

PROPOSED RESIDENCE
 UPPER FFL: 89.650
 MID FFL: 88.950
 LOWER FFL: 88.425

SEDIMENT & EROSION CONTROL PLAN

1:100
 - DENOTES SEDIMENT FENCE

STANDARD LINE TYPES AND SYMBOLS:

| | | | |
|--|--------------------------------|--|--------------------------------|
| | PROPOSED KERB & GUTTER | | DESIGN CENTRELINE |
| | EXISTING KERB & GUTTER | | EXISTING EDGE OF BITUMEN |
| | PROPOSED BELOW GROUND PIPELINE | | TELECOMMUNICATION CONDUIT |
| | PROPOSED SUSPENDED PIPELINE | | GAS MAIN |
| | EXISTING PIPELINE | | WATER MAIN |
| | SUBSOIL DRAINAGE LINE | | SEWER MAIN |
| | PROPOSED KERB INLET PIT | | UNDERGROUND ELECTRICITY CABLES |
| | EXISTING KERB INLET PIT | | PERMANENT MARK & S.S.M. |
| | PROPOSED JUNCTION OR INLET PIT | | BENCH MARK, SURVEY STATION |
| | EXISTING JUNCTION OR INLET PIT | | |

SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT AND EROSION CONTROL SHALL BE EFFECTIVELY MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL THE SITE HAS BEEN STABILISED OR LANDSCAPED TO THE SUPERINTENDENT'S SATISFACTION.

A SINGLE ALL WEATHER ACCESS WAY WILL BE PROVIDED AT THE FRONT OF THE PROPERTY CONSISTING OF 50-75 AGGREGATE OR SIMILAR MATERIAL AT A MINIMUM THICKNESS OF 150 LAID OVER NEEDLE-PUNCHED GEOTEXTILE FABRIC AND CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT NO SPOIL OR FILL ENROACHES UPON ADJACENT AREAS FOR THE DURATION OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT KERB INLETS AND DRAINS RECEIVING STORMWATER SHALL BE PROTECTED AT ALL TIMES DURING DEVELOPMENT. KERB INLET SEDIMENT TRAPS SHALL BE INSTALLED ALONG THE IMMEDIATE VICINITY ALONG THE STREET FRONTAGE.

SEDIMENT FENCING SHALL BE SECURED BY POST (WHERE METAL STAR PICKETS ARE USED PLASTIC SAFETY CAPS SHALL BE USED) AT 2000 INTERVALS WITH GEOTEXTILE FABRIC EMBEDDED 200 IN SOIL.

ALL TOPSOIL STRIPPED FROM THE SITE AND STOCKPILED DOES NOT INTERFERE WITH DRAINAGE LINES AND STORMWATER INLETS AND WILL BE SUITABLY COVERED WITH AN IMPERVIOUS MEMBRANE MATERIAL AND SCREENED BY SEDIMENT FENCING.

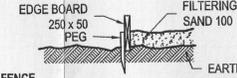
SOIL CONSERVATION NOTE:

PRIOR TO COMMENCEMENT OF CONSTRUCTION PROVIDE 'SEDIMENT FENCE', 'SEDIMENT TRAP' AND WASHOUT AREA TO ENSURE THE CAPTURE OF WATER BORNE MATERIAL GENERATED FROM THE SITE.

MAINTAIN THE ABOVE DURING THE COURSE OF CONSTRUCTION, AND CLEAR THE 'SEDIMENT TRAP' AFTER EACH STORM.

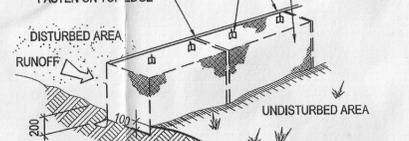
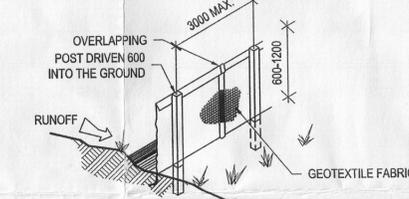
SEDIMENT TRAP
 1000 x 1000 WIDE 600 DEEP PIT, LOCATED AT THE LOWEST POINT TO THE TRAP SEDIMENT.

WASHOUT AREA
 TO BE 1800 x 1800 ALLOCATED FOR THE WASHING OF TOOL & EQUIPMENT.



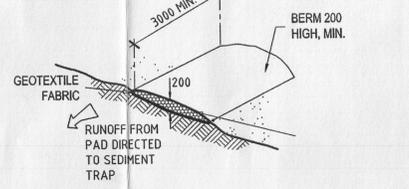
SEDIMENT FENCE

PROVIDE 'SEDIMENT FENCE' ON DOWN SLOPE BOUNDARY AS SHOWN ON PLAN. FABRIC TO BE BURIED BELOW GROUND AT LOWER EDGE.

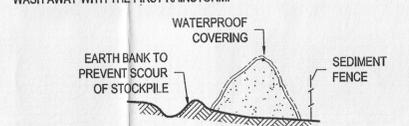


DRAINAGE AREA 0.5 HA. MAX. SLOPE GRADIENT 1:2 MAX. SLOPE LENGTH 50m.

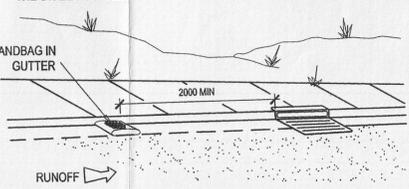
VEHICLE ACCESS TO SITE
 VEHICLE ACCESS TO THE BUILDING SITE SHOULD BE RESTRICTED TO A SINGLE POINT SO AS TO REDUCE THE AMOUNT OF SOIL DEPOSITED ON THE STREET PAVEMENT.



BUILDING MATERIAL STOCKPILES
 ALL STOCKPILES OF BUILDING MATERIAL SUCH AS SAND AND SOIL MUST BE PROTECTED TO PREVENT SCOUR AND EROSION. THEY SHOULD NEVER BE PLACED IN THE STREET GUTTER WHERE THEY WILL WASH AWAY WITH THE FIRST RAINSTORM.



SANDBAG KERB SEDIMENT TRAP
 IN CERTAIN CIRCUMSTANCES EXTRA SEDIMENT TRAPPING MAY BE NEEDED IN THE STREET GUTTER.



GENERAL NOTES

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS ARE IN MILLIMETRES & ALL LEVELS ARE IN METRES, UNO (UNLESS NOTED OTHERWISE).

NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DURING EXCAVATION WORK THE STRUCTURE SHALL BE MAINTAINED IN A STABLE AND NO PART SHALL BE OVERSTRESSED.

ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE SPECIFICATION.

EXISTING SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM SUPPLIED DATA AND SUCH THEIR ACCURACY CAN NOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK.

ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACK FILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCIL.

ALL TRENCH BACK FILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS UNLESS DIRECTED OTHERWISE.

STORMWATER DRAINAGE

THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3 - 1990 'STORMWATER DRAINAGE' & AS/NZS 3500.3.2-1998 'STORMWATER DRAINAGE - ACCEPTABLE SOLUTIONS'.

ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.

ANY VARIATIONS TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL.

DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100 COLORBOND/ZINCALUME STEEL, UNO.

BOX COLORBOND OR ZINCALUME STEEL. GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.

EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL.

SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

CONSTRUCTION CERTIFICATE
 No. 08/197
 These plans form part of the above Construction Certificate as issued by Greg Hough of Get Certified Building Services Pty Ltd Accreditation No: BFB0186

| | | |
|----------|----------|-----------------------|
| REVISION | DATE | AMENDMENT DESCRIPTION |
| A | 11.02.09 | ISSUED FOR APPROVAL |

COPYRIGHT
 ECLIPSE CONSULTING ENGINEERS PTY LTD is the owner of the copyright subsisting in these drawings, plans, designs and specifications. They must not be used, reproduced or copied in whole or in part without prior written consent of ECLIPSE CONSULTING ENGINEERS PTY LTD

ECLIPSE CONSULTING ENGINEERS
 Eclipse Consulting Engineers Pty Ltd
 384/12 Century Circuit
 Northwest Central
 Baulkham Hills NSW 2153
 Phone: (02) 9894 8500
 Fax: (02) 8850 0212
 info@eclipse-consulting.com.au
 www.eclipse-consulting.com.au

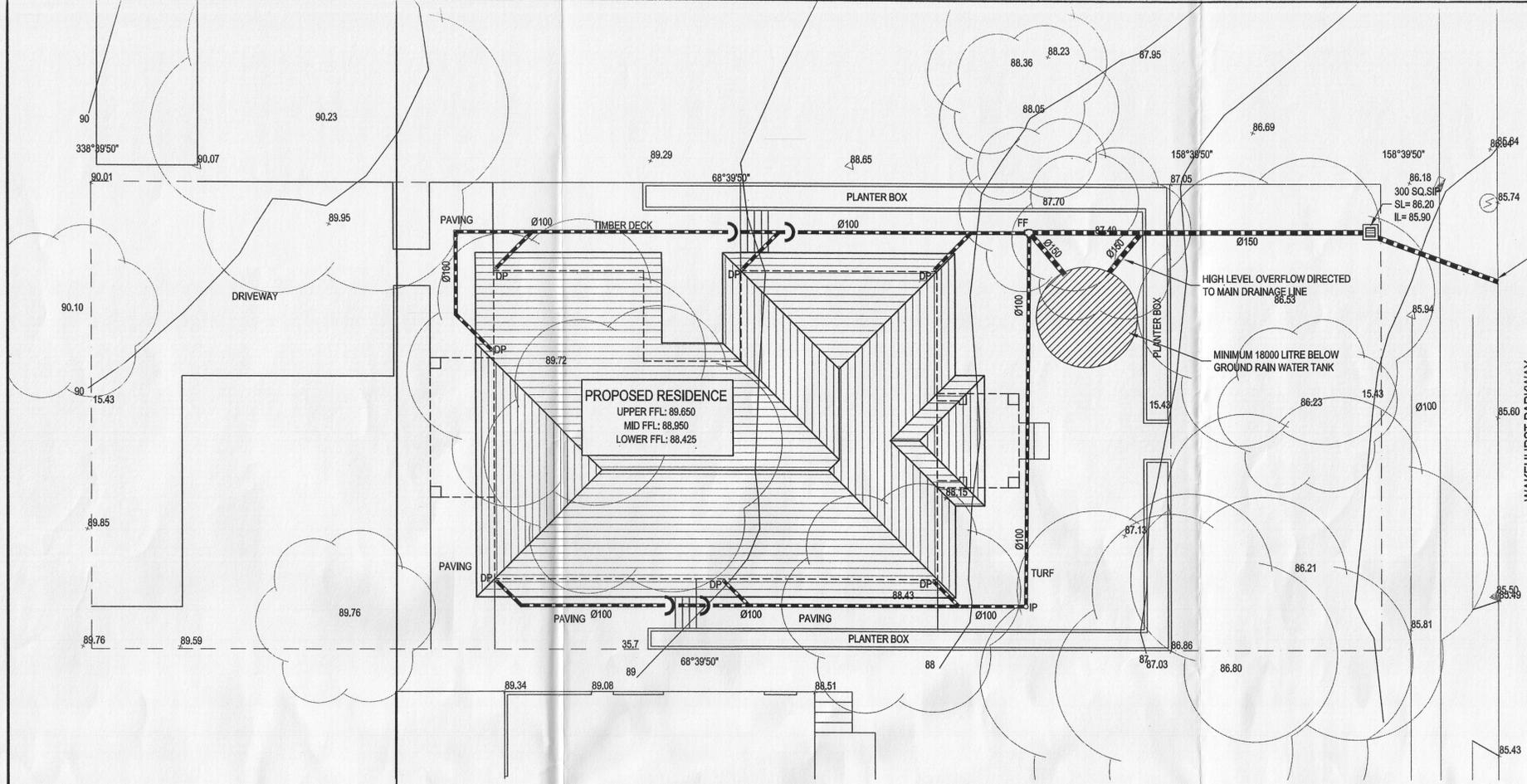
| | | | |
|--|--------------|------------------|---------------------|
| PROPOSED RESIDENCE | | | |
| 28 Wakehurst Parkway, Seaforth for Gremmo Homes | | | |
| SEDIMENT & EROSION CONTROL PLAN | | | |
| DESIGN BDC | DRAWN DMB | DATE JAN 2009 | PROJECT No. 5518 |
| CHECKED | APPROVED | SCALE 1:100 | DRG No. C01 - A |

AT ORIGINAL SIZE

DESIGN SUMMARY
 TOTAL SITE AREA = 550.9 m²
 ZONE 1, DENSITY SUB ZONE = 5
 AVERAGE SITE SLOPE = 10%

0% PRE DEVELOPMENT IMPERVIOUS AREA
 60% POST DEVELOPMENT IMPERVIOUS AREA

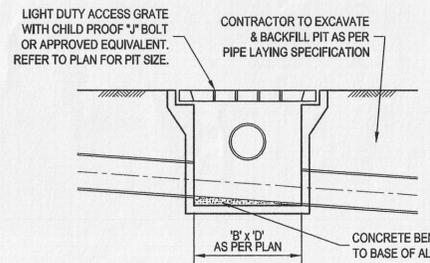
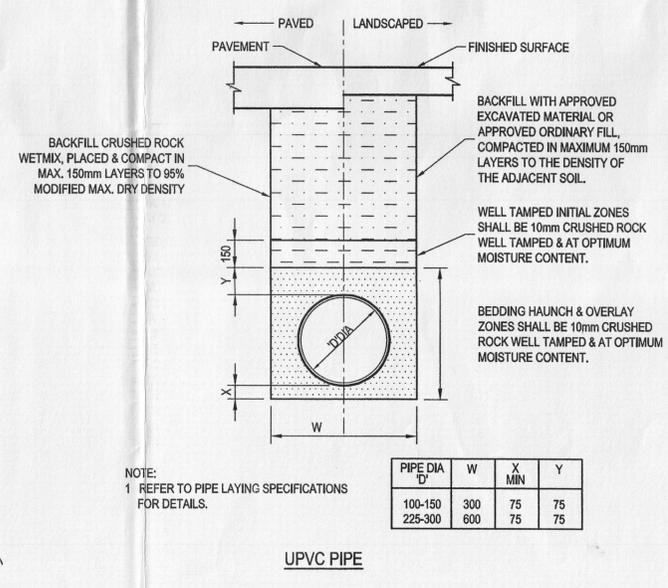
MAINLY SPECIFICATION FOR ON-SITE STORMWATER MANAGEMENT 2003, PAGE 45
 ON-SITE DETENTION STORAGE REQUIRES = 18.0m³
 COUNCIL ADVISED ON 23/01/09 100% OFFSET WITH RETENTION TANK ACCEPTABLE.
 PROVIDE MINIMUM 18.0m³ RETENTION TANK.



STORMWATER DRAINAGE PLAN

1:100
 ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO.
 ALL DRAINAGE LINES SHALL BE LAID @ 2% FALL MIN. UNO.
 FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL, TYPICAL
 ALL GUTTERS TO BE FITTED WITH GUTTER GUARD TO BUILDER'S DETAIL.
 MINIMUM EFFECTIVE EAVES GUTTER SIZE = 6700 mm²
 MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500
 THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:
 DP = Ø100 OR 100 x 75 RECTANGULAR DOWN PIPE, UNO.
 FO = Ø150 FLOOR OUTLET
 SIP = SURFACE INLET PIT (NO LINTEL)
 100 (c) = Ø100 CHARGED LINE
 IP = Ø150 INSPECTION POINT
 S = RAINWATER SPREADER
 FF = FIRST FLUSH RAINWATER DEVICE TO BUILDER'S DETAIL
 X [100.00] = PROPOSED FINISHED SURFACE LEVEL

CONSTRUCTION CERTIFICATE
 No. 08/147
 These plans form part of the above Construction Certificate as issued by
 Greg Hough of
 Get Certified Building Services Pty Ltd
 Accreditation No: BPB0186



TYPICAL SURFACE INLET PIT DETAIL
 1:20

TYPICAL PIPE LAYING DETAIL
 1:20

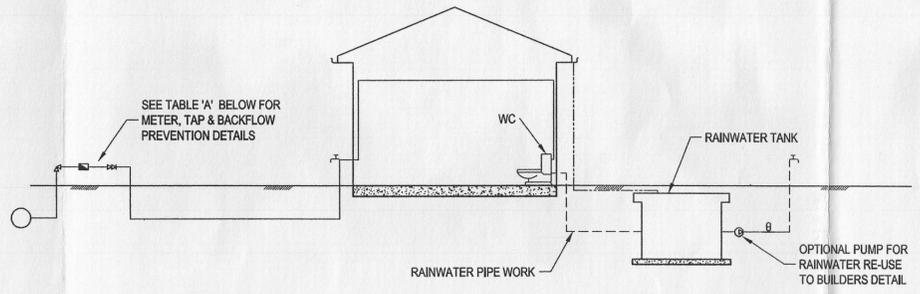


TABLE A

| RAINWATER TANK LOCATION | METER SIZE (mm) | TYPE OF TAP | TYPE OF BACKFLOW PREVENTION |
|-------------------------|-----------------|-------------|--|
| ABOVE GROUND | 20 | BALL VALVE | DUAL CHECK VALVE (COMBINED WITH METER) |
| | 25 | BALL VALVE | DUAL CHECK VALVE |
| | > 32 | BALL VALVE | DUAL CHECK VALVE |
| BELOW GROUND | 20 | BALL VALVE | TESTABLE DOUBLE CHECK VALVE |
| | 25 | BALL VALVE | TESTABLE DOUBLE CHECK VALVE |
| | > 32 | BALL VALVE | TESTABLE DOUBLE CHECK VALVE |

LEGEND

- ⊕ PRESSURE VESSEL
- M METER
- ⊕ BALL VALVE RIGHT ANGLE TYPE
- ⊕ DUAL CHECK VALVE
- ⊕ PUMP
- ⊕ GARDEN TAP
- DRINKING WATER SUPPLY PIPES
- - - RAINWATER SUPPLY PIPES
- DOWN PIPES

DIAGRAM NOTES:
 DRAWING TO BE READ IN CONJUNCTION WITH SYDNEY WATER PLUMBING REQUIREMENTS
 FOR TANKS 10,000 LITRES OR LESS, COUNCIL DEVELOPMENT CONSENT IS NOT REQUIRED, IF THEIR CONDITIONS FOR INSTALLATION ARE FOLLOWED.
 FOR TANKS GREATER THAN 10,000 LITRES COUNCIL DEVELOPMENT CONSENT IS GENERALLY REQUIRED.
 FOR TANKS MORE THAN 10,000 LITRES APPROVAL IS REQUIRED FOR BUILDING OVER SEWERS.
 SYDNEY WATER'S APPROVAL IS REQUIRED FOR ANY TOP UP FROM DRINKING WATER SUPPLY, REGARDLESS OF TANK SIZE. NO DIRECT CONNECTION IS ALLOWED BETWEEN THE DRINKING WATER SUPPLY AND THE RAINWATER TANK SUPPLY.
 RAINWATER PIPEWORK IS SHOWN ON THE DIAGRAM AS SUPPLYING INTERNAL AND EXTERNAL RAINWATER USES. CUSTOMERS MAY WANT ONE OR THE OTHER.
 ANY DESIGNED ACCESS LID INTO RAINWATER RE-USE TANK IS TO HAVE A LOCKABLE LID. IF THE LID IS DESIGNED TO BE ACCESSED BY A MAINTENANCE PERSON, IT MUST BE AT LEAST 600 mm x 900 mm IN SIZE.
 RE-USE PLUMBING TO BE DIRECTED INTERNALLY FOR CONNECTION TO WATER CLOSETS & LAUNDRY ETC.

DUAL DRINKING WATER & RAINWATER SUPPLY DIAGRAM
 NTS

| REVISION | DATE | AMENDMENT DESCRIPTION |
|----------|----------|-----------------------|
| A | 11.02.09 | ISSUED FOR APPROVAL |

COPYRIGHT
 ECLIPSE CONSULTING ENGINEERS PTY LTD is the owner of the copyright subsisting in these drawings, plans, designs and specifications. They must not be used, reproduced or copied in whole or in part without prior written consent of ECLIPSE CONSULTING ENGINEERS PTY LTD

ECLIPSE CONSULTING ENGINEERS

Eclipse Consulting Engineers Pty Ltd
 304/12 Century Circuit
 Norwest Central
 Baulkham Hills NSW 2153
 Phone: (02) 9894 6500
 Fax: (02) 8850 0212
 Info: info@eclipse-engineers.com.au
 www.eclipse-engineers.com.au

PROPOSED RESIDENCE
 28 Wakehurst Parkway, Seaforth
 for Gremmo Homes

STORMWATER DRAINAGE PLAN

| DESIGN | DRAWN | DATE | PROJECT No. |
|--------|-------|----------|-------------|
| BDC | DMB | JAN 2009 | 5518 |

| CHECKED | APPROVED | SCALE | DRG No. |
|---------|----------|-------------|---------|
| | | 1:100, 1:20 | C02 - A |

AT ORIGINAL SIZE