OF THE PITS ARE NOT COMPROMISED AND ONLY THE PIPE KNOCKOUTS ARE TO BE REMOVED FOR THE PIPE PENETRATIONS.

STORMWATER DRAINAGE NOTES (CONTINUED)

- ALL PRECAST PITS TO BE FOUNDED ON CONCRETE BLINDING LAYER (100mm ON AN EARTH FOUNDATION OR 150mm ON A ROCK FORMATION) WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPa UP TO 3.0m DEPTH TO INVERT AND 150KPa FROM 3.0m TO 6.0m DEPTH TO INVERT (MINIMUM 100mm THICK 25MPa OR DEEPER TO ENSURE MINIMUM SPECIFIED BEARING CAPACITY IS ACHIEVED). CONTRACTOR TO ENGAGE
- GEOTECHNICAL ENGINEER TO PROVIDE WRITTEN CONFIRMATION. ALL PRE-CAST PIT PENETRATIONS SHALL BE CUT SO THAT IT IS FLUSH WITH THE INTERNAL WALL.
- ALL PIPE JOINTING, SPARGING, RENDERING, FILLING OF GAPS TO BE FILLED WITH A HIGH STRENGTH NON-SHRINK GROUT WITH A MINIMUM 40MPa COMPRESSIVE STRENGTH AT 28 DAYS. (LANKO DURABED 702 OR SINGLE UNITS PREFERRED BUT IF REQUIRED MINIMUM RISER DEPTH

600mm PIT INSTALLATION AND JOINTING BETWEEN UNITS SHALL BE

UNDERTAKEN IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. ANY DAMAGE TO THE STRUCTURAL INTEGRITY OF THE PRE-CAST PIT WILL BE REPAIRED AND STRUCTURALLY CERTIFIED AT THE CONTRACTORS EXPENCE TO THE SATISFACTION OF THE VANGUARD,

SUPERINTENDENT / LOCAL GOVERNMENT AUTHORITY.

SURVEY NOTES

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. VANGUARD CONSULTING ENGINEERS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT VANGUARD CONSULTING ENGINEERS.

AS3500.3 MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS

		MINIM	MINIMUM INTERNAL DIMENSIONS mm							
DEPTH TO OUT		RECTAN	CIRCULAR							
		WIDTH LENGTH		DIAMETER						
	≤ 600	450	450	600						
> 600	≤ 900	600	600	900						
> 900	≤ 1200	600	900	1000						
> 1200		900	900	1000						

AS3500.3 MINIMUM GRADIENT OF SITE STORMWATER DRAINS **NOMINAL NOMINAL** MINIMUM GRADIENT MINIMUM GRADIENT SIZE SIZE DN ΑU ΝZ ΑU ΝZ 1:100 1:90 1:350 1:200 1:100 1:120 300 1:250 1:350 1:100 1:200 375 1:300 1:350

AS3500.3 **TABLE 7.1: MINIMUM PIPE COVER** (FROM FINISHED SURFACE TO TOP OF PIPE) OTHER CAST IRON, DUCTILE AUTHORIZED(*) IRON, GALVANIZED STEEL PRODUCTS LOCATION MINIMUM COVER (millimeters) NOT SUBJECT TO VEHICULAR LOADING (A) WITHOUT PAVEMENT -(i) FOR SINGLE DWELLINGS 100 (ii) FOR OTHER THAN ITEM (i) 300 (B) WITH PAVEMENT OF BRICK OR NIL (†) 50 (†) UNREINFORCED CONCRETE SUBJECT TO VEHICULAR LOADING (A) OTHER THAN ROADS -(i) WITHOUT PAVEMENT 300 450 (ii) WITH PAVEMENT OF -(A) REINFORCED CONCRETE FOR HEAVY NIL (†‡) 100 (†‡) VEHICULAR LOADING (B) BRICK OR UNREINFORCED CONCRETE NIL (†‡) 75 (†‡) FOR LIGHT VEHICULAR LOADING (B) ROADS -(i) SEALED 300 500 (†‡) (ii) UNSEALED 500 (†‡) SUBJECT TO CONSTRUCTION EQUIPMENT LOADING 500 (†‡) 300 OR IN EMBANKMENT CONDITIONS

INCLUDE OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK.

)	BELOW THE UNDERSIDE OF THE PAVEMENT.
)	SUBJECT TO COMPLIANCE WITH AS1762, AS2033, AS/NZS 2566.1, AS3725 OR AS4060

-	
— sw —— >—	STORMWATER LINE
— RW —— > —	ROOF WATER LINE
SSD	SUBSOIL DRAINAGE LINE
— OF —— >—	OVERFLOW LINE
— SWRM— SWRM—	STORMWATER RISING MAIN
е	EXISTING STORMWATER LINE
swsw	AUTHORITY STORMWATER LINE
HL HL	HIGH LEVEL STORMWATER LINE
s	AUTHORITY SEWER LINE
w	AUTHORITY WATER LINE
G G	AUTHORITY GAS LINE
— — E—	AUTHORITY ELECTRICITY LINE
— FO— FO— FO—	AUTHORITY FIBRE OPTIC LINE
TEL	AUTHORITY COMMS LINE
—— —— OH(E) ——	AUTHORITY OVERHEAD ELECTRICAL LINE
	FENCE LINE
	GRATED SURFACE INLET PIT
	GRATED SURFACE INLET PIT WITH OCEANGUARD BASKET
	JUNCTION PIT
	KERB INLET PIT
(11111111111111111111111111111111111111	GRATED TRENCH DRAIN
eTEL	EXISTING TELSTRA PIT
⊞ eHYD	EXISTING HYDRANT
⊠ eSV	EXISTING STOP VALVE
□ eGAS	EXISTING GAS VALVE
O ePP	EXISTING POWER POLE
□ eBT	EXISTING BOUNDARY TRAP
eSMH	EXISTING SEWER MANHOLE
OFP 📄	OVERLAND FLOW PATH
RWO∅	RAINWATER OUTLET

DOWNPIPE

LEGEND

DP

LEGEND	
CO Ø	CLEAR OUT POINT
DDO ∅	DISH DRAIN OUTLET
PD Ø	PLANTER DRAIN
	CAPPING
FF ∅	FIRST FLUSH
RH Ø	RAINHEAD
•	DOWNPIPE DROP
\bowtie	NON RETURN VALVE
<u> </u>	WALL PENETRATION
SP SP	DOWNPIPE SPREADER
	WARNING LIGHT
\$80.00	SPOT LEVELS
Δ	BENCHMARK

ABBF	REVIATIONS:
Ø or DIA CBR CH CL CO DD DDO DEJ	CALIFORNIA BEARING RATIO CHAINAGE CENTER LINE CLEAR OUT DISH DRAIN DISH DRAIN OUTLET DOWELLED EXPANSION JOINT
DGB DGS DP e	DENSE GRADED BASECOURSE DENSE GRADED SUB-BASE DOWNPIPE EXISTING
FFL	FINISHED FLOOR LEVEL GRATED TRENCH DRAIN GRATED SURFACE INLET PIT ISOLATING JOINT
IK IL IP KIP	INTEGRAL KERB INVERT LEVEL INTERSECTION POINT KERB INLET PIT
KO K&G KR NGL	KERB ONLY KERB & GUTTER KERB RETURN NATURAL GROUND LEVEL
OFP OSD R RCP	OVERLAND FLOW PATH ON-SITE DETENTION RADIUS
RK RL RW	ROLL KERB & GUTTER REDUCED LEVEL RETAINING WALL
RWT SJ SMH SWRM	RAINWATER TANK SAWN CONTROL JOINT SEWER MAN HOLE STORMWATER RISING MAIN
TOK TOW TWL	TOP OF KERB TOP OF WALL TOP WATER LEVEL

TANGENT POINT

TYPICAL

BENCH MARK

UNO

WPJ

FF

TYP

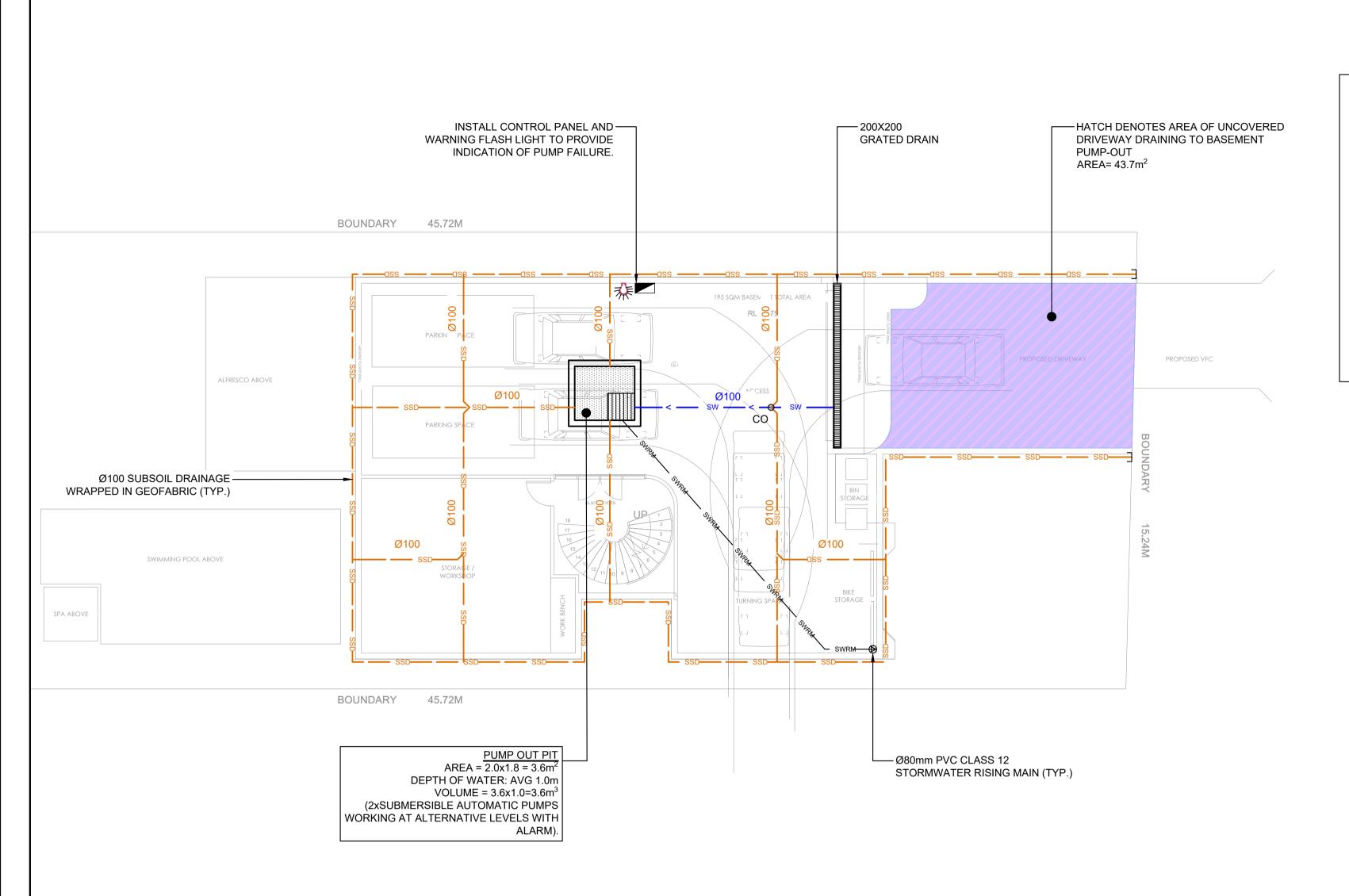
UNLESS NOTED OTHERWISE

WEAKENED PLANE JOINT

FIRST FLUSH DEVICE

	PROPOSED	EXISTING	FUTURE	TEMPORARY
STORMWATER PIPELINE		000000	000000	
STORMWATER DRAINAGEG PITS				
CONCRETE HEADWALL				
DRAINAGE LABEL	(A.05)	(A.05)	(A.05)	(A.05)
CATCH DRAIN	→→	$\rightarrow \rightarrow \rightarrow -$	$\rightarrow \rightarrow \rightarrow -$	$\rightarrow \rightarrow \rightarrow -$

REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED	PREPARED BY		ARCHITEC	T .	CLIENT	SCALE	GRID		PPROVAL ONSTRUCTION PURPOSES	
А	ISSUED FOR DA	28.02.2025	D.D.	M.N.	D.S.	D.S.						NOT TO SCALE	HEIGHT AHD	PROJECT TWO CT		
В	ISSUED FOR DA	14.03.2025	T.N.	M.N.	D.S.	D.S.	VANGUAF	CONSULTING ENGINEERS					DATUM AND	PROPOSED TWO-STO	OREY DWELLING WI EMENT	IH
							VANCOAN	1 ENGINEERS						19 LANCELOT STREET,		96
							E MAIL ADMINIQUENC COM ALL	055105 0.07 1.57/51 0.44.40				DRAWING TITLE		10 27 (102201 011(221)	,	
							_	OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA, 2154		07000		OFNIEDAL NIC	XTE0	LGA: CANTERBURY-BANKSTOWN		
							TEL: (02) 0445 0252	WEB: WWW.VCENG.COM.AU		ezcon		GENERAL NO	DIES	DRAWING NUMBER	REFERENCE NUMBER	REVISION
							·							V250137 - SW001	V250137	В



PUMP-OUT TANK CALCULATION:

1. STORAGE VOLUME

AREA DRAINING TO PUMP-OUT PIT = 43.7m2
RAINFALL DEPTH (100yr-2hr) = 76.7 mm
VOLUME REQUIRED = A x d = 43.7 x 76.7 x 10-3 = 3.35m3
VOLUME PROVIDED = 2.0x1.8x1.0 = 3.6m3

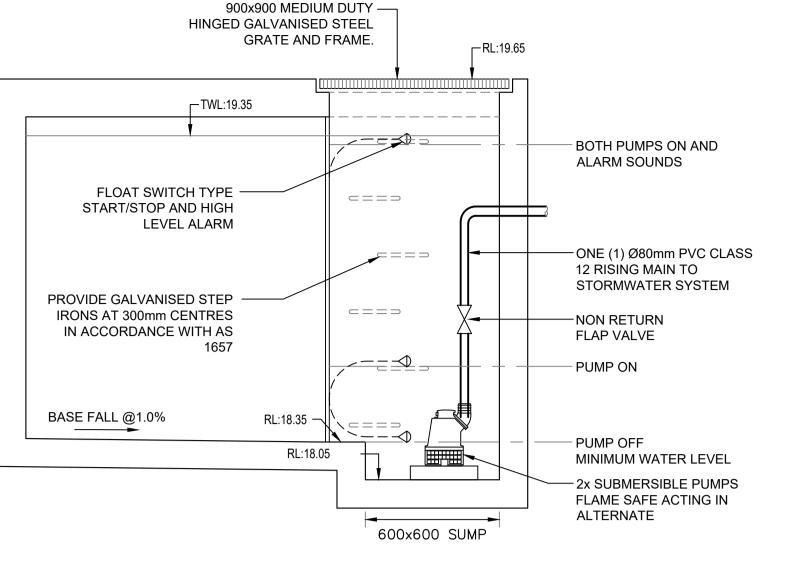
2. PUMP-OUT RATE

RAINFALL INTENSITY I (100yr-5mins) = 207 mm/hr
PUMP-OUT RATE REQUIRED Q = 1 x 207 x 43.7 / 3600 = 2.51 L/s
PUMP-OUT RATE PROVIDED = 10L/s OVER 5m HEAD.

SPECIFY 2x SUBMERSIBLE PUMPS ALINE KS-30 OR APPROVED EQUAL.

PUMP-OUT TANK NOTES:

- 1. PUMPS SHALL WORK ALTERNATIVELY
- 2. A LOW LEVEL FLOAT TO BE PROVIDED TO MAINTAIN MIN. WATER
- LEVEL IN THE TANK (OFF SWITCH)
- A SECOND FLOAT, 300mm HIGHER SHOULD BE PROVIDED TO ACTIVATE ONE PUMP THAT WILL DRAIN THE TANK TO THE LEVE OF THE LOW LEVEL FLOAT
- 4. A THIRD FLOAT SHALL BE PROVIDED APPROX. AT THE SOFFIT OF THE TANK; THIS FLOAT WILL ACTIVATE THE SECOND PUMP THAT IS NOT IN OPERATION AND WILL ACTIVATE THE ALARM
- 5. AN ALARM SYSTEM SHALL BE PROVIDED WITH FLASHING STROBE LIGHT AND A PUMP FAILURE SIGN WHICH ARE TO BE PROVIDED IN A VISIBLE SPOT AT THE DRIVEWAY ENTRANCE.
- 6. A BACK-UP BATTERY SHALL BE PROVIDED FOR THE ALARM SYSTEM IN CASE OF POWER FAILURE
- 7. A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH GUIDELINES FROM SAFE WORK AUSTRALIA.



DETAIL

SCALE 1:20

SUBSOIL PUMP OUT PIT

CONFINED SPACE
NO ENTRY WITHOUT
CONFINED SPACE
TRAINING

DETAIL 2
CONFINED SPACE SIGN SCALE 1:10

NOTE:
PLATE CAN BE 150x100mm AND
INSTALLED TO SIDE OF ACCESS
OPENING IF NEEDED.

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

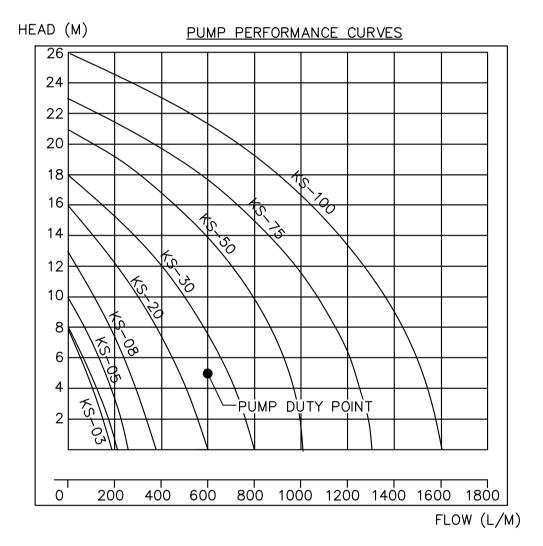
DETAIL

CONFINED SPACE SIGN
SCALE 1:10

3
-

NOTE:
SIGN SHALL BE PLACED IN A CLEAR AND
VISIBLE LOCATION WHERE VEHICLES ENTER
THE BASEMENT.

A SUITABLE ALARM SYSTEM POSITIONED AT ENTRANCE OF BASEMENT CARPARK TO PROVIDE A FLOOD WARNING IN CASE OF PUMP FAILURE (TO COUNCILS SPEC).

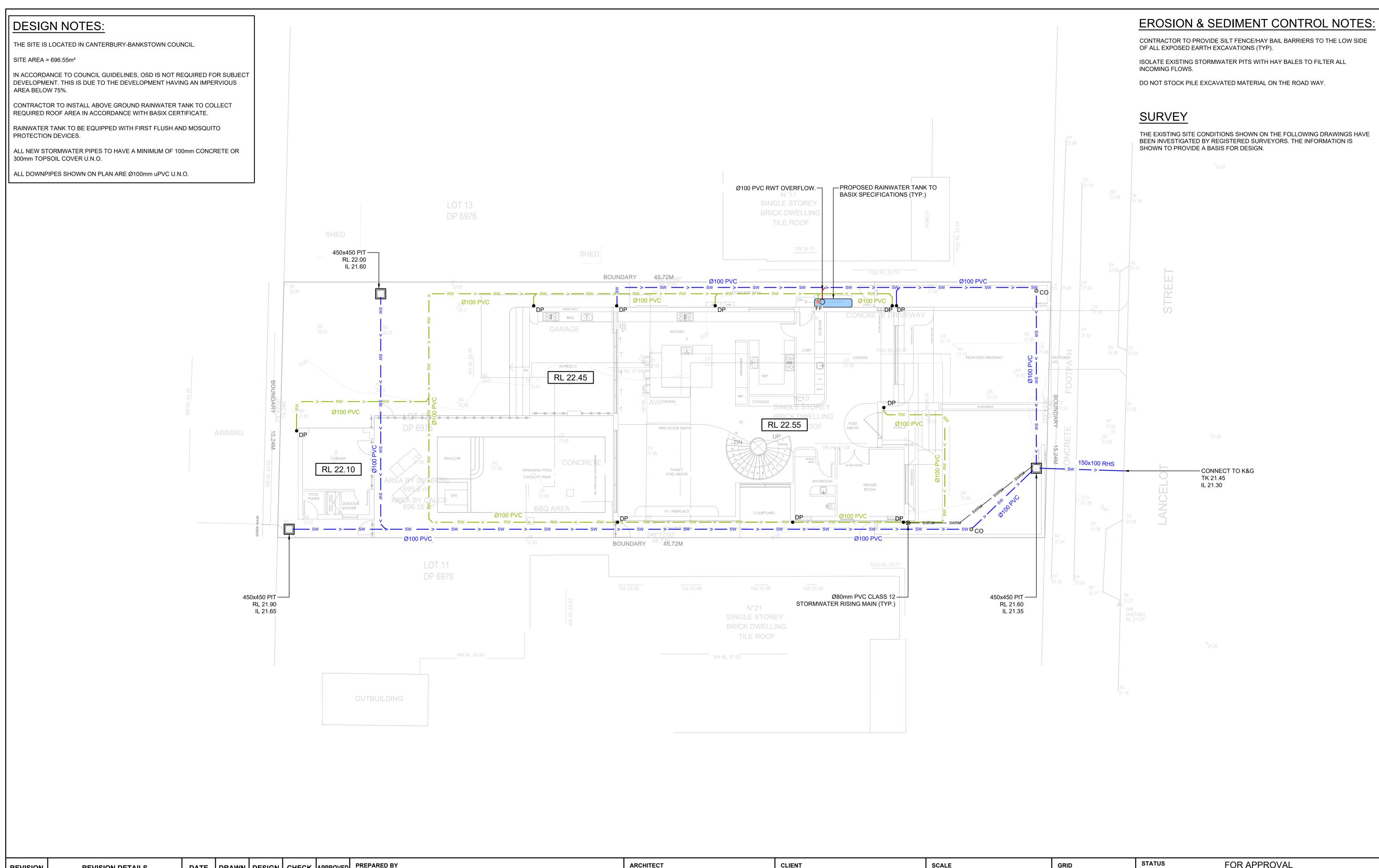


PUMP SIZING

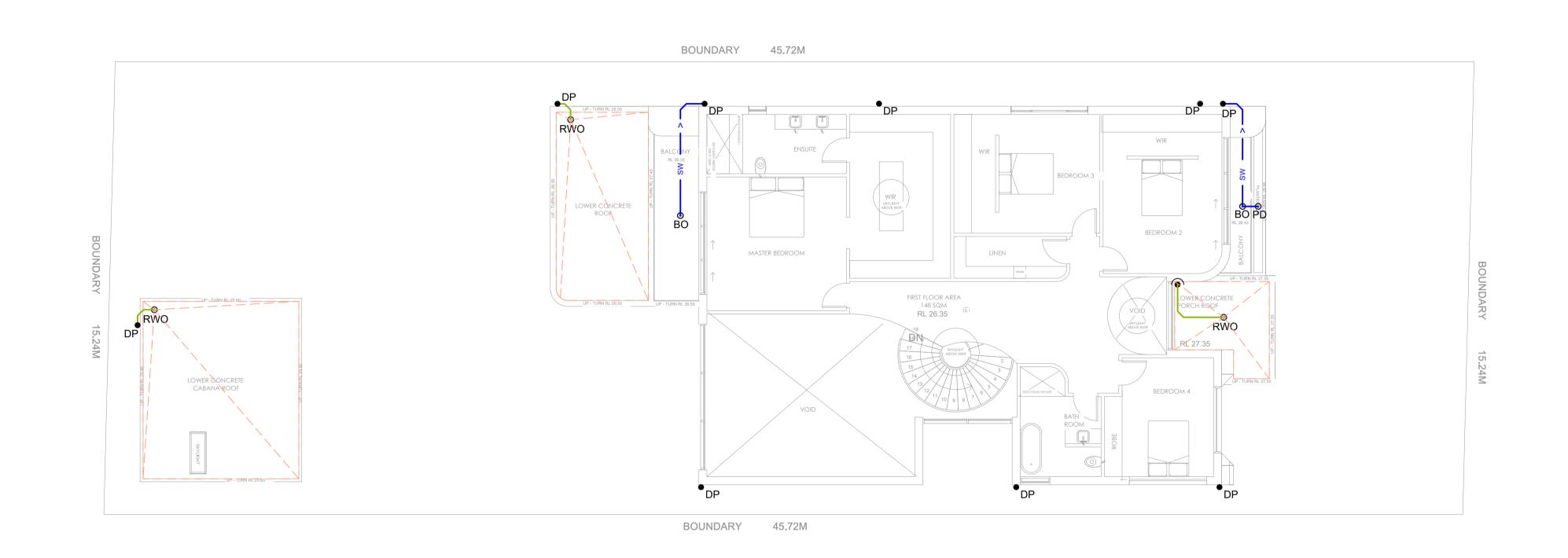
,		Out	put	Out	tlet	Rat	ted	Maxi	mum	Weigh		Dimension	
	Type	Out	put	Ou	uet	Head C	apacity	Head	Capacity	weign	5	Dilliension	
		HP	kW	mm	Inch	М	LPM	М	LPM	Kg	L(mm)	W(mm)	H(mm)
	KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
	KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
	KS-05	1/2	0.4	50	2"	5	160	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	182	475
	KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
RECOMMENDED PUMP	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

RECOMMENDED PUMP SPECIFICATIONS

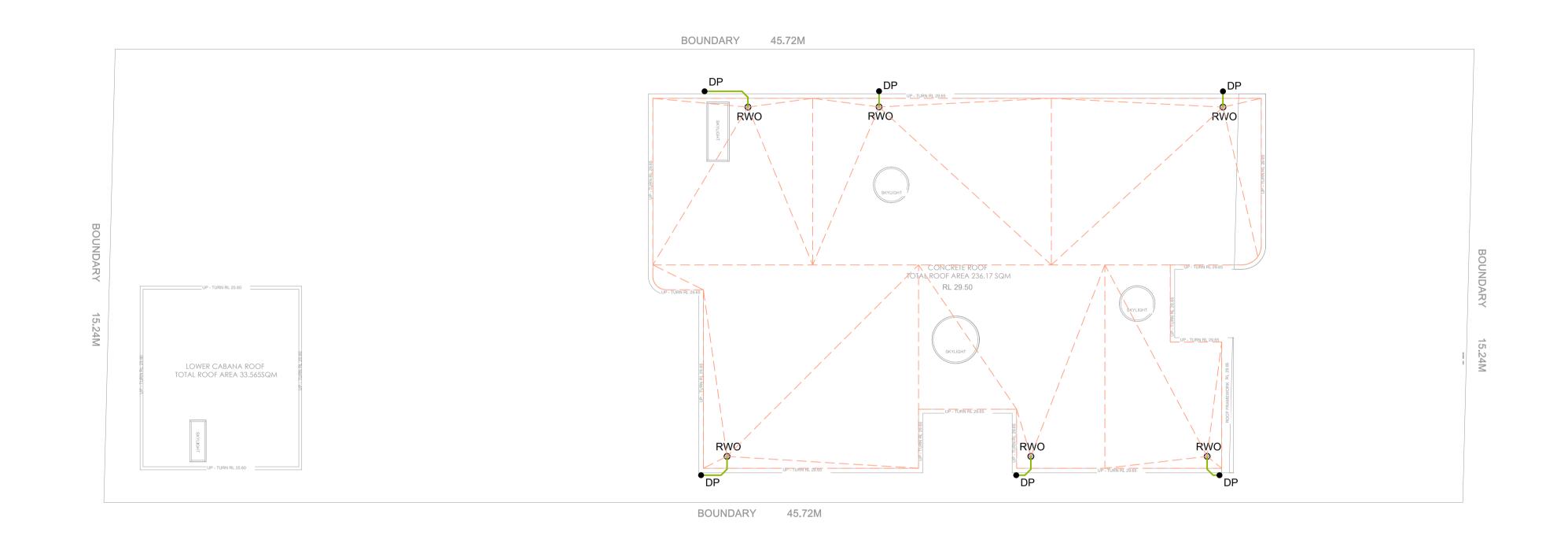
REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED	PREPARED BY	ARCHIT	ЕСТ	CLIENT	SCALE	GRID		PPROVAL CONSTRUCTION PURPOSES	
Α	ISSUED FOR DA	28.02.2025	D.D.	M.N.	D.S.	D.S.			•		1:100 / 1:200 0 1 2 3 4m	HEIGHT AHD	PROJECT TWO CO		T. .
В	ISSUED FOR DA	14.03.2025	T.N.	M.N.	D.S.	D.S.	VANGUARD CONSULTING CONSULT	G			A1 / A3	DATUM AND	PROPOSED TWO-ST	EMENT	IH
							TAIL OF A LENGINEERS		•					Γ, PUNCHBOWL NSW 219	96
									•		DRAWING TITLE		13 LANGLEST STREE	I, I ONOTIDOVIL NOVI 213	
							E-MAIL: ADMIN@VCENG.COM.AU OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA	2154					LGA: CANTERBURY-BANKSTOWN		
							TEL: (02) 9145 0253 WEB: WWW.VCENG.COM.AU	2104	dezcon		BASEMENT DRAINA	AGE PLAN	DRAWING NUMBER	REFERENCE NUMBER	REVISION
							WEB. WWW.VCENG.COM.AU		ACECOII				V250137 - SW100	V250137	В



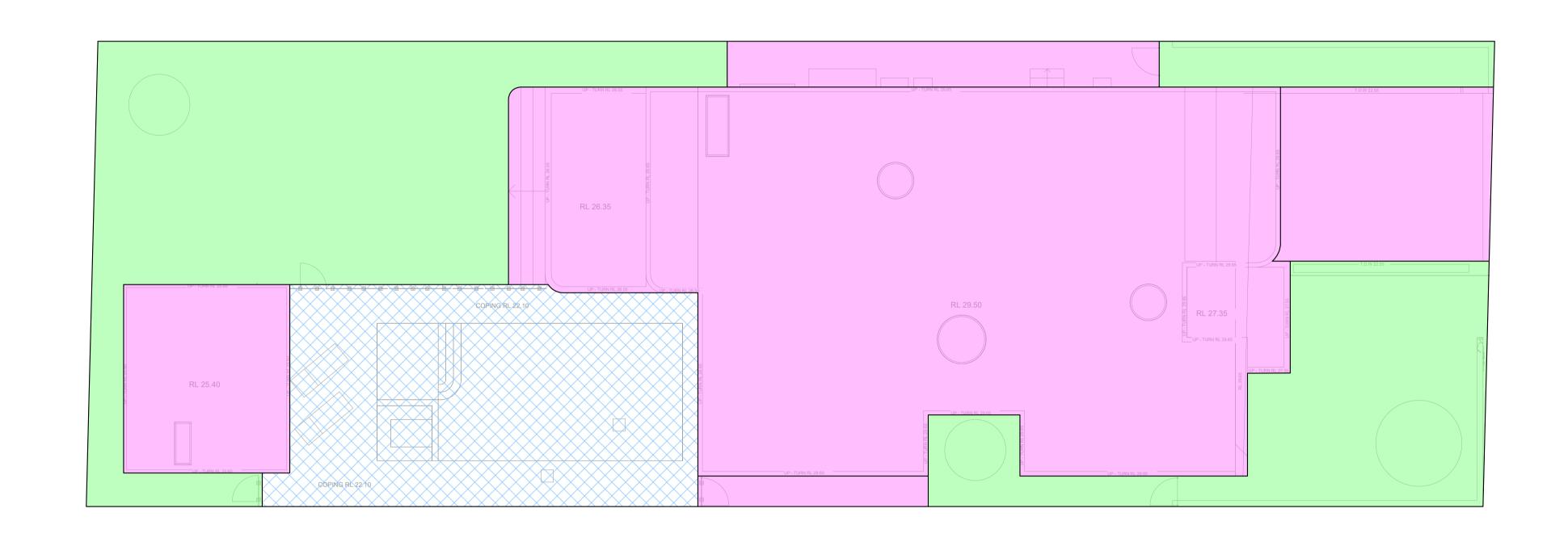
REVIS	SION	REVISION DETAILS	DATE	DRAWI	N DESIGN	CHECK	APPROVED	PREPARED BY	ARCHITECT		CLIENI	SCALE	GRID	NOT TO BE USED FOR CO		
А	٨	ISSUED FOR DA	28.02.202	5 D.D.	M.N.	D.S.	D.S.					1:100 / 1:200 0 1 2 3 4m	HEIGHT AHD	PROPOSED TWO-STO		
В	3	ISSUED FOR DA	14.03.202	5 T.N.	M.N.	D.S.	D.S.	VANGUARD CONSULTING ENGINEERS				A1 / A3	DATUM AND	BASE		
								TO THE TENOINEERS						19 LANCELOT STREET,		96
								E-MAIL: ADMIN@VCENG.COM.AU OFFICE 3.07 LEVEL 3, 14-16,				DRAWING TITLE		LGA: CANTERBURY-BANKSTOWN		
								LEXINGTON DRIVE, BELLA VISTA, 2154		0700D		GROUND FLO	UK		DESERVATION NUMBER	REVISION
								TEL: (02) 9145 0253 WEB: WWW.VCENG.COM.AU		ezcon		DRAINAGE PI	_AN	DRAWING NUMBER		REVISION
										U				V250137 - SW101	V250137	B



REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED	PREPARED BY		ARCHITECT		CLIENT	SCALE	GRID	STATUS NOT TO	FOR APPF TO BE USED FOR CONS	ROVAL STRUCTION PURPOSES	
Α	ISSUED FOR DA	28.02.2025	D.D.	M.N.	D.S.	D.S.						1:100 / 1:200 0 1 2 3 4m	HEIGHT AHD	PROJECT		REY DWELLING WI	T
В	ISSUED FOR DA	14.03.2025	T.N.	M.N.	D.S.	D.S.	VANGU	ARD CONSULTING ENGINEERS				A1 / A3	DATUM AND	PROPOS	BASEM		'H
					1		* / * ! * • •	7 TENGINEERS								UNCHBOWL NSW 219	96
												DRAWING TITLE		10 27 (110)	,		
							E-MAIL: ADMIN@VCENG.COM.AU	OFFICE 3.07 LEVEL 3, 14-16,					OR .	LGA: CANTERBURY-	,		
							E-MAIL: ADMIN@VCENG.COM.AU TEL: (02) 9145 0253	OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA, 2154 WEB: WWW.VCENG.COM.AU	de	ezcon		FIRST FLOO DRAINAGE P			′-BANKSTOWN		REVISION



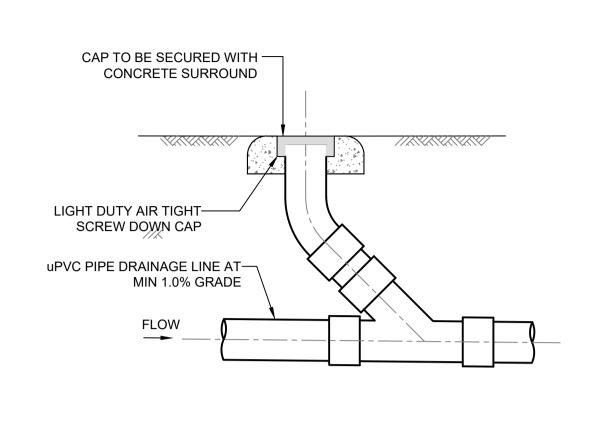
REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED	PREPARED BY		ARCHITE	T CLIENT	SCALE	GRID	STATUS NOT TO BE U	FOR APPROVAL USED FOR CONSTRUCTION		
A B	ISSUED FOR DA ISSUED FOR DA	28.02.2025 14.03.2025	 	M.N.	D.S.	D.S.	\// \ C /	CONSULTING			1:100 / 1:200 0 1 2 3 4m A1 / A3	HEIGHT AHD	PROJECT PROPOSED	TWO-STOREY DV	WELLING WIT	 TH
		11100.2020			J.G.	2.5.	VANGUA	R D ENGINEERS	-		DRAWING TITLE		19 LANCELOT	BASEMENT T STREET, PUNCHB	BOWL NSW 2196	6
							E-MAIL: ADMIN@VCENG.COM.AU	OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA, 2154		0700h	ROOF DRAINAG	SE DI AN	LGA: CANTERBURY-BANK			REVISION
							TEL: (02) 9145 0253	WEB: WWW.VCENG.COM.AU	C	ezcon	1.001 DIVAINA		DRAWING NUMBER V250137 - SV		250137	B

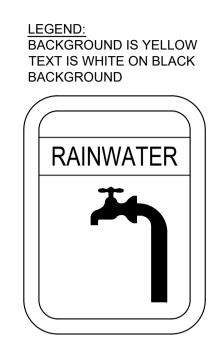


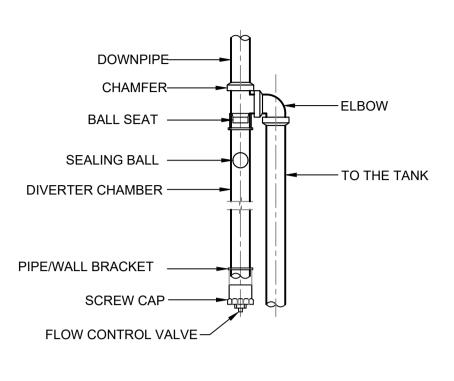
POST-DEVELOPMENT CATCHMENT PLAN SCALE 1:100

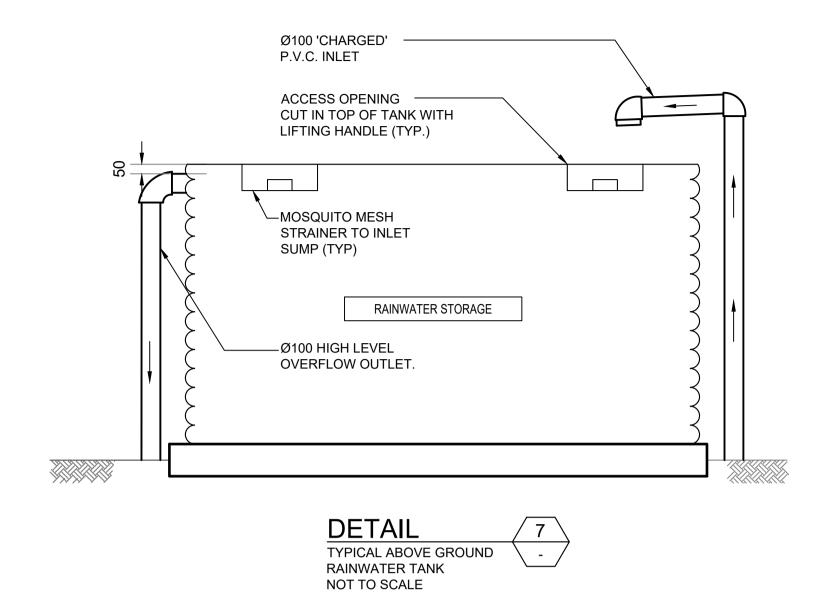
IMPERVIOUS AREA = 377.4 m^2 PERVIOUS AREA = 222.3 m^2 POOL & COPPING TO DRAIN TO SEWER = 96.8 m^2

REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED	PREPARED BY		ARCHITEC	CT	CLIENT	SCALE	GRID	STATUS FOR APP NOT TO BE USED FOR CON		
Α	ISSUED FOR DA	28.02.2025	D.D.	M.N.	D.S.	D.S.						1:100 / 1:200 0 1 2 3 4m	HEIGHT AHD	PROPOSED TWO-STOR		
В	ISSUED FOR DA	14.03.2025	T.N.	M.N.	D.S.	D.S.	VANGI	JARD CONSULTING ENGINEERS				A1 / A3	DATUM AND	BASEM		1H
							1710	I ENGINEERS						19 LANCELOT STREET, P		36
				1								DRAWING TITLE		13 LANGELOT OTREET, T	ONOTIDOVVE NOVV 213	,0
							E-MAIL: ADMIN@VCENG.COM.AU	OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA, 2154						LGA: CANTERBURY-BANKSTOWN		
					<u> </u>		TEL: (02) 9145 0253	WEB: WWW.VCENG.COM.AU		lezcon		ROOF DRAINAG	E PLAN	DRAWING NUMBER	REFERENCE NUMBER	REVISION
								VVLD. VVVVV.VOLING.GOIVI.AO		OLOGII				V250137 - SW110	V250137	В





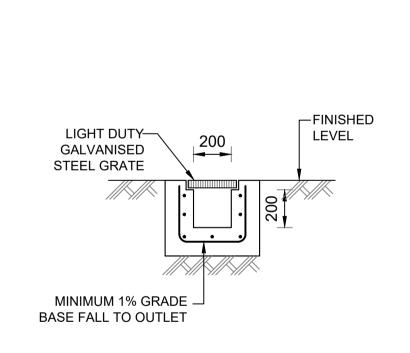


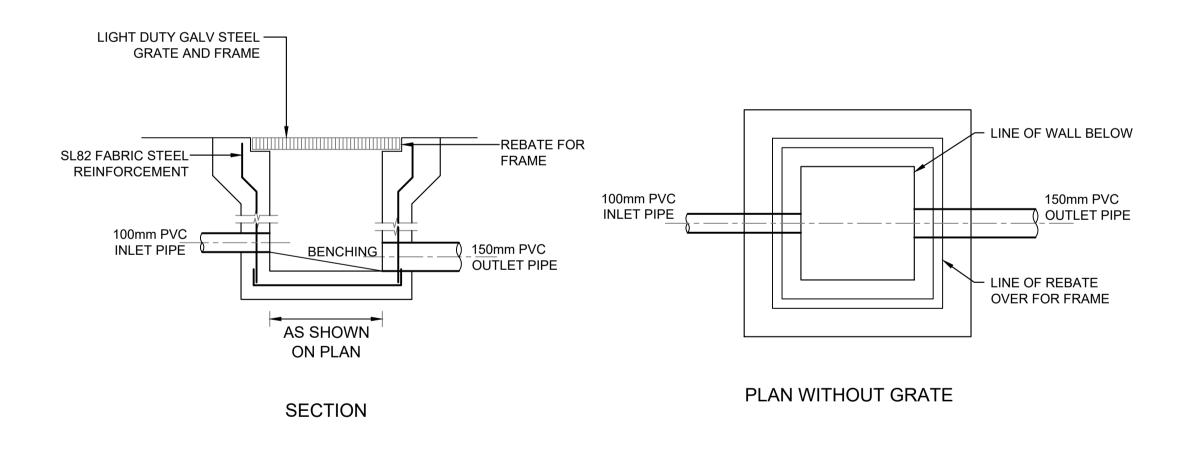


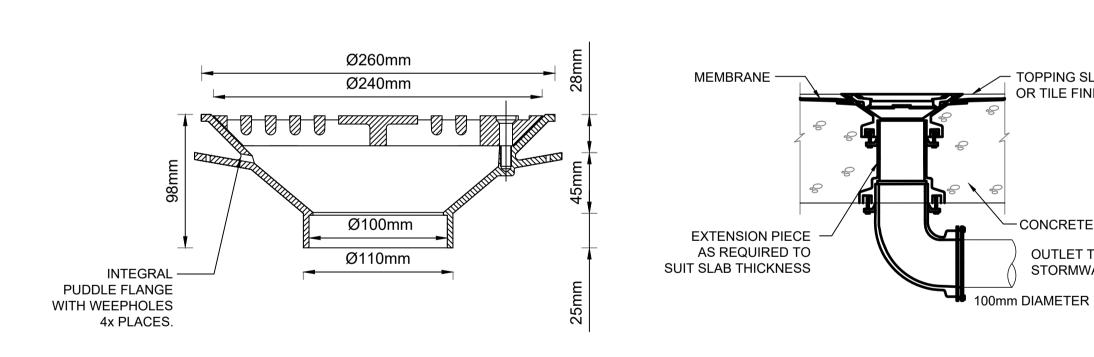










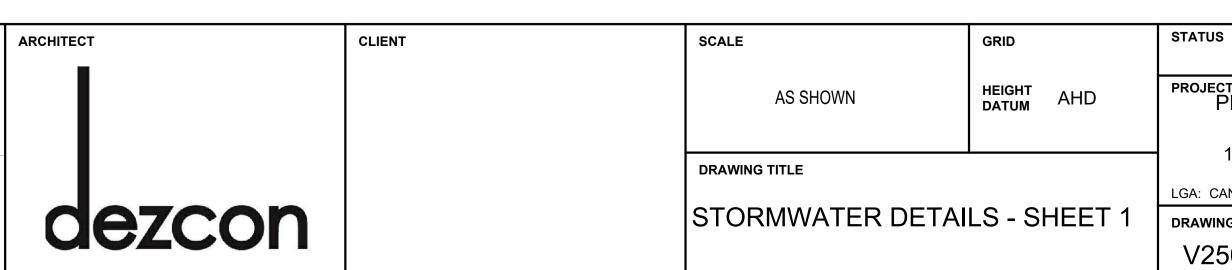




DETAIL	/	9	\
STORMWATER PIT SCALE 1:20		-	_/

DETAIL RAINWATER OUTLET NOT TO SCALE

A ISSUED FOR DA 28.02.2025 D.D. M.N. D.S. D.S. B ISSUED FOR DA 14.03.2025 T.N. M.N. D.S. D.S. E-MAIL: ADMIN@VCENG.COM.AU OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA, 2154 WEB: WWW.VCENG.COM.AU	REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED	PREPARED BY	ARCHITEC
E-MAIL: ADMIN@VCENG.COM.AU OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA, 2154	А	ISSUED FOR DA	28.02.2025	D.D.	M.N.	D.S.	D.S.		
E-MAIL: ADMIN@VCENG.COM.AU OFFICE 3.07 LEVEL 3, 14-16, LEXINGTON DRIVE, BELLA VISTA, 2154	В	ISSUED FOR DA	14.03.2025	T.N.	M.N.	D.S.	D.S.	VANGUARD CONSULTING	
LEXINGTON DRIVE, BELLA VISTA, 2154								V V C I C V C I C I ENGINEERS	-
TEL: (02) 91//5 0253								E-MAIL: ADMIN@VCENG.COM.AU OFFICE 3.07 LEVEL 3, 14-16,	
								TEL: (02) 01/15 0253	



	PROPOSED TWO-STOREY DWELLING WITH BASEMENT 19 LANCELOT STREET, PUNCHBOWL NSW 2196											
	LGA: CANTERBURY-BANKSTOWN											
T 1	DRAWING NUMBER	REFERENCE NUMBER	REVISION									
	V250137 - SW120	V250137	В									

FOR APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES

TOPPING SLAB
OR TILE FINISH

-CONCRETE SLAB

OUTLET TO

STORMWATER