

PROPOSED DEVELOPMENT

173-175 WHALE BEACH ROAD, WHALE BEACH NSW 2107

STORMWATER SERVICES

DRAWING SCHEDULE

STW-000	COVER SHEET
STW-101	GROUND FLOOR
STW-102	FIRST FLOOR
STW-103	SECOND FLOOR
STW-104	THIRD FLOOR
STW-105	ROOF
STW-201	ESC PLAN
STW-202	ESC DETAILS
STW-301	TYPICAL DETAILS
STW-302	OSD DETAILS

LEGEND

CO	CLEAR OUT
GSIP	GRATED SURFACE INLET PIT
DIA	DIAMETER
DP	DOWNSPIPE
FPL	FINISHED FLOOR LEVEL
HL	HIGH LEVEL
SP	SURFACE/STORMWATER PIT
IC	INSPECTION CHAMBER
IL	INVERT LEVEL
IOS	INSPECTION OPENING TO SURFACE
MH	MANHOLE
RHS	RECTANGULAR HOLLOW SECTION
RL	RELATIVE LEVEL
RWO	RAINWATER OUTLET
FDO	FLOOR DRAIN OUTLET
RW	RAIN WATER
GL	GROUND LEVEL
STW	STORMWATER
	SBF BARRIER FENCE
	SSD SUBSOIL DRAIN
	RM RISING MAIN
	SWD STORMWATER DRAINAGE
	RWt RAINWATER TANK LINE
	Grav Line - LEFT TO RIGHT
	Grav Line - RIGHT TO LEFT
	DOWN PIPE TAG (DIA & FLOW) WATER FLOW DIRECTION
	GRATED INLET PIT 450 mm SQ. CLASS 'D' GALV. GRATE
	RAINWATER OUTLET
	RAINWATER OUTLET

GENERAL NOTES

- ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION. THE CONSTRUCTOR SHALL PREPARE A DILAPIDATION REPORT FOR THE EXISTING INFRASTRUCTURE WITHIN THE ROAD RESERVE, INCLUDING BUT NOT LIMITED TO KERBS, GUTTERS, FOOTPATHS, VEHICULAR CROSSINGS, STREET SIGNS, SERVICE FITTING COVERS, ETC.
- THE CONSTRUCTOR SHALL REVIEW, BE AWARE AND AT ALL TIMES COMPLY WITH THE SPECIFIC REQUIREMENTS FOR THIS DEVELOPMENT AS SET OUT IN THE DEVELOPMENT APPROVAL FOR THE PROJECT.
- ANY CHANGES MADE BY THE CONSTRUCTOR TO ANY LEVEL, DIMENSION, LOCATION, POSITION, ALIGNMENT ETC, OF ANY OF THE WORKS SHOWN ON THE DRAWINGS WITHOUT THE WRITTEN CONSENT IF TORINEX CONSULTING ENGINEERS AND/OR THE PRINCIPAL CERTIFYING AUTHORITY IS DONE SO AT THE CONSTRUCTORS OWN RISK.
- THE CONSTRUCTOR SHALL ALLOW TO LIAISE WITH AND PROVIDE SUFFICIENT NOTICE TO THE PRINCIPAL CERTIFYING AUTHORITY TO ENSURE THAT ALL WORKS ARE INSPECTED TO ENABLE COMPLIANCE CERTIFICATES TO BE ISSUED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONSTRUCTOR SHALL LIAISE WITH THE PRINCIPAL CERTIFYING AUTHORITY PRIOR TO ANY CONSTRUCTION WORKS COMMENCING AND PREPARE AN INSPECTION AND TEST PLAN WITH A MUTUALLY AGREED WITNESS AND HOLD POINTS FOR THE CONSTRUCTION WORKS.
- IF THE PRINCIPAL CERTIFYING AUTHORITY IS NOT NORTHERN BEACHES COUNCIL, THEN THE CONSTRUCTOR MUST CONTACT COUNCIL'S WORKS DIVISION TO ENABLE THEIR INSPECTION OF ALL WORKS (INCLUDING EROSION AND SEDIMENT CONTROL MEASURES) WITHIN THE ROAD RESERVE AREA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL ACCESS TO THE SITE. THE ACCESS SHALL BE ALL WEATHER SAFE ACCESS TO THE CONTRACTOR'S SITE FACILITIES AT ALL TIMES FOR THE DURATION OF THE CONTRACT.
- A TEMPORARY HOARDING OR FENCE OF MINIMUM 1.5m HIGH IS TO BE PROVIDED AROUND THE SITE TO PROTECT THE PUBLIC PRIOR TO COMMENCEMENT OF WORKS. HOARDING OR FENCES ARE TO BE STRUCTURALLY ADEQUATE. THE CONTRACTOR SHALL OBTAIN AN APPROVAL FROM COUNCIL PRIOR TO ERRECTING THE HOARDING OR FENCE.
- ALL NEW WORKS SHALL MAKE A SMOOTH CONNECTION WITH ANY FORMATIONS, STRUCTURES, ETC.
- ALL ALTERATIONS AND/OR ADDITIONS TO EXISTING WORK, THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE EXISTING WORK BEFORE PROCEEDING AND NOTIFY THE SUPERINTENDENT OF DISCREPANCIES.
- THE CONTRACTOR SHALL USE MANUFACTURED ITEMS IN THE WORK ONLY IN ACCORDANCE WITH THE CURRENT PUBLISHED.

- THE WORKS SHALL BE CONSTRUCTED IN SUCH A MANNER THAT THERE IS MINIMUM DISTURBANCE TO EXISTING TREES AND VEGETATION.
- THE PUBLIC FOOTWAY AND ROADWAY FRONTING THE SITE SHALL BE MAINTAINED IN A SAFE AND UNOBSTRUCTED MANNER AT ALL TIMES DURING THE CONSTRUCTION WORKS.
- THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR REPAIRING TO THE SATISFACTION OF THE ASSET OWNER, ANY DAMAGE CAUSED TO ANY EXISTING INFRASTRUCTURE WITHIN THE ROAD RESERVE, INCLUDING BUT NOT LIMITED TO KERBS, GUTTERS, FOOTPATHS, VEHICULAR CROSSINGS, STREET SIGNS, SERVICE FITTING COVERS, ETC.
- THE SITE SHALL BE KEPT IN A TIDY CONDITION AT ALL TIMES. LITTER RUBBISH AND BUILDING RUBBLE SHALL BE PLACED IN CONTAINERS OR BINS AND REGULARLY REMOVED FROM SITE AS REQUIRED.

BRICKWORK NOTES

- ALL WORKMANSHIP AND MATERIALS IN ACCORDANCE WITH AS 3700 AND AS 2733.
- BLOCKS SHALL BE BORAL SPLIT FACE CHARCOAL WITH MATCHING CAPPING.
- MORTAR SHALL BE FRESHLY PREPARED, UNIFORMLY MIXED IN THE FOLLOWING RATION: 1:1/10:3 CEMENT, LIME SAND, IN ACCORDANCE WITH ASA 123 AND AS 3700 CLAUSE 2.2.2.
- BOTTOM COURSE OF BLOCKS TO HAVE INSPECTION OPENINGS TO ALL CORES TO BE GROUTED, THOROUGHLY CLEAN ALL CORES PRIOR TO REINFORCEMENT PLACING.
- STOP POUR 50 BELOW TOP OF BLOCK. MINIMUM GROUT STRENGTH 20 MPa. SLUMP - 230 mm MAX AGGREGATE SIZE = 10 mm.
- PROVIDE VERTICAL CONTROL JOINTS IN WALLS AT 8 m MAX. CENTRES. U.N.O
- TIE ALL VERTICAL REINFORCEMENT TO STARTER BARS AND TOP HORIZONTAL REINFORCEMENT.
- MAXIMUM POUR HEIGHT TO BE 2400 mm.
- OPEN ENDED DOUBLE U - BLOCKS TO BE USED FOR ALL REINFORCED BLOCKWORK.

CONCRETE NOTES

- ALL WORKMANSHIP, MATERIALS AND TESTING FOR CONCRETE WORKS SHALL COMPLY WITH THE REQUIREMENTS OF AS 3600.
- ALL WORKMANSHIP AND MATERIALS FOR FORMWORK SHALL COMPLY WITH THE REQUIREMENTS OF AS3610.
- THE CONSTRUCTOR SHALL ENSURE THAT ALL REINFORCEMENT IS SECURELY TIED AND SUPPORTED IN ITS CORRECT POSITION AND WITHIN ACCEPT TABLE TOLERANCES SO AS NOT TO BE DISPLACED DURING CONCRETE POURING.
- PROVIDE CONCRETE WITH A MAXIMUM SLUMP OF 80, TYPE SL CEMENT, MAXIMUM AGGREGATE SIZE 20, APPROVED ADMIXTURES AND STRENGTH GRADE AS FOLLOWS:

ELEMENT	EXPOSURE CLASSIFICATION	STRENGTH (MPa)
PAVEMENT	A2	32
KERB (ALL TYPES)	A2	25
FOOTPATH	A2	25
RETAINING WALL FOOTING	A1/B1	20

PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3600.

- PROVIDE LAPS ONLY AT LOCATIONS SHOWN AND OF DIMENSIONS AS FOLLOWS UNLESS DETAILED OTHERWISE OR APPROVED IN WRITING BY THE ENGINEER.

BAR SIZE	LAP
N12	500
N16	750
N20	1000

- OVERLAP FIRST AND SECOND CROSS WIRES OF EACH STREET OF FABRIC BY 25 AT LAPS.
- DO NOT WELD REINFORCEMENT UNLESS SHOWN OR APPROVED BY THE ENGINEER.
- TIE ALL UNSUPPORTED BARS TO N12.350 B OR N12.450 T CROSSRODS, LAPPED 450 WHERE REQUIRED.
- PROP, CURE AND STRIP IN ACCORDANCE WITH AS3600, AS3610 AND THE SPECIFICATION.
- CONCRETE SAWN JOINTS MUST BE DONE WITH 8 HOURS OF CONCRETE POUR.
- JOINT SEALANT MUST BE SILICONE SEALANT FOR CASTING IN -SITU AS SPECIFIED ON DRAWINGS.

SETTING OUT NOTES

- THE CONSTRUCTOR SHALL USE A SUITABLY QUALIFIED SURVEYOR TO SET OUT ALL WORKS. THE SURVEYOR SHALL ISSUE A CERTIFICATE TO THE PRINCIPAL CERTIFYING AUTHORITY CERTIFYING THAT THE WORKS HAVE BEEN SET OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS PRIOR TO THE WORKS BEING CONSTRUCTED.
- THE SURVEY WIRJ ASSOCIATED WITH THE CONTRACT SHALL INCLUDE SETTING OUT THE FOLLOWING COMPONENTS OF THE WORK:
 - DRAINAGE STRUCTURES

SAFETY IN DESIGN

- THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING THE DESIGN THAT ARE TYPICAL OF SIMILAR DESIGNS. AS FAR AS IS REASONABLY PRACTICAL RISKS HAVE BEEN ELIMINATED OR MINIMIZED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR, OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS.

ENVIRONMENTAL CONTROL NOTES

EROSION AND SEDIMENT CONTROL

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, THE RELEVANT STATE AUTHORITIES AND THE SUPERINTENDENT. TO THIS END, 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.

- NO CONSTRUCTION WORKS ARE TO COMMENCE ON SITE UNTIL ALL EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE COUNCIL ENGINEER AND/OR SUPERINTENDENT.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REGULARLY INSPECTED, IN PARTICULAR AFTER STORMS, AND REPAIRED OR MAINTAINED AS REQUIRED TO ENSURE THE MEASURES CORRECT AND EFFICIENT FUNCTION THROUGHOUT THE DURATION OF THE WORKS UNTIL SUCH TIME AS THE COUNCIL ENGINEER AND/OR SUPERINTENDENT AUTHORIZES THE REMOVAL OF SUCH MEASURES.
- ALL STOCKPILES SHALL BE CLEAR OF ALL TREES AND DRAINAGE LINES (INCLUDING OVERLAND FLOW PATHS) AND PROTECTED FROM EROSION.
- AND THE CASE OF THE TEMPORARY CONSTRUCTION EXIT, THE CONTRACTOR SHALL UNDERTAKE WEEKLY SURFACE CLEANING BY DRAG BROOM OR EQUIVALENT, TO REMOVE ALL BUILD UP OF FOREIGN MATERIAL TO THE SATISFACTION OF THE SUPERINTENDENT.

TRAFFIC CONTROLS

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF TRAFFICS INCLUDING VEHICLES AND PEDESTRIANS TO THE SATISFACTION OF COUNCIL, THE RELEVANT STATE AUTHORITIES AND THE SUPERINTENDENT.
- THE CONTRACTOR IS TO PREPARE A TRAFFIC MANAGEMENT PLAN TO THE REQUIREMENTS OF THE RMS - TRAFFIC CONTROL AT WORK SITE, AS1742 - AUSTRALIAN STANDARD MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND LOCAL COUNCIL STANDARDS.

OTHER ENVIRONMENTAL CONTROLS

- OTHER ENVIRONMENTAL CONTROLS LIKE NOISE, DUST, VIBRATION, FLORA & FAUNA, FIRE, HAZMAT, AND CONTAMINATIONS MUST BE CONTROLLED TO THE REQUIREMENT OF THE COUNCIL AND THE RELEVANT STATE AUTHORITIES.

STORMWATER NOTES

- STORMWATER DESIGN CRITERIA:
MINOR STORM ARI: 20 YEARS
MAJOR STORM ARI: 100 YEARS
- IFD DATE LOCALITY: WHALE BEACH/NORTHERN BEACHES COUNCIL
- PIPES DN375 AND LARGER TO BE STEEL REINFORCED CONCRETE PIPES CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS U.N.O.
- PIPES DN300 AND SMALLER SHALL BE GRADE SH (SEWER GRADE) uPVC WITH RUBBER RING JOINTS.
- EQUIVALENT STRENGTH FIBRE REINFORCED CONCRETE PIPES MAY BE USED UP TO DN450.
- PIPES FOR SUB-SOIL DRAINS SHALL BE SLOTTED 100MM DIAMETER CLASS 1000 WRAPPED IN GEOFABRIC, U.O.N, COMPLYING WITH THE REQUIREMENT OF AS 2439.
- PRECAST PITS, WHERE ALLOWED, AND THE IN-SITU BASE SHALL COMPLY WITH THE REQUIREMENT OF THE MANUFACTURER.
- ALL PITS/TANKS DEEPER THAN 1200mm TO HAVE STEP IRONS.
- ALL PITS SHOULD HAVE COVERS/LIDS/GRATES APPROPRIATE TO VEHICLE LOADING.
- ALL BALCONIES/ROOF AREAS TO HAVE 150x50 OVERFLOW COUNTS, UNLESS NOTIFIED BY THE ARCHITECT.
- BALCONY OVERFLOW COUNTS TO BE AT LEAST 2.4m APART.
- GRATES 600x600 OR GREATER TO BE LOCKABLE AND HINGED.
- PITS TO HAVE APPROPRIATE BENCHING OR AS PER COUNCIL REQUIREMENTS.
- ALL MILD STEEL FIXTURES INCLUDING GRATES, FRAMES, STEP IRONS, LADDERS, ETC., SHALL BE HOT DIP GALVANISED. GALVANIZING SHALL COMPLY WITH THE REQUIREMENTS OF AS 1214 OR AS 1650, AS APPROPRIATE.
- GEOFABRIC FILTER SHALL BE PERMEABLE, NON -WOVEN FABRIC MANUFACTURED FROM A POLYMER SUCH AS POLYPROPYLENE OR POLYESTER OF MASS NOT LESS THAN 135 g/m².
- THE MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:
CONCRETE AND FRC PIPES: EXTERNAL PIPE DIAMETER PLUS 400 mm.
uPVC PIPE: EXTERNAL DIAMETER OF PIPE PLUS 200 mm.
SUBSOIL PIPE: 250 mm.
- ALL PIPES SHALL BE PLACED CENTRALLY WITHIN THE TRENCH WITH EQUAL CLEARANCE EACH SIDE.
- 100 mm DIA. SUBSOIL DRAINAGE PIPE 3M LONG WRAPPED IN FILTER SOCK TO BE PROVIDED IN PIPE TRENCHES UPSTREAM OF ALL PITS.
- PIPE BEDDING MATERIAL SHALL BE CLEAN COARSE RIVER SAND WITH DEPTH AS FOLLOWS:
CONCRETE AND FRC PIPES: 100 mm (175 mm IN ROCK)
uPVC PIPE: 75 mm (100 mm IN ROCK)
SUBSOIL DRAINS: 50 mm
- ALL PIPES SHALL BE BACKFILLED WITH GRANULAR MATERIAL SUCH AS QUARRY FINES OR COARSE RIVER SAND TO A MINIMUM OF 150 mm ABOVE THE PIPE. THE GRANULAR MATERIAL SHALL BE PLACED IN 150 mm THICK MAXIMUM LAYERS AND COMPACTED TO ACHIEVE A DENSITY INDEX (DI) OF 70%. FREQUENCIES OF COMPACTION TESTS FOR TRENCHES SHALL BE 1 TEST PER 2 LAYERS PER 40 LINEAR METRE.
- BACKFILL THE REMAINDER OF THE TRENCH ABOVE THE SAND TO SUBGRADE LEVEL WITH TRENCH MATERIAL. PLACE AND COMPACT MATERIALS IN LAYERS NOT EXCEEDING 150MM LOOSE THICKNESS. MATERIALS LOWER THAN 500MM BELOW SUBGRADE LEVEL SHALL BE COMPACTED TO AT LEAST 95% OF STANDARD MAXIMUM DRY DENSITY. THE TOP 500MM BELOW PAVEMENT SUBGRADE LEVELS SHALL BE COMPACTED TO AT LEAST 100% STANDARD MAXIMUM DRY DENSITY.
- FILTER MATERIAL FOR SUBSOIL SHALL BE COARSE SAND OR CRUSHED STONE COMPLYING WITH ONE OF THE GRADING IN THE TABLE BELOW. WHERE NOTED ON THE DRAWINGS THE 7mm CRUSHED ROCK FILTER MATERIAL SHALL BE ENCLOSED WITHIN FILTER FABRIC SHEET AS SPECIFIED. FILTER MATERIAL SHALL BE PLACED IN 250mm LAYERS AND COMPACTED TO DENSITY INDEX (DI) OF 60%.
- UNLESS OTHERWISE DETAILED OR PERMITTED, THE MINIMUM GRADE OF ALL PIPE WORKS SHALL BE 1.0%.

AS SIEVE SIZE (mm)	SAND	7mm ROCK
9.5	100	100
6.7		75-100
4.75	90-100	20-55
2.36	75-100	0-15
1.18	50-90	
0.6	20-60	
0.3	10-30	
0.15	2-10	
0.075	0-3	0-2

THIS IS A STANDARD LEGEND. ALL SYMBOLS MAY NOT NECESSARILY BE USED IN THESE DRAWINGS

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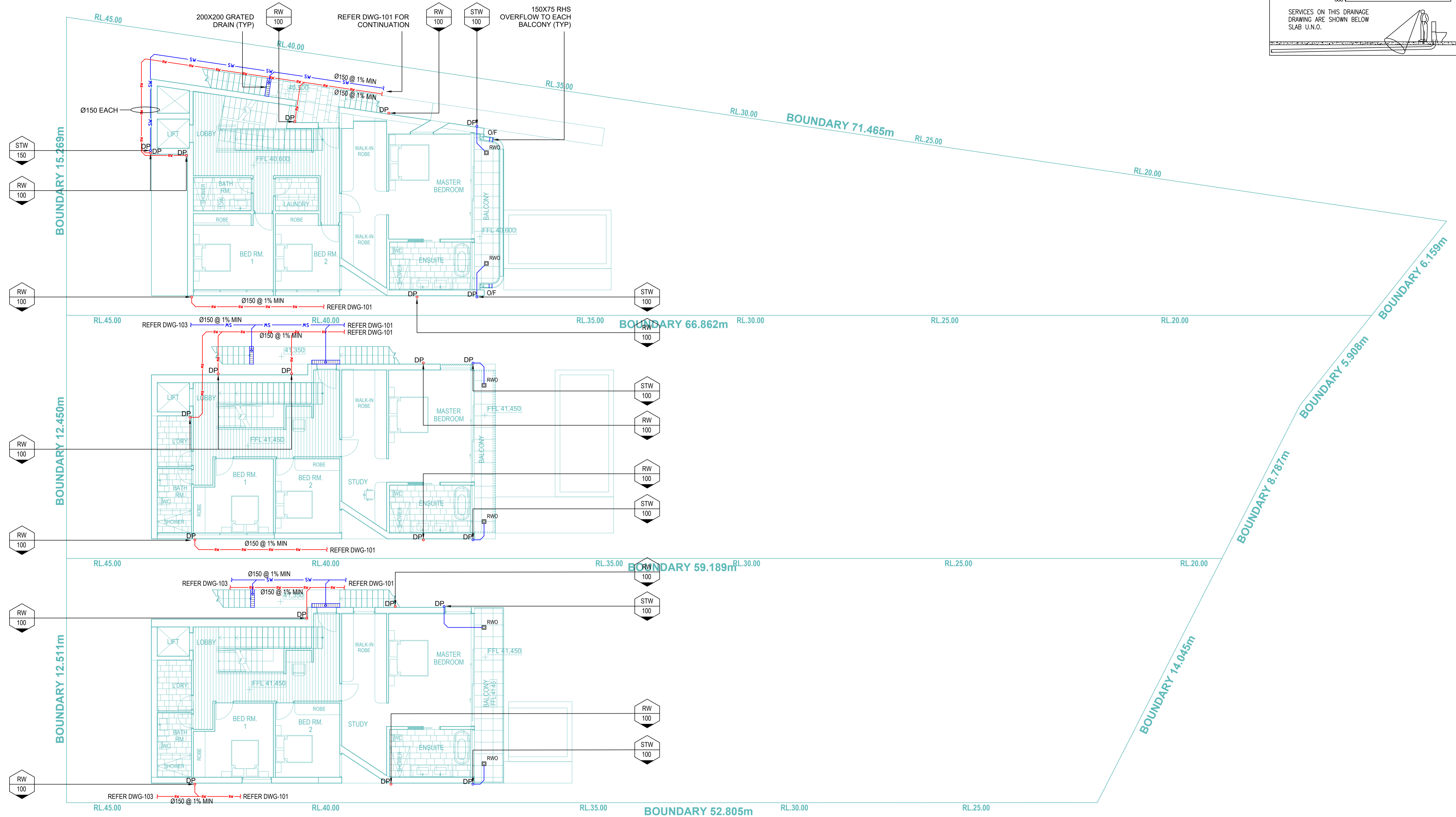
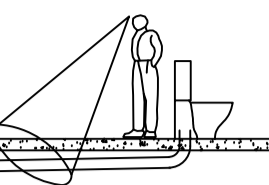
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CLIENT	ARCHITECT	REV 1 30.11.22 ISSUED FOR APPROVAL MS	REV 2 18.04.23 ISSUED FOR APPROVAL MS	SCALE NTS	SIZE A1	FOR APPROVAL	PROJECT 173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107
				DRAWN RZ	NORTH POINT		DRG. TITLE STORMWATER SERVICES COVER SHEET
				DESIGNED MS			DRAWING No. 2000265
				VERIFIED JF			PROJECT No. 2000265
						DISC. - STW	NUMBER 000
						REV 2	

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171A WHALE BEACH RD

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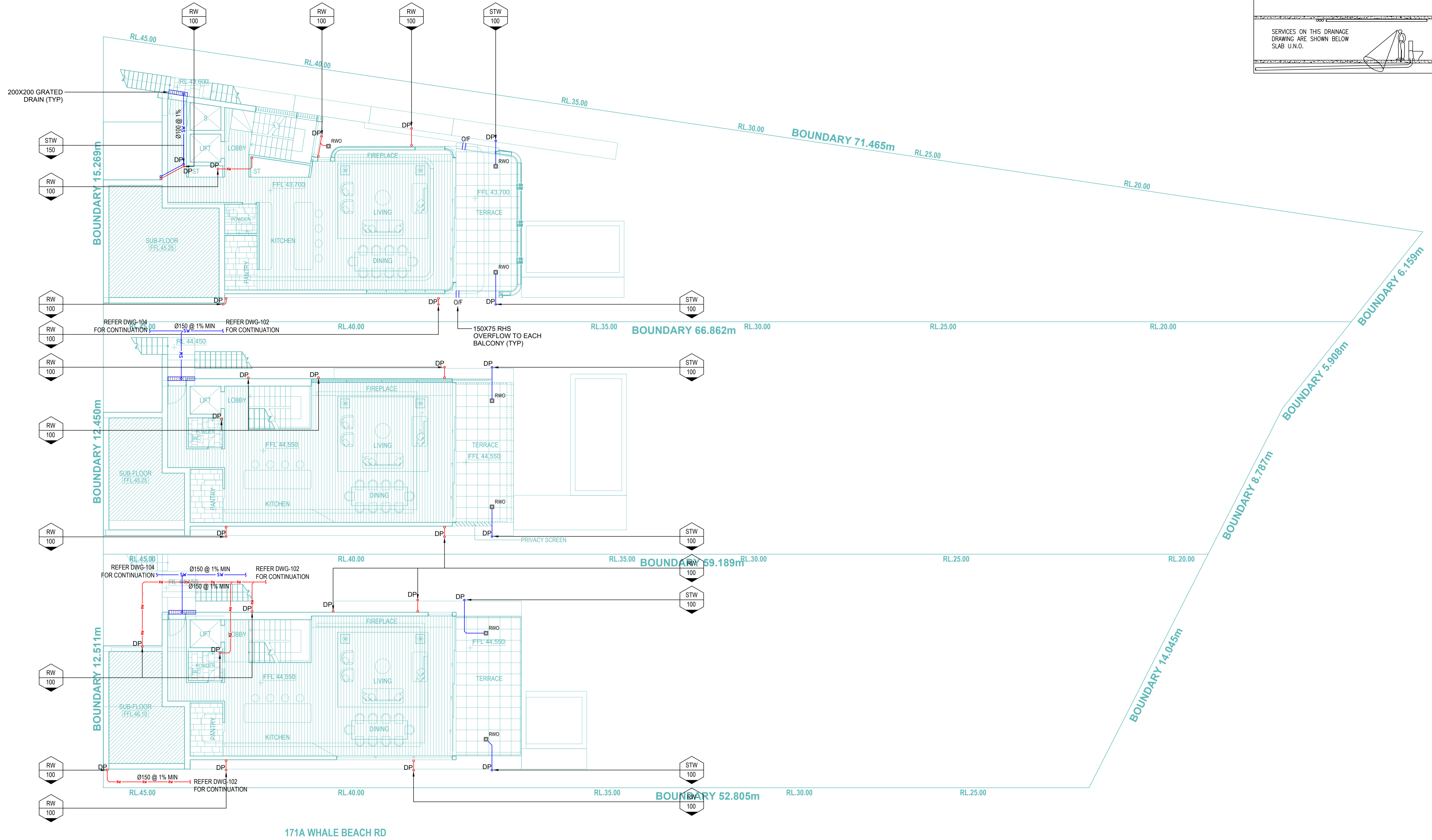
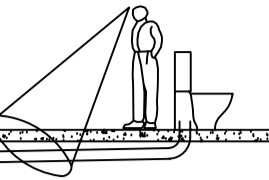
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VERIFIED	JF

FOR APPROVAL

NORTH POINT

PROJECT	173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107
DRG. TITLE	STORMWATER SERVICES STORMWATER MANAGEMENT PLAN FIRST FLOOR
DRAWING No.	PROJECT No. DISC. NUMBER REV
	2000265 - STW - 102 - 1

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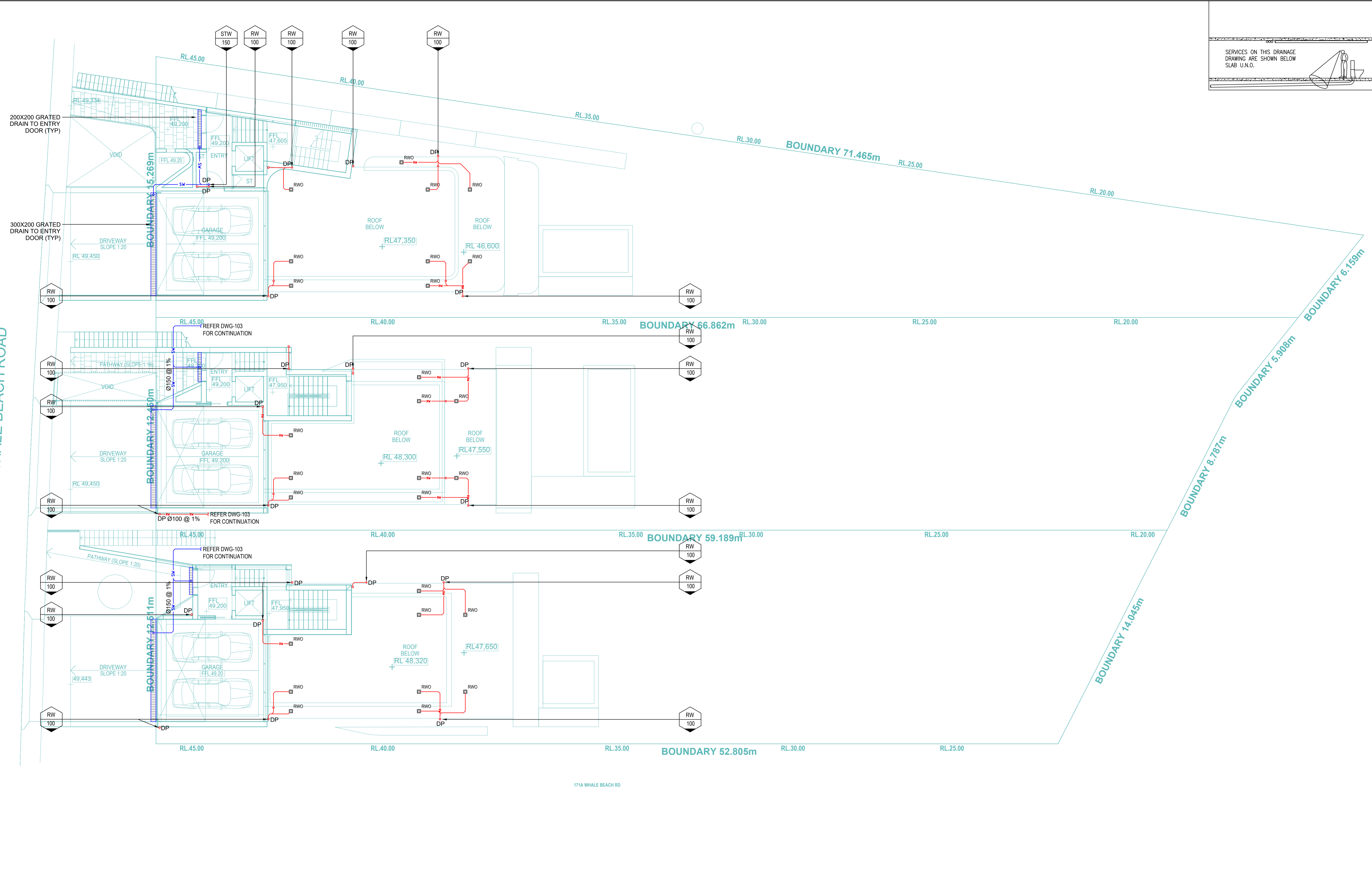
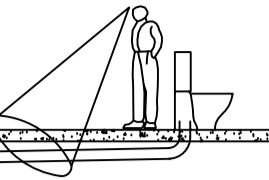
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PROJECT	173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107			
DRG. TITLE	STORMWATER SERVICES STORMWATER MANAGEMENT PLAN SECOND FLOOR			
DRAWING No.	PROJECT No. 2000265	DISC. - STW -	NUMBER 103	REV 1

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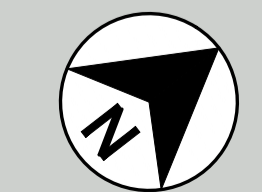
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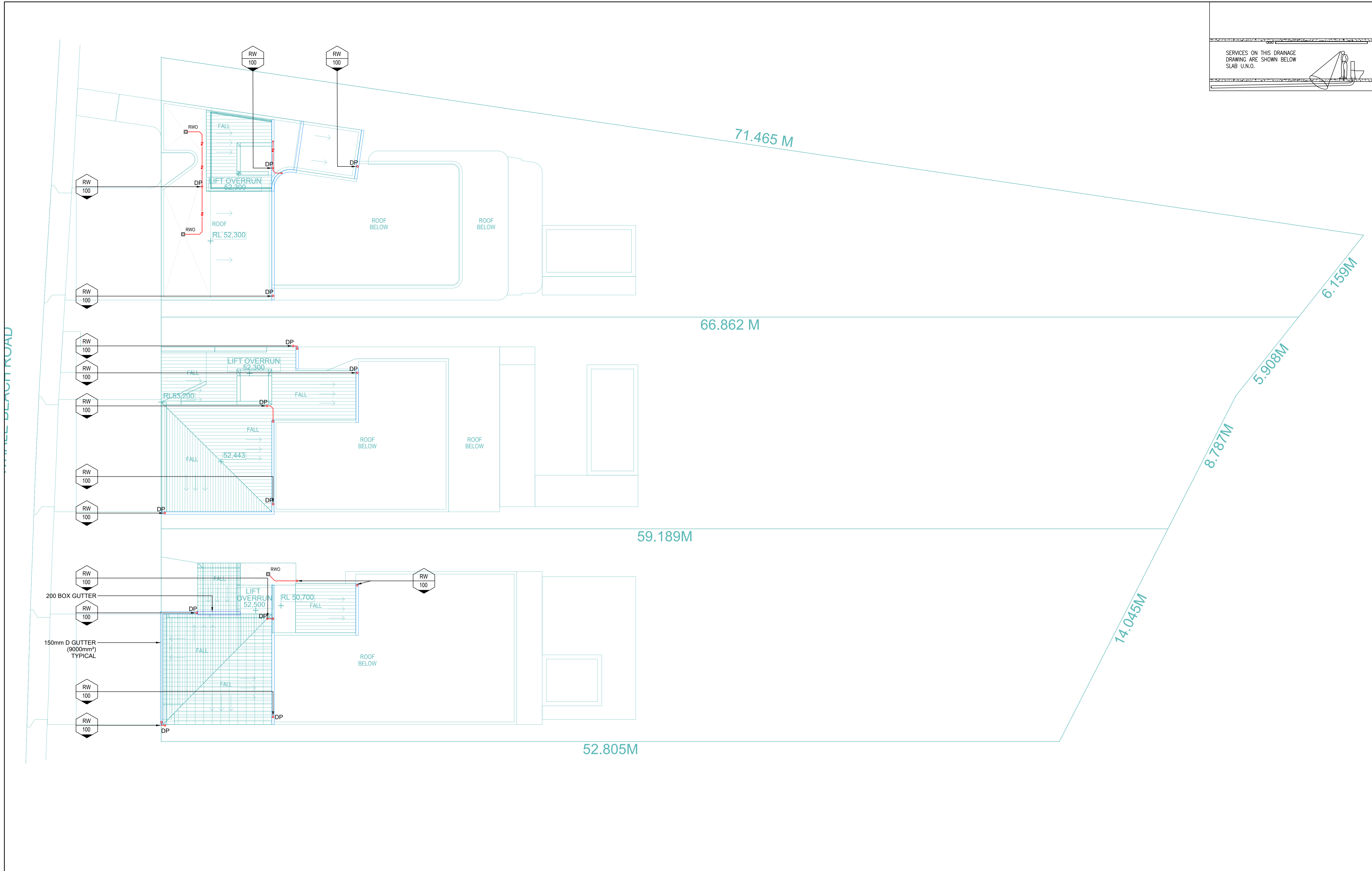
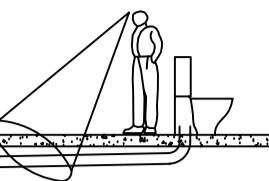


PROJECT	173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107			
DRG. TITLE	STORMWATER SERVICES STORMWATER MANAGEMENT PLAN THIRD FLOOR			
DRAWING No.	PROJECT No.	DISC.	NUMBER	REV
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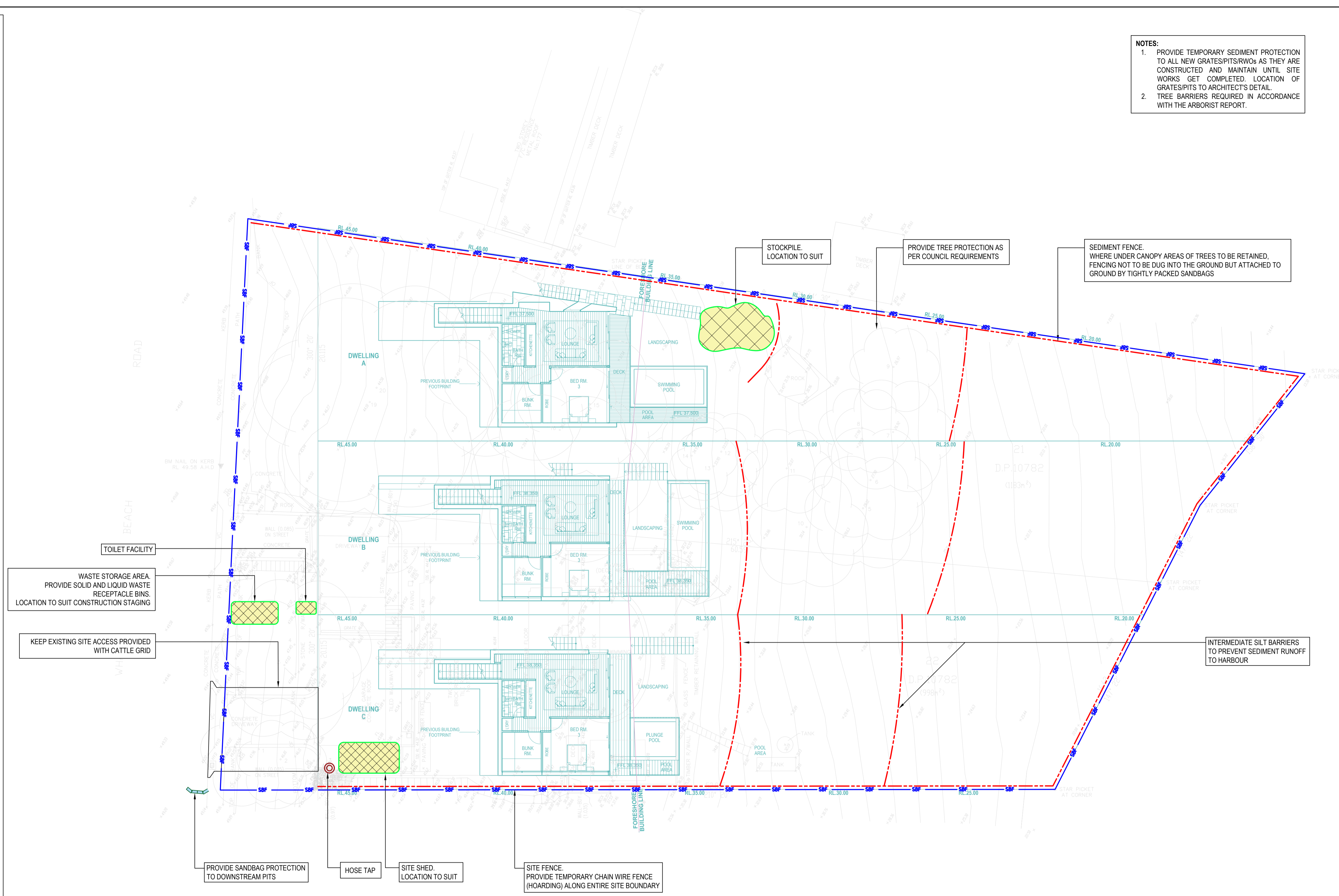
PROJECT	DRG. TITLE	DRAWING No.	PROJECT No.	DISC.	NUMBER	REV
173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107	STORMWATER SERVICES STORMWATER MANAGEMENT PLAN ROOF	2000265	2000265	STW	105	2

ENVIRONMENTAL SITE MANAGEMENT

1. EROSION & SEDIMENT CONTROLS TO BE INSTALLED IN ACCORDANCE WITH COUNCIL'S SPECIFICATION & THE NSW DEPARTMENT OF HOUSING "BLUE BOOK" - SOILS AND CONSTRUCTION - MANAGING URBAN STORMWATER, 2004. REFER TO THE BLUE BOOK FOR STANDARD DRAWINGS "SD"
2. SEDIMENT & EROSION CONTROLS MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OR DEMOLITION ACTIVITY. THE LOCATION OF SUCH DEVICES IS INDICATIVE ONLY AND FINAL POSITION SHOULD BE DETERMINED ON SITE.
3. RETAIN ALL EXISTING GRASS COVER WHEREVER POSSIBLE. TOPSOIL FROM ALL AREAS THAT WILL BE DISTRIBUTED TO BE STRIPPED AND STOCKPILED AT THE NOMINATED SITE. A SEDIMENT FENCE TO BE PLACED DOWNHILL OF STOCKPILE.
4. ALL EXISTING TREES TO BE RETAINED UNLESS SHOWN OTHERWISE ON APPROVED DRAWINGS. TREES RETAINED ARE TO BE PROTECTED WITH A HIGH VISIBILITY FENCE, PLUS FLAGGING TO INDIVIDUAL TREES AS NECESSARY.
5. INSTALL TEMPORARY SEDIMENT BARRIERS TO ALL INLET PITS LIKELY TO COLLECT SILT LADEN WATER, UNTIL SURROUNDING AREAS ARE PAVED OR REGRASSED.
6. ALL SILT FENCES & BARRIERS ARE TO BE MAINTAINED IN GOOD ORDER & REGULARLY DESILTED DURING THE CONSTRUCTION PERIOD.
7. STOCKPILES OF LOOSE MATERIALS SUCH AS SAND, SOIL, GRAVEL MUST BE COVERED WITH GEOTEXTILE SILT FENCE MATERIAL. PLASTIC SHEETING OR MEMBRANE MUST NOT BE USED. SAFETY BARRICADING SHOULD BE USED TO ISOLATE STOCKPILES OF SOLID MATERIALS SUCH AS STEEL REINFORCING, FORMWORK AND SCAFFOLDING.
8. WASTE MATERIALS ARE TO BE STOCKPILED OR LOADED INTO SKIP-BINS LOCATED ON SITE AS SHOWN ON PLAN.
9. NO MORE OF 150M OF TRENCHING TO BE OPEN AT ANY ONE TIME. IMMEDIATELY AFTER TRENCH BACKFILLING, PROVIDE SANDBAGS OR SAUSAGE FILTERS ACROSS EACH TRENCH AT MAXIMUM 20M SPACING. FILTERS TO REMAIN IN PLACE UNTIL REVEGETATION HAS OCCURRED.
10. ALL VEHICLES LEAVING THE SITE MUST PASS OVER THE STABILISED SITE ACCESS BALLAST AREA TO SHAKE OFF SITE CLAY AND SOIL. IF NECESSARY WHEELS AND AXLES ARE TO BE HOSED DOWN. BALLAST IS TO BE MAINTAINED AND REPLACED AS NECESSARY DURING THE CONSTRUCTION PERIOD.
11. THE HEAD CONTRACTOR IS TO INFORM ALL SITE STAFF AND SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN.
12. ANY SEDIMENT DEPOSITED ON THE PUBLIC WAY, INCLUDING FOOTPATH RESERVE AND ROAD SURFACE, IS TO BE REMOVED IMMEDIATELY.
13. PROVIDE BARRIERS AROUND ALL CONSTRUCTION WORKS WITHIN THE FOOTPATH AREA TO PROVIDE SAFE ACCESS FOR PEDESTRIANS.
14. CONCRETE PUMPS AND CRANES ARE TO OPERATE FROM WITHIN THE BALLAST ENTRY DRIVEWAY AREA AND ARE NOT TO OPERATE FROM THE PUBLIC ROAD WAY ACCESS UNLESS SPECIFIC COUNCIL PERMISSION IS OBTAINED.
15. TRUCKS REMOVING EXCAVATED / DEMOLISHED MATERIAL SHOULD TRAVEL ON STABILISED CONSTRUCTION PATHS. MATERIAL TO BE TAKEN TO THE TRUCK TO REDUCE TRUCK MOVEMENT ON SITE. TRUCKS TO BE LIMITED TO SINGLE UNIT HEAVY RIGID VEHICLES. [NO SEMITRAILERS]
16. ANY EXCAVATION WORK ADJUSTMENT TO ADJOINING PROPERTIES OR THE PUBLIC ROADWAY IS NOT TO BE COMMENCED UNTIL THE STRUCTURAL ENGINEER IS CONSULTED AND SPECIFIC INSTRUCTIONS RECEIVED FROM THE ENGINEER.
17. TOILET FACILITIES MUST BE EITHER A FLUSHING TYPE OR APPROVED PORTABLE CHEMICAL CLOSET. CHEMICAL CLOSETS ARE TO BE MAINTAINED AND SERVICED ON A REGULAR BASIS SO THAT OFFENSIVE ODOUR IS NOT EMITTED.
18. DURING TRENCH EXCAVATION ALL SPOIL SHALL BE MOUNDED ON THE UPHILL SIDE OF TRENCHES AND PLACEMENT IS TO COMPLY WITH THE SUPERINTENDENTS REQUIREMENT.
19. DIVERSION BANKS SHOULD BE CONSTRUCTED BY MOUNDING STRIPPED TOPSOIL (MIN HEIGHT 600MM) WHERE DIRECTED. MATERIAL TO BE RESPREAD ON FOOTWAYS AFTER FINAL TRIMMING.
20. UNDISTURBED BUFFER ZONE AREAS ARE CLOSED TO ALL TRAFFIC MOVEMENTS UNLESS OTHERWISE NOTED BY SUPERINTENDENT AND ACCESS TO THE SEWER ORC.D.L. TRENCHING WILL BE AS SHOWN, OR HEAVY PENALTIES MAY BE IMPOSED.
21. TRAFFIC MANAGEMENT MEASURES ARE TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION. IN ACCORDANCE WITH R.T.A. TRAFFIC CONTROL AT WORK SITES - CURRENT EDITION AND AS 1742 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES'.
22. PEDESTRIAN CONTROL MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION. IN ACCORDANCE WITH AS 1742 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES'.

NOTES:

1. PROVIDE TEMPORARY SEDIMENT PROTECTION TO ALL NEW GRATES/PITS/RWOS AS THEY ARE CONSTRUCTED AND MAINTAIN UNTIL SITE WORKS GET COMPLETED. LOCATION OF GRATES/PITS TO ARCHITECT'S DETAIL.
2. TREE BARRIERS REQUIRED IN ACCORDANCE WITH THE ARBORIST REPORT.



TOILET FACILITY

WASTE STORAGE AREA.
PROVIDE SOLID AND LIQUID WASTE RECEPTACLE BINS.
LOCATION TO SUIT CONSTRUCTION STAGING

KEEP EXISTING SITE ACCESS PROVIDED WITH CATTLE GRID

PROVIDE SANDBAG PROTECTION TO DOWNSTREAM PITS

HOSE TAP

SITE SHED. LOCATION TO SUIT

SITE FENCE. PROVIDE TEMPORARY CHAIN WIRE FENCE (HOARDING) ALONG ENTIRE SITE BOUNDARY

STOCKPILE LOCATION TO SUIT

PROVIDE TREE PROTECTION AS PER COUNCIL REQUIREMENTS

SEDIMENT FENCE. WHERE UNDER CANOPY AREAS OF TREES TO BE RETAINED, FENCING NOT TO BE DUG INTO THE GROUND BUT ATTACHED TO GROUND BY TIGHTLY PACKED SANDBAGS

INTERMEDIATE SILT BARRIERS TO PREVENT SEDIMENT RUNOFF TO HARBOUR

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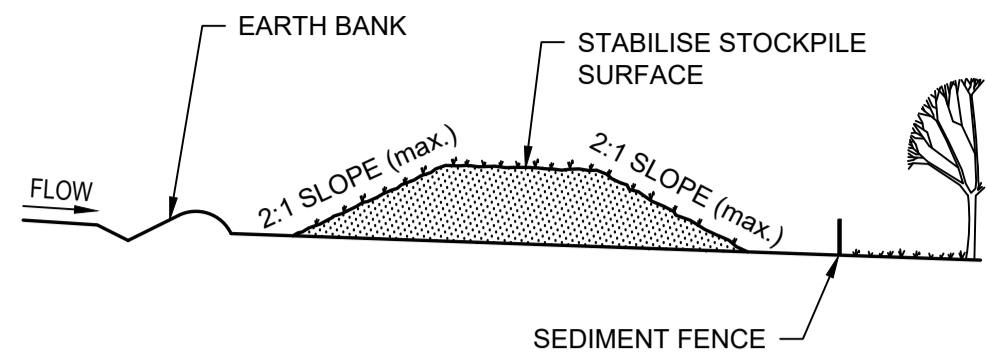
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2	18.04.23	ISSUED FOR APPROVAL	MS

SCALE	SIZE
NTS	A1
DRAWN	RZ
DESIGNED	MS
VERIFIED	JF

FOR APPROVAL

NORTH POINT

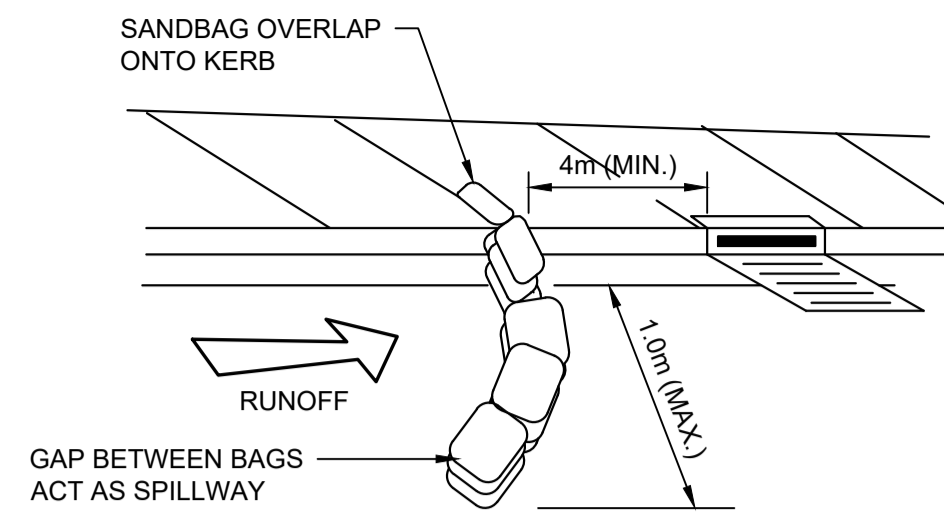
PROJECT	173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107			
DRG. TITLE	EROSION AND SEDIMENTATION CONTROL PLAN			
DRAWING No.	PROJECT No.	DISC.	NUMBER	REV
	2000265	- STW -	201	- 2



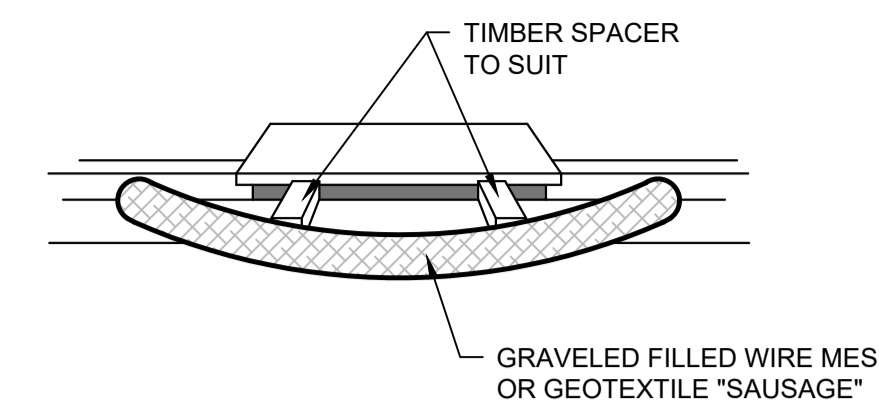
STOCKPILE
SCALE NTS

STOCKPILE

1. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95% STANDARD PROCTOR DENSITY.
2. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK LARGE STONE OR FOREIGN MATERIAL.
3. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.



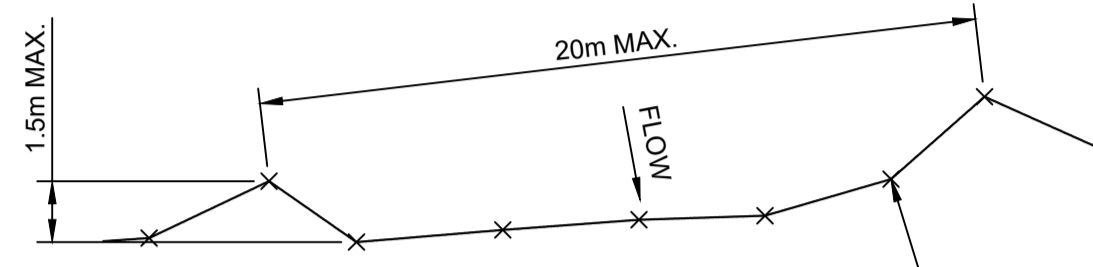
KERB INLET SEDIMENT FILTER (ON GRADE)
SCALE NTS



KERB INLET SEDIMENT FILTER (SAG)
SCALE NTS

KERB INLET SEDIMENT FILTER

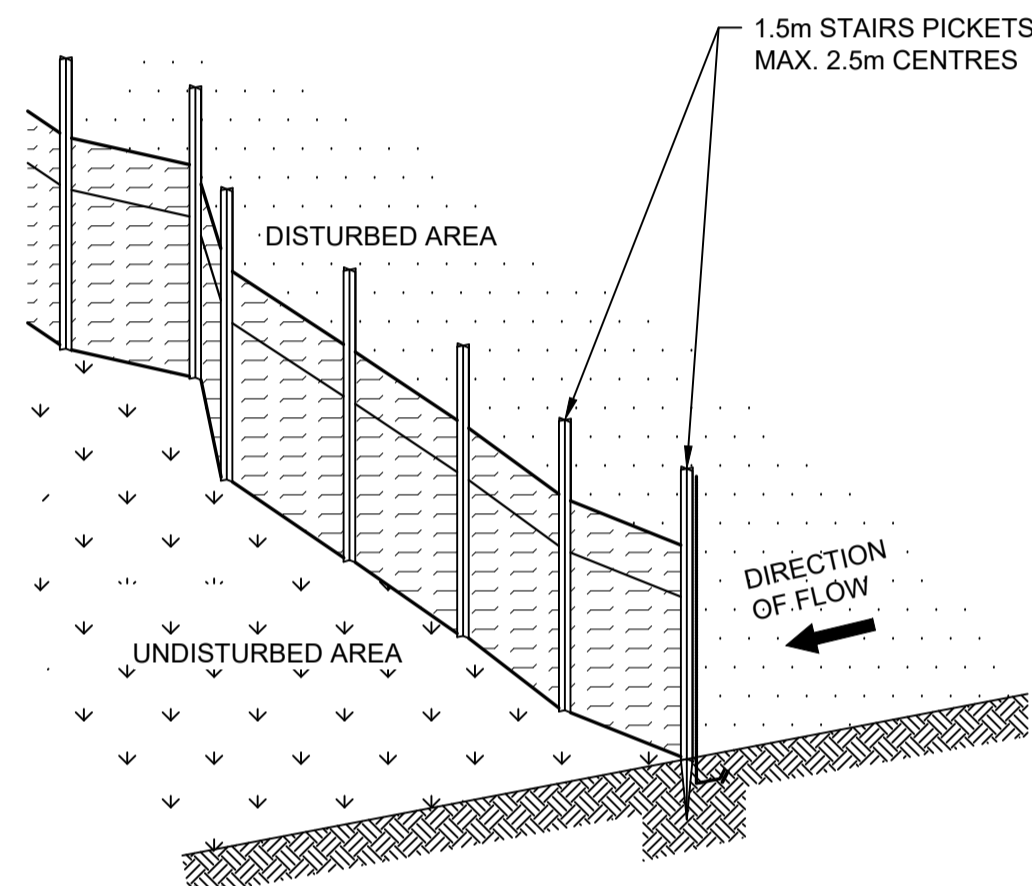
1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.
3. INSTALL SEDIMENT TRAP IN ACCORDANCE WITH STANDARD DRAWING SUPPLIED WITH THE APPROVED PLAN, OR AS DIRECTED BY THE SITE SUPERVISOR.
4. ENSURE THE SEDIMENT TRAP IS CONSTRUCTED UP-SLOPE OF AN ON-GRADE KERB INLET. THE SEDIMENT TRAP MUST NOT SURROUND THE KERB INLET UNLESS SPECIFICALLY DIRECTED BY THE SITE SUPERVISOR.
5. ENSURE THE SEDIMENT TRAP FULLY ENCLOSES THE KERB INLET. USE APPROPRIATE SPACERS TO ENSURE THE SEDIMENT TRAP DOES NOT BLOCK THE SIDE-ENTRY INLET.
6. TAKE ALL NECESSARY MEASURE TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE



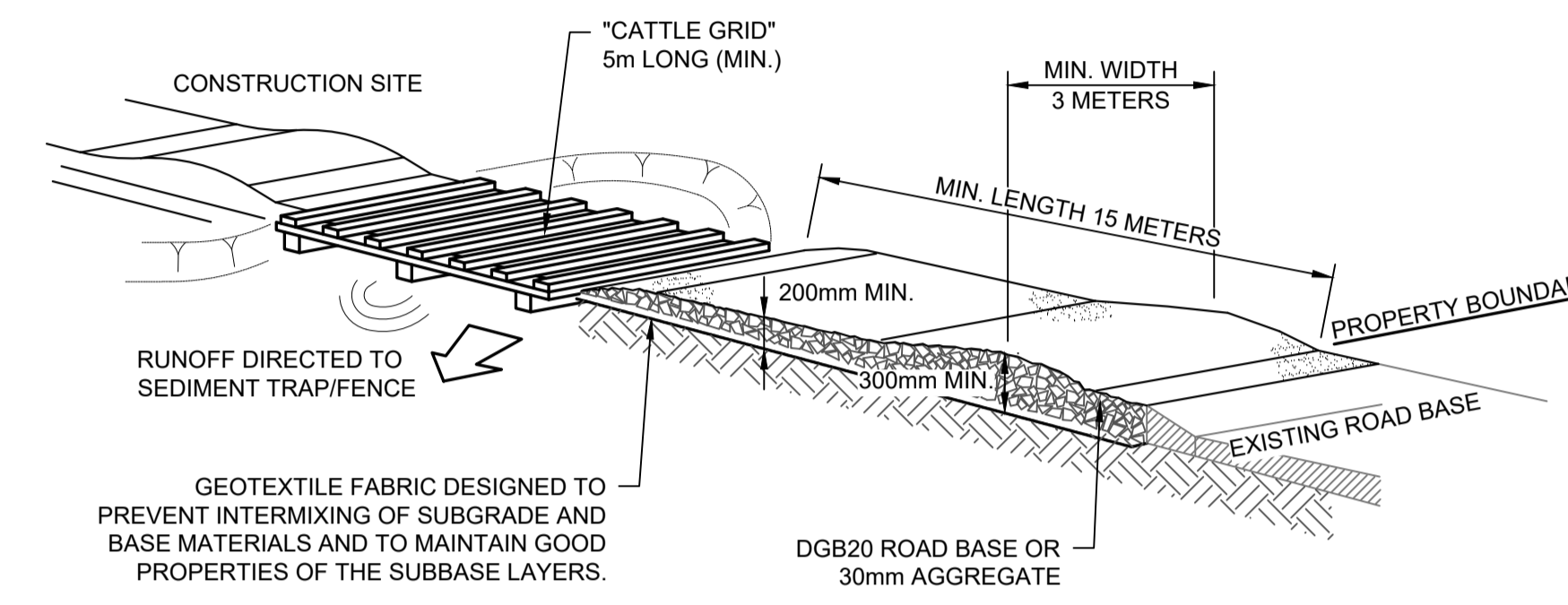
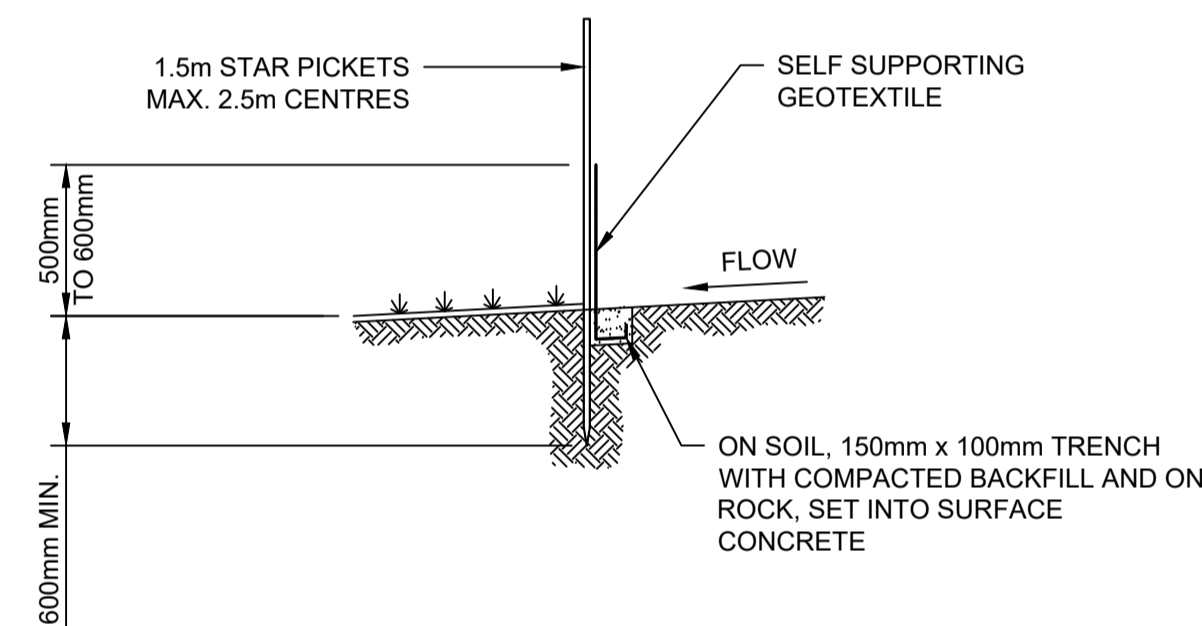
SEDIMENT FENCE - PLAN
NTS

SEDIMENT FENCE

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BE PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING, TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 litres/sec IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METER LONG STAR PICKETS INTO GROUND AT 2.5 METER INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS, ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES, OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



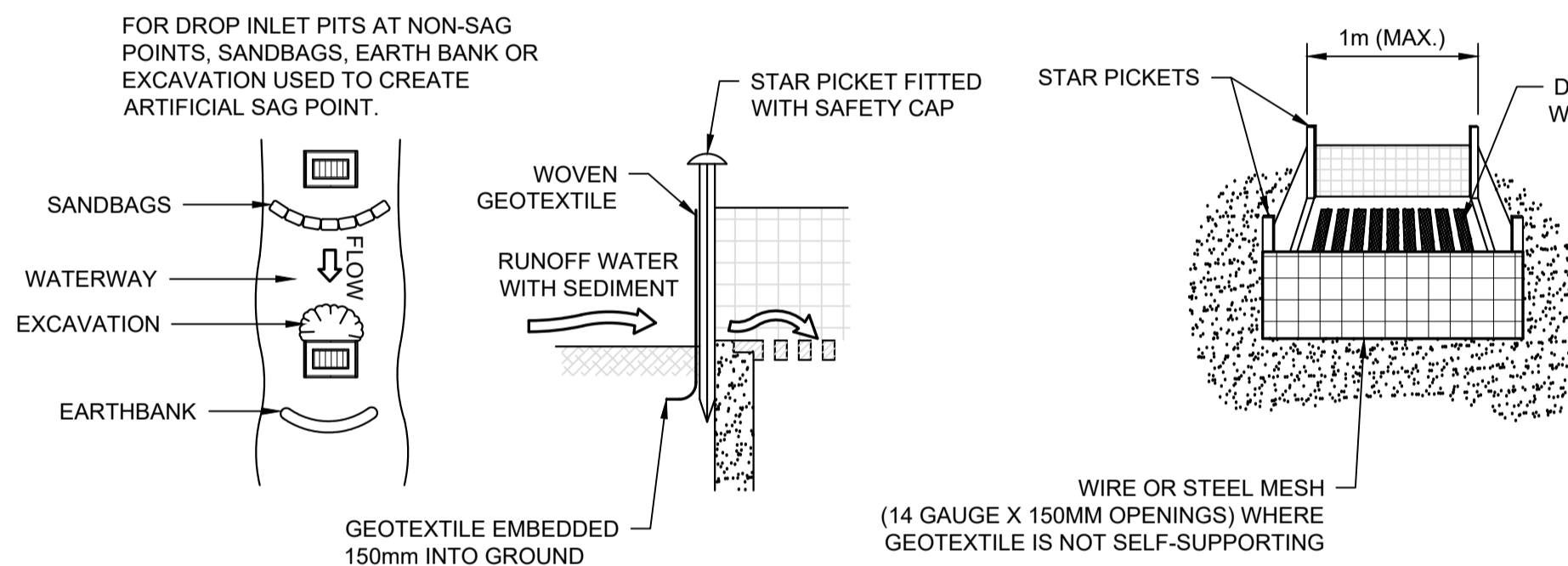
SEDIMENT FENCE - DETAIL
NTS



STABILISED SITE ACCESS DETAIL
NTS

STABILISED SITE ACCESS

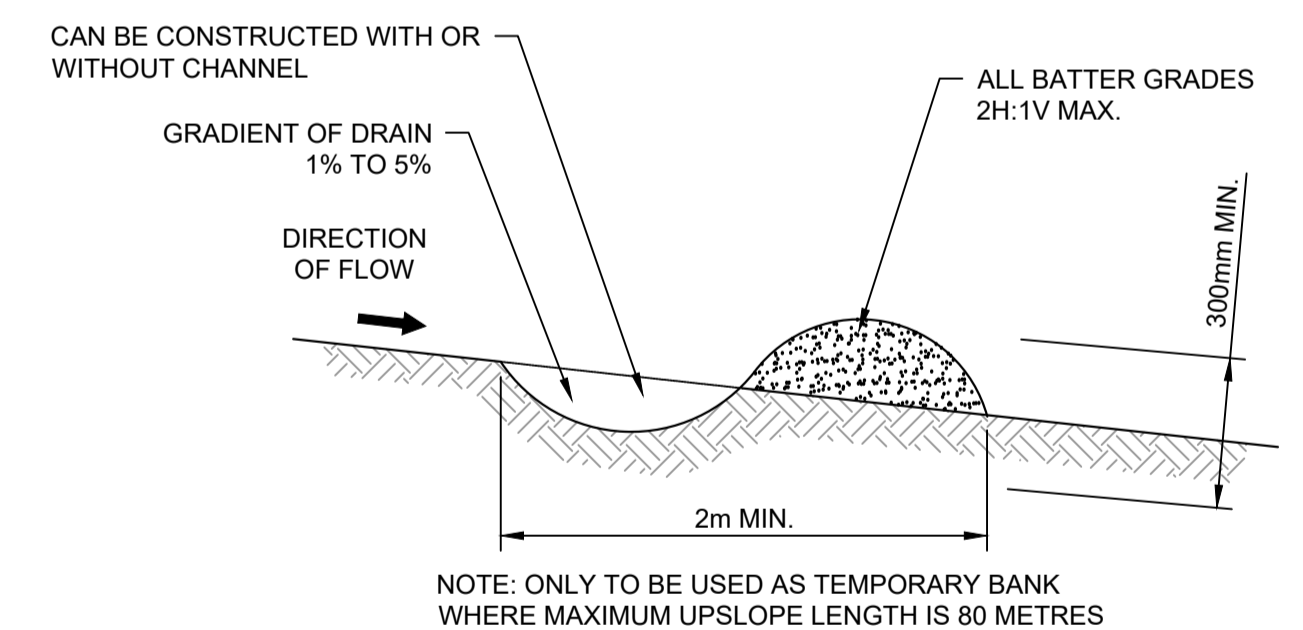
1. COVER THE EXISTING SANDSTONE SUBGRADE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
2. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
3. ENSURE THE STRUCTURE IS AT LEAST 15 METERS LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METERS WIDE.
4. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT



DROP INLET FILTER
NTS

DROP INLET FILTERS

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OF STRAW BALES.
2. FOLLOW STANDARD DRAWINGS OF STRAW BALE FILTERS AND SEDIMENT FENCES FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1m CENTERS.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

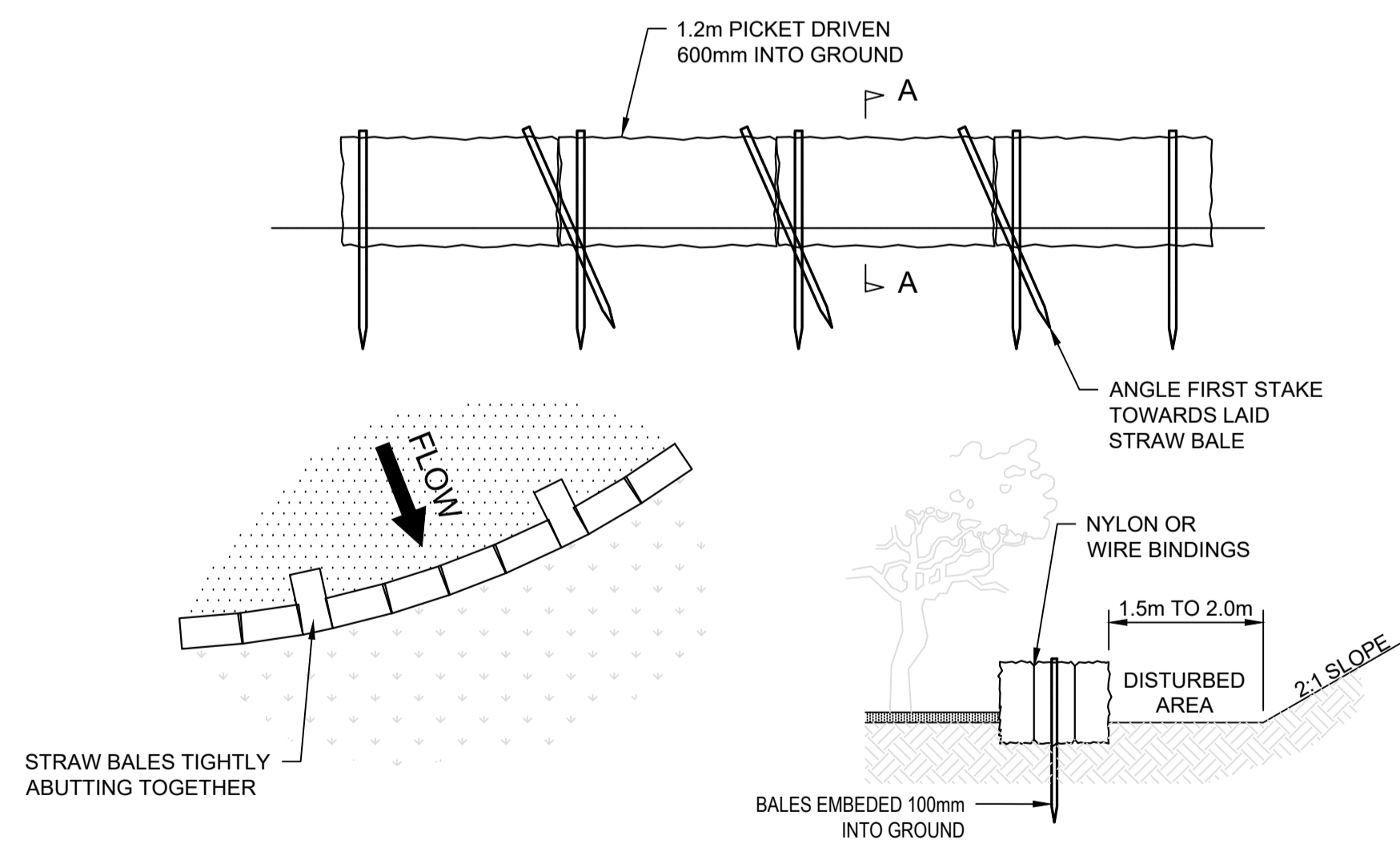


EARTHBANK (LOW FLOW)

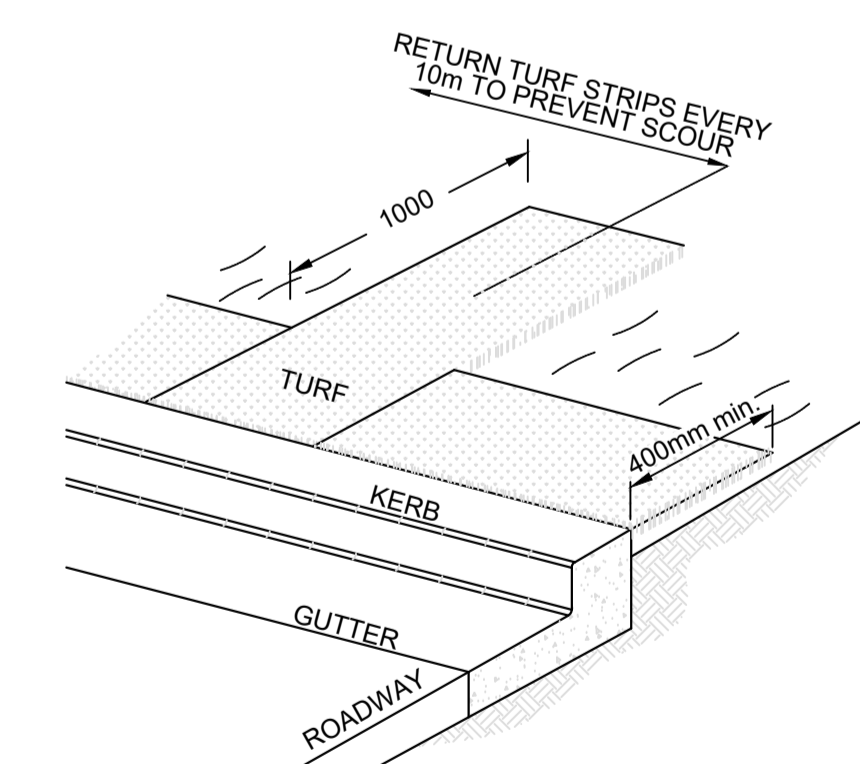
1. BUILD WITH GRADIENTS BETWEEN 1% AND 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

STRAW BALE FILTERS

1. CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DIAGRAM TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION.
2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN THE BALES. THE STRAWS IN EACH BALE TO BE ALIGNED PARALLEL TO THE GROUND.
3. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
4. EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH 1.2m STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 600mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
5. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE BALES ARE PLACED 1m TO 2m DOWNSLOPE FROM THE TOE.
6. ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.



STRAW BALE FILTERS
NTS



KERBSIDE TURF STRIP

1. INSTALL A 400mm MINIMUM WIDE ROLL OF TURF ON THE FOOTPATH NEXT TO THE KERB AND AT THE SAME LEVEL AS THE TOP OF THE KERB.
2. LAY 1.4m LONG TURF STRIPS NORMAL TO THE KERB EVERY 10m.
3. REHABILITATE DISTURBED SOIL BEHIND THE TURF STRIP FOLLOWING THE ESCP/SWMP.

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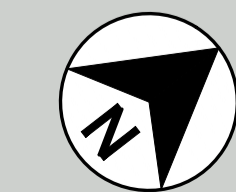
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SCALE	SIZE
AS SHOWN	A1
DRAWN	RZ
DESIGNED	MS
VERIFIED	JF

FOR APPROVAL

NORTH POINT



PROJECT

173-175 WHALE BEACH ROAD
WHALE BEACH NSW 2107

DRG. TITLE

STORMWATER SERVICES
EROSION & SEDIMENTATION
CONTROL DETAILS

DRAWING No.

PROJECT No.
2000265

DISC.

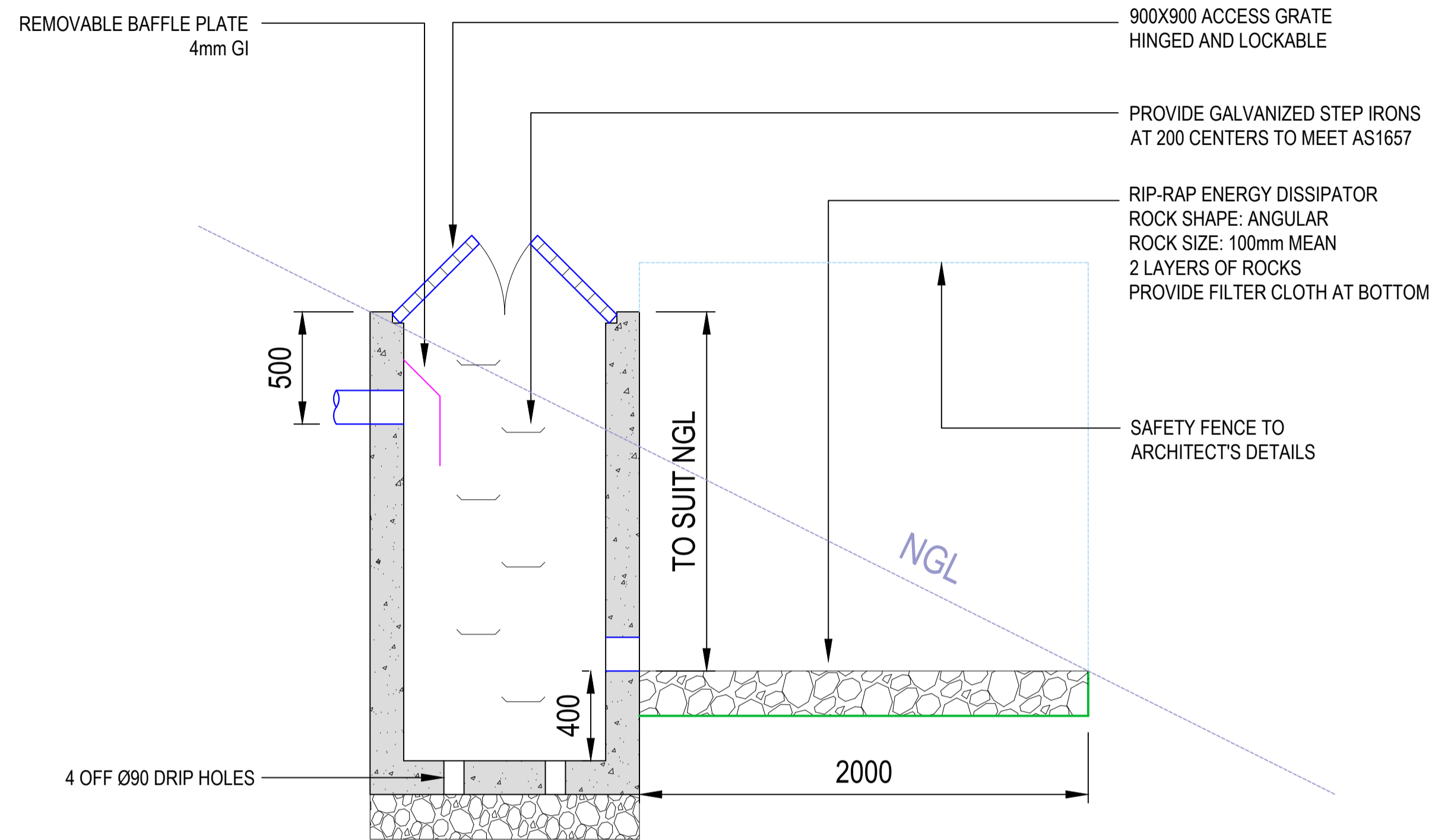
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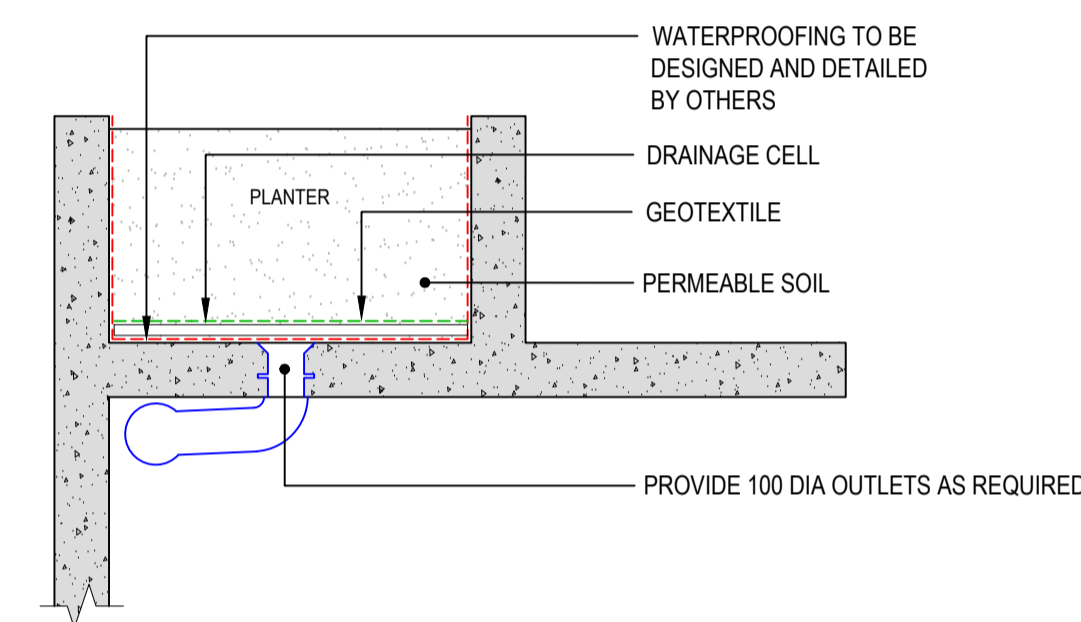
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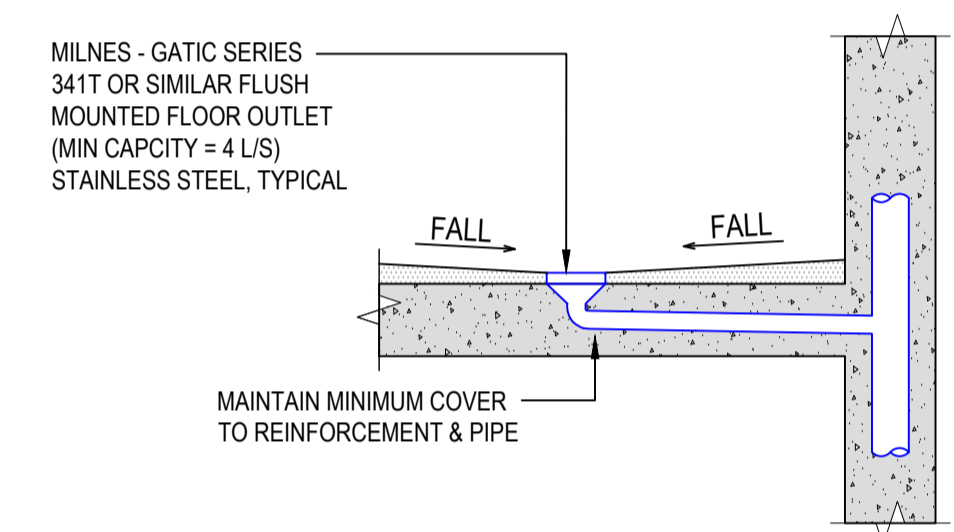
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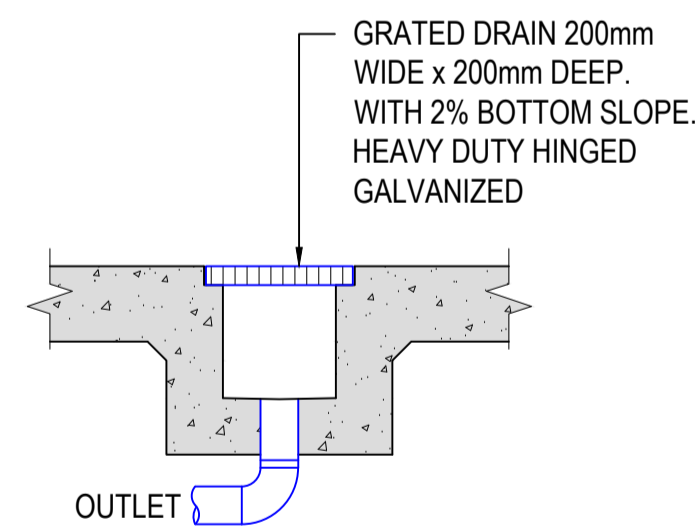
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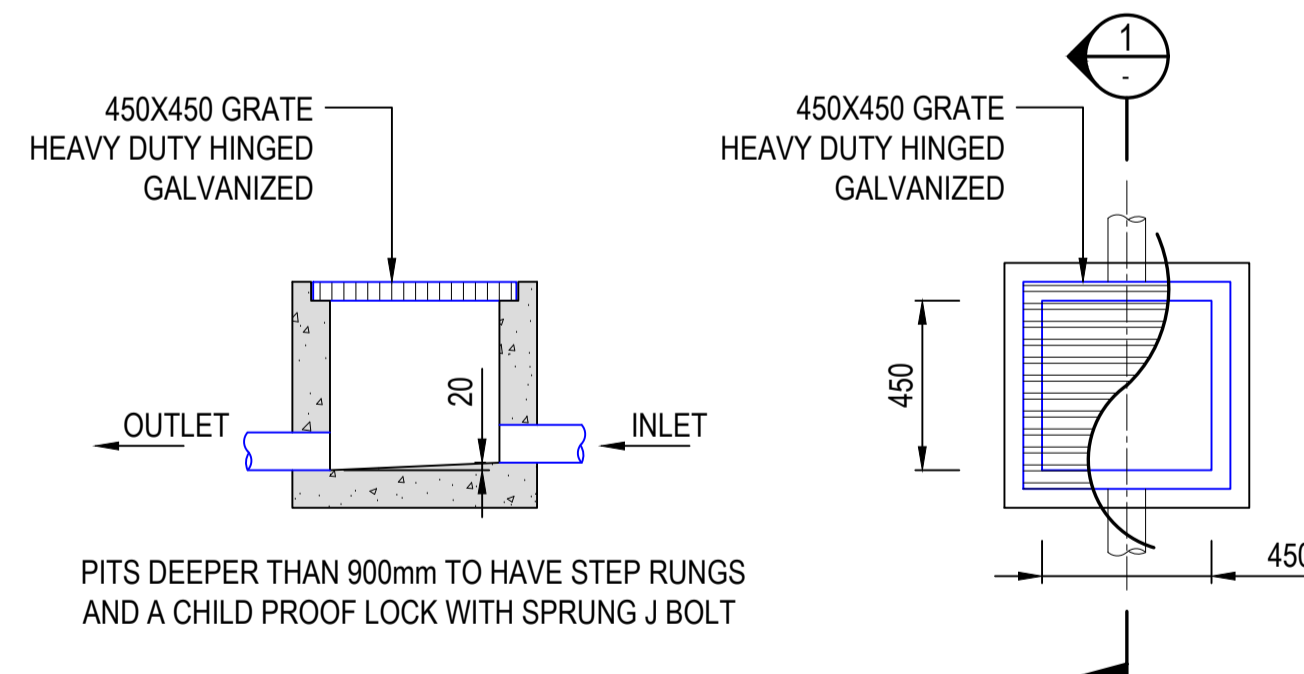
TYPICAL PLANTER DRAINAGE DETAIL
NTS



TYPICAL BALCONY FLOOR OUTLET DETAIL
NTS



STANDARD GRATED DRAIN
NTS



SECTION
SCALE NTS

STANDARD PIT
NTS

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS			
DEPTH TO INVERT OF OUTLET	MINIMUM INTERNAL DIMENSIONS, mm		
		WIDTH	LENGTH
≤600	450	450	
>600 ≤900	600	600	
>900 ≤1200	600	900	
>1200	900	900	

*STEP IRONS SHALL BE PROVIDED FOR PITS WITH DEPTHS OF 1200mm OR MORE

STANDARD PIT NOTES

- CLIMB IRONS SHALL BE PROVIDED AS PER AS1657.
- REINFORCEMENT NOTED IS ONLY REQUIRED FOR PITS EXCEEDING 900 DEEP, SUBJECT TO COUNCIL REQUIREMENTS. PITS GREATER THAN 3000 DEEP WILL REQUIRE STRUCTURAL ENGINEERS DESIGN.
- PROVIDE 90 DIA x 3000 LONG SUBSOIL DRAINAGE STUB PIPE SURROUNDED WITH 100mm THICKNESS OF NOMINAL 20mm COARSE FILTER MATERIAL WRAPPED IN GEOTEXTILE FILTER FABRIC. (BIDUM A24 OR APPROVED SIMILAR), TO BE PARALLEL TO UPSTREAM SIDE OF EACH INLET PIPE.
- ALTERNATIVE PIT CONSTRUCTION MAY BE USED SUBJECT TO THE ENGINEERS APPROVAL.
- CONCRETE STRENGTH $f'c = 32MPa$

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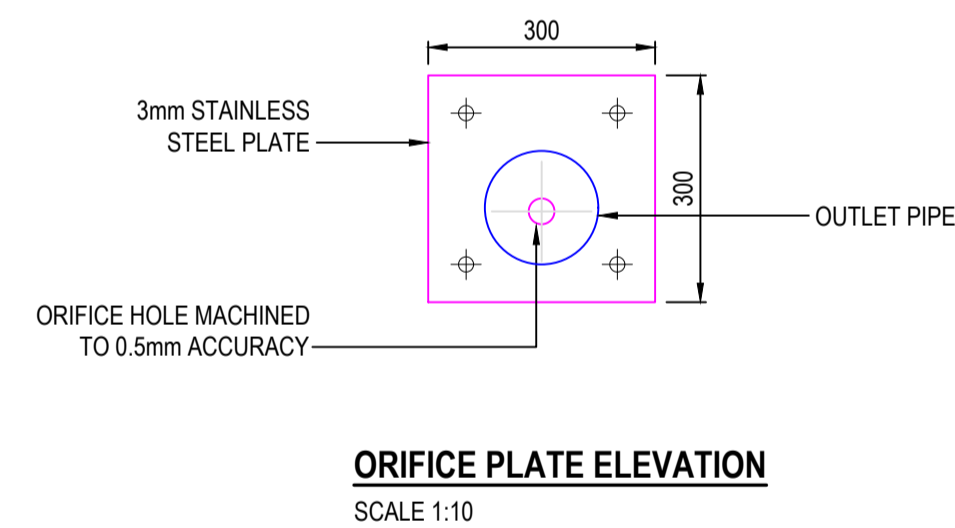
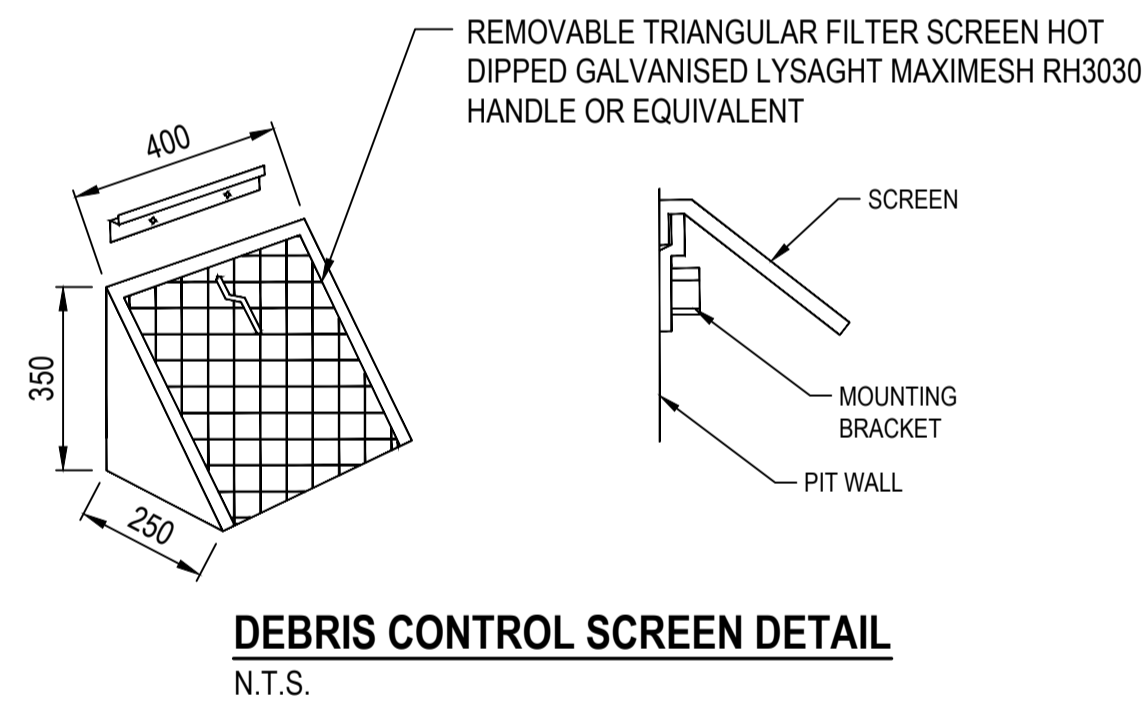
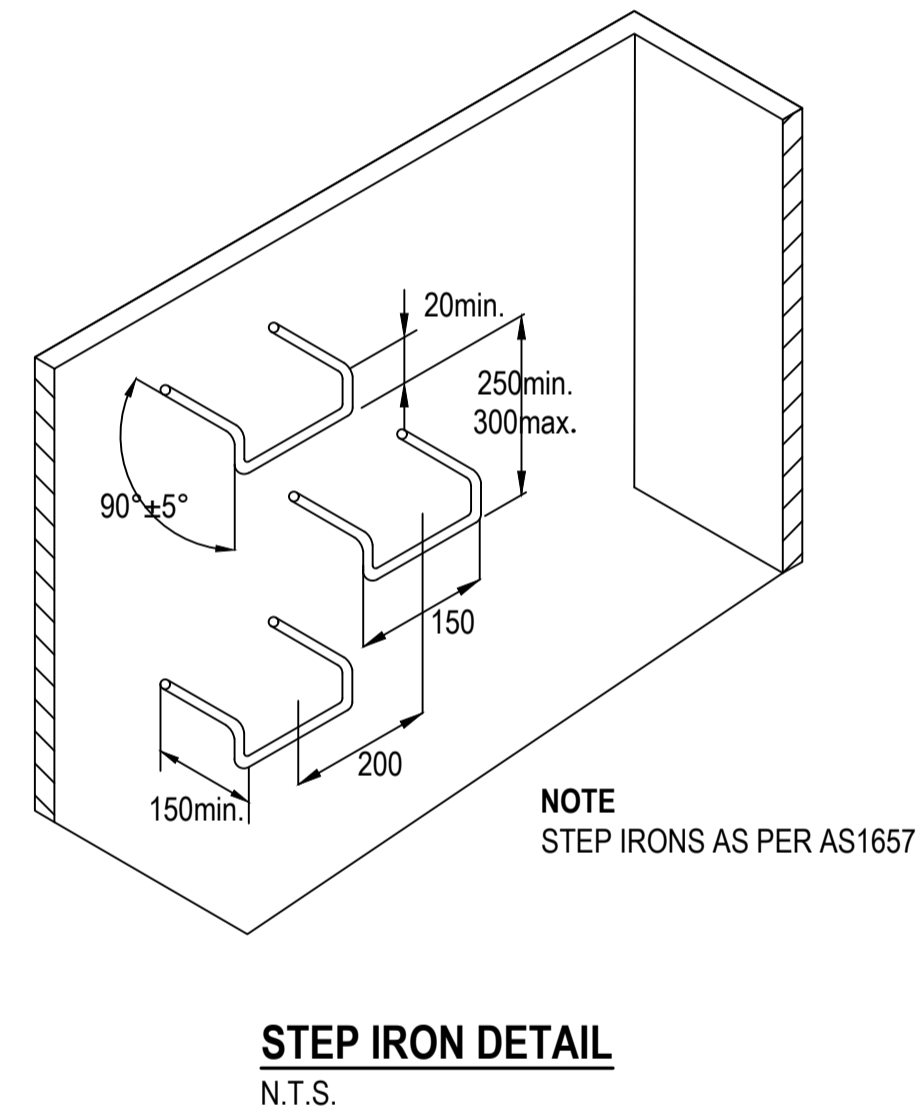
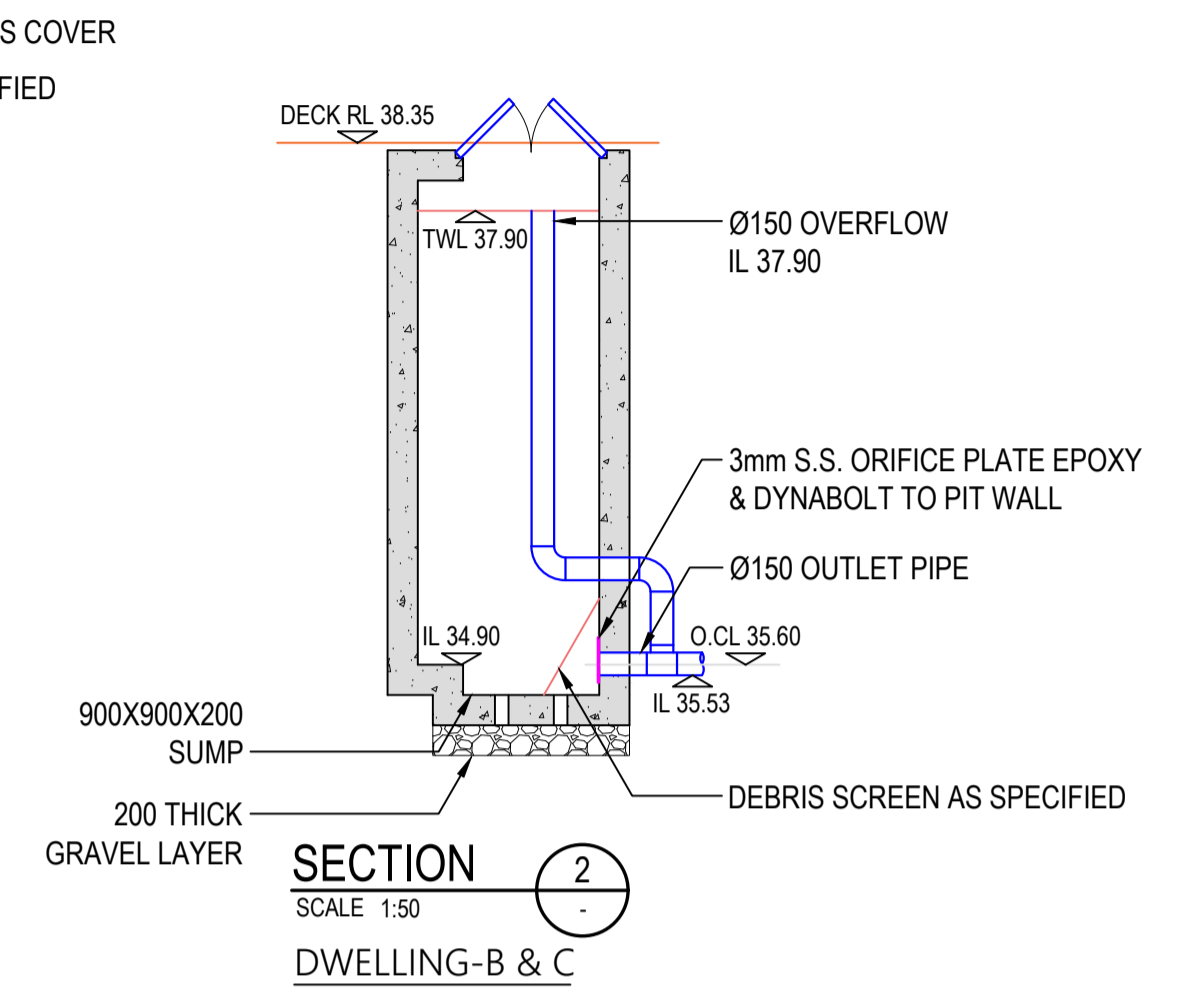
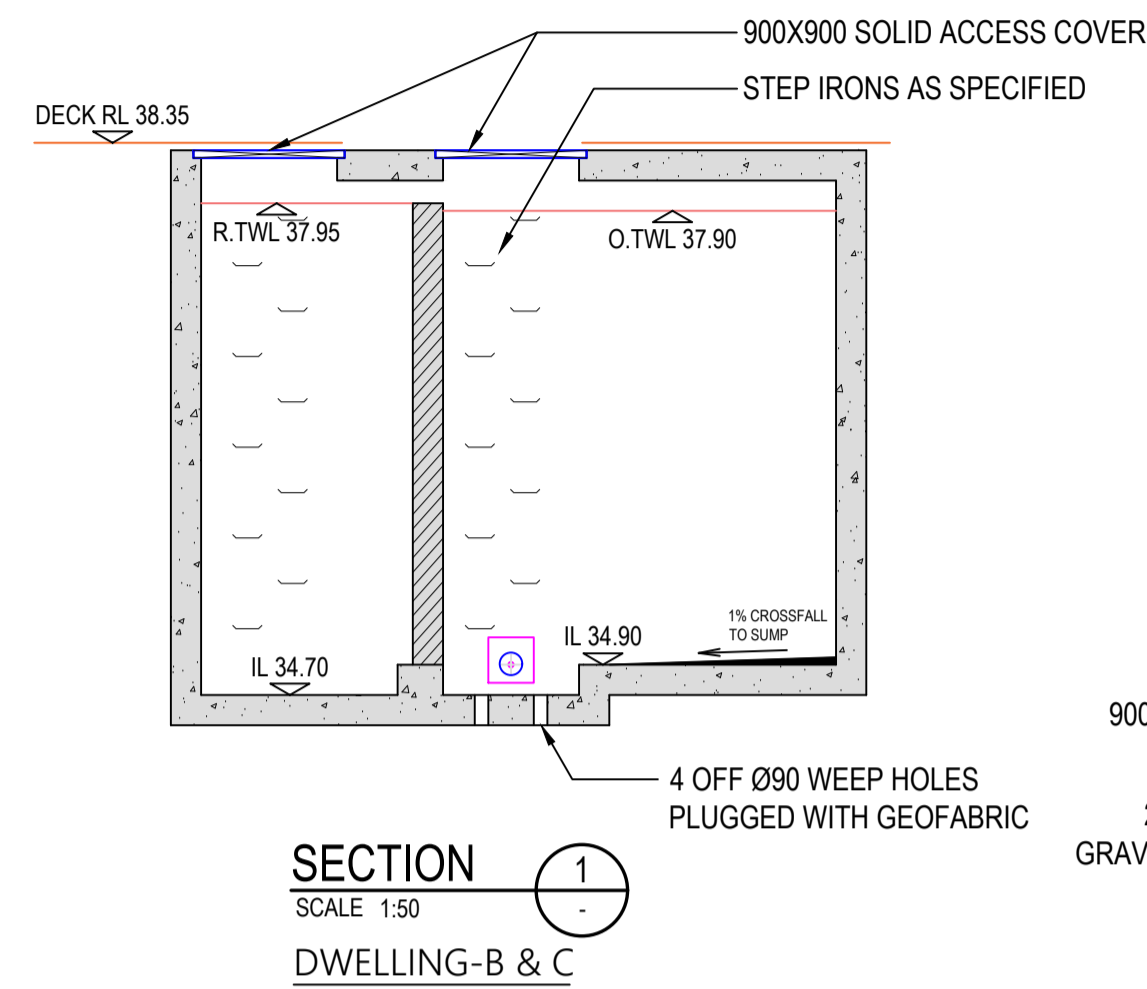
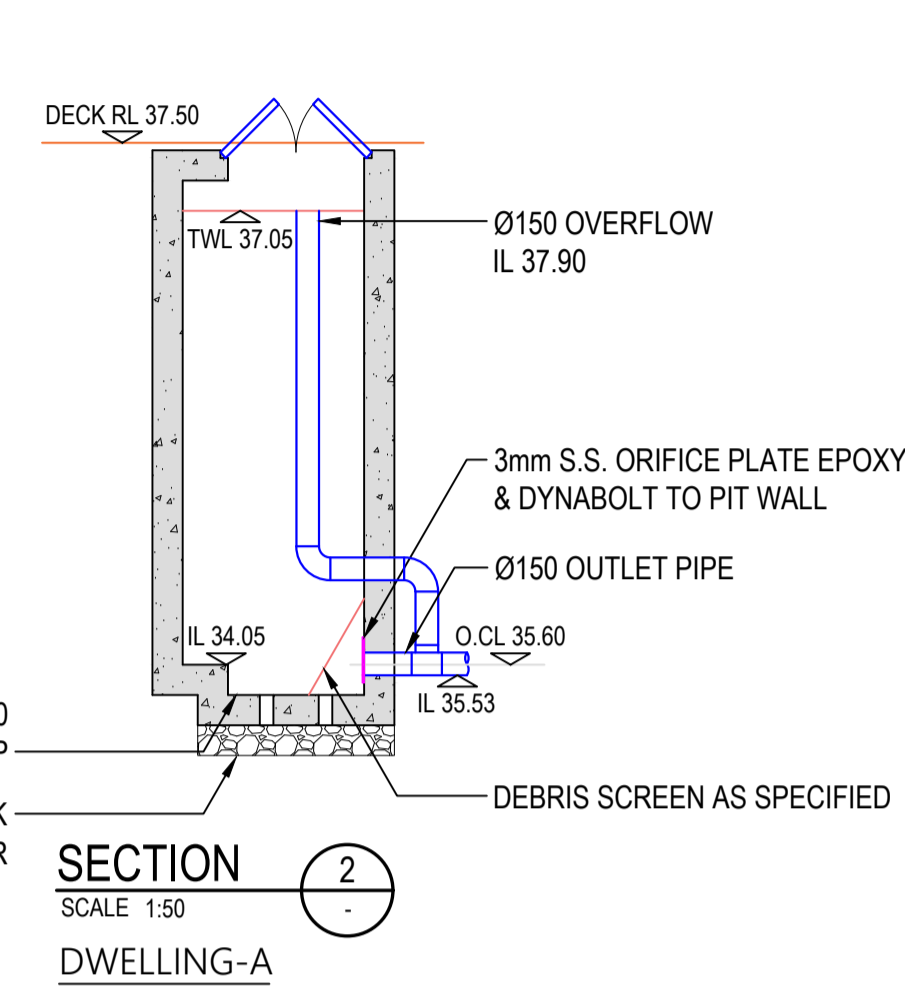
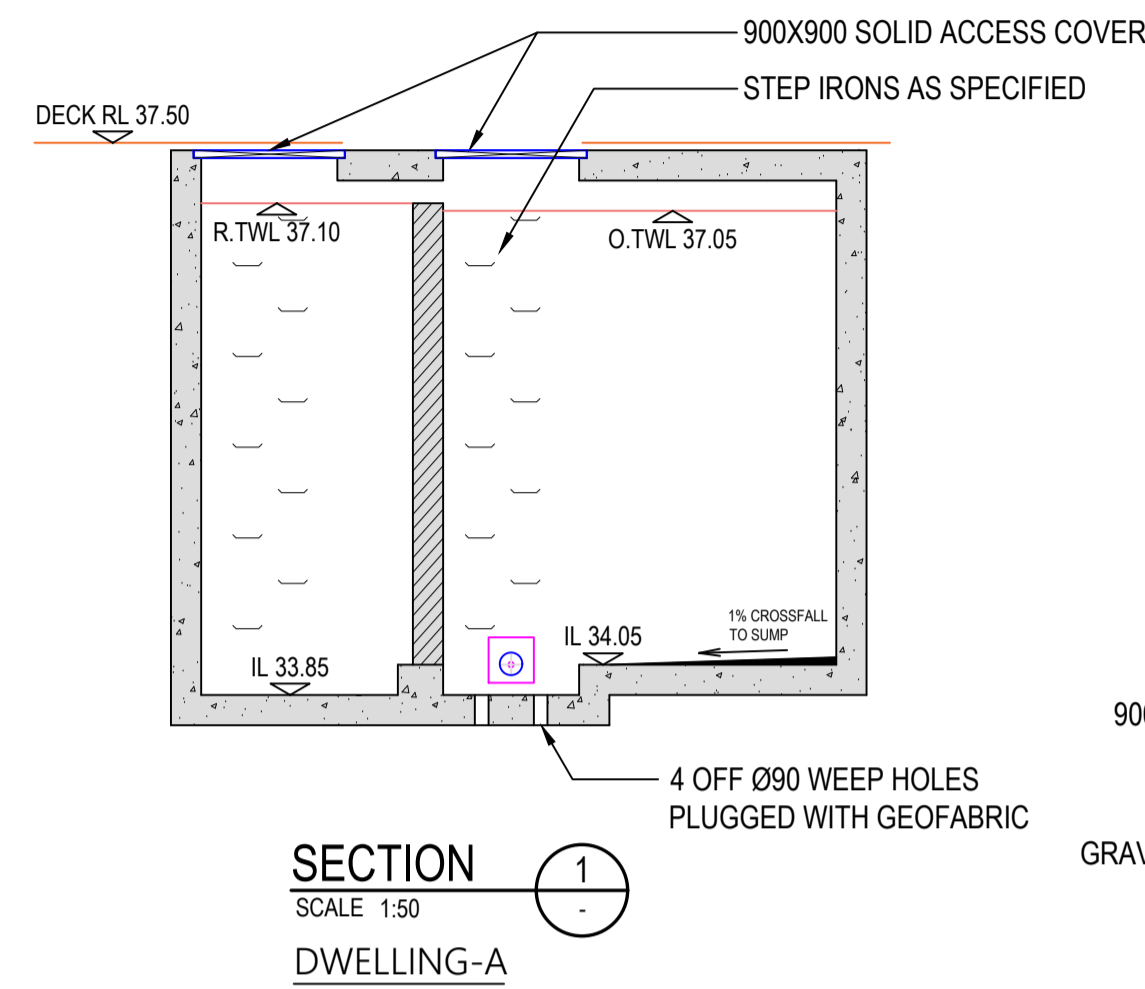
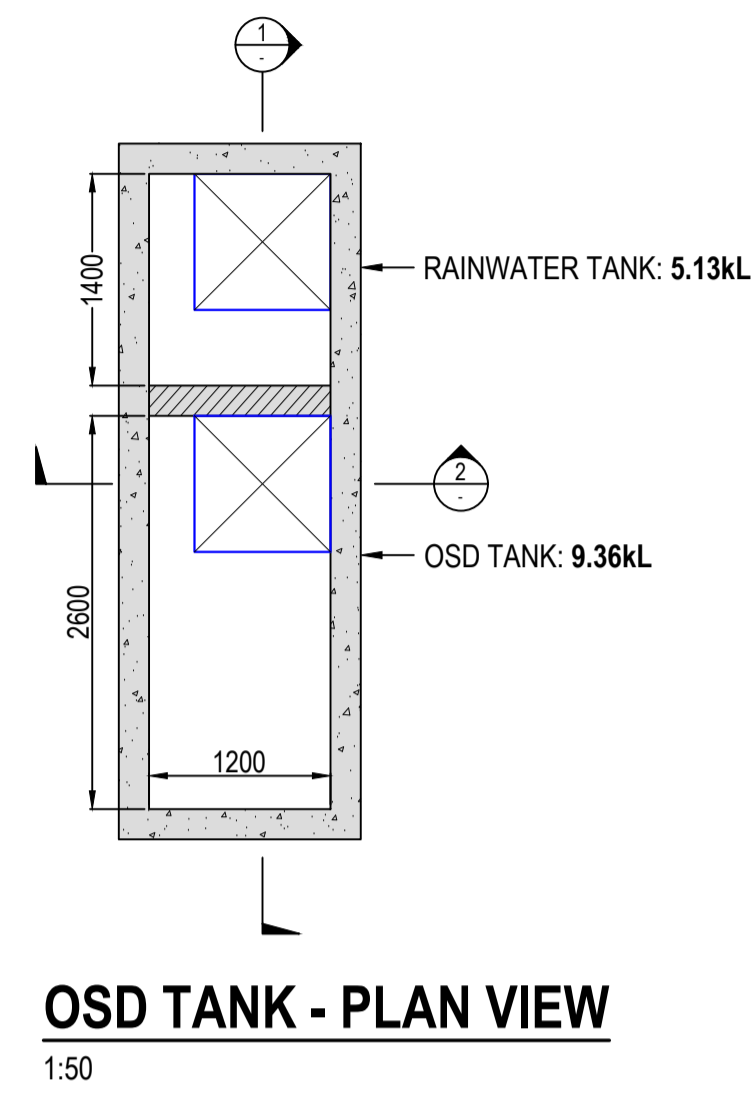
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PROJECT	173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107
DRG. TITLE	STORMWATER SERVICES TYPICAL DETAILS
DRAWING No.	PROJECT No. 2000265 DISC. - STW - NUMBER 301 - REV 1



173-175 Whale Beach Road, Whale Beach NSW 2107		
Designer	Muhammad Shahbaz	Project No. 2000265
Date	28-Nov-22	
Council	Northern Beaches	
	Water Management For Development Policy TRIM 2021/154368, Version 2, Dated 26/02/2021 Region 1 - Northern Catchment	
Pre-Developed Site Details		
Total Site Area (A)	2181.00 m ²	
Impervious Area (A _{ei})	487.00 m ²	
Pervious Area (A _{ep})	1694.00 m ²	
Post-Developed Site Details		
Pervious Area (A _{op})	1350.00 m ²	
Impervious Area (A _{oi})	831.00 m ²	
% Dev Impervious Area	38.10 %	
Additional Impervious Area	344.00 m ²	
^{SN} C ₂₀	0.615	State of Nature
Using Table 7		
Required OSD Volume	24.00 m ³	
Discharge Rate (PSD)	12.00 l/s	
Provided OSD Volume	28.08 m ³	
(3 off 9.36m ³ OSD tank with 4l/s PSD each. One tank per dwelling)		

OSD Orifice Diameter (D)	
C	0.61
g	9.81 m/s ²
Weir Height (H)	3.00 m
Orifice Dia (D)	33 mm

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PROJECT	173-175 WHALE BEACH ROAD WHALE BEACH NSW 2107
DRG. TITLE	STORMWATER SERVICES OSD DETAILS
DRAWING No.	PROJECT No. 2000265 DISC. - STW - NUMBER 302 - REV 2