## STORMWATER MANAGEMENT PLAN

## 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

INSTALL EROSION/SEDIMENT CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION OR EXCAVATION OPERATIONS.

PROVIDE SILT FENCE/STRAW BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS. THE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.

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.

TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITRE IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POEO 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL

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

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



10

20

30

40

SIZE: A3 L

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

## GENERAL NOTES

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

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

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

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

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

ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENT OF THE RELEVANT SAA CODES\_AND\_THE BY-LAWS AND ORDINANCE THE RELEVANT BUILDING AUTHORITIES.

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

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

WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSU! THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES OBTAINED

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

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

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

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

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THE DRAWIN HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVIC AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED SOLELY FO THE AUTHORITIES OWN USE AND MAY NOT NECESSARILY BE UPDATE OR ACCURATE

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

MODULAR ENGINEERS DOES NOT GUARANTEE THAT THE SERVIC INFORMATION SHOWN ON THE DRAWING SHOWS MORE THAN THE SERVICE PRESENCE OR ABSENCE OF SERVICES, AND WILL ACCEPT NO LIABILI FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM AN CAUSE WHATSOEVER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FROM TH UTILITY SERVICES AUTHORITIES A CURRENT COPY OF UNDERGROUP SERVICES SEARCH FOR THE LOCATION OF ALL EXISTING SERVICE PRIOR TO COMMENCEMENT OF ANY WORK AND NOTIFY ANY CONFLIC WITH THE DRAWINGS IMMEDIATELY. CLEARANCE SHALL BE OBTAIN FROM THE RELEVANT REGULATORY AUTHORITY. CONTRACTOR TO KE COPY OF UNDERGROUND SERVICES SEARCH ON SITE AT ALL TIME ANY DAMAGES TO SERVICES OR SERVICES ADJUSTMENTS SHALL CARRIED OUT BY THE CONTRACTOR OR RELEVANT AUTHORITY AT T CONTRACTOR'S EXPENSE.

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

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

IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN PLACE MAINTAIN TRAFFIC FACILITIES AT ALL TIMES DURING CONSTRUCTION. 100 110 90 120 80

	LEGEND		ABBREVIATIONS
		- (014	
<u>†</u>	DENOTED DOWN PIPE SPREADER	Ø/DIA	DENOTED DIAMETER
	DENOTES DOWN-PIPE	CBR	DENOTED CALIFORNIA BEA
eDP	DENOTES EXISTING DOWN-PIPE	CH	DENOTED CHAINAGE DENOTED CENTER LINE
R₩H	DENOTES RAINWATER HEAD WITH DOWN-PIPE		DENOTED CLEAR OUT
	DENOTES RAINWATER CHARGED LINE	DD	DENOTES DISH DRAIN
	DENOTES STORMWATER 1% MIN. FALL GRAVITY LINE	DDO	DENOTES DISH DRAIN OUTLET
	DENOTES STORMWATER SEALED CHARGE LINE	RCP	DENOTES REINFORCED CONCRET
/	DENOTES RAINWATER SEALED CHARGE LINE	DP	DENOTES DOWNPIPE
	DENOTES ANTICIPATED ALIGNMENT OF EXISTING UNDERGROUND STORMWATER SYSTEM	ext	DENOTES EXISTING
	DENOTES SUBSOIL LINE	FFL	DENOTES FINISHED FLOOR LEVEL
sw	DENOTES EXISTING STORMWATER LINE	GTD	DENOTES GRATED TRENCH DRAI
s	DENOTES AUTHORITY SEWER LINE	GSIP	DENOTES GRATED SURFACE INL
/	DENOTES SEDIMENT FENCE	HYD	DENOTES HYDRANT
œ	DENOTES SEDIMENT FENCE DENOTES CLEAR OUT EYE POINT	IJ	DENOTES ISOLATING JOINT
CE		IL IL	DENOTES INVERT LEVEL
<u> </u>	DENOTES SEALED CLEAR OUT EYE POINT	IP	DENOTES INTERSECTION POINT
	DENOTES GRATED SURFACE INLET PIT	KIP	denotes kerb inlet pit
	DENOTES GRATED TRENCH DRAIN	ко	DENOTES KERB OUTLET
× 100.00	DENOTES PROPOSED SPOT LEVEL	K&G	DENOTES KERB & GUTTER
	DENOTES EXISTING GRATED SURFACE INLET PIT	KR	DENOTES KERB RETURN
	DENOTES EXISTING JUNCTION PIT	LS	DENOTES LONGITUDINAL SECTION
	DENOTES EXISTING KERB INLET PIT	NGL	DENOTES NATURAL GROUND LEV
	DENOTES EXISTING TELSTRA PIT	OFP	DENOTES OVERLAND FLOW PATH
	DENOTES EXISTING HYDRANT	OSD	DENOTES ON-SITE DETENTION
eSV eSV	DENOTES EXISTING STOP VALVE	R	DENOTES RADIUS
G eGAS	DENOTES EXISTING GAS VALVE	RL	DENOTES REDUCED LEVEL
O ePP	DENOTES EXISTING POWER POLE	RW	DENOTES RETAINING WALL
Oesmh	DENOTES EXISTING SEWER MANHOLE	RWT	DENOTES RAINWATER TANK
OFP 🗪	DENOTES OVERLAND FLOW PATH	SJ	DENOTES SAWN CONTROL JOINT
		SMH	DENOTES SEWER MAN HOLE
		SW	DENOTES STORMWATER
		SWP	DENOTES STORMWATER PIT
		SWRM	DENOTES STORMWATER RISING N DENOTES STOP VALVE
		SV TOK	DENOTES TOP OF KERB
		TOW	DENOTES TOP OF WALL
		TWL	DENOTES TOP WATER LEVEL
		TP	DENOTES TANGENT POINT
		UPVC	DENOTES UNPLASTICISED POLYV
		UNO	DENOTES UNLESS NOTED OTHER
	CONSTRUCTION	FF	DENOTES FIRST FLUSH DEVICE
	CONSTRUCTION SITE 300 MIN WOTH 1500 MINIMUM LENG	TYP	DENOTES TYPICAL
		হাদ	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
	0000	>	
		000	
		_	
G	EOTEXTILE FABRIC		
ø	100-150 IGNEOUS		
	OCK RUN-OFF FROM	$\rightarrow$	EXISTING RC
	PAD DIRECTED TO SEDIMENT TRAP		
	SAND BEDDING		
	TEMPORARY CONSTRUCTION EXIT (F	RUBBLE	<u>ALTERNATIVE</u> )
	NOT TO SCALE		<i></i>
	MODULAR ENGINEERS pty Itd		ļ
	Δ 6/7 PARKES STREET, PARRAMATTA NSW 215 Τ 02 873 08473	0	I
JU	LAR T 02 873 08473 M 04 208 98999 E info@modularengineers.com.au		1
	ABN 66 646 960 929		



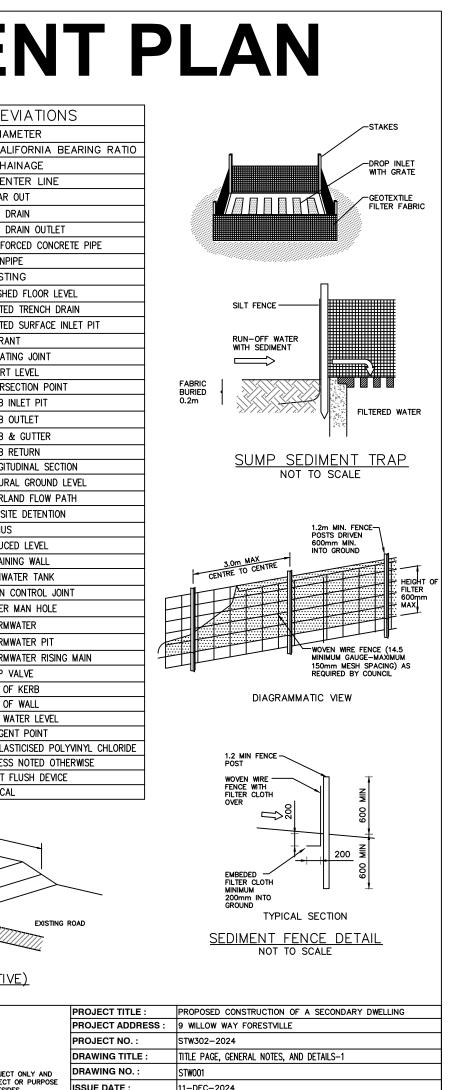
USE OF THESE DRAWINGS THE DESIGN AND DETAILS SHOWN ON THESE DRAWINGS ARE APPLICABLE TO THIS PROJECT ONLY AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART OR BE USED FOR ANY OTHER PROJECT OR PUPPOSE WITHOUT THE WRITTEN PERMISSION OF MODULAR ENGINEERS WITH WHOM COPYRIGHT RESIDES

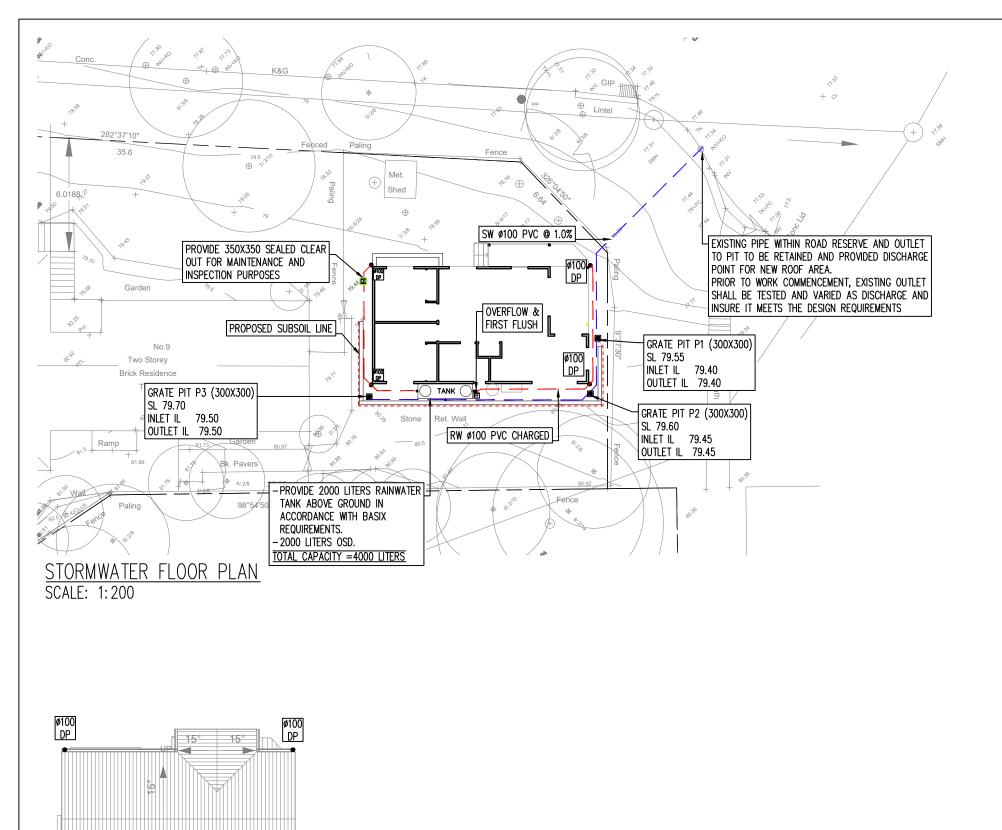
REVISIONS			APPROVED BY		
REV.	DATE	DESCRIPTION	D.P.ENG.	DFT.	ALI AL-OBAIDI
A	11-DEC-2024	ISSUED FOR CDC	S.R.	S.R.	MSc, BSc, MIEAust,CPEng,NER,NPER (No: 5358554).
В	18-DEC-2024	ISSUED FOR CDC	S.R.	S.R.	RPEQ(28316),
					PE(Victoia)No.0007689, PDP0000072,
					PRE0000191,

50

60

70





110

120

MODULAR

**ENGINEERS PTY LTD** 

	PIPE SCHEDULE				
TAG	SIZE	MATERIAL	GRADE	TYPE	
A	DAI.100	P.V.C.	MIN. 1%	GRAVITY	
В	DAI.150	P.V.C.	MIN. 1%	GRAVITY	
X	DAI.100	P.V.C.	CHARGE	TO RWT/PIT	
D	200X100	GALV. STEEL	MIN. 1%	TO KERB	
E	EXISTING	EXISTING	EXISTING	EXISTING	
X	DAI.100 200X100	P.V.C. GALV. STEEL	CHARGE MIN. 1%	TO RWT/F	

10 20 30 40 50 60 70 80 90 ˈSIZE: A3 ိ

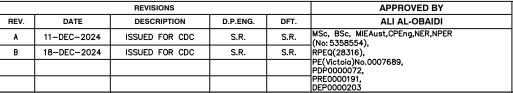
STORMWATER ROOF PLAN

ø100 DP

SCALE: 1:200

100

ø100 DP



MODULAR ENGINEERS pty ltd A 6/7 PARKES STREET,PARRAMATTA NSW 2150 T 02 873 08473 04 208 98999 info@modularengineers.com.au BN 66 646 960 929 USE OF THESE DRAWINGS THE DESIGN AND DETAILS SHOWN ON THESE DRAWINGS ARE APPLICABLE TO THIS PROJECT ONLY AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART OR BE USED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT THE WRITTEN PERMISSION OF MODULAR ENGINEERS WITH WHOM COPYRIGHT RESIDES

NC	TES:
0.00	AINTAOL

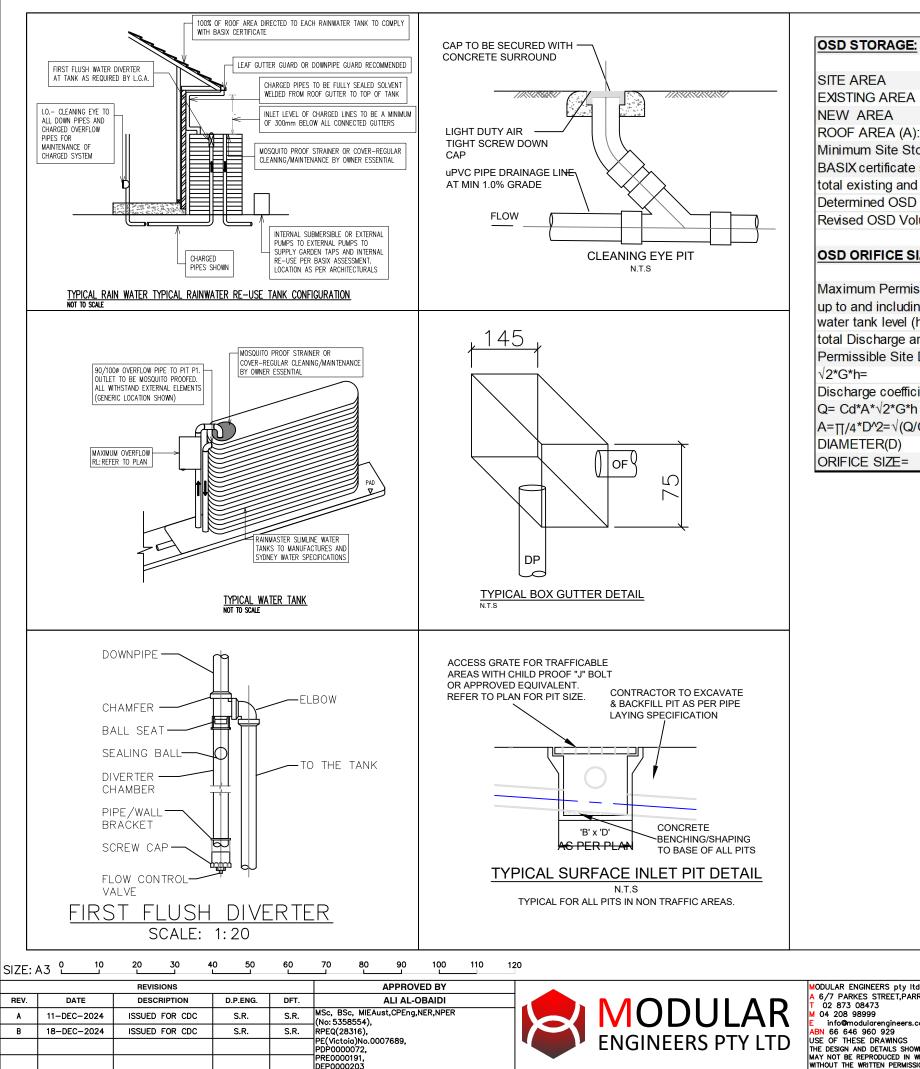
DRAINAGE A. ALL PIPES TO BE LAID ON 75mm SAND BED WITH THE BARRELS FULLY SUPPORTED

- B. 100mm AND 150mm DIAMETER PIPES TO BE LAID ON MINIMUM 1% GRADE
- MINIMUM DEPTH OF COVER FOR PIPES NOT SUBJECT TO VEHICULAR LOADING TO BE 300mm
- D. ALL DRAINAGE PIPES LAID UNDER PAVEMENT SHALL BE REINFORCED CONCRETE WITH RUBBER RING JOINTS
- BACKFILL TRENCHES WITH COMPACTED SAND OR APPROVED AGGREGATE MATERIAL
- ALL PITS TO HAVE 600x600mm INTERNAL DIMENSIONS (U.N.O.)
- SILT ARRESTORS TO HAVE 900x900mm INTERNAL DIMENSIONS
- HEAVY DUTY GALV. STEEL GRATES AND COVERS ARE TO BE PROVIDED IN TRAFFICABLE AREAS
- HEEL & WHEELCHAIR SAFE GRATE COVERS ARE TO BE PROVIDED IN PEDESTRIAN AREAS
- PIT GRATE TO BE TYPE WELDLOK OR APPROVED EQUIVALENT
- K. ALL PITS GREATER THAN 900mm DEEP SHALL BE PROVIDED WITH A CHILD-PROOF LOCKING CLIP
- ALL PITS SHALL BE MAINTAINED REGULARLY
- M. ALL PITS TO BE BENCHED MIN. 20mm TO INVERT OF OUTLET
- N. Ø100 SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK TO BE PROVIDED IN ALL LANDSCAPED AREAS & BEHIND RETAINING WALLS AND CONNECTED TO THE NEAREST STORMWATER PIT.
- COMPRESSIVE STRENGTH I'C FOR CAST IN SITU CONCRETE TO BE A MINIMUM OF 20MPa AT 28 DAYS
- P. PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS
- Q. ISOLATED JOINTS TO BE PROVIDED TO ISOLATE CONCRETE PAVEMENTS FROM PITS
- ALL TRENCH GRATES PROVIDED SHALL HAVE A MINIMUM CLEAR WIDTH OF 200mm
- STORMWATER DRAINAGE CONNECTIONS TO THE MAIN SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL

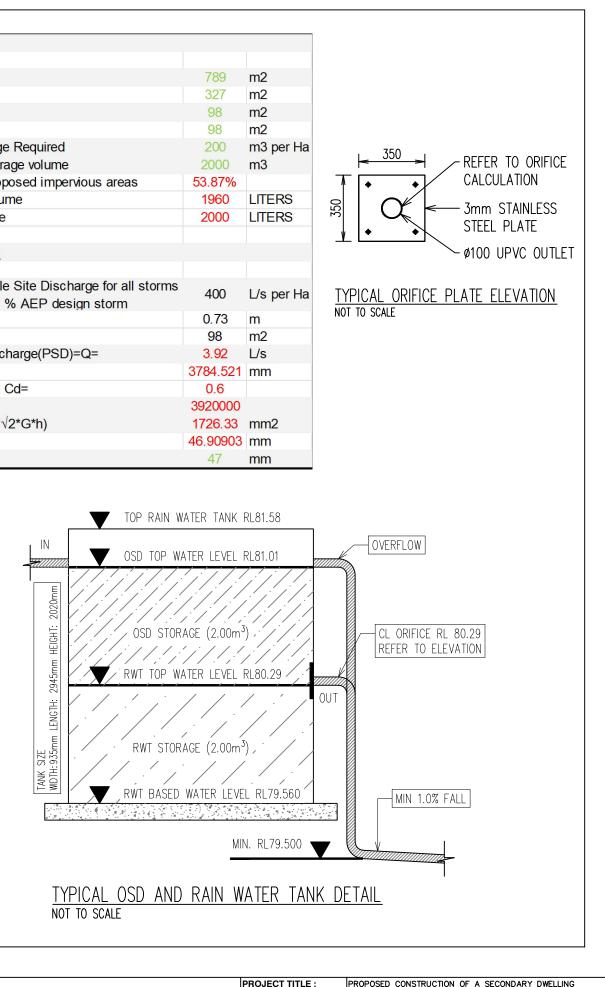
UPPER LEVEL

- A. INSTALL Ø65mm 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.
- BALCONY, TERRACE & CONCRETE ROOF AREAS TO BE FITTED WITH RAINWATER OUTLETS AND CONNECTED TO NEAREST DOWNPIPE WHERE REQUIRED (TYP).
- DOWNPIPES (DP) SHOWN ON PLAN ARE TO BE ø100mm uPVC OR 100x75 U.N.O. (TYP).
- CHARGED DOWNPIPES SHOWN ON PLAN MUST BE SEWER GRADE Ø100mm uPVC WITH ALL JOINTS SOLVENT WELDED TO A LEVEL 1200mm ABOVE THE RAINWATER TANK INLET R.L. (TYP).
- PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP)
- INSTALL DOWNPIPE WITH SPREADER PIPE (SP) (IF REQUIRED) TO DISPERSE STORMWATER ONTO LOWER ROOF AREAS EFFECTIVELY.

PROJECT TITLE :	PROPOSED CONSTRUCTION OF A SECONDARY DWELLING
PROJECT ADDRESS :	9 WILLOW WAY FORESTVILLE
PROJECT NO. :	STW302-2024
DRAWING TITLE :	STORMWATER DESIGN PLANS
DRAWING NO. :	STW002
ISSUE DATE :	11-DEC-2024



## 789 327 98 98 200 Minimum Site Storage Required BASIX certificate storage volume 2000 53.87% total existing and proposed impervious areas 1960 Determined OSD volume 2000 **Revised OSD Volume** OSD ORIFICE SIZE: Maximum Permissible Site Discharge for all storms 400 up to and including 1 % AEP design storm 0.73 water tank level (h)= 98 total Discharge area Permissible Site Discharge(PSD)=Q= 3.92 Discharge coefficient Cd= 0.6 3920000 A=π/4\*D^2=√(Q/Cd\*√2\*G\*h)



MODULAR ENGINEERS pty ltd A 6/7 PARKES STREET,PARRAMATTA NSW 2150 T 02 873 08473 04 208 98999 info@modularengineers.com.au BN 66 646 960 929 USE OF THESE DRAWINGS THE DESIGN AND DETAILS SHOWN ON THESE DRAWINGS ARE APPLICABLE TO THIS PROJECT ONLY AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART OR BE USED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT THE WRITTEN PERMISSION OF MODULAR ENGINEERS WITH WHOM COPYRIGHT RESIDES

PROPOSED CONSTRUCTION OF A SECONDARY DWELLING
9 WILLOW WAY FORESTVILLE
STW302-2024
STORMWATER DETAILS AND NOTES
STW003
11-DEC-2024