

18 VILLIERS ROAD, PADSTOW HEIGHTS

STORMWATER MANAGEMENT PLANS

GENERAL NOTES:

1. ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH COUNCIL'S ENGINEERING GUIDE FOR DEVELOPMENT AND CIVIL WORKS SPECIFICATION.
2. 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.
3. 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 .
4. 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 OF MDM ENGINEERING SERVICES PTY. LTD. AND OR THE PRINCIPAL CERTIFYING AUTHORITY IS DONE SO AT THE CONSTRUCTORS OWN RISK.
5. 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.
6. IF THE PRINCIPAL CERTIFYING AUTHORITY IS NOT THE 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.
7. 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.
8. 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. HOARDINGS OR FENCES ARE TO BE STRUCTURALLY ADEQUATE. THE CONTRACTOR SHALL OBTAIN AN APPROVAL FROM COUNCIL PRIOR TO ERECTING THE HOARDING OR FENCE.

9. ALL NEW WORKS SHALL MAKE A SMOOTH CONNECTION WITH ANY FORMATIONS, STRUCTURES, ETC.
10. 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.
11. THE CONTRACTOR SHALL USE MANUFACTURED ITEMS IN THE WORK ONLY IN ACCORDANCE WITH THE CURRENT PUBLISHED
12. THE WORKS SHALL BE CONSTRUCTED IN SUCH A MANNER THAT THERE IS MINIMUM DISTURBANCE TO EXISTING TREES AND VEGETATION.
13. THE PUBLIC FOOTWAY AND ROADWAY FRONTING THE SITE SHALL BE MAINTAINED IN A SAFE AND UNOBSTRUCTED MANNER AT ALL TIMES DURING THE CONSTRUCTION WORKS.
14. 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.
15. 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.
16. BENCHMARK, SSM's PERMANENT MARKS TO BE A.H.D.
17. DRIVEWAYS/LAYBACKS TO HAVE MINIMUM 1.0m CLEARANCE FROM POWER POLES, PIT LINTELS AND STORMWATER DRAINS, AND 6.0m CLEARANCE FROM KERB RETURN TANGENT POINT.
18. VEHICULAR CROSSINGS TO BE 4.0m WIDE AT KERB AND GUTTER.
19. TREES THAT ARE NOT TO BE REMOVED SHALL BE PRESERVED.

STORMWATER NOTES:

1. PIPES DN375 AND LARGER TO BE STEEL REINFORCED CONCRETE PIPES CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS U.N.O.
2. PIPES DN300 AND SMALLER SHALL BE GRADE SH (SEWER GRADE) uPVC WITH RUBBER RING JOINTS.
3. EQUIVALENT STRENGTH FIBRE REINFORCED CONCRETE PIPES MAY BE USED UP TO DN450.
4. PIPES FOR SUB-SOIL DRAINS SHALL BE SLOTTED 100MM DIAMETER CLASS 1000 WRAPPED IN GEOFABRIC, U.O.N, COMPLYING WITH THE REQUIREMENTS OF AS 2439.
5. PRECAST PITS, WHERE ALLOWED, AND THE INSITU BASE SHALL COMPLY WITH THE REQUIREMENT OF THE MANUFACTURER.
6. PROVIDE STEP IRONS FOR PITS DEEPER THAN 1.2m.
7. COMPRESSIVE STRENGTH FOR CAST IN-SITU PITS SHALL BE 25MPa UNLESS NOTED OTHERWISE
8. ALL PITS SHALL BE BENCHED AND FLOW STREAMLINED.
9. ALL MILD STEEL FIXTURES INCLUDING GRATES, FRAMES, STEP IRONS, LADDERS, ETC., SHALL BE HOT DIP GALVANISED. GALVANISING SHALL COMPLY WITH THE REQUIREMENTS OF AS 1214 OR AS 1650, AS APPROPRIATE.
10. GEOFABRIC FILTER SHALL BE PERMEABLE, NON-WOVEN FABRIC MANUFACTURED FROM A POLYMER SUCH AS POLYPROPYLENE OR POLYESTER OF MASS NOT LESS THAN 135G/M2.
11. THE MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS: CONCRETE AND FRC PIPES: EXTERNAL PIPE DIAMETER PLUS 400MM. uPVC PIPE: EXTERNAL DIAMETER OF PIPE PLUS 200MM. SUBSOIL PIPE: 250MM.
12. ALL PIPES SHALL BE PLACED CENTRALLY WITHIN THE TRENCH WITH EQUAL CLEARANCE EACH SIDE.
13. 100mm DIA. SUBSOIL DRAINAGE PIPE 3m LONG WRAPPED IN FILTER SOCK TO BE PROVIDED IN PIPE TRENCHES UPSTREAM OF ALL PITS.
14. PIPE BEDDING MATERIAL SHALL BE CLEAN COARSE RIVER SAND WITH DEPTH AS FOLLOWS: CONCRETE AND FRC PIPES: 100MM (175MM IN ROCK) UPVC PIPE: 75MM (100MM IN ROCK) SUBSOIL DRAINS: 50MM
15. ALL PIPES SHALL BE BACKFILLED WITH GRANULAR MATERIAL SUCH AS QUARRY FINES OR COARSE RIVER SAND TO A MINIMUM OF 150MM ABOVE THE PIPE. THE GRANULAR MATERIAL SHALL BE PLACED IN 150MM THICK MAXIMUM LAYERS AND COMPACTED TO ACHIEVE A DENSITY INDEX (ID) OF 70%. FREQUENCIES OF COMPACTION TESTS FOR TRENCHES SHALL BE 1 TEST PER 2 LAYERS PER 40 LINEAR METRE.
16. 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. MATERIAL 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.
17. FILTER MATERIAL FOR SUBSOIL SHALL BE COARSE SAND OR CRUSHED STONE COMPLYING WITH ONE OF THE GRADINGS 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 (ID) OF 60%.
18. UNLESS OTHERWISE DETAILED OR PERMITTED, THE MINIMUM GRADE OF ALL PIPE WORKS SHALL BE 1.0%.
19. PRIOR TO ISSUE OF PRACTICAL COMPLETION THE CONTRACTOR SHALL CARRY OUT CCTV SURVEY OF ALL PIPES AND SUBMIT DVD AND WRITTEN REPORT THAT ALL PIPES ARE FREE OF DEFECTS LAID TO THE SPECIFICATION.

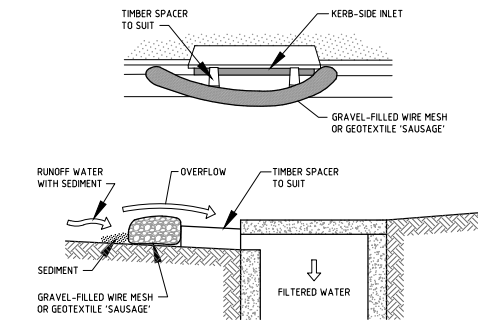
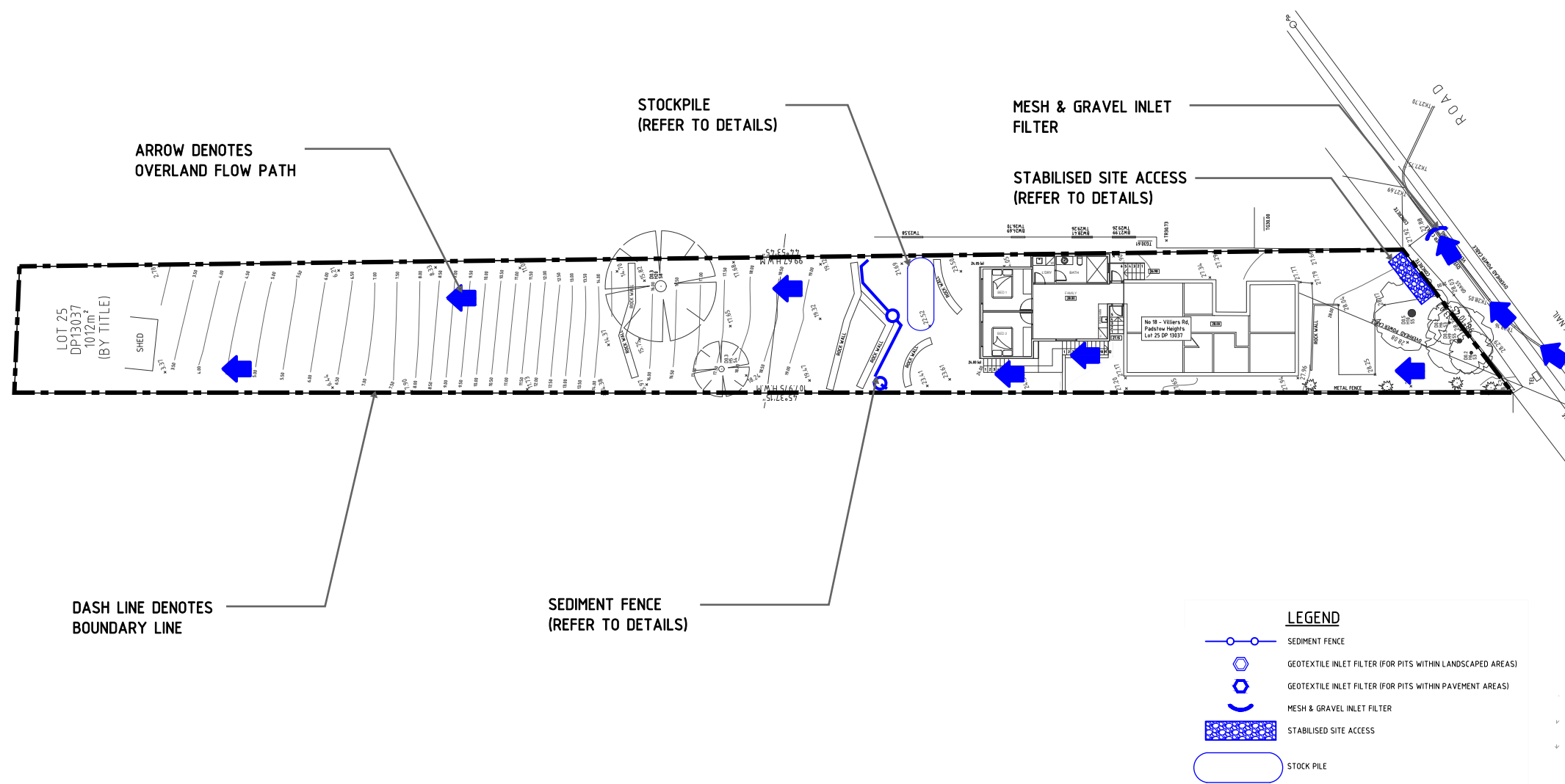
SERVICES NOTES:

1. IT IS THE CONSTRUCTORS RESPONSIBILITY TO NOTIFY THE RELEVANT SERVICES AUTHORITIES OF THE WORKS AND VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO ANY CONSTRUCTION ACTIVITIES COMMENCING.
2. THE CONSTRUCTOR SHALL LIAISE AND COORDINATE THE TIMING OF THE CONSTRUCTION OF THE WORKS WITH THE RELEVANT SERVICES AUTHORITIES AND/OR OTHER CONSTRUCTORS INSTALLING SERVICES CONCURRENTLY AT THIS SITE.
3. THE LOCATION OF ALL EXISTING SERVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND HAVE BEEN TAKEN FROM INFORMATION PROVIDED BY THE RELEVANT SERVICE AUTHORITIES.
4. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED TO EXISTING SERVICES AS A RESULT OF THE CONSTRUCTION WORKS.

GEOTECHNICAL NOTES:

1. ALL SEDIMENTATION CONTROL MEASURES TO BE INSTALLED PRIOR TO COMMENCEMENT OF WORKS.
2. FILL COMPACTION AS PER SPECIFICATION.
3. ALL TESTING CONTROLLED AND CERTIFIED BY NATA REGISTERED LABORATORY.
4. STRIP AND STOCKPILE TOPSOIL PRIOR TO FILLING; RESPREAD ON COMPLETION OF EARTHWORKS.
5. RESIDENTIAL LOTS TO BE INDIVIDUALLY CLASSIFIED

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					COVER SHEET, NOTES & LEGEND - SHEET 01			PROJECT NAME 18 VILLIERS RD, PADSTOW HEIGHTS				ENGINEER L.N	STATUS DA	PROJECT SUPERINTENDENT'S SIGNATURE:			

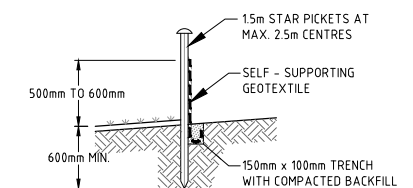


CONSTRUCTION NOTES:

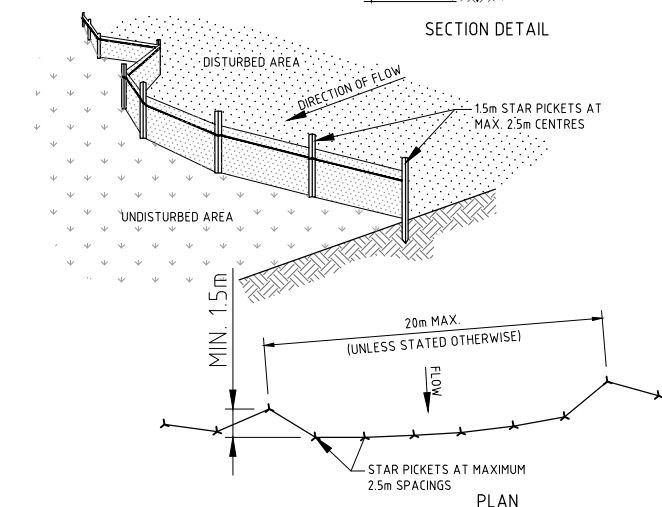
1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm to 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. COVER THE AREA WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDED THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

MESH AND GRAVEL INLET FILTER DETAIL

NOT TO SCALE



SECTION DETAIL

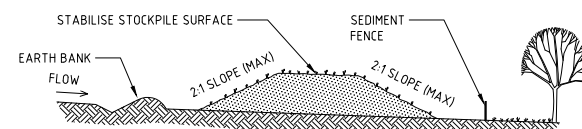


CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING 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 PER SECOND 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 15 METRE LONG STAR PICKETS INTO THE GROUND AT 2.5 METRE 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 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 150-mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE DETAIL
NOT TO SCALE

SITE PLAN
SCALE 1: 400

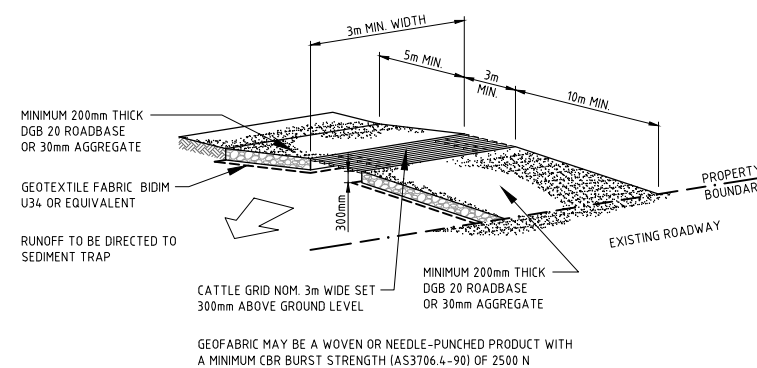


CONSTRUCTION NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARDOUS AREAS.
2. CONSTRUCT ON THE CONTOUR ON A LOW, FLAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE.

STOCK PILE DETAIL

NOT TO SCALE

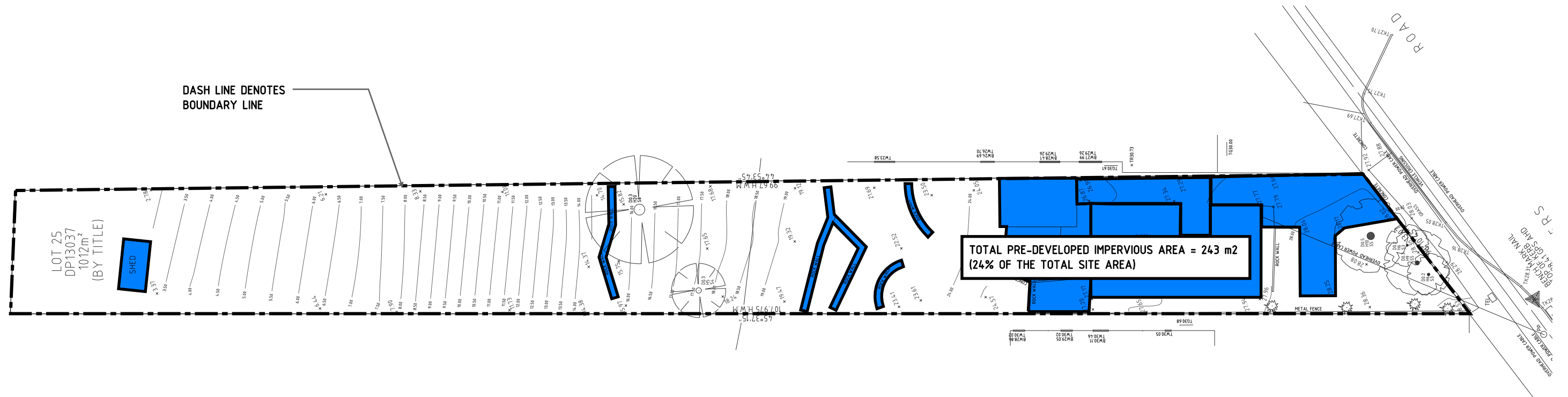


CONSTRUCTION NOTES:

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

STABILISED SITE ACCESS WITH SHAKER GRID DETAIL

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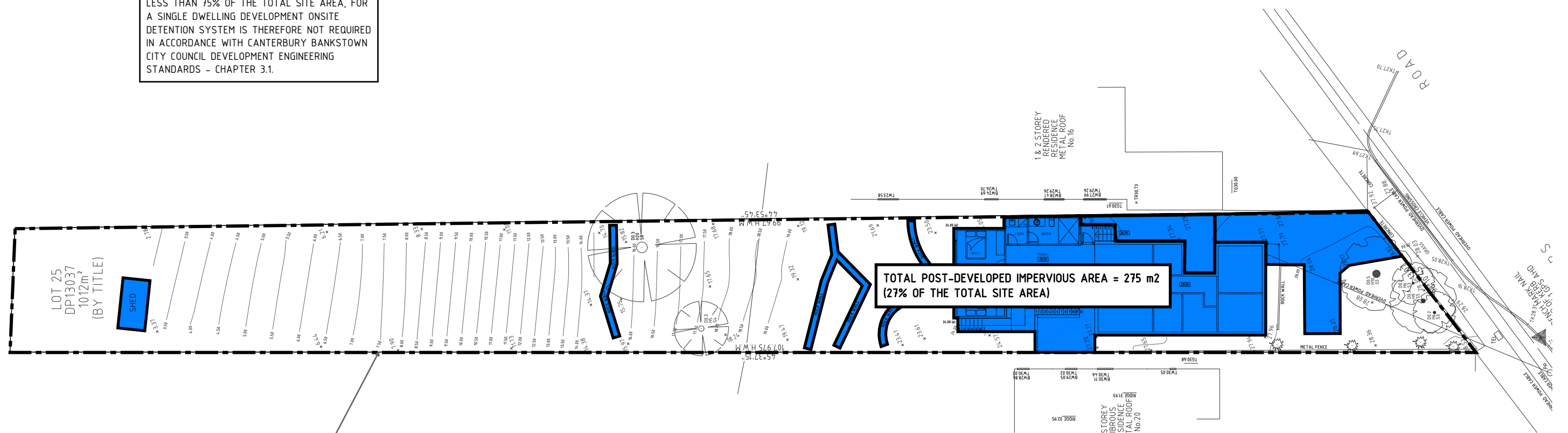


PRE-DEVELOPED IMPERVIOUS CATCHMENT PLAN

SCALE 1:300

IMPORTANT NOTES:

AS THE TOTAL PROPOSED IMPERVIOUS AREA IS LESS THAN 75% OF THE TOTAL SITE AREA, FOR A SINGLE DWELLING DEVELOPMENT ONSITE DETENTION SYSTEM IS THEREFORE NOT REQUIRED IN ACCORDANCE WITH CANTERBURY BANKSTOWN CITY COUNCIL DEVELOPMENT ENGINEERING STANDARDS – CHAPTER 3.1.



POST-DEVELOPED IMPERVIOUS CATCHMENT PLAN

SCALE 1:300

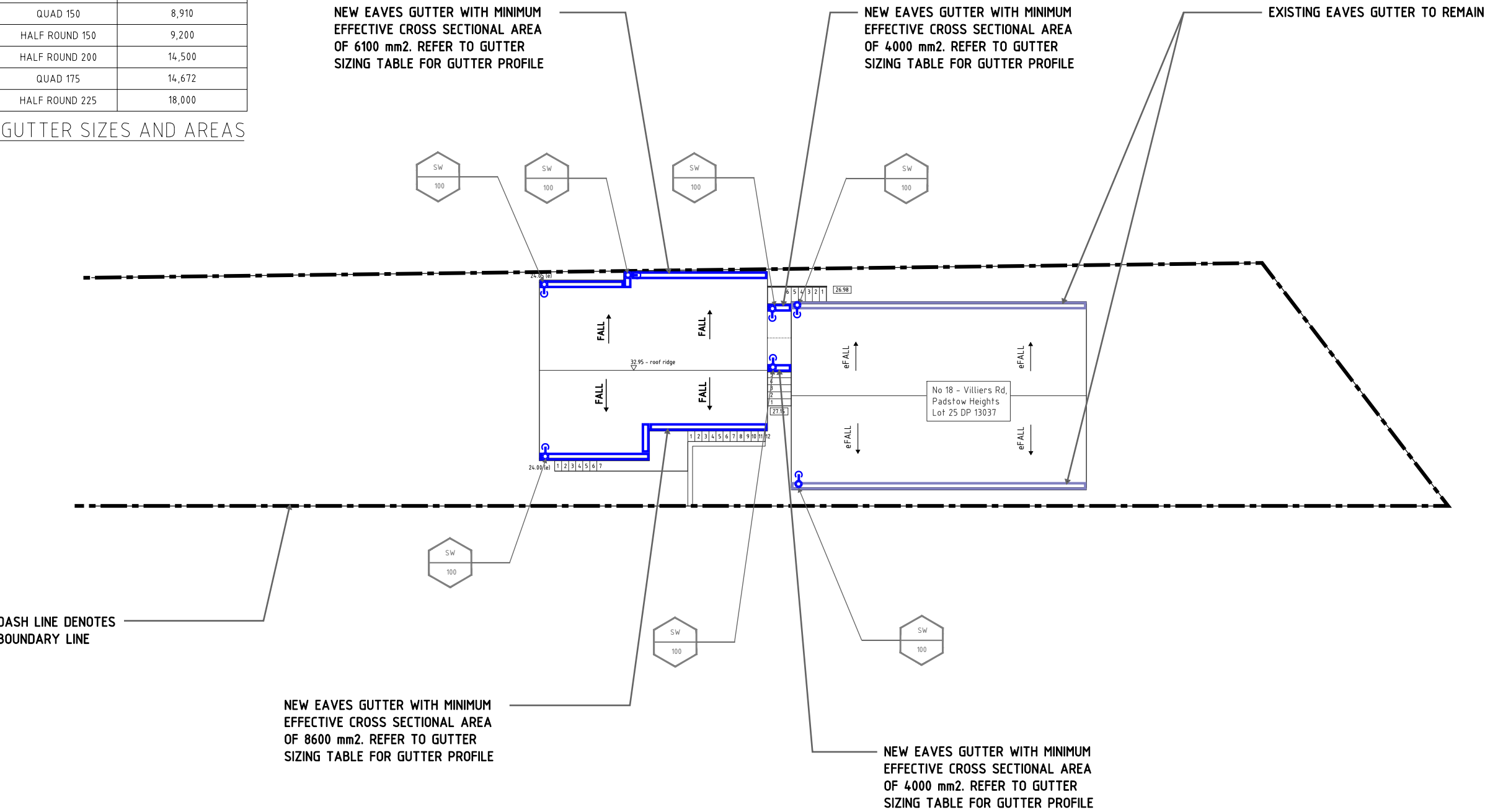
DASH LINE DENOTES
BOUNDARY LINE

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NOTE:
CROSS SECTIONAL AREAS SHOWN ARE FOR
NON-SLOTTED EAVES GUTTERS. EAVES GUTTERS BY
LYSAGHT.
CONTRACTOR TO CONFIRM WITH SUPPLIER CROSS
SECTIONAL AREA OF EAVES GUTTER PRIOR TO
INSTALLATION.

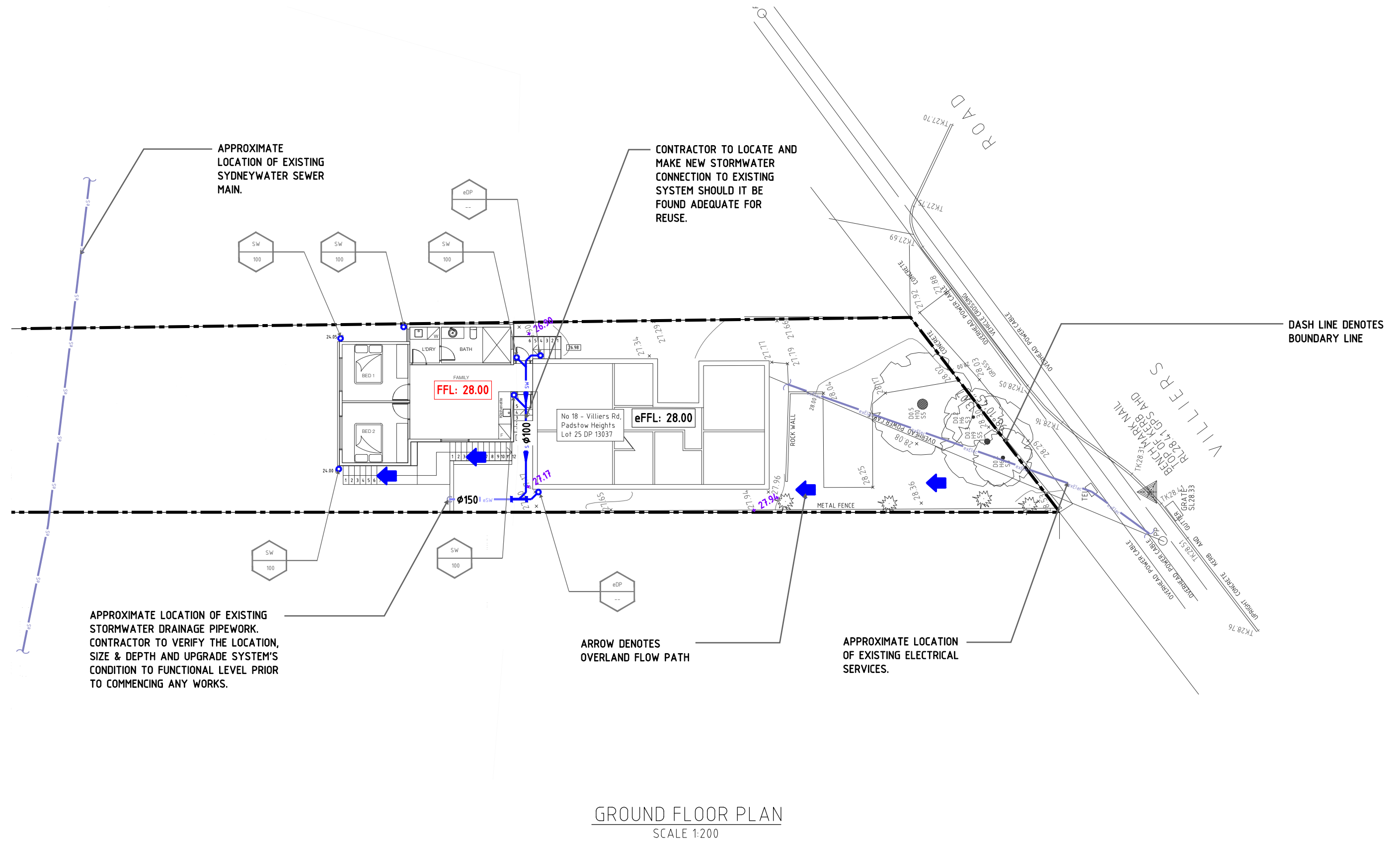
GUTTER PROFILE	EFFECTIVE CROSS SECTIONAL AREA (mm ²)
HALF ROUND 100	4,300
QUAD LO-FRONT 115	6,165
HALF ROUND 125	6,300
QUAD 150	8,910
HALF ROUND 150	9,200
HALF ROUND 200	14,500
QUAD 175	14,672
HALF ROUND 225	18,000

GUTTER SIZES AND AREAS

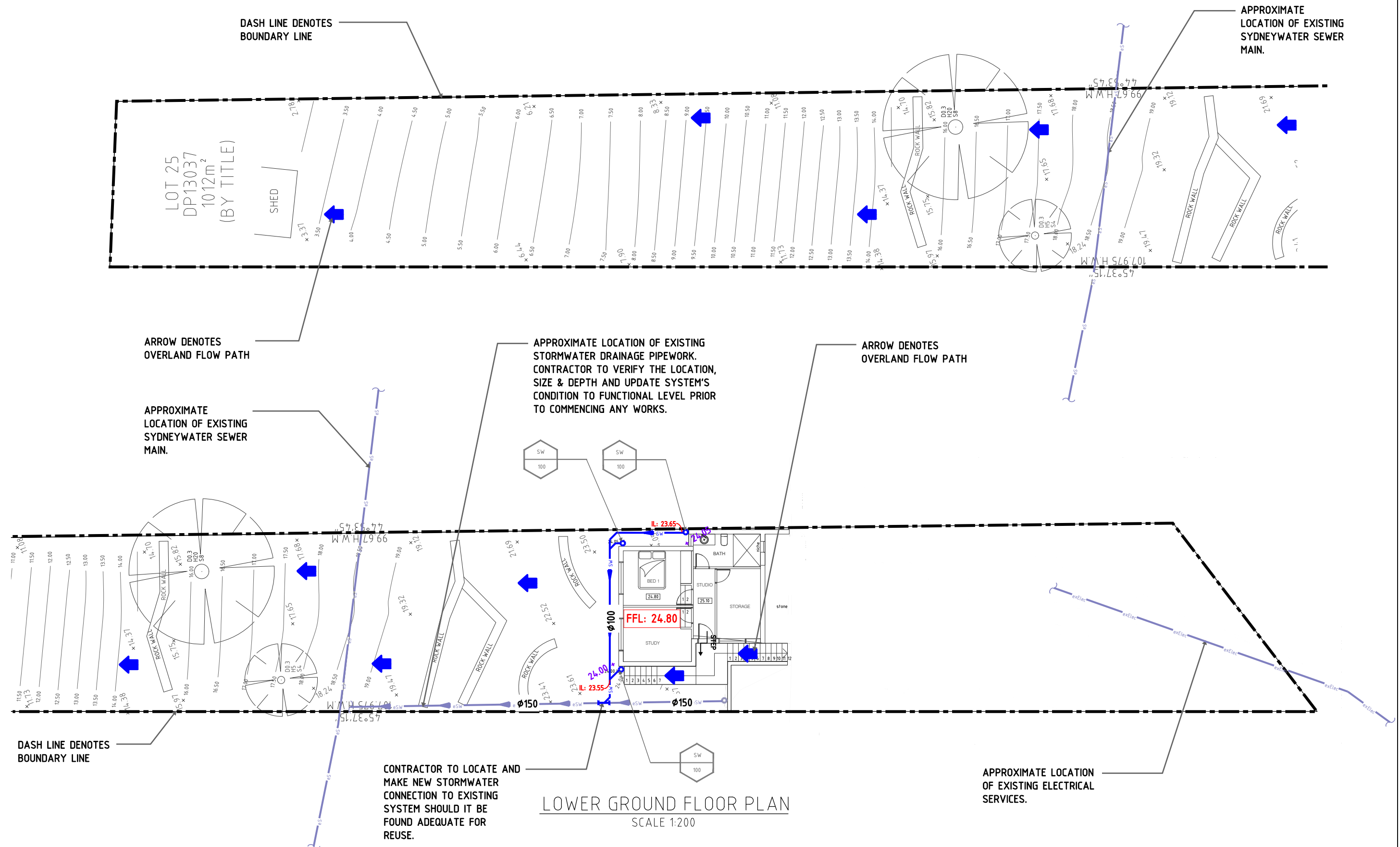


ROOF PLAN
SCALE 1:200

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					GROUND FLOOR PLAN		PROJECT NAME 18 VILLIERS RD, PADSTOW HEIGHTS				ENGINEER L.N		STATUS DA		PROJECT SUPERINTENDENT'S SIGNATURE: _____ DATE: _____			
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