GENERAL NOTES

- I. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE NOMINATED OR APPLICABLE COUNCIL SPECIFICATION. 2. THE CONTRACTOR SHOULD REPORT ANY DISCREPANCIES ON THE DRAWINGS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN.
- 3. IT IS THE RESPONSIBILITY OF THE TENDERER TO SEEK CLARIFICATION WHERE DOCUMENTATION IS CONFLICTING OR UNCLEAR WHERE NO CLARITY IS OBTAINED. THE TENDERER IS TO
- ALLOW FOR BOTH INTERPRETATIONS IN THEIR PRICING 4 CONTRACTOR IS NOT TO ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE PERMISSION OF THE OWNER.
- 5. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED OR REMOVED FROM SITE
- 6. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING.
- 7. ALL DRAINAGE LINES THOUGH ADJACENT LOTS SHALL BE CONTAINED WITHIN EASEMENTS CONFORMING TO COUNCIL'S STANDARDS
- 8. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL PROVIDE A TRAFFIC MANAGEMENT PLAN PREPARED BY AN ACCREDITED PERSON IN ACCORDANCE WITH RMS REQUIREMENTS, FOR ANY WORK ON OR ADJACENT TO PUBLIC
- ROADS PLAN TO BE SUBMITTED TO COUNCIL & RMS AS REQUIRED. 9. THESE PLANS SHALL BE A READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS SPECIFICATIONS CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE
- REQUIREMENTS. 10. THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.
- 11. THE BUILDER IS TO VERIFY ALL LEVELS ON SITE PRIOR TO COMMENCING CONSTRUCTION. 12. ALL THE CLEANING EYES (OR INSPECTION EYES) FOR THE UNDERGROUND PIPES HAVE TO BE TAKEN UP TO THE FINISHED
- GROUND LEVEL FOR EASY IDENTIFICATION AND MAINTENANCE PURPOSES 13. ALL TERRACE FLOOR AND PLANTER GRATES TO HAVE FIRE
- COLLARS FITTED EXCEPT FOR CLASS 1 BUILDINGS 14. ALL PITS HAVING AN INTERNAL DEPTH THAT EXCEEDS 1.0m SHALL BE PROVIDED WITH GALVANIZED STEP IRON'S AT 300 mm CENTRES PLACED IN A STAGGERED PATTERN AND SHALL BE IN
- ACCORDANCE WITH THE AUSTRALIAN STANDARDS AS4198-1994. 15. ALL MULCHING TO BE USED WITHIN THE AREA DESIGNATED AS ON SITE DETENTION STORAGE SHALL BE OF A NON-FLOATABLE MATERIAL SUCH AS DECORATIVE RIVER GRAVEL. BARK MULCHING
- SHALL NOT BE USED WITHIN THE DETENTION STORAGE AREA. 16. PRIOR TO COMMENCING ANY WORKS ON THE SITE, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTION INTO COUNCIL'S KERB/DRAINAGE SYSTEM MATCH THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER
- IMMEDIATELY 17. GREENVIEW IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY
- SURVEY INFORMATION PROVIDED ON THIS DRAWING. 18. ALL LEVELS SHOWN ARE EXPECTED TO BE TO A.H.D.
- 19. ALL CHAINAGES AND LEVELS ARE IN METERS, AND DIMENSIONS IN MILLIMETRES, UNLESS NOTED OTHERWISE.
- 20. THE SURVEY INFORMATION ON THIS DRAWING HAS BEEN PROVIDED BY THE ARCHITECT
- 21. CONTRACTORS SHALL ARRANGE FOR THE WORKS TO BE SET OUT BY A REGISTERED SURVEYOR 22. W.A.E DRAWINGS BY A REGISTERED SURVEYOR ARE REQUIRED
- PRIOR TO CERTIFICATION OF DRAINAGE. 23. WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT
- APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES WITHOUT WRITTEN APPROVAL
- WATER TREATMENT DEVICES TO STRICTLY COMPLY WITH MANUFACTURING SPECIFICATIONS.

RAINWATER REUSE SYSTEM NOTES

- RAINWATER SUPPLY PLUMBING TO BE CONNECTED TO OUTLETS WHERE REQUIRED BY BASIX CERTIFICATE (BY OTHERS)
- 2. NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAINWATER SUPPLY
- 3. PROVIDE AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK
- 4. PROVIDE AT LEAST ONE EXTERNAL HOSE COCK ON THE TOWN WATER SUPPLY FOR FIRE FIGHTING.
- 5. PROVIDE APPROPRIATE FLOAT VALVE AND/OR SOLENOID VALVES TO CONTROL TOWN WATER SUPPLY INLET TO TANK IN ORDER TO ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL DETAIL.
- 6. ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS/NZ3500.1 NATIONAL
- PLUMBING AND DRAINAGE CODE. 7. PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT
- BY A LICENSED ELECTRICIAN 8. ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER
- TANK SURFACE WATER INLETS ARE NOT TO BE CONNECTED 9. PIPE MATERIALS FOR RAINWATER SUPPLY PLUMPING ARE TO BE APPROVED MATERIALS TO AS/NZ3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINWATER'. THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS2648) OR
- FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345) 10. EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELLED 'RAINWATER' ON A METALLIC SIGN IN ACCORDANCE WITH AS1319
- 11. ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY
- 12. ALL DOWNPIPES CHARGED TO THE RAINWATER TANK ARE TO BE SEALED UP TO GUTTER LEVEL AND BE PRESSURE TESTED AND CERTIFIED 13. TOWN WATER CONNECTION TO RAINWATER TANK TO BE TO THE
- SATISFACTION OF THE REGULATORY AUTHORITY. THIS MAY **REQUIRE PROVISION OF**
- **13.1. PERMANENT AIR GAP** 13.2. BACKFLOW PREVENTION DEVICE

SAFETY IN DESIGN NOTES

THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING. WE NOTE THIS DESIGN IS TYPICAL OF SIMILAR DESIGNS. AS FAR AS IS REASONABLY PRACTICABLE RISKS HAVE BEEN ELIMINATED OR MINIMISED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR. OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS. GREENVIEW ASSESSMENT DID NOT IDENTIFY ANY UNIQUE RISKS ASSOCIATED WITH THE DESIGN

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DATE BY

REV.

EARTHWORK NOTES

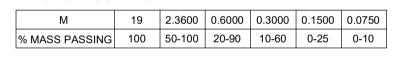
- 1. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH.
- FENCES AND DEBRIS ETC. TO THE EXTENT OF THE PROPOSED DEVELOPED AREA.
- PROVIDE PROTECTION BARRIERS TO PROTECTED/SENSITIVE AREAS PRIOR TO ANY BULK EXCAVATION. OVER FULL AREA OF EARTHWORKS, CLEAR VEGETATION, RUBBISH, SLABS ETC. AND STRIP TOP SOIL. AVERAGE 200mm THICK. REMOVE FROM SITE, EXCEPT TOP SOIL FOR RE-USE.
- 5. CUT AND FILL OVER THE SITE TO LEVELS REQUIRED. PRIOR TO ANY FILLING IN AREAS OF CUT OR IN EXISTING GROUND,
- PROOF ROLL THE EXPOSED SURFACE WITH A ROLLER OF MINIMUM WEIGHT OF 5 TONNES WITH A MINIMUM OF 10 PASSES. 7. EXCAVATE AND REMOVE ANY SOFT SPOTS ENCOUNTERED DURING PROOF ROLLING AND REPLACE WITH APPROVED FILL COMPACTED IN LAYERS. THE WHOLE OF THE EXPOSED SUBGRADE AND FILL SHALL BE
- COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2%. 8. FOR ON SITE FILLING AREAS, THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO
- COMMENCING FILL OPERATIONS. 9. WHERE HARD ROCK IS EXPOSED IN THE EXCAVATED SUB-GRADE. THIS WILL BE INSPECTED AND A DECISION MADE ON THE LEVEL TO WHICH EXCAVATION IS TAKEN.
- 10 FILL IN 200mm MAXIMUM (LOOSE THICKNESS) LAYERS TO UNDERSIDE OF BASECOURSE USING THE EXCAVATED MATERIAL AND COMPACTED TO 98% STANDARD (AS 1289 5.1.1). MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2% SHOULD THERE BE INSUFFICIENT MATERIAL FROM SITE EXCAVATIONS, IMPORT AS NECESSARY CLEAN GRANULAR
- FILL TO APPROVAL 11. COMPACTION TESTING SHALL BE CARRIED OUT AT THE RATE OF 2 TESTS PER 1000SQ METRES PER LAYER BY A REGISTERED NATA LABORATORY. THE COSTS OF TESTING AND RE-TESTING ARE TO BE ALLOWED FOR BY THE BUILDER.
- 12. BATTERS TO BE AS SHOWN, OR MAXIMUM 1 VERT : 4 HORIZ. 13. ALL CONDUITS AND MAINS SHALL BE LAID PRIOR TO LAYING FINAL PAVEMENT 14. ALL BATTERS AND FOOTPATHS ADJACENT TO ROADS SHALL BE TOP
- SOILED WITH 150mm APPROVED LOAM AND SEEDED UNLESS OTHERWISE SPECIFIED.

DRAINAGE INSTALLATION

RCP CONVENTIONAL

- **INSTALLATIONS & ROAD CROSSINGS** 1. SUPPLY & INSTALLATION OF DRAINAGE WORKS TO BE IN
- ACCORDANCE WITH THESE DRAWINGS, THE COUNCIL SPECIFICATION AND THE CURRENT APPLICABLE AUSTRALIAN
- STANDARDS. BACKFILL SHALL BE PLACED & COMPACTED IN ACCORDANCE WITH THE SPECIFICATION. A GRANULAR GRAVEL AGGREGATE MATERIAL (<10mm) BACKFILL IS RECOMMENDED FOR THE BEDDING, HAUNCH
- SUPPORT AND SIDE ZONE DUE TO IT'S SELF COMPACTING ABILITY A MINIMUM OF 150mm CLEARANCE IS TO BE PROVIDED BETWEEN THE OUTSIDE OF THE PIPE BARREL AND THE TRENCH WALL FOR
- PIPES < 600 DIA. 200mm CLEARANCE FOR PIPES 600 TO 1200 DIA AND D/6 CLEARANCE FOR PIPES > 1200 DIA. BEDDING OF THE PIPELINES IS TO BE TYPE 'HS2' IN ACCORDANCE WITH THE STANDARDS AND AS FOLLOWS:

a.COMPACTED GRANULAR MATERIAL IS TO COMPLY WITH THE FOLLOWING GRADINGS:



-AND THE MATERIAL PASSING THE 0.075 SIEVE HAVING LOW PLASTICITY AS DESCRIBED IN APPENDIX D OF AS1726.

b.BEDDING DEPTH UNDER THE PIPE TO BE 100mm

c.BEDDING MATERIAL TO BE EXTENDED FROM THE TOP OF THE BEDDING ZONE UP TO 0.3 TIMES PIPE OUTSIDE DIAMETER. THIS **REPRESENTS THE 'HAUNCH ZONE**

d.THE BEDDING & HAUNCH ZONE MATERIAL IS TO BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 98% WITHIN BOAD RESERVES AND TRAFFICABLE AREAS AND 95% ELSEWHERE FOR COHESIVE MATERIAL OR A MINIMUM DENSITY INDEX OF 70% IN ACCORDANCE WITH THE STANDARDS FOR COHESIONLESS MATERIAL

e.COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED

ORGANISATION WITH A NATA CERTIFIED LABORATORY FOR ALL DRAINAGE LINES LAID WHOLLY OR IN PART UNDER THE KERB & GUTTER OR PAVEMENT

ROOF DRAINAGE

- ALL ROOF DRAINAGE IS TO BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE CURRENT APPLICABLE AUSTRALIAN STANDARDS INCLUDING AS3500.3, NCC AND COUNCIL'S SPECIFICATIONS.
- DOWNPIPES SHOWN ARE INDICATIVE ONLY. REFER ARCHITECTURALS FOR FINAL LOCATIONS. ALL DOWNPIPES TO BE CONSTRUCTED OF ONE MATERIAL FOR AESTHETICS REASONS AND PAINTED TO PROTECT THEM AGAINST ULTRA-VIOLET LIGHT DAMAGE. UNLESS APPROVED OTHERWISE BY THE PROJECT ARCHITECT.
- 4. ALL DOWNPIPES TO HAVE LEAF GUARDS. ALL EAVES GUTTERS ARE TO BE DESIGNED TO THE 5% AEP (20YR) STORM
- EVENTS UNC 6. ALL EAVES GUTTER OVERFLOWS ARE TO BE IN ACCORDANCE WITH AS3500.3
- ALL BOX GUTTERS ARE TO BE DESIGNED TO CATER TO THE 1% AEP (100YR) STORM EVENTS UNO
- 8. IN ACCORDANCE WITH AS3500.3 CLAUSE 3.7.6.G, BOX GUTTERS SHALL a. BE STRAIGHT (WITHOUT CHANGE IN DIRECTION) HAVE A HORIZONTAL CONSTANT WIDTH BASE (SOLE) WITH VERTICAL
- SIDES IN A CROSS-SECTION. HAVE A CONSTANT LONGITUDINAL SLOPE BETWEEN 1:200 AND 1:40. d. DISCHARGE AT THE DOWNSTREAM END WITHOUT CHANGE OF DIRECTION (I.E. NOT TO THE SIDE); AND
- e. BE SEALED TO THE RAINHEADS AND SUMPS 9. GREENVIEW RECOMMENDS THAT THE BUILDER VERIFIES THAT ANY AND ALL BOX GUTTERS HAVE BEEN DESIGNED BY A QUALIFIED CIVIL ENGINEER PRIOR TO THE COMMENCEMENT OF WORKS
- 10. GREENVIEW RECOMMENDS A SPECIFIC INSPECTION AND CERTIFICATION BY A QUALIFIED CIVIL ENGINEER OF ANY AND ALL BOX GUTTERS INSTALLED ON THE PROJECT PRIOR TO OCCUPATION CERTIFICATE
- 11 ALL DOWNPIPES ARE TO BE PIPE CONNECTED INTO THE FORMAL RAINWATER OR STORMWATER LINE UNLESS SPECIFICALLY NOTED ON THE DRAWINGS OTHERWISE

PROPOSED DEVELOPMENT

72 Frenchs Forest Rd, Seaforth NSW 2092

Oliver Cooney & Nadine Blayney

STORMWATER DRAINAGE NOTES

CURRENT AUSTRALIAN STANDARDS INCLUDING AS3500.3 . NCC AND COUNCIL'S SPECIFICATION.

7.5.2.1 WHICH PROVIDES GUIDANCE ACCORDING TO PIT DEPTH U.N.O. TABLE 7.5.2.1

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS

Depth to invert	Minimum internal dimensions mm				
of outlet	Recta	Circular			
	Width	Length	Diameter		
≤450	350	350			
≤600 >600 ≤900 >000 ≤1200	450 600	450 600	600 900		
>900 ≤1200 >1200	600 900	900 900	1000		

- PIPES OF 225mm DIA. AND UNDER SHALL BE UPVC PIPES OF 300mm DIA. AND LARGER SHALL BE FRC OR CONCRETE CLASS 2
- RUBBER RING JOINTED UNO 5. ALL FRC OR RCP STORMWATER PIPES WITHIN ROAD RESERVE AREAS TO BE CLASS 3 U.N.O. BY COUNCILS SPECIFICATION.
- 6. PIPES SHALL GENERALLY BE LAID AT THE GRADES INDICATED ON THE DRAWINGS
- 7. MINIMUM COVER TO PIPES 300mm DIA. AND OVER GENERALLY SHALL BE 600mm IN CARPARK & ROADWAY AREAS UNO. 8 ALL PIPES LOCATED IN LANDSCAPE AREAS TO HAVE 300mm COVER. WHERE
- NOT POSSIBLE AND COVER IS BETWEEN 150mm AND 300mm USE SEWER GRADE PIPE. 9. PIPES 225mm DIA AND OVER SHALL BE LAID AT 0.5% MIN. GRADE U.N.O.
- 10. PIPES UP TO 150mm DIA SHALL BE LAID AT 1.0% MIN. GRADE U.N.O 11. BACKFILL TRENCHES WITH APPROVED FILL COMPACTED IN 200mm LAYERS TO
- 98% OF STANDARD DENSITY. 12. ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULKHEADS AT ALL JOINTS
- 13. THE MINIMUM SIZES OF THE STORMWATER DRAINAGE PIPES SHALL NOT BE LESS THAN 90mm DIA FOR CLASS 1 BUILDINGS AND 100mm DIA FOR OTHER
- 14. BUILD INTO UPSTREAM FACE OF ALL PITS A 3.0m SUBSOIL LINE FALLING TO PITS TO MATCH PIT INVERTS
- 15. ALL LANDSCAPED PITS TO BE MIN 450 SQUARE U.N.O OR LARGER AS REQUIRED BY AS3500 3 TABLE 7 5 2 1 16. GREENVIEW RECOMMENDS ALL COURTYARDS TO HAVE 450 SQUARE PLASTIC
- PIT INSTALLED WITH A 150mm DIA. CONNECTION TO FORMAL DRAINAGE SYSTEM U.N.O.
- 17. ALL DRIVEWAY PITS TO BE MIN 600 SQUARE U.N.O OR LARGER AS REQUIRED BY AS3500.3 TABLE 7.5.2.1

GRATE.

OVERFLOW

GALVANISED)

GRATE TYPE

3 - LIGHT DUTY

- MEDIUM DUTY

COVER TABLE

ANDSCAPE (SINGLE DWELLING)

UNDER TRAFFICABLE AREA

- HEAVY DUTY

LOCATION

ANDSCAPE

CONCRETE

ROADS

CHILDPROOF LOCKS

PRIOR TO BACKFILLING.

LANDSCAPE CONSULTANT

- STORMWATER DRAINAGE LINE. 19. ALL STORMWATER DRAINAGE WORK TO AVOID TREE ROOTS. WHERE NOT POSSIBLE, ALL EXCAVATIONS IN VICINITY OF TREE ROOTS ARE TO BE HAND
- 20. GEOTEXTILE FABRIC TO BE PLACED UNDER RIP RAP SCOUR PROTECTION WHERE APPLICABLE. 21. ALL BASES OF PITS TO BE BENCHED (TO HALF PIPE DEPTH) TO THE INVERT OF

CIVIL DESIGN FOR PROPOSED DEVELOPMENT AT 72 Frenchs Forest Rd, Seaforth NSW 2092

1. STORMWATER DRAINAGE SHALL BE GENERALLY IN ACCORDANCE WITH MINIMUM PIT DIMENSIONS ARE TO BE IN ACCORDANCE WITH AS3500.3 TABLE

- CLASSES OF BUILDING OR AS REQUIRED BY THE REGULATORY AUTHORITY
- 18. ALL PLANTER BOXES AND BALCONIES TO BE CONNECTED TO THE PROPOSED
- THE OUTLET PIPE AND PROVIDE GALVANISED ANGLE SURROUNDINGS TO 22. ANY VARIATION TO THAT WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY THE ENGINEER PRIOR TO THE COMMENCEMENT 23 ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY
- OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS 24. GREENVIEW RECOMMENDS ALL ACCESSIBLE GRATES TO BE FITTED WITH
- 25. ALL WORK WITHIN COUNCIL RESERVE AREAS TO BE INSPECTED BY COUNCIL 26. COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
- 27. WATER PROOF ALL CONCRETE BALCONIES & ROOFS TO ARCHITECTS DETAILS 28. ALL BALCONIES TO HAVE FLOOR WASTE AND 1% FALL WITH SAFETY
- 29. ALL SUBSOIL DRAINAGE SHALL BE A MINIMUM OF Ø65mm AND SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE
- 30. SUBSOIL DRAINAGE PIPES AND FITTINGS SHALL BE PERFORATED PLASTIC TO CURRENT AUSTRALIAN STANDARDS. LAY PIPES ON FLOOR OF TRENCH GRADED AT 1% MIN. AND OVERLAY WITH FILTER MATERIAL EXTENDING TO WITHIN 200mm OF SURFACE. PROVIDE FILTER FABRIC OF PERMEABLE
- POLYPROPYLENE BETWEEN FILTER MATERIAL AND TOPSOIL. PROVIDE FLUSHING EYE'S AT HIGH POINTS OR TO COUNCILS REQUIREMENTS. 31. ALL GRATES IN AREAS OF FREQUENT PEDESTRIAN TRAFFIC (IE FOOTPATHS, WALKWAYS, ETC.) TO BE HEELPROOF GRATE.

7.10.3)

32. REFER ARCHITECTS DETAIL FOR GRATE FINISH (IE STAINLESS STEEL OR

33. GRATES TO BE IN ACCORDANCE WITH TABLE BELOW: PIT GRATE INLINE TYPE

TRAFFIC CONDI

FOOTWAYS THAT CAN BE

MALLS AND PEDESTRIAN A

MOVING COMMERCIAL VE

CARRIGEWAYS OF ROADS COMMERCIAL VEHICHLES.

A - EXTRA LIGHT DUTY FOOTWAYS AND AREAS A PEDESTRIANS AND PEDAL

TABLE AS PER AS3996 - 2006. ENGINEER TO BE NOTIFIED I

TIONS
CESSIBLE ONLY TO CYCLISTS.
MOUNTED BY VEHICLES.
REAS OPEN TO SLOW HCLES.
AND AREAS OPEN TO
F LOAD CONDITIONS LISTED

32. COVER TO PIPE TO BE AS PER TABLE BELOW:

	PIPE TYPE	COVER
	PVC	300
i)	PVC	100
	PVC	100 BELOW UNDERSIDE OF PAVEMENT
	STEEL	NIL BELOW UNDERSIDE OF PAVEMENT
	RCP	500 BELOW UNDERSIDE OF PAVEMENT

STORMWATER DRAINAGE NOTES CONTINUED

- 33. GREENVIEW'S STORMWATER SYSTEM HAS BEEN DESIGNED TO CAPTURE SURFACE RUNOFF FROM THE SITE ITSELF BUT DOES NOT INCORPORATE SPECIFIC GROUNDWATER CAPTURE MECHANISMS. IN SOME CASES. GROUNDWATER INUNDATION MAY BE A SIGNIFICANT SOURCE OF WATER DURING A STORM EVENT. GREENVIEW RECOMMENDS THAT ALL RETAINING WALLS CLOSE TO HABITABLE AREAS BE FITTED WITH AN IMPERMEABLE MEMBRANE AND SUBSOIL DRAINAGE TO PREVENT GROUNDWATER
- INGRESS 34. GREENVIEW RECOMMENDS ALL IN-GROUND STORMWATER PIPE RUNS ARE SET OUT BY THE BUILDER PRIOR TO COMMENCEMENT OF WORKS. WHERE 300MM COVER IS NOT ACHIEVED. NOTIFY ENGINEER. 5. WHERE STORMWATER DRAINAGE WORKS ARE TO BE UNDERTAKEN PRIOR
- TO THE CONSTRUCTION OF THE BUILDING, THE BUILDER IS TO SET OUT THE FLOOR LEVELS AND ENSURE PROPOSED STORMWATER DRAINAGE LEVELS AND BUILDING LEVELS ARE COMPATIBLE. NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES.

ON-SITE DETENTION

- 1. ON-SITE DETENTION (OSD) TANKS ARE TO BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE CURRENT APPLICABLE AUSTRALIAN STANDARDS
- INCLUDING AS3500.3, NCC AND COUNCILS' SPECIFICATIONS. . IT IS CRITICAL THAT THE MINIMUM OSD VOLUME AS CALCULATED BY THE DESIGN AND NOTED ON THESE PLANS IS ACHIEVED ON SITE. VOLUMES TO BE VERIFIED BE REGISTERED SURVEYOR AND NOTED IN THE WAE SURVEY
- PRIOR TO CERTIFICATION. OSD VOLUME MAY BE ACHIEVED IN BELOW GROUND TANK, OR ABOVE GROUND PONDING, OR RAINWATER TANK OFFSET, OR INFILTRATION/ABSORPTION SYSTEM. EACH COUNCIL HAS SPECIFIC GUIDELINES FOR HOW STORMWATER FLOWS ARE TO BE CONTROLLED AND
- DISCHARGED PONDING AND OVERELOW LEVELS FROM THE OSD SHALL BE NOT LESS THAN 300mm BELOW ADJACENT HABITABLE FLOOR LEVELS OF BUILDINGS AND NOT LESS THAN 150mm BELOW NON-HABITABLE FLOOR LEVELS (AS3500.1 CLAUSE

7.10.1) **BELOW GROUND OSD TANKS**

- THE HYDRAULIC CONTROL FOR THE STORAGE (USUALLY ORIFICE PLATE) SHALL BE FIRMLY FIXED IN PLACE TO PREVENT REMOVAL OR TAMPERING. A PLATE OF 3mm TO 5mm THICK STAINLESS STEEL WITH A CIRCULAR HOLE SHALL BE USED, PROVIDED: a. IT IS MACHINED TO 0.5mm ACCURACY
- b. IT RETAINS A SHARP EDGE; AND c. THE ORIFICE DIAMETER IS NOT LESS THAN 25mm (AS 3500.3 CLAUSE 7.10.2 INSPECTION / ACCESS OPENINGS SHALL BE PROVIDED ABOVE THE LOCATION OF THE OUTLET WITH DIMENSIONS AT LEAST 600mm x 600mm OR 600mm DIAMETER FOR STORAGES UP TO 800mm DEEP AND 600mm x 900mm FOR DEEPER STORAGES. THERE SHALL BE NO IMPEDIMENTS TO THE REMOVAL OF DEBRIS THROUGH THIS OPENING. INSPECTION SHALL BE POSSIBLE WITHOUT
- RESIDENTS OR OWNERS HAVING TO REMOVE HEAVY ACCESS COVERS (AS3500.3 CLAUSE 7.10.2.b.ii) WHERE STORAGES ARE NOT DEEP ENOUGH TO WORK IN (<1.5m DEEP) ACCESS SHALL BE PROVIDED AT INTERVALS OF APPROXIMATELY 10m TO ALLOW THE SYSTEM TO BE FLUSHED TO THE STORAGE OUTLET> ACCESS SHALL BE PROVIDED AT THE OUTLET (AS3500.3 CLAUSE 7.10.2.b.iii) A SUMP SHALL BE PROVIDED AT THE OUTLET POINT, SET BELOW THE LEVEL OF THE MAIN STORAGE TO COLLECT DEBRIS, WHERE A DISCHARGE CONTROL PIT IS INCLUDED IN THE STORAGE< THIS SHALL CONTAIN A SUMP SET A MINIMUM OF 1.5 TIMES THE DIAMETER OF THE ORIFICE OF THE OUTLET
- BELOW THE CENTRE OF THE ORIFICE. SUMPS SHALL BE PROVIDED WITH WEEP HOLES TO DRAIN OUT TO THE SURROUNDING SOIL, AND SHALL BE FOUNDED ON A COMPACTED GRANULAR BASE. WHERE THE DEPTH OF THE TANK EXCEEDS 1.2m, A LADDER IN ACCORDANCE WITH AS3500.3 CLAUSE 7.5.5.4 SHALL BE INSTALLED.
- BELOW GROUND OSD SYSTEMS SHALL CONFORM WITH AS2865. IN ACCORDANCE WITH AS3500.3 CLAUSE 7.10.2.D SCREENS (TRASH RACKS) WITH THE FOLLOWING CHARACTERISTICS SHOULD BE PROVIDED TO COVER EACH ORIFICE OUTLET: a. FOR ORIFICES UP TO 150mm DIA., A FINE APERTURE-EXPANDED METAL MESH SCREEN WITH A MINIMUM AREA OF 50 TIMES THE AREA OF THE ORIFICE. FOR LARGER DIA. ORIFICES, A COARSER GRID MESH WITH A
- MINIMUM AREA OF 20 TIMES THE ORIFICE AREA MAY BE USED AS AN ALTERNATIVE b. STEEL SCREENS SHOULD BE STAINLESS STEEL OR HOT-DIP GALVANIZED WHERE APERTURE-EXPANDED MESH SCREENS ARE EMPLOYED. THEY SHOULD BE POSITIONED SO THAT THE OVAL-SHAPED HOLES ARE HORIZONTAL, WITH THE PROTRUDING LIP ANGLED UPWARDS AND FACING
- DOWNSTREAM. A HANDLE MAY BE FITTED TO ENSURE CORRECT ORIENTATION AND EASY REMOVAL FOR MAINTENANCE. SCREENS SHOULD BE PLACED NO FLATTER THAN 45 DEGREES TO THE HORIZONTAL IN SHALLOW STORAGES UP TO 600mm DEEP. IN DEEPER OR MORE REMOTE LOCATIONS, THE MINIMUM ANGLE SHOULD BE 60 DEGREES
- TO THE HORIZONTAL IF THE BELOW GROUND OSD STORAGE IS SEALED, A VENT SHOULD BE PROVIDED TO EXPEL ANY NOXIOUS GASES (AS3500.3 CLAUSE 7.10.2.D.B). THE STORAGE SHOULD BE DESIGNED TO FILL WITHOUT CAUSING OVERFLOWS IN UPSTREAM CONDUITS DUE TO BACKWATER EFFECTS
- (AS3500.3 CLAUSE 7.10.2.D.C). 10. BELOW GROUND STORAGES SHALL BE CONSTRUCTED OF CONCRETE. MASONRY, ALUMINIUM/ZINC AND ALUMINIUM/ZINC/MAGNESIUM ALLOY-COATED

STEEL, ZINC-COATED STEEL, GALVANISED IRON OR PLASTICS (AS3500.3

MAINTENANCE SCHEDULE: ON SITE DETENTION (OSD)

ALL OSD MAINTENANCE TASKS SHOULD BE UNDERTAKEN AFTER A SIGNIFICANT STORM EVENT

6 MONTHLY

ELEMENT	TASK	DESCRIPTION / ACTION
ORIFICE PLATE	INSPECT FOR BLOCKAGE	CHECK PLATE FOR BLOCKAGE AND CLEAN
TRASH SCREEN	CHECK / CLEAN	CHECK AND CLEAN TRASH SCREEN
PIT SUMP	CHECK FOR SEDIMENT	CHECK FOR SEDIMENT / LITTER / SLUDGE AND CLEAN-OUT
GRATED LIDS	CHECK FOR DAMAGE	CHECK FOR CORROSION OR OTHER DAMAGE AND REPAIR / REPLACE AS NEEDED
	CLEAR BLOCKAGES	CHECK AND CLEAR BLOCKAGES
STORAGE LIDS	CHECK	REMOVE DEBRIS / MULCH / LITTER / SEDIMENT
OUTLET PIPES	CHECK FOR BLOCKAGES	CHECK / CLEAN / FLUSH OUTLET PIPES, REMOVE ANY BLOCKAGES
STEP IRONS	CHECK FIXING	ENSURE STEP-IRON FIXINGS ARE SECURE AND REPAIR AS NEEDED

ANNUALLY

ASK CHECK TTACHMENT CHECK TTACHMENT	DESCRIPTION / ACTION ENSURE PLATE IS MOUNTED SECURELY, TIGHTEN AND SEAL GAPS AS REQUIRED ENSURE PLATE IS MOUNTED SECURELY, TIGHTEN AND SEAL GAPS AS REQUIRED
TTACHMENT CHECK TTACHMENT	SECURELY, TIGHTEN AND SEAL GAPS AS REQUIRED ENSURE PLATE IS MOUNTED SECURELY, TIGHTEN AND SEAL
TTACHMENT	SECURELY, TIGHTEN AND SEAL
CHECK CORROSION	CHECK TRASH SCREEN FOR CORROSION, ESPECIALLY AT CORNERS NEAR WELDS AND REPAIR / REPLACE AS NEEDED
HECK FOR	EXAMINE STEP IRONS AND REPAIR ANY DAMAGE
HECK	CHECK FOR CRACKS / SPALLING AND REPAIR AS NEEDED
HECK FOR	CHECK FOR SUBSIDENCE (WHICH MAY INDICATE LEAKS) AND REPAIR AS NEEDED
	HECK FOR DRROSION HECK HECK FOR

5-TEARLT		
ELEMENT	TASK	DESCRIPTION / ACTION
ORIFICE PLATE	CHECK ORIFICE PLATE	CHECK ORIFICE SIZE AGAINST WAE AND CHECK FOR PITTING / SCARRING, REPLACE IF NECESSARY

COLOUR LEGEND

NEW (REFER TO SCHEDULES FOR COLOUR DEFINITION)

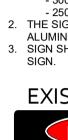
EXISTING

REMOVED OR RELOCATED

	GREENVIEW CIVIL SHEET LIST		
No.	SHEET NAME	REV.	
C01	NOTES & LEGENDS	3	
C02	GROUND FLOOR DRAINAGE PLAN	3	
C03	SITE STORMWATER DETAILS SHEET 1	3	
		3	

C	Greer (02) 8544 1683 W	BULTING				CIVIL DESIGN
DESIGN: LM	DRAWN: JPS	CHECKED: AMcK	SIZE:	A1	SCALE: 1:100	NOTES & LEGENDS







DP FFI RCP RKG RWO RW1 TOW TWL uPVC

RECOMMENDED SAFETY SIGNS

DANGER CONFINED SPACE NO ENTRY WITHOUT CONFINED SPACE TRAININ

CONFINED SPACE DANGER SIGN

1. A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANKS CONFINED SPACE. - MINIMUM DIMENSIONS OF THE SIGN

- 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES) 2. THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALLIMINUM OR POLYPROPYLENE 3. SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE

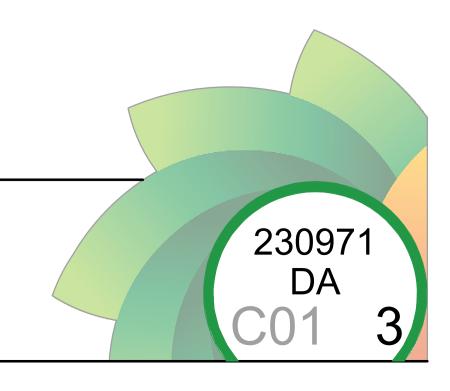
EXISTING SERVICES

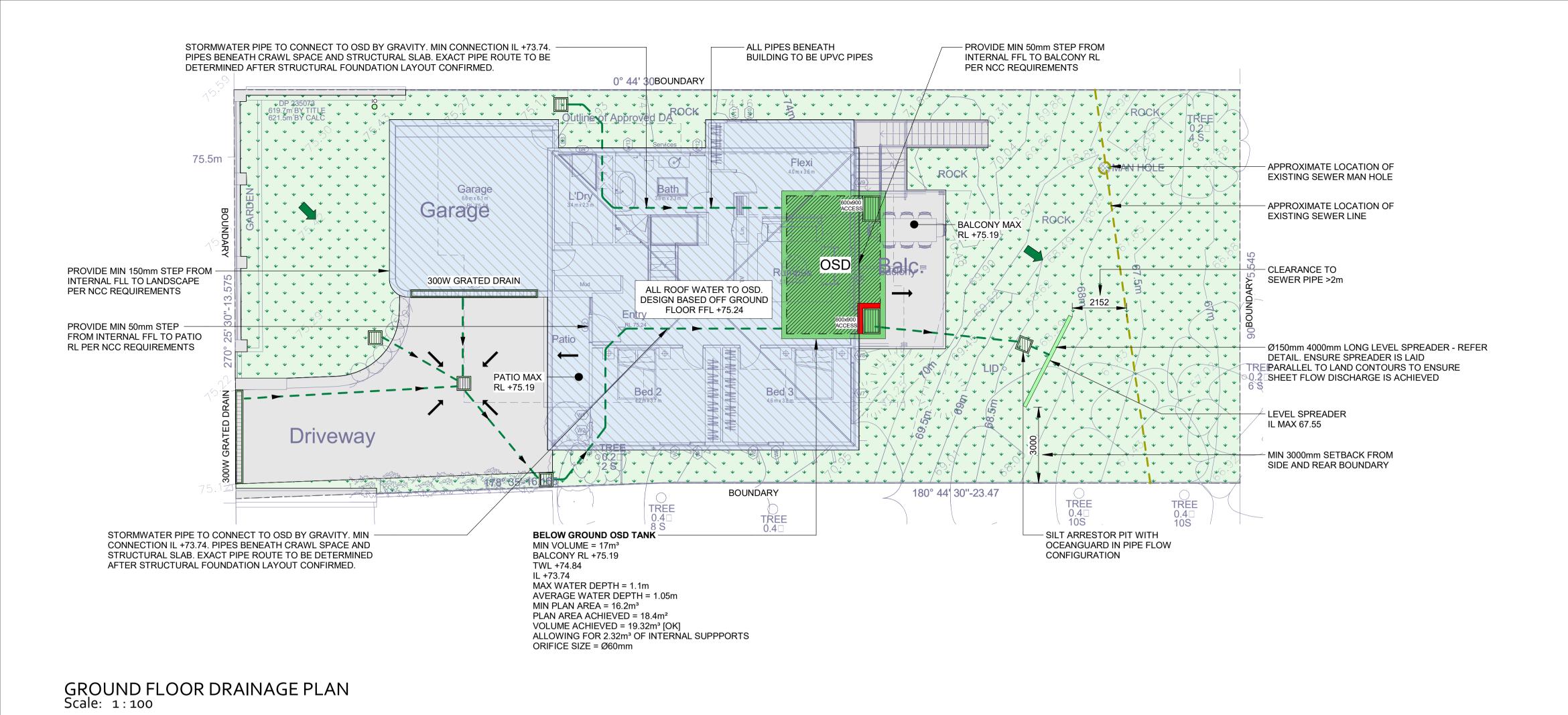
DANGER

WHEN EXCAVATING WITHIN ANY SITE DOTPATH AND ROADWAY, ALL SERVICE SHALL BE LOCATED PRIOR TO CEMENT OF THE EXCAVATI ORKS. CONTACT "DIAL BEFORE YOU DIG" (00 OR GOT THE WEB SITE "www.1100.com.

ABBREVIATIONS

DOWN PIPE PROPOSED FINISHED FLOOR LEVEL PROPOSED PIT SURFACE LEVE PROPOSED PIT INVERT LEVEL INSPECTION OPENING KERB & GUTTER FINISHED PAVEMENT LEVEL REINFORCED CONCRETE PIPE **ROLL KERB & GUTTER** FINISHED SURFACE LEVEL RAINWATER DRAINAGE OUTLET PROPOSED RAINWATER TANK TOP OF NEW KERB LEVEL TOP OF NEW RETAINING WALL LEVEL TOP OF WATER LEVEL RIGID PVC PIPE VERTICAL DROPPER





SIDE OF PIT, TO ALLOW SMOOTH FLOW OF STORMWATER. 12. PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATES IN TRAFFICABLE AREAS.

6. PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE WHERE IN TRAFFICABLE AREAS.

1. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING.

7. PROVIDE 100mm GAP IN BASE OF FENCE FOR EMERGENCY OVERFLOWS.

10. ALL PIPES TO BE 100mmØ @ 1% MINIMUM UNLESS NOTED OTHERWISE.

VICINITY OF TREE ROOTS ARE TO BE HAND DUG.

SPECIFICALLY NOTED ON THE DRAWINGS OTHERWISE.

FOR CLARITY OF DOCUMENTATION.

not

2. THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE,

FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS, ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT

OF ANY WORKS TO ENSURE THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.

WHERE THE SITE STORMWATER SYSTEM CONNECTION INTO COUNCIL'S KERB/DRAINAGE SYSTEM MATCH THE

3. PRIOR TO COMMENCING ANY WORKS ON THE SITE, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF

DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY

4. ALL STORMWATER DRAINAGE WORK TO AVOID TREE ROOTS. WHERE NOT POSSIBLE, ALL EXCAVATIONS IN

5. ALL BASES OF PITS TO BE BENCHED (TO HALF PIPE DEPTH) TO THE INVERT OF THE OUTLET PIPE WITH ALL PIPES CUT FLUSH WITH SIDE OF PIT, TO ALLOW SMOOTH FLOW OF STORMWATER.

8. PROVIDE SUBSOIL DRAINAGE AND OUTLETS TO ALL ON PODIUM PLANTER BOXES. OUTLET PIPES NOT SHOWN

9. ALL DOWNPIPES ARE TO BE PIPE CONNECTED INTO THE FORMAL RAINWATER OR STORMWATER LINE UNLESS

11. ALL BASES OF PITS TO BE BENCHED TO THE INVERT OF THE OUTLET PIPE WITH ALL PIPES CUT FLUSH WITH

STORMWATER CALCULATIONS:

- LGA: NORTHERN BEACHES
- REGION:SOUTHERN, ZONE#1 [OSD]
- SITE AREA = 622 m²
- POST- DEVELOPMENT AREAS:

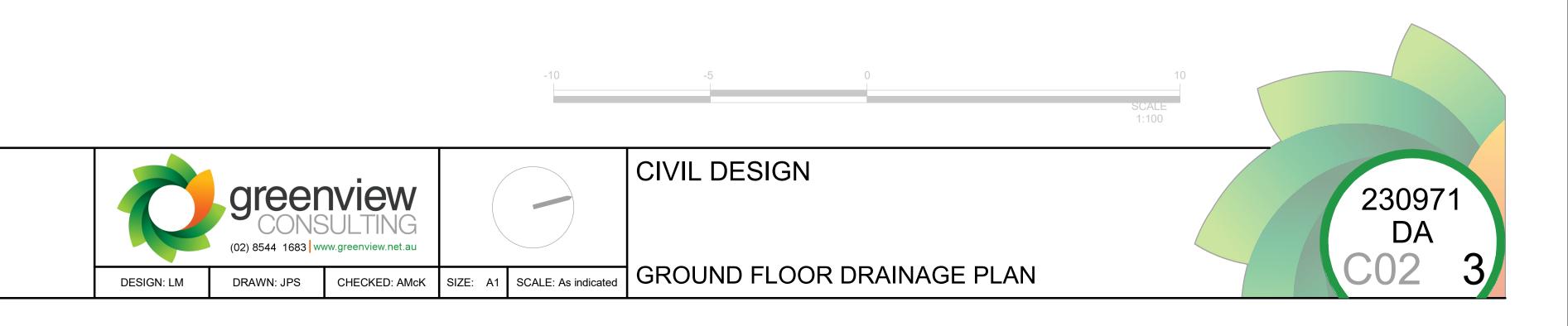
- SSR100 (1%AEP) = 14.1 m³
- Q5 PRE / POST = 23 / 13 L/s Q100 PRE / POST = 47 / 23 L/s
- ORIFICE CONTROL = D60MM IF 1.1m DEEP TANK USED [DRAINS]
- VOLUME PROVIDED IN TANK = 19.23m³ [OK]

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be repl	2	30.05.2024 29.05.2024	JPS JPS	PRELIMINARY ISSUE PRELIMINARY ISSUE	 Oliver Ceeney & Nedine Playney
with	REV.	DATE	BY	DESCRIPTION	Oliver Cooney & Nadine Blayney

DESIGN CRITERIA: REDUCE 100YR (1%AEP) POST-DEVELOPMENT BACK TO 5YR PRE-DEVELOPMENT FLOWRATES PRE-DEVELOPMENT IMPERVIOUS AREA: 180M2 [29%] NOTE 35% IS TYPICALLY ADOPTED UNLESS ACTUAL % IS LESS

- AREA BYPASSING OSD = 249 m² [9 m² IMP] @ 4% IMP.
 - POST-DEVELOPMENT AREA TO OSD: ROOF AND FRONT YARD = 373 m² [288 m² IMP.] @ 77% IMP.
 - LONGEST FLOW PATH = 40M @ 20% (ASSUME 10% MAX FOR CALCS, PSD WILL BE LESS THAN ACTUAL)

USE DRAINS RUNOFF-ROUTING MODEL TO ARR2019 METHODOLOGY (10 PATTERNS PER DURATION) DRAINS PARAMETERS: IL = 0mm, CLR = 1.6 mm/hr, N* (HARD) = 0.015, N*(GRASS) = 0.170



GENERAL LEGEND



	CIV - FIXTURES SCHEDULE					
	TYPE	DESCRIPTION				
		GRATED STORMWATER PIT				
	300W	GRATED STRIP DRAIN				
	IO	INSPECTION OUTLET				
Ô						

	CIV - STANDARD SYMBOLS
	DESCRIPTION
	FALL ARROW
-	
	OVERLAND FLOW PATH
Į	

CIV - STORMWATER SERVICES				
TYPE		DESCRIPTION		
	STW	STORMWATER		

sign remains and shall not onsent					PROPOSED DEVELOPMENT	
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	1	29.05.2024	JPS	PRELIMINARY ISSUE	Oliver Ceenery & Nedine Dleyney	
	REV.	DATE	BY	DESCRIPTION	Oliver Cooney & Nadine Blayney	

TYPICAL OSD BELOW GROUND Scale: 1:20

PIT SIZE

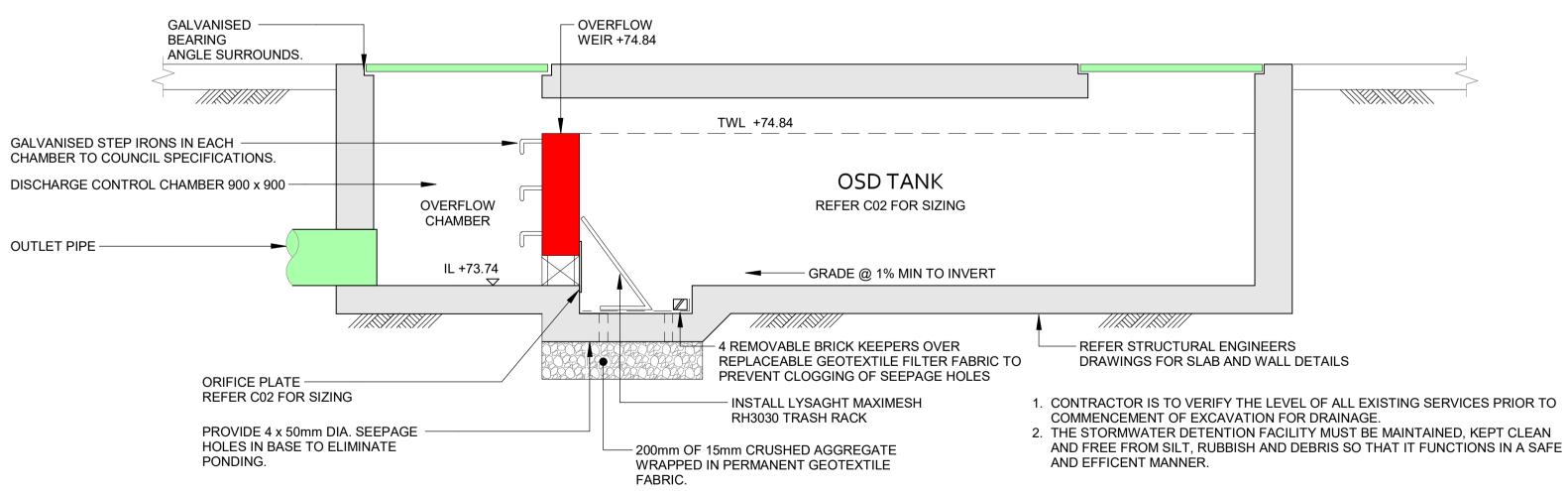
DEPTH

0 - 600

600 - 900

900 - 1200

1200 +



REFER PLAN FOR DIMENSIONS

TYPICAL CONCRETE INLET PIT - LANDSCAPE SURFACE

PIT DIMENSION

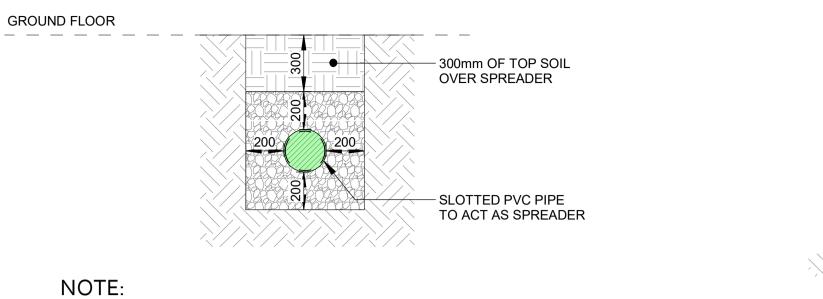
450 mm x 450 mm

600 mm x 600 mm

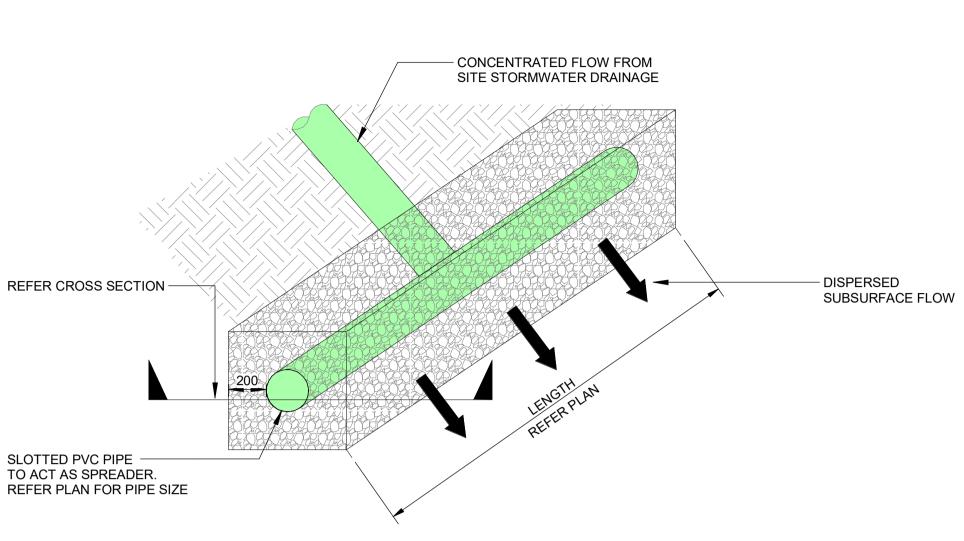
600 mm x 900 mm

900 mm x 900 mm

	GALVANIZED BEARING ANGLE OR SIMILAR SURROUNDS		HOT-DIP GALVANIZED GRATE, REFER NOTES SHEET FOR GRATE CLASS		
N FOR PIT DEPTHS	PIPES TO BE SET WITH MATCHING — OBVERTS WHERE APPLICABLE				
REFER PLAN	INLET PIPE MASS CONCRETE BENCHING TO PIT – BASE TO AVOID PONDING WATER	REFER TABLE FOR PIT SIZE		 PRECAST PIT. REFER NOTES SHEET FOR CLASS. NOTE IF PIT FOUNDED WITHIN A LANDSCAPE NON TRAFFICABLE AREA, A PLASTIC PIT IS ACCEPTABLE 	
	 ENSURE CLIMB IRONS ARE PROVID WHERE PIT DEPTH IS DEEPER THA GREENVIEW RECOMMENDS THE PL STUB PIPE SURROUNDED WITH 100 MATERIAL WRAPPED IN GEOTEXTIL BE PARALLEL TO UPSTREAM SIDE 0 	N 1000. LUMBER PROVIDES 901 Dmm THICKNESS OF NO LE FILTER FABRIC. (BID	Dia x 3000 LONG SUBSOIL DRA DMINAL 20mm COARSE FILTER	INAGE	



ENSURE PIPE IS LAID PARALLEL TO CONTOURS





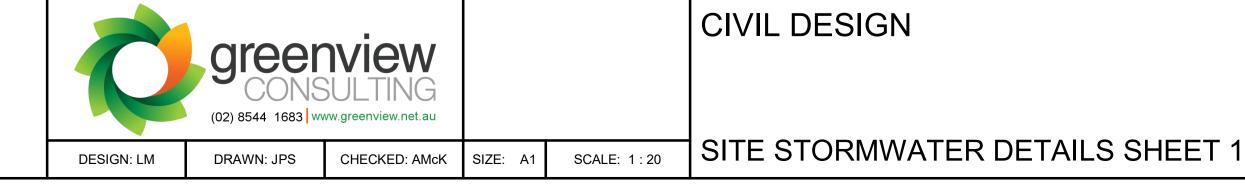
2. THE STORMWATER DETENTION FACILITY MUST BE MAINTAINED, KEPT CLEAN AND FREE FROM SILT, RUBBISH AND DEBRIS SO THAT IT FUNCTIONS IN A SAFE HOT-DIP GALVANISED GRATE REFER AS3966. —— WITH GALVANISED BEARING ANGLE SURROUNDS

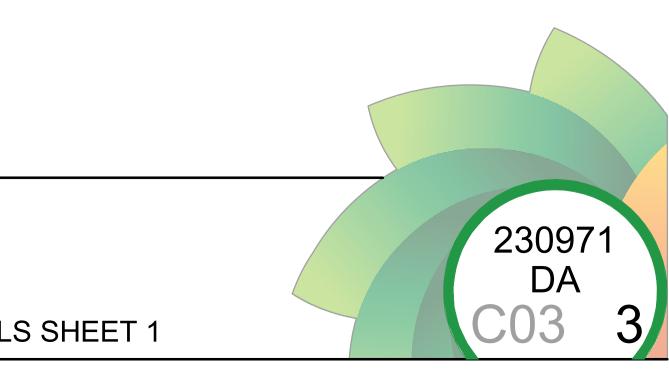
OUTLET PIPE

2 REMOVABLE BRICK KEEPERS PER PIT, OVER REPLACEACBLE GEOTEXTILE FILTER ABRIC, TO PREVENT CLOGGING OF SEEPAGE HOLES

PROVIDE 4 x 50mm DIA. SEEPAGE OUTLETS TO MINIMISE LONG TERM PONDING

SILT ARRESTOR PIT Scale: 1:20





MAINTENANCE OF SILT ARRESTOR PIT IS TO BE CARRIED OUT AT LEAST EVERY SIX MONTHS AND AFTER EVERY SIGNIFICANT STORM EVENT

