

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. TIE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT 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 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



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'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 ABUT 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.

MODULAR ENGINEERS 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.

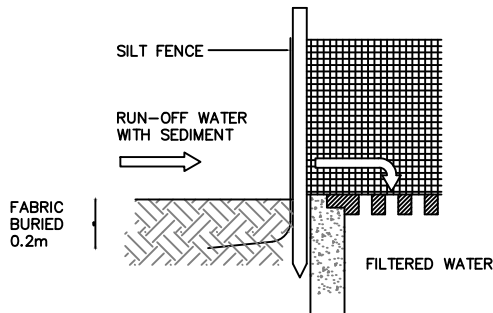
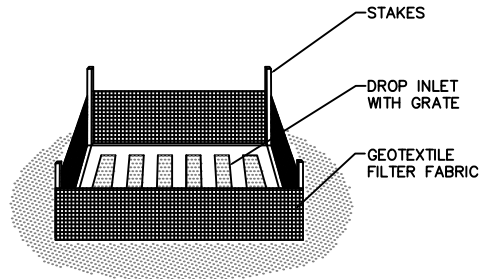
VISIT THE SITE BEFORE SUBMITTING THE FINAL TENDER PRICE TO ASSESS 'ON SITE' CONDITIONS. FAILURE TO DO SO WILL FORFEIT ANY CLAIM FOR NOT BEING AWARE OF CONDITIONS AFFECTING THE TENDER.

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

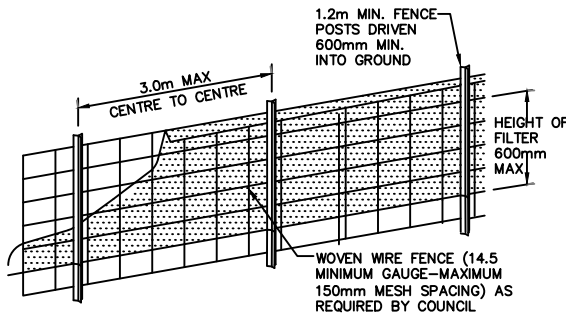
IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN PLACE & MAINTAIN TRAFFIC FACILITIES AT ALL TIMES DURING CONSTRUCTION.

LEGEND	
	DENOTES DOWN PIPE SPREADER
	DENOTES DOWN-PIPE
	DENOTES EXISTING DOWN-PIPE
	DENOTES RAINWATER HEAD WITH DOWN-PIPE
	DENOTES RAINWATER CHARGED LINE
	DENOTES STORMWATER 1% MIN. FALL GRAVITY LINE
	DENOTES STORMWATER SEALED CHARGE LINE
	DENOTES RAINWATER SEALED CHARGE LINE
	DENOTES ANTICIPATED ALIGNMENT OF EXISTING UNDERGROUND STORMWATER SYSTEM
	DENOTES SUBSOIL LINE
	DENOTES EXISTING STORMWATER LINE
	DENOTES AUTHORITY SEWER LINE
	DENOTES SEDIMENT FENCE
	DENOTES CLEAR OUT EYE POINT
	DENOTES SEALED CLEAR OUT EYE POINT
	DENOTES GRATED SURFACE INLET PIT
	DENOTES GRATED TRENCH DRAIN
	DENOTES PROPOSED SPOT LEVEL
	DENOTES EXISTING GRATED SURFACE INLET PIT
	DENOTES EXISTING JUNCTION PIT
	DENOTES EXISTING KERB INLET PIT
	DENOTES EXISTING TELSTRA PIT
	DENOTES EXISTING HYDRANT
	DENOTES EXISTING STOP VALVE
	DENOTES EXISTING GAS VALVE
	DENOTES EXISTING POWER POLE
	DENOTES EXISTING SEWER MANHOLE
	DENOTES OVERLAND FLOW PATH

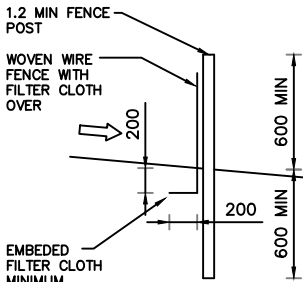
ABBREVIATIONS	
Ø/DIA	DENOTES DIAMETER
CBR	DENOTES CALIFORNIA BEARING RATIO
CH	DENOTES CHAINAGE
CL	DENOTES CENTER LINE
CO	DENOTES CLEAR OUT
DD	DENOTES DISH DRAIN
DDO	DENOTES DISH DRAIN OUTLET
RCP	DENOTES REINFORCED CONCRETE PIPE
DP	DENOTES DOWNPIPE
ext	DENOTES EXISTING
FFL	DENOTES FINISHED FLOOR LEVEL
GTD	DENOTES GRATED TRENCH DRAIN
GSIP	DENOTES GRATED SURFACE INLET PIT
HYD	DENOTES HYDRANT
IJ	DENOTES ISOLATING JOINT
IL	DENOTES INVERT LEVEL
IP	DENOTES INTERSECTION POINT
KIP	DENOTES KERB INLET PIT
KO	DENOTES KERB OUTLET
K&G	DENOTES KERB & GUTTER
KR	DENOTES KERB RETURN
LS	DENOTES LONGITUDINAL SECTION
NGL	DENOTES NATURAL GROUND LEVEL
OFD	DENOTES OVERLAND FLOW PATH
OSD	DENOTES ON-SITE DETENTION
R	DENOTES RADIUS
RL	DENOTES REDUCED LEVEL
RW	DENOTES RETAINING WALL
RWT	DENOTES RAINWATER TANK
SJ	DENOTES SAWN CONTROL JOINT
SMH	DENOTES SEWER MAN HOLE
SW	DENOTES STORMWATER
SWP	DENOTES STORMWATER PIT
SWRM	DENOTES STORMWATER RISING MAIN
SV	DENOTES STOP VALVE
TOK	DENOTES TOP OF KERB
TOW	DENOTES TOP OF WALL
TWL	DENOTES TOP WATER LEVEL
TP	DENOTES TANGENT POINT
UPVC	DENOTES UNPLASTICISED POLYVINYL CHLORIDE
UNO	DENOTES UNLESS NOTED OTHERWISE
FF	DENOTES FIRST FLUSH DEVICE
TYP	DENOTES TYPICAL



SUMP SEDIMENT TRAP
NOT TO SCALE

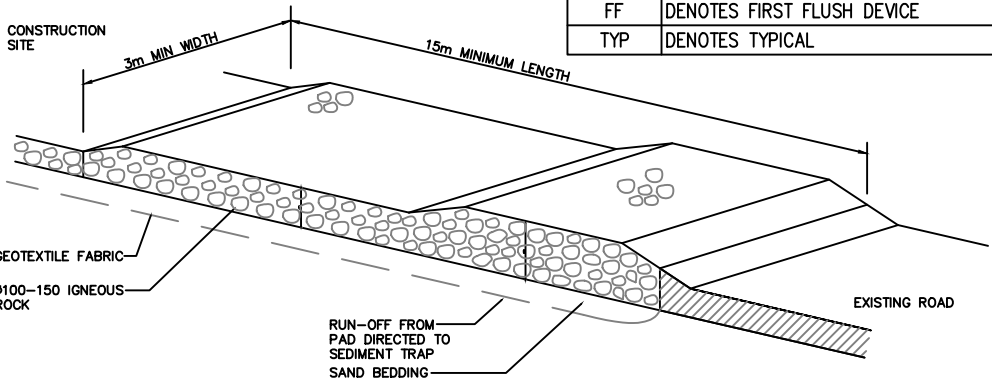


DIAGRAMMATIC VIEW



TYPICAL SECTION

SEDIMENT FENCE DETAIL
NOT TO SCALE



TEMPORARY CONSTRUCTION EXIT (RUBBLE ALTERNATIVE)
NOT TO SCALE

SIZE: A3 0 10 20 30 40 50 60 70 80 90 100 110 120

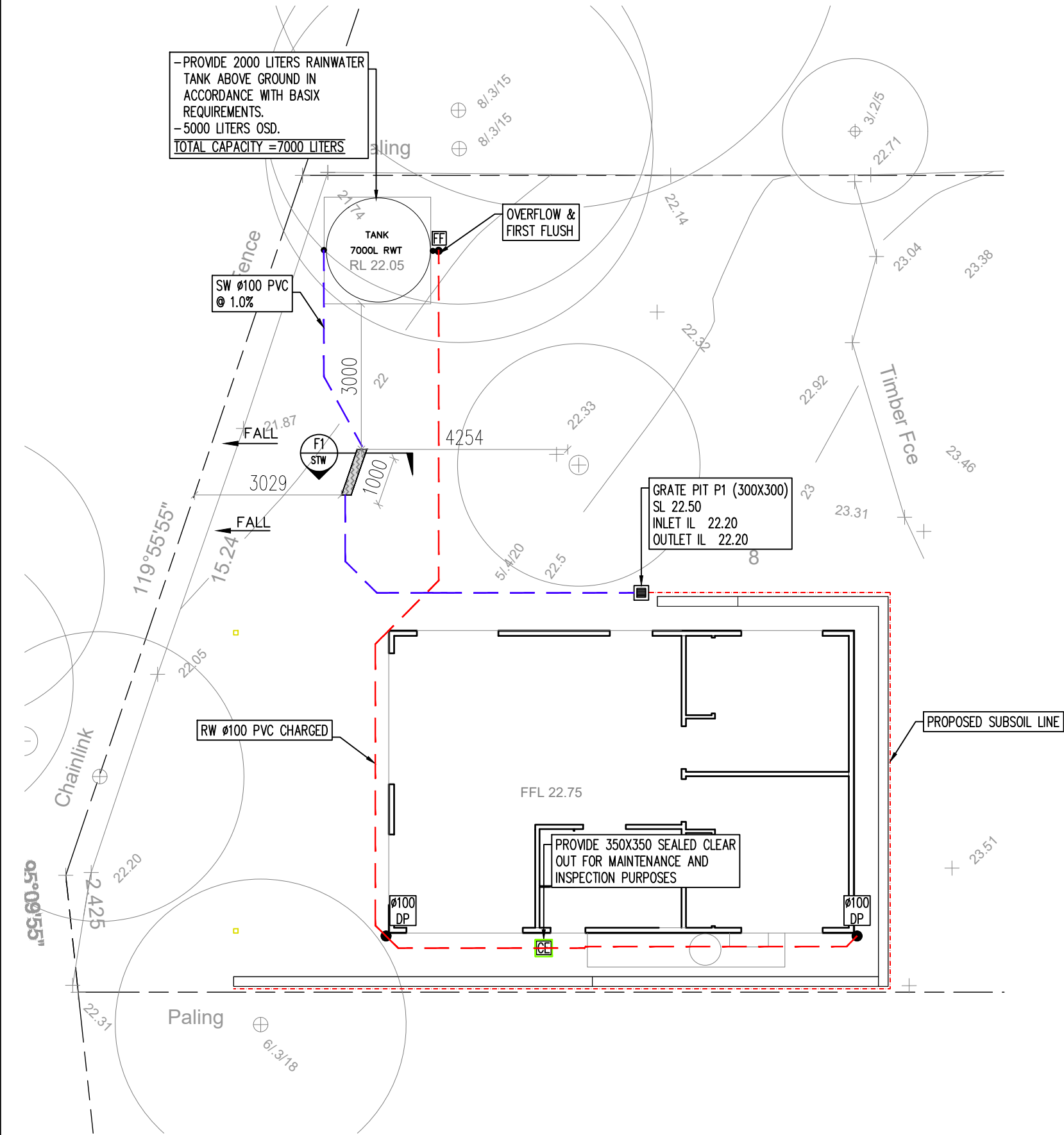
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REV.	DATE	DESCRIPTION	D.P.ENG.	DFT.	ALI AL-OBAIDI	
A	23-APR-2025	ISSUED FOR CDC	S.R.	S.R.	MSc, BSc, MIE Aust, CP Eng, NER, NPER (No: 5358554), RPEQ(28316), PE(Victoria) No. 0007689, PDP0000072, PRE0000191, DEP0000203	



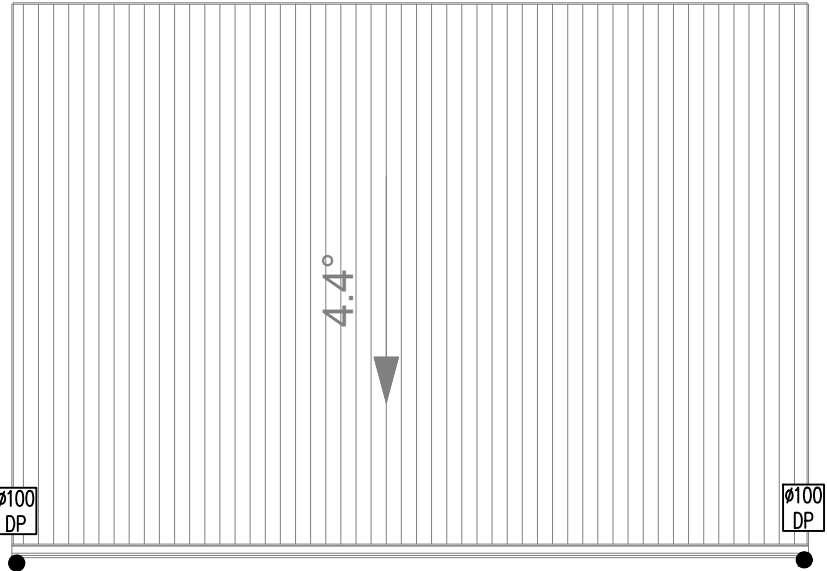
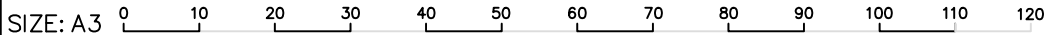
MODULAR
ENGINEERS PTY LTD

MODULAR ENGINEERS pty ltd
A 6/7 PARKES STREET, PARRAMATTA NSW 2150
T 02 873 08473
M 04 208 98999
E info@modularengineers.com.au
ABN 66 646 960 929
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PROJECT TITLE :	PROPOSED CONSTRUCTION OF A SECONDARY DWELLING
PROJECT ADDRESS :	14 HUDSON PARADE AVALON BEACH
PROJECT NO. :	STW314-2024
DRAWING TITLE :	TITLE PAGE, GENERAL NOTES, AND DETAILS-1
DRAWING NO. :	STW001
ISSUE DATE :	23-APR-2025



STORMWATER FLOOR PLAN
SCALE: 1:100




STORMWATER ROOF PLAN
SCALE: 1:100

- NOTES:
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
 - C. 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
 - E. BACKFILL TRENCHES WITH COMPACTED SAND OR APPROVED AGGREGATE MATERIAL
 - F. ALL PITS TO HAVE 600x600mm INTERNAL DIMENSIONS (U.N.O.)
 - G. SILT ARRESTORS TO HAVE 900x900mm INTERNAL DIMENSIONS
 - H. HEAVY DUTY GALV. STEEL GRATES AND COVERS ARE TO BE PROVIDED IN TRAFFICABLE AREAS
 - I. HEEL & WHEELCHAIR SAFE GRATE COVERS ARE TO BE PROVIDED IN PEDESTRIAN AREAS
 - J. 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
 - L. 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.
 - O. COMPRESSIVE STRENGTH f_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
 - R. ALL TRENCH GRATES PROVIDED SHALL HAVE A MINIMUM CLEAR WIDTH OF 200mm
 - S. 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.
 - B. BALCONY, TERRACE & CONCRETE ROOF AREAS TO BE FITTED WITH RAINWATER OUTLETS AND CONNECTED TO NEAREST DOWNPIPE WHERE REQUIRED (TYP).
 - C. DOWNPIPES (DP) SHOWN ON PLAN ARE TO BE Ø100mm uPVC OR 100x75 U.N.O. (TYP).
 - D. 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).
 - E. PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).
 - F. INSTALL DOWNPIPE WITH SPREADER PIPE (SP) (IF REQUIRED) TO DISPERSE STORMWATER ONTO LOWER ROOF AREAS EFFECTIVELY.

PIPE SCHEDULE				
TAG	SIZE	MATERIAL	GRADE	TYPE
A	DAI.100	P.V.C.	MIN. 1%	GRAVITY
B	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

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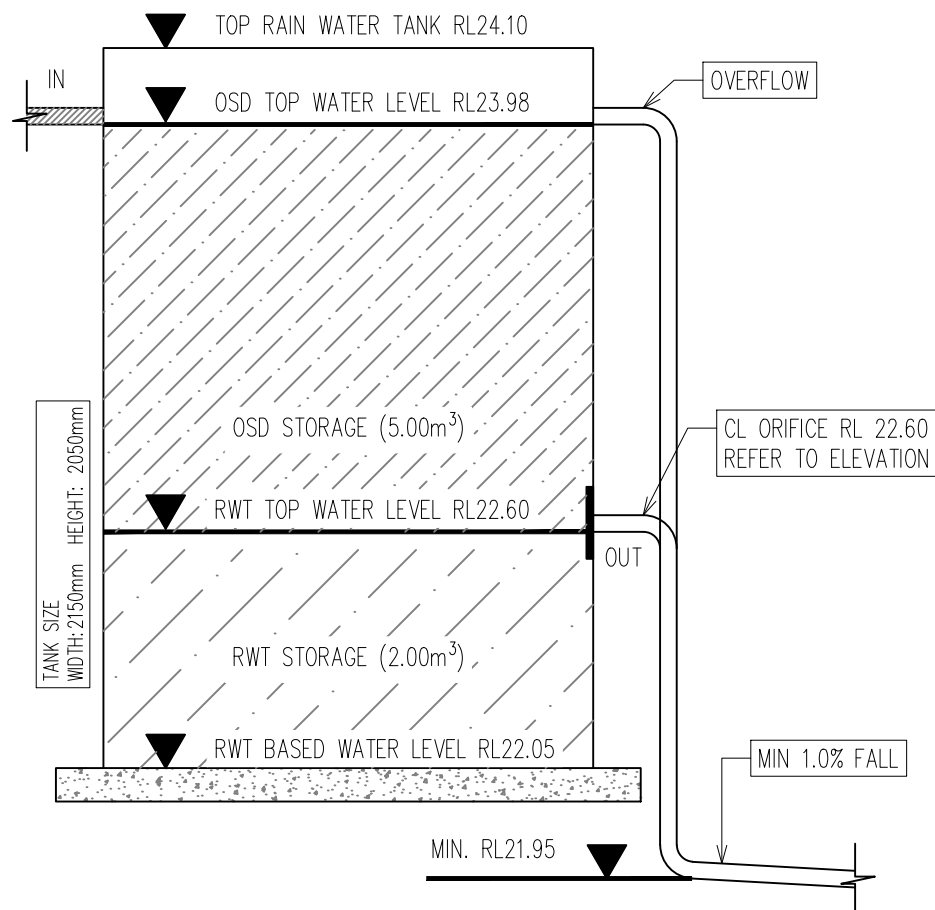


MODULAR
ENGINEERS PTY LTD

MODULAR ENGINEERS pty ltd
A 6/7 PARKES STREET, PARRAMATTA NSW 2150
T 02 873 08473
M 04 208 98999
E info@modularengineers.com.au
ABN 66 646 960 929

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PROJECT ADDRESS :	14 HUDSON PARADE AVALON BEACH
PROJECT NO. :	STW314-2024
DRAWING TITLE :	STORMWATER DESIGN PLANS
DRAWING NO. :	STW002
ISSUE DATE :	23-APR-2025



TYPICAL OSD AND RAIN WATER TANK DETAIL
NOT TO SCALE

INTEGRATED TANK

INSERT OUTCOME

Width	2150	1.155625
Length	3.14	3.14
Height	2050	2.05
RWT volume	2	2
OSD Volume	5	5
Height of RWT	0.551167269	
Height of OSD	1.377918172	

TOP TANK LEVEL	24.1	
OSD TWL	23.98	
RWT TWL/ CL ORIFICE	22.60	
RWT base water level	22.05	
MIN RL	21.85	

HEAD FOR HIGH 1.38

LEVEL SPREADER CALCULATION :

1. PEAK FLOW

RAINFALL INTENSITY (For 50 years 5min Storm) (I)=	253	mm/hr
Discharge coefficient (Cd)=	1	(ROOF)
ROOF AREA (A):	75	m2
Q = C I A =	5.27	L/s

2. LENGTH OF LEVEL SPREADER

DOWN SLOPE GROUND COVER	HICKET (SHRUBS, GRASS)
VELOCITY AT LEVEL SPREADER =	0.405 m/s
"EQUIVALENT" WATER HEIGHT OVER LEVEL SPREADER, X=	0.0176 m
V	GRASS & THICKET
L=Q/(XxV)=	0.23 m
USED LENGTH =	1.00 m

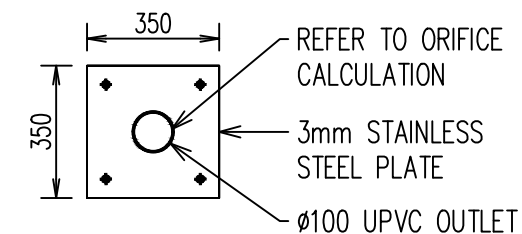
3. NUMBER OF LEVEL SPREADERS(N/S)

GROUND COVER WITH SLOPE FROM LEVEL SPREADER TO TOP OF STREAM BANK	GRASS WITH 0-8% SLOPE
EFFECTIVE DISTANCE Ed(m) =	15 m
RIPARIAN BUFFER WIDTH(W)	3 m
N/S=W/Ed	0.2
USED	1

4. EXTRA OSD STORAGE CALCULATION

VOLUME REQUIRED =	1.58 m3
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water tank level (h)=	1.38	m
total Discharge area	75	m2
Permissible Site Discharge(PSD)=Q=	3	L/s
$\sqrt{2 \cdot G \cdot h}$ =	0.164547	mm
Discharge coefficient Cd=	0.6	
$Q = Cd \cdot A \cdot \sqrt{2 \cdot G \cdot h}$	3	
$A = \pi / 4 \cdot D^2$	30.38652	
DIAMETER(D)	34.99733	mm
ORIFICE SIZE=	35	mm



TYPICAL ORIFICE PLATE ELEVATION
NOT TO SCALE

SIZE: A3 0 10 20 30 40 50 60 70 80 90 100 110 120

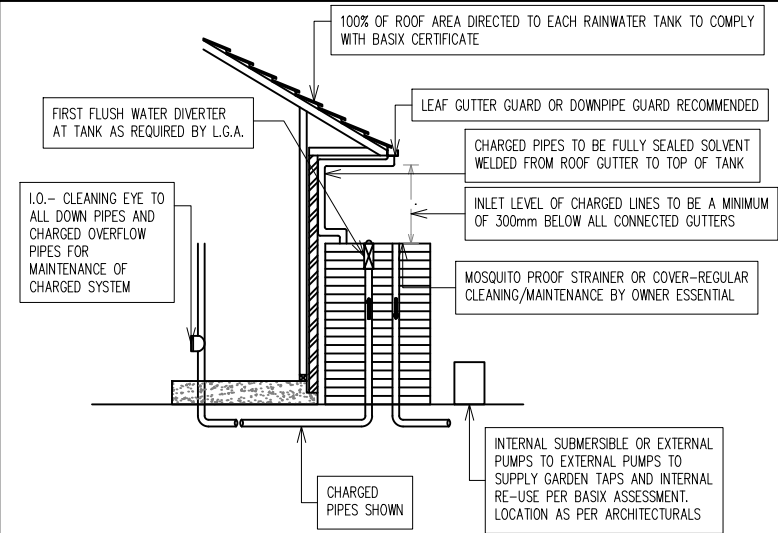
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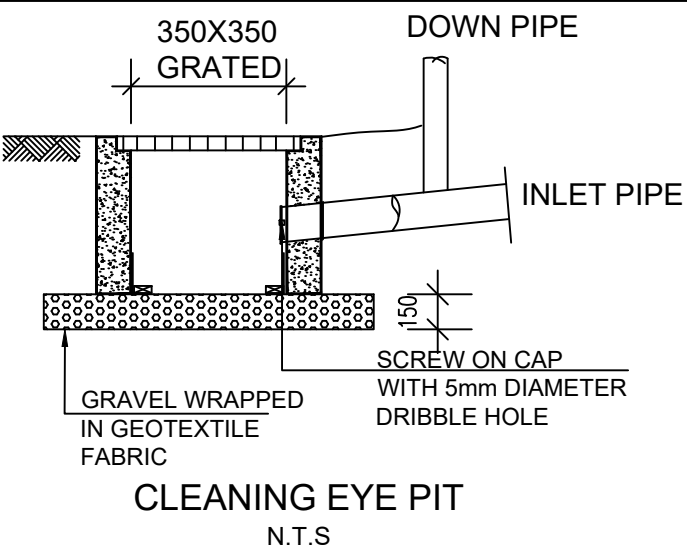
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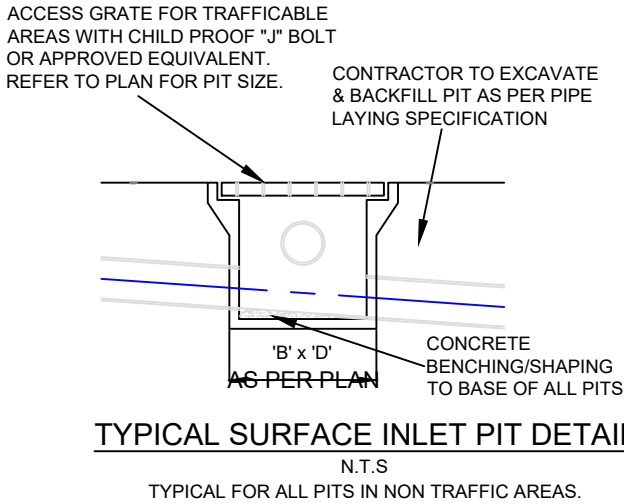
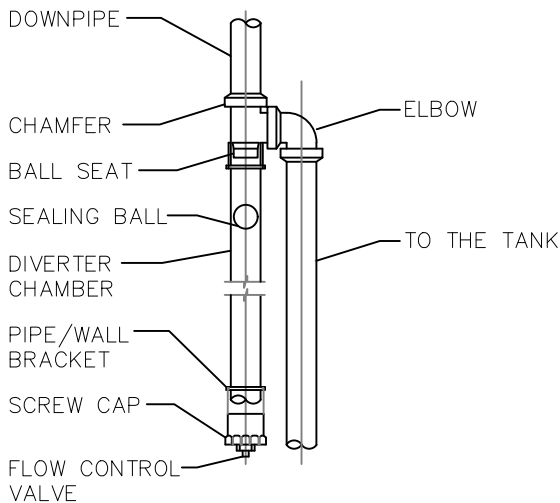
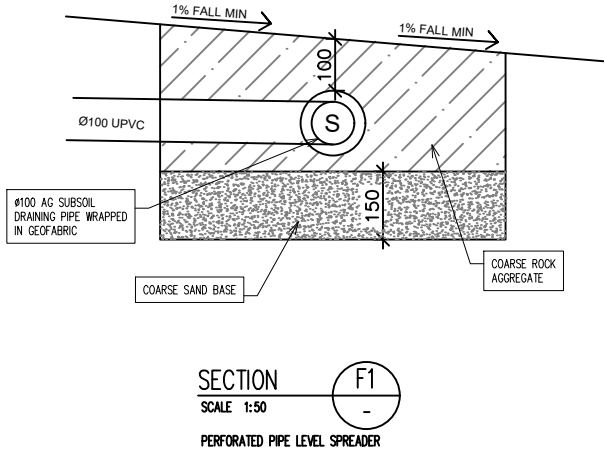
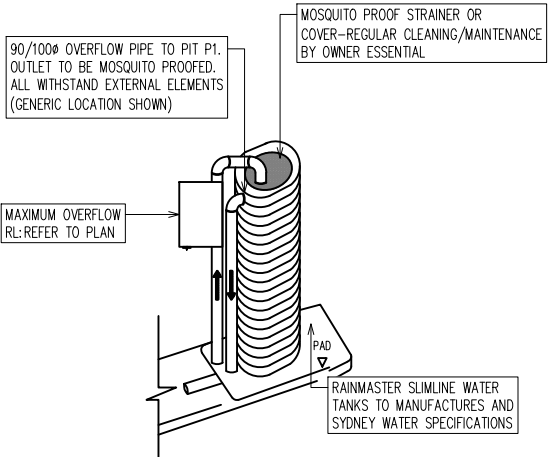
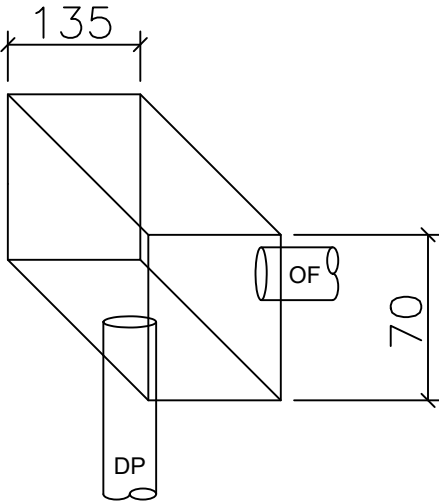
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DRAWING TITLE :	STORMWATER DETAILS AND NOTES
DRAWING NO. :	STW003
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TYPICAL RAIN WATER TYPICAL RAINWATER RE-USE TANK CONFIGURATION
NOT TO SCALE

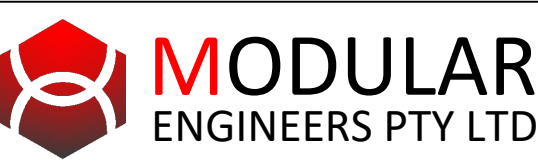


	Number Req'd	Number Used	Gutter Area?	Gutter Width?	Gutter Depth?
90	Dia: 2.13	3	6384	115	66
100	Dia: 1.68	2	9320	135	70
150	Dia: 0.67	1	17460	185	95
225	Dia: 0.27	1	17460	250	80
300	Dia: 0.14	1	17460	325	64



SIZE: A3 0 10 20 30 40 50 60 70 80 90 100 110 120

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MODULAR ENGINEERS pty ltd
A 6/7 PARKES STREET, PARRAMATTA NSW 2150
T 02 873 08473
M 04 208 98999
E info@modularengineers.com.au
ABN 66 646 960 929
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