

STORMWATER DRAINAGE PLANS

PROPOSED HOUSE AT

31 KOOLOORA AVENUE, FRESHWATER

DRAWING REGISTER	
NUMBER	NAME
SW00	COVER SHEET
SW01	DRAINAGE PLAN
SW02	SEDIMENT & EROSION CONTROL PLAN

TABLE 7.1 MINIMUM PIPE COVER (from finished surface to top of pipe)		
Location	millimetres	
	Cast iron, ductile iron, galvanized steel	Other authorized* products
Minimum cover		
1 Not subject to vehicular loading:		
(a) without pavement—		
(i) for single dwellings	Nil	100
(ii) for other than item (i)	Nil	300
(b) with pavement of brick or unreinforced concrete	Nil†	50‡
2 Subject to vehicular loading:		
(a) other than roads—		
(i) without pavement	300	450
(ii) with pavement of—		
(A) reinforced concrete for heavy vehicular loading	Nil†‡	100†‡
(B) brick or unreinforced concrete for light vehicular loading	Nil†‡	75†‡
(b) roads—		
(i) sealed	300	500‡
(ii) unsealed	300	500‡
3 Subject to construction equipment loading or in embankment conditions	300	500‡

* Includes overlay above the top of the pipe of not less than 50 mm thick.
† Below the underside of the pavement.
‡ Subject to compliance with AS 1762, AS 2033, AS/NZS 2566.1, AS 3725 or AS 4060.

AS3500.3

MINIMUM GRADIENT OF SITE STORMWATER DRAINS					
Nominal size	Minimum gradient		Nominal size	Minimum gradient	
DN	Aust.	NZ	DN	Aust.	NZ
90	1:100	1:90	225	1:200	1:350
100	1:100	1:120	300	1:250	1:350
150	1:100	1:200	375	1:300	1:350

AS3500.3

GENERAL

- ANY DEVIATIONS FROM LEVELS AND DETAILS SHOWN WITHIN THIS PACKAGE TO BE CONSULTED WITH THE ENGINEER CONSULTANT PRIOR TO ON-SITE CHANGES BEING MADE.
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL COUNCIL ENGINEERING SPECIFICATIONS.
- FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
- THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECTS AND OTHER CONSULTANT DRAWINGS. ANY DISCREPANCIES MUST BE REFERRED TO THE ENGINEER BEFORE PROCEEDING.
- INSPECTIONS BY THE CERTIFYING AUTHORITY SHALL BE CARRIED OUT FOR ALL THE CIVIL WORKS PRIOR TO RELEASE OF THE HOLD POINTS INCLUDING THE FOLLOWING STAGES:
 - PRIOR TO INSTALLATION OF EROSION AND SEDIMENT CONTROL STRUCTURES
 - FINAL INSPECTION AFTER ALL WORKS ARE COMPLETED AND 'WORK AS EXECUTED' PLANS HAVE BEEN SUBMITTED TO COUNCIL
- MAKE SMOOTH JUNCTIONS WITH EXISTING WORKS.
- NO WORK TO BE CARRIED OUT ON COUNCIL PROPERTY OR ADJOINING PROPERTIES WITHOUT THE WRITTEN PERMISSION FROM THE OWNER'S.
- VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION.
- ALL RUBBISH, BUILDINGS, SHEDS AND FENCES TO BE REMOVED TO SATISFACTION OF COUNCIL'S ENGINEER.
- THE CONTRACTOR SHALL OBTAIN ALL LEVELS FROM ESTABLISHED BENCH MARKS ONLY.

WARNING
BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site.
No guarantee is given that all existing services are shown.
Locate all underground services before commencement of works

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS			
Depth to invert of outlet	Minimum internal dimensions mm		
	Rectangular		Circular
	Width	Length	Diameter
≤600	450	450	600
>600 ≤900	600	600	900
>900 ≤1200	600	900	1 000
> 1 200	900	900	1 000

AS3500.3

EXISTING UNDERGROUND SERVICES NOTES

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.

SITEWORKS NOTES

- ORIGIN OF LEVELS:- REFER SURVEY NOTES.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO THE CIVIL CONSULTANT.
- MAKE SMOOTH CONNECTION WITH EXISTING WORKS.
- ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- BASE AND SUB-BASE LAYERS ARE TO BE INSPECTED AND TESTED BY AN INDEPENDENT GEOTECHNICAL TESTING AUTHORITY TO LEVEL 1 RESPONSIBILITY AS DEFINED IN AS3798.
- ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH RMS FORM 3051, COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m² OF BASECOURSE MATERIAL PLACED.
- ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH RMS FORM 3051, AND COMPACTED TO MINIMUM 95% MODIFIED DENSITY IN ACCORDANCE WITH A.S 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m² OF SUB-BASE COURSE MATERIAL PLACED.
- SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
- 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.

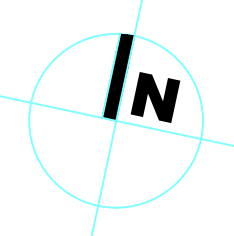
STORMWATER DRAINAGE NOTES

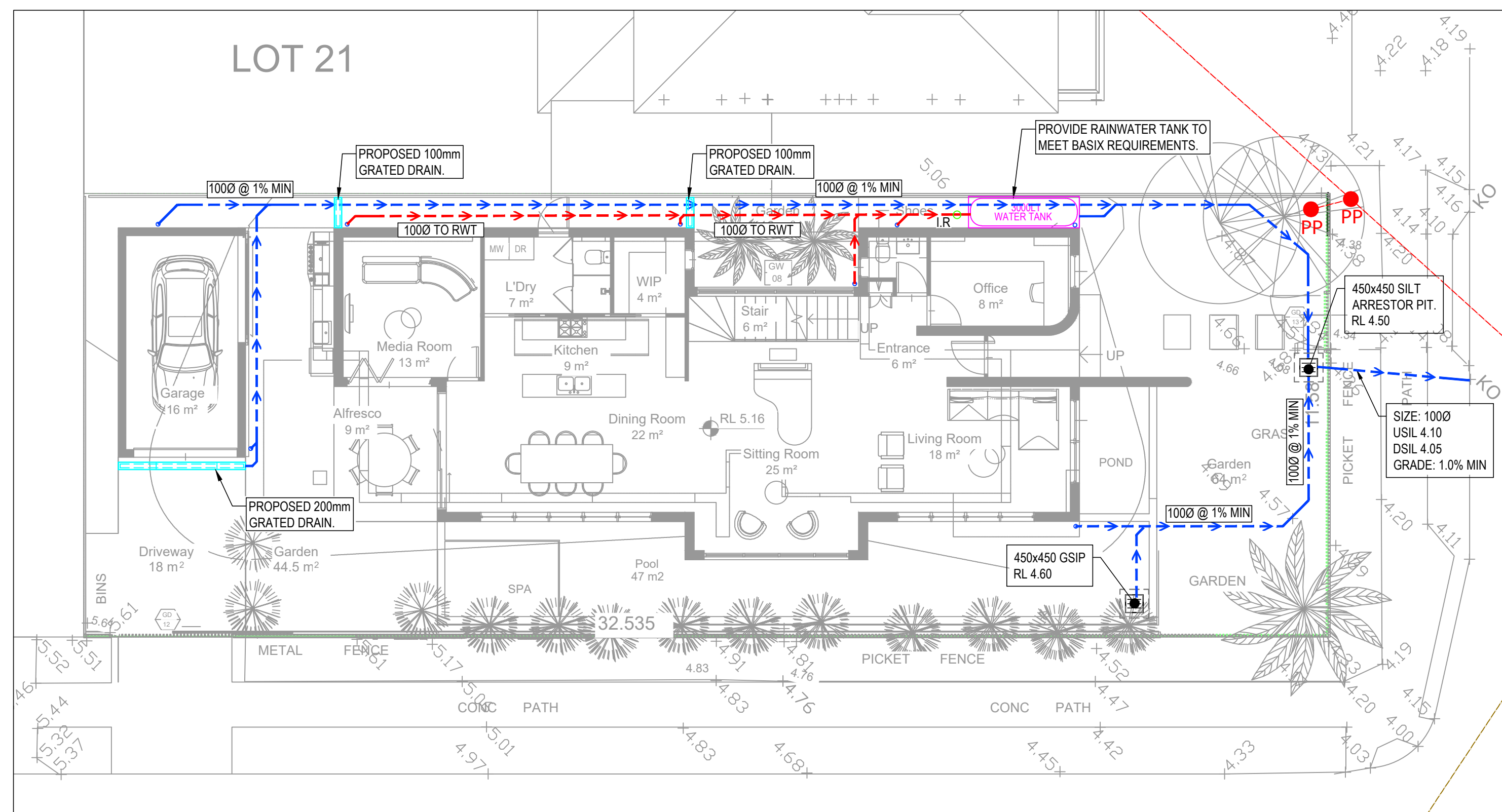
- ALL PIPES ON DRAWINGS TO BE MIN 1% GRADE UNLESS NOTED OTHERWISE.
- ALL DOWNPIPES TO BE 1000 PVC UNLESS NOTED OTHERWISE.
- PIPES 375 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '2'

APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.

- PIPES 300 DIA AND LESS SHALL BE DWV GRADE (CLASS SN8) uPVC WITH SOLVENT WELDED JOINTS.
- EQUIVALENT STRENGTH FRC PIPES MAY BE USED.
- ALL PIPES ARE TO BE UNIFORMLY SUPPORTED ALONG THE LENGTH OF THE BARREL BY SUITABLE FILL MATERIAL. REFER TO BEDDING SUPPORT TYPE.
- PIPES WITH SOCKETS SHALL BE LAID IN BEDDING WHERE SUITABLE RECESSES HAVE BEEN PROVIDED TO ENSURE PIPES DO NOT BEAR ON THEIR SOCKETS.
- 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.
- PIPES TO BE INSTALLED TO TYPE HS1 SUPPORT IN ACCORDANCE WITH AS 3725 (2007) IN ALL CASES BACKFILL TRENCH 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% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75).
- REFER TO AS/NRS 3725:2007 TABLE B1 FOR REQUIRED FILL DEPTHS ABOVE PIPE BARREL PRIOR TO USE OF COMPACTION MACHINERY OR TRAVERSING OF PIPES BY GENERAL SITE EQUIPMENT.
- WHERE WORKING METHODS REQUIRE HIGHER CLASS PIPE, THE CONTRACTOR SHALL REFER TO AS 3725 (2007) TO DETERMINE THE APPROPRIATE PIPE CLASS.
- ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (2018) AND AS/NZS 3500 3.2 (2018).
- ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
- WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPE IS TO BE USED.
- CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
- GRATES AND COVERS SHALL CONFORM TO AS 3996.
- ALL BOX CULVERTS SHALL BE STRUCTURALLY DESIGNED BY THE MANUFACTURER AND DELIVERED TO SITE AS FIT FOR PURPOSE.
- AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
- 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.

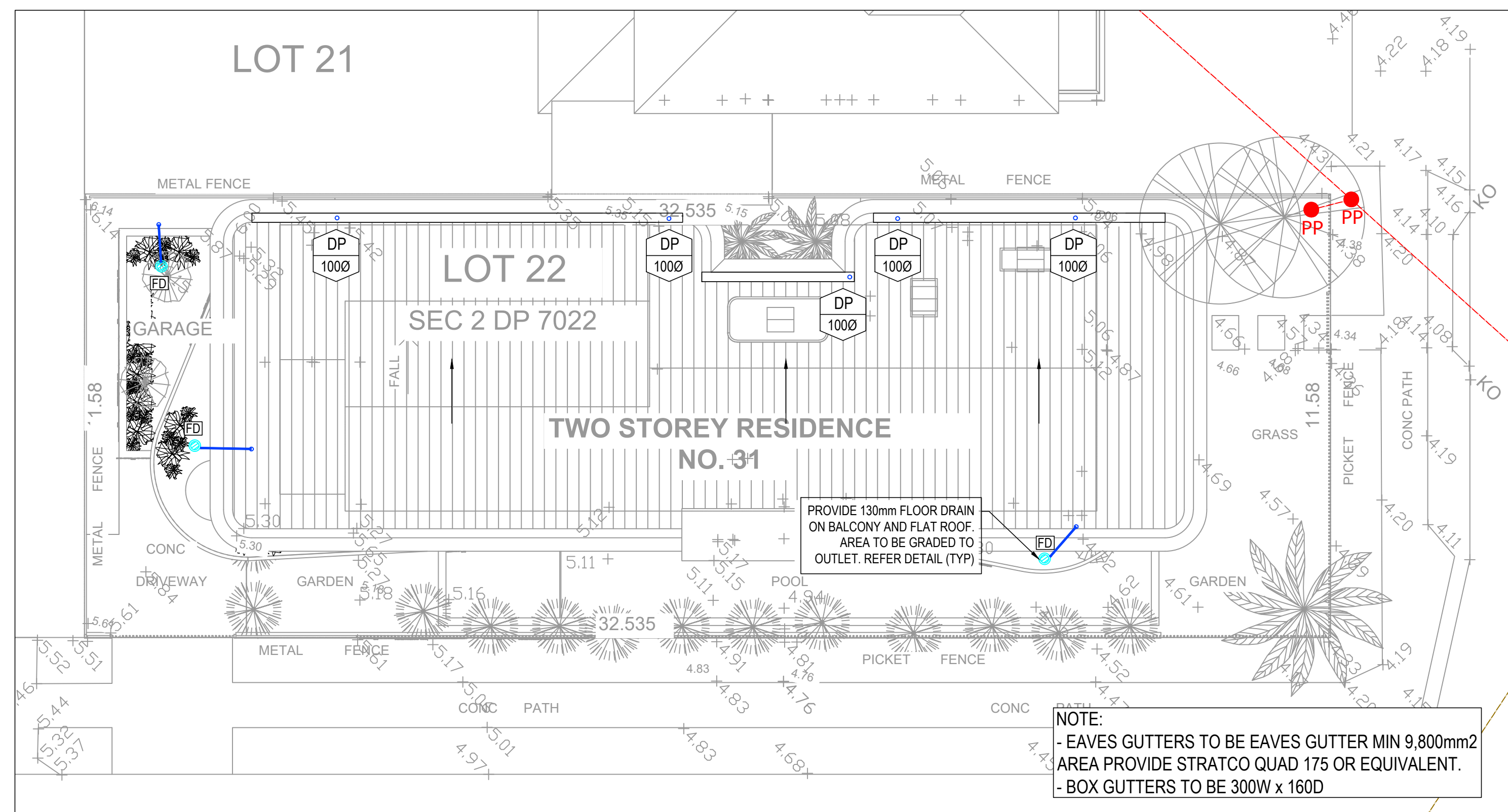
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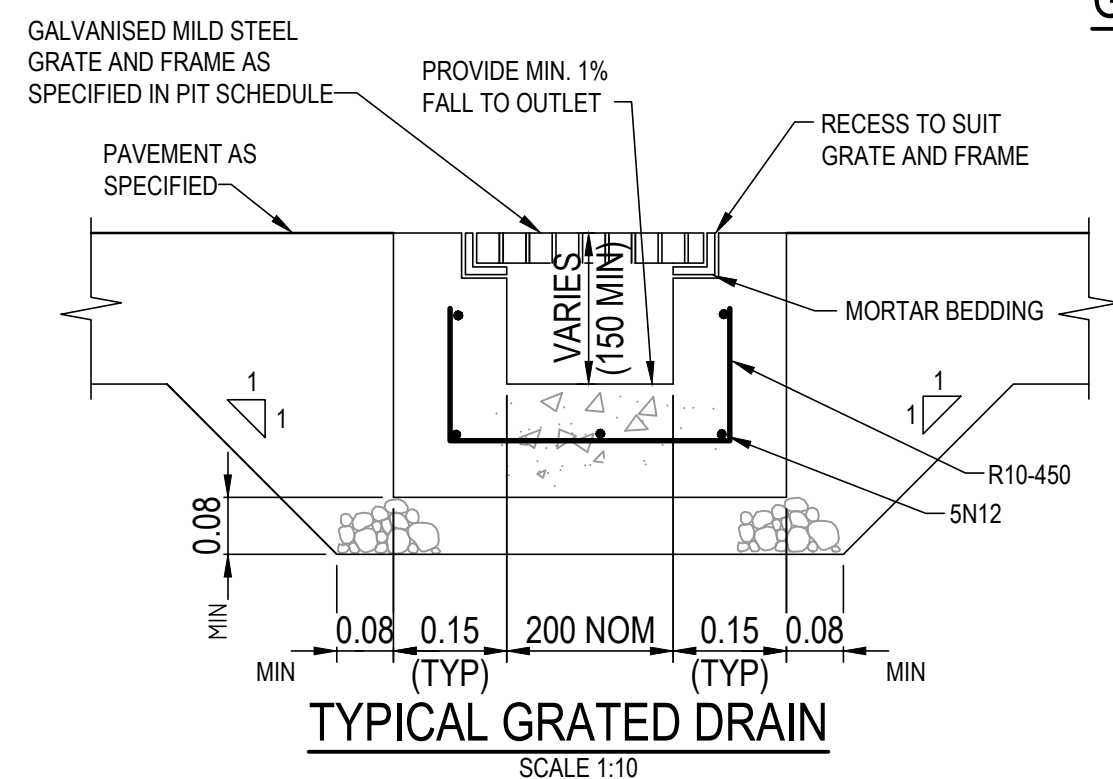
GROUND - STORMWATER PLAN

SCALE 1:100



ROOF - STORMWATER PLAN

SCALE 1:100

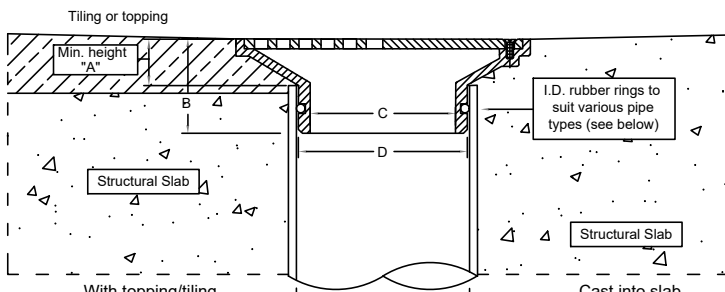
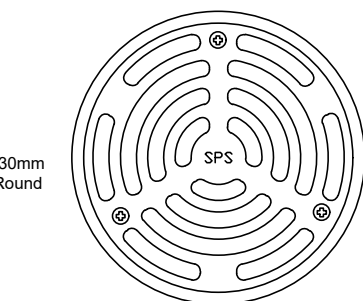


SPS 130mm Round Push-in Floor Drain

Specification codes:
R1300SR4 (60mm - polished 304SS)
R1300SR (60mm - satin 316SS)
R1300SR4 (80mm - polished 304SS)
R1300SR (80mm - satin 316SS)
R1300SR4 (100mm - polished 304SS)
R1300SR (100mm - satin 316SS)

80mm outlet
90mm outlet
100mm outlet

- Round grate available in 304 or 316 Stainless Steel
- O-ring against gasket into pipe. See below for specific size & material compatibility.



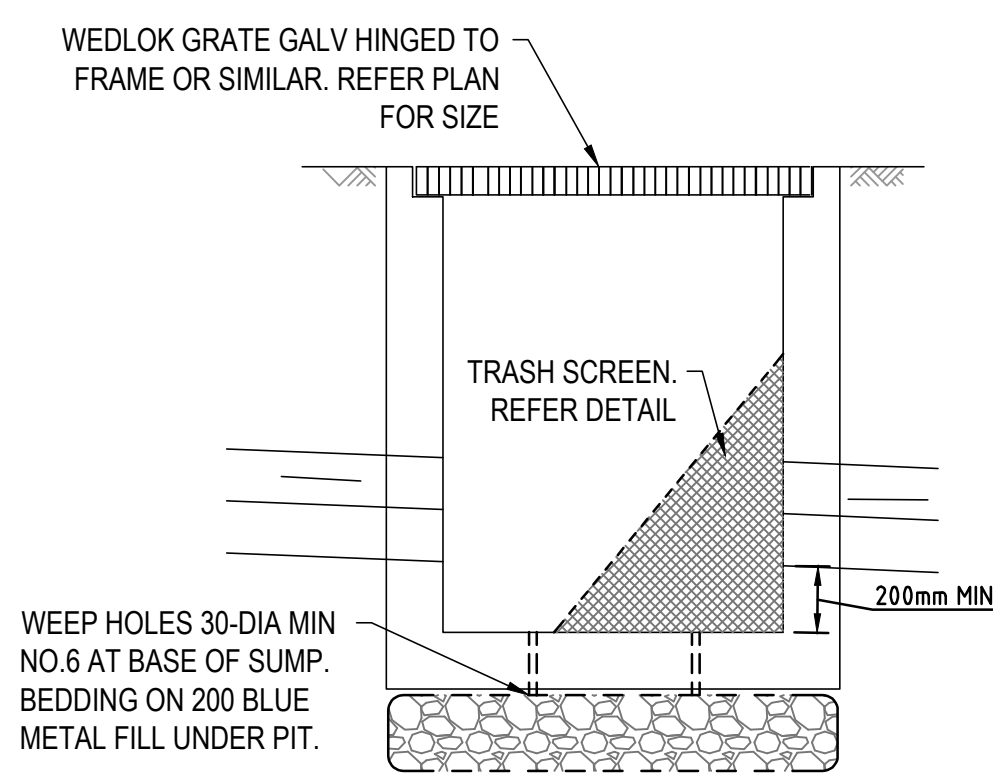
N.B.	A	B	C	D	Pipe compatibility
60mm	20	40	64	72	PVC and copper
80mm	20	40	75	80.5	PVC, HDPE and copper
100mm	17	41	90.5	97	PVC, HDPE and copper

*For flow rate data please refer to appendix.

Speciality Plumbing Supplies Pty Ltd
Tel: (02) 9417 1900 Fax: (02) 9417 0108 E-mail: info@spcdrains.com.au

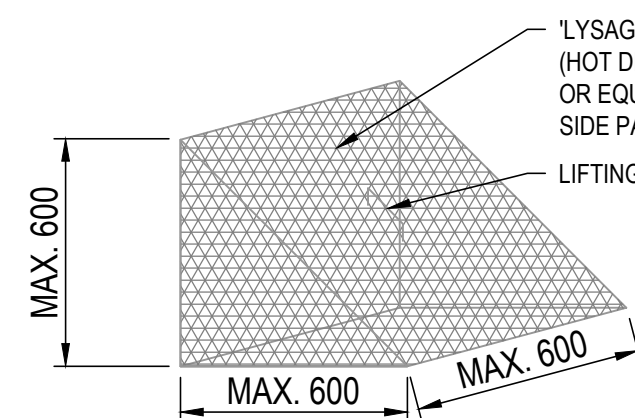
FLOOR DRAIN (FD) DETAIL

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TYPICAL GSIP & SILT ARRESTOR PIT DETAIL

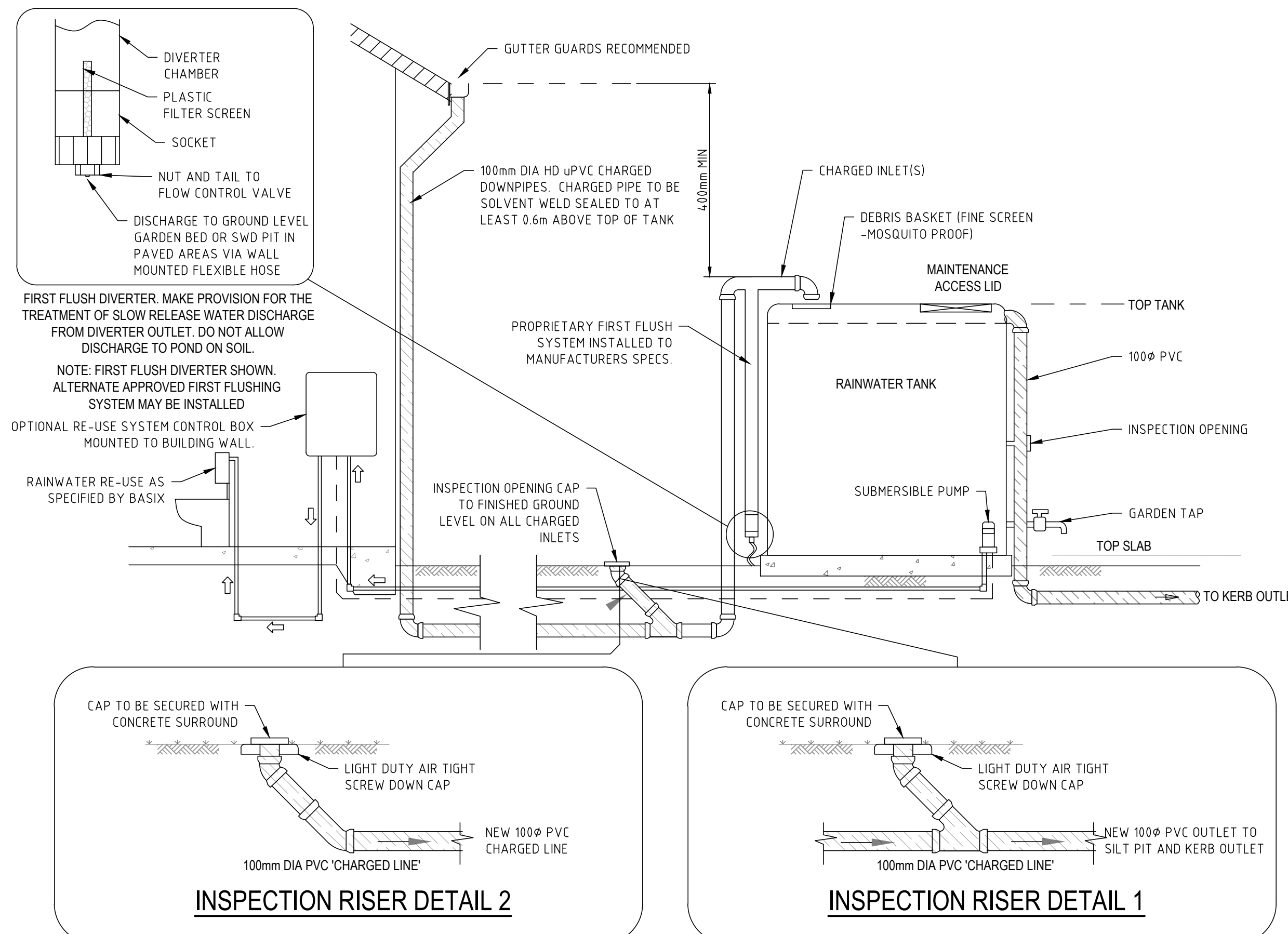
ADD STEP IRONS IN ACCORDANCE WITH DETAILS FOR ANY PITS DEEPER THAN 900mm



TRASH SCREEN DETAIL

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- NOTES:
- MAXIMESH SCREENS MUST BE PLACED SUCH THAT THE LONG AXIS OF THE OVAL SHAPED HOLES ARE ORIENTATED HORIZONTALLY WITH THE PORTTRUDING LIP ANGLED UPWARDS AND FACING TOWARDS THE OUTLET.
 - THE SCREEN IS TO BE FORMED BY WELDING TWO TRIANGULAR MAXIMESH (OR EQUIVALENT) PANELS TO A RECTANGULAR FRONT MAXIMESH PANEL (OR EQUIVALENT)



RAINWATER RE-USE TANK - ABOVE GROUND

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LEGEND	
	ROOF DRAINAGE TO RWT (Ø100 PVC U.N.O)
	GRAVITY PIPE (Ø100 @ 1% MIN U.N.O)
	GRAVED DRAIN
	DOWNPIPE SIZE
	INSPECTION RISER

DESIGN SUMMARY
COUNCIL AREA:
NORTHERN BEACHES COUNCIL

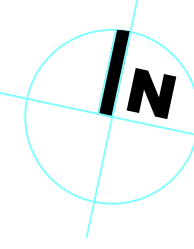
OSD REQUIREMENT:
NO OSD REQUIRED, SITE <450m²

LEGAL POINT OF DISCHARGE:
DISCHARGE VIA KERB OUTLET

BMV CONSULTANTS Pty Ltd
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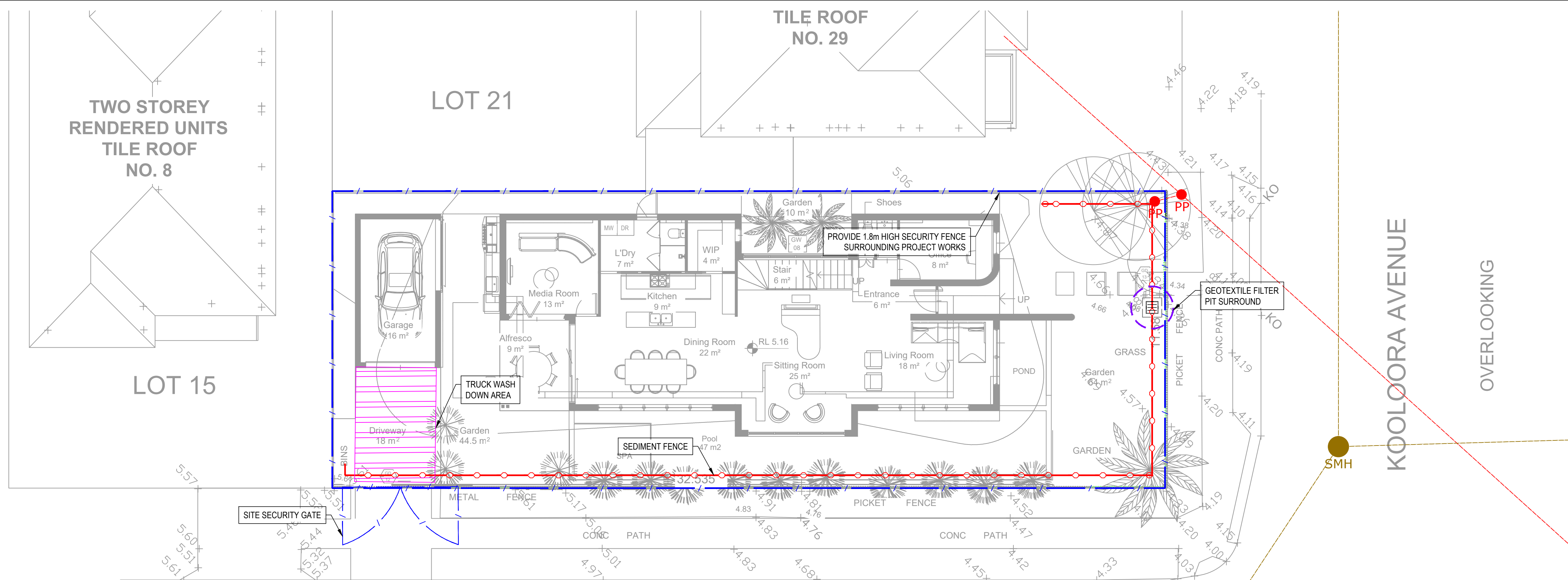
PROJECT
PROPOSED HOUSE AT
31 KOOLOORA AVENUE, FRESHWATER

CLIENT
JUDY HSU & CHRIS HUDSON

DRAINAGE PLAN

PROJECT NO.	DRAWING NO.	REVISION	DATE
230784	SW01	A	13.12.2023
SCALE @ A1	DRAWN	AUTHORISED	
1:100	D.Y	M.Y	

MOUSSA YOUSSEF B.E (Civil - Structures), Dip. Eng. Prac.



VIEW

SEDIMENT & EROSION PLAN
SCALE 1:100

SEDIMENT AND EROSION CONTROL NOTES

GENERAL INSTRUCTION

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, NSW OFFICE OF WATER, OFFICE OF ENVIRONMENT AND HERITAGE. THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE DRAWINGS SHALL ONLY BE USED AS A GUIDE BY THE CONTRACTOR, AND SHALL REPRESENT THE MINIMUM REQUIREMENT ONLY.
- THE CONTRACTOR SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED OR AS OTHERWISE DIRECTED BY THE SUPERINTENDENT. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH:
 - LOCAL AUTHORITY REQUIREMENTS
 - EPA REQUIREMENTS
 - NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004.
- MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
- WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
- CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

- WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:

- INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
- CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
- UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

- DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

- FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

- STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.

- ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.

- WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED

STRUCTURE

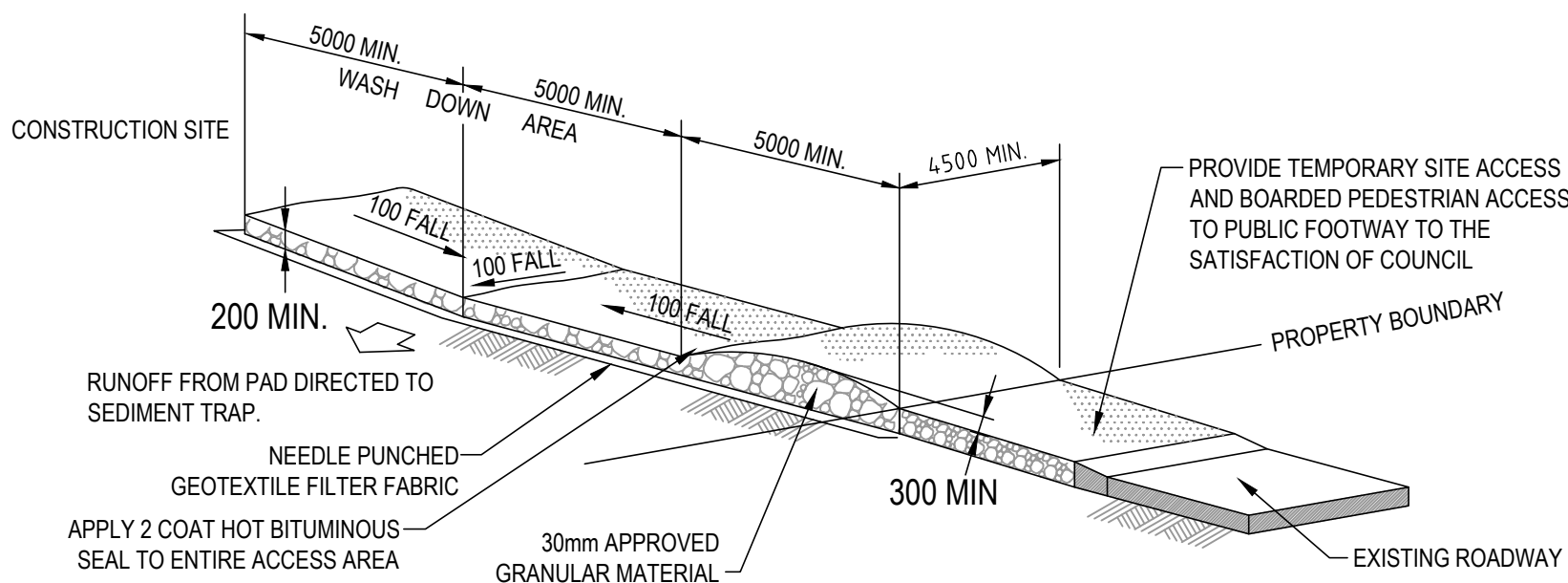
- TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

- ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.

- ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:

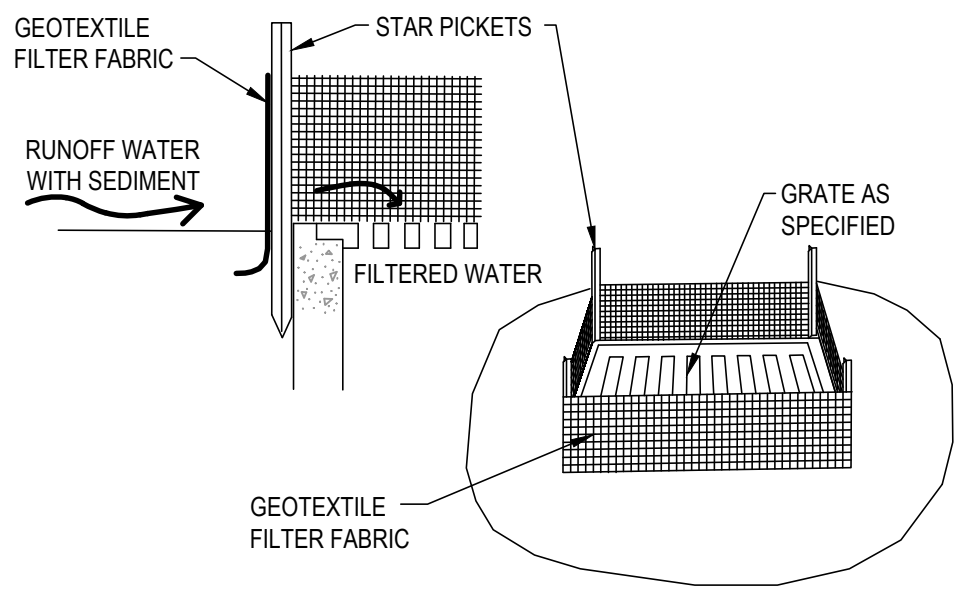
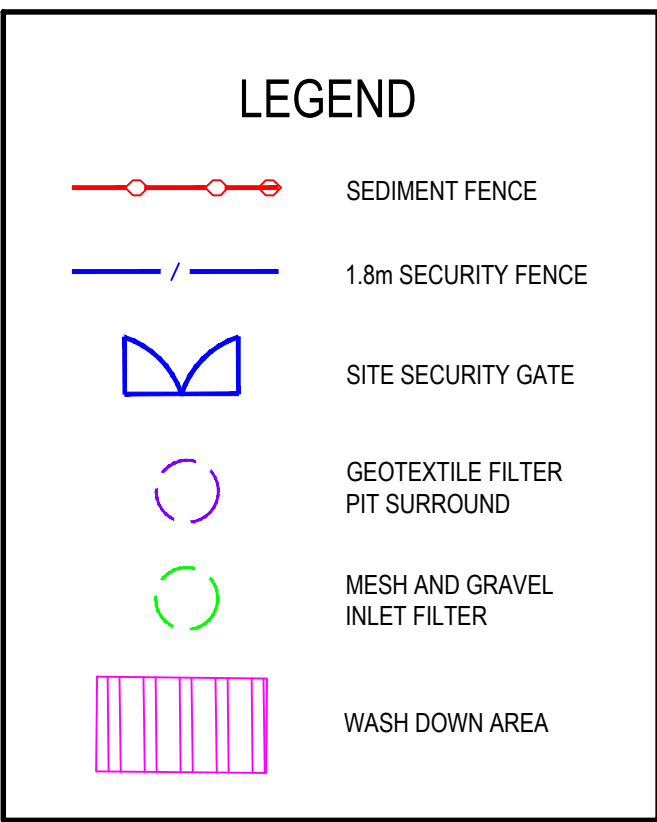
OTHER MATTERS

- PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE
- ENSURING THAT NOTHING IS NAILED TO THEM
- PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS:
 - ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER
 - A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH
 - CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.



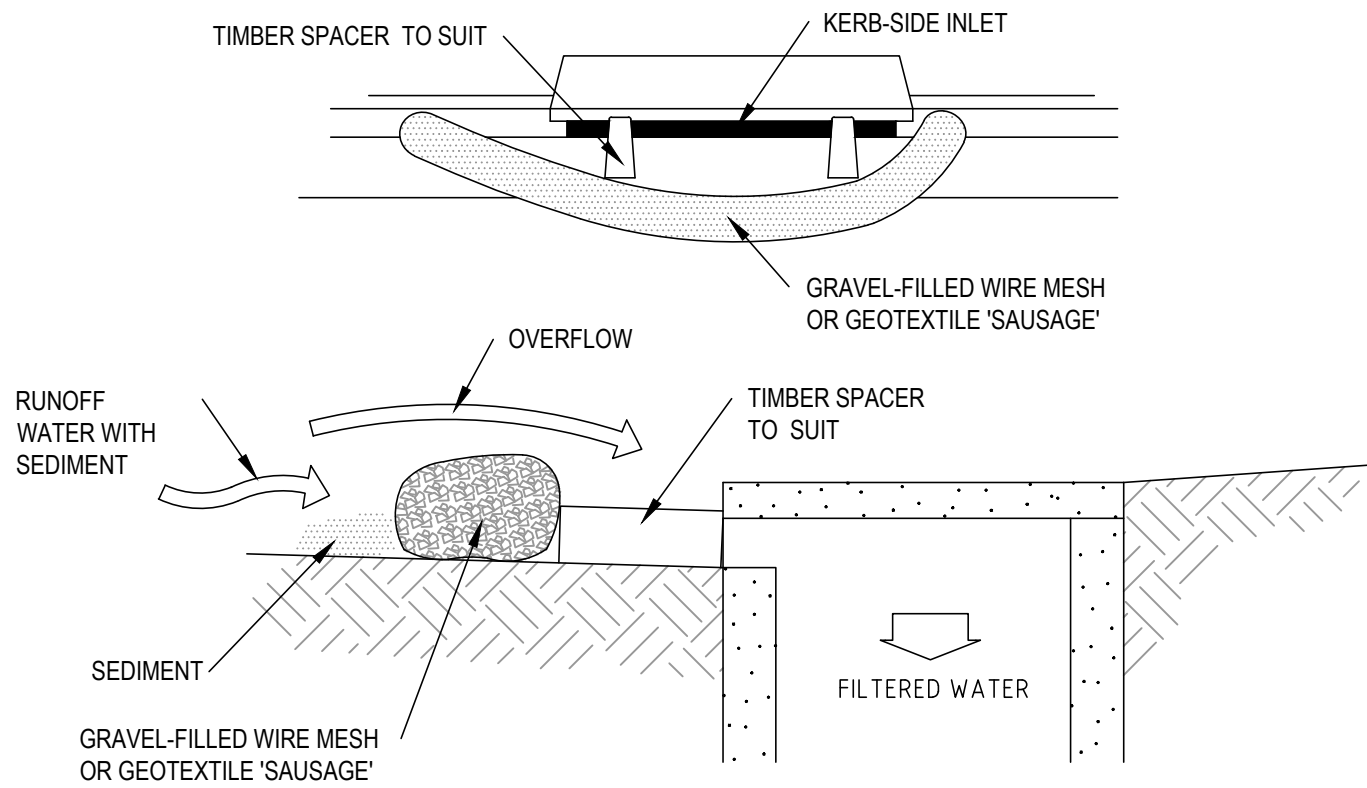
STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA

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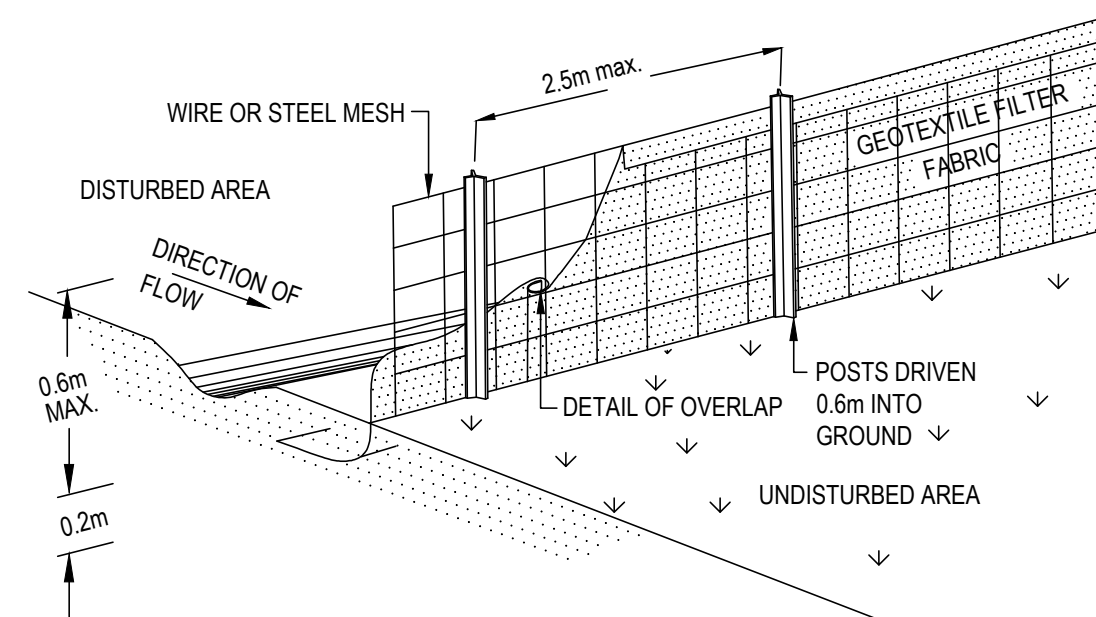
GEOTEXTILE FILTER PIT SURROUND

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MESH AND GRAVEL INLET FILTER

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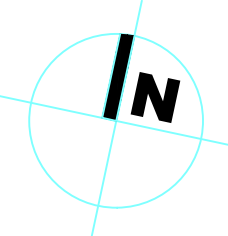
SEDIMENT FENCE

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PROJECT

PROPOSED HOUSE AT
31 KOOLOORA AVENUE, FRESHWATER

CLIENT

JUDY HSU & CHRIS HUDSON

DRAWING

SEDIMENT & EROSION
CONTROL PLAN

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230784	SW02	A	13.12.2023
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1:100	D.Y	M.Y	

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