

Appendix N

Utilities Reports



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153 Pacific Highway Charlestown

Date: 30 March, 2009
Reference no: 1067-808S

STERLINGS PTY LTD
153 MORGAN STREET, MEREWETHER
NSW 2291

Attention: MR TERRY ROCHE

Project: TOUKLEY SENIORS LIVING

Subject: HYDRAULIC CONNECTIONS TO AUTHORITIES SERVICES

Dear Terry, we have made contact with Wyong Shire Council regarding domestic water and fire services connections for the proposed development. Wyong Shire Council has confirmed that a sanitary drainage main is available for connection within the property boundary and has sufficient capacity to cater for the proposed development. They have also confirmed that a water main is available for connection on the northern side of Main Road just outside the property boundary and has sufficient capacity to cater for the proposed development.

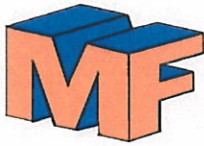
Additionally we have contacted Jemena regarding the supply of natural gas. Jemena have confirmed that a natural gas main is available on the southern side of Main Road and may be connected to the site via a 'long' service and has sufficient capacity to cater for the proposed development.

Regards

Robert McCallum (Director)

Appendix O

Civil Engineering Report



MICHAEL FITZGERALD
Consulting Engineers Pty Ltd ABN 73 075 676 854
Structural and Civil Engineers

Ref No 08.3401
Sterlings P/L
Project Managers
Attention Terry Roche

24th March, 2009

Dear Sir,

Re: STRUCTURAL & CIVIL ENGINEERING CERTIFICATION.
Seniors Living Residential Development - 222 Main Rd., Toukley for Rustrum P/L

We advise that the structural, civil engineering and stormwater drainage components for this proposed development have been designed by Michael Fitzgerald Consulting Engineers P/L.

Structural Engineering Details have been conceptually designed and final documentation will be completed at Construction Certificate Stage

Civil Engineering & Stormwater Drainage are shown on our Drawings 08.3401 C1 - C5

These drawings were prepared in reference to Architectural Drawings prepared by Anchor Mortlock Woolley Architects.

The structural design has been based on the following design data;

Wind Speed N3 W41
Region A
Terrain Category 3

Other data has been obtained from the following Australian Standards

- 1) AS1170 Pt1 Dead and Live Load
- 2) AS1170 Pt2 Wind Load
- 3) AS1170 Pt4 Earthquake Loading

Additionally, the structural design complies with all relevant Australian Standards as listed in Part B of the Building Code of Australia - 2008.

The structure of the building also complies with the requirements of Section C - Fire Resistance, of the Building Code of Australia - 2008.

Site Soil Classification is Class P in accordance with AS2870 - 1996. This classification meets the requirements of Geotechnical Report G08/221-A prepared by Network Geotechnics. Footings will be founded on weathered rock

In accordance with Wyong Shire Council requirements, the Stormwater Drainage has been designed in accordance with AS3500 and Australian Rainfall and Runoff 1987. Stormwater Drainage Documentation is detailed on drawings 08.3401 C2 - C5. We advise that the proposed improvements to this site will not adversely impact on adjoining properties and no water is drained onto or impounded on adjoining properties.

Sedimentation & Erosion Control measures are shown on our Drawing 08.3401 C1 and are in accordance with requirements of the Department of Natural Resources.

147 Parkway Avenue, Hamilton South NSW 2303
Phone: (02) 49613924 Fax: (02) 49613924 Mobile: 0412 056 934

It is our opinion that when the construction is completed in accordance with the design documentation, the designed construction will be structurally sound and satisfy the requirements of relevant codes and Australian Standards.

Yours Faithfully,

A handwritten signature in black ink, appearing to read 'M. Fitzgerald', written over a horizontal line.

Michael Fitzgerald
MIEAust CPEng



MICHAEL FITZGERALD
Consulting Engineers Pty Ltd ABN 73 075 676 854
Structural and Civil Engineers

STORMWATER DRAINAGE

Site Address Senior Living Residential Development - 222 Main Road Toukley for Rustrum P/L

Design Philosophy

The management of stormwater is in accordance with Wyong Shire Council requirements, AS3500 and Australian Rainfall and Runoff 1987.

Stormwater Drainage Documentation is detailed on drawings 08.3401 C2 - C5.

All rain water is collected, managed and discharged to the lake in accordance with accepted principles.

The site has not been detained due to close proximity and direct discharge to the lake.

The following stormwater drainage control measures have been implemented on this site:-

1) Rainwater Harvesting - Roof Water

Roof Water is collected in 2/ 30,000 litre tanks for Re-use to toilet cisterns and laundry. The reticulation system will be provided by the Hydraulic Services Engineer.

2) Landscaped Watering - Podium & Landscaped Areas

Podium & Landscaped Areas is collected in 1/ 30,000 litre storage tank for re-use as landscape watering. The reticulation system for watering will be provided by the Landscape Architect

3) Nutrient Control

Most water is from Roof & Hardstand Paving. Nutrients will be minimal and will be treated during storage in the re-use tanks.

4) Oil Spillage Control

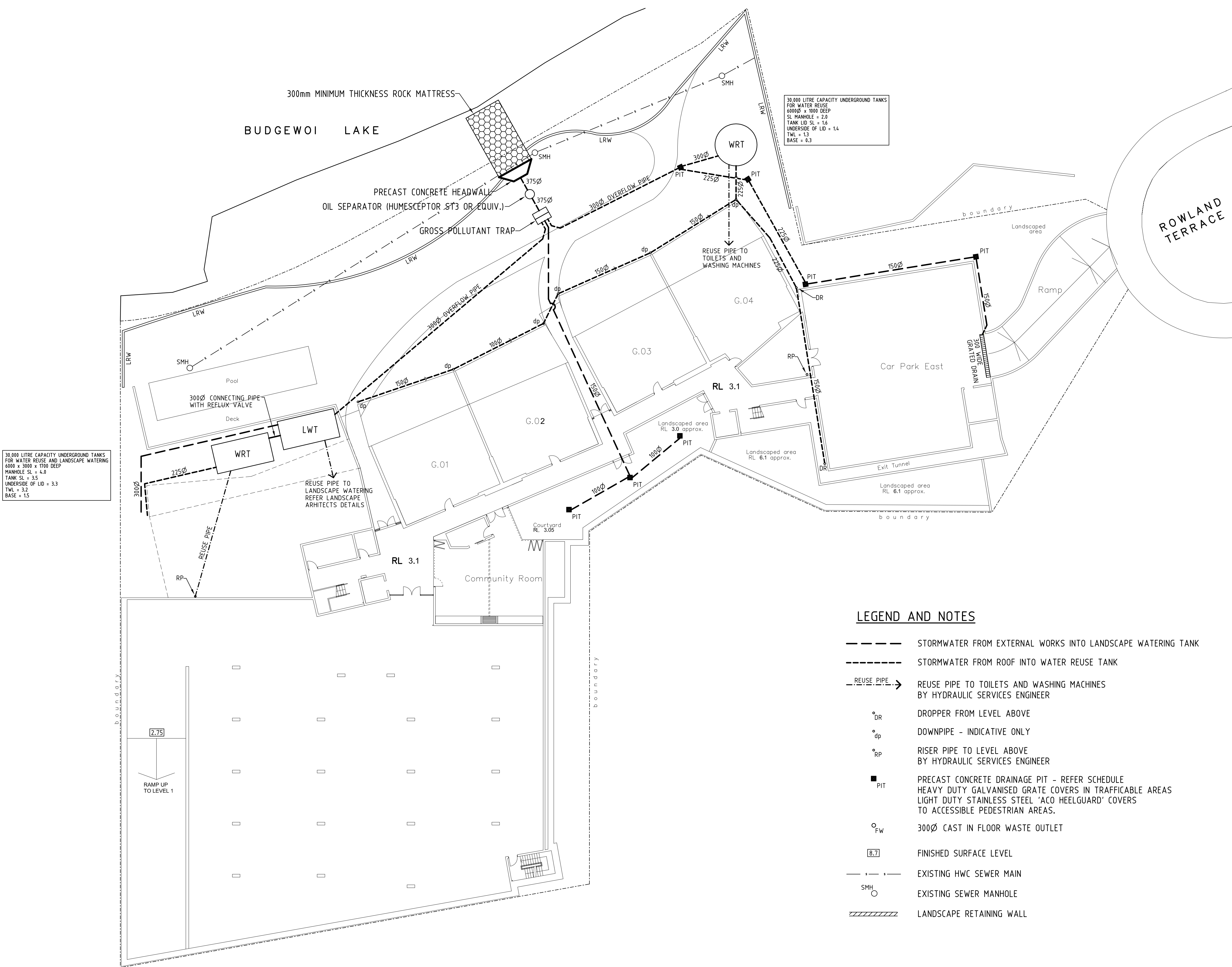
Water from Carpark Areas will be minimal. Notwithstanding this an oil separator is provided in the outlet pipe system prior to discharge to the lake.

5) Outlet from Site

Outlet from the site to the lake incorporates a gross pollutant trap, a Humesceptor (ST3) oil separator and a headwall / stone mat rip-rap to dissipate water velocity and discharge to the lake.

Michael Fitzgerald
MIEAust CPEng

Phone: (02) 49613924 Fax: (02) 49613924 Mobile: 0412 056 934
Email: m.fitzgerald@hunterlink.net.au



STORMWATER DRAINAGE NOTES

1. ALL STORMWATER DRAINAGE INSTALLATION WORKS TO COMPLY WITH NATIONAL PLUMBING AND DRAINAGE CODE AS 3500, THE BCA, NSW CODE OF PRACTICE 1999, COUNCIL CONSENT CONDITIONS AND THE STATUTORY AUTHORITY'S REQUIREMENTS.
2. ALL PITS TO BE PRECAST CONCRETE STEEL REINFORCED.
3. ALL PIPES TO BE 90Ø UPVC UNLESS NOTED OTHERWISE.
4. ALL PIPE SIZES SHOWN ARE DN (DIAMETER NOMINAL) EQUIVALENT PIPE SIZES FOR THE SELECTED PIPE MATERIALS TO COMPLY WITH TABLE 1.1 AND 1.3 OF AS3500.
5. 100Ø PIPES TO BE CLASS SN6 UPVC LAID AT MINIMUM GRADE 1 IN 100.
6. 150Ø PIPES TO BE CLASS SN4 UPVC LAID AT MINIMUM GRADE 1 IN 100.
7. 90Ø SUBSOIL DRAINAGE CLASS SN6 SLOTTED HARD TUBE LAID AT MINIMUM GRADE 1 IN 200.
8. ARROWS INDICATE DIRECTION OF GRADE 1:100 MINIMUM.
9. ALL LEVELS APPROXIMATE ONLY CONFIRM ON SITE
10. FLOOR LEVELS SHOWN ARE FINISHED FLOOR LEVELS.
11. COVER AND GRATE LEVELS TO BE MODIFIED AS NECESSARY ON SITE TO MATCH SURROUNDING AND ENSURE DRAINAGE TO GRATES.
12. MINIMUM COVER TO STORMWATER PIPES SHALL BE AS FOLLOWS:
TRAFFICABLE AREAS 450mm.
LANDSCAPED 300mm
PIPES TO BE CONCRETE ENCASED IF MINIMUM COVERS CANNOT BE OBTAINED IN TRAFFICABLE AREAS, REFER TO CLAUSE 3.8 AS 3500.3. ALTERNATIVELY USE UPVC SEWER GRADE PIPES UNDER ROADS AND BUILDINGS.
13. ALL LANDSCAPED AREAS PROVIDE DN90 SUBSOIL DRAINS (AGROFLEX OR SIMILAR) LAID AT MINIMUM GRADE 1 IN 200. PROVIDE GEOFABRIC FILTER SOCK TO ALL PIPES.
14. USE 90Ø UPVC PIPES FROM ALL DOWNPIPES.
FOR LOCATIONS OF DOWNPIPES REFER TO ARCHITECTURAL DRAWINGS.
15. ALL OUTLET PIPES TO HAVE 150 x 100 RHS HEAVY DUTY PLASTIC KERB ADAPTORS.

MAINTENANCE PROGRAMME

1. ALL STORMWATER PITS TO BE CLEANED ON A REGULAR BASIS AT MINIMUM 1 MONTH INTERVALS.
2. FLUSH SYSTEM ANNUALLY.

LEGEND AND NOTES

- STORMWATER FROM EXTERNAL WORKS INTO LANDSCAPE WATERING TANK
- STORMWATER FROM ROOF INTO WATER REUSE TANK
- REUSE PIPE ---> REUSE PIPE TO TOILETS AND WASHING MACHINES BY HYDRAULIC SERVICES ENGINEER
- °DR DROPPER FROM LEVEL ABOVE
- °dp DOWNPIPE - INDICATIVE ONLY
- °RP RISER PIPE TO LEVEL ABOVE BY HYDRAULIC SERVICES ENGINEER
- PIT PRECAST CONCRETE DRAINAGE PIT - REFER SCHEDULE
HEAVY DUTY GALVANISED GRATE COVERS IN TRAFFICABLE AREAS
LIGHT DUTY STAINLESS STEEL 'ACO HEELGUARD' COVERS TO ACCESSIBLE PEDESTRIAN AREAS.
- °FW 300Ø CAST IN FLOOR WASTE OUTLET
- [8.7] FINISHED SURFACE LEVEL
- EXISTING HWC SEWER MAIN
- SMH ○ EXISTING SEWER MANHOLE
- /// LANDSCAPE RETAINING WALL

2	12.05.2009	general revisions to carpark east & ramp
1	01.04.2009	EA submission
issue	date	comment

MICHAEL FITZGERALD
Consulting Engineers Pty Ltd ABN 73 075 676 854
Structural & Civil

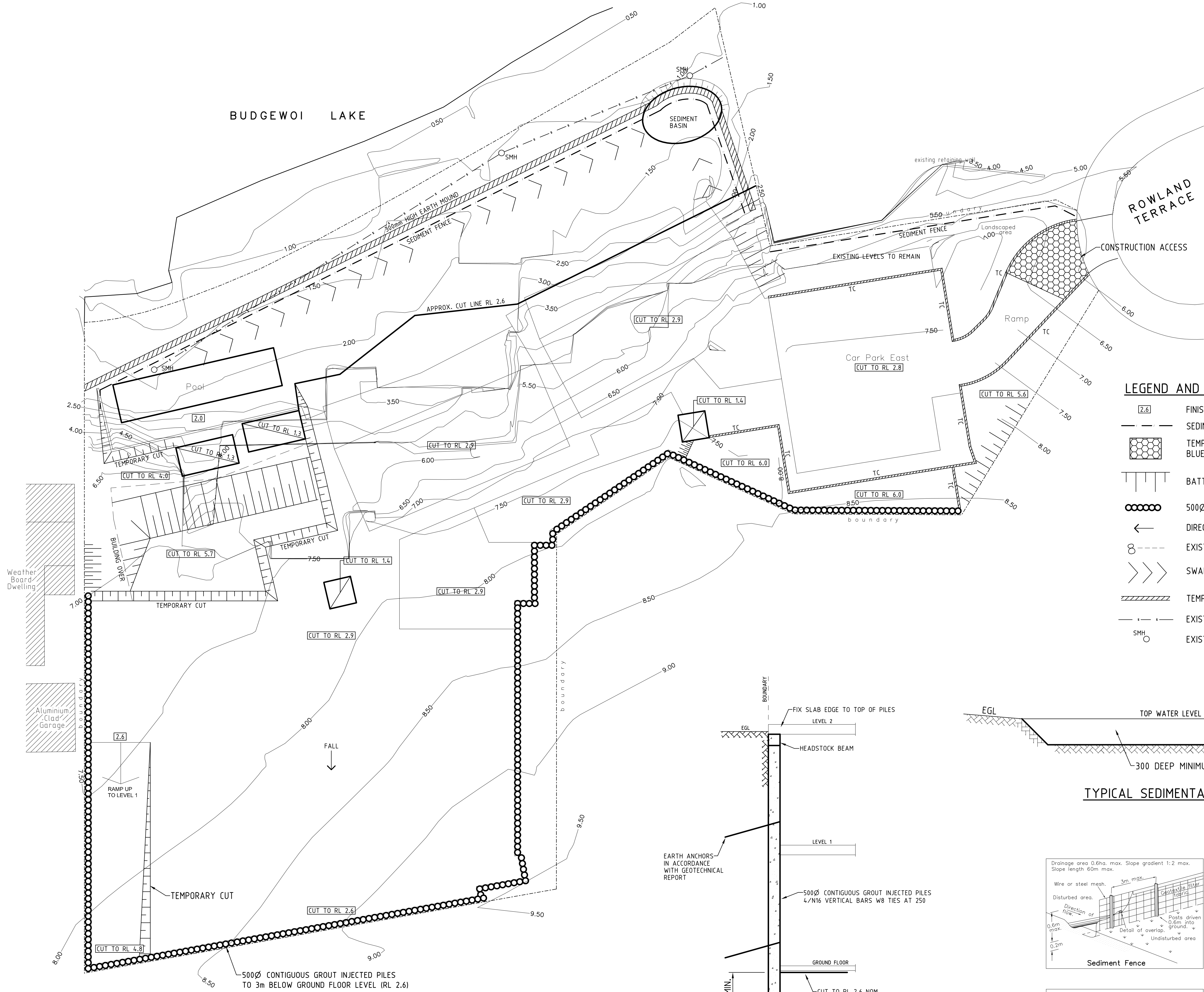
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project
TOUKLEY SENIORS LIVING
222 MAIN ROAD, TOUKLEY
FOR RUSTRUM PTY LTD

architect
ANCHER MORTLOCK WOOLLEY

drawing
GROUND LEVEL
STORMWATER DRAINAGE AND REUSE PLAN

date MARCH 2009	scales 1:200	job no. 09-3401
drown L.TAPP	cad file 09016	
certified	drawing no. C2	issue 2



GENERAL NOTES

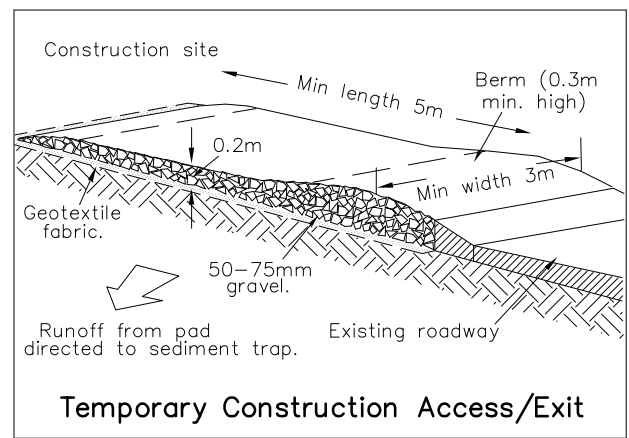
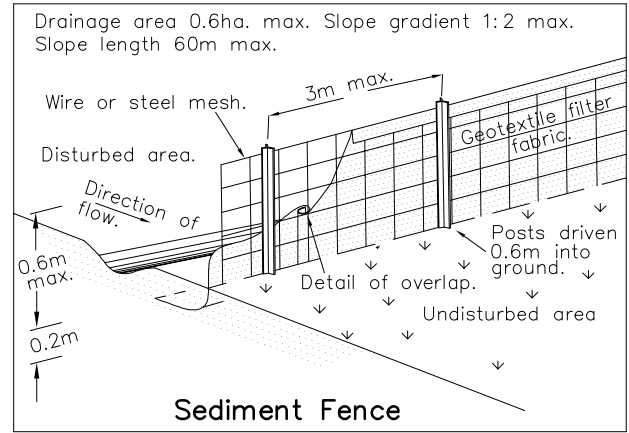
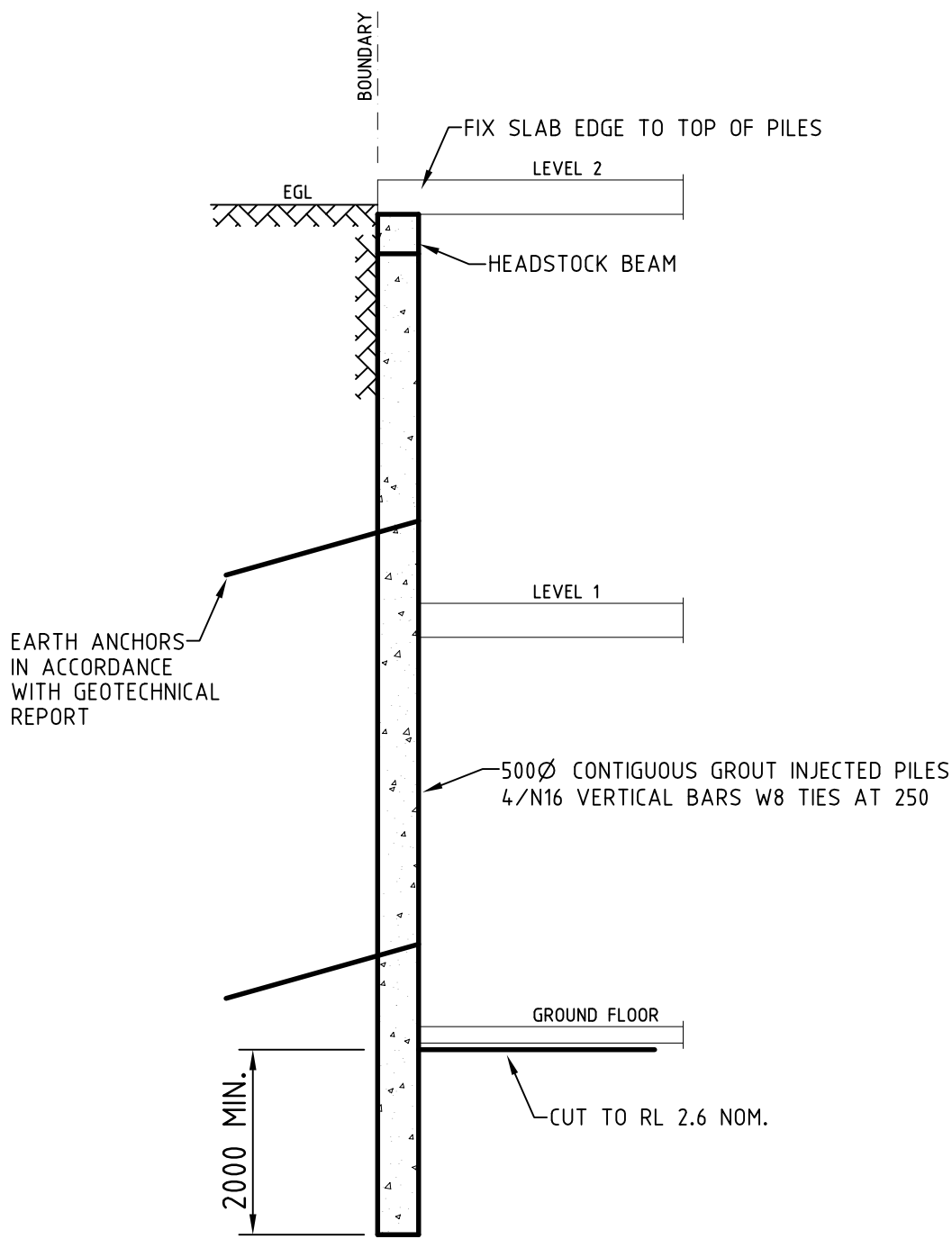
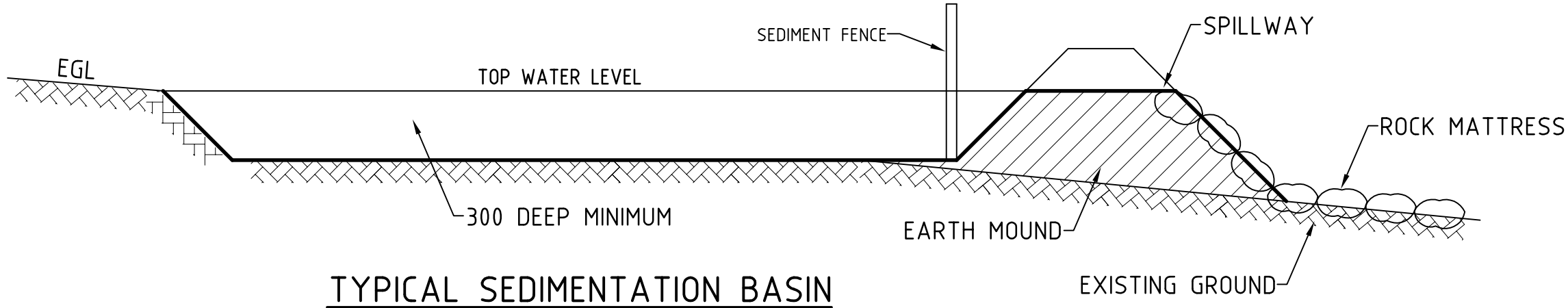
1. All excess excavated material to be removed from site.
2. Builder to landscape and revegetate the site immediately after building works construction.
3. All existing vegetation including trees to be cleared from site. Refer to landscape plan for details.
4. The developer is responsible for ongoing maintenance of erosion and siltation control measures.
5. It is the contractors responsibility to ensure that all works are carried out in strict accordance with the OCCUPATIONAL HEALTH AND SAFETY ACT.
6. All work is to be carried out in accordance with Councils specification for subdivision works and to the satisfaction of the director of development.
7. Council are to notified prior to the commencement of any works.
8. All public utilities are to be clearly identified in the field prior to any civil works. Council does not accept any responsibility for damage or relocation costs to public utilities during the construction of this development.
9. Permission to enter, construct works and discharge stormwater on adjoining properties is to be obtained and submitted to council prior to the commencement of any works.
10. All erosion and sediment control measures are to be carried out in accordance with Council's code of practice for erosion and sedimentation and must be implemented prior to the commencement of any building of civil works.
11. The rectification of all matters arising from insufficient information being shown on the submitted plans is to be carried out to the Engineer's satisfaction.
12. These plans are to be read in conjunction with the conditions stated in Council's engineering plan approval correspondence.

SEDIMENT CONTROL NOTES

1. All sediment control devices are to be constructed, placed and maintained in accordance with 'Urban Erosion & Sediment Control', C.A.L.M. N.S.W.
2. All perimeter & siltation control measures are to be constructed as the first step in earthworks and/or cleaning.
3. All temporary earth berms, diversion & silt dam bankments are to be machine compacted, seeded and mulched for temporary vegetation cover as soon as they have been formed.
4. All sediment trapping structures and devices are to be inspected after storms for structural damage or clogging. Trapped material is to be removed to a safe approved location.
5. All topsoil is to be stockpiled on site for re-use (away from trees and drainage lines). Measures shall be applied to prevent erosion of the stockpiles.
6. All cut and fill slopes are to be seeded and mulched within 10 days of completion of formation.
7. No disturbed area is to remain denuded longer than 14 days. Hydromulch or turf as required.
8. The area over all service lines not within road reserves is to be mulched and seeded or turfed where instructed within 14 days after backfill.
9. No more than 150 metres of trench is to be open at any one time.
10. All footpaths, berms and batters and site regrading area are to be topsoiled with minimum 100mm of selected site topsoil and grassed with seed.
11. Strips of turf are to be placed immediately behind the kerb of accessways 600mm wide minimum.
12. All landscaping measures including the establishment of grassing are to be completed prior to the final inspection. All erosion devices are to be maintained until the landscaping is completed and established.

LEGEND AND NOTES

- 2.6 FINISHED SURFACE LEVEL
- SEDIMENT FENCE
- TEMPORARY CONSTRUCTION ACCESS/EXIT
BLUE METAL SHAKER PAD
- BATTER EXCAVATION FOR BASEMENT - 1 VERTICAL TO 1.5 HORIZONTAL
- 500Ø CONTIGUOUS PILED WALL TO 3m BELOW GROUND FLOOR LEVEL
- DIRECTION OF FALL TO EXCAVATED GROUND
- EXISTING CONTOUR LEVELS
- SWALE FOR OVERLAND FLOWPATH
- TEMPORARY VERTICAL CUT - BEHIND FUTURE REATINING WALL
- EXISTING HWC SEWER MAIN
- EXISTING SEWER MANHOLE



2	15.05.2009	contiguous piling modified
1	01.04.2009	EA submission
issue	date	comment

MICHAEL FITZGERALD
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Structural & Civil

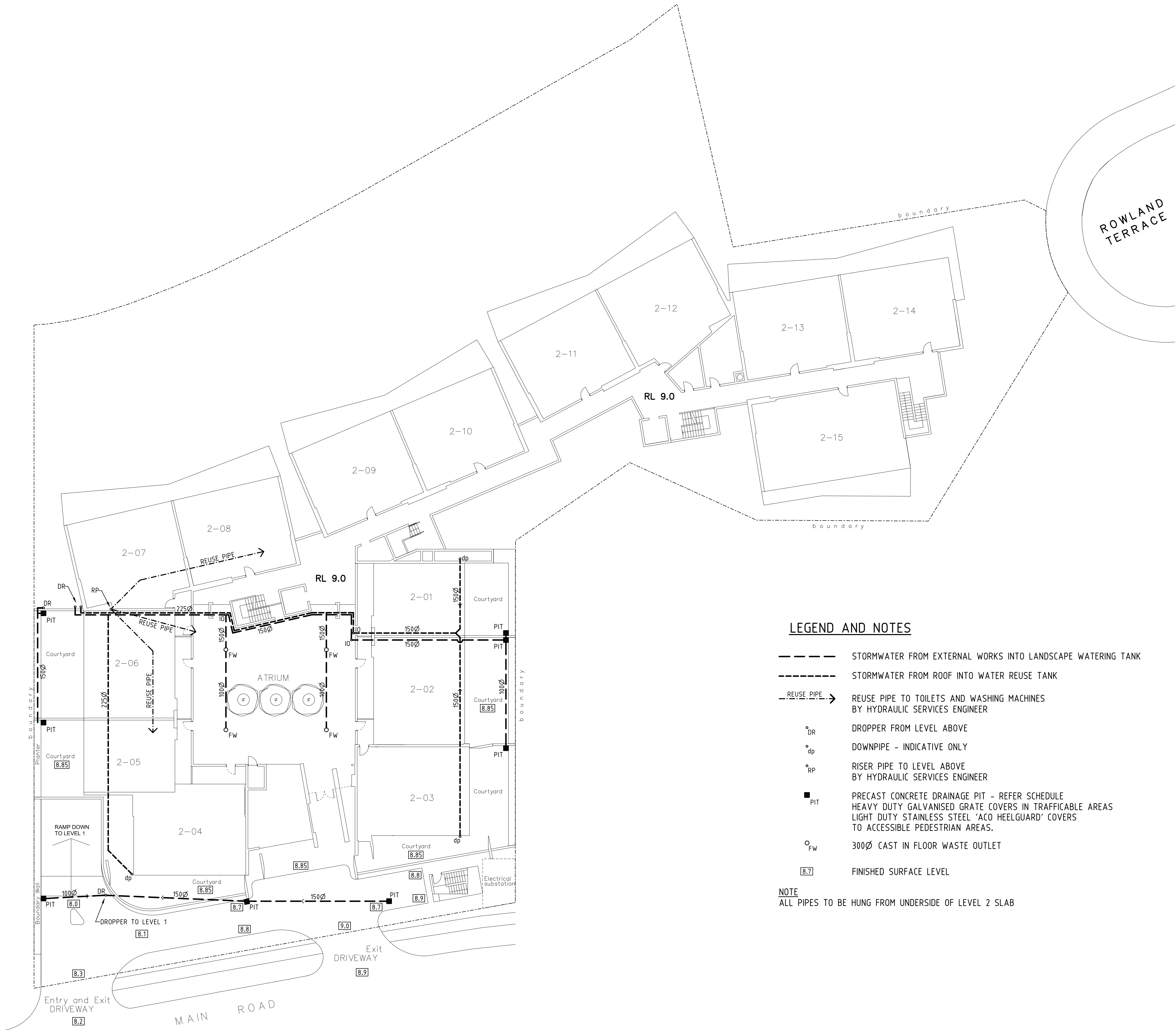
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project
TOUKLEY SENIORS LIVING
222 MAIN ROAD, TOUKLEY
FOR RUSTRUM PTY LTD

architect
ANCHER MORTLOCK WOOLLEY

drawing
SITE WORKS, RETAINING WALLS AND CUT LEVELS
SEDIMENT AND EROSION CONTROL

date MARCH 2009	scales 1:200	job no. 09-3401
drown L.TAPP	cad file 09016	
certified	drawing no. C1	issue 2



LEGEND AND NOTES

- STORMWATER FROM EXTERNAL WORKS INTO LANDSCAPE WATERING TANK
- STORMWATER FROM ROOF INTO WATER REUSE TANK
- REUSE PIPE ---> REUSE PIPE TO TOILETS AND WASHING MACHINES BY HYDRAULIC SERVICES ENGINEER
- ° DR DROPPER FROM LEVEL ABOVE
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- ° FW 300Ø CAST IN FLOOR WASTE OUTLET
- [8.7] FINISHED SURFACE LEVEL

NOTE
ALL PIPES TO BE HUNG FROM UNDERSIDE OF LEVEL 2 SLAB

1	27.03.2009	development application submission
issue	date	comment

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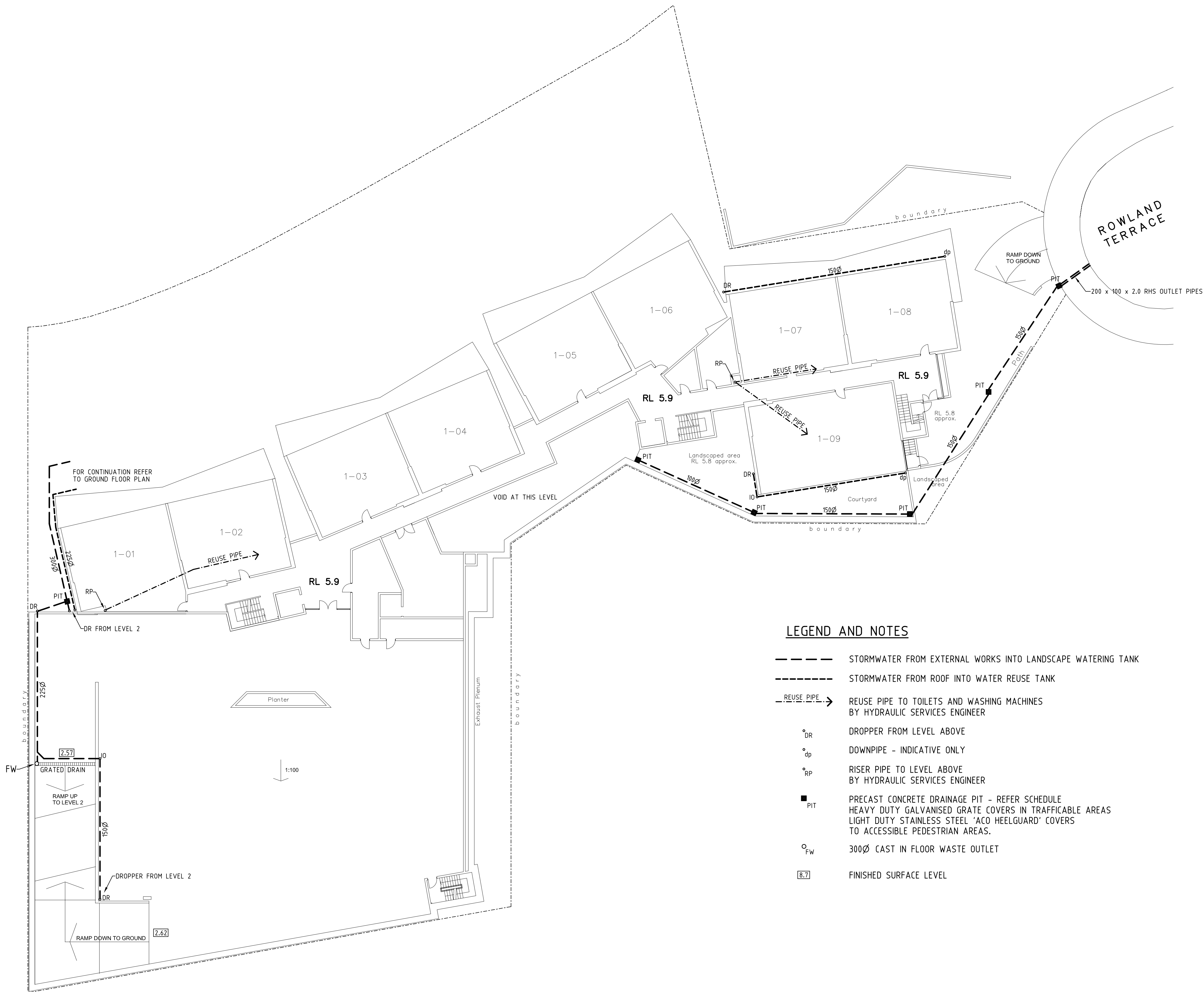
PHONE: (02) 49613924 147 PARKWAY AVENUE
FAX: (02) 49613924 HAMILTON SOUTH.
MOBILE: 0412 056934 N.S.W. 2303.

project
TOUKLEY SENIORS LIVING
222 MAIN ROAD, TOUKLEY
FOR RUSTRUM PTY LTD

architect
ANCHER/MORTLOCK/WOLLEY

drawing
LEVEL 2
STORMWATER DRAINAGE AND REUSE PLAN

date MARCH 2009	scales 1:200	job no. 09-3401
drown L.TAPP	cad file 09016	
certified	drawing no. C4	issue 1



LEGEND AND NOTES

- STORMWATER FROM EXTERNAL WORKS INTO LANDSCAPE WATERING TANK
- STORMWATER FROM ROOF INTO WATER REUSE TANK
- REUSE PIPE --- REUSE PIPE TO TOILETS AND WASHING MACHINES BY HYDRAULIC SERVICES ENGINEER
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1	27.03.2009	development application submission
issue	date	comment

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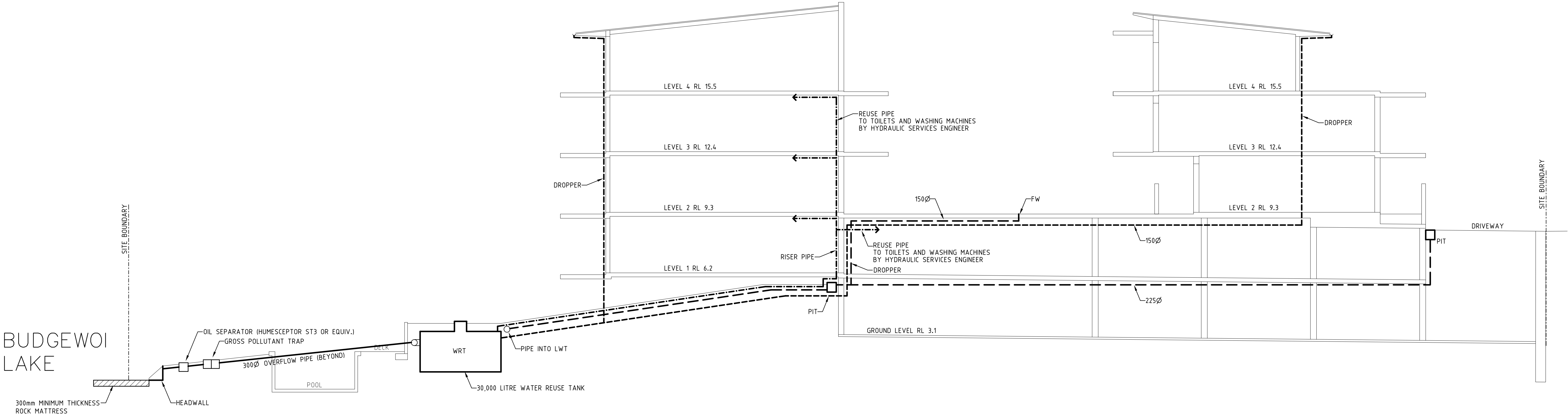
PHONE: (02) 49613924 147 PARKWAY AVENUE
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project
TOUKLEY SENIORS LIVING
222 MAIN ROAD, TOUKLEY
FOR RUSTRUM PTY LTD

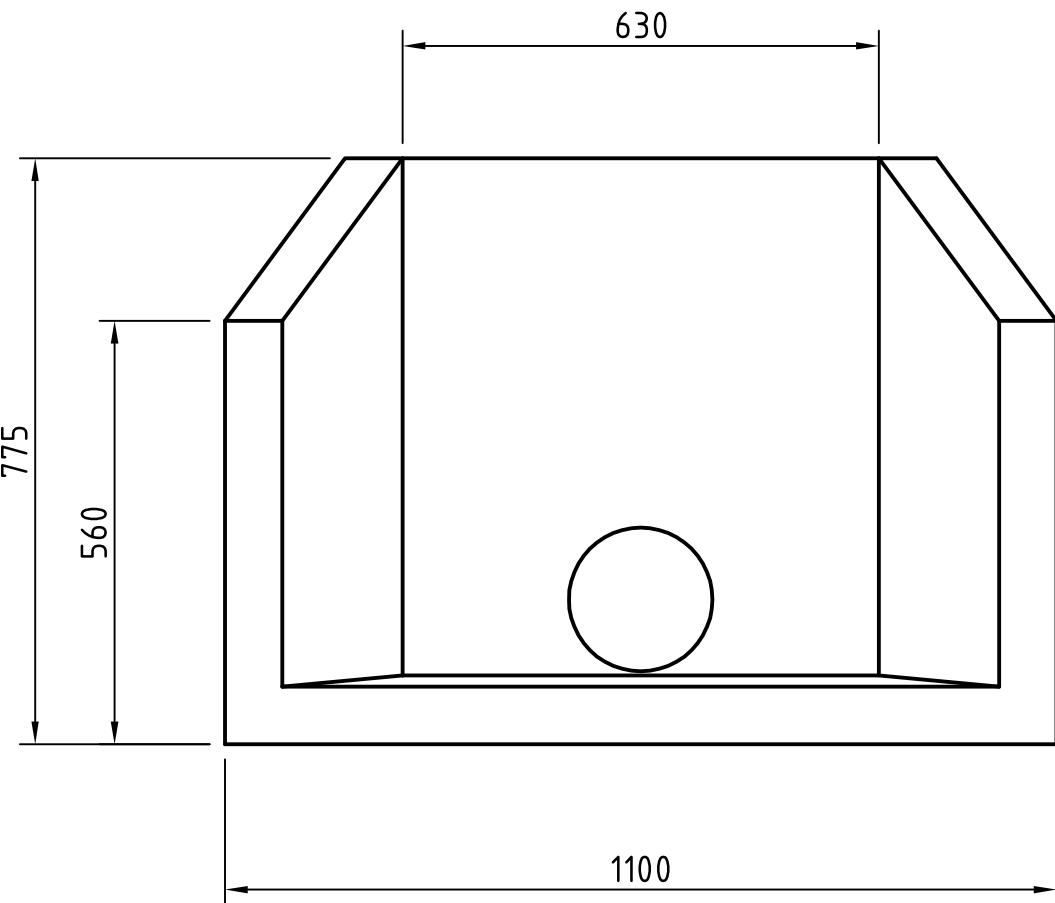
architect
ANCHER/MORTLOCK/WOLLEY

drawing
LEVEL 1
STORMWATER DRAINAGE AND REUSE PLAN

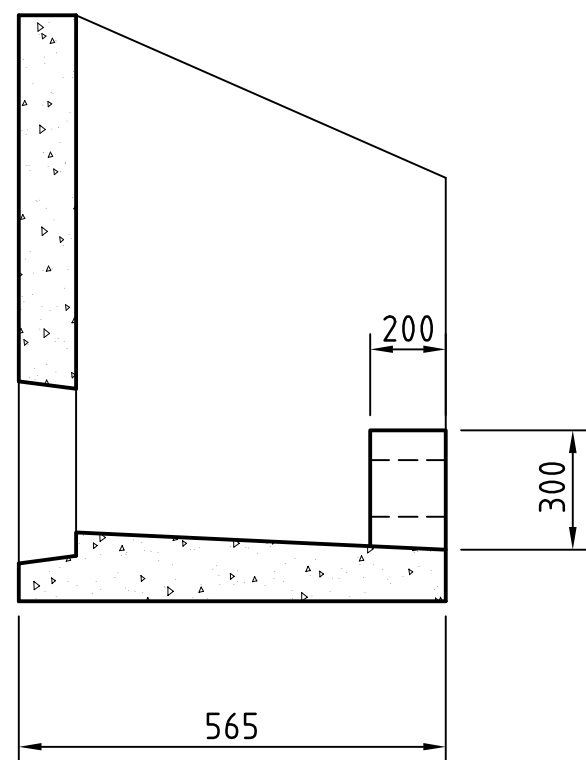
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MARCH 2009	1:200	09-3401
drown	cad file	
L.TAPP	09016	
certified	drawing no.	issue
	C3	1



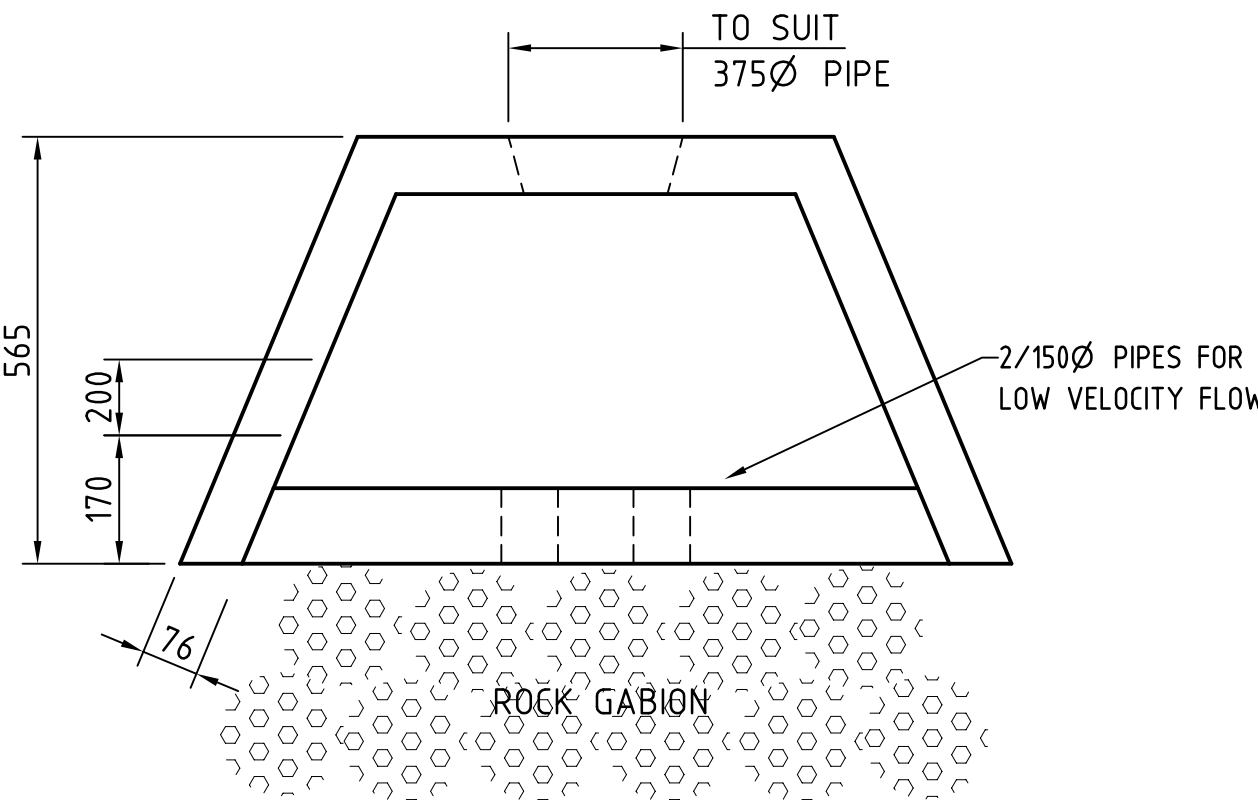
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SCALE 1:100



ELEVATION

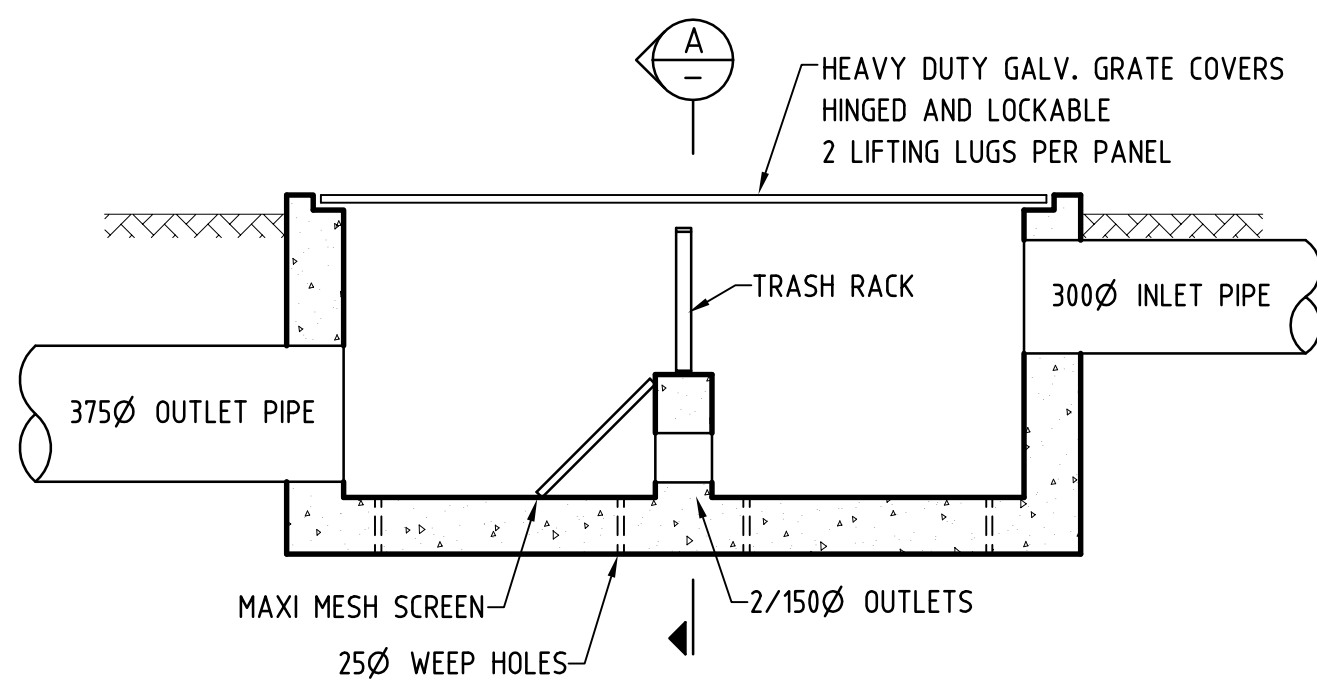


SECTION

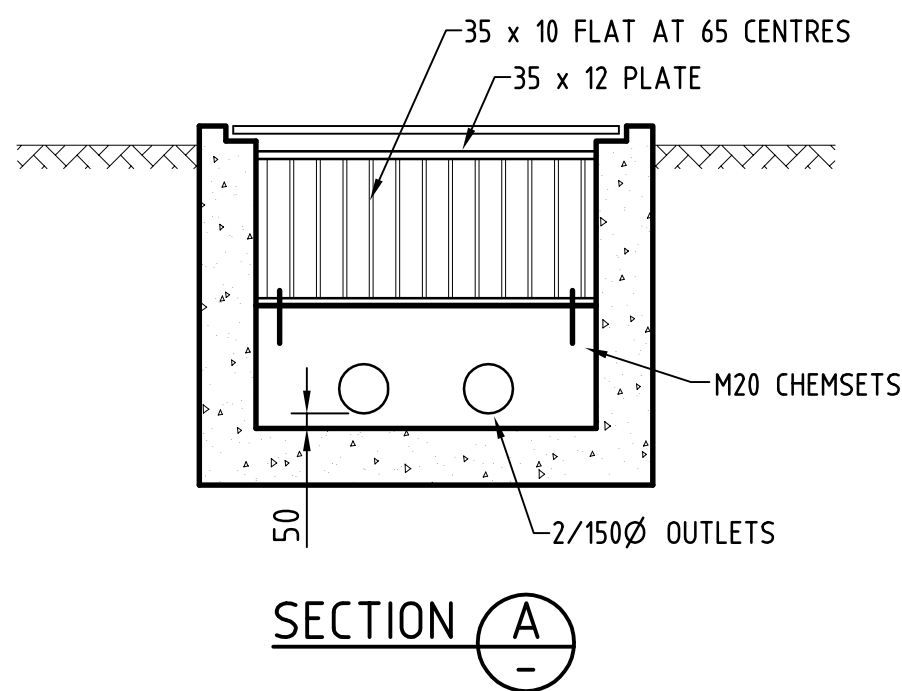


PLAN OF PRECAST CONCRETE HEADWALL

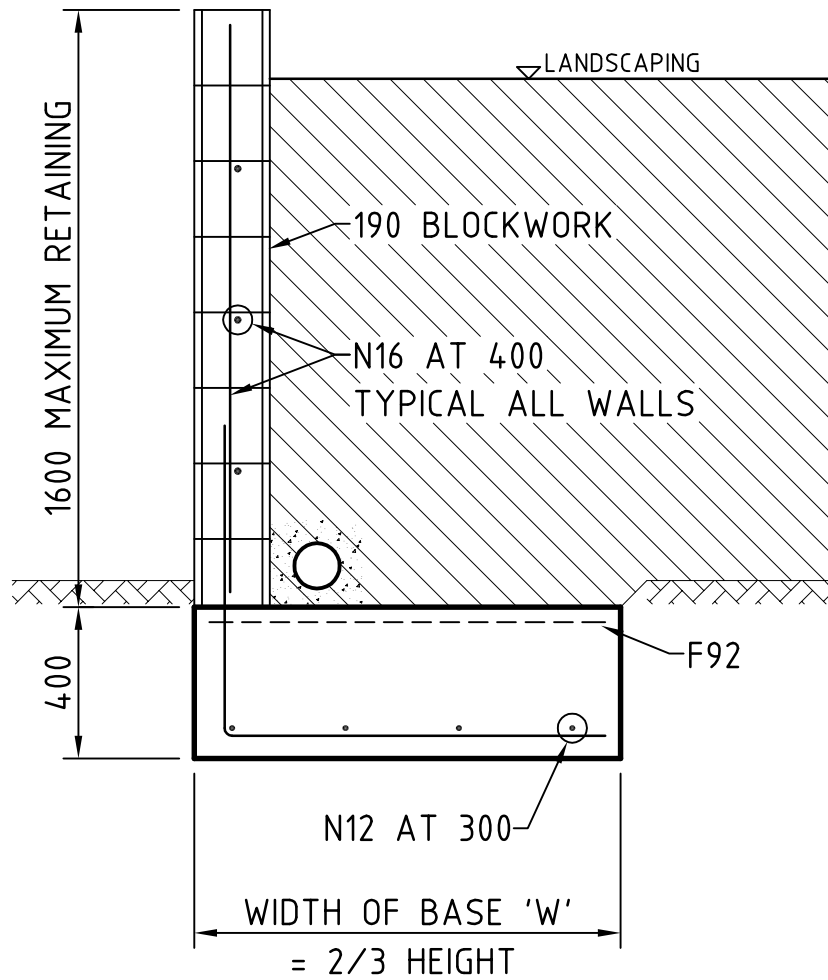
PRECAST CONCRETE HEADWALL AS SUPPLIED BY
BY ROCLA OR APPROVED EQUIVALENT



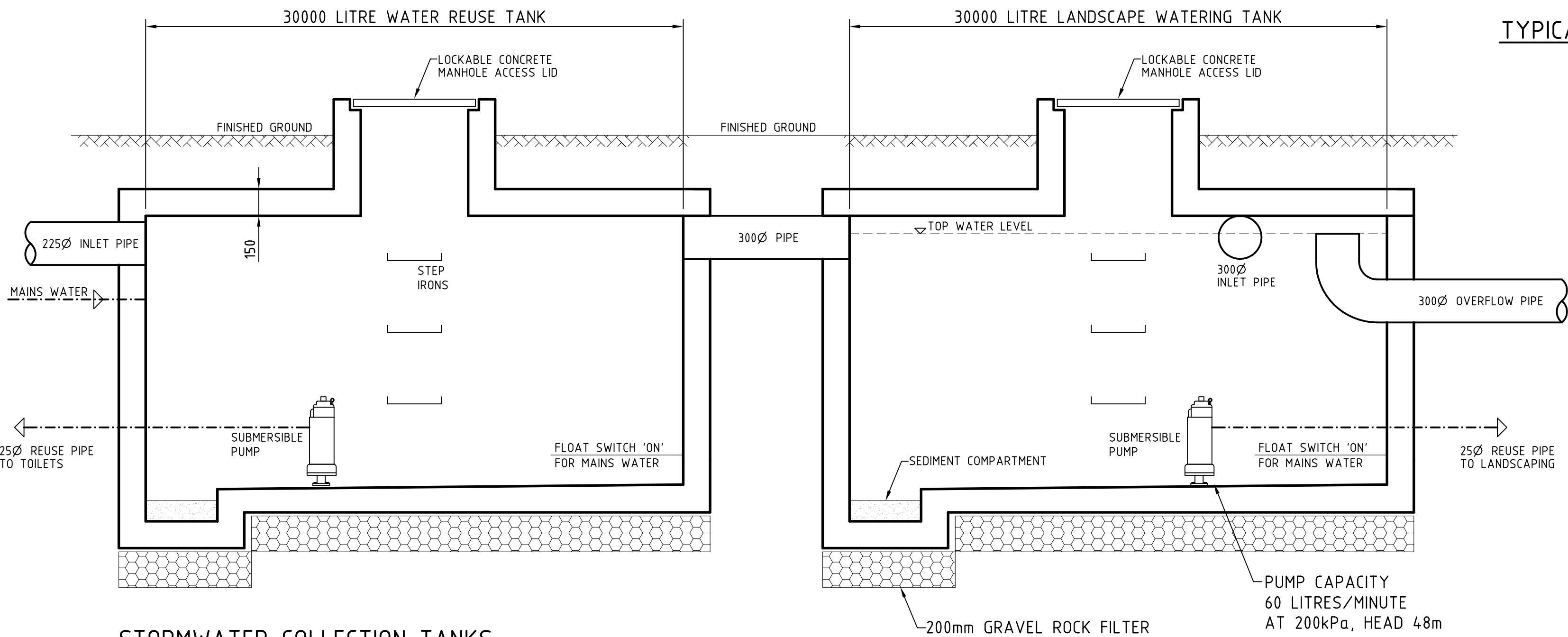
GROSS POLLUTANT TRAP



SECTION A-A



TYPICAL LANDSCAPE RETAINING WALL
IN FILLED GROUND



STORMWATER COLLECTION TANKS

NOTE
SWITCH TO MAINS PRESSURE IN EVENT OF A POWER FAILURE

1	01.04.2009	EA submission
issue	date	comment

MICHAEL FITZGERALD
Consulting Engineers Pty Ltd ABN 73 075 676 854
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project
TOUKLEY SENIORS LIVING
222 MAIN ROAD, TOUKLEY
FOR RUSTRUM PTY LTD

architect
ANCHER MORTLOCK WOOLLEY

drawing
TYPICAL SECTION

date MARCH 2009	scales 1:100	job no. 09-3401
drawn L.TAPP	cad file 09016	
certified	drawing no. CS	issue 1