

# 23 WOLLOMBI ROAD, BILGOLA PLATEAU

## STORMWATER MANAGEMENT PLAN

DRAWING INDEX

DR-000	LEGEND
DR-001	PIPE LAYOUT – UPPER
DR-002	ROOF LAYOUT
DR-003	SITE AREAS
DR-004	DETAILS
DR-005	PIPE LAYOUT – LOWER
SD-001	SEDIMENT & EROSION CONTROL PLAN

NOTES:

1. ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

2. SITE LAYOUT BASED ON ARCHITECTURAL PLANS BY DANIEL RAYMOND ARCHITECT (15/01/2019).

3. LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.

4. ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE RELEVANT STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER’S RECOMMENDATIONS, SYDNEY CATCHMENT AUTHORITY RECOMMENDED PRACTICE, AND LOCAL COUNCIL, AS APPLICABLE.

5. ALL INVERT LEVELS PROVIDED ON THIS DRAWING ARE REDUCED TO AHD AND BASED ON INTERPOLATED SURFACE LEVELS AND SYSTEM REQUIREMENTS.
6. WHERE POSSIBLE, PIPEWORK SHALL BE LOCATED EXTERNAL TO THE BUILDING.

7. DOWNPIPES AND STORMWATER LINES TO BE SEALED DN100 uPVC UNLESS OTHERWISE NOTED.




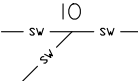
8. STORMWATER PIPES TO BE GRADED AT A MINIMUM 1% UNLESS NOTED OTHERWISE.

9. ALTERNATIVE GUTTER AND DOWNPIPE CONFIGURATION MAY BE INSTALLED PROVIDED IT COMPLIES WITH AS3500.

10. ALL PIPE AND CONDUITS TO BE MARKED IN ACCORDANCE WITH AS1345 – 1995.

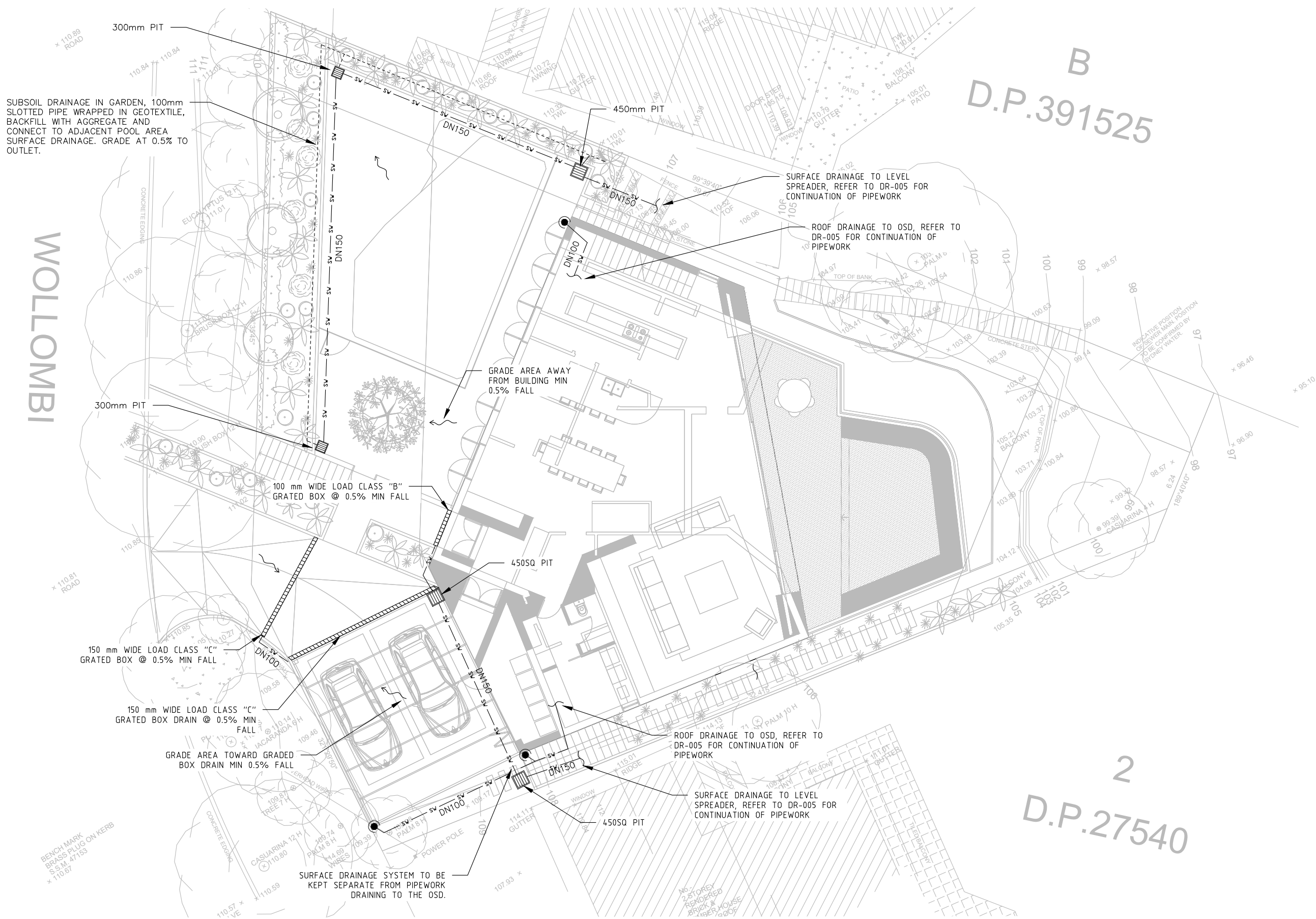
11. TRENCHES AND SERVICE SEPARATIONS IN ACCORDANCE WITH AS/NZS 5601, AS/NZS 3500, AND AS/CA S009.

LEGEND:

	DOWNPIPE
	STORMWATER PIPE
	DRAINAGE PIT
	INSPECTION OPENING

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REVISIONS						DESIGNED	YYA	CHECKED	SSD			LEGEND								
						DRAWN	YYA	CHECKED	SSD											
	1	LES	26/03/2019	APPROVED FOR DA SUBMISSION		LES	APPROVED	LES	DATE			26/03/2019								
	0	YYA	04/03/2019	APPROVED FOR AD SUBMISSION		SSD														
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PLAN  
1

PIPE LAYOUT-GROUND FLOOR LEVEL

1:150

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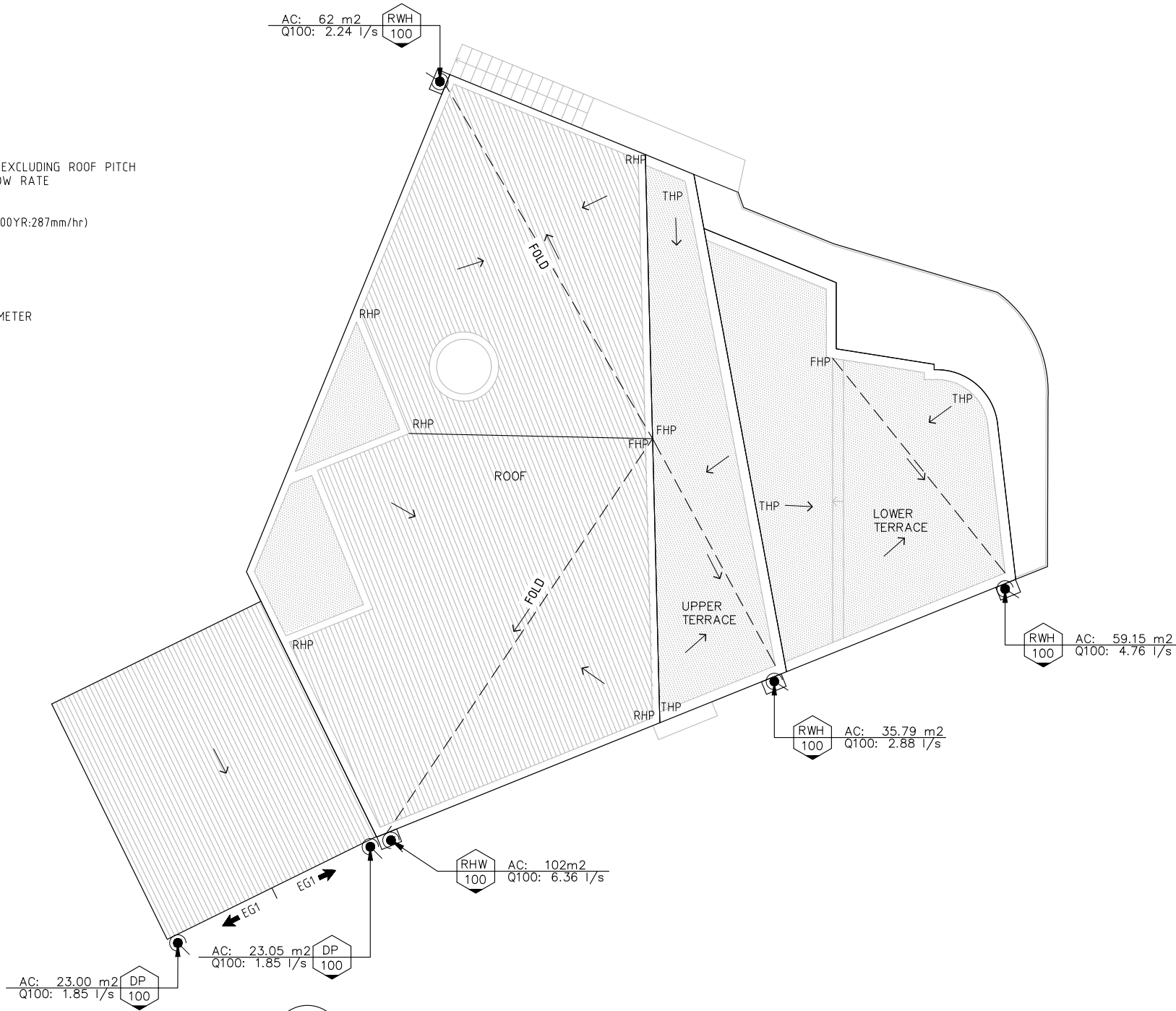
PIPE LAYOUT - UPPER

Size	Status	Drwg No.	Rev.
A3	APPROVED FOR DA SUBMISSION	DR-001	1

NOMENCLATURE  
DP - DOWNPIPE  
LS - LEVEL SPREADER  
EG - EAVES GUTTER  
HP - HIGH POINT  
RHP - ROOF HIGH POINT  
FHP - FOLD HIGH POINT  
THP - TERRACE HIGH POINT  
RWH - RAINWATER HEAD  
Ac - PLAN CATCHMENT AREA EXCLUDING ROOF PITCH  
Q100 - 100YR 5 MINUTE ARI FLOW RATE

GUTTER SIZING  
EAVES GUTTER DESIGNED TO ARI (100YR:287mm/hr)  
EG1 - MIN CSA 6,800 mm<sup>2</sup>

LEGEND  
TYPE DIA DOWNPIPE TYPE AND DIAMETER  
➔ DIRECTION OF FALL  
E LEVEL SPREADER



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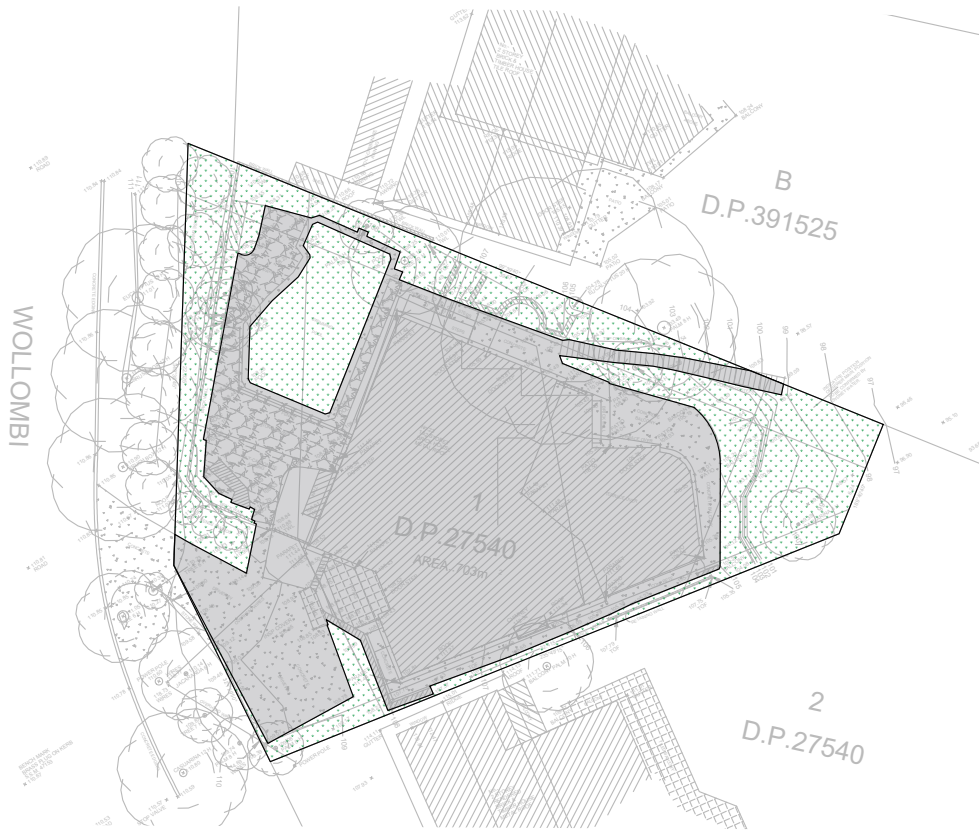
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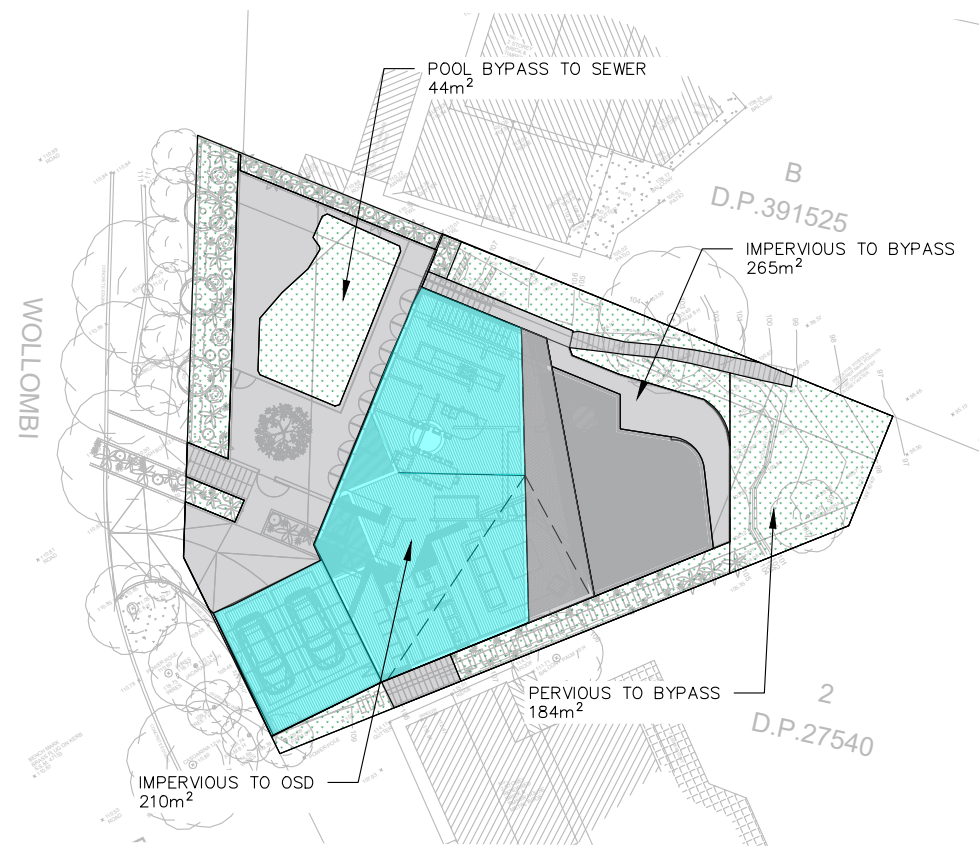
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23 WOLLOMBI ROAD, BILGOLA PLATEAU				
ROOF LAYOUT				
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			DR-002	Rev.
				1



PLAN 4 SITE AREA-EXISTING  
1: 400



PLAN 5 SITE AREA-PROPOSED  
1: 400

TABLE 1 – POST DEVELOPMENT FLOWS					
ARL	STATE OF NATURE (l/s)	OSD FLOW TO LEVEL SPREADER (l/s)	BYPASS FLOW (l/s)		TOTAL (l/s)
	100% PERVIOUS 659 <sup>(2)</sup> m <sup>2</sup>	IMPERVIOUS 210 m <sup>2</sup>	PERVIOUS 184 m <sup>2</sup>	IMPERVIOUS 265 m <sup>2</sup>	
5 YEAR	18	4	14		18
20 YEAR	29	5	22		27
100 YEAR	40	7	30		37

OSD TECHNICAL REQUIREMENTS FOR FLOWS

- PSD CALCULATED FROM THE "STATE OF NATURE" CASE (100% PERVIOUS SITE).
- POOL AREA (44m<sup>2</sup>) EXCLUDED FROM PRE AND POST CALCULATIONS.

LEGEND

- PERVIOUS (INCLUDING BYPASS)
- IMPERVIOUS (INCLUDING BYPASS)
- IMPERVIOUS TO OSD

EXISTING

SITE AREA: 703 m<sup>2</sup>  
PERVIOUS: 244 m<sup>2</sup> (35%)  
IMPERVIOUS: 459 m<sup>2</sup> (65%)

PROPOSED

SITE AREA: 703 m<sup>2</sup>  
PERVIOUS 228 m<sup>2</sup> (32%)  
IMPERVIOUS: 475 m<sup>2</sup> (68%)

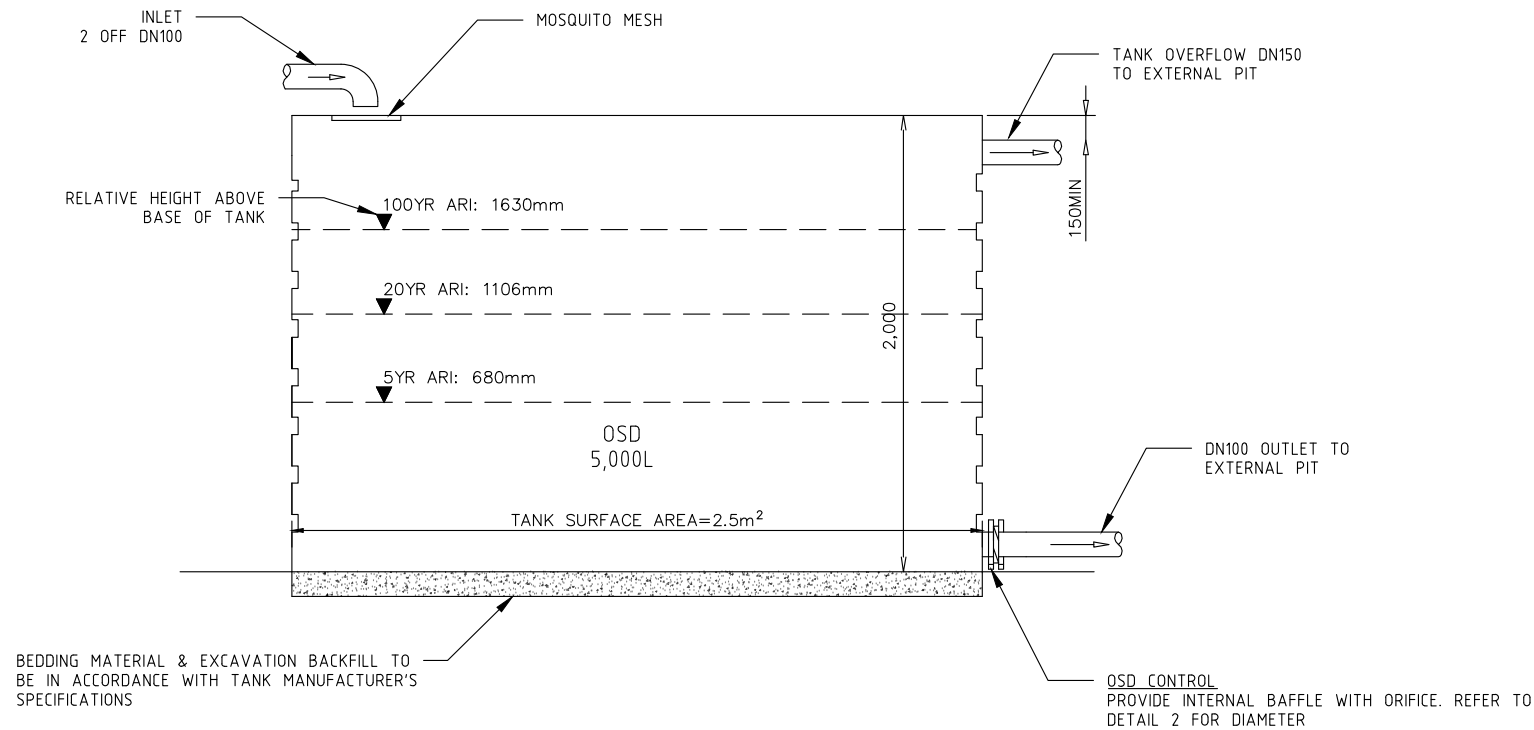
OSD CALCULATION:

NET IMPERVIOUS INCREASE (16m<sup>2</sup>) IS LESS THAN 50m<sup>2</sup>. IN ACCORDANCE WITH PITTWATER 21 DEVELOPMENT CONTROL PLAN PART 5.7 THE PROPOSED DEVELOPMENT DOES NOT REQUIRE OSD.

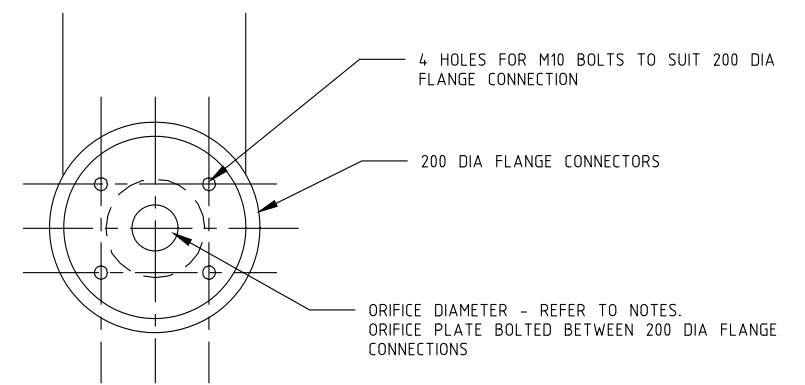
HOWEVER, OSD HAS BEEN PROVIDED TO RESTRICT FLOWS FROM THE LEVEL SPREADER TO THAT OF STATE OF NATURE CONDITIONS "GREEN FIELD".

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SITE AREAS																							
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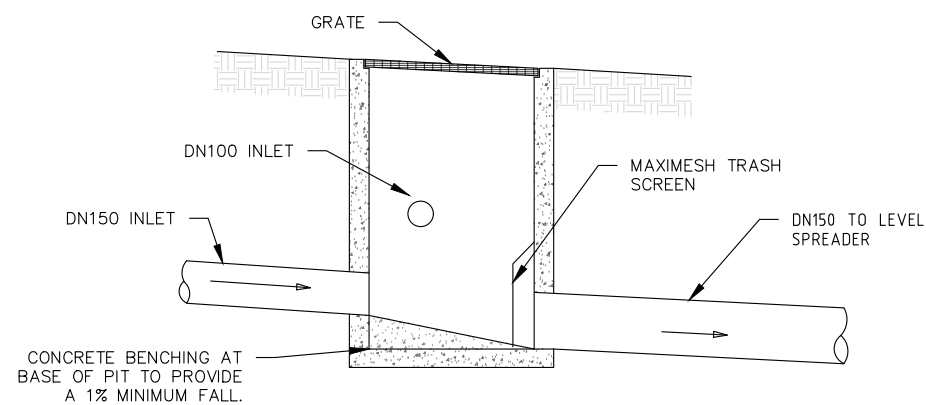


DETAIL 1  
OSD TANK ELEVATION AND CONNECTION DETAILS  
NOT TO SCALE



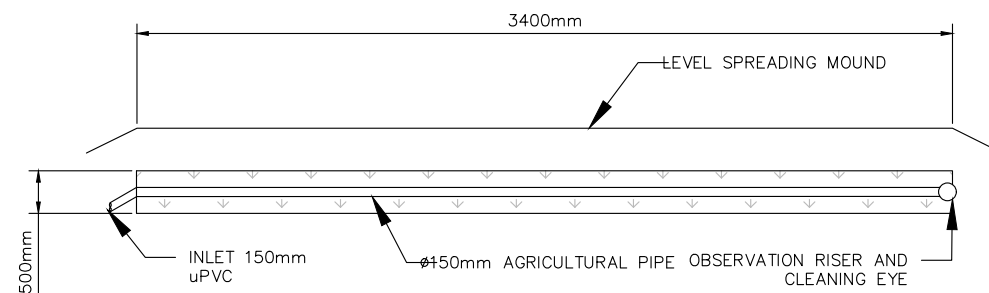
NOTES:  
1. ORIFICE PLATE DIAMETER TO BE 50mm

DETAIL 2  
ORIFICE PLATE  
NOT TO SCALE

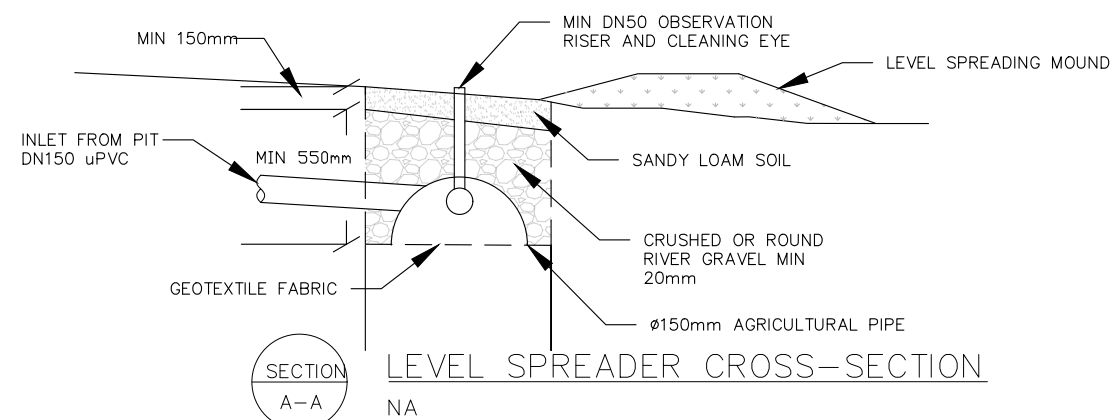


DETAIL 3  
450 SQUARE MEDIUM DUTY PIT  
NOT TO SCALE

- NOTES:
- 'LYSAGHT' MAXIMESH RH3030 (HOT DIPPED GALVANISED) OR EQUIVALENT.
  - MAXI MESH SCREENS MUST BE PLACED SUCH THAT THE LONG AXIS OF THE OVAL SHAPED HOLES ARE ORIENTATED HORIZONTALLY WITH THE PROTRUDING LIP ANGLED UPWARDS AND FACING TOWARDS THE OUTLET.



PLAN 6  
LEVEL SPREADER PLAN VIEW  
NA



SECTION A-A  
LEVEL SPREADER CROSS-SECTION  
NA

#### LEVEL SPREADER TRENCH CONSTRUCTION

- THE BASE OF THE BED MUST BE LEVEL TO ENSURE EVEN DISTRIBUTION OF STORMWATER. IT MUST ALSO BE SCARIFIED TO OVERCOME ANY SMEARING DURING EXCAVATION. BASE LEVELS SHOULD BE CHECKED WITH A DUMPY / LASER LEVEL.
- LEVEL SPREADING MOUND TO BE CONSTRUCTED PARALLEL TO THE NATURAL CONTOURS OF THE GROUND
- INSPECTION PORT ON DOWNHILL SIDE OF THE BED. MADE FROM 50 MM PVC PIPE WITH PERFORATIONS AT THE AGGREGATE LEVEL OF THE BED.
- BED DIMENSIONS ARE TYPICAL ONLY.
- MIN 2m FROM BUILDINGS AND BOUNDARY.
- TRENCHES ARE NOT TO BE PLACED UNDER THE CANOPY TREE AREAS OF ANY TREE.

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	No.	BY	DATE	DESCRIPTION	APPD																		



WOLLOMBI

B  
D.P.391525

2  
D.P.27540

ROOF DRAINAGE TO OSD FROM ABOVE, REFER TO DR-001 FOR CONTINUATION OF U/S PIPEWORK

SURFACE DRAINAGE FROM POOL AREA, REFER TO DR-001 FOR CONTINUATION OF U/S PIPEWORK

DN100 PIPEWORK TO HUG BUILDING LINE WHERE POSSIBLE TO MINIMISE IMPACT ON TREES.

450 SQ PIT WITH TRASH SCREEN. REFER TO DR-004

LEVEL SPREADER REFER TO DR-004.

100mm PIPEWORK SUSPENDED FROM CEILING AT H/L

5000 LITRE OSD TANK, REFER TO DR-004 FOR DETAILS

100mm OUTLET 150mm OVERFLOW

INTERNAL AREA TO BE GRADED TO EXTERNAL AREA AT 0.5% AS SHOWN

100mm PIPEWORK SUSPENDED FROM CEILING AT H/L

ROOF DRAINAGE TO OSD FROM ABOVE, REFER TO DR-001 FOR CONTINUATION OF U/S PIPEWORK

600mm JUNCTION PIT  
SURFACE DRAINAGE FROM ABOVE, REFER TO DR-001 FOR CONTINUATION OF U/S PIPEWORK

PLAN  
2

PIPE LAYOUT-LOWER GROUND FLOOR LEVEL  
1:150

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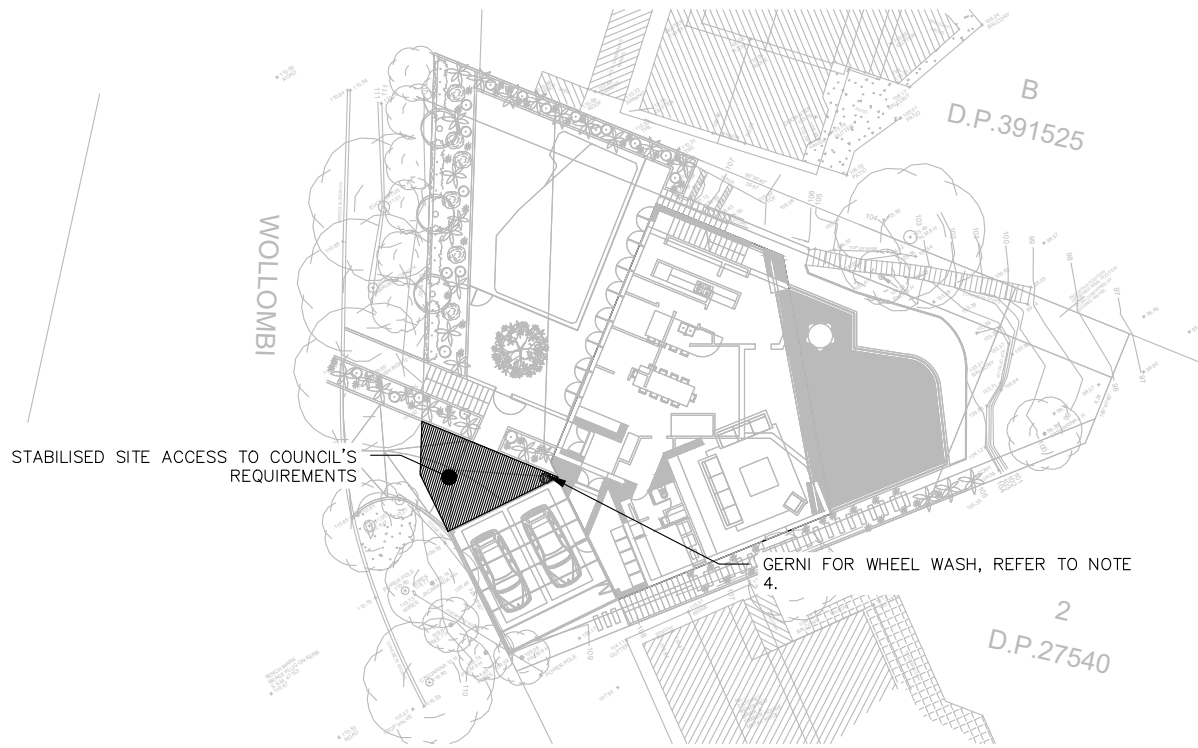
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PIPE LAYOUT - LOWER

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PLAN 7  
SEDIMENT & EROSION CONTROL PLAN—ROOF AND GROUND FLOOR LEVEL  
1: 400



PLAN 8  
SEDIMENT & EROSION CONTROL PLAN—LOWER GROUND FLOOR LEVEL  
1: 400

## GENERAL REQUIREMENTS

THE FOLLOWING EROSION AND SEDIMENT CONTROL PLAN (ESCP) HAS BEEN DEVELOPED IN GENERAL ACCORDANCE WITH LANDCOM (2004) – MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION, OTHERWISE KNOWN AS "THE BLUE BOOK". THIS PLAN SHOULD ALSO BE READ IN CONJUNCTION WITH MANAGING URBAN STORMWATER – SOILS AND CONSTRUCTION (VOLUME 2A INSTALLATION OF SERVICES).

## SITE ESTABLISHMENT

PRIOR TO THE COMMENCEMENT OF EARTHWORKS ON THE SITE THE FOLLOWING SHALL BE UNDERTAKEN AS A MINIMUM:

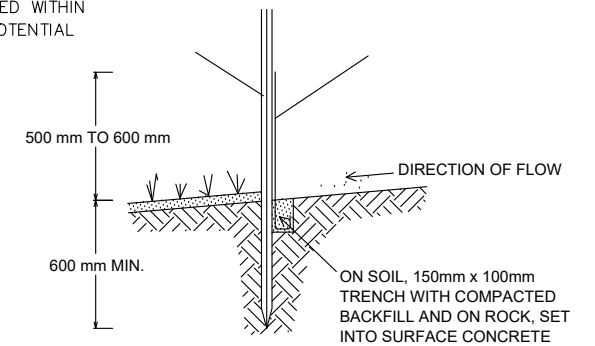
1. ERECT SAFETY FENCING WITH SIGNAGE CLEARLY INDICATING THAT THE SITE IS A CONSTRUCTION ZONE AND ACCESS IS RESTRICTED AS DEEMED NECESSARY.
2. ERECT CLEARLY VISIBLE BARRIER FENCING AT LOCATIONS SHOWN OR IF NOT SHOWN AT THE DISCRETION OF THE SITE SUPERINTENDENT TO ENSURE TRAFFIC IS CONTROLLED AND TO PROHIBIT UNNECESSARY SITE DISTURBANCE.
3. WHERE REQUIRED AT THE DISCRETION OF THE SITE SUPERINTENDENT, INSTALL STABILISED SITE ACCESS AT SITE ACCESS POINT TO PREVENT CONSTRUCTION EQUIPMENT FROM CARRYING SEDIMENT OFF THE SITE ONTO SURROUNDING ROADS.
4. PROVIDE GERNI PRESSURE CLEANER AT SITE EXIT POINT FOR TYRE WASH DOWN AT THE DISCRETION OF THE SITE SUPERINTENDENT.
5. INSTALL SEDIMENT AND EROSION CONTROL DEVICES IN ACCORDANCE WITH THE CONSTRUCTION DETAILS SPECIFIED IN THIS DRAWING SET AND/OR THE REQUIREMENTS OF THE 'BLUE BOOK'.

## CONSTRUCTION

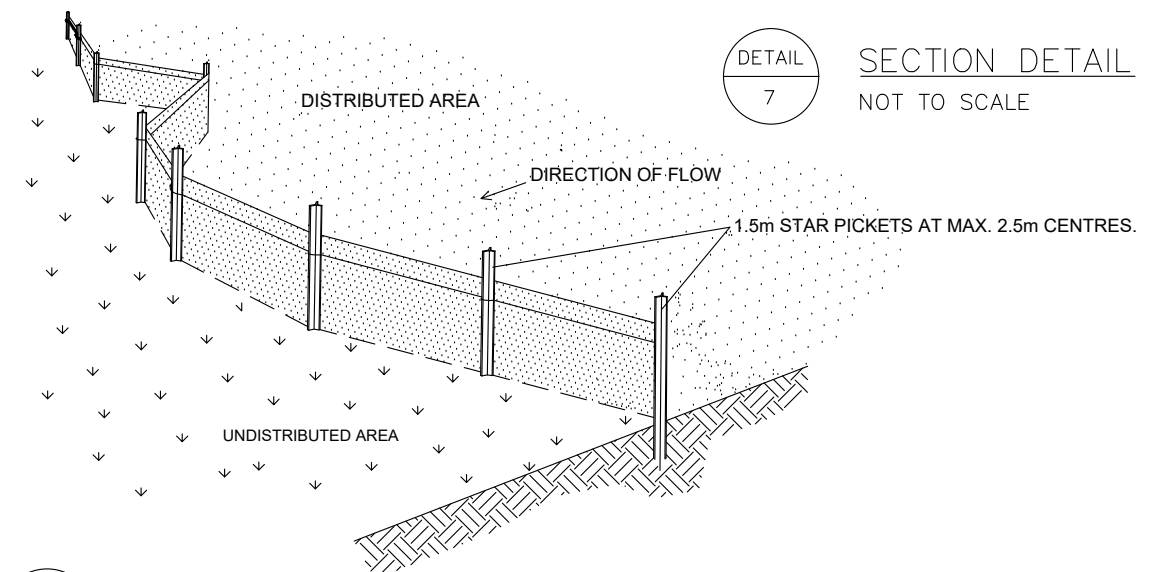
6. USE SANDBAGS, HAY BALES AND/OR GRAVEL FILLED GEOTEXTILE SOCKS TO FILTER AND CONVEY STORMWATER RUNOFF WITHIN THE SITE.
7. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT.
8. INLET FILTERS SHALL BE INSTALLED WHERE SHOWN TO PREVENT WATER FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE. IF THE LOCATION OF INLET FILTERS ARE NOT SHOWN ON THE PLAN THEIR LOCATION SHALL BE AT THE DISCRETION OF THE SUPERINTENDENT.
9. STAGE WORK AND PROGRAMMING OF CONSTRUCTION ACTIVITIES TO MINIMISE THE EXTENT AND DURATION OF OPEN EXCAVATION. AVOID OPENING TRENCHES WHENEVER THE RISKS OF STORMS ARE HIGH.
10. DIVERT SURFACE WATER AWAY FROM EXCAVATION AREAS WITH SANDBAGS OR EQUIVALENT.
11. FOR DEWATERING OF EXCAVATION AREAS SET UP TEMPORARY DEWATERING PUMP OUT SYSTEM AS REQUIRED AND ENSURE FLOCCULATION IS USED IF WATER IS NOT CLEAR (i.e. SEDIMENT > 50mg/L). FOR RATES AND AGENTS REFER APPENDIX E NSW DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER SOILS & CONSTRUCTION". DISCHARGE SHALL BE DIRECTLY TO COUNCIL'S PIPED DRAINAGE SYSTEM. DO NOT DISCHARGE TO THE KERB.
12. STOCKPILES SHALL BE LOCATED NO CLOSER THAN 2m (PREFERABLY 5m) FROM CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS. PROTECT STOCKPILES FROM EROSION BY RAIN AND SURFACE FLOWS.
13. ENSURE CHEMICAL AND FUELS ARE STORED WITHIN BUNDED AREAS AND ELEVATED ABOVE POTENTIAL FLOW PATHS.

## MAINTENANCE

14. ALL DEDICATED SEDIMENT STORAGE ZONES WITHIN TRAPS SHALL BE CLEANED WHEN A MAXIMUM OF 60% FULL OF SOLID MATERIALS AND DISPOSED OF IN A MANNER THAT PREVENTS FURTHER POLLUTION OF THE SITE.
15. TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES WILL BE RETAINED UNTIL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS STABILISED.
16. THE CONTRACTOR SHALL INSPECT THE SITE AT LEAST WEEKLY AND AFTER ANY STORM EVENT AND WILL:
  - ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS;
  - REMOVE SPILLED SAND OR OTHER MATERIALS FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS (ESPECIALLY DRAINS AND TEMPORARY FLOW PATHS)
  - REMOVE TRAPPED SEDIMENT WHENEVER LESS THAN DESIGN CAPACITY REMAINS WITHIN THE STRUCTURE;
  - CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS REQUIRED;
  - MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS STABILISED; AND
  - REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES AS THE LAST ACTIVITY IN THE CONSTRUCTION PROGRAM.



DETAIL 7  
SECTION DETAIL  
NOT TO SCALE



DETAIL 6  
TYPICAL SEDIMENT FENCE  
NOT TO SCALE

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